Carrizo Plain National Monument
Proposed Resource Management Plan
And
Final Environmental Impact Statement

BLM

Bakersfield Field Office

Volume 2

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U.S. DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

PROPOSED

RESOURCE MANAGEMENT PLAN

AND

FINAL ENVIRONMENTAL IMPACT STATEMENT

CARRIZO PLAIN NATIONAL MONUMENT

BAKERSFIELD, CALIFORNIA

Prepared by the
Bakersfield Field Office

Approved

James Wesley Abbott
Acting State Director, California

October 2009

Table of Contents

Volume 2

Appendices

** Appendices L and V were removed from the PRMP/FEIS. However, the letter designations used in the Draft RMP/EIS for other appendices were retained for continuity; there are no Appendices L and V in this PRMP/FEIS.*

Maps

Chapter 6. References

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ACRONYMS AND ABBREVIATIONS

ACEC	area of critical environmental concern
AGGR	Air to Ground Gunnery Range
AM	adaptive management
AOGCM	Atmosphere-Ocean General Circulation Model
APCD	air pollution control district
APE	area of potential effect
ARPA	*Archaeological Resources Protection Act*
ATV	all-terrain vehicle
AUM	animal unit month
AWC	areas with wilderness character
BLM	Bureau of Land Management
BMP	best management practice
BOPM	barrels of oil per month
CalTrans	California Department of Transportation
CDFA	California Department of Food and Agriculture
CDFG	California Department of Fish and Game
CDOGGR	California Department of Conservation, Division of Oil, Gas, and Geothermal Resources
CEQ	Council on Environmental Quality
CEQA	*California Environmental Quality Act*
CFR	Code of Federal Regulations
CNPS	California Native Plant Society
CPNM	Carrizo Plain National Monument
CPNA	Carrizo Plain Natural Area
EA	environmental assessment
EIS	environmental impact statement
ENSO	El Niño/Southern Oscillation
EOU	exchange of use
ESA	*Endangered Species Act*
°F	degrees Fahrenheit
FLPMA	*Federal Land Policy and Management Act*
FLRA	*Federal Lands Recreation Enhancement Act*
FMP	fire management plan
FMU	fire management unit
FWFMP	Federal Wildland Fire Management Policy
GIS	geographic information system
GPS	global positioning system
H2S	hydrogen sulfide
IMP	BLM's Interim Management Policy for Lands under Wilderness Review
IPM	integrated pest management
kV	kilovolt
MIST	minimum impact suppression tactics
MAC	Monument Advisory Committee

MOU	memorandum of understanding
mph	miles per hour
NAGPRA	*Native American Graves Protection and Repatriation Act*
NEPA	*National Environmental Policy Act*
NHPA	*National Historic Preservation Act*
NLCS	National Landscape Conservation System
NM	national monument
NOI	notice of intent
NOx	nitrogen oxides
NRHP	National Register of Historic Places
NWSRS	National Wild and Scenic Rivers System
OHV	off-highway vehicle
PDO	Pacific Decadal Oscillation
PILT	payments in lieu of taxes
$PM_{2.5}$	particulate matter less than 2.5 micrometers in diameter
PM_{10}	particulate matter less than 10 micrometers in diameter
RCM	Regional Climate Model
RFD	reasonably foreseeable development
RMIS	Recreation Management Information System
RMP	resource management plan
RMZ	recreation management zone
ROD	record of decision
ROS	recreation opportunity spectrum
RRU	Russell Ranch Unit
SARA	*Superfund Amendments and Reauthorization Act*
SHPO	State Historic Preservation Officer
SOP	standard operating procedure
SRMA	special recreation management area
SUV	sport utility vehicle
T&E	threatened and endangered
TNC	The Nature Conservancy
UCLA	University of California – Los Angeles
U.S.	United States
USDA	U. S. Department of Agriculture
USDI	U. S. Department of the Interior
USGS	U.S. Geological Survey
USFWS	U.S. Fish and Wildlife Service
VOC	volatile organic compound
VRM	visual resources management
WSA	wilderness study area
WWII	World War II

GLOSSARY

Accelerated Erosion – Soil loss above natural levels resulting directly from human activities. Because of the slow rate of soil formation, accelerated erosion can lead to a permanent reduction in plant productivity.

Adaptive Management – An iterative process, designed to experimentally compare selected management actions by evaluating alternative hypotheses about the ecosystem being managed. Adaptive management consists of three parts: management actions, monitoring, and adaptation. Management actions are treated as experiments subject to modification. Monitoring is conducted to detect the effects of the management actions. Finally, management actions are refined in response to the enhanced understanding of how the ecosystem responds.

Aggregate – Any combination of sand, gravel, and crushed stone in its natural or processed state.

Aliquot Part – A tract or other parcel of land definitely located by reference to the division of a United States Government survey township into sections (640 acres), 1/2 sections (320 acres), 1/4 sections (160 acres), half-quarter or 1/8 sections (80 acres), quarter-quarter or 1/16 sections (40 acres), 1/32 sections (20 acres), 1/64 sections (10 acres), 1/128 sections (5 acres), or 1/256 sections (2.5 acres).

Alluvial Fan - A low, outspread, relatively flat to gently sloping mass of loose rock material deposited by a stream where it flows from a narrow mountain valley onto a plain or broad valley.

Alluvium – Unconsolidated rock or sediment deposited by flowing water including gravel, sand, silt, clay, and various mixtures thereof.

Alkali Flat - a nearly level plain that is covered with a hard, dry mixture of alkaline salts and sediment, formed in an arid region by the complete evaporation of a shallow lake or basin.

Alkali Wetland - Wetlands are ecosystems identified by the presence of water at some point during the year, which creates a unique environment with hydric soils and specially adapted plants and animals. Those labeled alkali are brackish, subsaline, or saline and have marked basic properties.

Alternative – One of at least two proposed means of meeting planning objectives.

Animal Unit – One mature (1,000-pound) cow or the equivalent, based on an average forage consumption of 26 pounds of dry matter per day. For authorization calculation purposes, an animal unit is one cow and her calf, one horse, or five sheep or goats. Depending on the composition and weight of animals in the herd, actual forage use may vary.

Animal Unit Month (AUM) – The amount of forage needed to sustain one cow, five sheep, or five goats for 1 month.

Annual Plant – A plant that completes its life cycle within a single growing season. Also see PERENNIAL PLANT.

***Archaeological Resources Protection Act* of 1979 (ARPA) –** A federal law that prohibits the removal, disturbance, sale, receipt and interstate transportation of archaeological resources obtained illegally (without permits), from federal or Indian lands and authorizes agency permit procedures for investigations of archaeological resources on lands under the agency's control.

Area of Critical Environmental Concern (ACEC) – An area of BLM-administered land where special management attention is needed to do the following:

- to protect and prevent irreparable damage to important historic, cultural, or scenic values and to fish and wildlife or other natural systems or processes; or
- to protect life and provide safety from natural hazards.

Archaeological Site – Any place where human-made or modified artifacts, features, or ecofacts are found.

Arid region - A region where precipitation is insufficient to support any but drought-adapted vegetation.

Artifact – A discrete or portable object manufactured or modified by humans. Some common artifact categories include lithic, ceramic, organic, and metal objects.

Arroyo – A dry gully.

Authorized Officer – Any Bureau of Land Management employee who has been delegated the authority to perform defined duties.

Available Forage (or available forage species) – Forage that can be grazed and still allow sustained forage production on rangeland. Available forage may or may not be authorized for grazing.

Backfire – A fire set along the inner edge of a fireline to consume the fuel in the path of a wildfire and/or change the direction or force of the fire's convection column.

Best Management Practice (BMP) – Practices based on current scientific information and technology that, when applied during the implementation of management actions, ensure that adverse impacts are minimized. BMPs are generally tailored to site-specific conditions, in order to represent the most effective and practical means to achieve management goals for a given site.

Biological Diversity (Biodiversity) – The full range of variability within and among living organisms and the ecological complexes in which they occur. Biological diversity encompasses ecosystem or community diversity, species diversity, and genetic diversity. In this document, *biodiversity* refers to species richness defined as a number of species in a given habitat or location across habitats.

Biological Opinion – A document that includes the following:

- the opinion of the U.S. Fish and Wildlife Service or the National Marine Fisheries Service as to whether a federal action is likely to jeopardize the existence of a species listed as threatened or endangered, or destroy or adversely modify designated critical habitat,
- a summary of the information on which the opinion is based, and
- a detailed discussion of the effects of the action on listed species or designated critical habitat.

Biomass – The total amount of living plants and animals above and/or below ground in an area at a given time; plant material that can be burned as fuel.

Biota – The animal and plant life of a given region.

BLM Sensitive Species – Species designated by a state director, usually in cooperation with the state agency responsible for managing the species and state natural heritage programs, as sensitive. They are

those species that: (1) could become endangered in or extirpated from a state. Or within a significant portion of or distribution; (2) are under status review by the U.S. Fish and Wildlife Service and/or National Marine Fisheries Service; (3) are undergoing significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution; (4) are undergoing significant current or predicted downward trends in population or density such that federal listed, proposed, candidate, or State listed status may become necessary; (5) typically have small and widely dispersed populations; (6) inhabit ecological refugia or other specialized or unique habitats; or (7) are State listed but which may be better conserved through application of BLM sensitive species status.

Browse – The part of leaf and twig growth of shrubs, woody vines, and trees available for animal consumption; the act of consuming browse.

California Department of Fish and Game (CDFG) – The California state agency whose mission is to manage California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public. CDFG maintains native fish, wildlife, plant species, and natural communities for their intrinsic and ecological value and their benefits to people. This includes habitat protection and maintenance in a sufficient amount and quality to ensure the survival of all species and natural communities. CDFG is also responsible for the diversified use of fish and wildlife, including recreational, commercial, scientific, and educational uses.

Canopy – The vertical projection downward of the aerial portion of shrubs and trees, usually expressed as a percent of the ground so occupied.

Carrying Capacity – The maximum stocking rate possible without inducing permanent or long-term damage to vegetation or related resources. The rate may vary from year to year in the same area as a result of fluctuating forage production.

Catastrophic Wildfire – Fire that burns more intensely than the natural or historical range of variability, thereby causing unacceptable erosion, fundamentally changing the ecosystem, or destroying communities of rare or threatened species or habitat.

Chaparral – A vegetation community consisting of dense and often thorny shrubs and small trees.

Code of Federal Regulations – The official legal compilation of regulations directing federal government agencies.

Cold-trailing – Any procedure used to secure inactive fire perimeter, islands, or spot fires

Collaboration – A cooperative process in which interested parties, often with widely varied interests, work together to seek solutions with broad support for managing public and other lands. Collaboration may or may not involve an agency as a cooperating agency.

Communication Site – A hilltop or favorable signal receiving and transmitting location where a collection of facilities are located. A facility consisting of a small building and tower, used for transmitting or receiving radio, television, telephone, or other electronic signals.

Component (Cultural Resources) – An association of all the artifacts from one occupation level and one time period at a site.

Composition (Species Composition) – The proportions of plant species in relation to the total in a given area. Composition may be expressed as cover, density, and weight.

Confine Strategy – The strategy employed in a response to wildland fire where a fire perimeter is managed by a combination of direct and indirect actions and use of natural topographic features, fuel, and weather factors.

Containment – The status of a wildfire suppression action signifying that a control line has been completed around the fire and any associated spot fires, which can reasonably be expected to stop the fire's spread.

Connectivity – The degree to which habitats for a species are continuous or interrupted across a spatial extent, where habitats defined as continuous are within a prescribed distance over which a species can successfully conduct key activities, and habitats defined as interrupted are outside the prescribed distance.

Cooperating Agency – An agency that helps the lead federal agency develop the environmental analysis for a proposed major action. U.S. Council on Environmental Quality regulations implementing the *National Environmental Policy Act* (NEPA) define a cooperating agency as any agency that has jurisdiction by law or special expertise for proposals covered by NEPA. Any North American Indian tribe or federal, state, or local government jurisdiction with such qualifications may become a cooperating agency by agreement with the lead agency. Cooperating agency status is generally formalized through a memorandum of understanding between BLM and the cooperating agency.

Core Area – The CPNM has been identified as a core recovery area of natural lands targeted for protection in the Recovery Plan for Upland Species of the San Joaquin Valley, California (USFWS 1998). Note that the term "core area"— identified on Map 3-2, Special Status Animals and discussed in Chapter 2 of this RMP—refers to CPNM-specific core areas identified for management under this RMP and not to the broader core recovery area identified in the San Joaquin Valley Recovery Plan referenced above.

Critical Habitat – (1) The specific areas within the geographical area currently occupied by a species, at the time it is listed in accord with the *Endangered Species Act*, on which are found physical or biological features (i) essential to the conservation of the species and (ii) that may require special management considerations or protection, and (2) specific areas outside the geographical area occupied by a species at the time it is listed upon determination by the Secretary of the Interior that such areas are essential for the conservation of the species.

Cultural Resource – Any definite location of past human activity that is identifiable through field survey, historical documentation, or oral evidence. This includes archaeological or architectural sites, structures, or places; and places of traditional cultural or religious importance to specified groups, whether or not represented by physical remains.

Cultural Site – A physical location of past human activities or events, more commonly referred to as an archaeological site or a historic site. Such sites vary greatly in size and range from the location of a single cultural resource object to a cluster of cultural resource structures with associated objects and features.

Cumulative Impacts – The effect on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.

Defensible Space – A natural or human-made area where material that can cause a fire to spread has been treated, cleared, reduced, or changed to act as a barrier between an advancing wildland fire and the loss to

life, property, or resources. In practice, "defensible space" is defined as an area of at least 30 feet around a structure that is cleared of flammable brush or vegetation.

Desert Land Entry – An application to acquire title to irrigable arid agricultural public lands for the purpose of reclamation, irrigation, and cultivation in part.

Direct Protection Area – A concept developed by federal and state fire protection agencies to help resolve the management and fiscal complexities of wildland fires burning across intermingled and adjacent areas of state and federal responsibility. Within DPAs, federal and state agencies assume fire protection responsibility for the lands of another agency, along with their own. The agencies also, as nearly as possible, represent the other agencies' interests and objectives. Each agency must, therefore recognize, know, and understand each other's mission objectives, policies, and authorities.

Dispersed Recreation – Recreation activities that do not require developed sites or facilities.

Disposal Areas – Broad areas of public lands where BLM generally intends to dispose of existing public lands, either by land exchange or sale.

Dissolved Oxygen – The amount of free (not chemically combined) oxygen dissolved in water, wastewater, or other liquid, usually expressed in milligrams per liter, parts per million, or percent of saturation. Adequate concentrations of dissolved oxygen are needed for the life of fish and other aquatic organisms and the prevention of offensive odors. Dissolved oxygen levels are considered the most important and commonly employed measure of water quality and indicator of a water body's ability to support desirable aquatic life.

Dominant Species – Plants that, in abundance, coverage, or size, exert a major controlling influence on the conditions of existence for associated species in the ecosystem.

Easement – The right to use land in a certain way granted by a landowner to a second party.

Ecofact – Bones, vegetal matter, pollen, shells, modified soils, or other archaeological finds that though not human manufactured, give important clues as to human behavior or the environmental context of such behavior.

Ecological Health – The degree to which the integrity of the soil and ecological processes of ecosystems are sustained.

Ecological Processes – Processes that include the water cycle (the capture, storage, and redistribution of precipitation) energy flow (conversion of sunlight to plant and animal matter) and the nutrient cycle (the cycle of nutrients, such as nitrogen and phosphorus through the physical and biotic components of the environment). Ecological processes functioning within a normal range of variation at an ecological site will support specific plant and animal communities.

Ecosystem – A dynamic complex of plant, animal, fungal, and microorganism communities and their associated nonliving environment interacting as an ecological unit.

Ecotourism – Tourism that essentially focuses on natural rather than developed attractions with the goal of enhancing the visitor's understanding and appreciation of nature and natural features. Such tourism often attempts to be environmentally sound and to contribute economically to the local community.

Effects – Effects and impacts in the regulations are synonymous. Effects includes ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions that may have both beneficial and detrimental effects, even if on balance the agency believes that the effect will be beneficial. Effects include

- Direct effects, which are caused by the action and occur at the same time and place and
- Indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate and are related effects on air and water and other natural systems, including ecosystems.

Endangered Species – Any species defined through the *Endangered Species Act* as being in danger of extinction throughout all or a significant portion of its range. Also see THREATENED SPECIES.

Entry – An application to acquire title to public lands.

Environmental Assessment (EA) – A concise public document for which a federal agency is responsible. An EA serves (1) to briefly provide enough evidence and analysis for determining whether to prepare an environmental impact statement (EIS) or a finding of no significant impact (FONSI), and to aid an agency's compliance with the *National Environmental Policy Act* (NEPA) when no EIS is needed; and (2) to facilitate preparing an EIS when one is needed. Also see ENVIRONMENTAL IMPACT STATEMENT.

Environmental Impact Statement (EIS) – A detailed written statement required by the *National Environmental Policy Act* for major federal actions significantly affecting the quality of the human environment. An EIS addresses: (i) The environmental impact of the proposed action, (ii) Any adverse environmental effects which cannot be avoided should the proposal be implemented, (iii) Alternatives to the proposed action, (iv) The relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and (v) Any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

Environmental Justice – The fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income in developing, implementing, and enforcing environmental laws, regulations, and policies.

Ephemeral Stream – A stream that flows only in direct response to precipitation, and whose channel is at al times above the water table.

Erosion – The wearing away of the land surface or soil by running water, waves, or moving ice and wind, or by such processes as mass wasting and corrosion (solution and other chemical processes). "Accelerated erosion" generally refers to erosion in excess of what is presumed or estimated to be naturally occurring levels, and which is a direct result of human activities.

Ethnographic - Related to the branch of cultural anthropology that deals with the scientific investigation of living cultures. The main ethnographic data collection technique is participant observation–living with the people being investigated with the intention of full immersion in their culture. Such research is called ethnography.

Exotic – All species of plants and animals not naturally occurring, either presently or historically, in any ecosystem of the United States.

Extirpated Species – A locally extinct species; a species that is no longer found in a locality but exists elsewhere.

***Federal Land Policy and Management Act* (FLPMA) –** Public Law 94-579, the act that (1) established, for the BLM, standards for managing the public lands including land use planning, sales, withdrawals, acquisitions, and exchanges; (2) authorized the setting up of local advisory councils representing major citizens groups interested in land use planning and management, (3) established criteria for reviewing proposed wilderness areas, and (4) provided guidelines for other aspects of public land management such as grazing.

Federal Register – The federal government's official daily publication for rules, proposed rules, and notices of federal agencies and organizations, as well as executive orders and other presidential documents.

Fireline (Control Line) – An inclusive term for all constructed or natural barriers, and treated fire edges used to control a fire. Also called a fire trail.

Fire Management Plan – A strategic plan that defines a program to manage wildland and prescribed fires and documents the fire management program in the approved land use plan. The fire management plan is supplemented by operational procedures such as preparedness plans, preplanned dispatch plans, prescribed fire plans, and prevention plans.

Fire Management Unit – A fire planning unit in which preparedness strategies are designed to meet watershed or resource management objectives, designated by logical fire control or containment criteria such as watershed basins, sub-basins, ridgetops, topographic features, roads, or vegetation changes.

Fire Return Interval (Fire Frequency) – How often fire burns a given area, expressed as the interval or average time between fires (e.g. fire returns to an area every 5 to 7 years).

Fire Regime – A combination of components that characterize fire in a potential natural vegetation group, including frequency, intensity, seasonality, and extent.

Fire Retardant – Any substance except plain water that by chemical or physical action reduces flammability of fuels or slows their rate of combustion.

Forage – All browse and herbage that is available and acceptable to grazing animals or that may be harvested for feed**;** the act of consuming forage.

Forb – Any broad-leafed herbaceous plant that is not a grass, sedge, or rush.

Friable – Easily crumbled or crushed into powder**.**

Fuel Load (in fire ecology) – The oven-dry weight of fuel per unit area, usually expressed in tons/acre.

Fuel Model – A standardized description of fuels available to a fire based on the amount, distribution, and continuity of vegetation and wood. This information is used for rating fire danger and predicting fire behavior.

Geographic Information System (GIS) – A computer application used to store, view, and analyze geographical information, especially maps.

Grandfathered – The status accorded certain properties, uses, and activities that were legally existing before the adoption of a law, regulation, or restriction and therefore are not required to adhere to the law, regulation, or restriction.

Grazing Permit or Lease – A contractual agreement between BLM and another party that permits grazing of a specific number and class of livestock for a specified period on a defined rangeland. The permit allows grazing use of public land, subject to permit stipulations and annual adjustment based on current rangeland condition.

Great Basin – An area covering most of Nevada and much of western Utah and portions of southern Oregon and eastern California consisting mainly of arid, high-elevation desert valleys, sinks (playas), dry lake beds, and salt flats. In the Great Basin all surface waters drain inward to terminal lakes or sinks. None flow to the oceans.

Ground Cover– Plants or plant parts, living or dead, on the surface of the ground.
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Groundwater – Subsurface water that is in the zone of saturation. The top surface of the ground water is the water table. Groundwater is the source of water for wells, seepage, and springs.

Guild – A group of species having similar ecological resource requirements or foraging strategies.

Guzzler – A device for collecting and storing precipitation for use by wildlife or livestock. A guzzler consists of an impenetrable water collecting area, a storage facility, and a trough from which animals can drink.

Habitat – A specific set of physical conditions that surround a species, group of species, or a large community. Wildlife management considers the major constituents of habitat to be food, water, cover, and living space.

Herbaceous – Of, relating to, or having the characteristics of a vascular plant that does not develop woody tissue; nonwoody vegetation such as grasses and forbs.

Herbivory – The eating of plants by animals.

Historic District – An area that generally includes within its boundaries a significant concentration of properties linked by architectural style, historical development, archaeologically associated sites or a past event.

Historic Integrity – The authenticity of a property's historic identity, evidenced by the survival of physical characteristics that existed during the property's historic or prehistoric period.

Home Range – The area in which an animal travels in the scope of natural activities; the established territory of a wild animal.

Hydrologic Function (Stability) – The capacity of a site to capture, store, and safely release water from rainfall, run-on, and snowmelt; to resist a reduction in this capacity; and to recover this capacity following degradation. Hydrologic function is one of the three attributes of rangeland health.

Initial Attack – The actions taken by the first resources to arrive at a wildfire to protect lives and property, and prevent further extension of the fire.

Incised Channel – A channel that has been cut through the bed of the valley floor and formed by the process of degradation, as opposed to one flowing on a floodplain.

Infiltration – The downward entry of water into the soil or other material.

Inholdings – Parcels of land owned or managed by someone other than BLM but surrounded in part or entirely by BLM-administered land.

Interim Management Policy for Lands under Wilderness Review (IMP) (BLM 1995) – BLM's strategy for managing wilderness study areas following their recommendation for designation but before Congress designates them as wilderness or releases them to multiple use management.

Intermittent Stream – A stream or reach of a stream that does not flow year round and that flows only when it receives baseflow solely during wet periods or it receives groundwater discharge or protracted contributions from melting now or other erratic surface and shallow subsurface sources. See EPHEMERAL STREAM.

Invasive Species – An alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health.

Keystone Species – A species, such as the giant kangaroo rat, that affects the survival and abundance of many other species in its community.

Known Geothermal Resource Area– An area where geothermal resources are known to exist. In context: However, there are no known geothermal resource area designations, identified hydrothermal convection systems, or any warm springs within the boundary of the Monument

Lacustrine Sediment - Material deposited in stagnant water, such as in lakes and ponds. These sediments are often made up of silt and clay particles less than 0.02 mm in diameter

Lagomorph - Any of an order (Lagomorpha) of plant-eating mammals characterized by a short tail and two pairs of upper incisors, one behind the other, and consisting of the rabbits, hares, and pikas.

Land Use Allocations – The identification in a land use plan of the activities and foreseeable development that are allowed, restricted, or excluded for all or part of the planning area, based on desired future conditions.

Land Use Plan – A set of decisions that establish management direction for land within an administrative area, as prescribed under the planning provisions of the *Federal Land Policy and Management Act*; an assimilation of land-use-plan-level decisions developed through the planning process outlined in 43 CRF 1600, regardless of the scale at which the decisions were developed. Also see RESOURCE MANAGEMENT PLAN.

Leasable Minerals – Minerals whose extraction from federally managed land requires a lease and the payment of royalties. Leasable minerals include coal, oil and gas, oil shale and tar sands, potash, phosphate, sodium, and geothermal steam.

Lithic Scatter– Pertaining to or composed of stone flakes created by human flint knapping that are dispersed on the ground; a type of archaeological resource.

Litter – The uppermost layer of organic debris on the soil surface, essentially the freshly fallen or slightly decomposed vegetal material.

Locatable Minerals – Minerals subject to exploration, development, and disposal by staking mining claims as authorized by the Mining Law of l872 (as amended). Locatable minerals include valuable deposits of gold, silver, and other uncommon minerals not subject to lease or sale.

Location – The act of taking or appropriating a parcel of mineral land, including the posting of notices, the recording thereof when required, and marking the boundaries so they can be readily traced.

Mesic – Characterized by having intermediate moisture conditions, i.e. neither decidedly wet nor decidedly dry.

Mineral Entry – The filing of a claim on public land to obtain the right to any minerals it may contain.

Mineral Estate – The ownership of the minerals at or beneath the land's surface.

Mineral Materials – Materials such as common varieties of sand, stone, gravel, pumice, pumicite, and clay that are not obtainable under the mining or leasing laws but that can be acquired under the *Mineral Materials Act* of 1947, as amended.

Mining Claims – Portions of public lands claimed for possession of locatable mineral deposits by locating and recording under established rules and pursuant to the Mining Law of 1872.

Mining Law of 1872 (General Mining Law) – The federal act that, with its amendments, formed the framework for the mining of locatable minerals on the public lands. This law declared that "valuable" mineral deposits rather than simply "mineral deposits" were to be free and open to exploration and purchase, limited individual claims to 20 acres, required $100 worth of assessment work yearly, and allowed milling or processing claims of 5 acres or less to be entered on nonmineral lands.

Multiple Use – The management of the public lands and their resources so that they are used in the combination that will best meet the present and future needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; the use of some land for less than all of the resources; a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and non-renewable resources, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values; and harmonious and coordinated management of various resources without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output".

National Ambient Air Quality Standards– The allowable concentrations of air pollutants in the ambient (public outdoor) air specified in 40 CFR 50. National ambient air quality standards are based on the air quality criteria and divided into primary standards (allowing an adequate margin of safety to protect the public health including the health of "sensitive" populations such as asthmatics, children, and the elderly) and secondary standards (allowing an adequate margin of safety to protect the public welfare). Welfare is defined as including effects on soils, water, crops, vegetation, human-made materials, animals, wildlife,

weather, visibility, climate, and hazards to transportation, as well as effects on economic values and on personal comfort and well-being.

***National Environmental Policy Act* of 1969 (NEPA) –** The federal law, effective January 1, 1970, that established a national policy for the environment and requires federal agencies: (1) to become aware of the environmental ramifications of their proposed actions, (2) to fully disclose to the public proposed federal actions and provide a mechanism for public input to federal decision making, and (3) to prepare environmental impact statements for every major action that would significantly affect the quality of the human environment.

***National Historic Preservation Act* (NHPA) of 1966, as amended –** A federal statute that established a federal program to further the efforts of agencies and individuals in preserving the Nation's historic and cultural foundations. The *National Historic Preservation Act*: (1) authorized the National Register of Historic Places, (2) established the Advisory Council on Historic Preservation and a National Trust Fund to administer grants for historic preservation, and (3) authorized the development of regulations to require federal agencies to consider the effects of federally assisted activities on properties included in or eligible for the National Register of Historic Places. Also see NATIONAL REGISTER OF HISTORIC PLACES and SECTIONS 106 and 110 OF THE *NATIONAL HISTORIC PRESERVATION ACT*.

National Register of Historic Places (NRHP) – The official list, established by the *National Historic Preservation Act*, of the Nation's cultural resources worthy of preservation. The National Register lists archaeological, historic, and architectural properties (i.e., districts, sites, buildings, structures, and objects) nominated for their local, state, or national significance by state and federal agencies and approved by the National Register Staff. The National Park Service maintains the National Register. National Register eligible property is referred to as an historical, cultural, archaeological, or listed property. Also see *NATIONAL HISTORIC PRESERVATION ACT*.

National Wild And Scenic Rivers System (NWSRS) – A system of nationally designated rivers and their immediate environments that have outstanding scenic, recreational, geologic, fish and wildlife, historical, cultural, and other similar values and are preserved in a free-flowing condition. The system consists of three types of streams: (1) recreation—rivers or sections of rivers that are readily accessible by road or railroad and that may have some development along their shorelines and may have undergone some impoundments or diversion in the past, (2) scenic—rivers or sections of rivers free of impoundments with shorelines or watersheds still largely undeveloped but accessible in places by roads, and (3) wild—rivers or sections of rivers free of impoundments and generally inaccessible except by trails with watersheds or shorelines essentially primitive and waters unpolluted.

***Native American Graves Protection and Repatriation Act* (NAGPRA) of 1990 (P.L. 101-601; 104 Stat. 3048; 25 U.S.C. 3001) –** Establishes rights of Indian tribes and Native Hawaiian organizations to claim ownership of certain cultural items, including human remains, funerary objects, sacred objects, and objects of cultural patrimony, held or controlled by federal agencies and museums that receive federal funds. It requires agencies and museums to identify holdings of such remains and objects and to work with appropriate Native Americans toward their repatriation. Permits for the excavation and/or removal of cultural items protected by the act require Native American consultation, as do discoveries of cultural items made during land use activities. The Secretary of the Interior's implementing regulations are at 43 CFR Part 10.

Native Species – A plant or animal species that naturally occurs in an area and was not introduced by humans.

Naturalized Species – Those exotic species that are already occurring within defined areas in a self-sustaining wild state.

Niche – The place of an organism in its biotic environment; the position or function of an organism in a community of plants or animals; a microhabitat.

Non-Impairment of Wilderness Values Criteria – A set of criteria regulating land use to protect the wilderness values and characteristics of an area until Congress determines whether to preserve it as a wilderness. The nonimpairment criteria are as follows.

- The use, facility, or activity must be temporary. (This means a temporary use that does not create surface disturbance or involve permanent placement of facilities may be allowed if such use can easily and immediately be terminated upon wilderness designation.
- When the use, activity, or facility is terminated, the wilderness values must not have been degraded so far as to significantly constrain the area's suitability for preservation as wilderness.

The only permitted exceptions to the nonimpairment criteria are the following:

- wildfire or search and rescue emergencies,
- reclamation to minimize impacts of violations and emergencies,
- uses and facilities that are considered grandfathered or valid existing rights under the Interim Management Policy for Lands under Wilderness Review,
- uses and facilities that clearly protect or enhance the land's wilderness values or are the least needed for public health and safety, and
- reclamation of pre-*Federal Land Policy and Management Act* impacts.

Notice of Intent (NOI) - a notice that an environmental impact statement will be prepared and considered. The notice shall briefly: (a) Describe the proposed action and possible alternatives. (b) Describe the agency's proposed scoping process including whether, when, and where any scoping meeting will be held. (c) State the name and address of a person within the agency who can answer questions about the proposed action and the environmental impact statement.

Noxious Plant (Weed) – An unwanted plant specified by federal or state laws as being undesirable and requiring control. Noxious weed refers to any plant that, when established, is highly destructive, competitive, or difficult to control by cultural or chemical practices. Noxious weeds are usually non-natives and highly invasive.

Obligate – Restricted to one particularly characteristic mode of life.

Off-Highway Vehicle (OHV) – Any motorized track or wheeled vehicle designed for cross-country travel over natural terrain. OHVs exclude (1) any non-amphibious registered motorboat; (2) any fire, emergency, or law enforcement vehicle while being used for official or emergency purposes; and (3) any vehicle whose use is expressly authorized by a permit, lease, license, agreement, or contract issued by an authorized officer or otherwise approved.

Paleontological Resources – The remains of plants and animals preserved in soils and sedimentary rock. Paleontological resources are important for understanding past environments, environmental change, and the evolution of life.

Particulate Matter – Fine liquid (other than water) or solid particles suspended in the air, consisting of dust, smoke, fumes, and compounds containing sulfur, nitrogen, and metals.

Pasture – A subunit of a grazing allotment established and managed generally by building fences or, less commonly, by actively herding livestock.

Patch – A distinct area, such as a polygon or pixel, with a specific habitat type, cover type, or other homogeneous environmental condition.

Payment in Lieu of Taxes (PILT) – Federal payments to local governments to offset their inability to collect taxes for federally owned land.

Perennial Plant – A plant species with a life-cycle that characteristically lasts more than two growing seasons and persists for several years. Also see ANNUAL PLANT.

Pictograph - A painting of images on a rock outcropping or boulder. Also referred to as rock art or rock paintings.

Planning Criteria – The constraints or ground rules that guide the developing of a resource management plan. The criteria determine how the planning team develops alternatives and ultimately selects a Preferred Alternative.

Playa – An ephemerally flooded area on a basin floor that is barren of vegetation, is veneered with fine-textured sediment, and acts as a temporary or final sink for drainage water.

Pleistocene – An epoch in Earth history from about 2-5 million years to 10,000 years ago, when the Earth experienced a series of glacial and interglacial periods.

Population – A group of interbreeding individuals of the same species often occupying the same geographical area

Possessory Interest Tax – A tax on anyone who has exclusive use of a publicly owned property or facility.

Preferred Alternative – The alternative in this EIS that BLM has initially selected because it best fulfills BLM's mission and responsibilities and offers the most acceptable resolution of the planning issues and management concerns.

Prescribed Fire (Burning) – The planned application of fire to rangeland vegetation and fuels under specified conditions of fuels, weather, and other variables to allow the fire to remain in a predetermined area to achieve such site-specific objectives as controlling certain plant species; enhancing growth, reproduction, or vigor of plant species; managing fuel loads; and managing vegetation community types.

Prey Base – Populations and types of prey species available to predators, for example fish species and populations available to river otters.

Primitive Recreation – Recreation that occurs in a natural-appearing environment and that allows visitors to achieve solitude and isolation from human civilization. Primitive recreation may include hunting, horseback riding, wildlife viewing, nature study, photography, hiking, and backpacking.

Quarter Section - A unit of land area, equal to one quarter of a square mile or 160 acres (64.752 hectares).

Public Lands – Any land administered by the Secretary of the Interior through the U.S. Bureau of Land Management or by the Secretary of Agriculture through the U.S. Forest Service.

Range Drill – A heavy duty seeding machine that is dragged over rough terrain by a tractor or dozer to seed areas. This type of drill is constructed heavy enough to withstand rough rangeland conditions, in contrast to a farm drill.

Rangeland – A type of land on which the native vegetation, climax, or natural potential consists predominately of grasses, grasslike plants, forbs, or shrubs. Rangeland includes lands revegetated naturally or artificially to provide a plant cover that is managed like native vegetation. Rangelands may consist of natural grasslands, savannas, shrublands, moist deserts, tundra, alpine communities, coastal marshes, and wet meadows.

Rangeland Health – The degree to which the integrity of the soil, vegetation, water, and air, as well as the ecological processes of the rangeland (land) ecosystem, are balanced and sustained. Integrity is defined as maintenance of the structure and functional attributes characteristic of a locale, including normal variability.

Rangeland Health Assessment – An estimate or judgment of the status of ecosystem structures, functions, or processes, within a specified geographic area (preferably a watershed or a group of contiguous watersheds) at a specific time. Rangeland health is assessed by gathering, synthesizing, and interpreting information, from observations or data from inventories and monitoring. An assessment characterizes the status of resource conditions so that the status can be evaluated relative to land health standards. An assessment sets the stage for an evaluation. An assessment is not a decision.

Raptors – Birds of prey, such as eagles, owls, and hawks.

Record of Decision – A document signed by a responsible official recording a decision that was preceded by the preparing of an environmental impact statement.

Recreation Management Zone – In recreation management, an area with four defining characteristics: (1) it serves a different recreation niche within the primary recreation market, (2) it produces a different set of recreation opportunities and facilitates attaining different experiences and benefit outcomes, (3) it has a distinctive recreation setting character, and (4) it requires a different set of recreation provider actions to meet primary recreation market demand.

Recreation Opportunity Spectrum (ROS) – A planning process that provides a framework for defining classes of outdoor recreation environments, activities, and experience opportunities. In ROS, the setting, activities, and opportunities for experiences are arranged along a spectrum of six classes: Primitive, Semi-Primitive Non-Motorized, Semi-Primitive Motorized, Roaded Natural, Rural, and Urban. The resulting ROS analysis defines specific geographic areas on the ground, each of which encompasses one of the six classes. In this RMP the Ecosystem Restoration and Preferred Alternatives also propose a Backcountry class, which is a combination of Semi-Primitive Non-Motorized and Semi-Primitive Motorized.

Resource Advisory Council (RAC) – Advisory councils appointed by the Secretary of the Interior and consisting of representatives of major public land interest groups (e.g. commodity industries and recreation, environmental, and local area interests) in a state or smaller area. RACs advise BLM, focusing

on a full array of multiple use public land issues. RACs also help develop fundamentals for rangeland health and guidelines for livestock grazing.

Resource Management Plan (RMP) – A land use plan as described by the *Federal Land Policy and Management Act.* The RMP generally establishes in a written document: (1) land areas for limited, restricted or exclusive use; designations, including ACEC designations; and transfer from BLM administration; (2) allowable resource uses (either singly or in combination) and related levels of production or use to be maintained; (3) resource condition goals and objectives to be attained; (4) program constraints and general management practices needed to achieve the above items; (5) need for an area to be covered by more detailed and specific plans; (6) support actions, including such measures as resource protection, access development, realty action, and cadastral survey., as needed to achieve the above; (7) general implementation sequences, where carrying out a planned action depends on prior accomplishment of another planned action; and (8) intervals and standards for monitoring and evaluating the plan to determine its effectiveness and the need for amendment or revision. It is not a final implementation decision on actions that require further specific plans, process steps, or decisions under specific provisions of law and regulations.

Response to Wildland Fire – The mobilization of the necessary services and responders to a fire based on ecological, social, and legal consequences; the circumstances under which a fire occurs; and the likely consequences to firefighter and public safety and welfare, natural and cultural resources, and values to be protected.

Restoration – The act of restoring healthy but lacking key attributes and at-risk states of vegetation alliances, vegetation associations, and ecological sites to a healthy state with its original community structure, natural complement of species, and natural functions.

Right-of-Way (ROW) – A permit or an easement that authorizes the use of public lands for specified purposes, such as pipelines, roads, telephone lines, electric lines, communication sites, reservoirs, and the lands covered by such an easement or permit.

Right-of Way Corridor – A parcel of land that has been identified by law, Secretarial order, or through a land use plan or by other management decision as being the preferred location for existing and future right-of-way grants and suitable for one type of right-of-way or one or more rights-of-way that are similar, identical, or compatible.

Riparian – Area, zone, and/or habitat adjacent to streams, lakes, or other natural free water, which have a predominant influence on associated vegetation or biotic community; pertaining to or situated on or along the bank of a stream or other water body.

Riparian Area/Riparian Zone – Terrestrial areas where the vegetation complex and microclimate conditions are products of the combined presence and influence of perennial or intermittent water, high water tables, and soils that exhibit some wetness characteristics. These terms are normally used to refer to the zone within which plants grow rooted in the water table of these rivers, streams, lakes, ponds, reservoirs, springs, marshes, seeps, bogs, and wet meadows.

Riparian Species – Plant species occurring within the riparian zone. Obligate species require the environmental conditions within the riparian zone; facultative species tolerate the environmental conditions and therefore may also occur away from the riparian zone.

Riparian Vegetation – Plant communities in the riparian zone consisting of riparian species.

Runoff – The portion of precipitation or irrigation on an area that does not infiltrate (enter the soil) but is discharged by the area.

Sag Ponds – depressions that mark transcurrent, or strike-slip, fault zones**.**

Saleable Minerals – High volume, low-value mineral resources, including common varieties of rock, clay, decorative stone, sand, and gravel.

San Andreas Fault – The geologic transform fault that runs a length of roughly 800 miles through California.

Scoping – An early and open process for determining the scope of issues to be addressed in an environmental impact statement and the significant issues related to a proposed action.

Season of use (livestock grazing) – The primary season of the year (winter, spring, summer, or fall) that livestock grazing occurs within a given area or allotment.

Section 106 of the *National Historic Preservation Act* – The section of the *National Historic Preservation Act* that requires that federal agencies having direct or indirect jurisdiction over a proposed federal, federally assisted, or federally licensed undertaking, before approving the spending of funds or issuing a license, consider the effect of the undertaking on any district, site, building, structure, or object included in or eligible for inclusion in the National Register of Historic Places, and give the Advisory Council on Historic Preservation a reasonable opportunity to comment on the undertaking. Also see *NATIONAL HISTORIC PRESERVATION ACT* and NATIONAL REGISTER OF HISTORIC PLACES, and SECTION 110 OF THE *NATIONAL HISTORIC PRESERVATION ACT*.

Section 110 of the *National Historic Preservation Act* – The section of the *National Historic Preservation Act* that concerns the managing of federally owned historic properties. Among other provisions, Section 110 requires each federal agency to establish a program to locate, inventory, protect, restore and nominate to the Secretary of the Interior Standards all properties under its control that appear to qualify for the National Register of Historic Places. Also see *NATIONAL HISTORIC PRESERVATION ACT*, NATIONAL REGISTER OF HISTORIC PLACES, and SECTION 106 OF THE *NATIONAL HISTORIC PRESERVATION ACT*.

Sedimentation – The act or process of depositing sediment from suspension in water; all the processes by which particles of rock material are accumulated to form sedimentary deposits.

Sediment Load– The amount of sediment, measured in dry weight or by volume, that is transported through a stream cross-section in a given time. Sediment load consists of sediment suspended in water and sediment that moves by sliding, rolling, or bounding on or near the streambed.

Seeding – The planting of seeds to revegetate the land after a disturbance; an area that has been revegetated by seeding.

Seral Stages – The development stages of ecological succession.

Sheet Erosion – The uniform washing or eroding of surface soils on a large denuded surface area. Used once

Soil Compaction – Compression of the soil, resulting in reduced soil pore space (the spaces between soil particles), decreased movement of water and air into and within the soil, decreased soil water storage, and increased surface runoff and erosion.

Soil Fertility – The ability of a soil to support plant growth by providing water, nutrients, and a growth medium.

Soil Profile – A vertical section of the soil from the surface through all of its horizons.

Spawning Gravels – Stream-bottom gravels where fish deposit and fertilize their eggs. The covering of these gravels with silt can block the supply of oxygen to the eggs or serve as a cementing agent to prevent fry from emerging.

Special Status Species – Plant or animal species falling in any of the following categories:

- threatened or endangered species
- proposed threatened or endangered species
- candidate species
- state-listed species
- BLM sensitive species
- BLM special-interest species

Species – From Section 3(15) of the federal *Endangered Species Act*: "The term 'species' includes any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature." A population of individuals that are more or less alike and that can breed and produce fertile offspring under natural conditions.

Species Composition – The proportions of plant species in relation to the total on a given area. It may be expressed in terms of cover, density, or weight.

Stabilization (Cultural Resource) – Protective techniques usually applied to structures and ruins to keep them in their existing condition, prevent further deterioration, and provide structural safety without significant rebuilding. Capping mud-mortared masonry walls with concrete mortar is an example of a stabilization technique.

Standards for Rangeland Health – A description of conditions needed to sustain public land health; relates to all uses of the public land. These standards address soils, streams, water quality, riparian-wetlands, and biodiversity.

Stand Replacement Fire Regime – A regime in forests, shrublands, or grasslands in which fires kill or top-kill aboveground parts of the dominant vegetation, substantially changing the aboveground structure. About 80% or more of the aboveground dominant vegetation is either consumed or dies as a result of the fire.

State Historic Preservation Officer (SHPO) – The state official authorized to act as a liaison to the Secretary of the Interior for implementing the *National Historic Preservation Act* of l966.

Substrate – Mineral and organic material forming the bottom of a waterway or water body; the base or substance upon which an organism is growing. Used in: Pads and roads, especially if they do not have a lot of use, would also provide bare substrate, possibly suitable as nesting habitat for ground-nesting solitary bees (pollinators of native plants).

Succession – The progressive replacement of plant communities on an ecological site that leads to the climax community. Early seral stages are normally dominated by perennial grasses and annual as well as perennial forbs with few shrubs. During mid seral the woody species that the site supports such as shrubs and trees begin to make an obvious appearance, and annual forbs are dominated by perennial forbs. During late seral the shrubs normally dominate the cover on the site, but the perennial grasses still provide the most annual production on into the potential natural community.

Taylor Grazing Act – An act passed in 1934 that provides for the regulation of grazing on the public lands (excluding Alaska) to improve rangeland conditions and stabilize the western livestock industry.

Threatened Species – Any species defined through the *Endangered Species Act* as likely to become endangered within the foreseeable future throughout all or a significant portion of its range. Also see ENDANGERED SPECIES.

Traditional Cultural Property– A property that is eligible for the National Register of Historic Places because of its association with a living community's cultural practices or beliefs that are important in maintaining the continuing community's cultural identity.

Trailhead – The terminus of a hiking, horse, or bicycle trail accessible by motor vehicle and sometimes.

Trespass – Any occupancy, use, or development of the public lands or their resources of the United States without authority.

Turbidity – A measure of cloudiness of water, which is a function of the suspended organic and inorganic material.

Understory – Plants growing under the canopy of other plants. Understory usually refers to grasses, forbs, and low shrubs under a tree or brush canopy.

Ungulates – Hoofed animals, including ruminants such as cows, sheep, goats, and deer, but also horses, tapirs, elephants, rhinoceroses, and swine.

Upland Game – A term used in wildlife management to refer to hunted animals that are neither big game nor waterfowl. Upland game includes such birds as grouse, turkey, pheasant, quail, and dove, and such mammals as rabbit and squirrel.

Uplands – Lands at higher elevations than alluvial plains or low stream terraces; all lands outside the riparian wetland and aquatic zones.

Use of Wildland Fire – Management of either wildfire or prescribed fire to meet resource objectives specified in Resource Management Plans.

Utility Corridor – A parcel of land, without fixed limits or boundaries, that is being used as the location for one or more utility rights-of-way.

Valid Existing Rights – Locatable mineral development rights that existed when the *Federal Land Policy and Management Act* (FLPMA) was enacted on October 21, 1976. Some areas are segregated from entry and location under the Mining Law to protect certain values or allow certain uses. Mining claims that existed as of the effective date of the segregation may still be valid if they can meet the test of discovery of a valuable mineral required under the Mining Law. Determining the validity of mining claims located in segregated lands requires BLM to conduct a validity examination and is called a "valid existing rights" determination.

Vascular Plants – Any of various plants, such as the ferns and seed-bearing plants, in which the phloem transports sugar and the xylem transports water and salts.

Vernal Pools- perched wetlands which are seasonally to semi-permanently flooded depressions typically occurring on sites with poor drainage.

Viable Population – A wildlife or plant population that contains an adequate number of reproductive individuals to appropriately ensure the long-term existence of the species.

Viewshed – The entire area visible from a viewpoint.

Vigor – The capacity for natural growth and survival of plants and animals.

Visual Resource Management (VRM) – The inventory and planning actions to identify visual values and establish objectives for managing those values and the management actions to achieve visual management objectives.

Visual Resource Management (VRM) Classes – Categories assigned to public by scenic quality, sensitivity level, and distance zones. Each class has an objective that prescribes the amount of modification allowed in the landscape. The four classes are as follows:

> **Class I:** The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes, but it does not preclude very limited management activities. The level of change to the characteristic landscape should be very low and must not attract attention.
>
> **Class II:** The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen but should not attract the attention of the casual observer. Any change must repeat the basic element of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
>
> **Class III:** The objective of this class is to partially retain the landscape's existing character. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements in the predominant natural features of the characteristic landscape.
>
> **Class IV:** The objective of this class is to provide for management activities that require major changes to the landscape's existing character. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of the viewer's attention. But every attempt should be made to minimize the impact of these activities by careful location, minimal disturbance, and repeating the basic elements of the characteristic landscape.

Water Right – A right to use, in accord with its priority, a certain portion of the waters of the state for irrigation, power, domestic use or another similar use.

Watershed – An area of land from which water drains toward a single stream. The watershed is a hydrologic unit often used as a physical-biological unit and a socioeconomic-political unit for planning and managing natural resources.

Wetlands – Areas characterized by soils that are usually saturated or ponded; i.e., hydric soils, and that support mostly water-loving plants; i.e. hydrophytic plants. Wetlands generally include swamps, marshes, bogs, and similar areas.

Wilderness – An area of undeveloped federal land retaining its primeval character and influence, without permanent improvement or human habitation, that is protected and managed so as to preserve its natural conditions and that (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least 5,000 acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

Wilderness Study Area (WSA) – A roadless area that has been inventoried and found to be wilderness in character, has few human developments, and provides outstanding opportunities for solitude and primitive recreation, as described in Section 603 of the *Federal Land Policy and Management Act* of 1976 and in Section 2(c) of the *Wilderness Act* of l964.

Wilderness Values – Values established in the *Wilderness Act*, such as solitude and naturalness.

Wildfire – An unplanned ignition of a wildland fire (such as a fire casued by lightning, volcanoes, unauthorized and accidental human-caused fires) and escaped prescribed fires.

Wildland Fire – Any non-structure fire that occurs in the wild.

Wildlings – Young seedlings that develop naturally in the wild and are sometimes transplanted.

Withdrawal – An action that restricts the use of public lands by removing them from the operation of some or all of the public land or mining laws.

Woodland – A forest community occupied mainly by noncommercial species.

Xeric - Characterized by, or adapted to an extremely dry habitat.

Appendix A

Carrizo Plain National Monument Presidential Proclamation

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Appendix A

Carrizo Plain National Monument Presidential Proclamation

THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release: January 17, 2001

ESTABLISHMENT OF THE CARRIZO PLAIN NATIONAL MONUMENT
BY THE PRESIDENT OF THE UNITED STATES OF AMERICA
A PROCLAMATION

Full of natural splendor and rich in human history, the majestic grasslands and stark ridges in the Carrizo Plain National Monument contain exceptional objects of scientific and historic interest. Since the mid-1800s, large portions of the grasslands that once spanned the entire four hundred mile expanse of California's nearby San Joaquin Valley and other valleys in the vicinity have been eliminated by extensive land conversion to agricultural, industrial, and urban land uses. The Carrizo Plain National Monument, which is dramatically bisected by the San Andreas Fault zone, is the largest undeveloped remnant of this ecosystem, providing crucial habitat for the long-term conservation of the many endemic plant and animal species that still inhabit the area.

The monument offers a refuge for endangered, threatened, and rare animal species such as the San Joaquin kit fox, the California condor, the blunt-nosed leopard lizard, the giant kangaroo rat, the San Joaquin antelope squirrel, the longhorn fairy shrimp, and the vernal pool fairy shrimp. It supports important populations of pronghorn antelope and tule elk. The area is also home to many rare and sensitive plant species, including the California jewelflower, the Hoover's woolly-star, the San Joaquin woolly-threads, the pale-yellow layia, the forked fiddleneck, the Carrizo peppergrass, the Lost Hills saltbush, the Temblor buckwheat, the recurved larkspur, and the Munz's tidy-tips. Despite past human use, the size, isolation, and relatively undeveloped nature of the area make it ideal for long-term conservation of the dwindling flora and fauna characteristic of the San Joaquin Valley region.

The Carrizo Plain National Monument also encompasses Soda Lake, the largest remaining natural alkali wetland in southern California and the only closed basin within the coastal mountains. As its name suggests, Soda Lake concentrates salts as water is evaporated away, leaving white deposits of sulfates and carbonates. Despite this harsh environment, small plant and animal species are well adapted to the setting, which is also important to migratory birds. During the winter months the lake fills with water and teems with thousands of beautiful lesser sandhill cranes, long-billed curlews, and mountain plovers.

The Carrizo Plain National Monument owes its existence to the geologic processes that occur along the San Andreas Fault, where two of the Earth's five great tectonic plates slide past one another, parallel to the axis of the Plain. Shifting along the fault created the Plain by rumpling the rocks to the northeast into the Temblor Range and isolating the Plain from the rest of the San Joaquin Valley. The area is world-famous for its spectacular exposures of fault-generated land forms Stream valleys emerge from the adjacent mountains, only to take dramatic right-angle turns where they intersect the fault. Ponds and sags form where the ground is extended and subsides between branches of the fault. Benches form where the fault offsets valley walls. Many dramatic landscape features are products of the interplay between very

rapid fault movement and slower erosion. The dry climate of the area produces low erosion rates, thereby preserving the spectacular effects of fault slip, folding, and warping. On the Plain, these fault-related events happen intermittently, but with great force. In 1857, the strongest earthquake in California's recorded history ripped through the San Andreas Fault, wrenching the western side of the Carrizo Plain National Monument thirty-one feet northward.
The area is also distinguished for its significant fossil assemblages.

The Caliente Formation, exposed on the southeast side of the Caliente Range, is host to abundant and diverse terrestrial fossil mammal remains of the Miocene Epoch (from 13 million to 25 million years ago). Fossils of five North American provincial mammalian ages (Arikareean, Hemingfordian, Barstovian, Clarendonian, Hemphillian) are represented in sedimentary rocks in that formation. These terrestrial fossil remains are interlaced with marine sedimentary rocks bearing fossils of mollusks, pectens, turitellas, and oysters.

In addition to its geologic and biological wealth, the area is rich in human history. Archaeologists theorize that humans have occupied the Carrizo Plain National Monument area since the Paleo Indian Period (circa 11,000 to 9,000 B.C.). Bedrock mortar milling features, village middens, and elaborate pictographs are the primary manifestations of prehistoric occupation. Some of these, such as the Painted Rock and Sulphur Springs rock art sites, are recognized as world class. European expeditions through the area date back to the late 1700s, with settlement beginning in the 1850s. Livestock ranching, farming, and mining activities in the last century and a half are evidenced by numerous artifacts and historic ranch properties within the area.

Section 2 of the Act of June 8, 1906 (34 Stat. 225, 16 U.S.C. 431), authorizes the President, in his discretion, to declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated upon the lands owned or controlled by the Government of the United States to be national monuments, and to reserve as a part thereof parcels of land, the limits of which in all cases shall be confined to the smallest area compatible with the proper care and management of the objects to be protected.

WHEREAS it appears that it would be in the public interest to reserve such lands as a national monument to be known as the Carrizo Plain National Monument:

NOW, THEREFORE, I, WILLIAM J. CLINTON, President of the United States of America, by the authority vested in me by section 2 of the Act of June 8, 1906 (34 Stat. 225, 16 U.S.C. 431), do proclaim that there are hereby set apart and reserved as the Carrizo Plain National Monument, for the purpose of protecting the objects identified above, all lands and interests in lands owned or controlled by the United States within the boundaries of the area described on the map entitled "Carrizo Plain National Monument" attached to and forming a part of this proclamation. The Federal land and interests in land reserved consist of approximately 204,107 acres, which is the smallest area compatible with the proper care and management of the objects to be protected.

All Federal lands and interests in lands within the boundaries of this monument are hereby appropriated and withdrawn from all forms of entry, location, selection, sale, or leasing or other disposition under the public land laws, including but not limited to withdrawal from location, entry, and patent under the mining laws, and from disposition under all laws relating to mineral and geothermal leasing, other than by exchange that furthers the protective purposes of the monument. For the purpose of protecting the objects identified above, the Secretary shall prohibit all motorized and mechanized vehicle use off road, except for emergency or authorized administrative purposes.
Lands and interests in lands within the proposed monument not owned by the United States shall be reserved as a part of the monument upon acquisition of title thereto by the United States.

The Secretary of the Interior shall manage the monument through the Bureau of Land Management, pursuant to applicable legal authorities, to implement the purposes of this proclamation.

The Secretary of the Interior shall prepare a management plan that addresses the actions, including road closures or travel restrictions, necessary to protect the objects identified in this proclamation.

The establishment of this monument is subject to valid existing rights.

Nothing in this proclamation shall be deemed to enlarge or diminish the jurisdiction of the State of California with respect to fish and wildlife management.

There is hereby reserved, as of the date of this proclamation and subject to valid existing rights, a quantity of water sufficient to fulfill the purposes for which this monument is established. Nothing in this reservation shall be construed as a relinquishment or reduction of any water use or rights reserved or appropriated by the United States on or before the date of this proclamation.

Laws, regulations, and policies followed by the Bureau of Land Management in issuing and administering grazing permits or leases on all lands under its jurisdiction shall continue to apply with regard to the lands in the monument.

Nothing in this proclamation shall be deemed to revoke any existing withdrawal, reservation, or appropriation; however, the national monument shall be the dominant reservation.

Warning is hereby given to all unauthorized persons not to appropriate, injure, destroy, or remove any feature of this monument and not to locate or settle upon any of the lands thereof.

IN WITNESS WHEREOF, I have hereunto set my hand this seventeenth day of January, in the year of our Lord two thousand one, and of the Independence of the United States of America the two hundred and twenty-fifth.

WILLIAM J. CLINTON

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Appendix B

Secretary and BLM Direction For Monument Management

Note: The letters and attachments in this appendix provide details for management and protection of the Monument that are in addition to those found in the Proclamation itself.

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THE SECRETARY OF THE INTERIOR

WASHINGTON

JAN 19 2001

Memorandum

To: Director, Bureau of Land Management

From: The Secretary

Subject: Management of the Carrizo Plain National Monument

On January 17, 2001, the President created by Proclamation the Carrizo Plain National Monument in California. This national monument designation continues the tradition of giving management responsibility to the Bureau of Land Management (BLM), offering BLM a highly visible opportunity to demonstrate its stewardship. The purposes of this memorandum are to direct you to: (a) implement interim guidance for managing the Carrizo Plain National Monument; (b) review relevant management plans for the Monument to ensure consistency with the Proclamation; (c) review the memorandum of understanding with the California Department of Fish and Game and The Nature Conservancy for consistency with the requirements of the Proclamation; and (d) create an FACA-chartered advisory council that will involve the public and advise the monument manager regarding the management of the monument.

The President's Proclamation directs management of the monument pursuant to applicable legal authorities, including the Federal Land Policy and Management Act (FLPMA) and the National Environmental Policy Act (NEPA).

The public should have more explicit information concerning the management of specific activities during the interim period. You should issue and implement the necessary guidance for the protection of this area. Field managers should be fully conversant with that guidance and initiate efforts to provide information to the public as necessary. The President's Proclamation cited the monument's grasslands, wildlife habitat, and spectacular exposures of fault-generated landforms. It also stated that valid existing rights must be recognized. The Proclamation withdrew federal lands and interests in federal lands within the Monument from all forms of entry, location, sale or leasing or other disposition under the public land laws including but not limited to oil and gas leasing, geothermal leasing and the mining laws.

The management plan for the Carrizo Plain has been developed over the last three years and sets in place many important management goals. That plan should be amended to ensure its consistency with the Proclamation.

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Washington, D.C. 20240
http://www.blm.gov

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In Reply Refer to:
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Memorandum JAN 19 2001

To: State Director, California

From: Acting Director, Bureau of Land Management

Subject: Management of the Carrizo Plain National Monument

The Secretary has sent the attached memorandum concerning the management of the Carrizo Plain National Monument. We expect you to follow the guidance outlined in the memorandum. Specifically, you should: (a) implement interim guidance for managing the Carrizo Plain National Monument; (b) review relevant management plans for the Monument to ensure consistency with the Proclamation; (c) review the Memorandum of Understanding with the California Department of Fish and Game and The Nature Conservancy for consistency with the requirements of the Proclamation; and (d) create an FACA-chartered Advisory Council that will involve the public and advise the monument manager in the management of the Monument.

In addition, you will note that the Secretary has asked us to "issue and implement the necessary guidance for the protection of this area." You should inform the Director of the National Landscape Conservation System within 30 days of the date of this letter if additional interim management guidance is needed.

The creation of this new Monument is an exciting opportunity for our organization and we look forward to working with you in managing this nationally significant heritage resource.

If you have any questions concerning this memorandum, please contact Elaine Marquis-Brong at (202) 208-3516.

Attachments

1/17/01

Carrizo Plain National Monument

Location: The Carrizo Plain National Monument is located in central California, just off the southwest edge of the San Joaquin Valley, between San Luis Obispo and Bakersfield. Elevations within the monument range from 2,000 to 2,500 feet above sea level. It covers approximately 204,107 acres of federal land.

Description: Full of natural splendor and rich in human history, the majestic grasslands and stark ridges in the Carrizo Plain National Monument contain exceptional objects of scientific and historic interest. Since the mid-1800s, large portions of the grasslands that once spanned the entire four hundred mile expanse of California's nearby San Joaquin Valley and other valleys in the vicinity have been eliminated by extensive land conversion to agricultural, industrial, and urban land uses. The Carrizo Plain National Monument, which is dramatically bisected by the San Andreas Fault zone, is the largest undeveloped remnant of this ecosystem, providing crucial habitat for the long-term conservation of the many endemic plant and animal species that still inhabit the area.

The monument offers a refuge for endangered, threatened, and rare animal species such as the San Joaquin kit fox, the California condor, the blunt-nosed leopard lizard, the giant kangaroo rat, the San Joaquin antelope squirrel, the longhorn fairy shrimp and the vernal pool fairy shrimp. It supports important populations of pronghorn antelope and tule elk, and the area is also home to many rare and sensitive plant species. Despite past human use, the size, isolation, and relatively undeveloped nature of the area make it ideal for long-term conservation of the dwindling flora and fauna characteristic of the San Joaquin Valley region.

Besides its grasslands and wildlife habitat, the area is world-famous for its spectacular exposures of fault-generated landforms. In 1857, the strongest earthquake in California's recorded history ripped through the San Andreas fault, wrenching the western side of the Carrizo Plain National Monument thirty-one feet northward.

Management: The monument will be managed by the Bureau of Land Management, in cooperation with the California Department of Fish and Game and The Nature Conservancy, for the purpose of protecting the objects described above. Currently authorized livestock grazing, a minor oil and gas development, hunting, fishing, and similar activities will generally not be affected, nor will private property (approximately 33,156 acres) and state land (approximately 9,266 acres) within the boundaries of the monument, as well as other valid existing rights.

Process: The "Carrizo Plain National Conservation Area Act" (HR 1751) was introduced by Congresswoman Lois Capps in May 1999. This began a public process that included recommendations from the local Resource Advisory Council forwarded to the Congresswoman and Secretary Babbitt in December 1999 that were incorporated into the bill. Babbitt made two trips to the area to hold public meetings in late 1999. Although the bill was reported from the House Resources Committee, neither the House nor the Senate acted on the proposed legislation. On December 22, 2000, Secretary Babbitt recommended to the President that the area being designated a national monument. President Clinton designated the area as a national monument on January 17, 2001.

01/17/01

Attachment 2

Background Material on the Carrizo Plain National Monument

THE ANTIQUITIES ACT

Section 2 of the Antiquities Act, 16 U.S.C. 431, authorizes the President to establish as national monuments "historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated upon the lands owned or controlled by the Government of the United States..."

Objects of Historic or Scientific Interest

The Carrizo Plain National Monument is located in central California, just off the southwest edge of the San Joaquin Valley. Elevations within the monument range from 2,000 to 2,500 feet above sea level. The outer boundaries of the area encompass approximately 246,533 acres, of which the Bureau of Land Management (BLM) manages approximately 204,107 acres. The non-federal land is owned by the California Department of Fish and Game, The Nature Conservancy, and private land owners. The proclamation vividly describes objects in the area that warrant protection as a monument. The attached bibliography includes the principal sources of information relied upon in making this designation.

Full of natural splendor and rich in human history, the majestic grasslands and stark ridges in the Carrizo Plain National Monument contain exceptional objects of scientific and historic interest. Since the mid-1800s, large portions of the grasslands that once spanned the entire four hundred mile expanse of California's nearby San Joaquin Valley and other valleys in the vicinity have been eliminated by extensive land conversion to agricultural, industrial, and urban land uses. The Carrizo Plain National Monument, which is dramatically bisected by the San Andreas Fault zone, is the largest undeveloped remnant of this ecosystem, providing crucial habitat for the long-term conservation of the many endemic plant and animal species that still inhabit the area.

The monument offers a refuge for endangered, threatened, and rare animal species such as the San Joaquin kit fox, the California condor, the blunt-nosed leopard lizard, the giant kangaroo rat, the San Joaquin antelope squirrel, the longhorn fairy shrimp and the vernal pool fairy shrimp. It supports important populations of pronghorn antelope and tule elk. The area is also home to many rare and sensitive plant species, including the California jewelflower, the Hoover's woolly-star, the San Joaquin woolly-threads, the pale-yellow layia, the forked fiddleneck, the Carrizo peppergrass, the Lost Hills saltbush, the Temblor buckwheat, the recurved larkspur, and the Munz's tidy-tips. Despite past human use, the size, isolation, and relatively undeveloped nature of the area make it ideal for long-term conservation of the dwindling flora and fauna characteristic of the San Joaquin Valley region.

01/17/01

The Carrizo Plain National Monument also encompasses Soda Lake, the largest remaining natural alkali wetland in southern California and the only closed basin within the coastal mountains. As its name suggests, Soda Lake concentrates salts as water is evaporated away, leaving white deposits of sulfates and carbonates. Despite this harsh environment, small plant and animal species are well adapted to the setting, which is also important to migratory birds. During the winter months the lake fills with water and teems with thousands of beautiful lesser sandhill cranes, long-billed curlews, and mountain plovers.

The Carrizo Plain National Monument owes its existence to the geologic processes that occur along the San Andreas Fault, where two of the Earth's five great tectonic plates slide past one another, parallel to the axis of the Plain. Shifting along the fault created the Plain by rumpling the rocks to the northeast into the Temblor Range and isolating the Plain from the rest of the San Joaquin Valley. The area is world-famous for its spectacular exposures of fault-generated landforms. Stream valleys emerge from the adjacent mountains, only to take dramatic right-angle turns where they intersect the fault. Ponds and sags form where the ground is extended and subsides between branches of the fault. Benches form where the fault offsets valley walls. Many dramatic landscape features are products of the interplay between very rapid fault movement and slower erosion. The dry climate of the area produces low erosion rates, thereby preserving the spectacular effects of fault slip, folding and warping. On the Plain, these fault-related events happen intermittently, but with great force. In 1857, the strongest earthquake in California's recorded history ripped through the San Andreas fault, wrenching the western side of the Carrizo Plain National Monument thirty-one feet northward.

The area is also distinguished for its significant fossil assemblages. The Caliente Formation, exposed on the southeast side of the Caliente Range, is host to abundant and diverse terrestrial fossil mammal remains of the Miocene Epoch (from 13 million to 25 million years ago). Fossils of five North American provincial mammalian ages (Arikareean, Hemingfordian, Barstovian, Clarendonian, Hemphillian) are represented in sedimentary rocks in that formation. These terrestrial fossil remains are interlaced with marine sedimentary rocks bearing fossils of mollusks, pectens, turitellas, and oysters.

In addition to its geologic and biological wealth, the area is rich in human history. Archaeologists theorize that humans have occupied the Carrizo Plain National Monument area since the Paleo-Indian Period (circa 11,000 to 9,000 B.C.). Bedrock mortar milling features, village middens, and elaborate pictographs are the primary manifestations of prehistoric occupation. Some of these, such as the Painted Rock and Sulphur Springs rock art sites, are recognized as world class. European expeditions through the area date back to the late 1700s, with settlement beginning in the 1850s. Livestock ranching, farming, and mining activities in the last century and a half are evidenced by numerous artifacts and historic ranch properties within the area.

Efforts to protect the area within the monument began in 1984, when The Nature Conservancy and the BLM agreed to explore the possibility of acquiring the private lands in the Carrizo Plain region for preservation and restoration for rare and endangered San Joaquin Valley species. Over

the next several years, The Nature Conservancy and the BLM managed to acquire much of the area.

The area has been evaluated for its wilderness characteristics under the Federal Land Policy and Management Act of 1976. A study was completed in 1995 that determined 24,680 acres were suitable for wilderness designation. The documentation assembled in the wilderness inventory and study processes has identified many of the objects of scientific and historic interest within the monument.

Land Area Reserved for the Proper Care and Management of the Objects to be Preserved

The Antiquities Act authorizes the President, as part of his declaration of a national monument, to reserve land, "the limits of which in all cases shall be confined to the smallest area compatible with the proper care and management of the objects to be protected." 16 U.S.C. § 431. The area reserved has been carefully delineated, based on review of available information, to meet the goals of effectively caring for and managing the objects in perpetuity.

The area includes the biological, geological, and historical objects identified in the proclamation and the attached bibliography. The area of the monument is based on the conservation needs of the objects to be protected. Some of these objects, such as the biological resources, are present throughout the entire monument area. Others, such as the historic and archaeological objects, are confined to a smaller area. Many objects depend for their scientific value on their location at various sites or elevations.

Preservation of such objects requires, among other things, protection of enough land to maintain the conditions that have made their continued existence possible. The scientific value of many of the objects within the monument requires preservation of areas large enough to maintain the objects and their interactions. For example, because the area is a remnant of the dwindling natural ecosystem of the San Joaquin Valley region, some sensitive species depend upon its entirety for survival. Many species must range within and through the area to maintain viable populations and their role in the ecosystem. Thus, protection of the aggregate area is necessary for proper care of the objects. Management of a patchwork of reserved lands would be impractical, as it would make it more difficult to care for the objects, reduce options for natural resource management and lead to inconsistent resource management standards for overlapping resources. In short, our analysis indicates that reservation of a smaller area would undermine proper care and management of the monument.

01/17/01

LEGAL EFFECTS OF THE PROCLAMATION

There are several significant aspects of the proclamation. First, it reserves only the federal lands in the area, because the Antiquities Act applies only to objects of historic or scientific interest "that are situated upon the lands owned or controlled by the Government of the United States." 16 U.S.C. § 431.

Second, the proclamation is subject to valid existing rights. Thus, to the extent a person or entity has valid existing rights in the federal lands or resources within the area, the proclamation would respect their rights. The exercise of such rights could, however, be regulated in order to protect the purposes of the monument.

Third, the proclamation appropriates and withdraws the federal lands and interests in lands within the boundaries of the monument from entry, location, sale, leasing or other disposition under the public land laws, including but not limited to withdrawal from location, entry, and patent under the mining laws and from disposition under all laws relating to mineral and geothermal leasing, other than by exchange that furthers the protective purposes of the monument. The proclamation would therefore prevent the Secretary of the Interior from exercising discretion under the mineral leasing acts and related laws to lease or sell federal minerals within the boundaries of the monument, and also prevent the location of new mining claims under the 1872 Mining Law. The acquired federal lands in the monument are not subject to mining claim location (see Rawson v. United States, 225 F.2d 855 (9th Cir. 1955)); to provide clear public notice, the proclamation withdraws all the federal lands in the monument, including the acquired lands, from the Mining Law.

Fourth, the proclamation reserves, subject to valid existing rights and as of the date of the proclamation, sufficient water to fulfill the purposes for which the monument is established.

01/17/01

ADMINISTRATION OF THE MONUMENT

Management by the Bureau of Land Management

The federal lands in the area described in the proclamation are currently under the jurisdiction of the Bureau of Land Management (BLM) in the Department of the Interior. BLM manages the land pursuant to its basic organic authorities, the primary one being the Federal Land Policy and Management Act of 1976 (FLPMA). The proclamation would have the Secretary of the Interior manage the monument through this agency. The result would be that management of the federal land would continue under this agency's existing authorities, but subject to the overriding purpose of protecting the objects described in the proclamation. The establishment of the monument thus constitutes an overlay on the management regime otherwise applicable to lands managed by the BLM. It limits the management discretion that the BLM would otherwise have, by mandating protection of the historic and scientific objects within the national monument.

Currently, the BLM manages the Carrizo Plain area under a cooperative management agreement with The Nature Conservancy and the California Department of Fish and Game. After review and revision of the agreement, as appropriate, to ensure its consistency with the Proclamation, this arrangement will continue.

The inclusion of Wilderness Study Area lands within the Carrizo Plain National Monument would have no effect on the Wilderness Study Area status or on any Congressional action to designate lands within the monument as wilderness. Congress has, in fact, many times in the past designated wilderness within existing national monuments. The Wilderness Act of 1964 serves some values (e.g., outstanding opportunities for solitude and primitive and unconfined recreation) that are not addressed in the Antiquities Act of 1906 which, as noted earlier, serves to protect "objects of historic or scientific interest." On the other hand, section 2(c) of the Wilderness Act expressly acknowledges that wilderness areas "may...contain ecological, geological, or other features of scientific, education...or historic value," and section 4(b) directs that wilderness areas "shall be devoted to the public purposes" of, among others, "scientific, educational, conservation, and historical use."

01/17/01

Impact of Monument Designation on Existing or Planned Activities in the Area

Currently permitted livestock grazing (including water impoundments and similar range improvements), hunting, fishing, and similar activities

An experimental grazing program is being conducted in the area for the purposes of scientific research and study under 43 CFR 4130.5(b)(2). Grazing under this authority can continue as long as such use is consistent with the protection of the objects outlined in the proclamation, and as long as information derived from monitoring supports its use for the benefit of native species and natural communities.

Hunting and other similar uses are generally not affected except where (1) the BLM, through processes required by existing law, identifies places where such uses ought to be restricted or prohibited as necessary to protect the federal lands and resources, including the objects protected by the monument designation, or (2) the BLM finds a clear threat from such a use to the federal lands and resources, including the objects protected by the monument designation, and the circumstances call for swift protective action. Such uses will, of course, remain subject to applicable laws and regulations, and will therefore remain subject to regulation and limitation under such provisions for reasons other than establishment of the monument.

Use of existing rights-of-way (such as those established by Title V of FLPMA)

Use of existing rights-of-way will generally be subject to the same standards as described in the preceding section addressing currently permitted uses. In some cases existing rights-of-way may include valid existing rights. The exercise of such rights may be regulated in order to protect the purposes of the monument, but any regulation must respect such rights.

Off-road vehicle use

For purposes of protecting the objects it identifies, the proclamation prohibits motorized and mechanized travel off road, except for authorized administrative or emergency purposes. The current management plan generally prohibits travel off road in the monument, so there should be no change in actual practice.

Activities on state or private land

The area within the boundaries of the monument contains approximately 6,400 acres land owned by the California Department of Fish and Game, approximately 6,400 acres owned by The Nature Conservancy, and approximately 42,000 acres that are in other private ownerships. The monument designation would not apply to those lands, but the proclamation provides that if any of these lands within the outer boundaries of the

monument are acquired into federal ownership in the future, they will become part of the monument. In the absence of acquisition, the laws applicable to the use of private or state lands prior to the establishment of the monument will continue to apply.

Mineral activity

The proclamation withdraws the portions of the monument where the Federal government owns the mineral estate from the 1872 Mining Law (30 U.S.C. § 21 et seq), and from all forms of entry, appropriation or disposal under the public land laws. Existing mining claims that contain a valid discovery of a valuable mineral deposit as of the date of the designation would contain valid existing rights. The exercise of such rights may be regulated in order to protect the purposes of the monument, but any regulation must respect such rights. Existing mining claims that lack a valid discovery of a valuable mineral deposit have no valid existing rights; activities on such claims may be regulated or prohibited to protect the purposes of the monument.

Approximately 100,000 acres of land within the monument is acquired land for which the federal government owns the surface estate only. The Nature Conservancy is a partial owner of the mineral estate for the largest block of acquired lands (the former Oppenheimer ranches). Where the federal government owns only the surface estate, the property regulations in the mineral estate are governed largely by state, not federal, law. Although gypsum and phosphate are common in the monument, potential for development of these minerals is considered very low due to high mining costs.

Only one area in the monument now produces commercial quantities of oil and gas. This is a unit containing six Federal oil and gas leases covering approximately 6,000 acres on the south side of the Caliente range. Any valid existing rights in such leases, within this unit or elsewhere in the monument, will be respected if the area is proclaimed a national monument. Despite the drilling of at least 267 exploratory wells since 1901, no commercially successful wells have been developed, outside of this one unit. This lack of exploration success in the monument is attributed to the lack of a mature organic source for hydrocarbons. Because exploratory activity has resulted in only minor commercial success and has dwindled over time, the potential for further oil and gas development is regarded as low. New leases or sales of federally owned minerals would be prohibited as the proclamation withdraws the area from all applicable federal mineral leasing, minerals sales and related laws.

Attachment: Carrizo Plain National Monument Bibliography

01/17/01

Attachment 3

Bibliography
Carrizo Plain National Monument

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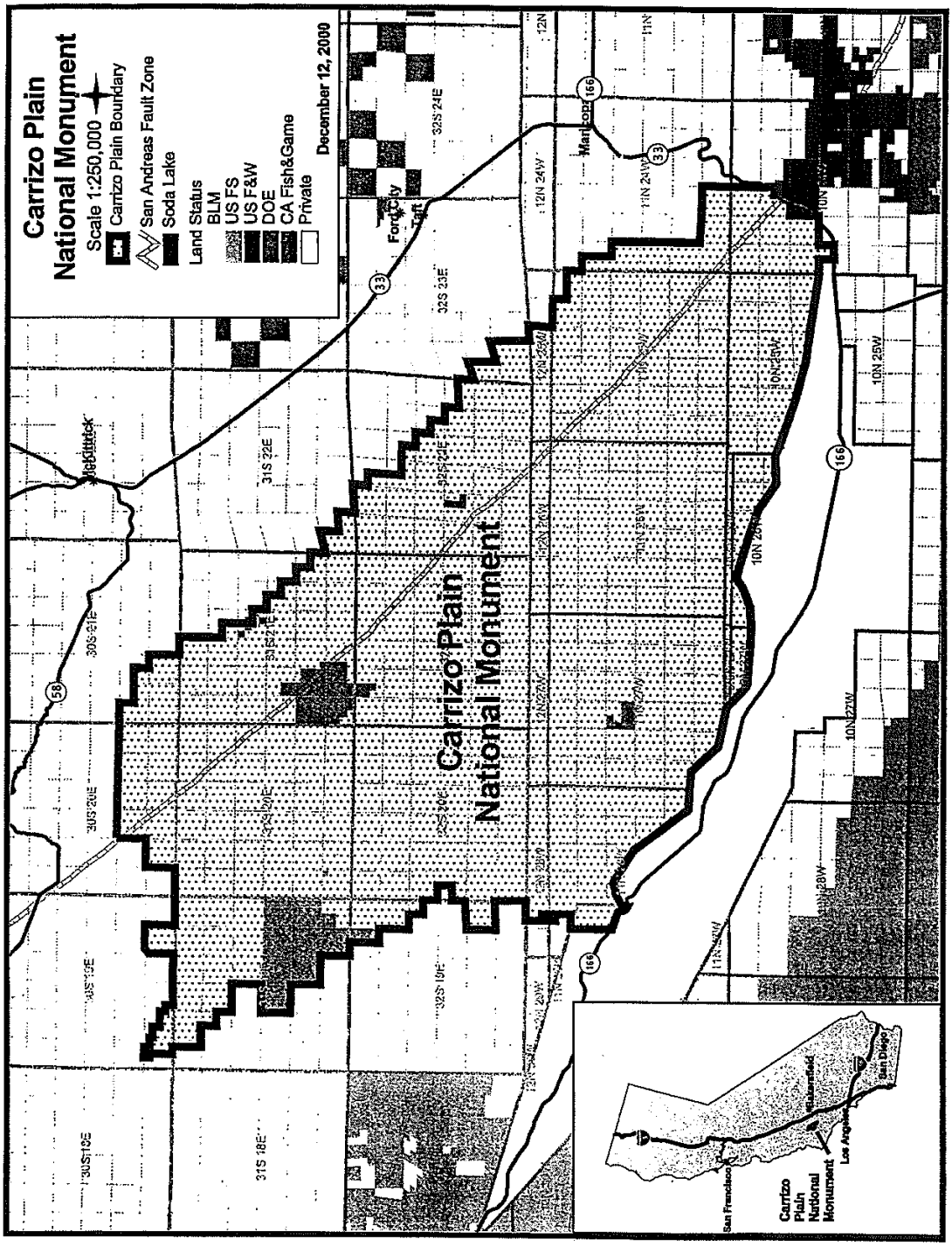

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Appendix C

Conservation Target Table

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Appendix C
Conservation Target Table

Background

Several resource management programs (Biology (wildlife and vegetation), Livestock Grazing, and Fire & Fuels Management) make reference to a "Conservation Target Table" to describe specific aspects of management program implementation. This table, a work in progress, has been developed by the managing partners as an integral part of an adaptive management approach to guide implementation of objectives in this RMP for protection and benefit of the natural communities and "featured species" (listed species, large native ungulates, and plant or animal species receiving management emphasis). The current table is not complete but will continue to be developed. More species of plants and animals (plant communities, vertebrate and invertebrate animals) will be added and prioritized. The objectives listed in the table are derived from and fully support the objectives described in this RMP. Specifically, the table identifies important ecological factors that influence the health, abundance, and distributions of the natural communities and featured species. This is accomplished by identifying: (1) the important habitat or population parameters that influence the target communities or species, (2) the specific habitat or population indicators or variables to be monitored, (3) the measurable attributes for these variables, (4) the values of these variables that will trigger management actions, and (5) the recommended management actions or prescriptions that may influence habitat suitability or population demographics needed to maintain the target's health, abundance, and distribution goals.

The elements in the table are developed using the best available information obtained from a variety of sources including published literature, unpublished reports, monitoring data from within the Monument and other similar habitats, other locations with the range of the featured species, and professional experience/opinion among staff with direct experience in the Monument.

Use of the Table in Implementing RMP Management Objectives

The Conservation Target Table is the foundation of the adaptive management strategy to be implemented in the Monument. The monitoring of the management actions and their effects to the conservation targets will occur in the following manner:

- The conservation targets (vegetation communities, plant and animal featured species populations, demographics and distributions) will be monitored.
- The variables for the management objectives will be gauged in relation to the desired values of the variable.
- Recommended management actions and constraints to actions (ranging from the hands-off treatments to the application of one or more tools) would be evaluated by monitoring the management objective variables in relation to the implementation of the actions and constraints.
- Changes in the management objective variables among the actions and constraints would be documented as a possible management effect.
- As monitoring data are evaluated, the information will be used to determine the success of the management actions and constraints in meeting the specific conservation target objectives and the overall management goals.
- The evaluations and new knowledge about the conservation targets and the management effects would be used to inform future management actions and decisions.

The Conservation Target Table will also be used to describe where or under what conditions in the Monument these RMP management objectives are relevant, where the indicator variables will be monitored, and where the actions and constraints will be applied. Initially, BLM will continue to use the commonly known pasture names and boundaries to identify the basic units for management, which originated with historic ownership or usage. As needs for species are identified and management actions are defined, the use of pasture boundaries may shift to more accurately delineate the biological management units that reflect ecological parameters. Until then, a management table using pasture names has been developed to inform managers where the Conservation Targets are currently relevant based on presence or absence within a pasture. Additionally, the "Pasture Management Table" will be concurrently used as a way for managers to determine the general grazing management actions or constraints. This management table will be evolving with the knowledge of the Conservation Targets, the changing pasture boundaries, and grazing use on the Monument.

Incorporating Changes into the Conservation Target Table

The Conservation target table and associated pasture management table are considered to be "works in progress" and will be updated as needed using adaptive management principles outlined in "Adaptive Management US Department of Interior Technical Guide" and authorized under Secretarial Order 3270. The elements of the tables will be subject to ongoing review by the managing partners (BLM, TNC, and CDFG), the scientific community, species experts, the Carrizo Plain National Monument Advisory Committee, the USFWS, and the public. Changes would be made to the management guidelines (actions and constraints) or the desired values for the indicator variables as new knowledge is gained about the natural communities, the species, the ecological relationships, and management effects. This knowledge would be applied to ongoing and future management objectives and decisions, thus "adapting" the management of the Monument to use the best available information about the natural communities, featured species, and objects to be protected in the Monument.

Information or events that may trigger a change include new literature, study results, more complete information, monitoring results, new species, new impacts, new locations, changes in law or policy, or input from species experts. The managing partners will review the Conservation Target Table annually to determine if changes are appropriate. Information or events may trigger more frequent reviews. The managing partners may solicit input from species or topic experts. Through consensus, the managing partners may make changes to the Conservation Target Table based on the review. The modified Conservation Target Table will be submitted to the BLM authorized officer for approval. The change would be implemented as soon as any intermediate steps have been completed, such as NEPA analysis, publication of Federal Register Notices, or consultation with SHPO or FWS. The current Conservation Target Table will be available to the public at the BLM website.

To address increasing concern over climate change and the possible effects to the Monument's resources, BLM will rely on the Conservation Target Table and adaptive management to guide its actions in a way that continues protection while detecting change. BLM and the managing partners recognize that there are likely to be future changes associated with climate change that will alter conditions for resources on the Monument. We also realize that to better understand the consequences of these changes will require using the best information and models available combined with good baseline data and effective monitoring. Through the process of adaptive management, we will be in a position to perceive differences linked to climate change and respond accordingly.

Changes in the management guidelines (actions and constraints) or the desired values for the indicator variables in the Conservation Target Table would normally not require an amendment to this plan, while changes to the conservation target management objectives would. Any changes will undergo appropriate

level of technical review and further NEPA analysis would be required if they are outside the scope of analysis of this EIS.

Definitions and Explanation for Understanding the Tables

The first table is a description of management objectives, variables, and base information regarding each conservation target. A Conservation Target is a species, population, natural community or other biological feature or value we want to conserve within the Monument. There are three sub-tables that are tied to the first Management Objective table. The sub-tables describe the Management Guidelines, or proposed actions and constraints for each of our major tools; livestock grazing, prescribed fire, and other restoration tools. The first five columns of the Management Objective tables are copied into each of the sub-tables to make each sub-table easier to use alone. Empty cells or rows within the tables will be completed as information becomes available.

The rows of each table are organized by conservation target. Each conservation target is further divided by a management objective identified for a specific parameter for that target. Each of these rows is assigned a unique numerical identifier. A single target is given a number. Each management objective for that target reflects the target's number and an alphabetical sub unit. The conservation targets are further grouped into plants and animals. The conservation target order parallels the order in Chapter 2, Alternatives. For example, conservation targets associated with Common to All Alternatives are listed first. These are followed by the conservation targets that have objectives that vary by alternative.

The information in each row is focused and true to that specific parameter for the target. The values or actions are for that specific parameter alone, and are not combined or compromised with values or management for other purposes. In this way we can track the exact purpose for each of our actions, what parameter we are managing for and what priority or importance it has when we have to combine management actions later.

The Conservation Target Table is designed to be used in conjunction with the Chapter 2, Alternatives. The Conservation Target Table is not a stand-alone document. When an objective or action in Chapter 2, Alternatives refers to the Conservation Target Table, the table should be consulted for detailed information. The information in each row may apply to one or more alternatives. Conversely, the information in a row may not apply to all alternatives. For example, since grazing would not occur in Alternative 1, any cell with grazing actions would not be applicable in Alternative 1.

Definitions of each of the 12 columns of the Management Objective table:

> Conservation Target: A conservation target is a species, population, natural community or other biological feature or value we want to conserve within the Monument.
>
> Management Objective: Management objectives for the target's habitat and populations. PRIMARY = Focus management on these objectives, but this doesn't preclude managing for a secondary objective. This variable may have a high influence on target health. Management can affect target health by affecting these variables. SECONDARY = This parameter is not as important for affecting target health. We may not be able to either adequately measure or affect this variable.
>
> Variable: The variable that we measure or monitor to assess if we are meeting our management objective.

Desired Value of the Variable: The specific value of the variable (may be a minimum or maximum or a range of values) within which we feel we can meet our target management objectives. If the value we measure is outside the range, it indicates that the objective is not being met and management action may be needed.

Time of year the variable should be measured: As stated.

Management Assumptions/ Notes: This column lists our current knowledge and assumptions of a target or its management. It holds background information and information we want to test or further investigate.

Current Monitoring of the Variable Value: Who is currently monitoring this variable and how.

Factors Affecting Management Objectives and Variables: This column holds known or suspected factors that can influence the target's health or the variables we are measuring.

Status of knowledge – throughout range (high, med, low): This is a description of what we think the status of knowledge about the target and associated parameters are throughout its range.

Status of knowledge – Carrizo (high med, low): This is a description of what we think the status of knowledge about the target and associated parameters are within the CPNM environment.

Potentially relevant citations: These are a listing of potentially relevant literature citations regarding the target and its management parameters. Not all citations have been thoroughly reviewed for applicability.

Suggested experts to contact: This is a list of experts that have knowledge regarding the target. It is a list of sources to help us with issues that arise beyond our knowledge.

Existing distributions for targets and habitats are based upon current recorded information from such sources as CNDDB, local agency inventories and observations, CDFG species monitoring and inventories, and others.

The three sub-tables – which are Management Guidelines for Grazing, Management Guidelines for Prescribed Fire, and Management Guidelines for Other Restoration Tools – provide guidance when using a particular tool to meet an objective. The sub-tables represent possible treatment options and one is not automatically applied over the other. The first five columns of the Management Objective tables are copied into each of the sub-tables to make each sub-table easier to use alone.

Column definitions of the 2 columns within the Management Guidelines tables:

Actions and constraints on the actions: This is a description of the prescription. It is the recommended action to take for that specific target management objective. It also describes constraints to the action (especially if action is taken for another management objective).

Actions to test and evaluate: These are actions we want to test and evaluate their effectiveness at meeting the management objective. We are currently unsure or have contradictory information regarding the effects of the action or constraint.

The actions and constraints listed in these management guidelines tables are pure actions and constraints that are true to that specific objective alone. They will be combined, overlapped, and consolidated

together later depending on the affected resources at the location of needed management. If no action is shown in the management guideline column, we have no action to recommend for that resource objective. A constraint is just that, it is not a prohibition on the tool entirely, but a restriction on its use.

The actions and constraints to the action will be layered and will result in a composite action in order to meet the management objectives for any given location within the CPNM. Conflicts between management actions in the same location will be resolved by the managing partners depending on the priority of the target or the location of the action.

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Carrizo Plain National Monument: Conservation Target Table

Management Objectives & Variables													
	Conservation Target	Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Management assumptions / notes (shaded indicates research priority)	Current Monitoring of the Variable Value	Factors Affecting Management Objectives and Variables	Status of knowledge - throughout range (high, medium, low)	Status of knowledge - Carrizo (high, medium, low)	Potentially relevant citations	Suggested experts to contact
Native plant species													
9a	**Caulanthus**	Maintain distribution and size of existing populations (BIO-2, BIO-14)	Distribution and population size; reproducing populations	>= current levels	January - May	Grazing is detrimental; positive (?) relationship between GKR and Caulanthus		Grazing; invasive plant species				
9b	**Caulanthus**	Restore populations to areas of known historical range (BIO-14, BIO-8)	Success (establishment and reproduction) of restored populations in historical range	Self-sustaining populations in introduced range	January - May	Reintroduced populations will succeed in historical range		Grazing; invasive plant species				
19	**wooly threads**	Maintain current distribution and population size (BIO -2, BIO-14	Presence/absence in known or appropriate locations	>= current distribution and condition across landscape relative to year's precipitation	Feb-Apr	Managed grazing not detrimental to populations, plants relatively widespread and vigorous on CPNM.		Competition from invasives, habitat degradation.	Medium - recent surveys by R. Lewis, etc.	high - 1993 & other surveys by R. Lewis	Mazer and Hendrickson 1993, Taylor 1987, Taylor and Buck 1993, Williams et al. 1998	
20a	**Lepidium jaredii**	maintain or enhance populations (BIO-2, BIO-14)	reproduction	some seed production in most years, large seed production occasionally (as in 2008)	Apr-May							

Management Objectives & Variables													
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Management assumptions / notes (shaded indicates research priority)	Current Monitoring of the Variable Value	Factors Affecting Management Objectives and Variables	Status of knowledge - throughout range (high, medium, low)	Status of knowledge - Carrizo (high, medium, low)	Potentially relevant citations	Suggested experts to contact
20b	**Lepidium jaredii**	maintain or enhance populations (BIO-2, BIO-14)	population size	in most years, some presence in known habitat, occasional large displays (as in 2008)	Mar-May							
32a	**Amsinckia vernicosa var. furcata**	maintain or enhance populations (BIO-2, BIO-14)	reproduction	some seed production in most years, large seed production occasionally	Mar-May							
32b	**Amsinckia vernicosa var. furcata**	maintain or enhance populations (BIO-2, BIO-14)	population size	in most years, some presence in known habitat, occasional large displays	Mar-May							
33a	**Acantho-mintha obovata ssp. cordata (clay species)**	maintain or enhance populations (BIO-2, BIO-14)	reproduction	some seed production in most years, large seed production occasionally	Apr-Jul							
33b	**Acantho-mintha obovata ssp. cordata**	maintain or enhance populations (BIO-2, BIO-14)	population size	in most years, some presence in known habitat, occasional large displays (like in 2008)	Apr-Jul							

Management Objectives & Variables												
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Management assumptions / notes (shaded indicates research priority)	Current Monitoring of the Variable Value	Factors Affecting Management Objectives and Variables	Status of knowledge - throughout range (high, medium, low)	Status of knowledge - Carrizo (high, medium, low)	Potentially relevant citations	Suggested experts to contact
22	**Clay species**	Maintain current distribution and population size	Presence/absence in known or appropriate locations	>= current distribution and condition across landscape relative to year's precipitation	Mar-Jun	Species restricted to clay soils present as linear outcrop along west side of Calientes.		habitat degradation by OHV, livestock, weeds.	Low - few or no studies, R. Lewis CPNM surveys only	R. Lewis 1992 ANOV surveys		
31	**vernal pools**	TBD										
2a1	**a. Bunch grasses** (*Poa secunda, Nasella cernua, Nasella pulchra, Sitanion hystrix, Achnatherum speciosa)*	Maintain or enhance populations PRIMARY (maintain pop. parameters) (BIO-2, BIO-14)	a. Seed production [presence of inflorescences (sexual) or new genets (asexual)]	Presence of inflorescences in > 50% of population	Varies depending on species (February-May)	Need to identify sites where we want to maintain/enhance bunchgrasses; e.g. cultivated areas? (Might be too difficult to restore); 50% threshold is currently a hypothesis; may vary annually; also depends on the relative contribution of seeds and seedlings to population growth rates (e.g., sensitivity analysis needed). Need to determine the value of the variable.		Drought; inappropriate grazing, invasive plant species				

Management Objectives & Variables												
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Management assumptions / notes (shaded indicates research priority)	Current Monitoring of the Variable Value	Factors Affecting Management Objectives and Variables	Status of knowledge - throughout range (high, medium, low)	Status of knowledge - Carrizo (high, medium, low)	Potentially relevant citations	Suggested experts to contact
2a2	**a. Bunch grasses** (*Poa secunda, Nasella cernua, Nasella pulchra, Sitanion hystrix, Achnatherum speciosa)*	Maintain or enhance populations PRIMARY (maintain pop. parameters) (BIO-2, BIO-14)	b. Recruitment of new individuals and Retention of existing. Measure through cover and frequency.	Recruitment and survival of new individuals.Maintain or enhance the average frequency of Poa secunda and Nassella spp. seedlings at more than 20 per plot during a five year period. Initiate active restoration when the average frequency of Poa secunda and Nassella spp. seedlings is ≤ 10 seedlings per plot.Frequency plot = large "inter-plot areas"	February for seedlings; late spring (May/June) for new juveniles and adults	Currently don't know necessary recruitment rates to sustain populations. Determine if livestock grazing can be used to create germination microsites & seedling establishment opportunities. During our study, Poa secunda frequency was higher in plots not subject to grazing in annual grasslands & in soil type 7. Poa frequency was higher in plots subject to grazing in USSSS, & in soil types 3 & 8. During our study, Nassella spp. frequency decreased as cattle density increased in valley & foothill grassland & subshrub scrub communities with soil types 7 & 8, but increased in soil type 3.It has been assumed that bunchgrasses are limited by direct competition with exotic annual grasses (EAG), & that properly timed grazing/biomass reduction can decrease EAG & increase bunchgrass cover/abundance. However, our study results revealed contradictory evidence, suggesting that additional mechanisms are operating. Thus, we plan to establish a research program to test additional tools, including dormant (June-Oct) season prescribed burning & seeding, that may allow for the enhancement of bunchgrass populations.		Drought; inappropriate grazing, invasive plant species	In dry annual grasslands eco-systems, like those found at the Carrizo, the status of knowledge is Low; in more mesic annual grassland systems statewide, the status of knowledge is High.	Medium (Christian et al. grazing analyses for 1997–2003 period at the Carrizo; Kimball and Schiffman (2003)).	Christian et al. (in prep); Stromberg et al., editors (2007); Kimball and Schiffman (2003); Hayes and Holl (2002); Brown and Rice (2000); Dyer and Rice (1999); Hamilton et al. (1999); Olff and Ritchie (1998); Dyer et al. (1996); Menke (1992).	Caroline Christian; Mark Stromberg; Kevin Rice; Paula Schiffman

Management Objectives & Variables												
Conservation Target		**Management Target (Plan Objective)**	**Variable**	**Desired Value of the Variable**	**Time of year the variable should be measured**	**Management assumptions / notes (shaded indicates research priority)**	**Current Monitoring of the Variable Value**	**Factors Affecting Management Objectives and Variables**	**Status of knowledge - throughout range (high, medium, low)**	**Status of knowledge - Carrizo (high, medium, low)**	**Potentially relevant citations**	**Suggested experts to contact**
2a3	**a. Bunch grasses** (*Poa secunda, Nasella cernua, Nasella pulchra, Sitanion hystrix, Achnatherum speciosa)*	Maintain stable size structure; PRIMARY (maintain pop. parameters) (BIO-2, BIO-14)	Cover, basal diameter	Maintain range of sizes.	February-May	Requires long-term demographic work to determine what actual stable stage/age structure is. This would require separate demographic studies for each species.		Drought; inappropriate grazing, invasive plant species				

Management Objectives & Variables												
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Management assumptions / notes (shaded indicates research priority)	Current Monitoring of the Variable Value	Factors Affecting Management Objectives and Variables	Status of knowledge - throughout range (high, medium, low)	Status of knowledge - Carrizo (high, medium, low)	Potentially relevant citations	Suggested experts to contact
2a4	**a. Bunch grasses** (*Poa secunda, Nasella cernua, Nasella pulchra, Sitanion hystrix, Achnatherum speciosa)*	Maintain or enhance spatial distribution of bunch grass populations PRIMARY (Maintain community parameters) (BIO-2, BIO-14)	Population boundary	Maintain or enhance population boundary within 'range of natural variation' (e.g., allowing for annual expansion and contraction)	February-May	Use remote imagery as tool to estimate changes in distributionSee 2a2 (bunchgrass populations)		Disturbance history (esp. tilling); drought; inappropriate grazing; invasive plant species	In dry annual grasslands ecosystems, like those found at the Carrizo, the status of knowledge is Low; in more mesic annual grassland systems statewide, the status of knowledge is High.	Medium (Christian et al. grazing analyses for 1997–2003 period at the Carrizo; Kimball and Schiffman (2003)).	Christian et al. (in prep.); Stromberg et al., editors (2007); Kimball and Schiffman (2003); Hayes and Holl (2002); Brown and Rice (2000); Dyer and Rice (1999); Hamilton et al. (1999); Olff and Ritchie (1998); Dyer et al. (1996); Menke (1992).	Caroline Christian; Mark Stromberg; Kevin Rice; Paula Schiffman
2b1	**b. Rhizomatous species (Distichlis spicata, Leymus triticoides)**	Maintain or enhance population patch size PRIMARY (BIO-2, BIO-14)	Patch size (e.g. %cover over larger scale)	Maintain or enhance patch size (No value for this variable yet)	Anytime (preferably peak growth period)	c4 grasses?		Drought; inappropriate grazing, disturbance history; competition from invasive plant species				

Management Objectives & Variables													
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Management assumptions / notes (shaded indicates research priority)	Current Monitoring of the Variable Value	Factors Affecting Management Objectives and Variables	Status of knowledge - throughout range (high, medium, low)	Status of knowledge - Carrizo (high, medium, low)	Potentially relevant citations	Suggested experts to contact
2b2	**b. Rhizomatous species (Distichlis spicata, Leymus triticoides)**	Maintain or enhance spatial distribution PRIMARY (BIO-2, BIO-14)	Population boundary	Maintain or enhance distribution (No value for this variable yet)	Anytime (peak growth period)	Use remote imagery as tool to estimate changes in distribution		Drought; inappropriate grazing, disturbance history; competition from invasive plant species				

Management Objectives & Variables												
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Management assumptions / notes (shaded indicates research priority)	Current Monitoring of the Variable Value	Factors Affecting Management Objectives and Variables	Status of knowledge - throughout range (high, medium, low)	Status of knowledge - Carrizo (high, medium, low)	Potentially relevant citations	Suggested experts to contact
2c1	**c.Native annual flora**	Maintain or enhance native annual species richness and cover PRIMARY (BIO-2, BIO-14)	Native annual species richness and cover	>= current levels.Maintain or enhance the average relative cover of native annual plant species at more than 20% and the average native annual plant species richness at more than 5 during a five year period. Initiate active restoration when the average relative cover of native annual plant species is ≤ 20% and/or the average native annual plant species richness is ≤ 3.5 during a five year period.Plant cover and richness = Daubenmire plot.	Spring-active: March-May; Summer-active: June-October	During our study, native annual plant species richness/cover were lower in all plots subject to grazing. Under the conditions tested, Nov-May grazing was not the proper tool for maintaining or enhancing native plant richness or cover.It has been assumed that native annual grasses/forbs are limited by direct competition with EAG, & that properly timed grazing can decrease EAG & increase native richness/cover. Our study revealed contradictory evidence, suggesting that additional mechanisms are operating. Thus, we plan to establish a research program to test 1) additional tools, including dormant season grazing and prescribed burning as well as seeding, which may allow for the enhancement of native annual plants, & 2) the mechanisms that may be acting to limit native annual flora. Part of this effort will involve testing the assumption of a link between RDM & native cover / richness.Does RDM have a relationship to native species richness or cover in the spring?		Invasive plant species; inappropriate grazing; drought	In dry annual grasslands ecosystems, like those found at the Carrizo, the status of knowledge is Low; in more mesic annual grassland systems statewide, the status of knowledge is High.	Medium (Christian et al. grazing analyses for 1997–2003 period at the Carrizo)	Christian et al. (in prep.); Kimball and Schiffman (2003); Olff and Ritchie (1998); D'Antonio and Vitousek (1992); Stromberg et al., editors (2007)	Caroline Christian; Paula Schiffman; Carla D'Antonio

Management Objectives & Variables												
Conservation Target		**Management Target (Plan Objective)**	**Variable**	**Desired Value of the Variable**	**Time of year the variable should be measured**	**Management assumptions / notes (shaded indicates research priority)**	**Current Monitoring of the Variable Value**	**Factors Affecting Management Objectives and Variables**	**Status of knowledge - throughout range (high, medium, low)**	**Status of knowledge - Carrizo (high, medium, low)**	**Potentially relevant citations**	**Suggested experts to contact**
2c2	**c. Native annual flora**	Maintain native annual seed bank PRIMARY (BIO-2, BIO-14)	Seed production during favorable years	"Adequate" proportion of population producing seeds	Varies depending on species (April-October)	It has been assumed that grazing before native annual forb seedset will likely reduce the amount of seed that makes it in to the seedbank. We assume that if more native forb seed makes it in to the seed bank its cover and richness will increase. We may need a seed bank census to evaluate these assumptions.		Invasive plant species; inappropriate grazing; drought	In dry annual grasslands ecosystems, like those found at the Carrizo, the status of knowledge is Low; in more mesic annual grassland systems statewide, the status of knowledge is Medium.	Low	Stromberg et al., editors (2007)	Carla D'Antonio

Management Objectives & Variables												
Conservation Target		**Management Target (Plan Objective)**	**Variable**	**Desired Value of the Variable**	**Time of year the variable should be measured**	**Management assumptions / notes (shaded indicates research priority)**	**Current Monitoring of the Variable Value**	**Factors Affecting Management Objectives and Variables**	**Status of knowledge - throughout range (high, medium, low)**	**Status of knowledge - Carrizo (high, medium, low)**	**Potentially relevant citations**	**Suggested experts to contact**
2c3	**c.Native annual flora**	Reduce abundance of exotic annual grasses and forbs SECONDARY (BIO-21)	% cover, richness, abundance, height of exotic species	< current levels	Spring-active: March-May; Summer-active: June-October	During our study, EAG and EAF cover was not reduced across any plots subject to grazing – EAG increased in soil types 3 and 7, and was unchanged in type 8. Under conditions tested, Nov-May grazing was not the proper tool for reducing EAG or EAF. It has been assumed that properly timed grazing reduces EAG, and that EAG reduces native richness/cover through direct competition. Our study revealed that Nov-May grazing does not reduce EAG. Thus, we plan to establish a research program to test 1) additional tools, including dormant season grazing and prescribed burning, which may reduce EAG, and 2) mechanisms that may be acting to limit native richness/cover.		Invasive plant species; inappropriate grazing; drought	in dry annual grasslands ecosystems, like those found at the Carrizo, the status of knowledge is Low; in more mesic annual grassland systems statewide, the status of knowledge is High	Low - historical sites and distribution generally known but densities unknown for most of the Carrizo Medium (Christian et al. grazing analyses for 1997–2003 period at the Carrizo)	Christian et al. (in prep.); Olff and Ritchie (1998); D'Antonio and Vitousek (1992); Stromberg et al., eds. (2007)	Caroline Christian; Paula Schiffman; Carla D'Antonio

Management Objectives & Variables												
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Management assumptions / notes (shaded indicates research priority)	Current Monitoring of the Variable Value	Factors Affecting Management Objectives and Variables	Status of knowledge - throughout range (high, medium, low)	Status of knowledge - Carrizo (high, medium, low)	Potentially relevant citations	Suggested experts to contact
2g	**Grassland Community**	Maintain matrix of bunchgrasses and native annual plant species PRIMARY (Maintain community parameters) (BIO-8)	Composition and % cover of non-bunchgrass plant species. Frequency of Poa secunda and Nassella species seedlings; relative or absolute cover of native annual plant species; native annual plant species richness.	See 2a2 and 2c1.	March-May	Goal is to enhance bunchgrass populations, while at the same time preserving or enhancing populations of native forbs and grasses (e.g., we don't want management of native bunchgrasses to compromise native forbs). It has been assumed that by reducing EAG we can increase native cover/richness. Our study results suggest that grazing Nov-May does not decrease EAG, increase native forbs, or increase native bunchgrass populations overall. Therefore, we plan to test additional tools that may allow us to achieve our plant community goals, including dormant season (June-Oct) grazing & prescribed burning and seeding of native species.		Drought; inappropriate grazing, invasive plant species	in dry annual grasslands ecosystems, like those found at the Carrizo, the status of knowledge is Low; in more mesic annual grassland systems statewide, the status of knowledge is High	Medium (Christian et al. grazing analyses for 1997–2003 period at the Carrizo; Kimball and Schiffman (2003)	Christian et al. (in preparation); Stromberg et al., editors (2007); Kimball and Schiffman (2003); Hayes and Holl (2002); Brown and Rice (2000); Olff and Ritchie (1998); Dyer and Rice (1997).	Caroline Christian; Mark Stromberg; Kevin Rice; Paula Schiffman.
2d	**d. Native perennial herbs & bulbs**	TBD (BIO-14)										

Management Objectives & Variables												
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Management assumptions / notes (shaded indicates research priority)	Current Monitoring of the Variable Value	Factors Affecting Management Objectives and Variables	Status of knowledge - throughout range (high, medium, low)	Status of knowledge - Carrizo (high, medium, low)	Potentially relevant citations	Suggested experts to contact
2e1	**e.Native shrub flora (Atriplex polycarpa, Atriplex spinifera, Ephedra spp)**	Maintain or enhance current cover and population distribution PRIMARY (BIO-8, BIO-14)	% cover, areal extent	> or = to current amount	Summer active: June-November; Winter active: December-May; depends on species	In appropriate habitats, depending on landscape setting and soils; fire is detrimental to some shrub species (need to look at relationship between fire interval, fire intensity and recruitment, maintaining population; grazing during summer is detrimental						
2e2	**e. Native shrub flora (Atriplex polycarpa, Atriplex spinifera, Ephedra spp)**	Recruitment in favorable years to maintain age structure PRIMARY (BIO-8, BIO-14)	Seedling survival during and following recruitment years	Recruitment and survival of new individuals; range of sizes and ages	Depends on species							
2e3	**e. Native shrub flora: Upper Sonoran Sub-Shrub Scrub Community**	Enhance the areal extent of this community. (BIO-8, BIO-14)	acres	> or = to current amount	anytime (remote sensing)	Grazing reduces the cover of scrub/shrub species, and encourages greater grass and forb cover. Seeding reduces seed limitation and increases the potential areal extent of those species. Update vegetation maps.			high	medium	Stromberg et al., editors (2007)	Carla D'Antonio

Management Objectives & Variables												
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Management assumptions / notes (shaded indicates research priority)	Current Monitoring of the Variable Value	Factors Affecting Management Objectives and Variables	Status of knowledge - throughout range (high, medium, low)	Status of knowledge - Carrizo (high, medium, low)	Potentially relevant citations	Suggested experts to contact
2e4	**e. Native shrub flora: Upper Sonoran Sub-Shrub Scrub Community**	Enhance native spp cover and richness within this community. (BIO-8, BIO-14)	Cover and richness of native spp.	> current levels		During our study, native plant richness/cover were lower in subshrub scrub plots subject to grazing. Under the conditions tested, Nov-May grazing was not the proper tool to enhance native richness/cover in the USSSS understory. It has been assumed that native annual forb cover/richness is limited by competition with EAG, & that properly timed grazing can decrease EAG & increase native cover / richness. Our study revealed contradictory evidence, suggesting that additional mechanisms are operating. Thus, we plan to establish a research program to test 1) additional tools that may allow for the enhancement of native cover/richness 2) the mechanisms that may be acting to limit native cover/richness.			low	Medium (Christian et al. grazing analyses for 1997–2003 period at the Carrizo)	Christian et al. (in prep.); Stromberg et al., editors (2007)	Caroline Christian; Paula Schiffman; Carla D'Antonio

Management Objectives & Variables												
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Management assumptions / notes (shaded indicates research priority)	Current Monitoring of the Variable Value	Factors Affecting Management Objectives and Variables	Status of knowledge - throughout range (high, medium, low)	Status of knowledge - Carrizo (high, medium, low)	Potentially relevant citations	Suggested experts to contact
2e6	**e. Native shrub flora: Valley Sink Scrub Community**	Enhance native spp cover and richness within this community. (BIO-8,BIO-14)	Cover and richness of native spp.	> current levels								
2f1	**f. blue and Alvord oaks**	maintain and enhance populations (BIO-14)	reproduction (acorn production)	cyclical production (mast years)	fall							
2f2	**f. blue and Alvord oaks**	maintain and enhance populations (BIO-14, BIO-8)	recruitment of new individuals	presence of seedlings/young trees	any							
2f3	**f. blue and Alvord oaks**	maintain and enhance populations (BIO-14, BIO-8)	understory habitat	presence of intact soils, leaf litter, diverse humus biota	any							
17a	**soil crusts**	maintain and enhance habitat (BIO-14)	geographic extent	increase of crust habitat	any	Bald areas with high species diversity are scattered over landscape; many washes with well developed crust layer; crust also scattered across landscape in and among vegetation; per Roger Rosentreter if can establish perennial grass species, open areas in between will be colonized by crusts.		fragmentation by animals (livestock, humans, horses, dogs etc) and vehicles (cars, bicycles, motorcycles etc.); deposition (getting buried) under dust/soil deposits; getting crowded out by dense vegetation	medium - much info on role, threats, restoration of crust available; California specific info lacking	medium - some distribution info known; some species known		Roger Rosentreter, 208-373-3824, roger_rosentreter@blm.gov; Jayne Belnap, jayne_belnap@usgs.gov

Management Objectives & Variables												
Conservation Target		**Management Target (Plan Objective)**	**Variable**	**Desired Value of the Variable**	**Time of year the variable should be measured**	**Management assumptions / notes (shaded indicates research priority)**	**Current Monitoring of the Variable Value**	**Factors Affecting Management Objectives and Variables**	**Status of knowledge - throughout range (high, medium, low)**	**Status of knowledge - Carrizo (high, medium, low)**	**Potentially relevant citations**	**Suggested experts to contact**
17b	**soil crusts**	maintain and enhance habitat (BIO-14)	diversity	presence of a number of species: bryophytes, lichens, algae, cyano-bacteria	best during wet season							
17c	**soil crusts**	maintain and enhance habitat (BIO-14)	serial stage	mix of late and early successional species	best during wet season							
17d	**soil crusts**	maintain and enhance habitat (BIO-14)	physical integrity	not broken during dry season, intact	dry season							
12	**Noxious Weeds** (Hoary Cress, Tamarisk, Russian Knapweed, Bull thistle, yellow star thistle)	Decrease or eliminate distribution and abundance of key invaders (see list) PRIMARY (BIO-21)	presence; % cover, density	presence; <= distribution	Varies depending on species	All species unacceptable (eradicate), all have potential to spread.						

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34	**Annual forage on Section 15 allotments**	Manage annual biomass to protect soils from accelerated erosion and replenish soil nutrients through decomposition. (BIO-1, BIO-8)	RDM	RDM at least 500 lbs/acre at beginning of the next growing season.	October-November	Rangeland Health guideline for Cen Cal is 200 lbs/ac RDM. (0-25% slope) UC Ag & Nat Res. guideline is 300-400 lbs/ac RDM (0-20% slope). Caliente RMP guideline is 500 lbs/ac to allow 350 lbs/ac RDM (0-25% slope)	Compliance monitoring by BLM using Robel pole and estimated classes and also a modified comparative yield measurement.						Bartolome, Heady, Holecheck, Menke
Native animal species												
3a	**Giant Kangaroo Rat**	Maintain or enhance current populations in core areas. PRIMARY (BIO-3, BIO-4)	GKR density (active) (over large scale)	Maintain at least 20 individuals per hectare in core areas or in mosaic pattern in landscape (20 individuals indicate treatment action needed in core area)	August-Sept	Need for demographic plots across landscape (grids with marked individuals); track populations, demographics, and habitat variables		Drought; accumulation of excessive amounts of biomass; inappropriate grazing (too little, too much)				

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3b	**Giant Kangaroo Rat**	Maintain or enhance distribution in core areas. PRIMARY (BIO-3, BIO-4)	Distribution of active GKR	Maintain at least 20 individuals per hectare in core areas or in mosaic pattern in landscape (20 individuals indicate treatment action needed in core area)	August-Sept			Drought; accumulation of excessive amounts of biomass; inappropriate grazing (too little, too much)				
3c	**Giant Kangaroo Rat**	Maintain suitable habitat structure in core areas. PRIMARY (BIO-3, BIO-4)	fall RDM	RDM < 1600 lbs/acre (dry mass) and GKR (>20 individuals / hectare).	fall, Oct-Nov	a. Non-linear relationship between biomass and GKR (hypothesis is that there is optimal range); vs. b) GKR modify own environment by reducing biomass; Assuming that biomass is important variable at time when GKR is clipping and clearing precincts; measures other than or in addition to RDM such as predator and prey bases may also be appropriate.		Drought; accumulation of excessive amounts of biomass; inappropriate grazing (too little, too much)				

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3d	**Giant Kangaroo Rat**	Maintain suitable shrub cover in core areas. SECONDARY (BIO-3, BIO-8)	Shrub cover	0-30%	Anytime	GKR decline in areas with shrub cover >30%; Heerman's correlated with shrub cover >30%		Drought; accumulation of excessive amounts of biomass; inappropriate grazing (too little, too much)				
3e	**Giant Kangaroo Rat**	Prevent species disappearance from the Monument. (Alt 2, Non-core areas) (BIO-4, BIO-15)	Allow populations, distribution, and habitat structure to fluctuate naturally within non-core areas of CMS, TR, PHEP, CPC, and CPN subregions.	Take action to prevent disappearance from the Monument when variables in core areas continue to decline despite actions already taken in core areas.	Same as GKR core timing	The decision to apply management outside the core area, and what type of management to use, would follow the logic outlined in the Decision Tree table for management of SJV target species in non-core areas. Specific management actions would be based on evaluations of core area populations, the effectiveness of current management, and whether target animal populations are responding to current management. See also Management Guidelines to test actions proposed in core areas.						

Management Objectives & Variables													
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4a	**Blunt-nosed Leopard Lizard**	Maintain suitable herbaceous structure in core areas. PRIMARY (BIO- 3)	Biomass (herbaceous layer only)	<500 optimal; <1000 ok	Spring - Late April - Mid-May (post annual dry-up; after peak production)	Need to incorporate patch size component (e.g. what is minimum patch size of 'open area'?)		Shrub and herbaceous cover that exceeds habitat structure requirements				Germano, Juarez,
4b	**Blunt-nosed Leopard Lizard**	Maintain or enhance population in core areas. PRIMARY (BIO-3)	Presence/absence	One or more individual observed on single visit in favorable conditions; several seen on repeated visits	May and June	CDFG - 17 day census; other sampling intervals used (Saslaw et al. , 6 days)		Shrub and herbaceous cover that exceeds habitat structure requirements			CDFG 2004 survey	
4c	**Blunt-nosed Leopard Lizard**	Maintain suitable shrub cover in areas with unsuitable number/density of open/ available burrows in core areas. PRIMARY (BIO-3, BIO-8)	Shrub cover (burrow availability)	Inadequate number/density of open/available burrows AND <5-20% shrub cover	Anytime	Thermoregulation; habitat structure; prey base; When burrows are unavailable, shrub cover is more important.		Inadequate number/density of open / available burrows AND <5-20% shrub cover. Adequate burrow availability directly correlated with adequate kangaroo rat population.				
4d	**Blunt-nosed Leopard Lizard**	Maintain suitable shrub cover in core areas. SECONDARY BIO-3, BIO-8)	Shrub cover	0-30%	Anytime	Thermoregulation; habitat structure; prey base; Negative correlation between BNLL and shrub cover > 30%.		Shrub and herbaceous cover that exceeds habitat structure requirements				

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4e	**Blunt-nosed Leopard Lizard**	Maintain burrows in core areas. SECONDARY (BIO-3, BIO-4)	Burrow density and distribution	Common and available. Suitable burrows present with very few altered by human-induced causes. Small mammal burrowing activity is evident and not reduced by management activities. Few (<10%) disturbed	Adults: May-August; hatchlings: July-August	Need burrows to escape predators; thermoregulation; hibernation		Shrub and herbaceous cover that exceeds habitat structure requirements				

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4f	**Blunt-nosed Leopard Lizard**	Prevent species disappearance from the Monument. (Alt 2, Non-core areas) (BIO-4, BIO-15)	Allow populations, and herbaceous structure to fluctuate naturally within non-core areas of CMS, PHEP, CPC, and CFS.	Take action to prevent disappearance from the Monument when variables in core areas continue to decline despite actions already taken in core areas.	Same timing as in BNLL core areas	The decision to apply management outside the core area, and what type of management to use, would follow the logic outlined in the Decision Tree table for management of SJV target species in non-core areas. Specific management actions would be based on evaluations of core area populations, the effectiveness of current management, and whether target animal populations are responding to current management. See also Management Guidelines to test actions proposed in core areas.						
8a	**Kit Fox**	Maintain and enhance populations in core areas. (BIO-3, BIO-4)	Kit fox abundance	>= current population size	quarterly	If populations declining, may need to look at fecundity and juvenile survival. SJKF function at larger scale than other spp. Distribution is different than before. We need to keep in focus to learn more.		Build up of excessive amounts of biomass; predation; inappropriate grazing (too much, too little); fluctuating prey base			Recovery Plan for Upland Species of the San Joaquin Valley, CA, USFWS	Brian Cypher, 661-837-5061, bcypher@esrp.org

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8b	**Kit Fox**	Monitor predator abundance in core areas. (BIO-3, BIO-4)	Predator abundance	Below "detrimental" levels	quarterly	Needs to be determined		Build up of excessive amounts of biomass; predation; inappropriate grazing (too much, too little); fluctuating prey base				
8c	**Kit Fox**	Maintain and enhance distribution in core areas. (BIO-3, BIO-4)	Kit fox distribution	>= current distribution	quarterly	If distribution declining, may need to look at fecundity and juvenile survival		Build up of excessive amounts of biomass; predation; inappropriate grazing (too much, too little); fluctuating prey base				
8d	**Kit Fox**	Maintain or enhance suitable habitat structure: shrub cover in core areas. (BIO-3, BIO-8)	Shrub cover	<30%	Anytime	Increased shrub cover associated with increase in fox mortality (coyotes)		Build up of excessive amounts of biomass; predation; inappropriate grazing (too much, too little); fluctuating prey base				

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8e	**Kit Fox**	Maintain or enhance suitable habitat structure: veg. ht. in core areas. (BIO-3, BIO-8)	Vegetation height	< Kit fox eyelevel (< 8 inches); patch size?	Anytime	affects prey base, predation rates		Build up of excessive amounts of biomass; predation; inappropriate grazing (too much, too little); fluctuating prey base				
8f	**Kit Fox**	Maintain prey abundance (nocturnal rodents, other small mammals) in core areas. (BIO-3, BIO-4)	Abundance of nocturnal mammals (jackrabbits, cottontails, kangaroo rats, etc.)	Absence, low numbers (need to look at data to determine whether there are thresholds)	quarterly			Build up of excessive amounts of biomass; predation; inappropriate grazing (too much, too little); fluctuating prey base				

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8g	**Kit Fox**	Prevent species disappearance from the Monument. (Alt 2, Non-core areas) (BIO-4, BIO-15)	Allow suitable habitat structure to fluctuate naturally within non-core areas of CMS, PHEP, CPC, and SL subregions.	Take action to prevent disappearance from the Monument when variables in core areas continue to decline despite actions already taken in core areas.	Same timing as SJKF core areas	The decision to apply management outside the core area, and what type of management to use, would follow the logic outlined in the Decision Tree table for management of SJV target species in non-core areas. Specific management actions would be based on evaluations of core area populations, the effectiveness of current management, and whether target animal populations are responding to current management. See also Management Guidelines to test actions proposed in core areas.						

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10a	**San Joaquin Antelope Squirrel**	Maintain suitable habitat structure: herbaceous biomass in core areas. PRIMARY (BIO-3, BIO-4)	fall RDM	<1600 lbs/ acre and GKR (> 20 individuals per hectare)	Oct-Nov, before rains	prefer open structure, similar to GKR (but SJAS don't manipulate biomass like GKR). Prefer shrubs but can occur without shrubs. Measures other than or in addition to RDM such as predator and prey bases may also be appropriate.						
10b	**San Joaquin Antelope Squirrel**	Maintain/ enhance distribution in core areas. PRIMARY (BIO-3, BIO-4)	Presence of individuals	>= existing distribution. 2 or more individuals on std. transect used to locate core areas.	Spring through Summer	Need to determine distribution						
10c	**San Joaquin Antelope Squirrel**	Maintain suitable habitat structure:shrub cover in core areas. SECONDARY (BIO-3, BIO-8)	Shrub cover	0-50%	Anytime	Populations decline with shrub cover > 50%; assuming a reduction in grass/forb production						

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10d	**San Joaquin Antelope Squirrel**	Prevent species disappearance from the Monument. (Alt 2, Non-core areas) (BIO-4, BIO-15)	Allow populations, suitable herbaceous structure to fluctuate naturally within non-core areas of CMS, PHEP, and CPC subregions.	Take action to prevent disappearance from the Monument when variables in core areas continue to decline despite actions already taken in core areas.	Same as SJAS core timing	The decision to apply management outside the core area, and what type of management to use, would follow the logic outlined in the Decision Tree table for management of SJV target species in non-core areas. Specific management actions would be based on evaluations of core area populations, the effectiveness of current management, and whether target animal populations are responding to current management. See also Management Guidelines to test actions proposed in core areas.						
30	**bats - pallid**	TBD										

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18	**Burrowing owl**	Maintain current distribution and population size (BIO-4)	nesting pairs with successfully fledged young	>= current levels	late May-July	Carrizo is one of four study sites (Carrizo, Lemoore, SF Bay Area, Imperial Valley); represents grassland area; predation is high in Carrizo compared to other sites. Assume burrow availability not limiting factor.		predation	medium - high California wide study mostly completed, monograph being prepared by D. Rosenberg	medium - high 1997 - 2003 data collected; many papers / reports produced; comprehensive monograph in prep now; winter use pattern not known; predation not understood		Dan Rosenberg, Utah State University, 435-797-8167, dan.rosenberg@usu.edu
11a	**Fairy Shrimp**	Maintain current distribution, population size and range (BIO-4, BIO-12)	Presence/absence in all known or potential pools	>= current frequency of occurrence across range	Late January - March	*Artemia* and *Lindahli* widespread and abundant, the 'abnoxious shrimp'. B. lynchi north of Monument, but not detected on Monument yet. B. longiantenna on north and south end. B. campestris at Ansin sag pond and Soda Lake - only 2 places found in CA although occurs in other states. B. mackini at Simmler Road and Soda Lake, and 7-mile Road.		modification of hydrologic regime or water chemistry	medium - distribution known, but other factors not known	medium - good distribution map of B. longiantenna and other species; but water chemistry, "phenology", ecological relationship unknown; B. lynchi distribution less known, could be present but just not detected yet.	draft vernal pool recovery plan; federal register notices	Mary Belk, 210-224-7743, dbelk@texas.net

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11b	**Fairy Shrimp**	Replace and maintain cyst bank (BIO-4, BIO-12)	Presence of females with mature cysts	Presence of females with mature cysts	Late January - March	If mature cysts found on females, cyst bank is being replaced		females not living long enough to produce mature cysts to replace cyst bank	low - medium - methods probably developed for measuring cyst output but may not be practical for "everyday" monitoring	low - medium - unknown if assumption of mature cysts = cyst bank replacement is valid; what is mature cyst?		
13a	**Sphinx moth**	Maintain current distribution, population size and range (BIO-4)	Presence / absence in all known locations or potential habitat	>= current distribution	Late January - mid-February (*adult emergence*)	Assume that population is being maintained (including pupa-bank) if adults emerge and Camissonia is persistent throughout the reproductive/flight season (moth)		trampling of Camissonia, eggs, larva & resting adults; degradation or loss of Camissonia germination sites	low - E. euturpe distribution uncertain with new population discoveries; if Carrizo and Cuyama pops are E. euturpe, much more widespread than previously thought; genetic relationship to Lassen, Atascadero, Pinnacles and Walker Basin pops needs to be done	medium - Peter Jump has good habitat "search image" for within Carrizo; much of likely habitat surveyed; high confidence of E. euterpe by Jump and others using traditional taxonomic methods; genetic work not completed yet		Peter Jump, 805-933-9912, hpjump@earthlink.net Ken Osborne; Paul Johnson

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13b	**Sphinx moth**	Maintain suitable habitat BIO-4, BIO-8)	Sparsely vegetated washes with Camissonia campestris	Camissonia is common in favorable years	Late January - late March (*plant presence*)	Trampling (grazing and human use) in washes is detrimental for host plant, adult moths and larvae		trampling of Camissonia; degradation or loss of Camissonia germination sites	see above	see above		
14	**Spade-foot toad**	Maintain current distribution, population size and range (BIO-4, BIO-12)	Presence/absence of tadpoles in all known or other ponds	Water present long enough to complete life cycle	Breeding season: January - April	Livestock use could be detrimental if hydrology altered (e.g. water consumption), water chemistry effects unknown; disturbance to ponds could be detrimental to eggs; Little known about upland habitat		water drying up before tadpoles can transform; trampling of eggs	medium - emergence cues not understood; distribution and abundance not known	medium - many locations known but not on GIS map yet	draft vernal pool recovery plan	Jennifer Matos, 818-677-2158, jennifer.matos@csun.edu
16	**Vernal pool inverte-brates**	Maintain current distribution, population size and species diversity (BIO-4, BIO-12)	Presence/absence in all known or potential locations	water present long enough to complete life cycle	Late January - March	observed in water troughs, vernal pools, with and without tadpoles or fairy shrimp; observed in locations that supported fairy shrimp earlier the same season.		water drying up before life cycle is completed? modification of hydrologic regime or water chemistry.	low - California wide ostracod survey underway by Mark Angelos, status of knowledge for other species unknown	low - distribution, species and relative importance unknown		Mark Angelos, Natural History Museum of LA, 310-615-9797, meangelos@mindspring.com

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26	**LeConte's thrasher**	Maintain current nesting populations (BIO-4, BIO-8)	Presence of LETH in suitable habitat; density of breeding pairs, active nests, # of fledglings	Persistence of current populations; suitable shrub cover for nesting structure; saltbush or ephedra >3' in stands, found in drainages or alluvial fans; open/bare ground for foraging away from shrubs.	Jan-March	Assume shrub objectives cover this target?		Wildfire.	Medium.	Low, habitat and annual sightings documented as well as some nest sites known; little known about fledgling success	CDFG Bird species of special concern 2008.	Al Schmierer, S. Fitton.

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5a	**Mountain Plover**	Maintain at least 3 of the core areas of 50-200 acres suitable for plovers by Sept. 1 if no suitable habitat available in non-core areas on the Monument. PRIMARY (BIO-3, BIO-4, BIO-5)	suitable by Sept 1 thru when they leave	low vegetation (< 2 inches)and patch size	30 days before they arrive	Winter use depends on very low structure, whether naturally occurring or management-induced. 3 areas maintained are chosen to include historical use in North, Central and Southern areas of the Monument.	Annual winter surveys	Vegetation height greater than habitat structure requirements. Shrub and herbaceous cover that exceeds habitat structure requirements		Medium - we know CPNM provides habitat free of pesticides; areas that have been burned, grazed by sheep and livestock in the valley floors have provided good habitat. plovers prefer lack of or very low vegetation height and 50-200 acre patch size though smaller areas may be used.		Sam Fitton, 513-523-4599, sfitton@woh.rr.com Kevin Hunting, 916-324-9265, khunting@dfg.ca.gov Fritz Knopf

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5b	**Mountain Plover**	Maintain low shrub cover in core areas. SECONDARY (BIO-5, BIO-8)	Shrub cover	< 5%; with minimum patch size of 10-200 acres	October-November	Plovers avoid areas with shrubs		Shrub and herbaceous cover that exceeds habitat structure requirements		medium - historical habitat sites well known; birds are monitored annually and detections included in fall raptor surveys; distribution map needs to be generated; annual MOPL surveys need to be continued	Distribution and Habitat Associations of the Mountain Plover in California. Hunting, Fitton, Edson	Sam Fitton, 513-523-4599, sfitton@woh.rr.com Kevin Hunting, 916-324-9265, khunting@dfg.ca.gov Fritz Knopf
5c	**Mountain Plover**	Maintain low biomass in core areas. SECONDARY (BIO-5, BIO-8)	Biomass	<500 lbs/acre	October-March	Winter use depends on very low structure, whether naturally occurring or management-induced. Structure appears to be the more limiting factor, unclear about biomass		Shrub and herbaceous cover that exceeds habitat structure requirements		Medium - areas that have been burned, grazed by sheep and livestock in the valley floors have provided good habitat		
29	**condor**	TBD (BIO-6)										
25	**sandhill crane**	TBD (BIO-4)										

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1a	**Pronghorn**	Maintain suitable vegetation height for fawning PRIMARY. (BIO-16, BIO-8)	Vegetation height	15-25 inches herbaceous veg over 80% of the fawning area (areas of <15% slope)	March-April	Importance of patch size/extent of fawning area unknown		Drought; inappropriate grazing			Pronghorn Ecology and Management, O'Gara and Yoakum; USGS studies	Jim Yoakum
1b	**Pronghorn**	Maintain suitable shrub cover for fawning. PRIMARY (BIO-16, BIO-8)	Shrub cover, density and distribution	patches of 5-30% cover; 15-25 inches tall, Distribution of patches?	Anytime	In appropriate habitats; currently using cover as surrogate for density and pattern of distribution		Drought; inappropriate grazing			Kindshee (blue mt. study) reports 5-30%	
1c	**Pronghorn**	Maintain suitable forage. PRIMARY (BIO-16)	Forb abundance and % cover	Maintain or exceed current cover and abundance of palatable forb species	Two sampling dates: March-April; August	Forbs important to doe fecundity and fawn survival; before breeding season, after fawning		Drought; inappropriate grazing; invasive by noxious, unpalatable plant species				
1d	**Pronghorn**	Provide adequate water PRIMARY (BIO-16)	available water	water source every two miles	year round							
1e	**Pronghorn**	Maintain or enhance fawn-to-doe ratios SECONDARY (BIO-16)	fawn:doe	Maintain a minimum of 25 fawns/100 does	July	Fawn production and survival is key to population health; will vary annually (though not clearly linked patterns to climatic variation).						
1f	**Pronghorn**	Enhance population size SECONDARY (BIO-16)	number of pronghorn	>= 250	January	Need to determine carrying capacity beyond threshold of 250						

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1g	**Pronghorn**	Maintain buck-to-doe ratio SECONDARY (BIO-16)	buck:doe	Maintain a minimum of 25 bucks/100 does + minimum population size of 250	January	This management ratio defines a healthy population; If hunting program is reinitiated, population dynamics need to be modeled to determine ideal ratio.						
1h	**Pronghorn**	Promote travel across landscape (BIO-16)	Fences	All fences modified for pronghorn passage/unnecessary fences removed	Anytime	Fences restrict movement of both individuals and herds; tumbleweeds pile up along fences and further restrict movement even if modified	Fences modified or removed 2-3 times/yr but not monitored as to their success					
15a	**Elk**	Maintain and expand foraging habitat. (BIO-17)	Presence of elk	Elk use in 90% of the Avena belt within the CFN and CPN subregions.	November	Elk prefer areas that have been ungrazed for ___ # of years. (based on 2005 & 2006 observations of collared elk that were 30/31 days in nongrazed and 1/31 days in grazed areas)				low knowledge on diet.	Big book of Elk.	Mc-Cullough, Brashares
15b	**Elk**	Maintain suitable vegetation height for calving. PRIMARY (BIO-17, BIO-8)	Vegetation height	>15 inches veg over 80% of the calving area (within appropriate area?)	March-April			Drought; inappropriate grazing				

Management Objectives & Variables												
Conservation Target		**Management Target (Plan Objective)**	**Variable**	**Desired Value of the Variable**	**Time of year the variable should be measured**	**Management assumptions / notes (shaded indicates research priority)**	**Current Monitoring of the Variable Value**	**Factors Affecting Management Objectives and Variables**	**Status of knowledge - throughout range (high, medium, low)**	**Status of knowledge - Carrizo (high, medium, low)**	**Potentially relevant citations**	**Suggested experts to contact**
15c	**Elk**	Provide adequate water PRIMARY (BIO-17)	available water	water source every two miles	year round							
15d	**Elk**	Prevent cow displacement during calving SECONDARY (BIO-17)	-	-	-	-	-	-	-	-	-	-
15e	**Elk**	Maintain or enhance calf-to-cow ratios SECONDARY (BIO-17)	calf:cow	Maintain a minimum of 25 fawns/100 does	July	Calf production and survival is key to population health; will vary annually (though not clearly linked patterns to climatic variation).						
15f	**Elk**	Enhance population size SECONDARY (BIO-17)	number of elk	>= 500, including both sub herds.	November	Need to determine carrying capacity beyond this threshold						
15g	**Elk**	Maintain bull-to-cow ratio SECONDARY (BIO-17)	bull:cow	Maintain a minimum of 25 bulls/100 cows + minimum population size of 250	November	This management ratio defines a healthy population; If hunting program is reinitiated, population dynamics need to be modeled to determine ideal ratio.						

Management Objectives & Variables												
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Management assumptions / notes (shaded indicates research priority)	Current Monitoring of the Variable Value	Factors Affecting Management Objectives and Variables	Status of knowledge - throughout range (high, medium, low)	Status of knowledge - Carrizo (high, medium, low)	Potentially relevant citations	Suggested experts to contact
24a	**Grasshopper sparrow**	Maintain suitable vegetation structure for nesting PRIMARY. (BIO-4, BIO-8, BIO-18))	Vegetation structure	Vegetation height = 10" to 20+", composed of annual and/or perennial grasses with some scattered shrubs-w/a pref. for bunch grasses; height for perching and cover but open space for quick movement to draw predators from nest (patchiness)	Dec-Jan	In most years only mgmt. necessary will be protection of habitat. Need to develop annual monitoring for species and habitat.	Plots set up for monitoring	Drought, wildfire.	Low.	Low.	CDFG Bird species of special concern 2008	A. Jones
24b	**Other grassland birds**	TBD (BIO-4, BIO-8, BIO-18)										
27	**tricolor blackbirds**	TBD (BIO-4, BIO-8)										

Management Objectives & Variables												
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Management assumptions / notes (shaded indicates research priority)	Current Monitoring of the Variable Value	Factors Affecting Management Objectives and Variables	Status of knowledge - throughout range (high, medium, low)	Status of knowledge - Carrizo (high, medium, low)	Potentially relevant citations	Suggested experts to contact
28a	**landscape scale ecosystem functioning**	Maintain the diversity of habitats (BIO-8)	diversity of habitats			Prevent disruption of whole systems. Fence re-alignments on ecosystem boundaries. Make sure landscape-ecosystem functioning is not compromised by actions or distribution of actions. Maintain diversity of habitats and diversity of native species within such habitats.						
28b	**landscape scale ecosystem functioning**	Maintain the diversity of native spp within habitats (BIO-4, BIO-8)	spp diversity within habitats									
29	**Long-billed curlew**	TBD										
30	**Wintering raptors**	TBD (BIO-4, BIO-18)										

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Management Objectives & Variables						*Management Guidelines:* Grazing	
Conservation Target		**Management Target (Plan Objective)**	**Variable**	**Desired Value of the Variable**	**Time of year the variable should be measured**	**Actions and Constraints to the Actions**	**Actions to test and evaluate**
Native plant species							
9a	**Caulanthus**	Maintain distribution and size of existing populations (BIO-2, BIO-14)	Distribution and population size; reproducing populations	>= current levels	January - May	No recommended action to meet this objective. CONSTRAINT: No grazing winter and spring in known habitat. SECTION 15: No grazing winter and spring in known habitat.	
9b	**Caulanthus**	Restore populations to areas of known historical range (BIO-14, BIO-8)	Success (establishment and reproduction) of restored populations in historical range	Self-sustaining populations in introduced range	January - May	NA	
19	**wooly threads**	Maintain current distribution and population size (BIO -2, BIO-14	Presence/absence in known or appropriate locations	>= current distribution and condition across landscape relative to year's precipitation	Feb-Apr	SECTION 15: No specific restrictions if grazing continues to be non-detrimental to populations.	
20a	**Lepidium jaredii**	maintain or enhance populations (BIO-2, BIO-14)	reproduction	some seed production in most years, large seed production occasionally (as in 2008)	Apr-May	No recommended action to meet this objective. CONSTRAINT: don't graze Lepidium habitat	
20b	**Lepidium jaredii**	maintain or enhance populations (BIO-2, BIO-14)	population size	in most years, some presence in known habitat, occasional large displays (as in 2008)	Mar-May	No recommended action to meet this objective. CONSTRAINT: don't graze Lepidium habitat	
32a	**Amsinckia vernicosa var. furcata**	maintain or enhance populations (BIO-2, BIO-14)	reproduction	some seed production in most years, large seed production occasionally	Mar-May	No recommended action to meet this objective.	Evaluate effects of grazing, if species is within treatment area
32b	**Amsinckia vernicosa var. furcata**	maintain or enhance populations (BIO-2, BIO-14)	population size	in most years, some presence in known habitat, occasional large displays	Mar-May	No recommended action to meet this objective.	Evaluate effects of grazing, if species is within treatment area
33a	**Acanthomintha obovata ssp. cordata (clay species)**	maintain or enhance populations (BIO-2, BIO-14)	reproduction	some seed production in most years, large seed production occasionally	Apr-Jul	No recommended action to meet this objective.	Evaluate effects of grazing, if species is within treatment area

Management Objectives & Variables						*Management Guidelines:* Grazing	
Conservation Target		**Management Target (Plan Objective)**	**Variable**	**Desired Value of the Variable**	**Time of year the variable should be measured**	**Actions and Constraints to the Actions**	**Actions to test and evaluate**
33b	**Acanthomintha obovata ssp. cordata**	maintain or enhance populations (BIO-2, BIO-14)	population size	in most years, some presence in known habitat, occasional large displays (like in 2008)	Apr-Jul	No recommended action to meet this objective.	Evaluate effects of grazing, if species is within treatment area
22	**Clay species**	Maintain current distribution and population size	Presence/absence in known or appropriate locations	>= current distribution and condition across landscape relative to year's precipitation	Mar-Jun	No recommended action to meet this objective. CONSTRAINT: No grazing populations of Antirhynum ovatum	Evaluate the effects of grazing on clay species.
31	**vernal pools**	TBD	0	0	0		
2a1	**a. Bunch grasses (Poa secunda, Nasella cernua, Nasella pulchra, Sitanion hystrix, Achnatherum speciosa)**	Maintain or enhance populations PRIMARY (maintain pop. parameters) (BIO-2, BIO-14)	a. Seed production [presence of inflorescences (sexual) or new genets (asexual)]	Presence of inflorescences in > 50% of population	Varies depending on species (February-May)	No recommended action to meet this objective. CONSTRAINT: No grazing before seedset (starting Feb for POSE and March for NACE) until seedfall.	

Management Objectives & Variables						*Management Guidelines:* Grazing	
Conservation Target		**Management Target (Plan Objective)**	**Variable**	**Desired Value of the Variable**	**Time of year the variable should be measured**	**Actions and Constraints to the Actions**	**Actions to test and evaluate**
2a2	**a. Bunch grasses (Poa secunda, Nasella cernua, Nasella pulchra, Sitanion hystrix, Achnatherum speciosa)**	Maintain or enhance populations PRIMARY (maintain pop. parameters) (BIO-2, BIO-14)	b. Recruitment of new individuals and Retention of existing. Measure through cover and frequency.	Recruitment and survival of new individuals. Maintain or enhance the average frequency of Poa secunda and Nassella spp. seedlings at more than 20 per plot during a five year period. Initiate active restoration when the average frequency of Poa secunda and Nassella spp. seedlings is ≤ 10 seedlings per plot. Frequency plot = large "inter-plot areas"	February for seedlings; late spring (May/June) for new juveniles and adults	ACTION: Poa secunda: In valley subshrub scrub communities with soil types 3 and 8, apply grazing Nov-May (the grazing timing used from 1997–2003). Nassella species: In valley grassland and subshrub scrub communities with soil type 3, apply grazing Nov-May (the grazing timing used from 1997–2003). CONSTRAINT: Set max. utilization of the current annual year's growth between 25-40% initially, considering the timing of grazing and plant phenology, the resource condition, and the site resiliency. Poa secunda: In valley and foothill grassland communities with soil type 7, avoid grazing Nov-May (the grazing timing used from 1997–2003). In pastures with POSE and recent cultivation: Avoid grazing. Nassella species: In valley and foothill grassland and subshrub scrub communities with soil types 7 and 8, avoid grazing Nov-May (the grazing timing used from 1997–2003).	Set up a study to test the mechanisms by which POSE and NACE increase at the CPNM.
2a3	**a. Bunch grasses (Poa secunda, Nasella cernua, Nasella pulchra, Sitanion hystrix, Achnatherum speciosa)**	Maintain stable size structure; PRIMARY (maintain pop. parameters) (BIO-2, BIO-14)	Cover, basal diameter	Maintain range of sizes.	February-May	CONSTRAINT: Prevent grazing in some areas with Bluegrass and some areas with Needlegrasses to allow maintenance of older/ larger plants. Avoid livestock grazing when inflorescences are developing and present. (Feb. for bluegrass, March for needlegrass).	

Management Objectives & Variables						*Management Guidelines:* Grazing	
Conservation Target		**Management Target (Plan Objective)**	**Variable**	**Desired Value of the Variable**	**Time of year the variable should be measured**	**Actions and Constraints to the Actions**	**Actions to test and evaluate**
2a4	**a. Bunch grasses (Poa secunda, Nasella cernua, Nasella pulchra, Sitanion hystrix, Achnatherum speciosa)**	Maintain or enhance spatial distribution of bunch grass populations PRIMARY (Maintain community parameters) (BIO-2, BIO-14)	Population boundary	Maintain or enhance population boundary within 'range of natural variation' (e.g. allowing for annual expansion and contraction	February-May	ACTION: ***Poa secunda:*** In valley subshrub scrub communities with soil types 3 and 8, apply grazing Nov-May (the grazing timing used from 1997–2003). ***Nassella species***: In valley grassland and subshrub scrub communities with soil type 3, apply grazing Nov-May (the grazing timing used from 1997–2003). CONSTRAINT: Set max. utilization of the current annual year's growth between 25-40% initially, considering the timing of grazing and plant phenology, the resource condition, and the site resiliency. ***Poa secunda***: In valley and foothill grassland communities with soil type 7, avoid grazing Nov-May (the grazing timing used from 1997–2003). In pastures with POSE and recent cultivation: Avoid grazing. ***Nassella species:*** In valley and foothill grassland and subshrub scrub communities with soil types 7 and 8, avoid grazing Nov-May (the grazing timing used from 1997–2003). SECTION 15: Set max. utilization of the current annual year's growth between 25-40% initially, considering the timing of grazing and plant phenology, the resource condition, and the site resiliency.	
2b1	**b. Rhizomatous species (Distichlis spicata, Leymus triticoides)**	Maintain or enhance population patch size PRIMARY (BIO-2, BIO-14)	Patch size (e.g. %cover over larger scale)	Maintain or enhance patch size (No value for this variable yet)	Anytime (preferably peak growth period)		

Management Objectives & Variables						*Management Guidelines:* Grazing	
Conservation Target		**Management Target (Plan Objective)**	**Variable**	**Desired Value of the Variable**	**Time of year the variable should be measured**	**Actions and Constraints to the Actions**	**Actions to test and evaluate**
2b2	**b. Rhizomatous species (Distichlis spicata, Leymus triticoides)**	Maintain or enhance spatial distribution PRIMARY (BIO-2, BIO-14)	Population boundary	Maintain or enhance distribution (No value for this variable yet)	Anytime (peak growth period)		
2c1	**c. Native annual flora**	Maintain or enhance native annual species richness and cover PRIMARY (BIO-2, BIO-14)	Native annual species richness and cover	>= current levels. Maintain or enhance the average relative cover of native annual plant species at more than 20% and the average native annual plant species richness at more than 5 during a five year period. Initiate active restoration when the average relative cover of native annual plant species is ≤ 20% and/or the average native annual plant species richness is ≤ 3.5 during a five year period. Plant cover and richness = Daubenmire plot.	Spring-active: March-May; Summer-active: June-October	No recommended action to meet this objective. CONSTRAINT: In valley and foothill grassland and scrub communities (soil types 3, 7, and 8), avoid grazing Nov-May (the grazing timing used from 1997–2003). When livestock grazing is applied to meet another target objective, avoid livestock use in spring during years and within pastures with exceptional expressions* of native annual plants. (* exceptional expressions = native annual spp make up 60%-80% of the total annual plant spp relative cover)	Evaluate the use of livestock to reduce fall RDM to a range that enhances native annual species composition in the spring. assumption = reduced RDM in fall promotes increase native annual species in spring so long as other factors are appropriate (timing and amount of rainfall, temperatures) Experimentally test a dormant season (June-October) grazing regime for the enhancement of native annual plant species richness and cover in select valley and foothill grassland community sites.
2c2	**c. Native annual flora**	Maintain native annual seed bank PRIMARY (BIO-2, BIO-14)	Seed production during favorable years	"Adequate" proportion of population producing seeds	Varies depending on species (April-October)	No recommended action to meet this objective. CONSTRAINT: Avoid livestock use in green season and before seedfall.	

Management Objectives & Variables						*Management Guidelines:* Grazing	
Conservation Target		**Management Target (Plan Objective)**	**Variable**	**Desired Value of the Variable**	**Time of year the variable should be measured**	**Actions and Constraints to the Actions**	**Actions to test and evaluate**
2c3	**c. Native annual flora**	Reduce abundance of exotic annual grasses and forbs SECONDARY (BIO-21)	% cover, richness, abundance, height of exotic species	< current levels	Spring-active: March-May; Summer-active: June-October	No recommended action to meet this objective. CONSTRAINT: In valley and foothill grassland and scrub communities, in soil types 3, 7and 8, avoid grazing Nov-May (the grazing timing used from 1997–2003).	Evaluate the use of livestock to reduce exotic summer annuals (tumbleweeds?).
2g	**Grassland Community**	Maintain matrix of bunchgrasses and native annual plant species PRIMARY (Maintain community parameters) (BIO-8)	Composition and % cover of non-bunchgrass plant species. Frequency of Poa secunda and Nassella species seedlings; relative or absolute cover of native annual plant species; native annual plant species richness.	See 2a2 and 2c1.	March-May	ACTION: Complete actions for both 2a1/2a2 (Maintain or enhance bunch grass populations-reproduction and recruitment) and 2c1 (Maintain or enhance species richness and cover of native annual flora) The Management Objective would be accomplished by each of these actions, no additional action needed for the management objective alone.	
2d	**d. Native perennial herbs & bulbs**	TBD (BIO-14)	0		0		
2e1	**e. Native shrub flora (Atriplex polycarpa, Atriplex spinifera, Ephedra spp)**	Maintain or enhance current cover and population distribution PRIMARY (BIO-8, BIO-14)	% cover, areal extent	> or = to current amount	Summer active: June-November; Winter active: December-May; depends on species	CONSTRAINT: Avoid grazing in summer or growing season for target shrub species. Remove livestock if shrubs are not meeting form class criteria (to be developed). Prevent grazing in some areas to allow maintenance of older/ larger plants. SECTION 15: Avoid grazing in summer or growing season for target shrub species. Remove livestock if shrubs are not meeting form class criteria (to be developed).	

Management Objectives & Variables						*Management Guidelines:* Grazing	
Conservation Target		**Management Target (Plan Objective)**	**Variable**	**Desired Value of the Variable**	**Time of year the variable should be measured**	**Actions and Constraints to the Actions**	**Actions to test and evaluate**
2e2	**e. Native shrub flora (Atriplex polycarpa, Atriplex spinifera, Ephedra spp)**	Recruitment in favorable years to maintain age structure PRIMARY (BIO-8, BIO-14)	Seedling survival during and following recruitment years	Recruitment and survival of new individuals; range of sizes and ages	Depends on species	No recommended action to meet this objective. CONSTRAINT: Avoid grazing in summer or growing season for target shrub species. Prevent grazing in some areas to allow maintenance of older/ larger plants.	Evaluate whether livestock grazing can provide germination microsites and seedling establishment opportunities for native shrubs.
2e3	**e. Native shrub flora: Upper Sonoran Sub-Shrub Scrub Community**	Enhance the areal extent of this community. (BIO-8, BIO-14)	acres	> or = to current amount	anytime (remote sensing)		
2e4	**e. Native shrub flora: Upper Sonoran Sub-Shrub Scrub Community**	Enhance native spp cover and richness within this community. (BIO-8, BIO-14)	Cover and richness of native spp.	> current levels	0	No recommended action to meet this objective. CONSTRAINT: In valley and foothill upper sonoran subshrub scrub communities (soil types 3, 7, and 8) avoid grazing Nov-May (the grazing timing used from 1997-2003).	Monitor and evaluate Nov-May grazing regime across Sec. 15 grazing leases to determine if valley and foothill upper sonoran subshrub scrub results from 1997–2003 monitoring study are supported across additional Carrizo scrub sites. Adjust subsequent grazing regime across Sec. 15 sites accordingly.
2e6	**e. Native shrub flora: Valley Sink Scrub Community**	Enhance native spp cover and richness within this community. (BIO-8,BIO-14)	Cover and richness of native spp.	> current levels	0	No recommended action to meet this objective. CONSTRAINT: No grazing. SECTION 15: No grazing.	
2f1	**f. blue and Alvord oaks**	maintain and enhance populations (BIO-14)	reproduction (acorn production)	cyclical production (mast years)	fall	No recommended action to meet this objective. CONSTRAINT: minimize livestock feeding on acorns.	

Management Objectives & Variables						*Management Guidelines:* Grazing	
Conservation Target		**Management Target (Plan Objective)**	**Variable**	**Desired Value of the Variable**	**Time of year the variable should be measured**	**Actions and Constraints to the Actions**	**Actions to test and evaluate**
2f2	**f. blue and Alvord oaks**	maintain and enhance populations (BIO-14, BIO-8)	recruitment of new individuals	presence of seedlings/young trees	any	No recommended action to meet this objective. CONSTRAINT: avoid grazing to minimize trampling of, and foraging on, young oaks. SECTION 15: Assess oak stands and individuals and consider site specific guidelines to meet objectives.	
2f3	**f. blue and Alvord oaks**	maintain and enhance populations (BIO-14, BIO-8)	understory habitat	presence of intact soils, leaf litter, diverse humus biota	any	No recommended action to meet this objective. CONSTRAINT: keep livestock away from understory.	
17a	**soil crusts**	maintain and enhance habitat (BIO-14)	geographic extent	increase of crust habitat	any	No recommended action to meet this objective. CONSTRAINT: minimize trampling in sensitive areas	investigate relationship of grazing to crusts and introduced weedy grasses
17b	**soil crusts**	maintain and enhance habitat (BIO-14)	diversity	presence of a number of species (bryophytes, lichens, algae, cyanobacteria)	best during wet season	No recommended action to meet this objective. CONSTRAINT: minimize trampling in sensitive areas	investigate relationship of grazing to crust diversity
17c	**soil crusts**	maintain and enhance habitat (BIO-14)	serial stage	mix of late and early successional species	best during wet season	No recommended action to meet this objective. CONSTRAINT: minimize trampling in sensitive areas	
17d	**soil crusts**	maintain and enhance habitat (BIO-14)	physical integrity	not broken during dry season, intact	dry season	No recommended action to meet this objective. CONSTRAINT: minimize trampling in sensitive areas	
12	**Noxious Weeds (Hoary Cress, Tamarisk, Russian Knapweed, Bull thistle, yellow star thistle)**	Decrease or eliminate distribution and abundance of key invaders (see list) PRIMARY (BIO-21)	presence; % cover, density	presence; <= distribution	Varies depending on species	No recommended action to meet this objective. CONSTRAINT: Avoid grazing of untreated populations to prevent spread. Continue to prevent supplemental feeding of livestock outside shipping corrals.	

Management Objectives & Variables						Management Guidelines: Grazing	
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Actions and Constraints to the Actions	Actions to test and evaluate
34	**Annual forage on Section 15 allotments**	Manage annual biomass to protect soils from accelerated erosion and replenish soil nutrients through decomposition. (BIO-1, BIO-8)	RDM	RDM at least 500 lbs/acre at beginning of the next growing season.	October-November	SECTION 15: Livestock turnout: 1,000 lbs/ac. and 2" green growth, or 1,200 lbs/ac. without green growth. Livestock removal: 700 lbs/ac. at end of growing season (May 31) or if grazing is applied during summer, set another value that results in at least 500 lbs/ac RDM.	
Native animal species							
3a	**Giant Kangaroo Rat**	Maintain or enhance current populations in core areas. PRIMARY (BIO-3, BIO-4)	GKR density (active) (over large scale)	Maintain at least 20 individuals per hectare in core areas or in mosaic pattern in landscape (20 individuals indicate treatment action needed in core area)	August-Sept	Action: Apply livestock grazing (when GKR density <20 individuals per hectare **and** RDM >1,600 lbs/acre and RDM is composed of thick, non-native grasses such as Bromus and Hordeum spp. (or other persistent exotics), making up over 70% of plant composition in the sampling area. Remove livestock when minimums (1,000 lbs/acre RDM or biomass, depending on time of year) are reached, to create large suitable areas in the core area and/or a mosaic pattern in landscape.	Test effects of vegetation management prescriptions on habitat characteristics and population / demographics
3b	**Giant Kangaroo Rat**	Maintain or enhance distribution in core areas. PRIMARY (BIO-3, BIO-4)	Distribution of active GKR	Maintain at least 20 individuals per hectare in core areas or in mosaic pattern in landscape (20 individuals indicate treatment action needed in core area)	August-Sept	Action: Apply livestock grazing (when GKR density <20 individuals per hectare **and** RDM >1,600lbs/acre and RDM is composed of thick, non-native grasses such as Bromus and Hordeum spp. (or other persistent exotics), making up over 70% of plant composition in the sampling area. Remove livestock when minimums (1,000 lbs/acre RDM or biomass, depending on time of year) are reached, to create large suitable areas in the core area and/or a mosaic pattern in landscape.	Test the use of remote sensing or other means to evaluate distributions in core areas to develop distribution thresholds

Management Objectives & Variables						*Management Guidelines:* Grazing	
Conservation Target		**Management Target (Plan Objective)**	**Variable**	**Desired Value of the Variable**	**Time of year the variable should be measured**	**Actions and Constraints to the Actions**	**Actions to test and evaluate**
3c	**Giant Kangaroo Rat**	Maintain suitable habitat structure in core areas. PRIMARY (BIO-3, BIO-4)	fall RDM	RDM < 1600 lbs/acre (dry mass) and GKR (>20 individuals / hectare). Consider using a range to prevent dropping below desired lbs/acre between measurement and actual removal of cattle	fall, Oct-Nov	Action: Apply livestock grazing (when GKR density <20 individuals per hectare **and** RDM >1,600lbs/acre and RDM is composed of thick, non-native grasses such as Bromus and Hordeum spp. (or other persistent exotics), making up over 70% of plant composition in the sampling area. Remove livestock when minimums (1,000 lbs/acre RDM or biomass, depending on time of year) are reached, to create large suitable areas in the core area and/or a mosaic pattern in landscape.. SECTION 15: Livestock turnout: 1,000 lbs/ac. and 2" green growth, or 1,200 lbs/ac. without green growth. Livestock removal: 700 lbs/ac. at end of growing season (May 31) or if grazing is applied during summer, set another value that results in at least 500 lbs/ac RDM.	Consider stubble height or level of utilization as as monitoring methods with or as opposed to RDM
3d	**Giant Kangaroo Rat**	Maintain suitable shrub cover in core areas. SECONDARY (BIO-3, BIO-8)	Shrub cover	0-30%	Anytime	ACTION: Develop species specific protocol for measurements to assess shrub cover in key areas. Develop criteria to determine how to apply summer grazing in these areas with greater than 30% shrub cover.	
3e	**Giant Kangaroo Rat**	Prevent species disappearance from the Monument. (Alt 2, Non-core areas) (BIO-4, BIO-15)	Allow populations, distribution, and habitat structure to fluctuate naturally within non-core areas of CMS, TR, PHEP, CPC, and CPN subregions.	Take action to prevent disappearance from the Monument when variables in core areas continue to decline despite actions already taken in core areas.	Same as GKR core timing	The decision to apply management outside the core area, and what type of management to use, would follow the logic outlined in the Decision Tree table for management of SJV target species in non-core areas. Specific management actions would be based on evaluations of core area populations, the effectiveness of current management, and whether target animal populations are responding to current management.	Test management actions to achieve core area effects in non-core areas when species thresholds at desired levels

Management Objectives & Variables						*Management Guidelines:* Grazing	
Conservation Target		**Management Target (Plan Objective)**	**Variable**	**Desired Value of the Variable**	**Time of year the variable should be measured**	**Actions and Constraints to the Actions**	**Actions to test and evaluate**
4a	**Blunt-nosed Leopard Lizard**	Maintain suitable herbaceous structure in core areas. PRIMARY (BIO- 3)	Biomass (herbaceous layer only)	<500 optimal; <1000 ok	Spring - Late April - Mid-May (post annual dry-up; after peak production)	Action: Apply livestock grazing when biomass is greater than 1000 lbs/acre in areas within current distribution. Areas are a subset of GKR core areas and treatment areas may vary. Monitoring will determine distribution and size of treatment areas. SECTION 15: Allow livestock when biomass is greater than 1000 lbs/acre in areas within and adjacent to current distribution. Habitat structure to maintain open ground cover: 500- 1000 pounds biomass-RDM/acre during active BNLL season (April-September). Remove livestock when 500 lbs/acre are reached.	
4b	**Blunt-nosed Leopard Lizard**	Maintain or enhance population in core areas. PRIMARY (BIO-3)	Presence/absence	One or more individual observed on single visit in favorable conditions; several seen on repeated visits	May and June	ACTION: Apply livestock grazing when regular observations decline from what is expected [One or more individual observed on single visit in favorable conditions; several seen on repeated visits] **and** when biomass is greater than 1000 lbs/acre in areas within and adjacent to current distribution. Habitat structure to maintain open ground cover: 500- 1000 pounds biomass-RDM/acre during active BNLL season (April-September). Remove livestock when 500 lbs/acre are reached.	
4c	**Blunt-nosed Leopard Lizard**	Maintain suitable shrub cover in areas with unsuitable number/density of open/ available burrows in core areas. PRIMARY (BIO-3, BIO-8)	Shrub cover (burrow availability)	inadequate number/density of open/available burrows AND <5-20% shrub cover	Anytime	ACTION: Modify grazing to promote shrub cover if < 5% and inadequate burrows.	
4d	**Blunt-nosed Leopard Lizard**	Maintain suitable shrub cover in core areas. SECONDARY BIO-3, BIO-8)	Shrub cover	0-30%	Anytime	ACTION: Develop species specific protocol for measurements to assess shrub cover in key areas. Develop criteria to determine how to apply summer grazing in these areas with greater than 30% shrub cover.	

Management Objectives & Variables						*Management Guidelines:* Grazing	
Conservation Target		**Management Target (Plan Objective)**	**Variable**	**Desired Value of the Variable**	**Time of year the variable should be measured**	**Actions and Constraints to the Actions**	**Actions to test and evaluate**
4e	**Blunt-nosed Leopard Lizard**	Maintain burrows in core areas. SECONDARY (BIO-3, BIO-4)	Burrow density and distribution	Common and available. Suitable burrows present with very few altered by human-induced causes. Small mammal burrowing activity is evident and not reduced by management activities. Few (<10%) disturbed	Adults: May-August; hatchlings: July-August	No recommended action to meet this objective.	
4f	**Blunt-nosed Leopard Lizard**	Prevent species disappearance from the Monument. (Alt 2, Non-core areas) (BIO-4, BIO-15)	Allow populations, and herbaceous structure to fluctuate naturally within non-core areas of CMS, PHEP, CPC, and CFS.	Take action to prevent disappearance from the Monument when variables in core areas continue to decline despite actions already taken in core areas.	Same as BNLL core timing	The decision to apply management outside the core area, and what type of management to use, would follow the logic outlined in the Decision Tree table for management of SJV target species in non-core areas. Specific management actions would be based on evaluations of core area populations, the effectiveness of current management, and whether target animal populations are responding to current management.	Test management actions to achieve core area effects in non-core areas when species thresholds at desired levels.
8a	**Kit Fox**	Maintain and enhance populations in core areas. (BIO-3, BIO-4)	Kit fox abundance	>= current population size	quarterly	NA	
8b	**Kit Fox**	Monitor predator abundance in core areas. (BIO-3, BIO-4)	Predator abundance	Below "detrimental" levels	quarterly	NA	
8c	**Kit Fox**	Maintain and enhance distribution in core areas. (BIO-3, BIO-4)	Kit fox distribution	>= current distribution	quarterly	NA	
8d	**Kit Fox**	Maintain or enhance suitable habitat structure: shrub cover in core areas. (BIO-3, BIO-8)	Shrub cover	<30%	Anytime	ACTION: Develop species specific protocol for measurements to assess shrub cover in key areas. Develop criteria to determine how to apply summer grazing in these areas with greater than 30% shrub cover.	

Management Objectives & Variables						*Management Guidelines:* Grazing	
Conservation Target		**Management Target (Plan Objective)**	**Variable**	**Desired Value of the Variable**	**Time of year the variable should be measured**	**Actions and Constraints to the Actions**	**Actions to test and evaluate**
8e	**Kit Fox**	Maintain or enhance suitable habitat structure: veg. ht. in core areas. (BIO-3, BIO-8)	Vegetation height	< Kit fox eyelevel (< 8 inches); patch size?	Anytime	Action: Apply livestock grazing (when GKR density <20 individuals per hectare **and** RDM >1,600lbs/acre and RDM is composed of thick, non-native grasses such as Bromus and Hordeum spp. (or other persistent exotics), making up over 70% of plant composition in the sampling area. Remove livestock when minimums (1,000 lbs/acre RDM or biomass, depending on time of year) are reached, to create large suitable areas in the core area and/or a mosaic pattern in landscape. SECTION 15: Livestock turnout: 1,000 lbs/ac. and 2" green growth, or 1,200 lbs/ac. without green growth. Livestock removal: 700 lbs/ac. at end of growing season (May 31) or if grazing is applied during summer, set another value that results in at least 500 lbs/ac RDM.	
8f	**Kit Fox**	Maintain prey abundance (nocturnal rodents, other small mammals) in core areas. (BIO-3, BIO-4)	Abundance of nocturnal mammals (jackrabbits, cottontails, kangaroo rats, etc.)	Absence, low numbers (need to look at data to determine whether there are thresholds)	quarterly	NA	
8g	**Kit Fox**	Prevent species disappearance from the Monument. (Alt 2, Non-core areas) (BIO-4, BIO-15)	Allow suitable habitat structure to fluctuate naturally within non-core areas of CMS, PHEP, CPC, and SL subregions.	Take action to prevent disappearance from the Monument when variables in core areas continue to decline despite actions already taken in core areas.	Same as SJKF core timing	The decision to apply management outside the core area, and what type of management to use, would follow the logic outlined in the Decision Tree table for management of SJV target species in non-core areas. Specific management actions would be based on evaluations of core area populations, the effectiveness of current management, and whether target animal populations are responding to current management.	Test management actions to achieve core area effects in non-core areas when species thresholds at desired levels.

Management Objectives & Variables						Management Guidelines: Grazing	
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Actions and Constraints to the Actions	Actions to test and evaluate
10a	**San Joaquin Antelope Squirrel**	Maintain suitable habitat structure: herbaceous biomass in core areas. PRIMARY (BIO-3, BIO-4)	fall RDM	<1600 lbs/ acre and GKR (> 20 individuals per hectare)	Oct-Nov, before rains	Action: Apply livestock grazing (when GKR density <20 individuals per hectare **and** RDM >1,600lbs/acre and RDM is composed of thick, non-native grasses such as Bromus and Hordeum spp. (or other persistent exotics), making up over 70% of plant composition in the sampling area. Remove livestock when minimums (1,000 lbs/acre RDM or biomass, depending on time of year) are reached, to create large suitable areas in the core area and/or a mosaic pattern in landscape.. SECTION 15: Livestock turnout: 1,000 lbs/ac. and 2" green growth, or 1,200 lbs/ac. without green growth. Livestock removal: 700 lbs/ac. at end of growing season (May 31) or if grazing is applied during summer, set another value that results in at least 500 lbs/ac RDM.	
10b	**San Joaquin Antelope Squirrel**	Maintain/ enhance distribution in core areas. PRIMARY (BIO-3, BIO-4)	Presence of individuals	>= existing distribution. 2 or more individuals on std. transect used to locate core areas.	Spring through Summer	Action: Apply livestock grazing (when GKR density <20 individuals per hectare **and** RDM >1,600lbs/acre and RDM is composed of thick, non-native grasses such as Bromus and Hordeum spp. (or other persistent exotics), making up over 70% of plant composition in the sampling area. Remove livestock when minimums (1,000 lbs/acre RDM or biomass, depending on time of year) are reached, to create large suitable areas in the core area and/or a mosaic pattern in landscape.	
10c	**San Joaquin Antelope Squirrel**	Maintain suitable habitat structure:shrub cover in core areas. SECONDARY (BIO-3, BIO-8)	Shrub cover	0-50%	Anytime	ACTION: Develop species specific protocol for measurements to assess shrub cover in key areas. Develop criteria to determine how to apply summer grazing in these areas with greater than 50% shrub cover over 30% of the SJAS core area and if no conflicts with LETH.	Test effects of vegetation management prescriptions on habitat characteristics and population / demographics

Management Objectives & Variables						Management Guidelines: Grazing	
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Actions and Constraints to the Actions	Actions to test and evaluate
10d	**San Joaquin Antelope Squirrel**	Prevent species disappearance from the Monument. (Alt 2, Non-core areas) (BIO-4, BIO-15)	Allow populations, suitable herbaceous structure to fluctuate naturally within non-core areas of CMS, PHEP, and CPC subregions.	Take action to prevent disappearance from the Monument when variables in core areas continue to decline despite actions already taken in core areas.	Same as SJAS core timing	The decision to apply management outside the core area, and what type of management to use, would follow the logic outlined in the Decision Tree table for management of SJV target species in non-core areas. Specific management actions would be based on evaluations of core area populations, the effectiveness of current management, and whether target animal populations are responding to current management.	Test management actions to achieve core area effects in non-core areas when species thresholds at desired levels.
30	**bats - pallid**	TBD	0	0	0		
18	**Burrowing owl**	Maintain current distribution and population size (BIO-4)	nesting pairs with successfully fledged young	>= current levels	late May-July	Treatment prescriptions for GKR, BNLL, MOPL provide suitable habitat. Assume specific treatment for BUOW not required since GKR, MOPL, BNLL treatment will overlap BUOW distribution. Ask Dan R. to confirm burrows are not limiting.	
11a	**Fairy Shrimp**	Maintain current distribution, population size and range (BIO-4, BIO-12)	Presence/absence in all known or potential pools	>= current frequency of occurrence across range	Late January - March	ACTION: In pastures with known non-lindahli pools: Don't modify existing grazing regime in known pools. Continue past (last 10 -15 years) grazing or non-grazing regime around pools that support non-lindahli species. Grazing on currently known pools was Nov-April, when biomass >1,000 lbs/ac. and native annual species cover was less than 60% of the total annual plant cover. Consider fencing livestock into a smaller area of use that includes the pools rather than using the entire pasture if it will not modify the grazing pattern around the pools. SECTION 15: Don't modify existing grazing regime in known pools. Continue past (last 10 -15 years) grazing or non-grazing regime around pools that support non-lindahli species. Grazing on currently known pools was Nov-April, when biomass >1,000 lbs/ac. and native annual species cover was less than 60% of the total annual plant cover.	

Management Objectives & Variables						*Management Guidelines:* Grazing	
Conservation Target		**Management Target (Plan Objective)**	**Variable**	**Desired Value of the Variable**	**Time of year the variable should be measured**	**Actions and Constraints to the Actions**	**Actions to test and evaluate**
11b	**Fairy Shrimp**	Replace and maintain cyst bank (BIO-4, BIO-12)	Presence of females with mature cysts	Presence of females with mature cysts	Late January - March	No recommended action to meet this objective. CONSTRAINT: In pastures with known non-lindahli pools: Avoid accelerated drawdown of water - maintain water in pools long enough for one to several cysts production cycles. Provide alternate water for livestock to reduce drawdown by livestock consumption (assess vulnerability of pool - large pools = less vulnerable). Advise sheep herders to avoid vulnerable pools.	
13a	**Sphinx moth**	Maintain current distribution, population size and range (BIO-4)	Presence/absence in all known or potential occurrences	>= current distribution	Late January - mid-February (adult emergence)	No recommended action to meet this objective. CONSTRAINT: Avoid trampling of host plant, moth, larvae, and pupae - Avoid livestock use of known habitat during all life stages. SECTION 15: Avoid trampling of host plant, moth, larvae, and pupae - Avoid livestock use of known habitat during all life stages. (There are currently no known locations in Sec. 15 allotments.)	
13b	**Sphinx moth**	Maintain suitable habitat BIO-4, BIO-8)	Sparsely vegetated washes with Camissonia campestris	Camissonia is common in favorable years	Late January - late March (plant presence)	CONSTRAINT: In drainages with known KPSM habitat: avoid trampling of washes supporting host plant. Avoid heavy trampling (damage to crust and microsite features required for maintenance of host plant) of known habitat and suspected habitat at all times. SECTION 15: Avoid heavy trampling (damage to crust and microsite features required for maintenance of host plant) of known habitat at all times. (There are currently no known locations in Sec. 15 allotments.)	

Management Objectives & Variables						Management Guidelines: Grazing	
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Actions and Constraints to the Actions	Actions to test and evaluate
14	**Spade-foot toad**	Maintain current distribution, population size and range (BIO-4, BIO-12)	Presence/absence of tadpoles in all known or other ponds	Water present long enough to complete life cycle	Breeding season: January - April	ACTION: Apply livestock grazing when non-native annuals within 5m of pool's edge approach >=10" to minimize effects of evapotranspiration. Remove livestock when height reaches 3"-5". CONSTRAINT: Avoid accelerated drawdown of water – allow enough water in pools long enough for toads to complete life cycle (>=60 days). Provide alternate water for livestock to reduce drawdown by livestock consumption (assess vulnerability of pool – large pools = less vulnerable). Advise sheep herders to avoid vulnerable pools.	
16	**Vernal pool invertebrates**	Maintain current distribution, population size and species diversity (BIO-4, BIO-12)	Presence/absence in all known or potential locations	water present long enough to complete life cycle	Late January - March		
26	**LeConte's thrasher**	Maintain current nesting populations (BIO-4, BIO-8)	Presence of LETH in suitable habitat	Persistence of current populations; suitable shrub cover for nesting structure; saltbush or ephedra >3' in stands, found in drainages or alluvial fans; open/bare ground for foraging away from shrubs.	Jan-March	CONSTRAINT: Grazing use/intensity that maintains large shrub structure. Maintain between 500 - 1000 lbs/ac biomass for suitable foraging structure.	
5a	**Mountain Plover**	Maintain at least 3 of the core areas of 50-200 acres suitable for plovers by Sept. 1 if no suitable habitat available in non-core areas on the Monument. PRIMARY (BIO-3, BIO-4, BIO-5)	suitable by Sept 1 thru when they leave	low vegetation (< 2 inches)and patch size	30 days before they arrive	Winter use depends on very low structure, whether naturally occurring or management-induced. 3 areas maintained are chosen to include historical use in North, Central and Southern areas of the Monument.	

Management Objectives & Variables						Management Guidelines: Grazing	
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Actions and Constraints to the Actions	Actions to test and evaluate
5b	**Mountain Plover**	Maintain low shrub cover in core areas. SECONDARY (BIO-5, BIO-8)	Shrub cover	< 5% shrub cover in core area; with minimum patch size of 50-200 acres	September	ACTION: Develop protocol to assess shrub cover in key areas.	Develop criteria to determine how to apply summer grazing in these areas with greater than 5% shrub cover.
5c	**Mountain Plover**	Maintain low biomass in core areas. SECONDARY (BIO-5, BIO-8)	Biomass	<500 lbs/acre	October-March	ACTION: Apply livestock grazing when biomass is >500 lbs/acre Sept. in core areas if no other suitable habitat available. Apply grazing if green growth occurring Oct – Jan. Remove livestock when 500 lbs/acre reached.	
29	**condor**	TBD (BIO-6)					
25	**sandhill crane**	TBD (BIO-4)					
1a	**Pronghorn**	Maintain suitable vegetation height for fawning PRIMARY. (BIO-16, BIO-8)	Vegetation height	15-25 inches herbaceous veg over 80% of the fawning area (areas of <15% slope)	March-April	ACTION: In Pronghorn Fawning Area: Introduce livestock, when herbaceous vegetation height is > than 25 inches over 80%* of the key area. Remove livestock when herbaceous veg height is between 15 - 25 inches within 80%* of the key area (representing the fawning area) or fawning begins (mid-April). (* for example 80 out of 100 samples) SECTION 15: Should pronghorn establish or expand fawning areas into section 15 lease areas, consider guidelines which encourage that use.	
1b	**Pronghorn**	Maintain suitable shrub cover for fawning. PRIMARY (BIO-16, BIO-8)	Shrub cover, density and distribution	patches of 5-30% cover; 15-25 inches tall, Distribution of patches?	Anytime	ACTION: In Pronghorn fawning Area: Develop species specific protocol for measurements to assess shrub cover in key areas. Develop criteria to determine how to apply summer grazing in these areas with greater than 30% shrub cover.	
1c	**Pronghorn**	Maintain suitable forage. PRIMARY (BIO-16)	Forb abundance and % cover	Maintain or exceed current cover and abundance of palatable forb species	Two sampling dates: March-April; August	No recommended action to meet this objective. CONSTRAINT: In Pronghorn Foraging Areas: Avoid livestock use in spring during years and within pastures with exceptional expressions* of native annual plants. (* exceptional expressions = native annual spp make up 60?-80% of the total annual plant spp relative cover)	Experiment to test whether summer season grazing to reducing RDM to improve forb production
1d	**Pronghorn**	Provide adequate water PRIMARY (BIO-16)	available water	water source every two miles	year round	NA for grazing	

Management Objectives & Variables						Management Guidelines: Grazing	
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Actions and Constraints to the Actions	Actions to test and evaluate
1e	**Pronghorn**	Maintain or enhance fawn-to-doe ratios SECONDARY (BIO-16)	fawn:doe	Maintain a minimum of 25 fawns/100 does	July	NA for grazing	
1f	**Pronghorn**	Enhance population size SECONDARY (BIO-16)	number of pronghorn	>= 250	January	NA for grazing	
1g	**Pronghorn**	Maintain buck-to-doe ratio SECONDARY (BIO-16)	buck:doe	Maintain a minimum of 25 bucks/100 does + minimum population size of 250	January	NA for grazing	
1h	**Pronghorn**	Promote travel across landscape (BIO-16)	Fences	All fences modified for pronghorn passage/unnecessary fences removed	Anytime		
15a	**Elk**	Maintain and expand foraging habitat. (BIO-17)	Presence of elk	Elk use in 90% of the Avena belt within the CFN and CPN subregions.	November	No recommended action to meet this objective. CONSTRAINT: Do not graze Avena belt within the CFN and CPN subregions. Use GPS elk collar data to determine elk home range. Expect elk home range to be a subset of pronghorn fawning = grasshopper sparrow). SECTION 15: No grazing in current elk cow herd home ranges. Should elk establish or expand home ranges into section 15 lease areas, consider guidelines which encourage that use.	
15b	**Elk**	Maintain suitable vegetation height for calving. PRIMARY (BIO-17, BIO-8)	Vegetation height	>15 inches veg over 80% of the calving area (within appropriate area?)	March-April	No recommended action to meet this objective. CONSTRAINT: In Elk calving areas: Remove livestock when veg height is approaching 15 inches within 80%* of the key area (representing the calving area) or when calving begins (mid-April). (* for example 80 out of 100 samples)	

Management Objectives & Variables						*Management Guidelines:* Grazing	
Conservation Target		**Management Target (Plan Objective)**	**Variable**	**Desired Value of the Variable**	**Time of year the variable should be measured**	**Actions and Constraints to the Actions**	**Actions to test and evaluate**
15c	**Elk**	Provide adequate water PRIMARY (BIO-17)	available water	water source every two miles	year round	NA	
15d	**Elk**	Prevent cow displacement during calving SECONDARY (BIO-17)				No recommended action to meet this objective. CONSTRAINT: Avoid livestock use during calving period (mid-April thru July)	
15e	**Elk**	Maintain or enhance calf-to-cow ratios SECONDARY (BIO-17)	calf:cow	Maintain a minimum of 25 fawns/100 does	July	NA	
15f	**Elk**	Enhance population size SECONDARY (BIO-17)	number of elk	>= 500, including both sub herds.	November	NA	
15g	**Elk**	Maintain bull-to-cow ratio SECONDARY (BIO-17)	bull:cow	Maintain a minimum of 25 bulls/100 cows + minimum population size of 250	November	NA	
24a	**Grasshopper sparrow**	Maintain suitable vegetation structure for nesting PRIMARY. (BIO-4, BIO-8, BIO-18))	Vegetation structure	Vegetation height = 10" to 20+", composed of annual and/or perennial grasses with some scattered shrubs-w/a pref. for bunch grasses; height for perching and cover but open space for movement (patchiness)	Dec-Jan	ACTION: Introduce livestock when patchiness absent and herbaceous vegetation is too dense to allow for movement, or when shrub cover is >20%. Remove when patchiness is achieved or shrub component reduced to <20% over the nesting area. (Assume nesting area between 75 to 250 acres.) CONSTRAINT: Avoid grazing during nesting (March-August).	
24b	**Other grassland birds**	TBD (BIO-4, BIO-8, BIO-18)					
27	**tricolor blackbirds**	TBD (BIO-4, BIO-8)					
28a	**landscape scale ecosystem functioning**	Maintain the diversity of habitats (BIO-8)	diversity of habitats				

Management Objectives & Variables						*Management Guidelines:* Grazing	
Conservation Target		**Management Target (Plan Objective)**	**Variable**	**Desired Value of the Variable**	**Time of year the variable should be measured**	**Actions and Constraints to the Actions**	**Actions to test and evaluate**
28b	**landscape scale ecosystem functioning**	Maintain the diversity of native spp within habitats (BIO-4, BIO-8)	spp diversity within habitats				
29	**Long-billed curlew**						
30	**Wintering Raptors**	TBD (BIO-18)					

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Management Objectives & Variables						Management Guidelines: Prescribed Fire	
Conservation Target		**Management Target (Plan Objective)**	**Variable**	**Desired Value of the Variable**	**Time of year the variable should be measured**	**Actions and Constraints on the Actions**	**Actions to test and evaluate**
Native plant species							
9a	*Caulanthus*	Maintain distribution and size of existing populations (BIO-2, BIO-14)	Distribution and population size; reproducing populations	>= current levels	January - May		
9b	*Caulanthus*	Restore populations to areas of known historical range (BIO-14, BIO-8)	Success (establishment and reproduction) of restored populations in historical range	Self-sustaining populations in introduced range	January - May		
19	**woolly-threads**	Maintain current distribution and population size (BIO -2, BIO-14	Presence/absence in known or appropriate locations	>= current distribution and condition across landscape relative to year's precipitation	Feb-Apr		
20a	**Lepidium jaredii**	maintain or enhance populations (BIO-2, BIO-14)	reproduction	some seed production in most years, large seed production occasionally (as in 2008)	Apr-May		
20b	**Lepidium jaredii**	maintain or enhance populations (BIO-2, BIO-14)	population size	in most years, some presence in known habitat, occasional large displays (as in 2008)	Mar-May		
32a	**Amsinckia vernicosa var. furcata**	maintain or enhance populations (BIO-2, BIO-14)	reproduction	some seed production in most years, large seed production occasionally	Mar-May		
32b	**Amsinckia vernicosa var. furcata**	maintain or enhance populations (BIO-2, BIO-14)	population size	in most years, some presence in known habitat, occasional large displays	Mar-May		

Management Objectives & Variables						Management Guidelines: Prescribed Fire	
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Actions and Constraints on the Actions	Actions to test and evaluate
33a	**Acanthomintha obovata ssp. cordata (clay species)**	maintain or enhance populations (BIO-2, BIO-14)	reproduction	some seed production in most years, large seed production occasionally	Apr-Jul		
33b	**Acanthomintha obovata ssp. cordata**	maintain or enhance populations (BIO-2, BIO-14)	population size	in most years, some presence in known habitat, occasional large displays (like in 2008)	Apr-Jul		
22	**Clay species**	Maintain current distribution and population size	Presence/absence in known or appropriate locations	>= current distribution and condition across landscape relative to year's precipitation	Mar-Jun		
31	**vernal pools**	TBD	0	0	0		
2a1	**a. Bunch grasses (Poa secunda, Nasella cernua, Nasella pulchra, Sitanion hystrix, Achnatherum speciosa)**	Maintain or enhance populations PRIMARY (maintain pop. parameters) (BIO-2, BIO-14)	a. Seed production [presence of inflorescences (sexual) or new genets (asexual)]	Presence of inflorescences in > 50% of population	Varies depending on species (February-May)		

Management Objectives & Variables						Management Guidelines: Prescribed Fire	
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Actions and Constraints on the Actions	Actions to test and evaluate
2a2	**a. Bunch grasses (Poa secunda, Nasella cernua, Nasella pulchra, Sitanion hystrix, Achnatherum speciosa)**	Maintain or enhance populations PRIMARY (maintain pop. parameters) (BIO-2, BIO-14)	b. Recruitment of new individuals and Retention of existing. Measure through cover and frequency.	Recruitment and survival of new individuals. Maintain or enhance the average frequency of Poa secunda and Nassella spp. seedlings at more than 20 per plot during a five year period. Initiate active restoration when the average frequency of Poa secunda and Nassella spp. seedlings is ≤ 10 seedlings per plot. Frequency plot = large "inter-plot areas"	February for seedlings; late spring (May/June) for new juveniles and adults		Experimentally test dormant season prescribed burning, in select valley and foothill grassland areas where native perennial bunchgrasses are present, for enhancement of native perennial bunchgrass recruitment (i.e., provide germination microsites for new bunchgrass species seedlings by reducing competition (biomass) from exotic annual grasses).
2a3	**a. Bunch grasses (Poa secunda, Nasella cernua, Nasella pulchra, Sitanion hystrix, Achnatherum speciosa)**	Maintain stable size structure; PRIMARY (maintain pop. parameters) (BIO-2, BIO-14)	Cover, basal diameter	Maintain range of sizes.	February-May		

Management Objectives & Variables						Management Guidelines: Prescribed Fire	
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Actions and Constraints on the Actions	Actions to test and evaluate
2a4	**a. Bunch grasses (Poa secunda, Nasella cernua, Nasella pulchra, Sitanion hystrix, Achnatherum speciosa)**	Maintain or enhance spatial distribution of bunch grass populations PRIMARY (Maintain community parameters) (BIO-2, BIO-14)	Population boundary	Maintain or enhance population boundary within 'range of natural variation' (e.g. allowing for annual expansion and contraction	February-May		
2b1	**b. Rhizomatous species (Distichlis spicata, Leymus triticoides)**	Maintain or enhance population patch size PRIMARY (BIO-2, BIO-14)	Patch size (e.g. %cover over larger scale)	Maintain or enhance patch size (No value for this variable yet)	Anytime (preferably peak growth period)		
2b2	**b. Rhizomatous species (Distichlis spicata, Leymus triticoides)**	Maintain or enhance spatial distribution PRIMARY (BIO-2, BIO-14)	Population boundary	Maintain or enhance distribution (No value for this variable yet)	Anytime (peak growth period)		

Management Objectives & Variables						Management Guidelines: Prescribed Fire	
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Actions and Constraints on the Actions	Actions to test and evaluate
2c1	**c. Native annual flora**	Maintain or enhance native annual species richness and cover PRIMARY (BIO-2, BIO-14)	Native annual species richness and cover	>= current levels. Maintain or enhance the average relative cover of native annual plant species at more than 20% and the average native annual plant species richness at more than 5 during a five year period. Initiate active restoration when the average relative cover of native annual plant species is ≤ 20% and/or the average native annual plant species richness is ≤ 3.5 during a five year period. Plant cover and richness = Daubenmire plot.	Spring-active: March-May; Summer-active: June-October	occasional burn targeting weedy biomass	Experimentally test dormant season prescribed burning in select valley and foothill grasslands areas for enhancement of native annual plant species cover and richness (i.e., to reduce competition (biomass) from exotic annual grasses, and increase recruitment).
2c2	**c. Native annual flora**	Maintain native annual seed bank PRIMARY (BIO-2, BIO-14)	Seed production during favorable years	"Adequate" proportion of population producing seeds	Varies depending on species (April-October)		

Management Objectives & Variables						Management Guidelines: Prescribed Fire	
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Actions and Constraints on the Actions	Actions to test and evaluate
2c3	**c. Native annual flora**	Reduce abundance of exotic annual grasses and forbs SECONDARY (BIO-21)	% cover, richness, abundance, height of exotic species	< current levels	Spring-active: March-May; Summer-active: June-October		Evaluate the use of livestock to reduce exotic summer annuals (tumbleweeds?). Experimentally test dormant season prescribed burning in select valley and foothill grasslands areas to reduce the abundance of exotic annual grasses.
2g	**Grassland Community**	Maintain matrix of bunchgrasses and native annual plant species PRIMARY (Maintain community parameters) (BIO-8)	Composition and % cover of non-bunchgrass plant species. Frequency of Poa secunda and Nassella species seedlings; relative or absolute cover of native annual plant species; native annual plant species richness.	See 2a2 and 2c1.	March-May		Experimentally test dormant season prescribed burning, in select valley and foothill grassland areas where native perennial bunchgrasses are present, for enhancement of native perennial bunchgrass and native annual forb recruitment (i.e., provide germination microsites for new bunchgrass species seedlings and enhance the cover and richness of native annual forbs by reducing competition (biomass) from exotic annual grasses).
2d	**d. Native perennial herbs & bulbs**	TBD (BIO-14)	0		0		

Management Objectives & Variables						Management Guidelines: Prescribed Fire	
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Actions and Constraints on the Actions	Actions to test and evaluate
2e1	**e. Native shrub flora (Atriplex polycarpa, Atriplex spinifera, Ephedra spp)**	Maintain or enhance current cover and population distribution PRIMARY (BIO-8, BIO-14)	% cover, areal extent		Summer active: June-November; Winter active: December-May; depends on species	Burn prescription should be geared toward target shrub species. Some species may take decade + to reestablish (saltbush) vs. some may come back in 3-5 years (buckwheat).	
2e2	**e. Native shrub flora (Atriplex polycarpa, Atriplex spinifera, Ephedra spp)**	Recruitment in favorable years to maintain age structure PRIMARY (BIO-8, BIO-14)	Seedling survival during and following recruitment years	Recruitment and survival of new individuals; range of sizes and ages	Depends on species		Evaluate whether fire can provide germination microsites and seedling establishment opportunities for native shrubs.
2e3	**e. Native shrub flora: Upper Sonoran Sub-Shrub Scrub Community**	Enhance the areal extent of this community. (BIO-8, BIO-14)	acres	> or = to current amount	anytime (remote sensing)		
2e4	**e. Native shrub flora: Upper Sonoran Sub-Shrub Scrub Community**	Enhance native spp cover and richness within this community. (BIO-8, BIO-14)	Cover and richness of native spp.	> current levels	0		
2e6	**e. Native shrub flora: Valley Sink Scrub Community**	Enhance native spp cover and richness within this community. (BIO-8,BIO-14)	Cover and richness of native spp.	> current levels	0		
2f1	**f. blue and Alvord oaks**	maintain and enhance populations (BIO-14)	reproduction (acorn production)	cyclical production (mast years)	fall		

Management Objectives & Variables						Management Guidelines: Prescribed Fire	
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Actions and Constraints on the Actions	Actions to test and evaluate
2f2	**f. blue and Alvord oaks**	maintain and enhance populations (BIO-14, BIO-8)	recruitment of new individuals	presence of seedlings/young trees	any		
2f3	**f. blue and Alvord oaks**	maintain and enhance populations (BIO-14, BIO-8)	understory habitat	presence of intact soils, leaf litter, diverse humus biota	any		
17a	**soil crusts**	maintain and enhance habitat (BIO-14)	geographic extent	increase of crust habitat	any		
17b	**soil crusts**	maintain and enhance habitat (BIO-14)	diversity	presence of a number of species (bryophytes, lichens, algae, cyanobacteria)	best during wet season		
17c	**soil crusts**	maintain and enhance habitat (BIO-14)	serial stage	mix of late and early successional species	best during wet season		
17d	**soil crusts**	maintain and enhance habitat (BIO-14)	physical integrity	not broken during dry season, intact	dry season		
12	**Noxious Weeds (Hoary Cress, Tamarisk, Russian Knapweed, Bull thistle, yellow star thistle)**	Decrease or eliminate distribution and abundance of key invaders (see list) PRIMARY (BIO-21)	presence; % cover, density	presence; <= distribution	Varies depending on species	use if effective for target species and location.	
34	**Annual forage on Section 15 allotments**	Manage annual biomass to protect soils from accelerated erosion and replenish soil nutrients through decomposition. (BIO-1, BIO-8)	RDM	RDM at least 500 lbs/acre at beginning of the next growing season.	October-November		

Management Objectives & Variables						Management Guidelines: Prescribed Fire	
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Actions and Constraints on the Actions	Actions to test and evaluate
Native animal species							
3a	**Giant Kangaroo Rat**	Maintain or enhance current populations in core areas. PRIMARY (BIO-3, BIO-4)	density (active) (over large scale)	Maintain at least 20 individuals per hectare in core areas or in mosaic pattern in landscape (20 individuals indicate treatment action needed in core area)	August-Sept	Apply fire in any season to reduce standing biomass to create mosaic pattern; Apply fire when GKR density <20 individuals per hectare **and** RDM >1,600lbs/acre when RDM is composed of thick, non-native grasses such as Bromus and Hordeum spp. (or other persistent exotics), making up over 70% of plant composition in the sampling area.	Efficacy of fire to maintain suitable habitat structure Test effects of vegetation management prescriptions on habitat characteristics and population/demographics
3b	**Giant Kangaroo Rat**	Maintain or enhance distribution in core areas. PRIMARY (BIO-3, BIO-4)	Distribution of active GKR	Maintain at least 20 individuals per hectare in core areas or in mosaic pattern in landscape (20 individuals indicate treatment action needed in core area)	August-Sept	Apply fire treatments to create large suitable areas in core areas and/or in a mosaic pattern in landscape. Apply fire when GKR density <20 individuals per hectare **and** RDM >1,600lbs/acre when RDM is composed of thick, non-native grasses such as Bromus and Hordeum spp. (or other persistent exotics), making up over 70% of plant composition in the sampling area.	Test effects of vegetation management prescriptions on habitat characteristics and population/demographics

Management Objectives & Variables						Management Guidelines: Prescribed Fire	
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Actions and Constraints on the Actions	Actions to test and evaluate
3c	**Giant Kangaroo Rat**	Maintain suitable habitat structure in core areas. PRIMARY (BIO-3, BIO-4)	fall RDM	< 1600 lbs/acre (dry mass) and GKR (>20 individuals/hectare).	fall, Oct-Nov	Apply fire in any season to reduce standing biomass to create mosaic pattern	Consider stubble height or level of utilization as monitoring methods along with or as opposed to RDM
3d	**Giant Kangaroo Rat**	Maintain suitable shrub cover in core areas. SECONDARY (BIO-3, BIO-8)	Shrub cover	0-30%	Anytime	Burn in areas with greater than 30% shrub cover. Apply low fire intensity prescriptions	
3e	**Giant Kangaroo Rat**	Prevent species disappearance from the Monument. (Alt 2, Non-core areas) (BIO-4, BIO-15)	Allow populations, distribution, and habitat structure to fluctuate naturally within non-core areas of CMS, TR, PHEP, CPC, and CPN subregions.	Take action to prevent disappearance from the Monument when variables in core areas continue to decline despite actions already taken in core areas.	Same as timing in GKR core areas	The decision to apply management outside the core area, and what type of management to use, would follow the logic outlined in the Decision Tree table for management of SJV target species in non-core areas. Specific management actions would be based on evaluations of core area populations, the effectiveness of current management, and whether target animal populations are responding to current management.	Test management actions to achieve core area effects in non-core areas when species thresholds at desired levels. Consider impacts at diff. age classes, effects to food base and pressures from predators.

Management Objectives & Variables						Management Guidelines: Prescribed Fire	
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Actions and Constraints on the Actions	Actions to test and evaluate
4a	**Blunt-nosed Leopard Lizard**	Maintain suitable herbaceous structure in core areas. PRIMARY (BIO- 3)	Biomass (herbaceous layer only)	<500 optimal; <1000 ok	Spring - Late April - Mid-May (post annual dry-up; after peak production)	Apply fire in any season to reduce standing biomass; Apply fire when biomass is greater than 1,000 lbs/acre in areas within current distribution. Areas are a subset of GKR core areas and treatment areas may vary. Monitoring will determine distribution and size of treatment areas.	Efficacy of fire to maintain suitable habitat structure
4b	**Blunt-nosed Leopard Lizard**	Maintain or enhance population in core areas. PRIMARY (BIO-3)	Presence/absence	One or more individual observed on single visit in favorable conditions; several seen on repeated visits	May and June	Apply fire treatments to create large suitable areas in core areas and/or in a mosaic pattern in landscape	BNLL detection protocols used for monitoring habitat suitability
4c	**Blunt-nosed Leopard Lizard**	Maintain suitable shrub cover in areas with unsuitable number/density of open/ available burrows in core areas. PRIMARY (BIO-3, BIO-8)	Shrub cover (burrow availability)	inadequate number/density of open/available burrows AND <5-20% shrub cover	Anytime	Design burns to avoid reducing shrub cover.	
4d	**Blunt-nosed Leopard Lizard**	Maintain suitable shrub cover in core areas. SECONDARY BIO-3, BIO-8)	Shrub cover	0-30%	Anytime	Burn areas with >30% shrub cover	

Management Objectives & Variables						Management Guidelines: Prescribed Fire	
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Actions and Constraints on the Actions	Actions to test and evaluate
4e	**Blunt-nosed Leopard Lizard**	Maintain burrows in core areas. SECONDARY (BIO-3, BIO-4)	Burrow density and distribution	Common and available. Suitable burrows present with very few altered by human-induced causes. Small mammal burrowing activity is evident and not reduced by management activities. Few (<10%) disturbed	Adults: May-August; hatchlings: July-August		
4f	**Blunt-nosed Leopard Lizard**	Prevent species disappearance from the Monument. (Alt 2, Non-core areas) (BIO-4, BIO-15)	Allow populations, and herbaceous structure to fluctuate naturally within non-core areas of CMS, PHEP, CPC, and CFS.	Take action to prevent disappearance from the Monument when variables in core areas continue to decline despite actions already taken in core areas.	Same as timing in BNLL core areas timing	The decision to apply management outside the core area, and what type of management to use, would follow the logic outlined in the Decision Tree table for management of SJV target species in non-core areas. Specific management actions would be based on evaluations of core area populations, the effectiveness of current management, and whether target animal populations are responding to current management.	Test management actions to achieve core area effects in non-core areas when species thresholds at desired levels. Consider impacts at diff. age classes, effects to food base and pressures from predators.
8a	**Kit Fox**	Maintain and enhance populations in core areas. (BIO-3, BIO-4)	Kit fox abundance	>= current population size	quarterly		

Management Objectives & Variables						Management Guidelines: Prescribed Fire	
Conservation Target		**Management Target (Plan Objective)**	**Variable**	**Desired Value of the Variable**	**Time of year the variable should be measured**	**Actions and Constraints on the Actions**	**Actions to test and evaluate**
8b	**Kit Fox**	Monitor predator abundance in core areas. (BIO-3, BIO-4)	Predator abundance	Below "detrimental" levels	quarterly		
8c	**Kit Fox**	Maintain and enhance distribution in core areas. (BIO-3, BIO-4)	Kit fox distribution	>= current distribution	quarterly		
8d	**Kit Fox**	Maintain or enhance suitable habitat structure: shrub cover in core areas. (BIO-3, BIO-8)	Shrub cover	<30%	Anytime	Burn in areas with greater than 30% shrub cover.	
8e	**Kit Fox**	Maintain or enhance suitable habitat structure: veg. ht. in core areas. (BIO-3, BIO-8)	Vegetation height	< Kit fox eyelevel (< 8 inches); patch size?	Anytime	Action: Apply fire when RDM >1,600lbs/acre when RDM is composed of thick, non-native grasses such as Bromus and Hordeum spp. (or other persistent exotics), making up over 70% of plant composition in the sampling area, to create large suitable areas in core areas and/or a mosaic pattern in landscape.	
8f	**Kit Fox**	Maintain prey abundance (nocturnal rodents, other small mammals) in core areas. (BIO-3, BIO-4)	Abundance of nocturnal mammals (jackrabbits, cottontails, kangaroo rats, etc.)	Absence, low numbers (need to look at data to determine whether there are thresholds)	quarterly		

Management Objectives & Variables						Management Guidelines: Prescribed Fire	
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Actions and Constraints on the Actions	Actions to test and evaluate
8g	**Kit Fox**	Prevent species disappearance from the Monument. (Alt 2, Non-core areas) (BIO-4, BIO-15)	Allow suitable habitat structure to fluctuate naturally within non-core areas of CMS, PHEP, CPC, and SL subregions.	Take action to prevent disappearance from the Monument when variables in core areas continue to decline despite actions already taken in core areas.	Same as timing in SJKF core areas	The decision to apply management outside the core area, and what type of management to use, would follow the logic outlined in the Decision Tree table for management of SJV target species in non-core areas. Specific management actions would be based on evaluations of core area populations, the effectiveness of current management, and whether target animal populations are responding to current management.	Test management actions to achieve core area effects in non-core areas when species thresholds at desired levels. Consider impacts at diff. age classes, effects to food base and pressures from predators.

Management Objectives & Variables						Management Guidelines: Prescribed Fire	
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Actions and Constraints on the Actions	Actions to test and evaluate
10a	**San Joaquin Antelope Squirrel**	Maintain suitable habitat structure: herbaceous biomass in core areas. PRIMARY (BIO-3, BIO-4)	fall RDM	<1600 lbs/ acre and GKR (> 20 individuals per hectare)	Oct-Nov, before rains	Apply fire treatments to create large suitable areas in core areas and/or in a mosaic pattern in landscape; when GKR density <20 individuals per hectare **and** RDM >1,600lbs/acre) and RDM is composed of thick, non-native grasses such as Bromus and Hordeum spp. (or other persistent exotics), making up over 70% of plant composition in the sampling area.	Efficacy of fire to maintain suitable habitat structure; Consider stubble height or level of utilization as monitoring methods along with or as opposed to RDM
10b	**San Joaquin Antelope Squirrel**	Maintain/ enhance distribution in core areas. PRIMARY (BIO-3, BIO-4)	Presence of individuals	>= existing distribution. 2 or more individuals on std. transect used to locate core areas.	Spring through Summer	Apply fire treatments to create large suitable areas in core areas and/or in a mosaic pattern in landscape	
10c	**San Joaquin Antelope Squirrel**	Maintain suitable habitat structure:shrub cover in core areas. SECONDARY (BIO-3, BIO-8)	Shrub cover	0-50%	Anytime	Burn in areas with greater than 50% shrub cover. Apply low intensity fire prescriptions to minimize too high Atriplex kill	

Management Objectives & Variables						Management Guidelines: Prescribed Fire	
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Actions and Constraints on the Actions	Actions to test and evaluate
10d	**San Joaquin Antelope Squirrel**	Prevent species disappearance from the Monument. (Alt 2, Non-core areas) (BIO-4, BIO-15)	Allow populations, suitable herbaceous structure to fluctuate naturally within non-core areas of CMS, PHEP, and CPC subregions.	Take action to prevent disappearance from the Monument when variables in core areas continue to decline despite actions already taken in core areas.	Same as SJAS core timing	The decision to apply management outside the core area, and what type of management to use, would follow the logic outlined in the Decision Tree table for management of SJV target species in non-core areas. Specific management actions would be based on evaluations of core area populations, the effectiveness of current management, and whether target animal populations are responding to current management.	Test management actions to achieve core area effects in non-core areas when species thresholds at desired levels. Consider impacts at diff. age classes, effects to food base and pressures from predators
30	**bats - pallid**	TBD					
18	**Burrowing owl**	Maintain current distribution and population size (BIO-4)	nesting pairs with successfully fledged young	>= current levels	late May-July	Avoid indirect effects to nests and young owls - vehicle strikes, entombment.	
11a	**Fairy Shrimp**	Maintain current distribution, population size and range (BIO-4, BIO-12)	Presence/absence in all known or potential pools	>= current frequency of occurrence across range	Late January - March		
11b	**Fairy Shrimp**	Replace and maintain cyst bank (BIO-4, BIO-12)	Presence of females with mature cysts	Presence of females with mature cysts	Late January - March		

Management Objectives & Variables						Management Guidelines: Prescribed Fire	
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Actions and Constraints on the Actions	Actions to test and evaluate
13a	**Sphinx moth**	Maintain current distribution, population size and range (BIO-4)	Presence/absence in all known or potential occurrences	>= current distribution	Late January - mid-February (adult emergence)	Avoid burning host plant, moth, and larvae - don't burn known habitat during moth above ground period. Avoid indirect impacts to moth and habitat - vehicle strikes? disturbance to habitat - no surface disturbance in known habitat.	
13b	**Sphinx moth**	Maintain suitable habitat BIO-4, BIO-8)	Sparsely vegetated washes with Camissonia campestris	Camissonia is common in favorable years	Late January - late March (plant presence)	Avoid indirect impacts to habitat - - no surface disturbance in known habitat that could preclude host plant maintenance.	
14	**Spade-foot toad**	Maintain current distribution, population size and range (BIO-4, BIO-12)	Presence/absence of tadpoles in all known or other ponds	Water present long enough to complete life cycle	Breeding season: January - April		Determine if adults stay near pond post breeding so flaming can be used to prevent evapotranspiration of pond water
16	**Vernal pool invertebrates**	Maintain current distribution, population size and species diversity (BIO-4, BIO-12)	Presence/absence in all known or potential locations	water present long enough to complete life cycle	Late January - March		

Management Objectives & Variables						Management Guidelines: Prescribed Fire	
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Actions and Constraints on the Actions	Actions to test and evaluate
26	**LeConte's thrasher**	Maintain current nesting populations (BIO-4, BIO-8)	Presence of LETH in suitable habitat	Persistence of current populations; suitable shrub cover for nesting structure; saltbush or ephedra >3' in stands, found in drainages or alluvial fans; open/bare ground for foraging away from shrubs.	Jan-March	Avoid prescribed fire in drainages/alluvial fans that contain large shrubs. Suppress fires to prevent stands of shrubs from burning.	
5a	**Mountain Plover**	Maintain at least 3 of the core areas of 50-200 acres suitable for plovers by Sept. 1 if no suitable habitat available in non-core areas on the Monument. PRIMARY (BIO-3, BIO-4, BIO-5)	suitable by Sept 1 thru when they leave	low vegetation (< 2 inches)and patch size	30 days before they arrive	Winter use depends on very low structure, whether naturally occurring or management-induced. ACTION: May need to apply fire when veg height is >2" in Sept. in core areas if no other suitable habitat available. Patchiness from GKR may be ok. 3 areas maintained are chosen to include historical use in North, Central and Southern areas of the Monument.	
5b	**Mountain Plover**	Maintain low shrub cover in core areas. SECONDARY (BIO-5, BIO-8)	Shrub cover	< 5%; with minimum patch size of 50-200 acres	October-November	Burn in areas with greater than 5% shrub cover.	
5c	**Mountain Plover**	Maintain low biomass in core areas. SECONDARY (BIO-5, BIO-8)	Biomass	<500 lbs/acre	October-March	ACTION: May need to apply fire when biomass is >500 lbs/acre Sept. in core areas if no other suitable habitat available. Patchiness from GKR may be ok.	
29	**condor**	TBD (BIO-6)					
25	**sandhill crane**	TBD (BIO-4)					

Management Objectives & Variables						Management Guidelines: Prescribed Fire	
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Actions and Constraints on the Actions	Actions to test and evaluate
1a	**Pronghorn**	Maintain suitable vegetation height for fawning PRIMARY. (BIO-16, BIO-8)	Vegetation height	15-25 inches herbaceous veg over 80% of the fawning area (areas of <15% slope)	March-April		
1b	**Pronghorn**	Maintain suitable shrub cover for fawning. PRIMARY (BIO-16, BIO-8)	Shrub cover, density and distribution	patches of 5-30% cover; 15-25 inches tall, Distribution of patches?	Anytime	Burn in areas with greater than 30% shrub cover.	
1c	**Pronghorn**	Maintain suitable forage. PRIMARY (BIO-16)	Forb abundance and % cover	Maintain or exceed current cover and abundance of palatable forb species	Two sampling dates: March-April; August	Burn pastures to promote palatable forbs.	
1d	**Pronghorn**	Provide adequate water PRIMARY (BIO-16)	available water	water source every two miles	year round		
1e	**Pronghorn**	Maintain or enhance fawn-to-doe ratios SECONDARY (BIO-16)	fawn:doe	Maintain a minimum of 25 fawns/100 does	July		
1f	**Pronghorn**	Enhance population size SECONDARY (BIO-16)	number of pronghorn	>= 250	January		
1g	**Pronghorn**	Maintain buck-to-doe ratio SECONDARY (BIO-16)	buck:doe	Maintain a minimum of 25 bucks/100 does + minimum population size of 250	January		

Management Objectives & Variables						Management Guidelines: Prescribed Fire	
Conservation Target		**Management Target (Plan Objective)**	**Variable**	**Desired Value of the Variable**	**Time of year the variable should be measured**	**Actions and Constraints on the Actions**	**Actions to test and evaluate**
1h	**Pronghorn**	Promote travel across landscape (BIO-16)	Fences	All fences modified for pronghorn passage/unnecessary fences removed	Anytime	Not applicable to fire	
15a	**Elk**	Maintain and expand foraging habitat. (BIO-17)	Presence of elk	Elk use in 90% of the Avena belt within the CFN and CPN subregions.	November		
15b	**Elk**	Maintain suitable vegetation height for calving. PRIMARY (BIO-17, BIO-8)	Vegetation height	>15 inches veg over 80% of the calving area (within appropriate area?)	March-April		
15c	**Elk**	Provide adequate water PRIMARY (BIO-17)	available water	water source every two miles	year round		
15d	**Elk**	Prevent cow displacement during calving SECONDARY (BIO-17)					
15e	**Elk**	Maintain or enhance calf-to-cow ratios SECONDARY (BIO-17)	calf:cow	Maintain a minimum of 25 fawns/100 does	July		
15f	**Elk**	Enhance population size SECONDARY (BIO-17)	number of elk	>= 500, including both sub herds.	November		
15g	**Elk**	Maintain bull-to-cow ratio SECONDARY (BIO-17)	bull:cow	Maintain a minimum of 25 bulls/100 cows + minimum population size of 250	November		

Management Objectives & Variables						Management Guidelines: Prescribed Fire	
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Actions and Constraints on the Actions	Actions to test and evaluate
24a	**Grasshopper sparrow**	Maintain suitable vegetation structure for nesting PRIMARY. (BIO-4, BIO-8, BIO-18))	Vegetation structure	Vegetation height = 10" to 20+", composed of annual and/or perennial grasses with some scattered shrubs-w/a pref. for bunch grasses; height for perching and cover but open space for movement (patchiness)	Dec-Jan	Use prescribed fire on portions of habitat (rotation) when patchiness absent and herbaceous veg. too dense for movement, or when shrubs>20%.	
24b	**Other grassland birds**	TBD (BIO-4, BIO-8, BIO-18)					
27	**tricolor blackbirds**	TBD (BIO-4, BIO-8)					
28a	**landscape scale ecosystem functioning**	Maintain the diversity of habitats (BIO-8)	diversity of habitats				
28b	**landscape scale ecosystem functioning**	Maintain the diversity of native spp within habitats (BIO-4, BIO-8)	spp diversity within habitats				
29	**Long-billed curlew**						
30	**Wintering Raptors**	TBD (BIO-4, BIO-18)					

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Management Objectives & Variables						Management Guidelines: Other Restoration Tools	
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Actions and Constraints on the Actions	Actions to test and evaluate
Native plant species							
9a	**Caulanthus**	Maintain distribution and size of existing populations (BIO-2, BIO-14)	Distribution and population size; reproducing populations	>= current levels	January - May		
9b	**Caulanthus**	Restore populations to areas of known historical range (BIO-14, BIO-8)	Success (establishment and reproduction) of restored populations in historical range	Self-sustaining populations in introduced range	January - May	reintroduce in historical range.	
19	**wooly threads**	Maintain current distribution and population size (BIO -2, BIO-14	Presence/absence in known or appropriate locations	>= current distribution and condition across landscape relative to year's precipitation	Feb-Apr		
20a	**Lepidium jaredii**	maintain or enhance populations (BIO-2, BIO-14)	reproduction	some seed production in most years, large seed production occasionally (as in 2008)	Apr-May		
20b	**Lepidium jaredii**	maintain or enhance populations (BIO-2, BIO-14)	population size	in most years, some presence in known habitat, occasional large displays (as in 2008)	Mar-May		
32a	**Amsinckia vernicosa var. furcata**	maintain or enhance populations (BIO-2, BIO-14)	reproduction	some seed production in most years, large seed production occasionally	Mar-May		

Management Objectives & Variables						Management Guidelines: Other Restoration Tools	
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Actions and Constraints on the Actions	Actions to test and evaluate
32b	**Amsinckia vernicosa var. furcata**	maintain or enhance populations (BIO-2, BIO-14)	population size	in most years, some presence in known habitat, occasional large displays	Mar-May		
33a	**Acanthominth a obovata ssp. cordata (clay species)**	maintain or enhance populations (BIO-2, BIO-14)	reproduction	some seed production in most years, large seed production occasionally	Apr-Jul		
33b	**Acanthominth a obovata ssp. cordata**	maintain or enhance populations (BIO-2, BIO-14)	population size	in most years, some presence in known habitat, occasional large displays (like in 2008)	Apr-Jul		
22	**Clay species**	Maintain current distribution and population size	Presence/absence in known or appropriate locations	>= current distribution and condition across landscape relative to year's precipitation	Mar-Jun		
31	**vernal pools**	TBD	0	0	0		
2a1	**a. Bunch grasses (Poa secunda, Nasella cernua, Nasella pulchra, Sitanion hystrix, Achnatherum speciosa)**	Maintain or enhance populations PRIMARY (maintain pop. parameters) (BIO-2, BIO-14)	a. Seed production [presence of inflorescences (sexual) or new genets (asexual)]	Presence of inflorescences in > 50% of population	Varies depending on species (February-May)		

Management Objectives & Variables						Management Guidelines: Other Restoration Tools	
Conservation Target		**Management Target (Plan Objective)**	**Variable**	**Desired Value of the Variable**	**Time of year the variable should be measured**	**Actions and Constraints on the Actions**	**Actions to test and evaluate**
2a2	**a. Bunch grasses (Poa secunda, Nasella cernua, Nasella pulchra, Sitanion hystrix, Achnatherum speciosa)**	Maintain or enhance populations PRIMARY (maintain pop. parameters) (BIO-2, BIO-14)	b. Recruitment of new individuals and Retention of existing. Measure through cover and frequency.	Recruitment and survival of new individuals.Maintain or enhance the average frequency of Poa secunda and Nassella spp. seedlings at more than 20 per plot during a five year period. Initiate active restoration when the average frequency of Poa secunda and Nassella spp. seedlings is ≤ 10 seedlings per plot.Frequency plot = large "inter-plot areas"	February for seedlings; late spring (May/June) for new juveniles and adults		Experimentally test dormant season prescribed burning plus seeding of native perennial bunchgrasses, in select valley and foothill grassland areas where native perennial bunchgrasses are not currently present but could be established, for enhancement of native perennial bunchgrass recruitment (i.e., 1) provide germination microsites for new bunchgrass species seedlings by reducing competition (biomass) from exotic annual grasses; 2) increase the number of native perennial bunchgrass seedlings in the community).
2a3	**a. Bunch grasses (Poa secunda, Nasella cernua, Nasella pulchra, Sitanion hystrix, Achnatherum speciosa)**	Maintain stable size structure; PRIMARY (maintain pop. parameters) (BIO-2, BIO-14)	Cover, basal diameter	Maintain range of sizes.	February-May		

Management Objectives & Variables						Management Guidelines: Other Restoration Tools	
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Actions and Constraints on the Actions	Actions to test and evaluate
2a4	**a. Bunch grasses (Poa secunda, Nasella cernua, Nasella pulchra, Sitanion hystrix, Achnatherum speciosa)**	Maintain or enhance spatial distribution of bunch grass populations PRIMARY (Maintain community parameters) (BIO-2, BIO-14)	Population boundary	Maintain or enhance population boundary within 'range of natural variation' (e.g. allowing for annual expansion and contraction	February-May		
2b1	**b. Rhizomatous species (Distichlis spicata, Leymus triticoides)**	Maintain or enhance population patch size PRIMARY (BIO-2, BIO-14)	Patch size (e.g. %cover over larger scale)	Maintain or enhance patch size (No value for this variable yet)	Anytime (preferably peak growth period)		
2b2	**b. Rhizomatous species (Distichlis spicata, Leymus triticoides)**	Maintain or enhance spatial distribution PRIMARY (BIO-2, BIO-14)	Population boundary	Maintain or enhance distribution (No value for this variable yet)	Anytime (peak growth period)		

Management Objectives & Variables						Management Guidelines: Other Restoration Tools	
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Actions and Constraints on the Actions	Actions to test and evaluate
2c1	**c. Native annual flora**	Maintain or enhance native annual species richness and cover PRIMARY (BIO-2, BIO-14)	Native annual species richness and cover	>= current levels. Maintain or enhance the average relative cover of native annual plant species at more than 20% and the average native annual plant species richness at more than 5 during a five year period. Initiate active restoration when the average relative cover of native annual plant species is ≤ 20% and/or the average native annual plant species richness is ≤ 3.5 during a five year period. Plant cover and richness = Daubenmire plot.	Spring-active: March-May; Summer-active: June-October	restoration pretreatment using herbicides. enhance native species seed bank - island in landscape, range drill, and broadcast seed.	Experimentally test dormant season prescribed burning plus seeding of native annual forbs, in select valley and foothill grassland areas, for enhancement of native annual forb cover and richness (i.e., 1) reduce competition (biomass) from exotic annual grasses; 2) reduce seed limitation, increase the number and diversity of native annual forbs in the community).
2c2	**c. Native annual flora**	Maintain native annual seed bank PRIMARY (BIO-2, BIO-14)	Seed production during favorable years	"Adequate" proportion of population producing seeds	Varies depending on species (April-October)		

Management Objectives & Variables						*Management Guidelines: Other Restoration Tools*	
Conservation Target		**Management Target (Plan Objective)**	**Variable**	**Desired Value of the Variable**	**Time of year the variable should be measured**	**Actions and Constraints on the Actions**	**Actions to test and evaluate**
2c3	**c. Native annual flora**	Reduce abundance of exotic annual grasses and forbs SECONDARY (BIO-21)	% cover, richness, abundance, height of exotic species	< current levels	Spring-active: March-May; Summer-active: June-October		Evaluate the use of other methods to reduce exotic summer annuals (tumbleweeds?).

Management Objectives & Variables						Management Guidelines: Other Restoration Tools	
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Actions and Constraints on the Actions	Actions to test and evaluate
2g	**Grassland Community**	Maintain matrix of bunchgrasses and native annual plant species PRIMARY (Maintain community parameters) (BIO-8)	Composition and % cover of non-bunchgrass plant species. Frequency of Poa secunda and Nassella species seedlings; relative or absolute cover of native annual plant species; native annual plant species richness.	See 2a2 and 2c1.	March-May		Experimentally test dormant season prescribed burning plus seeding of native perennial bunchgrass seedlings and native annual forb seeds, in select valley and foothill grassland areas where native perennial bunchgrasses **are present,** for enhancement of native perennial bunchgrass and native annual forb recruitment, i.e., 1) provide germination microsites for new bunchgrass species seedlings and enhance native annual forb cover by reducing competition (biomass) from exotic annual grasses; 2) increase the number of native perennial bunchgrass seedlings and the number and richness of native annual forb seedlings in the community. Experimentally test dormant season prescribed burning plus seeding of native perennial bunchgrasses seedlings and native annual forb seeds, in select valley and foothill grassland areas where native perennial bunchgrasses **are not currently present**, for enhancement of native perennial bunchgrass recruitment (i.e., 1) provide germination microsites for new bunchgrass species seedlings and enhance native annual forb cover by reducing competition (biomass) from exotic annual grasses; 2) increase the number of native perennial bunchgrass seedlings and the number and richness of native annual forb seedlings in the community).

Management Objectives & Variables						Management Guidelines: Other Restoration Tools	
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Actions and Constraints on the Actions	Actions to test and evaluate
2d	**d. Native perennial herbs & bulbs**	TBD (BIO-14)	0		0		
2e1	**e. Native shrub flora (Atriplex polycarpa, Atriplex spinifera, Ephedra spp)**	Maintain or enhance current cover and population distribution PRIMARY (BIO-8, BIO-14)	% cover, areal extent		Summer active: June-November; Winter active: December-May; depends on species	maintain/restore hydrology to promote seed distribution. Protect isolated shrubs (fence) to protect seed source. use grazing to provide germination microsites. Establish islands/strips to act as seed source.	
2e2	**e. Native shrub flora (Atriplex polycarpa, Atriplex spinifera, Ephedra spp)**	Recruitment in favorable years to maintain age structure PRIMARY (BIO-8, BIO-14)	Seedling survival during and following recruitment years	Recruitment and survival of new individuals; range of sizes and ages	Depends on species	maintain/restore hydrology to promote seed distribution. Protect isolated shrubs (fence) to protect seed source.	Evaluate whether other tools can provide germination microsites and seedling establishment opportunities for native shrubs.
2e3	**e. Native shrub flora: Upper Sonoran Sub-Shrub Scrub Community**	Enhance the areal extent of this community. (BIO-8, BIO-14)	acres	> or = to current amount	anytime (remote sensing)		
2e4	**e. Native shrub flora: Upper Sonoran Sub-Shrub Scrub Community**	Enhance native spp cover and richness within this community. (BIO-8, BIO-14)	Cover and richness of native spp.	> current levels	0		

Management Objectives & Variables						Management Guidelines: Other Restoration Tools	
Conservation Target		**Management Target (Plan Objective)**	**Variable**	**Desired Value of the Variable**	**Time of year the variable should be measured**	**Actions and Constraints on the Actions**	**Actions to test and evaluate**
2e6	**e. Native shrub flora: Valley Sink Scrub Community**	Enhance native spp cover and richness within this community. (BIO-8,BIO-14)	Cover and richness of native spp.	> current levels	0		
2f1	**f. blue and Alvord oaks**	maintain and enhance populations (BIO-14)	reproduction (acorn production)	cyclical production (mast years)	fall		
2f2	**f. blue and Alvord oaks**	maintain and enhance populations (BIO-14, BIO-8)	recruitment of new individuals	presence of seedlings/young trees	any		
2f3	**f. blue and Alvord oaks**	maintain and enhance populations (BIO-14, BIO-8)	understory habitat	presence of intact soils, leaf litter, diverse humus biota	any		
17a	**soil crusts**	maintain and enhance habitat (BIO-14)	geographic extent	increase of crust habitat	any		
17b	**soil crusts**	maintain and enhance habitat (BIO-14)	diversity	presence of a number of species (bryophytes, lichens, algae, cyanobacteria)	best during wet season		
17c	**soil crusts**	maintain and enhance habitat (BIO-14)	serial stage	mix of late and early successional species	best during wet season		
17d	**soil crusts**	maintain and enhance habitat (BIO-14)	physical integrity	not broken during dry season, intact	dry season		

Management Objectives & Variables						Management Guidelines: Other Restoration Tools	
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Actions and Constraints on the Actions	Actions to test and evaluate
12	**Noxious Weeds (Hoary Cress, Tamarisk, Russian Knapweed, Bull thistle, yellow star thistle)**	Decrease or eliminate distribution and abundance of key invaders (see list) PRIMARY (BIO-21)	presence; % cover, density	presence; <= distribution	Varies depending on species	Treat aggressively according to species. Monitor Cal IPC (California invasive plant council) list in event new species appear on Carrizo.	
34	**Annual forage on Section 15 allotments**	Manage annual biomass to protect soils from accelerated erosion and replenish soil nutrients through decomposition. (BIO-1, BIO-8)	RDM	RDM at least 500 lbs/acre at beginning of the next growing season.	October-November		
Native animal species							
3a	**Giant Kangaroo Rat**	Maintain or enhance current populations in core areas. PRIMARY (BIO-3, BIO-4)	GKR density (active) (over large scale)	Maintain at least 20 individuals per hectare in core areas or in mosaic pattern in landscape (20 individuals indicate treatment action needed in core area)	August-Sept		

Management Objectives & Variables						*Management Guidelines: Other Restoration Tools*	
Conservation Target		**Management Target (Plan Objective)**	**Variable**	**Desired Value of the Variable**	**Time of year the variable should be measured**	**Actions and Constraints on the Actions**	**Actions to test and evaluate**
3b	**Giant Kangaroo Rat**	Maintain or enhance distribution in core areas. PRIMARY (BIO-3, BIO-4)	Distribution of active GKR	Maintain at least 20 individuals per hectare in core areas or in mosaic pattern in landscape (20 individuals indicate treatment action needed in core area)	August-Sept	relocate to appropriate sites.	
3c	**Giant Kangaroo Rat**	Maintain suitable habitat structure in core areas. PRIMARY (BIO-3, BIO-4)	fall RDM	RDM < 1600 lbs/acre (dry mass) and GKR (>20 individuals/hectare).	fall, Oct-Nov		
3d	**Giant Kangaroo Rat**	Maintain suitable shrub cover in core areas. SECONDARY (BIO-3, BIO-8)	Shrub cover	0-30%	Anytime		

Management Objectives & Variables						Management Guidelines: Other Restoration Tools	
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Actions and Constraints on the Actions	Actions to test and evaluate
3e	**Giant Kangaroo Rat**	Prevent species disappearance from the Monument. (Alt 2, Non-core areas) (BIO-4, BIO-15)	Allow populations, distribution, and habitat structure to fluctuate naturally within non-core areas of CMS, TR, PHEP, CPC, and CPN subregions.	Take action to prevent disappearance from the Monument when variables in core areas continue to decline despite actions already taken in core areas.	Same timing as GKR core areas	The decision to apply management outside the core area, and what type of management to use, would follow the logic outlined in the Decision Tree table for management of SJV target species in non-core areas. Specific management actions would be based on evaluations of core area populations, the effectiveness of current management, and whether target animal populations are responding to current management.	Test management actions to achieve core area effects in non-core areas when species thresholds at desired levels
4a	**Blunt-nosed Leopard Lizard**	Maintain suitable herbaceous structure in core areas. PRIMARY (BIO- 3)	Biomass (herbaceous layer only)	<500 optimal; <1000 ok	Spring - Late April - Mid-May (post annual dry-up; after peak production)		

Management Objectives & Variables						Management Guidelines: Other Restoration Tools	
Conservation Target		**Management Target (Plan Objective)**	**Variable**	**Desired Value of the Variable**	**Time of year the variable should be measured**	**Actions and Constraints on the Actions**	**Actions to test and evaluate**
4b	**Blunt-nosed Leopard Lizard**	Maintain or enhance population in core areas. PRIMARY (BIO-3)	Presence/absence	One or more individual observed on single visit in favorable conditions; several seen on repeated visits	May and June	Avoid activities that may result in direct take and reduce habitat availability in core/occupied areas. Conduct in dry conditions to avoid burrow collapse	
4c	**Blunt-nosed Leopard Lizard**	Maintain suitable shrub cover in areas with unsuitable number/density of open/ available burrows in core areas. PRIMARY (BIO-3, BIO-8)	Shrub cover (burrow availability)	inadequate number/density of open/available burrows AND <5-20% shrub cover	Anytime	Restoration would be used to increase shrub cover to optimal levels (of 5-20%).	
4d	**Blunt-nosed Leopard Lizard**	Maintain suitable shrub cover in core areas. SECONDARY BIO-3, BIO-8)	Shrub cover	0-30%	Anytime	Restoration would not be used to achieve >30% shrub cover.	
4e	**Blunt-nosed Leopard Lizard**	Maintain burrows in core areas. SECONDARY (BIO-3, BIO-4)	Burrow density and distribution	Common and available. Suitable burrows present with very few altered by human-induced causes. Small mammal burrowing activity is evident and not reduced by management activities. Few (<10%) disturbed	Adults: May-August; hatchlings: July-August	Avoid management activities that reduce burrow availability	

Management Objectives & Variables						Management Guidelines: Other Restoration Tools	
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Actions and Constraints on the Actions	Actions to test and evaluate
4f	**Blunt-nosed Leopard Lizard**	Prevent species disappearance from the Monument. (Alt 2, Non-core areas) (BIO-4, BIO-15)	Allow populations, and herbaceous structure to fluctuate naturally within non-core areas of CMS, PHEP, CPC, and CFS.	Take action to prevent disappearance from the Monument when variables in core areas continue to decline despite actions already taken in core areas.	Same timing as BNLL core areas	The decision to apply management outside the core area, and what type of management to use, would follow the logic outlined in the Decision Tree table for management of SJV target species in non-core areas. Specific management actions would be based on evaluations of core area populations, the effectiveness of current management, and whether target animal populations are responding to current management.	Test management actions to achieve core area effects in non-core areas when species thresholds at desired levels
8a	**Kit Fox**	Maintain and enhance populations in core areas. (BIO-3, BIO-4)	Kit fox abundance	>= current population size	quarterly	Post signs to prevent vehicle strikes for dens near Soda Lake Rd.	
8b	**Kit Fox**	Monitor predator abundance in core areas. (BIO-3, BIO-4)	Predator abundance	Below "detrimental" levels	quarterly		

Management Objectives & Variables						Management Guidelines: Other Restoration Tools	
Conservation Target		**Management Target (Plan Objective)**	**Variable**	**Desired Value of the Variable**	**Time of year the variable should be measured**	**Actions and Constraints on the Actions**	**Actions to test and evaluate**
8c	**Kit Fox**	Maintain and enhance distribution in core areas. (BIO-3, BIO-4)	Kit fox distribution	>= current distribution	quarterly		
8d	**Kit Fox**	Maintain or enhance suitable habitat structure: shrub cover in core areas. (BIO-3, BIO-8)	Shrub cover	<30%	Anytime		
8e	**Kit Fox**	Maintain or enhance suitable habitat structure: veg. ht. in core areas. (BIO-3, BIO-8)	Vegetation height	< Kit fox eyelevel (< 8 inches); patch size?	Anytime		
8f	**Kit Fox**	Maintain prey abundance (nocturnal rodents, other small mammals) in core areas. (BIO-3, BIO-4)	Abundance of nocturnal mammals (jackrabbits, cottontails, kangaroo rats, etc.)	Absence, low numbers (need to look at data to determine whether there are thresholds)	quarterly		

Management Objectives & Variables						Management Guidelines: Other Restoration Tools	
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Actions and Constraints on the Actions	Actions to test and evaluate
8g	**Kit Fox**	Prevent species disappearance from the Monument. (Alt 2, Non-core areas) (BIO-4, BIO-15)	Allow suitable habitat structure to fluctuate naturally within non-core areas of CMS, PHEP, CPC, and SL subregions.	Take action to prevent disappearance from the Monument when variables in core areas continue to decline despite actions already taken in core areas.	Same timing as SJKF core areas	The decision to apply management outside the core area, and what type of management to use, would follow the logic outlined in the Decision Tree table for management of SJV target species in non-core areas. Specific management actions would be based on evaluations of core area populations, the effectiveness of current management, and whether target animal populations are responding to current management.	Test management actions to achieve core area effects in non-core areas when species thresholds at desired levels
10a	**San Joaquin Antelope Squirrel**	Maintain suitable habitat structure: herbaceous biomass in core areas. PRIMARY (BIO-3, BIO-4)	fall RDM	<1600 lbs/ acre and GKR (>20 individuals per hectare)	Oct-Nov, before rains		
10b	**San Joaquin Antelope Squirrel**	Maintain/ enhance distribution in core areas. PRIMARY (BIO-3, BIO-4)	Presence of individuals	>= existing distribution. 2 or more individuals on std. transect used to locate core areas.	Spring through Summer	Apply seeding rates of shrubs that average <30% cover	figure out why SJAS are not present/declining.

Management Objectives & Variables						Management Guidelines: Other Restoration Tools	
Conservation Target		**Management Target (Plan Objective)**	**Variable**	**Desired Value of the Variable**	**Time of year the variable should be measured**	**Actions and Constraints on the Actions**	**Actions to test and evaluate**
10c	**San Joaquin Antelope Squirrel**	Maintain suitable habitat structure:shrub cover in core areas. SECONDARY (BIO-3, BIO-8)	Shrub cover	0-50%	Anytime	Apply seeding rates of shrubs that average <30% cover	
10d	**San Joaquin Antelope Squirrel**	Prevent species disappearance from the Monument. (Alt 2, Non-core areas) (BIO-4, BIO-15)	Allow populations, suitable herbaceous structure to fluctuate naturally within non-core areas of CMS, PHEP, and CPC subregions.	Take action to prevent disappearance from the Monument when variables in core areas continue to decline despite actions already taken in core areas.	Same timing as SJAS core areas	The decision to apply management outside the core area, and what type of management to use, would follow the logic outlined in the Decision Tree table for management of SJV target species in non-core areas. Specific management actions would be based on evaluations of core area populations, the effectiveness of current management, and whether target animal populations are responding to current management.	Test management actions to achieve core area effects in non-core areas when species thresholds at desired levels
30	**bats - pallid**	TBD					

Management Objectives & Variables						Management Guidelines: Other Restoration Tools	
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Actions and Constraints on the Actions	Actions to test and evaluate
18	**Burrowing owl**	Maintain current distribution and population size (BIO-4)	nesting pairs with successfully fledged young	>= current levels	late May-July	Minimize vehicle strikes - speed limits? Education? warning signs? Avoid indirect effects to nests and young owls - vehicle strikes, entombment.	
11a	**Fairy Shrimp**	Maintain current distribution, population size and range (BIO-4, BIO-12)	Presence/absence in all known or potential pools	>= current frequency of occurrence across range	Late January - March		
11b	**Fairy Shrimp**	Replace and maintain cyst bank (BIO-4, BIO-12)	Presence of females with mature cysts	Presence of females with mature cysts	Late January - March		
13a	**Sphinx moth**	Maintain current distribution, population size and range (BIO-4)	Presence/absence in all known or potential occurrences	>= current distribution	Late January - mid-February (adult emergence)	Avoid indirect impacts to moth and habitat - vehicle strikes? disturbance to habitat - no surface disturbance in known habitat	Research currently ongoing to determine impacts from various types of disturbance.
13b	**Sphinx moth**	Maintain suitable habitat BIO-4, BIO-8)	Sparsely vegetated washes with Camissonia campestris	Camissonia is common in favorable years	Late January - late March (plant presence)	Avoid indirect impacts to habitat - - no surface disturbance in known habitat that could preclude host plant maintenance.	

Management Objectives & Variables						Management Guidelines: Other Restoration Tools	
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Actions and Constraints on the Actions	Actions to test and evaluate
14	**Spadefoot toad**	Maintain current distribution, population size and range (BIO-4, BIO-12)	Presence/absence of tadpoles in all known or other ponds	Water present long enough to complete life cycle	Breeding season: January - April	Post signs to prevent trespass sheep grazing; use hand tools to remove vegetation around ponds when needed to prevent evapotranspiration.	
16	**Vernal pool invertebrates**	Maintain current distribution, population size and species diversity (BIO-4, BIO-12)	Presence/absence in all known or potential locations	water present long enough to complete life cycle	Late January - March		
26	**LeConte's thrasher**	Maintain current nesting populations (BIO-4, BIO-8)	Presence of LETH in suitable habitat	Persistence of current populations; suitable shrub cover for nesting structure; saltbush or ephedra >3' in stands, found in drainages or alluvial fans; open/bare ground for foraging away from shrubs.	Jan-March	Avoid disturbance in drainages and alluvial fans. Restore shrubs when lost to fire or management actions.	
5a	**Mountain Plover**	Maintain at least 3 of the core areas of 50-200 acres suitable for plovers by Sept. 1 if no suitable habitat available in non-core areas on the Monument. PRIMARY (BIO-3, BIO-4, BIO-5)	suitable by Sept 1 thru when they leave	low vegetation (< 2 inches)and patch size	30 days before they arrive		

Management Objectives & Variables						Management Guidelines: Other Restoration Tools	
Conservation Target		**Management Target (Plan Objective)**	**Variable**	**Desired Value of the Variable**	**Time of year the variable should be measured**	**Actions and Constraints on the Actions**	**Actions to test and evaluate**
5b	**Mountain Plover**	Maintain low shrub cover in core areas. SECONDARY (BIO-5, BIO-8)	Shrub cover	< 5%; with minimum patch size of 50-200 acres; areas as little as 10 acres may be used but larger preferred	October-November		
5c	**Mountain Plover**	Maintain low biomass in core areas. SECONDARY (BIO-5, BIO-8)	Biomass	<500 lbs/acre	October-March		
29	**condor**	TBD (BIO-6)				lead free special rules?	
25	**sandhill crane**	TBD (BIO-4)					
1a	**Pronghorn**	Maintain suitable vegetation height for fawning PRIMARY. (BIO-16, BIO-8)	Vegetation height	15-25 inches herbaceous veg over 80% of the fawning area (areas of <15% slope)	March-April		
1b	**Pronghorn**	Maintain suitable shrub cover for fawning. PRIMARY (BIO-16, BIO-8)	Shrub cover, density and distribution	patches of 5-30% cover; 15-25 inches tall, Distribution of patches?	Anytime		
1c	**Pronghorn**	Maintain suitable forage. PRIMARY (BIO-16)	Forb abundance and % cover	Maintain or exceed current cover and abundance of palatable forb species	Two sampling dates: March-April; August		
1d	**Pronghorn**	Provide adequate water PRIMARY (BIO-16)	available water	water source every two miles	year round		
1e	**Pronghorn**	Maintain or enhance fawn-to-doe ratios SECONDARY (BIO-16)	fawn:doe	Maintain a minimum of 25 fawns/100 does	July		

Management Objectives & Variables						Management Guidelines: Other Restoration Tools	
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Actions and Constraints on the Actions	Actions to test and evaluate
1f	**Pronghorn**	Enhance population size SECONDARY (BIO-16)	number of pronghorn	>= 250	January	Don't hunt. Relocate more	
1g	**Pronghorn**	Maintain buck-to-doe ratio SECONDARY (BIO-16)	buck:doe	Maintain a minimum of 25 bucks/100 does + minimum population size of 250	January		
1h	**Pronghorn**	Promote travel across landscape (BIO-16)	Fences	All fences modified for pronghorn passage/unnecessary fences removed	Anytime	Continue to modify fences to BLM standards or w/higher bottom wire; remove unnecessary fences	
15a	**Elk**	Maintain and expand foraging habitat. (BIO-17)	Presence of elk	Elk use in 90% of the Avena belt within the CFN and CPN subregions.	November		
15b	**Elk**	Maintain suitable vegetation height for calving. PRIMARY (BIO-17, BIO-8)	Vegetation height	>15 inches veg over 80% of the calving area (within appropriate area?)	March-April		
15c	**Elk**	Provide adequate water PRIMARY (BIO-17)	available water	water source every two miles	year round		
15d	**Elk**	Prevent cow displacement during calving SECONDARY (BIO-17)				Restrict access during calving period.	

Management Objectives & Variables						Management Guidelines: Other Restoration Tools	
Conservation Target		**Management Target (Plan Objective)**	**Variable**	**Desired Value of the Variable**	**Time of year the variable should be measured**	**Actions and Constraints on the Actions**	**Actions to test and evaluate**
15e	**Elk**	Maintain or enhance calf-to-cow ratios SECONDARY (BIO-17)	calf:cow	Maintain a minimum of 25 fawns/100 does	July		
15f	**Elk**	Enhance population size SECONDARY (BIO-17)	number of elk	>= 500, including both sub herds.	November	Appropriate hunt harvest. will accept translocations within habitat capacity	
15g	**Elk**	Maintain bull-to-cow ratio SECONDARY (BIO-17)	bull:cow	Maintain a minimum of 25 bulls/100 cows + minimum population size of 250	November	Reduce hunting pressure. Avoid conflicts with hunting seasons.	
24a	**Grasshopper sparrow**	Maintain suitable vegetation structure for nesting PRIMARY. (BIO-4, BIO-8, BIO-18))	Vegetation structure	Vegetation height = 10" to 20+", composed of annual and/or perennial grasses with some scattered shrubs-w/a pref. for bunch grasses; height for perching and cover but open space for movement (patchiness)	Dec-Jan	Use restoration to increase native bunch grasses in habitat or to create habitat.	
24b	**Other grassland birds**	TBD (BIO-4, BIO-8, BIO-18)					
27	**tricolor blackbirds**	TBD (BIO-4, BIO-8)					
28a	**landscape scale ecosystem functioning**	Maintain the diversity of habitats (BIO-8)	diversity of habitats				

Management Objectives & Variables						Management Guidelines: Other Restoration Tools	
Conservation Target		Management Target (Plan Objective)	Variable	Desired Value of the Variable	Time of year the variable should be measured	Actions and Constraints on the Actions	Actions to test and evaluate
28b	**landscape scale ecosystem functioning**	Maintain the diversity of native spp within habitats (BIO-4, BIO-8)	spp diversity within habitats				
29	**Long-billed curlew**	TBD					
30	**Winter Raptors**	TBD (BIO-4, BIO-18)					

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Appendix D

Research Authorization Process and Example Permit Form

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Appendix D

Research Authorization Process and Example Permit Form

Research Proposal Guidelines and Authorization Process:

The Carrizo Plain is often referred to as an "Outdoor Laboratory" and research is welcomed and encouraged. All persons conducting research within the Monument however, must receive authorization prior to the commencement of the project. Below are general guidelines to expedite the process.

The first step in the process is to contact a BLM staff person such as a biologist, botanist, archaeologist or geologist. Staff will need:

- a detailed project proposal that provides as much information as possible

- the geographic location of the project within the Monument (the contact person will help determine if the location is located on BLM, CDFG or private land as not all property within the Monument is public land). Staff will provide assistance with finding an appropriate location if necessary. For all projects on CDFG land, CDFG must be contacted for their authorization process.

After speaking with a staff specialist and for all projects on BLM lands:

> If the project is determined to be of valid, scientific merit and have no impacts to cultural, listed or sensitive species, a notice of approval or denial may be expected shortly thereafter. If the project is approved, it may take a few days or weeks to receive an approved authorization, depending on current work load. **Important:** A **minimum** of one month is needed for staff to make this determination.

If the project is determined to impact cultural, listed or sensitive species in some way, an authorization may take up to 90 days or more for staff to complete an Environmental Assessment (it must go through BLM's NEPA process) if needed. There may be a request for project modification. Projects may also be denied. Cultural projects require a permit that identifies standards for inventory and monitoring on public lands.

If the project involves animal species or the possible take of any listed species (plant or animal), you will be asked to provide proof that you hold the necessary, current permits from the California Department of Fish and Game and/or the U.S. Fish and Wildlife Service. (Acquiring these permits may take four months or more).

Long-term projects may be required to be submitted to the Carrizo Science Review Team for their analysis.

(The staff specialist may assist with project modification or work to help expedite the process).

Once these steps are completed and the project is approved, an authorization will be issued electronically.

An annual summary or report of project activities to BLM is required as well as any publications resulting from work within the Monument to provide the most benefit to the managing partners, other agencies, researchers and the public. Cultural projects must follow requirements for archiving any cultural records and inventory.

Note: BLM reserves the right to deny projects that do not meet criteria.

CARRIZO PLAIN NATIONAL MONUMENT

BUREAU OF LAND MANAGEMENT
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Bakersfield, California 93308-6837
(661) 391-6000

THE NATURE CONSERVANCY
California Regional Office
201 Mission Street, 4th Floor
San Francisco, California 94105

CALIFORNIA DEPARTMENT OF FISH & GAME
Region III
P.O. Box 47
Yountville, California 94599

Researcher's Name
Researcher's Contact Information:
(Address, Phone, e-mail address etc.)

Date

Dear Researcher:

This letter will serve to authorize the following field/research activities within the Carrizo Plain National Monument, subject to the constraints described below:

- Geologic mapping of a portion of the Caliente Range within the Carrizo Plain National Monument (CPNM).
- No digging or plant removal is permitted.
- All access off of established roads will be by foot travel.
- Access to private property will not be provided by the Bureau of Land Management (BLM).
- A copy of all data including a copy of the final map or maps produced, associated GPS points, and resulting reports will be provided to the BLM. Data can be in electronic or paper form and sent to the contact person below.

Authorized Vehicle(s) Description: Black Jeep Wagoneer, California or other license plate number

All vehicles will display an Authorized Researcher vehicle placard on the front dashboard while conducting activities.

Names of Authorized Persons: Researcher.
Additional authorized users:
Assistants; Advisor, etc.

List other activities here that may also be authorized or any additional information

This authorization is also subject to compliance with the standard research guidelines (see attached).

If there are any changes to your plans, or if any of the above information is incorrect, please notify the contact person listed below as soon as possible.

The contact person for this authorization is: (Name of Contact Person here) – Wildlife Biologist Carrizo Plain National Monument Bureau of Land Management 3801 Pegasus Drive Bakersfield, CA 93308 661-391-xxxx phone, 661-391-xxxx fax e-mail: contactperson@blm.gov	Authorized by: _____ (Name of BLM Manager here) _____ Date Valid through (Expiration Date of Authorization)

Electronic cc:

Names of Managing Partners listed here with their contact information

Appendix E

Central California Standards for Rangeland Health and Guidelines for Grazing Management

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Record of Decision

Central California

STANDARDS

for Rangeland Health

and

GUIDELINES

for Livestock Grazing Management

Prepared by the Bureau of Land Management
California State Office
June 1999

ABSTRACT

Central California

Standards for Rangeland Health and Guidelines for Livestock Grazing Management

Draft ( ) Final ( ) Record of Decision (X)

United States Department of the Interior, Bureau of Land Management (BLM)

1. Type of Action: Administrative (X) Legislative ( )

2. Abstract: This is the Record of Decision for the environmental impact statement (EIS) documenting the effects of adopting regional standards for rangeland health and guidelines for livestock grazing management on BLM-administered lands in parts of California and NW Nevada. This Record of Decision covers that part of Central California formerly known as the Bakersfield District.

The Preferred Alternative described in the final EIS (Alternative 5), has been chosen as the Standards and Guidelines for Central California. The changes reflected in this Decision are within the scope and analysis of the EIS.

These Standards and Guidelines will be recommended to the Secretary of the Interior for final approval. They will take effect immediately upon that approval.

This document contains the actual Decision establishing Rangeland Health Standards and Guidelines for Central California. It includes the following:

- Decision on Plan Amendments
- Standards and Guidelines for 'Central California (formerly the Bakersfield District)
- Implementation Plan
- Monitoring Plan

Al Wright, Acting State Director — Date: 6-14-99

Bureau of Land Management
California State Office

SUMMARY

This is the Record of Decision (Decision) recommending Rangeland Health Standards and Livestock Grazing Management Guidelines for Central California. These recommendations will be submitted to the Secretary of the Interior (Secretary) for his approval, and will become effective immediately upon that approval.

The Decision amends BLM land use plans in Central California to include the Standards and Guidelines and directs evaluation of existing, and development of new, Desired Plant Community (DPC) standards to ensure conformance of the DPCs with the Standards.

The Decision selects the Preferred Alternative described in the final EIS (Alternative 5), with minor changes for clarification, as the Rangeland Health Standards and Guidelines to be submitted to the Secretary for his approval.

The Decision describes how the Standards and Guidelines will be implemented and how rangeland health conditions will be monitored to assure achieving the Standards.

For further information contact:

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Sacramento, CA 95825-0451
(916) 978-4630

TABLE of CONTENTS

DECISION

1. INTRODUCTION

There were five alternatives considered and analyzed in the EIS. Alternative 1 consisted of the standards and guidelines developed by the three Resource Advisory Councils (RACs) for their representative areas. Alternative 2 consisted of the state-wide standards developed by BLM, in consultation with representatives from each of the RACs, but without concurrence by the entire RAC membership. The guidelines for Alternative 2 were essentially the same as those for Alternative 1. Alternative 3 was adoption of the national "fall-back" standards and guidelines listed in the regulations. Alternative 4 (the environmentally preferred alternative) was a rapid improvement or rapid recovery alternative developed by BLM, with suggestions from several interest groups. The Standards in Alternative 4 were the same as those in Alternative 2, except for Water Quality; however, the implementation would have occurred much faster than under other alternatives. Alternative 5 was a modified version of Alternative 1, with changes based upon suggestions and new information from the public, the RACs, and BLM.

The Decision is to select Alternative 5, with some minor changes and clarifications, all of which are within the scope of the analysis. This decision will become effective immediately upon approval by the Secretary of the Interior.

This Alternative was selected for a number of reasons, including (1) it meets the requirements of the regulations at 43 CFR 4180.1 and 4180.2 to address the principles of rangeland health; (2) it was based upon and incorporates a large portion of the regional standards and guidelines recommended by the Resource Advisory Council; (3) it incorporates some good suggestions by other agencies and the public; (4) it is based upon sound science as requested repeatedly by the different parties who commented on the process; and (5) it can be implemented within BLM's existing budgets without undue economic impacts to the grazing operators and the surrounding communities.

2. PLAN AMENDMENTS

In accordance with the grazing administration regulations at 43 CFR 4100, existing land use plans (Resource Management Plans and Management Framework Plans) have been examined to determine their compliance with the new regulations and the principles of rangeland health. In most cases, these plans do comply.

The land use plans identified below, as well as allotment management and other activity level plans, are hereby amended to include the standards and guidelines as adopted in this decision. The standards and guidelines will become effective immediately upon approval by the Secretary of the Interior and will be incorporated into the Plans at that time. Where there are plan decisions that are contrary to the new regulations, the principles of rangeland health, and the standards and guidelines, those decisions will be deleted from the plans or amended to comply.

Where "desired plant community" (DPC) objectives have been determined through the BLM planning and NEPA processes, the DPCs will be evaluated to ensure they meet the standards of rangeland health. Where DPCs have not yet been determined for a pasture or allotment, they will be developed through the BLM planning and NEPA processes to meet local and regional management objectives, and the standards of rangeland health.

Each Field Office will make the physical changes to their land use plans prior to the next grazing season. As this is merely plan maintenance, further NEPA analysis will not be necessary to complete this administrative action.

LAND USE PLAN	PLAN DATE	FIELD OFFICE
Sierra Management Framework Plan Amendment	1988	Folsom
Hollister Resource Management Plan	1984	Hollister
Clear Creek Amendment	1995	Hollister -- part only
Bishop Resource Management Plan	1993	Bishop
Caliente Resource Management Plan	1997	Caliente

3. STANDARDS AND GUIDELINES for RANGELAND HEALTH in CENTRAL CALIFORNIA

The Preferred Alternative described in the final EIS (Alternative 5), with minor changes for clarification, has been chosen as the Standards and Guidelines for Central California. The changes reflected in this Decision are within the scope and analysis of the EIS. These Standards and Guidelines will take effect immediately upon their approval by the Secretary of the Interior.

These standards and guidelines were developed for, and are hereby adopted for, that part of central California formerly known as the Bakersfield District.

Preamble

The standards for rangeland health and guidelines for livestock management on Bureau of Land Management lands are written to accomplish the four fundamentals of rangeland health, insofar as the standards are affected by livestock grazing practices. Those fundamentals are:

A. Watersheds are properly functioning;
B. Ecological processes are in order;
C. Water Quality complies with State standards; and,
D. Habitats of protected species are in order.

A "standard" serves as the criterion to determine if management actions are resulting in the maintenance or attainment of healthy rangelands per the four fundamentals of rangeland health. Standards are expressions of physical and biological conditions or degree of function required for healthy, sustainable rangelands. "Guidelines" serve as the vehicle to implement management actions related to livestock grazing to accomplish rangeland health standards. Guidelines will indicate the types of grazing methods and practices determined to be appropriate to ensure that standards can be met. The public should be an active participant in the application of these standards and guidelines.

Standards and guidelines will apply to all BLM lands within the geographic area for which they are written. Using the complete set of standards and guidelines, the local BLM range managers, in consultation with grazing permittees and other interested parties, will determine "terms and conditions" for each grazing allotment. These terms and conditions are the specific grazing practices that are appropriate for that allotment.

BLM lands vary so greatly in topography, climate, soils, water availability, size and distribution of parcels, and other factors, that local managers must have the flexibility needed to determine which grazing practices will work best in each area, and to change those practices when necessary to achieve the desired rangeland conditions.

The scientific evidence and collective knowledge of the public and rangeland managers show a wide variety of grazing effects on plants, animals and watersheds. As a result, the application of these standards and guidelines will emphasize using the best available information for a site-specific situation, and the results of historical grazing patterns should be given significant weight in any decisions about grazing practices to be followed on BLM allotments. Where historical grazing use has been compatible with meeting the standards for soils, species, riparian areas or water quality, no permanent changes should be mandated in the existing grazing patterns without substantial scientific evidence that changing the existing grazing pattern will improve the ability to achieve the standards.

For any standard, guideline, term, or condition to work, it must be capable of being achieved, based on sound science or good common sense, and be measurable, understandable, and economically feasible. There is no use in setting standards that cannot be met.

Successful application of these standards and guidelines will depend on BLM's capability to monitor rangeland conditions and implement management practices. Each Bureau office should develop a monitoring and implementation plan that sets priorities based on resource conditions, trends, and resource values.

CENTRAL CALIFORNIA STANDARDS FOR RANGELAND HEALTH

STANDARD: SOILS

Soils exhibit functional biological and physical characteristics that are appropriate to soil type, climate, and land form.

Meaning That:

Precipitation is able to enter the soil surface at appropriate rates; the soil is adequately protected against accelerated erosion; and the soil fertility is maintained at appropriate levels.

As Indicated By:

* Ground cover (vegetation and other types of ground cover such as rock) is sufficient to protect sites from accelerated erosion.

* Litter/residual dry matter is evident, in sufficient amounts to protect the soil surface.

* A diversity of plant species, with a variety of root depths, is present and plants are vigorous during the growing season.

* There is minimal evidence of accelerated erosion in the form of rills, gullies, pedestaling of plants or rocks, flow patterns, physical soil crusts/surface sealing, or compaction layers below the soil surface

* Biological (microphytic or cryptogamic) soil crusts are in place where appropriate.

STANDARD: SPECIES

Viable, healthy, productive, and diverse populations of native and desired species, including special status species (Federal T&E, Federal proposed, Federal candidates, BLM sensitive, or Calif. State T&E) are maintained or enhanced where appropriate.

Meaning That:

Native and other desirable plant and animals are diverse, vigorous, able to reproduce and support the hydrologic cycle, nutrient cycles, and energy flows over space and time.

As Indicated By:

* Wildlife habitats include seral stages, vegetation structure, and patch size to promote diverse and viable wildlife populations.

* A variety of age classes are present for most perennial plant species.

* Plant vigor is adequate to maintain desirable plants and ensure reproduction and recruitment of plants when favorable climatic events occur.

* The spatial distribution and cover of plant species and their habitats allows for reproduction and recovery from localized catastrophic events.

* A diversity of plant species with various phenological stages and rooting depths are present on sites where appropriate.

* Appropriate natural disturbances are evident.

* Levels of non-native plants and animals are at acceptable levels.

* Special status species present are healthy and in numbers that appear to ensure stable to increasing populations; habitat areas are large enough to support viable populations or are connected adequately with other similar habitat areas.

* Adequate organic matter (litter and standing dead plant material) is present for site protection and decomposition to replenish soil nutrients.

* Where appropriate, biological soil crusts (also called microphytic or cryptogamic soil crusts) are present and not excessively fragmented.

* Noxious and invasive species are contained at acceptable levels.

STANDARD: RIPARIAN

Riparian/wetland vegetation, structure and diversity, and stream channels and floodplains are functioning properly, and meeting regional and local management objectives.

Meaning That:

The vegetation and soils interact to capture and pass sediment, sustain infiltration, maintain the water table, stabilize the channel, sustain high water quality, and promote biodiversity appropriate to soils, climate, and landform.

As Indicated By:

Vegetation Attributes:

* Vegetation cover is greater than 80% or the percentage that will protect banks and dissipate energy during high flows.

* Age-class and structure of woody/riparian vegetation are diverse and appropriate for the site.

* Where appropriate, shading is sufficient to provide adequate thermal regulation for fish and other riparian dependent species.

* Where appropriate, there is adequate woody debris.

* A diversity of plant species with various phenological stages and rooting depths is present. Root masses are sufficient to stabilize stream banks and shorelines.

* Plant species present indicate that soil moisture characteristics are being maintained.

* There is minimal cover of invader/shallow-rooted species.

* Adequate organic matter (litter and standing dead plant material) is present to protect the site and to replenish soil nutrients through decomposition.

* Point bars are vegetated.

Physical Indicators:

* Streambank stability, pool frequency, substrate sediments, stream width, and bank angles are appropriate for the stream type.

STANDARD: WATER QUALITY

Surface and groundwater complies with objectives of the Clean Water Act and other applicable water quality requirements, including meeting the California State standards.

Management Objective: For water bodies, the primary objective is to maintain the existing quality and beneficial uses of water, protect them where they are threatened (and livestock grazing activities are a contributing factor), and restore them where they are currently degraded (and livestock grazing activities are a contributing factor). This objective is of even higher priority in the following situations:

(a) where beneficial uses of water bodies have been listed as threatened or impaired pursuant to Section 303(d) of the Federal Clean Water Act;

(b) where aquatic habitat is present or has been present for Federal threatened or endangered, candidate, and other special status species dependent on water resources; and,

(c) in designated water resource sensitive areas such as riparian and wetland areas.

Meaning That:

BLM will, pursuant to the Clean Water Act:

Maintain the physical, biological, and chemical integrity of waters flowing across or underlying the lands it administers;

Protect the integrity of these waters where it is currently threatened;

Insofar as is feasible, restore the integrity of these waters where it is currently impaired;

Not contribute to pollution and take action to remedy any pollution resulting from its actions that violates applicable California (including the requirements identified in Regional Basin Plans), or Tribal water quality standards or other applicable water quality requirements (e.g., requirements adopted by SWRCB or RWQCB in California, or US EPA pursuant to Section 303(d) of the Clean Water Act or the Coastal Zone Reauthorization Act). Where action related to grazing management is required, such action will be taken as soon as practicable but not later than the start of the next grazing year (in accordance with 43 CFR 4180.1).

Be consistent with the non-degradation policies identified in the Regional Basin Plans in California.

Work with the State (including the Regional Water Quality Control Boards) and U.S. EPA to establish appropriate beneficial uses for public waters, establish appropriate numeric targets for

303(d)-listed water bodies, and implement the applicable requirements to ensure that water quality on public lands meets the criteria for the designated beneficial uses of the water.

Develop and implement Best Management Practices (BMPs) approved by the SWRCB to protect and restore the quality and beneficial uses of water, and monitor both implementation and effectiveness of the BMPs. These BMPs will be developed in full consultation, coordination, and cooperation with permittees and other interests.

As Indicated By:

* The following do not exceed the applicable requirements: chemical constituents, water temperature, nutrient loads, fecal coliform, turbidity, suspended sediment, and dissolved oxygen.

* Achievement of the standards for riparian, wetlands, and water bodies.

* Aquatic organisms and plants (e.g., macroinvertebrates, fish, algae, and plants) indicate support for beneficial uses.

* Monitoring results or other data that show water quality is meeting the standard.

CENTRAL CALIFORNIA GUIDELINES FOR GRAZING MANAGEMENT:

Guideline 1: Livestock grazing operations will be conducted so that progress is made toward maintaining or promoting adequate amounts of vegetative ground cover, including standing plant material and litter to support infiltration and permeability, and maintain soil moisture storage and soil stability appropriate for the ecological sites within the management units. The ground cover should maintain soil organisms, plants, and animals to support the hydrologic and nutrient cycles, and energy flow.

Guideline 2: Implement grazing systems that regulate the timing and intensity of grazing. Continuous season-long grazing use is allowed if it has been demonstrated that it can be consistent with achieving a healthy, properly functioning ecosystem. Grazing systems should specify season of use based on plant phenology and geohydrologic processes where appropriate. On annual rangelands, mulch management should be used to define target forage use levels that will ensure that sufficient amounts of residual dry matter (RDM) or standing plant material will be maintained throughout the grazing season. Mulch levels for annual grasses should meet the requirements of Table A, whenever feasible. Mulch levels will include a "buffer" to account for RDM loss from other natural processes (decomposition, animal use, etc.). Exceptions may be approved during the green season when substantial regrowth is expected or if lower RDM levels are required to meet particular rangeland health objectives, such as reducing competition for a desired species.

Guideline 3: On Annual Range, readiness will be determined by: (1) Minimum RDM levels at the time of turnout prior to green season growth are exceeded by 200 pounds per acre; or (2) Minimum RDM levels and at least 2 inches of new growth are present in the growing season.

Guideline 4: Where appropriate, use grazing systems that maintain the presence and distribution of microsites for seed germination.

Guideline 5: Perennial plant utilization should be limited to appropriate levels of the current year's growth as indicated in Table A, unless it has been proven that this level of use is incompatible with the continued existence of the plant.

Management changes will be implemented (e.g., reductions in stocking rate or another management change) if utilization guidelines on the average of the upland key areas across the pasture (or allotment if there is only one pasture) are exceeded for 2 consecutive years or in any 2 years out of every 5 years. In addition, at least 70% of upland key areas on the pasture (or allotment) are not to exceed maximum utilization guidelines in most years. Because of the potential long-term damage to perennial grass species associated with severe grazing, severe grazing use (>70% utilization) in any upland key area in any year will result in a management change the following year. If any particular key area fails to meet the guidelines for more than 2 consecutive years, then management action will be taken to remedy the problem in the area of the allotment that key area represents. The average (mean) utilization on key species will be estimated at each key area and used to determine if the guidelines have been met. There are indications that the median may be a better statistic to use than the mean; we will calculate both statistics from the same data sets and make a determination on which statistic to use after examining the data over a period of a few years. See Appendix 20 of the FEIS for further discussion on this issue.

For allotments not meeting or making significant progress toward meeting the standards (and for which lower utilization levels of perennial upland species would be expected to help move these allotments toward the standards), utilization data already in hand will be used to determine whether a management change is necessary. Thus, for example, if utilization on a particular key area has exceeded the thresholds of Table A for the two years previous to the approval of these standards and guidelines, a management change will be implemented prior to the first grazing year following this approval. In addition to implementing management changes that are expected to bring utilization levels within threshold values, close monitoring will follow to ensure that the grazing use levels are not exceeded during the grazing period following the management changes. If utilization levels are exceeded or expected to be exceeded during this period, a reduction or curtailment of further grazing in the area represented by the key area will be required for the remainder of the grazing season. In addition, further management changes will be implemented prior to the start of the next grazing season to bring utilization levels within thresholds.

Guideline 6: Implement grazing systems that permit existing native species to complete entire life cycles and sustain the spatial distribution of microsites necessary for seed germination at intervals sufficient to maintain the viability of the species.

Guideline 7: Use grazing systems that are compatible with the persistence of desired species. Grazing use should provide appropriate levels of plant matter that will promote the existence of desirable plants and animals.

Guideline 8: Native species are recommended for all revegetation and enhancement projects unless they are not readily available in sufficient quantities or are incapable of maintaining or achieving properly functioning conditions and biological health.

Guideline 9: Within identified deer concentration areas there will be no more than 20 percent utilization of annual growth on key browse species prior to October 1.

Guideline 10: Periods of rest from livestock grazing or other avoidable disturbances should be provided during/after episodic events (e.g., flood, fire, drought) and during critical times of plant growth needed to achieve proper functioning conditions, recovery of vegetation, or desired plant community.

Guideline 11: Grazing management practices will allow for the reproduction of species that will maintain riparian-wetland functions, including energy dissipation, sediment capture, groundwater recharge, streambank stability, the hydrologic cycle, nutrient cycle, and energy flow.

Guideline 12: Grazing practice should maintain a minimum herbage stubble height on all stream-side, riparian and wetland areas at the end of the growing season. There should be sufficient residual stubble or regrowth at the end of the growing season to meet the requirements of plant vigor maintenance, bank protection, and sediment entrapment (Table A).

Management changes will be implemented (e.g., reductions in stocking rate or another management change) if stubble heights on the average of the key riparian areas across the pasture (or allotment if there is only one pasture) fall below the guidelines for 2 consecutive years or in any 2 years out of every 5 years. In addition, at least 70% of riparian key areas on the allotment are to exceed minimum stubble heights in most years. If any particular key area fails to meet the guidelines for more than 2 consecutive years, then management action will be taken to remedy the problem in the area of the allotment that key area represents. Because stream banks may be inadequately protected by heavy use in any one year and because stubble heights below 3 inches result in cattle shifting their preference to shrubs, stubble heights below 2 inches in any one year will require a management change in the following year.

The mean stubble height on key riparian species will be estimated at each riparian key area and used to determine if the guidelines have been met. There are indications that the median may be a better statistic to use than the mean; we will calculate both statistics from the same data sets and make a determination on which statistic to use after examining the data over a period of a few years. See Appendix 20 of the Final EIS for further discussion on this issue.

For allotments not meeting or making significant progress toward meeting the standards (and for which higher stubble would be expected to help move these allotments toward the standards), stubble height data already in hand will be used to determine whether a management change is necessary. Thus, for example, if stubble heights on a particular key area have fallen below the thresholds of Table A for the two years previous to the approval of these standards and guidelines, a management change will be implemented prior to the first grazing year following this approval. In addition to implementing management changes that are expected to bring stubble heights within threshold values, close monitoring will follow to ensure the grazing use levels are not exceeded during the grazing period following the management changes. If utilization levels are exceeded or expected to be exceeded during this period, a reduction or curtailment of further grazing in the area represented by the key area will be required for the remainder of the grazing season. In addition, further management changes will be implemented prior to the start of the next grazing season to bring utilization levels within thresholds.

Guideline 13: Water sources, wetlands and riparian areas may be fenced to reduce impacts from livestock.

Guideline 14: The development of water sources will maintain ecologic and hydrologic function and processes.

Guideline 15: Locate salt blocks and other supplemental feed well away from riparian/wetland areas.

Guideline 16: Locate new livestock handling and/or management facilities outside of riparian/wetland areas. For existing livestock handling facilities inside riparian areas, ensure that facilities do not prevent attainment of standards. Limit livestock trailing, bedding, watering, loading, and other handling efforts to those areas and times that will not retard or prevent attainment of standards.

Table A: Forage Utilization and Mulch Management Requirements

Precipitation	Plant Community	Slope, Elevation	Minimum Residual Dry Matter* (lbs/ac)	Maximum Utilization of Key Perennials. #, ##
4-10 Inches	California annual grassland	<25% 25-45% >45%	200 250 350	25-40%
10-40 Inches	California annual grassland, Oak woodlands	<25% 25-45% >45% <15%, 1000-2500' >15%, >2500'	400 600 800 700-900** 1000-1200**	30-45%
8-30 Inches	Sagebrush grassland, semi-desert grass and shrubland, Pinyon-juniper woodland, Cool season pasture	NA	NA	30-40%
	Coniferous forest, mountain shrubland	NA	NA	30-40%
	Alpine tundra	NA	NA	20-30%
	Salt Desert Shrubland	NA	NA	25-35%
4-40 Inches	Riparian areas, wetlands	NA	4-6 inch stubble height #	35-45% herbs, 10-20% shrubs, 0-20% trees

* Minimum to be present at fall/winter green-up.

** Higher minimum is for sites that are: in unsatisfactory condition, grazed during active growth, not rested, or on steeper slopes.

\# Stubble height and percent utilization levels are initial values that should be adjusted to consider timing of grazing use and plant phenology, resource conditions and a site's resiliency at the allotment, pasture or site-specific location. Perennial plant utilization levels and stubble heights are based on a literature review by Holechek (1988, 1991), Holechek et al. (1998) and Willoughby (see the Annotated Bibliography on Utilization in the FEIS).

On sites in unsatisfactory condition and/or trend, perennial plant utilization should be no more than 15-25% current annual growth where less than one period of rest is provided per growing season of use.

Guideline 17: Implement grazing systems that will promote compliance with the Water Quality Standards.

d. Apply the management practices recognized and approved by the State of California as Best Management Practices (BMPs) for grazing related activities to protect and maintain water quality.

e. In watersheds draining into water bodies that have been listed or are proposed for listing as having threatened or impaired beneficial uses, and where grazing activities may contribute to the pollutants causing such impairment, the management objective is to fully protect, enhance, and restore the beneficial uses of the water.

Guideline 18: The plan for grazing on any allotment must consider other uses (recreation, wildlife, mineral resource development, etc.) and be coordinated with other users of the public lands so that overall use does not detract from the goal of achieving rangeland health.

4. IMPLEMENTATION

BLM will fully implement the grazing standards and guidelines as directed in the rulemaking. The rule states that, "The authorized officer shall take appropriate action as soon as practicable but not later than the start of the next grazing year upon determining that grazing practices or levels of grazing use on public lands are significant factors in failing to achieve the standards and conform to the guidelines...."(43 CFR 4180.2(c)).

Determination of the "appropriate action," and the actual scheduling of the implementation, will be the responsibility of the local Field Managers. However, it will be done using the priority system described in Appendix 1.

5. ASSESSMENTS and MONITORING

Field Offices will conduct assessments of all allotments according to the priority described in Appendix 1. All allotments will be assessed within five years of the approval of these Standards and Guidelines by the Secretary of the Interior. These assessments will be done using an interdisciplinary approach, and the findings and reasons for the findings will be documented. The format and content of this documentation will be left to the discretion of the individual Field Manager. (Examples are in the Final EIS.)

Field Offices will monitor allotments according to the priority described in Appendix 1. The monitoring will be done using an interdisciplinary approach, using methods described in Appendix 2.

Rangeland health conditions will be reported annually for each grazing allotment. This information will include the determinations of rangeland health conditions through assessments and monitoring and the progress made towards meeting rangeland health standards. Specifically, for each allotment an identification will be made of what standards, if any, are not met or where significant progress is not being made toward meeting the standard; etc.; what progress has been made regarding determining and implementing needed management changes; and the results of making the management changes as determined from monitoring information. Additionally, any changes in the management categories of the allotments will be identified and an explanation of the reasons for the change will be made.

The above information will be gathered at the Field Office which administers the respective allotment(s). A summary of this information will be consolidated for all of the allotments in the state (exclusive of the California Desert District) and made available to the public annually.

6. PUBLIC INVOLVEMENT and RESPONSE to PROTESTS

BLM has had extensive public involvement throughout the process of developing the Standards and Guidelines. Early phases of this involvement were described in the Draft EIS, and in Chapter 5 of the Final EIS. Further, we have consulted extensively with the three Resource Advisory Councils(RAC) on content and wording of the Standards and Guidelines.

As stated in the Final EIS, "following the comment period on the draft EIS, the RAC members were sent copies of all of the comment letters. The RACs discussed the comments and the draft EIS in their meetings. Representatives of the three RACs then met with BLM staff in a workshop setting and made recommendations for modification of their original proposals."

Comments made by the public following the Draft EIS were individually analyzed by BLM, and responded to in the Final EIS. The Proposed Action (Alternative 5) in the Final EIS was based upon the original RAC proposals, with changes suggested by the RACs and by BLM, based upon analysis of the public comments. There were several meetings with the Susanville RAC and other interested parties prior to issuing the Final EIS because there were items in the Standards and Guidelines that caused concern to RAC members and ranchers in NE California and NW Nevada.

Following release of the Final EIS, BLM received 5 protests, two of which applied to Central California. The major concerns were that there were changes made in the Final EIS that the public had not been allowed to review in the Draft; that a protestor did not like the water quality guidelines; that there was no "no grazing" alternative; and, that the Bureau does not have enough staff to implement the Standards and Guidelines.

As a result of these protests, BLM has added some language to this ROD to clarify how the standards and guidelines will be implemented. However, no substantive changes have been made to the Central California Standards and Guidelines from that contained in the Final EIS. Based on the clarification language, three of the protestors subsequently withdrew their protests. The remaining two protests were dismissed by the Director of BLM, who sent letters to the two protestors explaining the reasons for the dismissals.

APPENDIX 1: IMPLEMENTATION

The fallback standards (43 CFR 4180.2(f)(1)) have been in effect in since August 12, 1997. An initial screening of allotments was made, based on existing information, to determine the status of each allotment with respect to meeting the fallback standards. Each allotment was placed into one of four categories as follows:

Category 1: Areas where one or more standards are not being met, or significant progress is not being made toward meeting the standards(s), and livestock grazing is a significant contributor to the problem.

Category 2: Areas where all standards are being met, or significant progress is being made toward meeting the standard(s).

Category 3: Areas where the status for one or more standards is not known, or the cause of the failure to not meet the standard(s) is not known.

Category 4: Allotments where one or more of the standards are not being met or significant progress is not being made toward meeting the standards due to causes other than (or in addition to) livestock grazing activities. (Those allotments where current livestock grazing is also a cause for not meeting the standards are included in Category 1 in addition to this category.) The authorized officer should take appropriate action based on regulation or policy; however, these actions not related to livestock grazing are outside the scope of this implementation plan and will not be addressed in this document.

An assumption has been made by the BLM field managers that, with few possible exceptions, the implementation needed for the regulatory fallback standards and guidelines will essentially be the same as for any anticipated set of final approved standards and guidelines implemented pursuant to this Record of Decision (ROD). Consequently, the categorization of allotments under the standards in this ROD is likely to be the same as the categorization under the fallback standards and guidelines. Existing allotment assessments and their resulting determinations as to category will be reviewed to ensure the determination is correct under the standards set in place by this ROD.

New allotment assessments, reviews of existing allotment assessments, and determination of allotment category will be conducted in full consultation, coordination, and cooperation with permittees and other interests.

We intend to conduct assessments on all allotments within the next 5 years. First priority for these allotment assessments will be given to those allotments where we already know or suspect one or more of the standards is not being met. These include those allotments placed in Category 1 under the fallback standards and those allotments currently in Category 3 that we have reason to believe may not be meeting standards. After these allotments have been assessed, the remaining allotments will be assessed using the BLM I, M, and C priority management system, with first priority to I, second to M, and last to C.

For those allotments where the standards are not being met (Category 1), management actions will be implemented to correct the situation prior to the next grazing season turn-out period for the allotment. The management options will be determined in full coordination, consultation, and cooperation with permittees and other interests.

Monitoring will be conducted to evaluate the progress towards improving rangeland health and to evaluate the success of the specific management measures applied.

APPLICATION OF GUIDELINES

Once the guidelines are approved by the Secretary of the Interior, they will be applicable to the management of livestock grazing on all allotments not meeting the health standards. Some guidelines will be applicable regardless of the specific rangeland health condition, as they are designed to help protect and sustain rangeland health and are not intended to be applied only to remedy problems. Many of the guidelines will need to be more specifically identified and then applied as terms and conditions of a permit or lease, based upon the specific needs for meeting rangeland health standards. There will be instances where specific terms and conditions will be applied to grazing use authorizations for reasons other than those directly related to rangeland health, such as to accommodate other resource needs and land uses or to meet administrative requirements. Examples of this may include protecting cultural resource sites, requiring a specific breed of livestock to be used that is compatible with the needs of other permittees or lessees using the same allotment, or for meeting various regulatory requirements for grazing administration purposes. In some instances, existing terms and conditions will be carried over from previously made plans and commitments, such as those identified in allotment management plans or coordinated management plans. In these instances, the terms and conditions may or may not be related to rangeland health needs.

Any terms or conditions specified for a permit or lease must be consistent with and support appropriate BLM land use plans or other land use plans applicable to the public lands. BLM will also adhere to requirements such as those identified as terms or conditions from a biological opinion for protecting the habitat of a plant or animal under the Endangered Species Act.

Terms and conditions will be applied to grazing permits, leases, or other grazing authorizations as the authorized officer (Field Manager) determines the need. The determination of what terms and conditions will be applied will be made in consultation with the respective permittees/lessees and other interested parties involved in the particular allotment. The same process will be used for making needed changes to any existing terms and conditions. Information from assessments and evaluations of monitoring data will be used to determine the management changes needed. Management options that would be expected to move allotments toward meeting the standards will be determined in full coordination, consultation, and cooperation with permittees/lessees and other interested parties.

Alternative management changes will be considered and evaluated through the NEPA process prior to making final determinations. It is anticipated that in most instances, the terms and conditions will be identified cooperatively and be agreed upon by the affected permittee/lessee and all interested parties. Where an agreement cannot be reached, then a formal decision (which is appealable) will be issued.

If reductions in permitted use are necessary to achieve the standards or meet the guidelines, the animal unit months (AUMs) by which the permitted use is reduced will be held in suspension. Once the authorized officer determines that rangeland health has recovered to an extent that all or part of the suspended permitted use can be restored, this suspended permitted use shall first be apportioned in satisfaction of suspended permitted use to the permittee(s) or lessee(s) authorized to graze in the allotment in which the forage is available (this is in accordance with 43 CFR 4110.3-1(b)).

Appendix 1 -- Page 2

REPORTING PROGRESS IN RANGELAND HEALTH ACHIEVEMENTS

Rangeland health conditions will be reported annually for each grazing allotment. This information will include the determinations of rangeland health conditions through assessments and monitoring and the progress made towards meeting rangeland health standards. At a minimum the report will identify, by allotment: (1) what standards, if any, are not being met; (2) whether significant progress is being made toward meeting those standards that are not currently being met; (3) the magnitude of those standards not being met, in terms such as acres, miles of stream, number of sites, etc.; (4) the progress that has been made in determining and implementing needed management changes; and (5) the results of making the management changes as determined from monitoring and assessment information. Additionally, any changes in the management categories of the allotments will be identified, accompanied by an explanation of the reasons for the change.

The above information will be gathered at the field office which administers the respective allotment(s). A summary of this information will be consolidated for all of the allotments within the EIS area and made available to the public annually.

Tables were provided in the Final EIS that showed all allotments in the State and the category to which they were assigned in 1997. Since that list was compiled, management changes have been implemented and additional assessment and monitoring work has been completed that makes those lists obsolete. When the annual report is compiled each year, an updated list of all allotments, by category, will be provided as part of the report.

Throughout all processes the public is encouraged to participate in the identification of rangeland health conditions, developing management remedies, monitoring results, and reviewing progress towards achieving rangeland health standards.

APPENDIX 2: ASSESSMENT AND MONITORING

Assessment to Determine if Allotments are Meeting Standards

"Assessment" means the analysis, synthesis, and interpretation of information, including monitoring data, to characterize the health of an allotment or other management unit. Gathering new information in the field may be necessary as part of the assessment process. "Monitoring" means the periodic gathering of information.

In some cases, quantitative monitoring data, gathered over a period of years, may be essential to determine whether an area meets the standards and whether livestock grazing is a significant factor contributing to a failure to meet the standards. However, quantitative monitoring data is not always required to make these determinations nor to implement actions to improve grazing management. The preamble to the 1995 grazing regulations (BLM 1995) states that managers may "use a variety of information, including monitoring records, assessments, and knowledge of the locale." The 1995 regulations also require the manager to "reduce permitted grazing use or otherwise modify management practices...when monitoring or field observations show grazing use or patterns of use are not consistent with the provisions of 43 CFR subpart 4180" (43 CFR 4110.3-2(b); subpart 4180 includes the standards and guidelines). Changes in permitted use are to be "...supported by monitoring, field observation, ecological site inventory, or other data acceptable to the authorized officer." Therefore, actions needed to improve grazing management in order to comply with guidelines or meet standards should not be delayed solely because monitoring data are lacking. Rangelands will not be allowed to deteriorate while prolonged monitoring studies are conducted, when reliable indicators of rangeland health demonstrate a need for corrective action.

Assessments should employ the minimum information needed to determine whether the standards are being met and whether livestock grazing is a significant factor in failing to meet the standards. All resource information or data collected should be tied directly to the standards, guidelines, or resource objectives.

Field Offices will conduct assessments of all allotments according to the priority described in Appendix 1. These assessments will be done using an interdisciplinary approach, and the findings and reasons for the findings will be documented. The format and content of this documentation will be left up to individual Field Managers, but the form used by the Eagle Lake Field Office (Appendix 24 in the Final EIS) is one example of the type of documentation that could be employed.

The term "assessment," when used by itself, has the meaning described above; that is, it considers all available information, whether from inventory, monitoring, or qualitative assessments. "Qualitative assessment" refers to a particular method used to rapidly assess whether allotments or areas within allotments are meeting standards. The Proper Functioning Condition (PFC) procedure is the qualitative assessment method that is applied to riparian/wetland areas (BLM 1993b and 1994). The Qualitative Procedure to Assess Rangeland Health (Appendix 25 in the Final EIS) is the qualitative method that will be applied to upland rangelands. The use of these procedures, and their relationship to monitoring, will be discussed in more detail below.

Application of Traditional Rangeland Monitoring to Assessing Whether Standards are Being Met

Many rangeland monitoring studies have been in place and read on a regular basis by BLM personnel in California for many years. These studies involve using qualitative or quantitative procedures, or both, and often are directed at determining the condition and trend of key species in key areas. The basic types of studies, as well as the use of the key species and key area approach, are described in Chapter 3, Section 3.2.5, of the Final EIS. The purpose of these studies has primarily been to determine if management objectives relative to particular grazing allotments are being met or if the trend is toward meeting these objectives. For example, a management objective might be to increase the frequency of a key species such as squirreltail (*Elymus elymoides* ssp. *elymoides*) by 10% in Pasture A of Allotment Z in 5 years. Some method of frequency monitoring is then set up in one or more key areas in Pasture A and read on a regular basis (this could be annually but might be once every five years; in this example the frequency of monitoring would have to be at least every five years). In another example, the objective might be to increase the basal cover of the key species bluebunch wheatgrass (*Pseudoregneria spicata* ssp. *spicata*) in Pasture B of Allotment X by 5 percent over the next 6 years. A method of monitoring that measures cover is then set up in one or more key areas of Pasture B and read on a regular basis (this could be annually or on some other schedule, but must be at least every 6 years).

Management objectives have not always been directed at key species. Objectives to increase the total vegetation cover on particular pastures or allotments have also been applied, as well as objectives to decrease the cover of shrubs or trees. In both of these examples, monitoring methods are chosen that measure or estimate cover. These methods might be quantitative in nature or qualitative; the latter might involve taking photographs, either on the ground or aerially.

A second monitoring objective of traditional rangeland monitoring has been to determine the "condition and trend" of rangelands. The condition is determined by comparing the current species composition and production of a given ecological site to the species composition and production of the potential natural community of that site (see Chapter 3, Section 3.3.3 in the Final EIS for a more complete description of the process). Trend is recorded as upward, downward, or static, based on whether species composition and production are moving toward, away, or not at all, respectively, from the potential natural community. Ecological site inventory (ESI) is used to determine condition at any one point in time. A second ESI can then be used to determine trend; other monitoring studies, however, can also be used for this purpose, if they yield information on species composition.

Although much of the monitoring currently being conducted will have applicability to determining the effectiveness of implementation of the rangeland standards, some old methods will have to be modified and new methods introduced. This is because the standards require monitoring of certain rangeland attributes that are not assessed under current methodology.

Table 1 is a list of rangeland attributes that may be assessed in order to determine whether standards are being met.

Table 1. List of rangeland attributes that may be assessed in order to determine whether standards are being met, along with the actual wording of the indicator(s) to which each attribute applies (parentheses following each indicator show the standard to which it applies). Several indicators apply to more than one attribute and therefore are listed under each of the appropriate attributes.

7. Ground cover
   a. "Vegetation and other types of ground cover such as rock" (Soils)
   b. "Spatial distribution and cover of plant species and their habitats allows for reproduction and recovery from localized catastrophic events" (Species)
   c. "Vegetation cover is greater than 80% or the percentage that will protect banks and dissipate energy during high flows" (Riparian)
   d. "There is minimal cover of invader/shallow-rooted species" (Riparian)
   e. "Point bars are vegetated" (Riparian)

8. Litter/residual dry matter
   a. "Litter/residual dry matter is evident, in sufficient amounts to protect the soil surface" (Soils)
   b. "Adequate organic matter (litter and standing dead plant material) is present for site protection and decomposition to replenish soil nutrients" (Species)
   c. "Adequate organic matter (litter and standing dead plant material) is present to protect the site and to replenish soil nutrients through decomposition" (Riparian)

9. Plant species diversity
   a. "A diversity of plant species, with a variety of root depths, is present and plants are vigorous during the growing season" (Soils)
   b. "A diversity of plant species with various phenological stages and rooting depths is present on sites where appropriate" (Species)
   c. "Where appropriate, species composition contributes to the desired plant community objectives" (Species)
   d. "A diversity of plant species with various phenological stages and rooting depths is present." (Riparian)
   e. "Plant species present indicate that soil moisture characteristics are being maintained" (Riparian)

10. Plant vigor
   a. "A diversity of plant species, with a variety of root depths, is present and plants are vigorous during the growing season" (Soils)
   b. "Plant vigor is adequate to maintain desirable plants and ensure reproduction and recruitment of plants when favorable climatic events occur" (Species)

Table 1, continued

11. Soil crusts
    a. "Biological (microphytic or cryptogamic) soil crusts are in place where appropriate" (Soils)
    b. "Where appropriate, biological soil crusts (also called microphytic or cryptogamic soil crusts) are present and not excessively fragmented" (Species)

12. Plant structure
    a. "A variety of age classes are present for most perennial plant species" (Species)
    b. "Age-class and structure of woody/riparian vegetation is diverse and appropriate for the site" (Riparian)
    c. "Wildlife habitats include seral stages, vegetation structure, and patch size to promote diverse and viable wildlife populations" (Species)

13. Spatial distribution of plants and their habitats
    a. "Spatial distribution and cover of plant species and their habitats allows for reproduction and recovery from localized catastrophic events" (Species)
    b. "Wildlife habitats include seral stages, vegetation structure, and patch size to promote diverse and viable wildlife populations" (Species)

14. Natural disturbances
    "Appropriate natural disturbances are evident." (Species)

15. Non-native plants and animals, including noxious and invasive species
    "Levels of non-native plants and animals are at acceptable levels" (Species)

16. Special status species
    "Special status species are healthy and in numbers that appear to ensure stable to increasing populations; habitat areas are large enough to support viable populations or are connected adequately with other similar habitat areas" (Species)

17. Tree and shrub canopy cover
    "Where appropriate, shading is sufficient to provide adequate thermal regulation for fish and other riparian dependent species" (Riparian)

18. Woody debris
    "Where appropriate, there is adequate woody debris" (Riparian)

19. Root masses
    "Root masses are sufficient to stabilize stream banks and shorelines" (Riparian)

Table 1, continued

20. Streambank stability
"Streambank stability, pool frequency, substrate sediments, stream width, and bank angles are appropriate for the stream type (using Rosgen's Streambank Classification System)" (Riparian)

21. Pool frequency
"Streambank stability, pool frequency, substrate sediments, stream width, and bank angles are appropriate for the stream type (using Rosgen's Streambank Classification System)" (Riparian)

22. Substrate sediments
"Streambank stability, pool frequency, substrate sediments, stream width, and bank angles are appropriate for the stream type (using Rosgen's Streambank Classification System)" (Riparian)

23. Stream width/depth
"Streambank stability, pool frequency, substrate sediments, stream width, and bank angles are appropriate for the stream type (using Rosgen's Streambank Classification System)" (Riparian)

24. Bank angles
"Streambank stability, pool frequency, substrate sediments, stream width, and bank angles are appropriate for the stream type (using Rosgen's Streambank Classification System)" (Riparian)

25. Chemical constituents of water
"The following do not exceed the applicable requirements: chemical constituents, water temperature, nutrient loads, fecal coliform, turbidity, suspended sediment, and dissolved oxygen" (Water Quality)

26. Water temperature
a. "The following do not exceed the applicable requirements: chemical constituents, water temperature, nutrient loads, fecal coliform, turbidity, suspended sediment, and dissolved oxygen" (Water Quality)
b. "Where appropriate, shading is sufficient to provide adequate thermal regulation for fish and other riparian dependent species" (Riparian)

27. Nutrient loading
"The following do not exceed the applicable requirements: chemical constituents, water temperature, nutrient loads, fecal coliform, turbidity, suspended sediment, and dissolved oxygen" (Water Quality)

Appendix 2 -- Page 5

Table 1, continued

28.	Fecal coliform "The following do not exceed the applicable requirements: chemical constituents, water temperature, nutrient loads, fecal coliform, turbidity, suspended sediment, and dissolved oxygen" (Water Quality)
29.	Turbidity "The following do not exceed the applicable requirements: chemical constituents, water temperature, nutrient loads, fecal coliform, turbidity, suspended sediment, and dissolved oxygen" (Water Quality)
30.	Suspended sediment "The following do not exceed the applicable requirements: chemical constituents, water temperature, nutrient loads, fecal coliform, turbidity, suspended sediment, and dissolved oxygen" (Water Quality)
31.	Dissolved oxygen "The following do not exceed the applicable requirements: chemical constituents, water temperature, nutrient loads, fecal coliform, turbidity, suspended sediment, and dissolved oxygen" (Water Quality)
32.	Aquatic and riparian organisms "Aquatic organisms and plants (e.g., macroinvertebrates, fish, algae, and plants) indicate support for beneficial uses" (Water Quality)
33.	Soil erosion "There is minimal evidence of accelerated erosion in the form of rills, gullies, pedestaling of plants or rocks, flow patterns, physical soil crusts/surface sealing, or compaction layers below the soil surface" (Soils)

Monitoring of Vegetation and Physical Attributes

Vegetation monitoring (including soil crusts). Table A.22.2 in the Final EIS lists the trend monitoring methods currently in use or described in the Interagency Technical Reference, Sampling Vegetation Attributes (BLM et al. 1996a) and the plant and vegetation attributes they measure. Of the attributes listed in Table 1 in this appendix, the following can be monitored using a combination of the methods from the technical reference:

- Ground cover
- Litter/residual dry matter
- Plant species diversity
- Plant vigor
- Soil crusts
- Plant structure
- Spatial distribution of plants and their habitats

Appendix 2 -- Page 6

- Natural disturbances (although not specifically identified by a column heading on Table A.22.2, these can be tracked under the heading "spatial distribution")
- Non-native plants (these can be monitored by measuring or estimating density, frequency, or cover)
- Special status plants (these can be monitored by measuring or estimating density, frequency, or cover)
- Tree and shrub canopy cover

Note, however, that in some cases these attributes are not measured or estimated as part of the standard procedure. For example, the typical way in which the Daubenmire method (which estimates canopy cover in either 6 or 10 categories in a series of plots) is used yields measurements of the cover of bare ground, vegetation, litter, gravel/rock, as well as frequency and species composition. Other attributes, such as the cover of biological, physical, and chemical crusts, cryptogams, production, and vigor *can* be incorporated into the standard procedure with proper planning.

Monitoring of Guidelines Associated with Utilization, Residue, and Stubble Heights. For the reasons given in Section 3.2.5 in the Final EIS, it is important to set and monitor guidelines on utilization levels, minimum residues, and minimum stubble heights. Existing monitoring of utilization, residue, and stubble heights will continue, and new studies will be established as needed. On upland perennial rangelands not meeting the standards, utilization will be measured on key species in key areas, with the average (mean) utilization used to assess whether the portion of the allotment or pasture represented by the key area is meeting the utilization guideline (there are indications that the median may be a better statistic to use than the mean; we will calculate both statistics from the same data sets and make this determination after examining the data over a period of a few years). We recognize that residue, in terms of stubble height and litter, is a better measure of utilization in upland perennial grass communities than percent utilization, but we do not have sufficient information at this time to develop guidelines that use these attributes. We intend to investigate this matter further, however, as time and funding permit, and to eventually replace the utilization guidelines on perennial uplands (which specify percent of key species removed) with guidelines specifying minimum amounts of residue to be left. A very preliminary study proposal is given in Table 2.

Table 2. Preliminary Study Proposal: Developing Residue and Stubble Height Guidelines for Major Vegetation Types in the Great Basin

Objective: Develop upland residue and stubble height guidelines for the major vegetation types in the Great Basin

- Conduct a literature review.

This review would look at material published in peer-reviewed publications and "gray" literature as well as information collected by field offices. In addition, range scientists at universities and in other agencies (e.g., NRCS, ARS, Forest Service) would be interviewed.

- Conduct the following study.

A study would be conducted to fill in the gaps in information that are expected to exist following the literature review. Over a period of several years the residue left following known levels of utilization will be measured at several sites in different vegetation types. This will entail measuring total above ground production in ungrazed areas (using either cages or exclosures), measuring utilization after the grazing season on key species, and measuring the amount of standing and fallen dead plant material (separately) at that level of use. The stubble heights of key species will also be measured, both in grazed and ungrazed condition. Photographs will be taken both of the key species and the landscape, both in grazed and ungrazed areas. As much as possible, sites should be selected that are close to existing weather stations (NOAA, RAWS stations, etc.) so the total production can be related to the amount of precipitation received.

The study should be conducted over several years in order to show a range of residue, stubble heights, and utilization levels as related to different amounts of precipitation. This study should enable field personnel to develop either State or regional guidelines on the appropriate residue and stubble height levels that should be left following grazing.

Following is a list of the utilization and residue studies from the Interagency Technical Reference, *Utilization Studies and Residual Measurements* (BLM et al. 1996b) that may be applied to public lands within the EIS area:

Browse Utilization Methods:
- Twig Length Measurement Method
- Cole Browse Method
- Extensive Browse Method

Residue Measuring Methods
- Stubble Height Method
- Visual Obstruction Method
- Comparative Yield Method

Herbaceous Utilization Methods
- Paired Plot Method
- Ocular Estimate

Appendix 2 -- Page 8

- Key Species Method
- Height-Weight Method
- Actual Weight Method
- Grazed-Class Method
- Landscape Appearance Method

Exact methods to be used to monitor utilization, residue, and stubble heights will be determined by the Field Offices.

The above utilization and residue monitoring studies are usually applied to key areas (see the glossary in the Final EIS for a definition of key area and the discussion of key areas in Chapter 3, Section 3.2.5 of the Final EIS). Utilization pattern mapping is another important monitoring tool. This method entails canvassing the entire allotment or individual pasture and mapping the area into several classes based on the level of utilization (e.g., no use, light use, moderate use, and heavy use) on key species (see Chapter 3, Section 3.2.5 for more information). These studies will continue where necessary.

Actual use monitoring. Actual use studies (BLM 1984) are another form of traditional range monitoring that will continue. These studies track the actual use made by livestock in pastures and/or allotments based on the numbers of livestock and the length of time livestock are present. These numbers are usually provided by lessees/permittees but are sometimes also estimated from counts by BLM professionals. The actual use made by other herbivores such as wild horses and burros and wildlife is often estimated as well. These data are important in determining what changes should be made when objectives and standards are not being met.

Climate monitoring. It is important to consider climate when interpreting monitoring data. Climate monitoring most often consists of compiling precipitation and temperature information collected by the National Oceanic and Atmospheric Administration at the many weather stations in the EIS area. In some cases, precipitation data are collected through the placement of rain gauges in allotments. Additionally, both temperature and precipitation data are collected from 14 Remote Automated Weather Stations (RAWS) within the EIS area.

Riparian-wetland monitoring. The vegetation attributes of riparian-wetland areas are monitored using one or more of the techniques described in Table A.22.2 in the Final EIS. The Greenline Riparian-Wetland Monitoring Method (BLM 1993a) is also used by some field offices. The following physical attributes are also monitored on some riparian-wetland areas:

- Bankfull discharge
- Sinuosity
- Riparian zone width
- Floodplain and channel characteristics (i.e., rocks, overflow channels, coarse and/or large woody debris)
- Width/depth ratio

Use of Qualitative Assessments to Determine if Standards are Being Met

As noted above, traditional range monitoring studies can help assess whether standards are being met. The standards, however, call for the assessment of indicators that are not addressed by these traditional monitoring studies. Where the status of these indicators cannot be inferred from existing monitoring information, other monitoring or assessment methods must be employed. The following qualitative

assessment procedures were developed to rapidly assess all the physical and biological components of rangeland health.

Qualitative Upland Assessment. For uplands, the qualitative assessment method will be used. Although a technical reference has not yet been finalized on the method, a draft has been prepared and field tested. The details were given in Appendix 25 in the Final EIS. Field Offices may adapt this method as necessary to meet local needs. The results of the qualitative assessment will be used in conjunction with all other available information to determine if an allotment is meeting the standards. If it is not, and does not appear to be making significant progress toward meeting the standards, and grazing has been determined to be a significant factor, changes will be made to the management of livestock grazing. To assess whether these management changes are effective in moving toward meeting the standards, monitoring will be initiated (or, if already being conducted, will be continued) that is directed toward those indicators that caused the allotment to not meet the standards. For example, if the qualitative assessment indicates that insufficient litter is present, subsequent monitoring will focus on measuring the amount of litter (either the cover of litter or the amount in weight of litter).

Qualitative Riparian/Wetland Assessment. A qualitative procedure, called proper function condition (PFC) assessment (see Appendix 23 of the Final EIS), is already in place to help assess whether riparian and wetland areas are meeting the standards (BLM 1993b and 1994). This PFC assessment has already been applied to many riparian/wetland areas within the EIS area. Its use will be continued. Just as with the upland qualitative assessment procedure, when the PFC results in one or more indicators being responsible for an allotment not meeting the standards, subsequent monitoring will focus on those indicators. For example, if the width/depth ratio is the main reason a stream is determined to be not meeting the standard of proper functioning condition, subsequent monitoring would focus on the width/depth ratio of the stream.

Wildlife Monitoring for Rangeland Health

The standards for rangeland health include a "species" standard. They also include several indicators of animal habitats and populations that are attributes of a healthy rangeland ecosystem. These indicators can be divided into those related to habitat, and those related to animal populations. The habitat indicators include habitat seral stages, vegetation structure and patch size, spatial distribution of habitats, habitat size, how habitats are connected, and the habitat's ability to support viable populations. The animal population indicators include the spatial distribution of animals, special status species numbers, stable to increasing populations, viable populations, and levels of non-native animals.

The BLM recognizes that determining the biodiversity health for each allotment is an impossible task involving the gathering of species-specific data at many locations and scales. However, a more achievable option is to design monitoring programs that evaluate ecosystem components, structures and processes as indicators of a habitat's *capability* to support healthy animal communities. We would then rely on focused studies to more directly monitor species of management concern.

There are different scales of monitoring and management to evaluate the relationships between habitat management from livestock grazing and animal populations. It is critical to evaluate the assumptions that habitat management at the allotment (or pasture) level will actually affect animal presence and abundance at the monitoring site(s). It is necessary to determine the appropriate scale of monitoring: coarse scale regional monitoring of several allotments for some animal community indicators; fine scale monitoring at the allotment level for some special status, game animals, and keystone species; and site-specific scale for some special status species and ecosystem health indicators that are restricted to very small habitat areas. Monitoring plans should consider these issues of scale when designing allotment monitoring programs.

Habitat mapping and vegetation monitoring would usually suffice to evaluate whether the allotments are providing *adequate opportunities* for wildlife communities in meeting the standards. Spot checking for selected species at the appropriate habitats over several allotments would evaluate rangeland health for many species. At a finer scale of analysis, population censuses at the allotment scale may be needed to determine if the standards are being met. This finer scale monitoring would be directed at special status animals or at species with a very restricted habitat requirement as a rangeland health indicator.

Most allotment monitoring will evaluate the habitat capability for species of management concern. Vegetation characteristics of habitat structure (for example, ground cover, vertical layering, form of trees and shrubs), plant composition, age structure of plants (young, reproducing, old, or decadent trees or shrubs), plant vigor, and the distribution of plant communities across the landscape will be the focus of BLM's monitoring.

Field assessments should emphasize the use of habitat quality checklists to identify significant problems at the appropriate scale (allotment or landscape levels). These checklists can be designed to evaluate habitat quality for a particular species, group of species, or general animal community composition. The elements of such a checklist are given in Table 3. More focused studies or monitoring protocols may be developed where habitat monitoring indicates standards are not being met and where management priority is high.

The BLM will consider existing information on soils, habitats, scientific literature, historic records, fire history, and disturbance regimes to assess habitat capability. When more detailed information regarding a particular species is required, wildlife information systems and species records may be used to conduct assessments of habitat quality for animals of management concern. The California Wildlife Habitat Relationships System (CWHR) and Habitat Evaluation Procedures (HEP) models may be used for these assessments. These models are based on the assumptions that through habitat assessments, habitat capability (quality) for a particular species or group of species can be determined. The California Natural Diversity Data Base will be used to help assess the significance of BLM actions on special status animal species and rare plant communities.

The rangeland health indicators for animal (wildlife) populations cannot be assessed separately for each species. Evaluating animal numbers and distributions for each species would require an extensive amount of monitoring of hundreds of animal species, a task far beyond the capability of the BLM and our State and private management partners. Instead, monitoring must be focused on a subset of animal "indicator" species that represent wildlife communities and populations in general as indicators of ecosystem health. While this method of monitoring has been criticized as flawed since each species has its own niche in the ecosystem that cannot be represented by another species, this approach gives the BLM the opportunity to focus wildlife monitoring within our capability. The indicator species may be threatened or endangered, game animals, species of regional or special concern, keystone species, abundant, or rare. The selection of the indicator species will depend on the allotment management objectives, land use plan objectives, and/or BLM commitments to regional plans. The monitoring of the indicator species may include general distribution or abundance surveys or more focused research to better evaluate the relationships between the animals and their habitats and grazing effects. In many cases, data collection may not be required within each allotment, but across the landscape in habitats with similar characteristics.

Table 3. Elements of a Biodiversity and Species Checklist for Wildlife.

Habitats

CWHR Habitats and seral stage(es) present:

Habitat composition and seral stages related to management objectives:
- Seral stages meet management objectives
- Plant community composition indicates good rangeland health
- Native species present at acceptable levels
- Non-native species at acceptable levels
- Invasive weeds at acceptable levels

Habitat structure related to management objectives:
- Plant cover is adequate, within natural range
- Plant height adequate: herbaceous shrub trees
- Plant density is adequate
- Plants distributed normally
- Ground cover is within normal range
- Age-class indicates community maintenance
- Form-class indicates normal growth characteristics

Distribution of Habitats across landscape:
- Patch size is adequate
- Fragmentation is not excessive
- Habitats are connected within site capability

Species

Management indicators selected:

Habitats meet requirements of indicator species:
- Elements are considered acceptable:
- Elements lacking:

Key management areas present:
- Listed species habitats
- Riparian
- Wetlands
- Seasonal ranges (winter, migratory, calving/fawning, etc)
- Breeding/nesting sites

Appendix 2 -- Page 12

Table 3, cont.
Focused Studies Focused studies in progress: Focused studies needed: **Evaluation:** Habitats are meeting management objectives Habitats promote diverse and viable wildlife populations Seral stages present Composition Structure Distribution Habitats can withstand catastrophic events (flood/fire/windstorm) Species present indicate healthy ecosystem function Habitats meeting species/diversity standards Habitats not meeting species/diversity standards Livestock grazing/management is (is not) significant factor Management changes needed to meet standards

Water Quality Assessment and Monitoring

Most often, when riparian areas and wetlands are healthy, the quality of water for most beneficial uses meets standards. Many of the attributes assessed and monitored for riparian and wetland areas also affect the quality of the water, at least indirectly. There are exceptions, however, where this may not always be true, particularly with regard to the chemistry and physical properties of the water. Biological assessments and monitoring of aquatic organisms in water bodies serve to identify important attributes reflecting the quality of water for many beneficial uses and will be used when it is determined that the quality of the water may be in question.

In most situations BLM will depend upon the State and Regional water quality agencies to either identify, or assist BLM in identifying, where water quality is impaired or has a high probability of being impaired. For those areas where livestock grazing activities on public land are known to cause or are suspected of causing water quality impairment, BLM will closely coordinate with these agencies in obtaining any needed water quality monitoring and assessment information. Where sufficient information is not available, BLM will also closely coordinate with these agencies in the selection and design of the attributes to be assessed and monitored by BLM. Since the states have primary responsibility and primacy regarding the Clean Water Act and the Safe Drinking Water Act, it is important that any water quality assessment or monitoring information obtained by BLM meet the acceptance of those state agencies responsible for identifying the specific requirements of those Acts.

Effectiveness Monitoring of Guidelines

Effectiveness monitoring is used to evaluate whether a particular activity, when carried out as planned, results in the desired effect (MacDonald et al. 1991). In the context of rangeland standards and guidelines, effectiveness monitoring will be used to evaluate whether guidelines, if followed, result in either meeting or making progress toward meeting the standards. This type of monitoring will be employed when the other types of monitoring and assessment discussed in this appendix determine that progress is not being made toward meeting standards despite compliance with guidelines. For example, a grazing system is implemented in order to move an allotment toward meeting standards, but after five years of monitoring no progress is detected. The management system will then be evaluated to determine why it is not producing the desired effects and changed accordingly. Utilization and stubble height guidelines provide another example. If, after several years of compliance with these guidelines, allotments are not moving toward meeting standards, these guidelines will be evaluated and supplanted by new ones as appropriate.

Application of New Technology to Monitor and Assess Rangeland Health

Traditional transect-based techniques for measuring vegetation and other indicators of rangeland health provide detailed information at a plot level. Care must be used when using plot-based measurements to characterize large areas because of problems in extrapolating information from small samples to large areas. Methods for assessing rangeland health at multiple scales are currently in their infancy. The use of remotely-sensed data, primarily satellite imagery, will hopefully become a rapid and inexpensive method for measuring rangeland health on larger areas.

One pilot effort recently initiated in the northeastern portion of the EIS area is a cooperative project between BLM, the National Resource Conservation Service, and the Forest Service's Pacific Northwest Experiment Station. It involves the transitioning from traditional Soil Surveys to Resource Surveys, which are multi-resource, map-based surveys of soil, vegetation, water, and wildlife characteristics. Part of the project will include development of a set of tools that will be designed to assess rangeland health at multiple scales and areal extent.

As new methodologies such as this one are developed, they will be applied to monitoring and assessing rangeland health standards within the EIS area.

Monitoring and Assessment Plans

Each Field Office will develop a plan that will direct its monitoring and assessment activities relative to making determinations on whether standards are being met, whether progress is being made toward meeting the standards if they are not currently being met, and whether livestock grazing is the reason for standards not being met. These plans need not be elaborate, but at a minimum they will include a list of the attributes that will be monitored, the monitoring methods that will be used (with reference to a complete description of the method), the allotments that will be monitored using these methods, the frequency at which the allotments will be monitored, and how often interdisciplinary assessments will be made of all the information collected (including monitoring data, qualitative assessment information, inventory data, etc.). A monitoring and assessment schedule will also be included. These monitoring and assessment plans will be made available to all interested parties.

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Appendix F

Wild and Scenic River Eligibility Analysis

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Appendix F

Wild and Scenic River Eligibility Analysis

BLM is required to evaluate stream segments on public lands as potential additions to the National Wild and Scenic Rivers System (NWSRS) during the RMP process under Section 5(d) of The *Wild and Scenic Rivers Act* of 1968 (Public Law 90-542).

The RMP team met in October, 2007 and identified/evaluated watersheds and geologic features within the National Monument for eligibility under the Wild and Scenic Rivers Act. The team took the broadest interpretation of stream segments as defined by the act, given the arid conditions of the National Monument.

The team made the following determinations:

Soda Lake and tributaries (not-eligible -- decision carried forward from Caliente RMP 1997): The team determined that the eligibility study for Soda Lake conducted for the Caliente RMP (1997) would be carried forward in this RMP, as the factors that led to the non-eligible determination had not changed. The team also noted that although Soda Lake did not meet the eligibility criteria, it was explicitly identified as an object for protection under the proclamation.

Wallace Creek and Abbot Canyon (Not Eligible – do not meet definition of "River" under the Act)

Wallace Creek provides an outstanding example of a channel that was offset by the San Andreas Fault. This offset channel is a geologic feature of national significance, and is one of the objects identified for protection under the proclamation. However, Wallace Creek was determined not to meet the definition of "River" under the Wild and Scenic Rivers Act which is ". . .a flowing body of water or estuary, or a section, portion or tributary thereof, including rivers, streams, creeks, runs, kills, rills and small lakes." (16 U.S.C. §§ 1268, October 2, 1968). Wallace Creek is a dry wash or arroyo that rarely carries water except during and immediately after periods of excessive rainfall.

Abbot Canyon contains archaeological sites that are of at least regional significance. These sites are thought to have been located along the canyon during a period when there was more water available to the inhabitants. However, Abbot Canyon is now a dry feature, with the exception of several spring seeps, so like Wallace Creek was determined not to

Cuyama River (Not Eligible – Free Flowing, but no outstandingly remarkable values) – A very short segment (less than 1/8 mile) of the Cuyama River flows through a corner of the southern boundary of the monument. The river is intermittent with a wide sandy bottom. Although there is a bridge along the segment, overall it is considered to be free flowing. This segment of the Cuyama is very typical of streams in the driest parts of the Southern Coast Range Physiographic Province. There is limited riparian vegetation, including some scattered cottonwoods along the corridor. In summary, the segment contains no outstandingly remarkable values.

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Appendix G

Cultural Resource Use Allocations

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Appendix G
Cultural Resource Use Allocations

Use Categories for Cultural Resource Use Allocations

A. Scientific Use. This category applies to any cultural property determined to be available for consideration as the subject of scientific or historical study at the present time, using currently available research techniques. Study includes methods that would result in the property's physical alteration or destruction. This category applies almost entirely to prehistoric and historic archaeological properties, where the method of use is generally archaeological excavation, controlled surface collection, and/or controlled recordation (data recovery). Recommendations to allocate individual properties to this use must be based on documentation of the kinds of data the property is thought to contain and the data's importance for pursuing specified research topics. Properties in this category need not be conserved in the face of a research or data recovery (mitigation) proposal that would make adequate and appropriate use of the property's research importance.

B. Conservation for Future Use. This category is reserved for any unusual cultural property which, because of scarcity, a research potential that surpasses the current state of the art, singular historic importance, cultural importance, architectural interest, or comparable reasons, is not currently available for consideration as the subject of scientific or historical study that would result in its physical alteration. A cultural property included in this category is deemed worthy of segregation from all other land or resource uses, including cultural resource uses that would threaten the maintenance of its present condition or setting, as pertinent, and will remain in this use category until specified provisions are met in the future.

C. Traditional Use. This category is to be applied to any cultural resource known to be perceived by a specified social and/or cultural group as important in maintaining the cultural identity, heritage, or well being of the group. Cultural properties assigned to this category are to be managed in ways that recognize the importance ascribed to them and seek to accommodate their continuing traditional use.

D. Public use. This category may be applied to any cultural property found to be appropriate for use as an interpretive exhibit in place, or for related educational and recreational uses by members of the general public. The category may also be applied to buildings suitable for continued use or adaptive use, for example as staff housing or administrative facilities at a visitor contact or interpretive site, or as shelter along a cross-country ski trail.

E. Experimental Use. This category may be applied to a cultural property judged well-suited for controlled experimental study, to be conducted by BLM or others concerned with the techniques of managing cultural properties, which would result in the property's alteration, possibly including loss of integrity and destruction of physical elements. Committing cultural properties or the data they contain to loss must be justified in terms of specific information that would be gained and how it would aid in the management of other cultural properties. Experimental study should aim toward understanding the kinds and rates of natural or human-caused deterioration, testing the effectiveness of protection measures, or developing new research or interpretation methods and similar kinds of practical management information. It should not be applied to cultural properties with strong research potential, traditional cultural importance, or good public use potential, if it would significantly diminish those uses.

F. Discharged from Management. This category is assigned to cultural properties that have no remaining identifiable use. Most often these are prehistoric and historic archaeological properties, such as small surface scatters of artifacts or debris, whose limited research potential is effectively exhausted as soon as they have been documented. Also, more complex archaeological properties that have had their salient information collected and preserved through mitigation or research may be discharged from management, as should cultural properties destroyed by any natural event or human activity. Properties discharged from management remain in the inventory, but they are removed from further management attention and do not constrain other land uses. Particular classes of unrecorded cultural properties may be named and described in advance as dischargeable upon documentation, but specific cultural properties must be inspected in the field and recorded before they may be discharged from management.

Appendix H

Management of Lands With Wilderness Characteristics

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Appendix H

Management of Lands With Wilderness Characteristics

Management Direction

Management of Lands With Wilderness Characteristics is part of BLM's multiple-use mandate, and is recognized within the spectrum of resource values and uses. Public lands with wilderness characteristics generally:

- Have been affected primarily by the forces of nature, with the imprint of humans substantially unnoticeable.
- Have outstanding opportunities for solitude or a primitive and unconfined type of recreation,
- Have at least five thousand acres of land or of sufficient size as to make practicable its preservation and use in unimpaired condition, and
- Potentially containing ecological, geological, or other features of scientific, educational, scenic, or historical value.

With exceptions, public lands having wilderness characteristics should be managed to protect these values. In addition, they should augment multiple-use management of the CPNM and adjacent lands particularly for the protection of watersheds and water yield, wildlife habitat, natural plant communities, and similar natural values.

With exceptions, the following activities generally do not occur within lands having wilderness characteristics:

- Commercial enterprises
- Permanent roads
- Temporary roads
- Use of motor vehicles
- Use of motorized / Mechanized equipment
- Use of motorboats
- Landing of aircraft
- Mechanical transport
- Structures Installations

However, there are exceptions to these prohibitions and they are generally grouped into three categories:

- Valid Existing Rights. Prior-existing rights may continue. New discretionary uses that create valid existing rights are not allowed.
- Administrative Activities. New commercial activities or new permanent roads will not be authorized. BLM may authorize any of the other prohibitions if it is necessary to meet the minimum requirements to administer and protect the lands with wilderness character and to protect the health and safety of persons within the area.
- Other General Allowances. Subject to limitations determined by the State Director, general allowances could include actions necessary to control fire, insects, and diseases, recurring Federal mineral surveys, established livestock grazing, commercial services to the extent necessary for activities which

are proper for realizing the recreational or other wilderness character purposes and compatible with the defined values, and adequate access to inholdings.

Specific Guidance

1. Emergencies. The use of motor vehicles and mechanical transport, and the construction of temporary roads, structures, and installations is allowed for emergency purposes and when consistent with the management principles of the CPNM.

2. Land Disposals, Rights-of-Ways, Use Authorizations. These lands will be retained in public ownership. They will not be disposed through any means, including public sales, exchanges, patents under the Recreation and Public Purposes Act, color of title Class II, desert land entries (except where a vested right was established prior to October 21, 1976) or State selections. Disposals may be permitted under normal BLM procedures for mining patents, color of title Class I, and desert land entries in which a vested right was established. Prior existing rights, such as leases under the Recreation and Public Purposes Act, leases/permits under 43 CFR 2920, and rights-of-ways (ROWs) may continue. These also could be renewed if they are still being used for their authorized purpose. New authorizations, leases, permit, and ROWs will not be authorized since they are considered new valid rights.

3. Routes of Travel. The construction of new permanent roads will not be allowed. New temporary roads could be allowed if the BLM determines it is consistent with the objectives of this plan, if it is necessary to protect the health and safety of persons within the area, or if necessary to control fire, insects, non-native invasive plants and diseases. Motorized or mechanized use of the existing routes is allowed subject to prescriptions outlined in the route designation process or stipulations identified in an authorization. Unless stipulated in the plan, any motorized or mechanized uses off those routes of travel will not be allowed.

4. Mining. There are no authorized mining operations in the Monument. All lands are withdrawn from mineral entry. Therefore there will be no mining operations.

5. Mineral Leasing. Existing mineral leases represent a valid existing right. These rights are dependent upon the specific terms and conditions of each lease. Existing leases will be regulated to prevent unnecessary or undue degradation. No new oil and gas leases will be issued.

6. Grazing. Existing livestock grazing, and the activities and facilities that support a grazing program are permitted to continue at the same level and degree, subject to any additional prescriptions. The construction of new grazing facilities would be permitted if they are primarily for the purpose of protecting wilderness characteristics and more effective management of resources, rather than to accommodate increased numbers of livestock.

7. Fire Management. Fire management will be consistent with Bureau policy. Fires must be controlled to prevent the loss of human life or property. They must also be controlled to prevent the spread of fires to areas outside of Lands With Wilderness Character where life, resources, or property may be threatened. Human caused wildfires will be prevented and/or controlled. Prescribed fires are allowed in conformity with a fire management plan so long as it consistent in improving or maintaining the areas wilderness character. Minimum impact suppression tactics (MIST) will be applied to the extent possible.

8. Forest/Vegetation Health. Insects, disease, and non-native invasive species may be controlled if determined that it is necessary to meet the minimum requirements to administer and protect these lands. Insect and disease outbreaks must not be artificially controlled, except to protect valuable resources

outside the Land With Wilderness Character, or in special instances when the loss to resources within these lands is undesirable. Vegetative manipulation to control non-native invasive species is allowed when there is no effective alternative and when the control is necessary to maintain the natural ecological balances within the area. Control may include manual, chemical, and biological treatment provided it will not cause adverse impacts to the wilderness character.

9. Recreation. Primitive and unconfined recreational uses such as hiking, camping, rock climbing, hunting etc. are allowed on these lands. Recreational uses will not be allowed if they require:

- Motor vehicles or mechanical transport (e.g, mountain bikes) off routes designated as open or limited as designated through the route designation process.
- Permanent structures or installations (other than tents, tarpaulins, temporary corrals, and similar devices for overnight camping).

New commercial services will not be allowed unless they are necessary for realizing the primitive and unconfined recreational values. An example of an allowed commercial service would be an outfitting and guide service. Existing commercial recreational authorizations may be allowed to continue under its terms and conditions to their expiration date.

10. Cultural and Paleontological Resources. Cultural and paleontological resources are recognized as unique and valuable. They are also important supplemental values to an area's wilderness character. Resource inventories, studies, and research involving surface examination may be permitted if it benefits wilderness values. This same standard applies for the salvage of archeological and paleontological sites; rehabilitation, stabilization, reconstruction, and restoration work on historic structures; excavations; and extensive surface collection may also be permitted for a specific project.Permanent physical protection, such as fences, will be limited to those measures needed to protect resources eligible for the National Register of Historic Places and will be constructed so as to minimize impacts on apparent naturalness.

11. Wildlife Management. Wildlife resources are a special feature that may contribute to an area's wilderness character. Whenever possible, these resources should be managed to maintain that character. Nothing will be construed as affecting the jurisdiction or responsibilities of the State agencies with respect to wildlife management on these lands. Hunting is a legitimate activity on these lands. The State establishes regulations and enforcement for these uses. State wildlife agencies and the BLM are responsible for fostering a mutual understanding and cooperation in the management of wildlife. Management activities on these lands will emphasize the protection of natural processes. Management activities will be guided by the principle of doing the minimum necessary to manage the area to preserve its natural character. Management of public lands having wilderness character will follow the guidelines provided in the Memorandum of Understanding between the BLM and the International Association of Fish and Wildlife Agencies. It will also follow any additional site-specific wildlife decisions addressed through the land use planning process.

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Appendix I

Supplementary Rules for Public Use

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Appendix I
Supplementary Rules for Public Use

Supplementary rules complement local, state, and federal laws and regulations, to increase public safety and protect sensitive resources. These rules are not intended to unduly interfere with the public use and enjoyment of the CPNM, but to enhance that use by providing protection for the area so that its natural qualities will be maintained or enhanced in the future. Preliminary text to be included in the new rules, as well as text from existing rules, is provided below for general information purposes. Any new rules will be formalized through a Federal Register notice and rulemaking process that will be initiated upon completion of the RMP.

Existing Rules

Establish shooting closures to protect visitors within the following high-use areas:

- Within ¼ mile of any Administrative site, including but not limited to the Selby and KCL Campgrounds, Washburn, Saucito, Goodwin and MU Ranch headquarters, the Soda lake Overlook complex and the Wallace Creek interpretive area.
- Beginning at the intersection of Soda Lake Road and Selby Road, southerly along Selby Road to its intersection with a fence line behind Painted Rock, then westerly along that fence line to its intersection with the section fence line, then northerly along the section fence line to its intersection with Soda Lake Road, then southerly back to the beginning.

Recreational target shooting is prohibited in the CPNM.

The Washburn Administrative Site and the MU, Goodwin, Saucito, and Painted Rock ranches headquarters may be closed to public access at the discretion of the BLM or the managing partners.

Sulphur Springs are closed to public access except under permit from BLM. Painted Rock is closed to public access from March 1 through July 15 except for tours conducted by the managing partners. It is open to public access at other times, subject to special closure for resource protection at the discretion of BLM.

Operation of any vessel, including aircraft, hovercraft, and boats of any kind, or any vehicle equipped with an engine or motor for propulsion is prohibited on or within 100 feet of Soda Lake or any adjacent stream, channel, dry lake, or body of water.

Vehicles parked adjacent to any designated route of travel must be parked as close to the route as possible without preventing passage of other vehicles.

All roads, routes, paths, trails, fire lines, burned areas, and ways are closed to motor vehicles unless designated open for such use. Open roads may be closed temporarily at the discretion of the managing partners for public safety or resource protection. Unless otherwise posted, the speed limit within the CPNM shall be 25 mph except on county roads. Vehicles are limited to designated routes only. No cross-country travel is permitted unless authorized.

No person, other than employees on official business or representatives of the managing partners, may operate a motor vehicle on any route designated for administrative use only, except by prior approval of the managing partners.

Bicycles may not be operated on closed roads or trails, or off existing open roadways or trails. Roads designated for administrative use only are open to bicycle, pedestrian, and casual horse use unless otherwise posted.

All litter, waste, or refuse at campsites must be kept within a container or receptacle while camping and removed when leaving the CPNM.

All camping or overnight parking must occur within designated camping areas and campgrounds.

Property left unattended for more than four days, without prior approval of the managing partners, will be treated as abandoned and may be removed and stored by law enforcement personnel at the owner's expense.

Overnight camping is limited to 14 days in any 30-day period, for no more than 28 days within a 1-year period, except as specified in writing by the authorized officer. Camping is allowed only within designated campgrounds and camping areas. Note: "Camping areas" in this existing rule are zones within the CPNM open to camping. The boundaries of these zones are described in visitor information.

When livestock grazing is occurring under permit from BLM, the primary purpose of all appurtenant facilities such as corrals and loading chutes will be for the permittee's livestock.

Camping or overnight parking is prohibited within 200 yards of a natural or artificial water source.

All pets and pack animals must be controlled by the owner at all times. Pack animals shall be within corrals or adequately restrained. Pets must be prevented from chasing, harassing, or taking wildlife.

Organized groups with 20 or more persons or 5 or more vehicles must secure a permit for any day or overnight use.

Any research or study activities will require a permit or authorization from BLM.

The use of metal detectors is prohibited, except for approved administrative purposes.

Supplementary Rules for Public Use Proposed Under this RMP

Any paintball, airsoft, or like weapon is prohibited from use on the CPNM.

In coordination with CDFG, eliminate varmint (non-game species) hunting on the Monument.

Still and video photography of the pictograph images at Painted Rock and other rock art sites in the Monument are prohibited for commercial purposes.

Permit is required to access Painted Rock. The details on how to obtain a permit and the rules to be followed are in Appendix X of this document.

A 1,204-acre area from Painted Rock to Selby Rocks is closed to horses, livestock, dogs, and the discharge of firearms. The closed area does not include Selby Road or Caliente Mountain Road (see Map 2-2).

Only street-legal vehicles are permitted on routes within the Carrizo Plain National Monument. Non-street-legal vehicles are prohibited with the following exceptions:

- When used for authorized, permitted, and administrative purpose, including those used in emergency situations.
- When used on a portion of the Temblor Ridge Road from T. 31 S., R. 21 E., Sec. 23 (Crocker Grade Road) to T. 11 N., R. 24 W., Sec. 7 allowing connectivity to the eastern slopes of the Temblors. Staging for OHV activities and trailing of OHV vehicles is prohibited along Temblor Ridge Road.

Competitive / recreational events shall not include the release of nonnative or captive-held native species.

Pets shall remain leashed at all developed sites including visitor centers, interpretive overlooks, and camping areas.

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Appendix J

BLM Road Maintenance Classifications

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Appendix J

BLM Road Maintenance Classifications

Level 1. This level is basic custodial care as required to protect the road investment and or adjacent lands and resource values. Normally, these roads are blocked and not open for traffic or are open only to restricted traffic. Include primitive roads (way) here.

a. Roads typical of this level. Roads that have served or were constructed as fire trails, access to discontinued-use administrative areas, logging spurs on completed sales, occasionally discontinued access to development areas, and primitive roads (way) receiving no maintenance.

b. Maintenance standard. Maintain culverts, waterbars, and other drainage facilities. Sides, fallen trees, and brush would be left unless they affected roadbed drainage. Closure and traffic restrictive devices would be maintained. Primitive roads (way) would receive no maintenance.

Level 2. This level is used on roads where management requires a road to be opened seasonally for limited passage of traffic. Traffic is generally administrative with some minor specialized use or moderate seasonal use.

a. Roads typical of this level. Roads serving firewood permits, environmental study areas, hunter access and ORV areas.

b. Maintenance standard. Minimum of maintenance, including brush and obstruction removal, maintenance of drainage facilities, and minimum maintenance of road prism.

Level 3. This level is for roads which are seasonal in nature or occasionally open year around. Traffic volumes approach an Average Daily Traffic (ADT) of 15 vehicles. These roads may require a seasonally adjusted level of maintenance. (See Manual Section 9113.17.)

a. Roads typical of this level. Low standard, low volume, single lane, natural earth surface (dirt) roads, typical of a resource road, serving low-use recreation areas, minor timber-sale areas, or other resource uses.

b. Maintenance standard. Maintain as needed. Keep drainage functional and maintain roadway prism. Maintain sight distance and provide concern for driver safety and convenience.

Level 4. This level is used on roads which are generally kept open year around or a high-use seasonal road, and have a high concern for driver safety and convenience.

a. Roads typical of this level. Medium volume, double-lane roads consisting of a high standard natural earth surface (dirt) road, aggregate surface road, or occasionally a bituminous surface road. Typical of this road would be a local road that serves as an artery to other road networks; serves medium to high-recreation areas and resource development areas, such as energy and timber production.

b. Maintenance standard. The roadway is maintained on a scheduled basis. May have a preventive maintenance program established. A greater concern for driver safety and convenience. Problems are repaired as soon as discovered.

Level 5. This level of maintenance is for those collector aggregate or bituminous surface roads with an ADT range between 15-100 per day and design speeds of 55 mph. Safety and comfort are important considerations.

a. Roads typical of this level. Collector roads serving as arteries and access to major recreation complexes, where the safety and comfort of the using public is a prime consideration. These roads would also include those resource production roads where heavy traffic is the norm.

b. Maintenance standard. In addition to a scheduled maintenance program, these roads have a preventive maintenance program established to maintain the integrity of the system.

Appendix K

Monument Wildlife List

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Appendix K

Monument Wildlife List

STATUS CODES

FE - Fed. Endangered	SE - CA Endangered	? - Potentially Occurring
FT - Fed. Threatened	ST - CA Threatened	EX - Exotic Species
FC - Fed. Candidate	SSC[1] - CDFG Species of Concern	breed - Status applies to breeding
FD - Fed. Delisted	SCD – State Candidate Delisted	population only and known
BS - BLM Sensitive	SFP – State Fully Protected	to breed on the Carrizo

INVERTEBRATES

(Only those invertebrate species mentioned in the text are listed)

SCIENTIFIC NAME	COMMON NAME	STATUS
Fairy shrimp – ORDER Anostraca		
Artemia franciscana	brine shrimp	
Branchinecta campestris	pouch-pocketed fairy shrimp	
Branchinecta lindahli	versatile fairy shrimp	
Branchinecta longiantenna	longhorn fairy shrimp	FE
Branchinecta lynchi	vernal pool fairy shrimp	?, FT
Branchinecta mackini	alkali fairy shrimp	
Insects – CLASS Insecta		
Eustenopus villosus	hairy weevil	
Euproserpinus euterpe	Kern primrose sphinx moth	FT

REPTILES AND AMPHIBIANS[2]

SCIENTIFIC NAME	COMMON NAME	STATUS
Salamanders – ORDER Caudata		
Batrachoseps nigriventris	black-bellied slender salamander	
Frogs and Toads – ORDER Salientia		
Spea (Scaphiopus) hammondii	western spadefoot toad	SSC, BS
Bufo boreas	western toad	
Pseudacris regilla	pacific treefrog	
Lizards and Snakes – ORDER Squamata		
Gambelia sila	blunt-nosed leopard lizard	FE, SE, SFP
Sceloporus occidentalis	western fence lizard	
Uta stanburiana	common side-blotched lizard	
Phrynosoma coronatum frontale	coast horned lizard	SSC, BS
Xantusia vigilis	desert night lizard	
Eumeces skiltonianus	western skink	

REPTILES AND AMPHIBIANS[2]

SCIENTIFIC NAME	COMMON NAME	STATUS
Eumeces gilberti	Gilbert's skink	
Cnemidophorus tigris	western (tiger) whiptail	
Elgaria multicarinata	southern alligator lizard	
Anniella pulchra pulchra	silvery legless lizard	SSC
Diadophis sp.	ringneck snake	
Coluber constrictor	racer	
Masticophis flagellum ruddocki	San Joaquin coachwhip	SSC
Salvadora hexalepis	western patch-nosed snake	
Arizona elegans	glossy snake	
Pituophis catenifer	gopher snake	
Lampropeltis getula	common kingsnake	
Rhinocheilus lecontei	long-nosed snake	
Thamnophis sirtalis	common garter snake	
Tantilla planiceps	California (western) black-headed	?
Tantilla hobartsmithi	snake	?
Hypsiglena torquata	southwestern (Smith's)black-headed	
Crotalus viridus	snake	
	night snake	
	western rattlesnake	

MAMMALS[3]

SCIENTIFIC NAME	COMMON NAME	STATUS
Marsupials – ORDER Didelphimorphia		
Didelphus virginiana	Virginia opossum	EX
Shrews and Moles – ORDER Insectivora		
Sorex ornatus	ornate shrew	
Scapanus latimanus	Broad-footed mole	?
Bats – ORDER Chiroptera		
Myotis californicus	California myotis	
Myotis ciliolabrum	western small-footed myotis	BS
Myotis evotis	long-eared myotis	?, BS
Myotis thysanodes	fringed myotis	BS
Myotis yumanensis	Yuma myotis	?, BS
Pipistrellus hesperus	western pipistrelle	
Eptesicus fuscus	big brown bat	
Corynorhinus townsendii	Townsend's big-eared bat	?, SSC, BS
Antrozous pallidus	pallid bat	SSC, BS
Tadarida brasiliensis	Brazilian free-tailed bat	BS
Nyctinomops macrotis	big free-tailed bat	SSC
Eumops perotis	western mastiff bat	SSC, BS
Rabbits and Hares – ORDER Lagomorpha		
Sylvilagus audubonii	desert cottontail	
Lepus californicus	black-tailed hare	

MAMMALS[3]

SCIENTIFIC NAME	COMMON NAME	STATUS
Rodents – ORDER Rodentia		
Tamias merriami	Merriam's chipmunk	?
Ammospermophilus nelsoni	San Joaquin antelope squirrel	ST
Spermophilus beecheyi	California ground squirrel	
Thomomys bottae	Botta's pocket gopher	
Perognathus inornatus inornatus	San Joaquin pocket mouse	BS
Perognathus longimembris	little pocket mouse	
Chaetodipus californicus	California pocket mouse	
Dipodomys agilis	Agile kangaroo rat	?
Dipodomys heermanni	Heermann's kangaroo rat	
Dipodomys ingens	giant kangaroo rat	FE, SE
Dipodomys nitratoides brevinasus	short-nosed kangaroo rat	SSC, BS
Reithrodontomys megalotis	western harvest mouse	
Peromyscus boylei	brush mouse	
Peromyscus californicus	California mouse	
Peromyscus crinitus	canyon mouse	
Peromyscus maniculatus	deer mouse	
Peromyscus truei	pinyon mouse	
Onychomys torridus	southern grasshopper mouse	
Onychomys torridus tularensis	Tulare grasshopper mouse	SSC, BS
Neotoma fuscipes	dusky-footed wood rat	
Neotoma lepida	desert wood rat	
Mus musculus	house mouse	EX
Microtus californicus	California vole	
Carnivores – ORDER Carnivora		
Canis latrans	coyote	
Vulpes macrotis muticus	San Joaquin kit fox	FE, ST
Vulpes vulpes	red fox	EX
Ursus americanus	black bear	
Procyon lotor	raccoon	
Mustela frenata	long-tailed weasel	
Taxidea taxus	American badger	
Spilogale gracilis	western spotted skunk	
Mephitis mephitis	striped skunk	
Felis concolor	mountain lion	
Felis rufus	bobcat	
Even-Ted Ungulates – ORDER Artiodactyla		
Sus scrofa	wild pig	EX
Cervus elaphus nannodes	tule elk	
Odocoileus hemionus columbianus	black-tailed deer	
Antilocarpa americana	pronghorn	

BIRDS[4]

SCIENTIFIC NAME	COMMON NAME	STATUS
Ducks, Geese, Swans – ORDER Anseriformes		
Anser albifrons	greater white-fronted goose	
Chen caerulescens	snow goose	
Branta bernicla	brant	
Branta canadensis	Canada goose	
Anas strepera	gadwall	
Anas americana	American wigeon	
Anas platyrhynchos	mallard	
Anas cyanoptera	cinnamon teal	
Anas clypeata	northern shoveler	
Anas acuta	northern pintail	
Anas crecca	green-winged teal	
Aythya valisineria	canvasback	
Bucephala albeola	bufflehead	
Oxyura jamaicensis	ruddy duck	
Quail – ORDER Galliformes		
Alectoris chukar	chukar	EX
Oreortyx pictus	mountain quail	
Callipepla californica	California quail	
Loons – ORDER Gaviiformes		
Gavia immer	common loon	
Grebes – ORDER Podicipediformes		
Podiceps nigricollis	eared grebe	
Pelicans – ORDER Pelecaniformes		
Pelecanus erythrorhynchos	American white pelican	
Herons, Egrets – ORDER Ciconiiformes		
Ardea alba	great egret	
Egretta thula	snowy egret	
Butorides virescens	green heron	
Nycticorax nycticorax	black-crowned night-heron	
Vultures – ORDER Ciconiiformes		
Cathartes aura	turkey vulture	
Gymnogyps californianus	California condor	FE, SFP
Kites, Eagles, Hawks, Falcons – ORDER Falconiformes		
Pandion haliaetus	osprey	
Elanus leucurus	white-tailed kite	SFP
Haliaeetus leucocephalus	bald eagle	FD, SE, SFP
Circus cyaneus	northern harrier	SSC breed
Accipiter striatus	sharp-shinned hawk	
Accipiter cooperii	Cooper's hawk	
Buteo swainsoni	Swainson's hawk	ST
Buteo jamaicensis	red-tailed hawk	

BIRDS[4]

SCIENTIFIC NAME	COMMON NAME	STATUS
Buteo regalis	ferruginous hawk	
Buteo lagopus	rough-legged hawk	
Aquila chrysaetos	golden eagle	SFP
Falco sparverius	American kestrel	
Falco columbarius	merlin	
Falco peregrinus	Ppregrine falcon	FD, SCD, SFP
Falco mexicanus	prairie falcon	
Soras, Coots, Cranes – ORDER Gruiformes		
Porzana carolina	sora	
Gallinula chloropus	common noorhen	
Fulica americana	American coot	
Grus canadensis canadensis	lesser sandhill crane	SSC
Plovers, Stilts, Avocets, Sandpipers – ORDER Charadriiformes		
Pluvialis squatarola	black-bellied plover	
Charadrius alexandrinus	snowy plover	
Charadrius semipalmatus	semipalmated plover	
Charadrius vociferus	killdeer	
Charadrius montanus	mountain plover	SSC, BS
Himantopus mexicanus	black-necked stilt	
Recurvirostra americana	American avocet	
Tringa melanoleuca	greater yellowlegs	
Tringa flavipes	lesser yellowlegs	
Actitis macularia	spotted sandpiper	
Numenius phaeopus	whimbrel	
Numenius americanus	long-billed curlew	
Calidris mauri	western sandpiper	
Calidris minutilla	least sandpiper	
Calidris alpina	dunlin	
Limnodromus scolopaceus	long-billed dowitcher	
Gallinago delicata	Wilson's snipe	
Phalaropus tricolor	Wilson's phalarope	
Phalaropus lobatus	red-necked phalarope	
Gulls, Terns – ORDER Charadriiformes		
Larus californicus	California gull	
Sterna caspia	Caspian tern	
Doves – ORDER Columbiformes		
Columba livia	rock (feral) pigeon	
Streptopelia decaocto	Eurasian collared-dove	
Zenaida macroura	mourning dove	
Cuckoos, **Roadrunners** – ORDER Cuculiformes		
Coccyzus americanus	yellow-billed cuckoo	FC, SE
Geococcyx californianus	greater roadrunner	

BIRDS[4]

SCIENTIFIC NAME	COMMON NAME	STATUS
Owls – ORDER Strigiformes		
Tyto alba	barn owl	
Otus kennicottii	western screech-owl	
Bubo virginianus	great horned owl	
Glaucidium gnoma	northern pygmy-owl	
Athene cunicularia	burrowing owl	SSC, BS breed
Asio otus	long-eared owl	SSC breed
Asio flammeus	short-eared owl	SSC breed
Nightjars – ORDER Caprimulgiformes		
Chordeiles acutipennis	lesser nighthawk	
Phalaenoptilus nuttallii	common poorwill	
Swifts – ORDER Apodiformes		
Chaetura vauxi	Vaux's swift	SSC
Aeronautes saxatalis	white-throated swift	
Archilochus alexandri	black-chinned hummingbird	
Calypte anna	Anna's hummingbird	
Calypte costae	Costa's hummingbird	
Stellula calliope	calliope hummingbird	
Selasphorus rufus	rufous hummingbird	
Kingfisher – ORDER Apodiformes		
Ceryle alcyon	belted kingfisher	
Woodpeckers – ORDER Piciformes		
Melanerpes lewis	Lewis's woodpecker	
Melanerpes formicivorus	acorn woodpecker	
Sphyrapicus thyroideus	Williamson's sapsucker	
Sphyrapicus varius	yellow-bellied sapsucker	
Sphyrapicus ruber	red-breasted sapsucker	
Picoides nuttallii	Nuttall's woodpecker	
Picoides albolarvatus	white-headed woodpecker	
Colaptes auratus	northern flicker	
Passerines - ORDER Passeriformes		
Flycatchers		
Contopus sordidulus	western wood-pewee	
Empidonax traillii	willow flycatcher	SE
Empidonax hammondii	Hammond's flycatcher	
Empidonax wrightii	gray flycatcher	
Empidonax difficilis	Pacific-slope flycatcher	
Sayornis nigricans	black phoebe	
Sayornis saya	Say's phoebe	
Myiarchus cinerascens	ash-throated flycatcher	
Tyrannus verticalis	western kingbird	
Shrikes		
Lanius ludovicianus	loggerhead shrike	SSC breed

BIRDS[4]

SCIENTIFIC NAME	COMMON NAME	STATUS
Vireos		
Vireo huttoni	Hutton's vireo	
Vireo gilvus	warbling vireo	
Jays,Crows, Magpies (Corvids)		
Aphelocoma californica	western scrub-jay	
Gymnorhinus cyanocephalus	pinyon jay	
Pica nuttalli	yellow-billed magpie	
Corvus brachyrhynchos	American crow	
Corvus corax	common raven	
Larks		
Eremophila alpestris	horned lark	
Swallows		
Tachycineta bicolor	tree swallow	
Tachycineta thalassina	violet-green swallow	
Stelgidopteryx serripennis	northern rough-winged wwallow	
Petrochelidon pyrrhonota	cliff swallow	
Hirundo rustica	barn swallow	
Chickadees and Titmice		
Poecile gambeli	mountain chickadee	
Baeolophus inornatus	oak titmouse	
Bushtits		
Psaltriparus minimus	bushtit	
Nuthatches		
Sitta carolinensis	white-breasted nuthatch	
Wrens		
Salpinctes obsoletus	rock wren	
Catherpes mexicanus	canyon rren	
Thryomanes bewickii	Bewick's wren	
Troglodytes aedon	house wren	
Cistothorus palustris	marsh wren	
Kinglets		
Regulus calendula	ruby-crowned kinglet	
Polioptila caerulea	blue-gray gnatcatcher	
Thrushes		
Sialia mexicana	western bluebird	
Sialia currucoides	mountain bluebird	
Myadestes townsendi	Townsend's solitaire	
Catharus ustulatus	Swainson's thrush	
Catharus guttatus	hermit thrush	
Turdus migratorius	American robin	
Ixoreus naevius	varied thrush	

BIRDS[4]

SCIENTIFIC NAME	COMMON NAME	STATUS
Wrentits		
Chamaea fasciata	wrentit	
Mimic Thrushes		
Mimus polyglottos	northern mockingbird	
Oreoscoptes montanus	sage thrasher	
Toxostoma redivivum	California thrasher	
Toxostoma lecontei	Le Conte's thrasher	SSC, BS breed
Starlings		
Sturnus vulgaris	European starling	EX
Pipits		
Anthus rubescens	American pipit	
Waxwings		
Bombycilla cedrorum	cedar waxwing	
Silky Flycatchers		
Phainopepla nitens	phainopepla	
Warblers		
Vermivora celata	orange-crowned warbler	
Vermivora ruficapilla	Nashville warbler	
Dendroica petechia	yellow warbler	SSC
Dendroica caerulescens	black-throated blue warbler	
Dendroica coronata	yellow-rumped Warbler	
Dendroica nigrescens	black-throated gray warbler	
Dendroica virens	black-throated green warbler	
Dendroica townsendi	Townsend's warbler	
Dendroica occidentalis	hermit warbler	
Dendroica striata	blackpoll warbler	
Oporornis tolmiei	MacGillivray's warbler	
Geothlypis trichas	common yellowthroat	
Wilsonia pusilla	Wilson's warbler	
Icteria virens	yellow-breasted chat	
Tanagers		
Piranga ludoviciana	western tanager	
Sparrows		
Pipilo maculatus	spotted towhee	
Pipilo crissalis	California towhee	
Aimophila ruficeps	rufous-crowned sparrow	
Spizella passerina	chipping sparrow	
Spizella breweri	Brewer's sparrow	
Spizella atrogularis	black-chinned sparrow	
Pooecetes gramineus affinis	Oregon vesper sparrow	SSC
Pooecetes gramineus confinis	Great Basin vesper sparrow	
Chondestes grammacus	lark sparrow	
Amphispiza bilineata	black-throated sparrow	

BIRDS[4]

SCIENTIFIC NAME	COMMON NAME	STATUS
Amphispiza belli	sage sparrow	
Calamospiza melanocorys	lark bunting	
Passerculus sandwichensis	savannah sparrow	
Ammodramus savannarum	grasshopper sparrow	SSC breed
Passerella iliaca	fox sparrow	
Melospiza melodia	song sparrow	
Melospiza lincolnii	Lincoln's sparrow	
Zonotrichia querula	Harris's sparrow	
Zonotrichia leucophrys	white-crowned sparrow	
Zonotrichia atricapilla	golden-crowned sparrow	
Junco hyemalis	dark-eyed Junco	
Calcarius mccownii	McCown's longspur	
Calcarius lapponicus	Lapland longspur	
Grosbeaks		
Pheucticus melanocephalus	black-headed grosbeak	
Passerina caerulea	blue grosbeak	
Passerina amoena	lazuli bunting	
Blackbirds		
Agelaius phoeniceus	red-winged blackbird	
Agelaius tricolor	tricolored blackbird	SSC, BS
Sturnella neglecta	western meadowlark	
Xanthocephalus xanthocephalus	yellow-headed blackbird	SSC
Euphagus cyanocephalus	Brewer's blackbird	
Quiscalus mexicanus	great-tailed grackle	
Molothrus ater	brown-headed cowbird	
Icterus bullockii	Bullock's oriole	
Icterus parisorum	Scott's oriole	
Finches		
Carpodacus mexicanus	house finch	
Carduelis pinus	pine siskin	
Carduelis psaltria	lesser goldfinch	
Carduelis lawrencei	Lawrence's goldfinch	
Carduelis tristis	American goldfinch	
Weavers		
Passer domesticus	house sparrow	EX

1 – SE, FE and ST, FT and SCD, FD based on the following:
February 2008 California Department of Fish and Game Endangered and Threatened Animals List. SSC based on the following California Department of Fish and Game Special Animals Lists: (Mammals, 1986), (Birds, 2006*), (Amphibians and Reptiles, 1994).
BS based on California Bureau of Land Management Animal Sensitive Species List, September 2006.

* Shuford, W.D., and T. Gardali, eds. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.

2 - Scientific and common names for amphibians and reptiles follow:
Stebbins, R.C. 2003. *Western Reptiles and Amphibians.* 3rd Edition. Houghton Mifflin Company, New York.

Crother, B.I., chair. 2000. Scientific and standard English names of amphibians and reptiles of North America north of Mexico, with comments regarding confidence in our understanding, 5th ed. Committee on Standard English and scientific names, Society for the Study of Amphibians and Reptiles.

3 - Scientific and common names for mammals follow:
Complete List of Amphibian, Reptile, Bird and Mammal Species in California, California Department of Fish and Game, March 2006 found at: http://www.dfg.ca.gov/biogeodata/cwhr/pdfs/species_list.pdf (accessed April 2008).

Baker, R.J., L.C. Bradley, R.D.Bradley, J.W. Dragoo, M.D. Engstrom, R.S. Hoffmann, C.A. Jones, F. Reid, D.W. Rice, and C. Jones. 2003. Revised checklist of North American mammals north of Mexico, 2003. Occasional Papers of the Museum of Texas Tech University 229:1-22.

4 – Scientific, and common names and groupings for birds follow:
American Ornithologists Union (A.O.U.). Check-list of North American Birds, Seventh Edition, Fortyeighth Supplement (2007).

Appendix L has been removed from the PRMP/FEIS.

The letter designations used in the Draft RMP/EIS for other appendices were retained for continuity; there is no Appendix L in this PRMP/FEIS.

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Appendix M
Existing Pasture Matrix, No Action

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Existing Pasture Matrix (from 2005), No Action

Pasture Name, Allotment Name, Allotment Number [1]	Approximate Acreage [2]	Key Resource Values [3]	Special Considerations [4]	Vegetation Objective [5]	Grazing Prescription [6]	Fire Prescription [7]	Other Mgt. [8]	Monitoring Needs / Efforts [9]
Abbott Canyon, Carrizo Ranch, #70	BLM 2602 PVT	Erho, riparian, bunchgrass, shrubs	Cultural sites, heavy hunting use	Native grasslands, well structured shrub land	Annual, off March 31 1000 lbs/ac	No		Shrubs in 2001
Airstrip, Washburn Ranch, #18	BLM 684	Bunchgrasses, GKR	Feed slow to grow	Native grasslands	Annual, off March 31 1000 lbs/ac	No burn	Seed natives	
American, American Eco Reserve	CDFG 4843 PVT 25	Elk, pronghorn, riparian, grasshopper sparrow		Taller grass structure	Non-grazed	Burn for native bunchgrasses and other plants		
Back Canyon, Washburn Ranch, #18	BLM 972	Bunchgrasses, nace	Cultivated	Restore native grasslands	Annual, off March 31 1000 lbs/ac			1997–2002 study
Big Tank, Temblor-Caliente, #53	BLM 323 PVT 1	GKR, SJAS, SJKF, Atpo		Maintain open structure	Annual 1000 lbs/ac		Remove fence	
Brumley, Saucito Ranch, #46	BLM 1460 PVT 28	Nace, elk, riparian, cultural sites, high native spp. grasshopper sparrows, past pronghorn fawning	Cultural sites, yellow star thistle, older cultivation. End before star thistle heads out (end of May). No driving during elk season (~Oct 13–Nov 4 and Nov 10–Dec 2).	Native grasslands eradicate YST.	Pronghorn fawning, non-grazed unless 15”–25” of height		Treat YST (apply Transline several yrs., early heavy livestock use on YST, mow, burn), fence cultural sites	1997–2002 study NACE util.
Buck, KCL Ranch, #29	BLM 326	Few GKR, Leco, pronghorn	Very weedy, dense tall structure	Non-grazed study pasture	Non-grazed	None	None	1997–2002 study

Pasture Name, Allotment Name, Allotment Number [1]	Approximate Acreage [2]	Key Resource Values [3]	Special Considerations [4]	Vegetation Objective [5]	Grazing Prescription [6]	Fire Prescription [7]	Other Mgt. [8]	Monitoring Needs / Efforts [9]
Calf Shed, Temblor-Caliente, #53	BLM 2104 PVT 14	Br. longiantenna, GKR, SJKF, ephedra, KPSM, pronghorn fawning	Maintain vernal pools	Open structure and shrub cover/structure	Annual, off April 30 1000 lbs/ac. Current grazing use at vernal pools is working.		Move water trough	Shrimp, spadefoot toads
California Valley, Goodwin Ranch, #43 (includes east of powerlines, above residences to top of hill)	BLM 1057 PVT 66	No T&E species known. Good bunchgrasses.			Annual 1000 lbs/ac Off by March 31 for Poa			
Center Well, KCL Ranch, #29	BLM 4853	Core area for Leco, MOPL, GKR, BNLL. Pronghorn fawning.	Core area for GKR, BNLL, Leco, MOPL that require open structure	Promote open structure, maintain natives, maintain Atpo	Annual, off April 30 500 lbs/ac	Burned in 1998 (part)		1997–2002 study
Cochora Horse, Temblor-Caliente, #53	BLM 343				Holding/horses 500 lbs/ac			
County Line, Temblor-Caliente, #53	BLM 262 PVT 536							
Coyote, Painted Rock, #26	BLM 2265	Dere, BUOW, pronghorn fawning	Dere, pronghorn fawning	Higher structure, higher stubble	Non-grazed unless native plant species composition is observed to decline during annual monitoring, 15”–25” of height	Part burned in 1993		Pronghorn fawning May and June. Pronghorn fawning as key area, monitor BUOW.
Dead Brush, KCL Ranch, #29	BLM 2240 PVT 4	Leco, dere, Atsp, GKR, pronghorn fawning, Poa	Maintain Atpo/Atsp	Maintain structure, open understory	Annual, off March 31 1000 lbs/ac or establish stubble		Improve water system	Monitor shrubs, pronghorn fawning

Pasture Name, Allotment Name, Allotment Number [1]	Approximate Acreage [2]	Key Resource Values [3]	Special Considerations [4]	Vegetation Objective [5]	Grazing Prescription [6]	Fire Prescription [7]	Other Mgt. [8]	Monitoring Needs / Efforts [9]
Dillard, Goodwin Ranch, #43 (includes top of hill, above steep road)	BLM 270 PVT 32	No T&E species known. Good bunchgrasses.	Needs longer season to use effectively by cattle. Lacks fencing between N. Goodwin. Cultivated.	Maintain adequate ground cover. Restore previously cultivated fields.	Annual 1000 lbs/ac off by March 31 for Poa.	Apply fire as needed to improve native plant seeding.	Consider seeding CRP lands with native species.	
East Cochora, Temblor-Caliente, #53	BLM 12835 PVT 314	Core area for high GKR, BNLL, SJAS, Leco, MOPL, Pose. Pronghorn fawning.	North-south transition zone	Open structure for BNLL. Expanded cover of matchweed.	Annual, off March 31 for Poa. 1000 lbs/ac, rest for 04/05 for non-disturbance of tumbleweeds.		Burn matchweed	1997–2002 study, watch at end of season.
East Cousins, KCL Ranch, #29	BLM 2416	GKR, SJAS, sandhill cranes	Cultivated. No water for livestock, past crane use.	Improve for native species comp., reduce weedy cover	Annual 1000 lbs/ac. Need water to graze (hauled).	Burn to reduce weedy cover?	Seed grains for cranes in fall 2001, fence as needed, graze after grain heads out, leave some ungrazed.	
East Painted Rock, Washburn Ranch, #18	BLM 893	More GKR, SJAS in past. Pronghorn fawning.	Cultivated	Restore native grasslands	Non-grazed unless 15”–25” of height		Seed natives	1997–2002 study
Ed. Center, Soda Lake	BLM 42 TNC 19		Visitor center		Non-grazed	Burn before seeding natives		Monitor burn effects
Elk Canyon, Goodwin Ranch, #43	BLM 1132 PVT 14	Hills with juniper/ buckwheat and Prunus spp	Small riparian area	Riparian	Non-grazed west side of elk fence		Move fence to base of hills. Fence riparian area.	

Pasture Name, Allotment Name, Allotment Number [1]	Approximate Acreage [2]	Key Resource Values [3]	Special Considerations [4]	Vegetation Objective [5]	Grazing Prescription [6]	Fire Prescription [7]	Other Mgt. [8]	Monitoring Needs / Efforts [9]
Elkhorn, KCL Ranch, #29	BLM 344 PVT 6	Nace, Atpo	Cultivated		Non-grazed			
Elkhorn Eco Reserve, Temblor-Caliente, #53	CDFG 166	GKR, BNLL, SJAS, Leco, Leth	Long-term study site for ungrazed	Ungrazed natural lands	Non-grazed			ESRP, Ephedra following burn
Fault, Fault, #1	BLM 3165 PVT 913	GKR, BNLL, SJAS, MOPL, Atpo, pronghorn?	Open structure for BNLL, MOPL, many inholdings private	More open to east	Non-grazed			.
Foothills, Fault, #1	BLM 3578 PVT 2919	Caca, pronghorn, KPSM, spadefoot toads	Many inholdings private	More cover on western side	Non-grazed		Lighter use in hills where pronghorn are	
Goat Spring, Carrizo Ranch, #70	BLM 630 PVT 5	Higher natives, higher Pose, some Nace, riparian, juniper, shrubs	Cultural sites, heavy hunting use, weeds	Native grasslands, riparian	Annual 1000 lbs/ac, off by March 31 for Poa	No	Thistle control	1997–2002 study, riparian, NACE utilization
Gun Club, Carrizo Ranch, #70	BLM 211 PVT 950							
Hanline, Temblor-Caliente, #53	BLM 158	Some Atpo, Br. longiantenna, BNLL			Annual 500 lbs/ac			Vernal pools/pond
Hill, Saucito Ranch, #46	BLM 1097 PVT 4	High Pose and Nace, riparian, grasshopper sparrow, pronghorn use		Native grasslands	1000 lbs/ac, off by March 31 for Poa		Treat YST	1997–2002 study NACE utilization.
Holding, Carrizo Ranch, #70	BLM 325 PVT 101	GKR, MOPL, Leco,		Open structure, occasional use MOPL, GKR	Annual 1000 lbs/ac		Remove net fence	1997–2002 study

Pasture Name, Allotment Name, Allotment Number [1]	Approximate Acreage [2]	Key Resource Values [3]	Special Considerations [4]	Vegetation Objective [5]	Grazing Prescription [6]	Fire Prescription [7]	Other Mgt. [8]	Monitoring Needs / Efforts [9]
Hostetter, Temblor-Caliente, #53	BLM 1060	Br. longiantenna, spadefoot toads, Poa, Nace	Russian knapweed, hoary cress		Annual 500 lbs/ac. Current grazing use at vernal pools. Off by March 31 for Poa, or when needed to maintain water in ponds.			Shrimp, vernal pools
Jobe Back, Temblor-Caliente, #53	BLM 422 PVT 71	Pronghorn fawning in past	Erosion, cattle trail to corral		Annual, off April 30 1000 lbs/ac, set stubble objective		Move water from corral	1997–2002 study
KCL House, KCL Ranch, #29	BLM 1804 PVT 24	Higher GKR, higher natives, higher Pose, and Nace, Atpo, Caca? Riparian.	Native bunch grasses, saltbush	Native grasslands	Annual 1000 lbs/ac, off by March 31 for Poa		Fence riparian	1997–2002 study NACE utilization, lupine RDM on flats
Kinney-Hahl, KCL Ranch, #29	BLM 1694	Pronghorn, MOPL, GKR, SJAS, Leco, BNLL	Cultivated, fenced	Improve native comp, maintain Atpo	Annual 500 lbs/ac	Burn as needed to improve natives	Seed natives	Monitor separately from Center Well
Middle, Washburn Ranch, #18	BLM 329		Increased bunchgrass		Non-grazed			Monitor bunchgrass?
MU Horse, Temblor-Caliente, #53	BLM 88 PVT?	Spadefoot toads, Poa			Holding/horses 500 lbs/ac, off when needed to maintain water in pond			
MU House, Temblor-Caliente, #53	BLM 315	Spadefoot toads	Large pond		Annual 1000 lbs/ac, off by March 31or when needed to maintain water in pond. Current use okay, annual/special.			Spadefoot toads

Pasture Name, Allotment Name, Allotment Number [1]	Approximate Acreage [2]	Key Resource Values [3]	Special Considerations [4]	Vegetation Objective [5]	Grazing Prescription [6]	Fire Prescription [7]	Other Mgt. [8]	Monitoring Needs / Efforts [9]
North Cal Poly, Phelan, #92	BLM 533	Large saltbrush			Non-grazed			
North Goodwin, Goodwin Ranch, #43 (includes east of house, both sides of Sprague Hill road, around Sprague Hill well)	BLM 1582 PVT 25	Visual, Br longiantenna	Entrance to CPNA, cultivated, vernal pools	Promote aesthetics as entrance enhance wildflower/community displays.	Annual 1000 lbs/ac, or set stubble ht., balance with wildflower needs		Remove fences, seed natives in cultivated	1997–2002 study, south of Sprague Hill Road
North Saucito, Saucito Ranch, #46	CDFG 159	High native spp.	Yellow star thistle	Native grasslands, eradicate YST	Non-grazed		Treat YST	1997–2002 study
Old Adobe, KCL Ranch, #29	BLM 543 PVT 2	GKR, Leco, bgrasses, MOPL	Problems with hunters and gates open. Water problems, cultivated.	Reduce weediness, native grasslands	Annual off March 31 1000 lbs/ac		Water system?	
Old Corral East, KCL Ranch, #29	BLM 1154 PVT 1	Caca, Dere, high GKR, saltbush	Non-grazed study pasture	Maintain as study pasture	Non-grazed			1997–2002 study BNLL, MOPL
Old Corral North, KCL Ranch, #29	BLM 1319 PVT 12	GKR, BNLL, Leco	Lack of water	Open structure for BNLL, look at saltbush cover	Annual 500 lbs/ac		Consider fence removal on deadbrush boundary	Leco, saltbush
Padrone, Temblor-Caliente, #53	BLM 6046 PVT 741	Higher GKR, SFtoads, ephedra, scalebroom, Anov, BNLL, Caca	Popular hunting	Open structure, maintain shrubs	Annual 1000 lbs/ac, off March 31 or when needed to maintain water in pond		Padrone spring use as water? Fence spring.	1997–2002 study cattle distributions

Pasture Name, Allotment Name, Allotment Number [1]	Approximate Acreage [2]	Key Resource Values [3]	Special Considerations [4]	Vegetation Objective [5]	Grazing Prescription [6]	Fire Prescription [7]	Other Mgt. [8]	Monitoring Needs / Efforts [9]
Painted Rock, Painted Rock, #26	BLM 974	Cultural interpretive site, Nace stands, SJKF	Public destination, cultivated, cultural, visitor site, bgrasses	Desirable natural community and native plants for public education	Non-grazed	As needed to improve native plant comp, small patches	Seed for natives away from Painted rock	Nace distributions, native spp.
Panorama, Panorama Eco Reserve	CDFG 2778 PVT 49	GKR, BNLL, SJAS, Leco,	Long-term study pasture		Non-grazed	Burning?	Tumbleweed control, seed natives in cultivated fields	
Phelan, Phelan, #92	BLM 4843 PVT 555	MOPL, SJAS, BNLL, saltbush, GKR, Nace, Poa	Weedy in places		Sheep 500 lbs/ac (historic levels and seasons)			Need to make observations on MOPL and BNLL to justify treatment.
Powerline, Goodwin Ranch, #43	BLM 487 PVT 9				Non-grazed			
Quail Spring, Temblor-Caliente, #53 (includes "Saddle Tank" area)	BLM 11136 PVT 514	GKR, BNLL on Cuyama side, Atsp, pronghorn in flats in past, Scott's oriole, black-throated sparrow	Very dry sites, forage not produced in many years, limited waters	Open, shrub structure, minimum mulch	Annual 1000 lbs/ac, off by March 31 for Poa		Rearrange pasture boundary, fence across saddle tank, no graze in south, tamarisk weed control	Atsp structure
Ranch, Painted Rock, #26	BLM 3099 PVT 6	Visitor center viewing, sjkf, gkr in past, pronghorn fawning	Need water to spread use, cultivated, pronghorn fawn	Promote wildflower displays	Non-grazed unless native plant species composition is observed to decline during annual monitoring or 15"–25" of height		Visitor center interpretation, seed natives into cultivated	

Pasture Name, Allotment Name, Allotment Number [1]	Approximate Acreage [2]	Key Resource Values [3]	Special Considerations [4]	Vegetation Objective [5]	Grazing Prescription [6]	Fire Prescription [7]	Other Mgt. [8]	Monitoring Needs / Efforts [9]
Red Tank, Temblor-Caliente, #53	BLM 6982 PVT 284	Pronghorn,lower GKR, MOPL, and SJKF; higher Pose	Flat floods in wet years, GKRs in hills, Pose in hills	Forb production for pronghorn, open structure	Annual 1000 lbs/ac, off by March 31 for Poa	Widlfire in 1996		1997–2002 study, pronghorn habitat use, forage
Sand Canyon, KCL Ranch, #29	BLM 3361 PVT 75	Bgrass, ephedra, shrubs, SJAS, springs, Anov, kite nesting	No water, hunting area		Non-grazed		Poor water and fences	Inventory
School House, Temblor-Caliente, #53	BLM 1928 PVT 26	GKR, shrubs, pronghorn fawning	Holding and shipping	Shrub structure	Annual, off April 30 1000 lbs/ac			
Selby, Painted Rock, #26	BLM 2391	Nace in hills, SJKF, pronghorn fawning, MOPL, grasshopper sp., spadefoot toads, BUOW	Wildflower viewing, cultivated need to spread cattle use with new waters	Promote wildflower displays	Non-grazed unless native plant species composition is observed to decline during annual monitoring, 15” –25” of height	Burned in 1998, burn study plots	Add trough ½ mile east	1997–2002 study, pronghorn fawning May and June, NACE utilization, monitor BUOW
Sheep Camp, Saucito Ranch, #46	BLM 1085	SJKF, MOPL high use, GKR , visitor center viewing, pronghorn fawning	Near visitor center, Yellow star thistle, burn interpretation, cultivated	Promote low cow impacts, low structure, patchy openings,	Non-grazed unless native plant species composition is observed to decline during annual monitoring, 15”–25” of height		Seed native wildflowers	1997–2002 study
Shipping, KCL Ranch, #29	BLM 648 PVT 12	MOPL, GKR, AJAS, pronghorn	Shrubs increasing	Open structure for MOPL, BNLL	Holding/horses 500 lbs/ac higher use okay			
Silver Gate, Washburn Ranch, #18	BLM 1226	More GKR, SJAS in past, bgrass, rprn	Cultivated	Open for SJAS, bunchgrasses in hills	Annual, off March 31 1000 lbs/ac			

Pasture Name, Allotment Name, Allotment Number [1]	Approximate Acreage [2]	Key Resource Values [3]	Special Considerations [4]	Vegetation Objective [5]	Grazing Prescription [6]	Fire Prescription [7]	Other Mgt. [8]	Monitoring Needs / Efforts [9]
Soda Lake, Soda Lake	BLM 13530 PVT 320	Br. Compestris, Br. mackini, wildflower displays, pronghorn fawning, roosting cranes, curlews, sage sparrows	High visitor use, sink habitats, sometimes weedy Between Soda Lake Rd and Atsp. Very weedy.	Maintain Atsp communities, wildflower displays near Lake	Non-grazed	Burn near Goodwin. Consider to reduce nonnatives. Multiple applications.	Visitor sites, reseed natives	Burn study near Goodwin, shrimp
South Cousins, Washburn Ranch, #18	BLM 1144 PVT 3	Leco, Pose? GKR, SJAS, pronghorn, MOPL, BNLL	Cultivated, tends to be weedy	Open for MOPL, reduce weediness	Annual 500 lbs/ac, off by March 31 for Poa		Seed in more natives?	
South Goodwin, Goodwin Ranch, #43 (will include east part of old Elk Canyon after fence moved)	BLM 705 PVT 33	Visual, pronghorn, Br. longiantenna, Pose, Nace, high native spp. Hills with juniper/buckwheat and Prunus spp.	Cultivated adjacent to overlook. Was in CRP. Old fence, water well not used. Cultivated.	Native grasslands, cultivated with weeds, native grasslands	Annual 1000 lbs/ac, off by March 31 for Poa. Do not graze west side of elk fence. Set stubble obj.	Promote native grasslands	Seed natives into cultivated flats. Move fence to base of hills.	1997–2002 study, NACE utilization
Sulfur Spring, Washburn Ranch, #18	BLM 1087 PVT 2	High Pose and Nace	Cultural sites	Native grasslands,	Annual, off March 31 1000 lbs/ac			1997–2002 study
Swain, KCL Ranch, #29	BLM 1702 PVT 1532	Caca, SJAS higher GKR, Leth higher natives higher Poa, BNLL Ephedra, pronghorn	Burn study plots, naturally open, diverse	Maintain open structure, naturally open, high diversity,	Non-grazed	Study plots, burn old cultivated south flat?	Water for pronghorn away from road? Well?	1997–2002 study
Tripod, Washburn Ranch, #18	BLM 880 PVT 10	Higher bunchgrasses	Slow return of veg after burn	Native grasslands	Annual, off March 31 1000 lbs/ac			1997–2002 study
Van Matre, Temblor-Caliente, #53	BLM 1995 PVT 5	Higher GKR, pronghorn	Cultivated		Non-grazed	Burns to open structure	Seeding of natives in cultivated areas	1997–2002 study

Pasture Name, Allotment Name, Allotment Number [1]	Approximate Acreage [2]	Key Resource Values [3]	Special Considerations [4]	Vegetation Objective [5]	Grazing Prescription [6]	Fire Prescription [7]	Other Mgt. [8]	Monitoring Needs / Efforts [9]
Washburn Horse, Washburn Ranch, #18	BLM 120				Holding/horses 500 lbs/ac			
West Cochora, Temblor-Caliente, #53	BLM 11768 PVT 828	BNLL, SJAS, GKR, Leco, Ergo ephedra, pronghorn fawning	Long-term study site for grazed treatment	Open structure, maintain shrubs at north end	Annual+ (5/31), 500 lbs/ac. Graze to achieve grazing treatment.	Burn matchweed	Grazing treatment plot	ESRP study sites
West Painted Rock, Washburn Ranch, #18	BLM 813	More GKR in past	Cultivated, Atpo stringer died, burned 1997. Nace planted 1997.	Improve native composition, open structure	Non-grazed unless native plant species composition is observed to decline during annual monitoring, 15"–25" of height			
West Panorama, KCL Ranch, #29	BLM 1214	Lepidium jaredii MOPL, Dere, Atsp	Larkspur problem with livestock, no water, heavy old brush		Non-grazed. Unused due to larkspur and water.			
West Well , KCL Ranch, #29	BLM 4554	MOPL, good Pose, GKRs in past, Leco, Leje, Dere, pronghorn fawning, "the barrrens"	Burn/grazing GKR study plot. Barren key for MOPL, SASP down.	Open ground for MOPL when barren floods, maintain Pose	Annual, off April 30 1000 lbs/ac or set stubble height. Monitor the effects of late cattle removal date.			1997–2002 study. Pronghorn fawning and mulch/cover Poa utilization, triangle burn GKR and Poa.
Widow Woman, Temblor-Caliente, #53	BLM 132 PVT 7	Riparian spring	Limited waters, dry sites, forage not produced	Riparian habitat, shrubs, veg cover	Non-grazed		Water for other pastures?	Look at riparian
Windmill, American Eco Reserve	CDFG 445	Br. longiantenna riparian stream, Nace, Pose			Non-grazed			1997–2002 study

[1] See map, can sort by allotment or pasture name.

[2] By owners as of 2/12/03 in GIS.
[3] T&E populations, rare community, bunchgrasses, shrubs, riparian, cultural, other.
[4] Visitor use, wildflower displays, T&E mgt., research plots, no water, livestock operations.
[5] Community type/composition, structure, timing, natives, disturbances.
[6] Type of livestock, timing, stocking density, duration, early, late, annual, rest, control.
[7] Suitability for fire or no fire, timing, frequency, extent of area.
[8] Seedings, seed collection / propagation, education, visual.
[9] Vegetation, species-specific, long-term study, extensive or key area.

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Appendix N

Actual Grazing Use for Vegetation Management Since 1989

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Note: Throughout these tables, under "Kind of Livestock,", C=cattle, H=horse, and S=sheep.

Carrizo Grazing Use 1989–1990 Season

Allotment Number	Pasture Name	Animal Livestock Number	Kind of Livestock	Period Begin	Period End	Animal Unit Months
00018	All Pastures	81	C	12/18/89	02/15/90	160
		30	C	12/18/89	02/28/90	72
		30	C	03/01/90	04/01/90	32
		81	C	02/28/90	02/28/90	1
		81	C	03/01/90	03/05/90	7
		81	C	03/24/90	03/28/90	13
	Total Allotment 00018					***285***
00025	All Pastures	38	C	06/13/90	07/18/90	45
	Total Allotment 00025					***45***
00026	All Pastures	48	C	12/1/89	2/13/90	39
		21	C	12/21/89	2/13/90	13
		30	C	12/1/89	2/10/90	9
		189	C	2/12/90	2/28/90	106
		189	C	3/1/90	3/30/90	186
		2	C	2/12/90	2/28/90	1
		2	C	3/1/90	4/15/90	3
	Total Allotment 00026					***357***
00029	All Pastures	38	C	12/30/89	2/25/90	72
		35	C	12/30/89	2/28/90	70
		23	C	1/6/90	2/28/90	41
		30	C	1/8/90	2/28/90	51
		11	C	1/16/90	2/28/90	16
		113	C	1/19/90	2/26/90	14
		62	C	1/23/90	2/26/90	7
		105	C	2/2/90	2/26/90	9
		2	C	2/7/90	2/26/90	1
		5	C	2/7/90	2/24/90	1
		325	C	1/26/90	2/28/90	363
		424	C	3/1/90	3/9/90	125
		99	C	3/10/90	3/19/90	33
		325	C	3/10/90	3/25/90	171
		287	C	2/28/90	2/28/90	2
		287	C	3/1/90	4/12/90	69
		45	C	3/15/90	4/12/90	7
	Total Allotment 00029					***1052***
Total 1989–1990						***1739***

Carrizo Grazing Use*** 1990–1991 Season

Allotment Number	Pasture Name	Animal Livestock Number	Kind of Livestock	Period Begin	Period End	Animal Unit Months
00018	All Pastures	160	C	12/1/90	2/28/91	473
		160	C	3/1/91	4/1/91	168
	Total Allotment 00018					***641******
00026	All Pastures	224	C	12/1/90	2/28/91	663
		224	C	3/1/91	4/1/91	236
	Total Allotment 00026					***899******
00029	All Pastures	788	C	12/1/90	2/28/91	2332
		788	C	3/1/91	4/1/91	829
	Total Allotment 00029					***3161******
00070	All Pastures	55	C	12/1/90	2/28/91	163
		55	C	3/1/91	4/1/91	58
	Total Allotment 00070					***221******
Total 1990–1991						***4922******

***No grazing was allowed during the 1990–1991 season due to low residual mulch levels and current drought conditions. Livestock numbers and AUMs shown are those numbers that could have been authorized during the season, but were not.

Carrizo Grazing Use 1991–1992 Season

Allotment Number	Pasture Name	Animal Livestock Number	Kind of Livestock	Period Begin	Period End	Animal Unit Months
00018	Air Strip	55	C	1/1/92	2/20/92	92
	East Painted Rock	44	C	2/27/92	2/29/92	4
		44	C	3/1/92	4/5/92	52
	Silver Gate	104	C	2/21/92	2/29/92	31
		104	C	3/1/92	4/5/92	123
	South Cousins	49	C	1/1/92	2/20/92	82
	Total Allotment 00018					***384***
00026	Painted Rock South	149	C	1/19/92	2/19/92	157
	Ranch	149	C	2/20/92	2/29/92	49
		149	C	3/1/92	4/6/92	181
	Total Allotment 00026					***387***
00029	House	217	C	2/3/92	2/29/92	193
		220	C	3/1/92	4/6/92	268
	Total Allotment 00029					***461***
00043	Saucito House	101	C	1/18/92	2/22/92	120
	Sheep Ranch	101	C	2/23/92	2/29/92	23
		101	C	3/1/92	4/3/92	113
	Total Allotment 00043					***256***
Total 1991–1992						***1488***

Carrizo Grazing Use 1992–1993 Season

Allotment Number	Pasture Name	Animal Livestock Number	Kind of Livestock	Period Begin	Period End	Animal Unit Months
00018	Air Strip	74	C	2/14/93	2/28/93	36
		74	C	3/1/93	4/1/93	78
	Canyon	47	C	12/1/92	2/28/93	139
		47	C	3/1/93	4/1/93	49
	East Painted Rock	51	C	1/1/93	2/14/93	75
	Silver Gate	17	C	12/2/92	1/24/93	30
		74	C	1/25/93	2/14/93	51
	South Cousins	51	C	2/14/93	2/28/93	25
		51	C	3/1/93	4/1/93	54
	Total Allotment 00018					***537***
00026	Coyote	158	C	12/14/92	1/21/93	203
		162	C	1/22/93	2/15/93	133
	Selby	162	C	2/16/93	2/28/93	69
		162	C	3/1/93	3/6/93	32
		166	C	3/7/93	4/1/93	142
	Total Allotment 00026					***579***
00029	Center Well	95	C	12/3/92	12/13/92	34
		395	C	12/14/92	1/21/93	506
		468	C	1/22/93	2/28/93	585
		468	C	3/1/93	3/3/93	46
		449	C	3/4/93	4/2/93	443
		114	C	4/3/93	4/6/93	15
		19	C	4/7/93	5/5/93	18
		3	C	5/6/93	5/23/93	2
	Dead Brush	163	C	12/17/92	1/21/93	193
		258	C	1/22/93	2/18/93	238
	East Cousins	193	C	12/5/92	2/16/93	470
	Shipping	54	C	12/9/92	2/28/93	146
		54	C	3/1/93	3/4/93	7
	West Well	85	C	2/16/93	2/17/93	6
		343	C	2/18/93	2/28/93	124
		343	C	3/1/93	3/4/93	45
		333	C	3/5/93	4/4/93	339
		16	C	4/5/93	5/22/93	25
		8	C	5/23/93	5/24/93	1
	Total Allotment 00029					***3243***
00043	All Pastures	158	C	12/2/92	12/3/92	6
		42	C	12/4/92	1/21/93	37
		46	C	1/22/93	2/22/93	26
		144	C	2/23/93	2/28/93	15
		144	C	3/1/93	3/6/93	15
		149	C	3/7/93	3/31/93	66
		307	C	4/1/93	4/5/93	27
		143	C	4/6/93	4/7/93	5
	Total Allotment 00043					***197***

Allotment Number	Pasture Name	Animal Livestock Number	Kind of Livestock	Period Begin	Period End	Animal Unit Months
00046	Brumley	107	C	2/15/93	2/28/93	49
		107	C	3/1/93	3/21/93	74
		106	C	3/22/93	4/4/93	49
	Hill	57	C	12/1/92	12/14/92	26
		103	C	12/15/92	1/19/93	122
		107	C	1/20/93	2/15/93	95
	Total Allotment 00046					***415***
00053	All Other Pastures	642	C	2/15/93	2/16/93	42
		657	C	2/17/93	2/28/93	259
		857	C	3/1/93	3/14/93	394
		856	C	3/15/93	3/21/93	197
		625	C	3/22/93	4/8/93	370
	East Cochora	590	C	12/1/92	12/14/92	272
		599	C	12/15/92	1/3/93	394
		631	C	1/4/93	1/14/93	228
		843	C	1/15/93	1/31/93	471
		842	C	2/1/93	2/14/93	388
	West Cochora	200	C	2/15/93	2/28/93	92
		200	C	3/1/93	3/1/93	7
		237	C	4/9/93	4/18/93	78
		292	C	4/19/93	5/9/93	202
		289	C	5/10/93	5/21/93	114
		215	C	5/22/93	5/28/93	49
		159	C	5/29/93	5/30/93	10
	Total Allotment 00053					***3567***
00070	Goat Spring	46	C	2/1/93	2/28/93	42
		46	C	3/1/93	4/1/93	48
	Holding	70	C	2/1/93	2/28/93	64
		70	C	3/1/93	4/1/93	74
	Total Allotment 00070					***228***
Total 1992–1993						***8766***

Carrizo Grazing Use 1993–1994 Season

Allotment Number	Pasture Name	Animal Livestock Number	Kind of Livestock	Period Begin	Period End	Animal Unit Months
00018	Canyon	40	C	12/23/93	1/3/94	16
		49	C	1/4/94	1/16/94	21
		51	C	1/17/94	2/28/94	72
		51	C	3/1/94	3/28/94	47
	East Painted Rock	57	C	2/15/94	2/28/94	26
		57	C	3/1/94	3/31/94	58
	Silver Gate	92	C	2/15/94	2/28/94	42
		92	C	3/1/94	3/31/94	94
	Sulphur Spring	38	C	12/23/93	1/10/94	24
		86	C	1/11/94	1/19/94	25
		92	C	1/20/94	2/15/94	82
	Tripod	28	C	12/23/93	1/3/94	11
		36	C	1/4/94	1/14/94	13
		44	C	1/15/94	1/16/94	3
		57	C	1/17/94	2/15/94	56
	Total Allotment 00018					***590***
00026	Coyote	241	C	2/12/94	2/28/94	135
		241	C	3/1/94	3/21/94	166
	Ranch	282	C	12/17/93	2/12/94	538
	Total Allotment 00026					***839***
00029	Center Well	261	C	12/9/93	12/16/93	69
		711	C	12/17/93	12/22/93	140
		861	C	12/23/93	1/5/94	396
		529	C	1/6/94	2/1/94	470
		554	C	2/2/94	2/14/94	237
	Dead Brush	629	C	2/15/94	2/28/94	290
		629	C	3/1/94	3/28/94	579
		612	C	3/29/94	4/1/94	80
	House	332	C	1/6/94	1/21/94	175
		347	C	1/22/94	2/14/94	274
	Shipping	269	C	2/15/94	2/28/94	124
		269	C	3/1/94	3/29/94	256
	Total Allotment 00029					***3090***
00043	All Pastures	365	C	12/2/93	12/16/93	97
		83	C	12/17/93	2/28/94	109
		83	C	3/1/94	3/20/94	29
		324	C	3/21/94	3/30/94	58
	Total Allotment 00043					***293***
00046	Hill	85	C	2/14/94	2/26/94	36
		125	C	2/27/94	2/28/94	8
		125	C	3/1/94	4/1/94	132
	Sheep Camp	85	C	12/28/93	2/14/94	137
	Total Allotment 00046					***313***

Allotment Number	Pasture Name	Animal Livestock Number	Kind of Livestock	Period Begin	Period End	Animal Unit Months
00053	Calf Shed	610	C	3/12/94	3/26/94	301
		372	C	3/27/94	3/31/94	61
	East Cochora	104	C	12/2/93	12/4/93	10
		146	C	12/5/93	12/24/93	96
		730	C	12/25/93	12/31/93	168
		727	C	1/1/94	2/28/94	1410
		724	C	3/1/94	3/11/94	262
		114	C	3/12/94	3/12/94	4
		159	C	3/13/94	3/19/94	37
		99	C	3/20/94	3/31/94	39
	Hanline	160	C	12/15/93	12/25/93	58
	Hostetter	18	C	2/9/94	2/28/94	12
		18	C	3/1/94	3/4/94	2
		332	C	3/5/94	3/13/94	98
		190	C	3/14/94	3/29/94	100
	Jobe	188	C	12/1/93	2/5/94	414
		190	C	2/6/94	2/28/94	144
		190	C	3/1/94	3/14/94	87
	Red Tank	272	C	12/1/93	12/23/93	206
		293	C	12/24/93	1/11/94	183
		364	C	1/12/94	1/31/94	239
		359	C	2/1/94	2/28/94	330
		359	C	3/1/94	3/4/94	47
		45	C	3/5/94	3/13/94	13
	School House	273	C	12/3/93	12/3/93	9
		424	C	12/4/93	12/25/93	307
		332	C	3/13/94	3/27/94	164
		169	C	3/28/94	3/29/94	11
		44	C	3/30/94	3/31/94	3
	West Cochora	189	C	3/29/94	3/29/94	6
		412	C	3/31/94	3/31/94	14
		408	C	4/1/94	4/12/94	161
		445	C	4/13/94	4/30/94	263
		444	C	5/1/94	5/29/94	423
	Total Allotment 00053					***5682***
00070	Goat Spring	47	C	1/22/94	2/28/94	59
		47	C	3/1/94	4/1/94	49
	Holding	35	C	3/1/94	4/1/94	37
	Total Allotment 00070					***145***
Total 1993–1994						***10952***

Carrizo Grazing Use 1994–1995 Season

Allotment Number	Pasture Name	Animal Livestock Number	Kind of Livestock	Period Begin	Period End	Animal Unit Months
00018	Air Strip	58	C	12/18/94	12/29/94	23
		66	C	12/30/94	1/20/95	48
		74	C	1/21/95	2/15/95	63
	Canyon	50	C	12/3/94	2/19/95	130
		62	C	2/20/95	2/28/95	18
		62	C	3/1/95	3/26/95	53
		2	C	3/27/95	3/31/95	1
	South Cousins	72	C	12/3/94	1/20/95	116
		77	C	1/21/95	2/12/95	58
	Sulphur Spring	74	C	2/15/95	2/19/95	12
		85	C	2/20/95	2/23/95	11
		104	C	2/24/95	2/24/95	3
		109	C	2/25/95	2/28/95	14
		109	C	3/1/95	3/28/95	100
	Tripod	77	C	2/12/95	2/28/95	43
		77	C	3/1/95	3/27/95	68
	Total Allotment 00018					***761***
00026	Ranch	343	C	2/15/95	2/28/95	158
		343	C	3/1/95	3/31/95	350
	Selby	131	C	12/3/94	12/22/94	86
		344	C	12/23/94	2/15/95	622
	Total Allotment 00026					***1216***
00029	Center Well	40	C	12/12/94	12/12/94	1
		136	C	12/13/94	12/14/94	9
		96	C	12/15/94	12/16/94	6
		131	C	12/17/94	12/19/94	13
		230	C	12/20/94	12/26/94	53
		244	C	12/27/94	12/30/94	32
		258	C	12/31/94	1/19/95	170
		260	C	1/20/95	2/15/95	231
		452	C	2/16/95	2/28/95	193
		452	C	3/1/95	3/31/95	461
	House	164	C	2/16/95	2/28/95	70
		164	C	3/1/95	3/31/95	167
	Shipping	96	C	12/10/94	12/13/94	13
		40	C	12/15/94	12/19/94	7
		50	C	12/20/94	12/26/94	12
		77	C	12/27/94	2/16/95	132
	West Well	38	C	12/12/94	12/16/94	6
		55	C	12/17/94	12/19/94	5
		105	C	12/20/94	12/26/94	24
		175	C	12/27/94	12/30/94	23
		185	C	12/31/94	1/19/95	122
		314	C	1/20/95	2/16/95	289
	Total Allotment 00029					***2039***
00043	All Pastures	281	C	12/10/94	1/30/95	259
	Total Allotment 00043					***259***

Allotment Number	Pasture Name	Animal Livestock Number	Kind of Livestock	Period Begin	Period End	Animal Unit Months
00046	Brumley	37	C	12/8/94	12/17/94	12
		79	C	12/18/94	1/19/95	86
		88	C	1/20/95	1/20/95	3
		97	C	1/21/95	2/23/95	108
	Total Allotment 00046					***209***
00053	Big Tank	100	C	2/20/95	2/27/95	26
	Calf Shed	450	C	2/27/95	2/28/95	30
		450	C	3/1/95	3/18/95	266
		662	C	3/19/95	3/25/95	152
		458	C	3/26/95	3/28/95	45
		273	C	3/29/95	3/29/95	9
		48	C	3/30/95	3/31/95	3
	East Cochora	870	C	1/30/95	1/31/95	57
		862	C	2/1/95	2/19/95	538
		762	C	2/20/95	2/26/95	175
		412	C	2/27/95	2/28/95	27
		406	C	3/1/95	3/18/95	240
		194	C	3/19/95	3/28/95	64
	Hostetter	80	C	12/10/94	1/29/95	134
		21	C	1/30/95	2/12/95	10
	Jobe	193	C	12/1/94	1/29/95	381
		30	C	1/30/95	2/12/95	14
		25	C	2/21/95	2/28/95	7
		25	C	3/1/95	3/5/95	4
	Red Tank	46	C	12/1/94	12/11/94	17
		150	C	12/12/94	12/12/94	5
		202	C	12/13/94	12/13/94	7
		357	C	12/14/94	12/14/94	12
		513	C	12/15/94	12/15/94	17
		721	C	12/16/94	12/16/94	24
		927	C	12/17/94	12/19/94	91
		977	C	12/20/94	12/31/94	385
		1020	C	1/1/95	1/30/95	1006
		423	C	2/12/95	2/20/95	125
		398	C	2/21/95	2/28/95	105
		398	C	3/1/95	3/4/95	52
		273	C	3/5/95	3/18/95	126
		190	C	3/19/95	3/31/95	81
	Saddle Tank	372	C	1/30/95	2/12/95	171
	School House	150	C	3/5/95	3/18/95	69
		233	C	3/19/95	3/27/95	69
		127	C	3/28/95	3/31/95	17
	West Cochora	300	C	3/28/95	3/30/95	30
		490	C	3/31/95	5/28/95	950
		316	C	5/29/95	5/29/95	10
		167	C	5/30/95	5/31/95	11
	Total Allotment 00053					***5562***

Allotment Number	Pasture Name	Animal Livestock Number	Kind of Livestock	Period Begin	Period End	Animal Unit Months
00070	Goat Spring	17	C	1/1/95	2/3/95	19
		60	C	2/4/95	2/28/95	49
		60	C	3/1/95	4/1/95	63
	Holding	34	C	1/1/95	2/28/95	66
		34	C	3/1/95	4/1/95	36
	Total Allotment 00070					***233***
Total 1994–1995						***10279***

Carrizo Grazing Use 1995–1996 Season

Allotment Number	Pasture Name	Animal Livestock Number	Kind of Livestock	Period Begin	Period End	Animal Unit Months
00018	Horse	1	H	12/10/95	2/28/96	3
		1	H	3/1/96	3/31/96	1
	Air Strip	114	C	2/15/96	2/28/96	52
		114	C	3/1/96	3/29/96	109
	Canyon	51	C	12/1/95	2/29/96	153
		51	C	3/1/96	3/28/96	47
	East Painted Rock	31	C	12/14/95	12/15/95	2
		63	C	12/16/95	12/17/95	4
		79	C	12/18/95	12/19/95	5
		85	C	12/20/95	12/26/95	20
		95	C	12/27/95	12/28/95	6
		114	C	12/29/95	2/15/96	184
	Silver Gate	116	C	12/4/95	12/14/95	42
		134	C	12/15/95	2/15/96	278
	South Cousins	134	C	2/15/96	2/28/96	62
		134	C	3/1/96	3/31/96	137
	Total Allotment 00018					***1105***
00026	Coyote	274	C	12/1/95	12/18/95	162
		344	C	12/19/95	2/16/96	679
	Selby	344	C	2/16/96	2/29/96	158
		344	C	3/1/96	3/24/96	271
	Total Allotment 00026					***1270***
00029	Center Well	726	C	12/27/95	1/1/96	143
		773	C	1/2/96	1/12/96	280
		473	C	1/13/96	2/15/96	529
		770	C	3/15/96	3/27/96	329
	Dead Brush	300	C	1/13/96	2/15/96	335
	Shipping	726	C	12/12/95	12/26/95	358
		47	C	12/27/95	1/2/96	11
		770	C	3/28/96	3/29/96	51
	West Well	770	C	2/15/96	2/29/96	380
		770	C	3/1/96	3/15/96	380
	Total Allotment 00029					***2796***
00043	All Pastures	80	C	12/1/95	12/20/95	53
		124	C	12/21/95	2/29/96	289
		124	C	3/1/96	3/21/96	86
		42	C	3/22/96	3/23/96	3
		383	C	3/24/96	3/29/96	76
		2	H	12/1/95	2/1/96	4
	Total Allotment 00043					***511***
00046	Brumley	132	C	2/14/96	2/29/96	69
		132	C	3/1/96	3/30/96	130
	Hill	35	C	12/1/95	12/2/95	2
		58	C	12/3/95	12/13/95	21
		91	C	12/14/95	1/3/96	63
		117	C	1/4/96	1/31/96	108
		132	C	2/1/96	2/14/96	61
	Total Allotment 00046					***454***
00053	Big Tank	30	C	1/22/96	2/29/96	38

Allotment Number	Pasture Name	Animal Livestock Number	Kind of Livestock	Period Begin	Period End	Animal Unit Months
		30	C	3/1/96	3/31/96	31
	East Cochora	277	C	12/1/95	12/1/95	9
		335	C	12/2/95	12/16/95	165
		338	C	12/17/95	12/31/95	167
		441	C	1/1/96	1/6/96	87
		434	C	1/7/96	1/13/96	100
		448	C	1/14/96	1/21/96	118
		418	C	1/22/96	1/22/96	14
		417	C	1/23/96	1/31/96	123
		414	C	2/1/96	2/14/96	191
		413	C	2/15/96	2/29/96	204
		406	C	3/1/96	3/31/96	414
	Horse	4	C	2/1/96	2/29/96	4
		5	C	3/1/96	3/24/96	4
		19	C	3/25/96	3/30/96	4
		2	C	3/31/96	5/29/96	4
		7	C	5/30/96	5/31/96	1
	Hanline	35	C	12/14/95	1/14/96	37
	Hostetter	202	C	12/11/95	12/19/95	60
		272	C	12/20/95	12/23/95	36
		455	C	12/24/95	12/31/95	120
		485	C	1/1/96	1/12/96	191
		135	C	1/13/96	2/14/96	146
		134	C	2/15/96	2/29/96	66
		134	C	3/1/96	3/2/96	9
		112	C	3/3/96	3/31/96	107
	House	211	C	1/22/96	1/31/96	69
		210	C	2/1/96	2/29/96	200
		210	C	3/1/96	3/31/96	214
	Jobe	214	C	12/2/95	12/31/95	211
		212	C	1/1/96	1/5/96	35
		211	C	1/6/96	1/22/96	118
	School House	350	C	1/13/96	1/31/96	219
		349	C	2/1/96	2/29/96	333
		349	C	3/1/96	3/23/96	264
		264	C	3/24/96	3/31/96	69
	West Cochora	346	C	3/31/96	3/31/96	11
		343	C	4/1/96	5/9/96	440
		342	C	5/10/96	5/13/96	45
	Total Allotment 00053					***4678***
00070	Goat Spring	22	C	12/10/95	2/29/96	59
		22	C	3/1/96	3/31/96	22
	Holding	52	C	2/11/96	2/29/96	32
		52	C	3/1/96	3/31/96	53
	Total Allotment 00070					***166***
Total 1995–1996						***10980***

Carrizo Grazing Use 1996–1997 Season

Allotment Number	Pasture Name	Animal Livestock Number	Kind of Livestock	Period Begin	Period End	Animal Unit Months
00018	Canyon	51	C	12/26/96	2/28/97	109
		51	C	3/1/97	3/29/97	49
	East Painted Rock	138	C	2/15/97	2/21/97	32
		156	C	2/22/97	2/26/97	26
		163	C	2/27/97	2/28/97	11
		163	C	3/1/97	3/29/97	155
	Horse	2	H	12/1/96	1/31/97	4
	Silver Gate	135	C	2/15/97	2/21/97	31
		145	C	2/22/97	2/28/97	33
		145	C	3/1/97	3/31/97	148
	Sulphur Spring	100	C	12/18/96	1/6/97	66
		136	C	1/7/97	2/15/97	179
	Tripod	56	C	12/6/96	12/6/96	2
		107	C	12/7/96	12/7/96	4
		112	C	12/8/96	12/20/96	48
		133	C	12/21/96	1/8/97	83
		139	C	1/9/97	2/15/97	174
	Total Allotment 00018					***1154***
00026	Coyote	334	C	2/15/97	2/28/97	154
		334	C	3/1/97	3/7/97	77
		321	C	3/8/97	3/10/97	32
	Ranch	316	C	12/2/96	1/7/97	384
		338	C	1/8/97	2/15/97	433
		321	C	3/10/97	3/26/97	179
	Total Allotment 00026					***1259***
00029	Center Well	235	C	12/20/96	1/23/97	270
		388	C	1/24/97	2/15/97	293
		560	C	2/16/97	2/20/97	92
		410	C	2/21/97	2/28/97	108
		410	C	3/1/97	3/9/97	121
		361	C	3/10/97	3/23/97	166
		372	C	3/24/97	3/27/97	49
		109	C	3/28/97	4/1/97	18
	Dead Brush	150	C	2/21/97	2/28/97	39
		150	C	3/1/97	3/10/97	49
	House	211	C	12/9/96	2/14/97	472
	Old Adobe	393	C	3/24/97	3/26/97	39
	Old Corral North	137	C	1/9/97	2/16/97	176
	Shipping	41	C	12/1/96	12/1/96	1
		101	C	12/2/96	12/2/96	3
		142	C	12/3/96	12/3/96	5
		193	C	12/4/96	12/5/96	13
		211	C	12/6/96	12/9/96	28
		211	C	2/14/97	2/28/97	104
		211	C	3/1/97	3/10/97	69
	Total Allotment 00029					***2115***
00043	North Goodwin	91	C	12/3/96	1/7/97	108
		98	C	1/8/97	1/9/97	6

Allotment Number	Pasture Name	Animal Livestock Number	Kind of Livestock	Period Begin	Period End	Animal Unit Months
		132	C	1/10/97	2/28/97	217
	South Goodwin	132	C	2/28/97	2/28/97	4
		132	C	3/1/97	3/3/97	13
	Total Allotment 00043					***348***
00046	Hill	200	C	2/15/97	2/28/97	92
		200	C	3/1/97	4/1/97	210
	Sheep Camp	200	C	12/1/96	2/15/97	506
	Total Allotment 00046					***808***
00053	Big Tank	119	C	1/16/97	2/28/97	172
		119	C	3/1/97	3/29/97	113
	Calf Shed	239	C	1/16/97	1/31/97	126
		237	C	2/1/97	2/28/97	218
		237	C	3/1/97	3/29/97	226
	East Cochora	264	C	12/1/96	12/3/96	26
		488	C	12/4/96	12/6/96	48
		496	C	12/7/96	12/12/96	98
		636	C	12/13/96	12/31/96	397
		634	C	1/1/97	2/28/97	1230
		632	C	3/1/97	3/30/97	623
	Hostetter	200	C	12/6/96	12/6/96	7
		239	C	12/7/96	12/8/96	16
		438	C	12/9/96	1/2/97	360
		435	C	1/3/97	1/25/97	329
	Jobe Back	120	C	1/26/97	2/28/97	134
		120	C	3/1/97	3/21/97	83
	MU Horse	4	H	2/1/97	2/28/97	4
		5	H	3/1/97	3/24/97	4
		19	H	3/25/97	3/30/97	4
		2	H	3/31/97	5/31/97	4
	MU House	50	C	12/6/96	1/25/97	84
	Padrone	40	C	1/16/97	2/28/97	58
		40	C	3/1/97	3/29/97	38
	Quail Spring	365	C	1/16/97	2/7/97	276
		364	C	2/8/97	2/14/97	84
		362	C	2/15/97	2/28/97	167
		362	C	3/1/97	3/20/97	238
		282	C	3/21/97	3/21/97	9
		149	C	3/22/97	3/27/97	29
	Red Tank	395	C	12/3/96	12/31/96	377
		393	C	1/1/97	1/22/97	284
		392	C	1/23/97	2/1/97	129
		390	C	2/2/97	2/28/97	346
		390	C	3/1/97	3/26/97	333
		192	C	3/27/97	3/31/97	32
	School House	378	C	12/4/96	12/13/96	124
		394	C	12/14/96	12/31/96	233
		398	C	1/1/97	1/15/97	196
	West Cochora	541	C	3/31/97	4/1/97	36
		537	C	4/2/97	4/24/97	406
		536	C	4/25/97	4/30/97	106

Allotment Number	Pasture Name	Animal Livestock Number	Kind of Livestock	Period Begin	Period End	Animal Unit Months
		533	C	5/1/97	5/8/97	140
		532	C	5/9/97	5/26/97	315
		416	C	5/27/97	5/27/97	14
		298	C	5/28/97	5/28/97	10
		135	C	5/29/97	5/30/97	9
	Total Allotment 00053					***8295***
00070	Goat Spring	18	C	12/1/96	12/7/96	4
		28	C	12/8/96	2/21/97	70
		43	C	2/22/97	2/28/97	10
		43	C	3/1/97	3/29/97	41
	Holding	82	C	12/1/96	12/27/96	73
		85	C	12/28/96	2/28/97	176
		85	C	3/1/97	3/29/97	81
	Total Allotment 00070					***455***
00092	Phelan	715	S	2/23/97	2/25/97	14
		1390	S	2/26/97	2/28/97	28
		1390	S	3/1/97	3/24/97	219
		675	S	3/25/97	4/2/97	40
		1635	S	5/5/97	6/21/97	516
		1628	S	8/12/97	8/31/97	214
		2878	S	9/1/97	9/11/97	208
		2408	S	9/12/97	9/15/97	63
	Total Allotment 00092					***1302***
Total 1996–1997						***15736***

Carrizo Grazing Use 1997–1998 Season

Allotment Number	Pasture Name	Animal Livestock Number	Kind of Livestock	Period Begin	Period End	Animal Unit Months
00018	Air Strip	89	C	12/23/97	1/21/98	88
		102	C	1/22/98	2/15/98	84
	Canyon	55	C	12/2/97	2/28/98	161
		55	C	3/1/98	4/21/98	94
	South Cousins	63	C	12/11/97	12/16/97	12
		79	C	12/17/97	2/15/98	158
	Sulphur Spring	102	C	2/15/98	2/28/98	47
		102	C	3/1/98	4/30/98	205
	Tripod	79	C	2/15/98	2/28/98	36
		129	C	3/1/98	4/24/98	233
	West Painted Rock	65	C	12/19/97	12/20/97	4
		82	C	12/21/97	12/28/97	22
		102	C	12/29/97	2/28/98	208
		52	C	3/1/98	4/24/98	94
	Total Allotment 00018					***1446***
00026	Ranch	256	C	3/6/98	4/30/98	471
	Selby	206	C	12/2/97	12/22/97	142
		258	C	12/23/97	2/28/98	577
		258	C	3/1/98	3/6/98	51
	Total Allotment 00026					***1241***
00029	Center Well	238	C	12/13/97	12/17/97	39
		246	C	12/18/97	12/23/97	49
		317	C	12/24/97	12/25/97	21
		501	C	12/26/97	1/31/98	609
		504	C	2/1/98	2/15/98	249
		506	C	2/16/98	2/25/98	166
		143	C	2/26/98	2/28/98	14
		143	C	3/1/98	3/9/98	42
		506	C	3/10/98	4/16/98	632
		433	C	4/17/98	4/27/98	157
		370	C	4/28/98	4/30/98	36
	House	150	C	2/27/98	2/28/98	10
		150	C	3/1/98	5/2/98	311
	Shipping	306	C	12/11/97	12/15/97	50
		334	C	12/16/97	12/26/97	121
		363	C	2/26/98	2/28/98	36
		363	C	3/1/98	3/10/98	119
		262	C	4/30/98	5/1/98	17
		222	C	5/2/98	5/4/98	22
	West Well	150	C	12/26/97	2/27/98	316
	Total Allotment 00029					***3016***
00043	North Goodwin	144	C	1/5/98	2/28/98	260
		144	C	3/1/98	4/24/98	260
	South Goodwin	30	C	2/16/98	2/28/98	13
		30	C	3/1/98	3/22/98	22
		43	C	3/23/98	4/24/98	47
	Total Allotment 00043					***602***
00046	Brumley	150	C	12/1/97	2/25/98	429
	Sheep Camp	150	C	2/25/98	2/28/98	20

Allotment Number	Pasture Name	Animal Livestock Number	Kind of Livestock	Period Begin	Period End	Animal Unit Months
		150	C	3/1/98	5/10/98	350
	Total Allotment 00046					***799***
00053	Big Tank	49	C	12/5/97	2/28/98	139
		49	C	3/1/98	4/3/98	55
	Calf Shed	80	C	12/10/97	1/2/98	63
		128	C	1/3/98	2/28/98	240
		128	C	3/1/98	3/25/98	105
		42	C	3/26/98	4/3/98	12
	East Cochora	454	C	12/1/97	12/3/97	45
		673	C	12/4/97	12/14/97	243
		739	C	12/15/97	12/31/97	413
		737	C	1/1/98	2/28/98	1430
		737	C	3/1/98	4/22/98	1284
		736	C	4/23/98	4/23/98	24
		734	C	4/24/98	4/24/98	24
		732	C	4/25/98	4/28/98	96
		636	C	4/29/98	4/30/98	42
		74	C	12/1/97	1/5/98	88
		123	C	1/6/98	2/28/98	218
		123	C	3/1/98	3/26/98	105
	Hostetter	245	C	3/16/98	4/1/98	137
	Jobe Back	245	C	2/2/98	2/28/98	217
		245	C	3/1/98	3/15/98	121
	Padrone	77	C	12/1/97	12/21/97	53
		197	C	12/22/97	12/27/97	39
		316	C	12/28/97	2/28/98	655
		316	C	3/1/98	3/25/98	260
		188	C	3/26/98	4/3/98	56
	Quail Spring	84	C	3/27/98	3/31/98	14
		82	C	4/1/98	4/1/98	3
		327	C	4/2/98	4/24/98	247
		321	C	4/25/98	4/26/98	21
		319	C	4/27/98	4/27/98	10
		273	C	4/28/98	4/29/98	18
		96	C	12/1/97	12/4/97	13
		144	C	12/5/97	12/7/97	14
		264	C	12/8/97	1/2/98	226
		332	C	1/3/98	1/9/98	76
		331	C	1/10/98	1/18/98	98
		330	C	1/19/98	2/28/98	445
		330	C	3/1/98	3/26/98	282
	Red Tank	205	C	12/1/97	12/1/97	7
		336	C	12/2/97	12/2/97	11
		416	C	12/3/97	12/9/97	96
		446	C	12/10/97	12/12/97	44
		657	C	12/13/97	12/13/97	22
		737	C	12/14/97	12/15/97	48
		788	C	12/16/97	12/26/97	285
		758	C	12/27/97	12/27/97	25
		792	C	12/28/97	12/30/97	78

Allotment Number	Pasture Name	Animal Livestock Number	Kind of Livestock	Period Begin	Period End	Animal Unit Months
		838	C	12/31/97	12/31/97	28
		1014	C	1/1/98	1/16/98	533
		1000	C	1/17/98	1/25/98	296
		1016	C	1/26/98	1/29/98	134
		1019	C	1/30/98	1/30/98	34
		778	C	2/1/98	2/28/98	716
		778	C	3/1/98	3/20/98	512
		675	C	3/21/98	3/21/98	22
		555	C	3/22/98	3/22/98	18
		438	C	3/23/98	3/23/98	14
		263	C	3/24/98	3/24/98	9
		131	C	3/25/98	3/25/98	4
		86	C	3/26/98	3/29/98	11
		84	C	3/30/98	3/31/98	6
		102	C	12/1/97	2/28/98	302
		102	C	3/1/98	3/31/98	104
	School House	69	C	12/3/97	1/5/98	77
		101	C	1/6/98	2/28/98	179
		101	C	3/1/98	3/25/98	83
		18	C	3/26/98	4/3/98	5
	West Cochora	273	C	4/30/98	4/30/98	9
		909	C	5/1/98	5/1/98	30
		808	C	5/2/98	6/6/98	956
		728	C	6/7/98	6/7/98	24
		577	C	6/8/98	6/8/98	19
		576	C	6/9/98	6/20/98	227
		454	C	6/21/98	6/21/98	15
		421	C	6/22/98	7/23/98	443
		420	C	7/24/98	7/24/98	14
		237	C	7/25/98	7/25/98	8
		187	C	7/26/98	7/27/98	12
		99	C	7/28/98	7/31/98	13
	Total Allotment 00053					***13104***
00070	Abbott Canyon	70	C	12/14/97	2/28/98	177
		70	C	3/1/98	4/19/98	115
	Goat Spring	43	C	12/14/97	2/21/98	99
	Holding	43	C	2/21/98	2/28/98	11
		43	C	3/1/98	4/18/98	69
		113	C	4/19/98	5/1/98	48
	Total Allotment 00070					***519***
00092	Phelan	712	S	1/20/98	2/28/98	187
		712	S	3/1/98	3/19/98	89
		1432	S	3/20/98	4/19/98	292
		720	S	4/20/98	4/21/98	10
		1605	S	6/3/98	7/28/98	591
	Total Allotment 00092					***1169***
Total 1997–1998						***21896***

Carrizo Grazing Use 1998–1999 Season

Allotment Number	Pasture Name	Animal Livestock Number	Kind of Livestock	Period Begin	Period End	Animal Unit Months
00018	Air Strip	103	C	2/14/99	2/28/99	51
		103	C	3/1/99	5/30/99	308
	Canyon	70	C	10/22/98	10/25/98	9
		73	C	10/26/98	2/28/99	302
		73	C	3/1/99	5/30/99	218
	East Painted Rock	56	C	10/23/98	10/26/98	7
		87	C	10/27/98	10/29/98	9
		110	C	10/30/98	2/14/99	391
	Silver Gate	101	C	10/21/98	10/25/98	17
		104	C	10/26/98	2/14/99	383
	South Cousins	120	C	2/14/99	2/28/99	59
		120	C	3/1/99	5/31/99	363
	West Painted Rock	48	C	10/17/98	10/19/98	5
		59	C	10/20/98	2/13/99	227
		48	C	2/14/99	2/28/99	24
		48	C	3/1/99	5/31/99	145
		18	C	3/15/99	5/24/99	42
	Total Allotment 00018					***2560***
00026	Coyote	253	C	12/1/98	2/28/99	749
		253	C	3/1/99	4/1/99	266
	Selby	43	C	4/15/99	4/19/99	7
		183	C	4/20/99	5/30/99	247
	Total Allotment 00026					***1269***
00029	Center Well	129	C	12/4/98	12/13/98	42
		505	C	12/14/98	12/31/98	299
		513	C	1/1/99	2/28/99	995
		513	C	3/1/99	3/4/99	67
		643	C	3/5/99	3/30/99	550
		513	C	3/31/99	5/28/99	995
	Dead Brush	369	C	1/13/99	1/19/99	85
		424	C	1/20/99	2/16/99	390
	Shipping	109	C	11/26/98	1/3/99	140
		130	C	1/4/99	2/28/99	239
		130	C	3/1/99	3/5/99	21
		424	C	5/20/99	5/26/99	98
	West Well	424	C	2/16/99	2/28/99	181
		424	C	3/1/99	3/14/99	195
		406	C	3/15/99	5/20/99	894
	Total Allotment 00029					***5191***
00043	North Goodwin	160	C	1/15/99	2/28/99	237
		160	C	3/1/99	4/1/99	168
	South Goodwin	160	C	12/1/98	1/15/99	242
		14	C	4/1/99	4/19/99	9
		36	C	4/20/99	5/29/99	47
	Total Allotment 00043					***703***
00046	Brumley	150	C	1/15/99	2/28/99	222
		150	C	3/1/99	6/1/99	459
	Hill	150	C	10/17/98	1/15/99	449
	Total Allotment 00046					***1130***

00053	Calf Shed	120	C	12/8/98	12/15/98	32
	East Cochora	67	C	10/17/98	11/5/98	44
		88	C	11/6/98	11/11/98	17
		214	C	11/12/98	11/13/98	14
		344	C	11/14/98	11/14/98	11
		425	C	11/15/98	11/19/98	70
		467	C	11/20/98	11/24/98	77
		489	C	11/25/98	12/4/98	161
		691	C	12/5/98	12/6/98	45
		702	C	12/7/98	12/12/98	138
		727	C	12/13/98	12/14/98	48
		734	C	12/15/98	1/4/99	507
		729	C	1/5/99	1/14/99	240
		727	C	1/15/99	2/8/99	598
		726	C	2/9/99	2/28/99	477
		725	C	3/1/99	3/28/99	667
		723	C	3/29/99	3/31/99	71
	Hostetter	733	C	5/21/99	5/21/99	24
		704	C	5/22/99	5/23/99	46
		586	C	5/24/99	5/26/99	58
		454	C	5/29/99	5/29/99	15
		378	C	6/1/99	6/1/99	12
		90	C	6/2/99	6/3/99	6
		585	C	5/27/99	5/28/99	38
	Jobe Back	160	C	3/16/99	3/26/99	58
	MU House	13	C	10/18/98	2/28/99	57
		13	C	3/1/99	5/31/99	39
	Padrone	120	C	12/16/98	2/28/99	296
		120	C	3/1/99	4/23/99	213
	Quail Spring	538	C	3/16/99	3/26/99	195
		698	C	3/27/99	3/28/99	46
		697	C	4/1/99	5/13/99	985
		693	C	5/14/99	5/20/99	159
	Red Tank	27	C	10/25/98	10/25/98	1
		144	C	10/26/98	10/26/98	5
		262	C	10/27/98	10/27/98	9
		303	C	10/28/98	10/31/98	40
		539	C	11/1/98	11/1/98	18
		698	C	11/2/98	12/20/98	1124
		699	C	12/21/98	12/31/98	253
		709	C	1/1/99	1/14/99	326
		746	C	1/15/99	2/7/99	589
		745	C	2/8/99	2/9/99	49
		744	C	2/10/99	2/13/99	98
		743	C	2/14/99	2/28/99	366
		743	C	3/1/99	3/6/99	147
		738	C	3/7/99	3/14/99	194
		40	C	3/15/99	5/20/99	88
	School House	120	C	4/24/99	4/30/99	28
	West Cochora	723	C	4/1/99	5/13/99	1022
		581	C	5/14/99	5/16/99	57
		515	C	5/17/99	5/25/99	152
		514	C	5/26/99	5/27/99	34

		511	C	5/28/99	5/28/99	17
		509	C	5/29/99	5/30/99	33
		470	C	5/31/99	6/7/99	124
		439	C	6/8/99	6/16/99	130
		366	C	6/17/99	6/25/99	108
		299	C	6/26/99	6/26/99	10
		259	C	6/27/99	6/28/99	17
	Total Allotment 00053					***10365***
00070	Abbott Canyon	46	C	12/27/98	2/28/99	97
		46	C	3/1/99	4/3/99	51
	Goat Spring	34	C	12/27/98	2/28/99	72
		34	C	3/1/99	4/3/99	38
		40	C	4/24/99	5/28/99	46
	Holding	32	C	12/27/98	2/28/99	67
		32	C	3/1/99	4/2/99	35
		112	C	4/3/99	4/24/99	81
	Total Allotment 00070					***487***
00092	Phelan	870	S	3/8/99	3/17/99	57
		1610	S	3/18/99	4/22/99	381
		748	S	4/23/99	4/25/99	15
		17	S	4/26/99	5/19/99	3
		1827	S	5/20/99	8/9/99	985
		32	S	8/10/99	8/10/99	1
	Total Allotment 00092					***1442***
Total 1998–1999						***23147***

Carrizo Grazing Use 1999–2000 Season

Allotment Number	Pasture Name	Animal Livestock Number	Kind of Livestock	Period Begin	Period End	Animal Unit Months
00018	Air Strip	30	C	11/10/99	1/31/00	82
		50	C	3/15/00	5/27/00	122
	Canyon	70	C	10/17/99	2/28/00	311
		70	C	3/1/00	5/27/00	203
	East Painted Rock	51	C	10/24/99	11/30/99	64
		57	C	12/1/99	2/28/00	169
		57	C	3/1/00	4/30/00	114
		135	C	5/1/00	5/14/00	62
		60	C	5/15/00	5/27/00	26
	Horse	2	H	10/17/99	2/28/00	9
		2	H	3/1/00	5/27/00	6
	Silver Gate	98	C	10/16/99	2/28/00	438
		98	C	3/1/00	5/27/00	284
	South Cousins	17	C	10/23/99	11/2/99	6
		34	C	11/3/99	2/28/00	132
		34	C	3/1/00	5/21/00	92
	Sulphur Spring	52	C	10/21/99	10/31/99	19
		82	C	11/1/99	1/31/00	248
		112	C	2/1/00	2/28/00	103
		112	C	3/1/00	3/14/00	52
		62	C	3/15/00	5/27/00	151
	Tripod	57	C	10/17/99	12/10/99	103
		71	C	12/11/99	2/28/00	187
		71	C	3/1/00	5/1/00	145
		70	C	5/15/00	5/27/00	30
	West Painted Rock	52	C	10/17/99	2/28/00	231
		52	C	3/1/00	4/30/00	104
		45	C	5/1/00	5/14/00	21
		50	C	5/15/00	5/27/00	21
	Total Allotment 00018					***3535***
00026	Coyote	105	C	11/29/99	11/30/99	7
		131	C	12/1/99	2/28/00	388
		131	C	3/1/00	5/26/00	375
	Ranch	145	C	10/17/99	10/18/99	10
		183	C	10/19/99	2/28/00	800
		183	C	3/1/00	5/31/00	554
	Selby	83	C	11/20/99	11/22/99	8
		132	C	11/23/99	11/30/99	35
		158	C	12/1/99	2/28/00	468
		158	C	3/1/00	5/26/00	452
	Total Allotment 00026					***3097***
00029	Center Well	901	C	10/20/99	12/14/99	1659
		751	C	12/15/99	1/7/00	593
		300	C	4/8/00	4/11/00	39
		421	C	4/12/00	4/12/00	14
		1022	C	4/13/00	5/8/00	874
		901	C	5/9/00	5/25/00	504
		145	C	5/26/00	5/26/00	5
	Dead Brush	250	C	1/20/00	1/31/00	99

Allotment Number	Pasture Name	Animal Livestock Number	Kind of Livestock	Period Begin	Period End	Animal Unit Months
		300	C	2/1/00	2/28/00	276
		300	C	3/1/00	4/8/00	385
	House	125	C	2/7/00	2/28/00	90
		125	C	3/1/00	3/30/00	123
		229	C	4/24/00	5/22/00	218
	Old Adobe	125	C	1/24/00	2/7/00	62
		121	C	5/9/00	5/30/00	88
		54	C	11/17/99	11/21/99	9
		145	C	11/22/99	12/2/99	52
		201	C	12/3/99	2/23/00	548
		210	C	2/24/00	2/28/00	35
		210	C	3/1/00	4/17/00	331
		229	C	4/18/00	4/24/00	53
	Shipping	21	C	10/18/99	11/14/99	19
		89	C	11/15/99	11/26/99	35
		115	C	11/27/99	12/9/99	49
		125	C	12/10/99	1/24/00	189
		125	C	3/30/00	4/12/00	58
		229	C	5/22/00	5/23/00	15
		145	C	5/26/00	6/1/00	33
	West Well	150	C	12/15/99	1/6/00	113
		901	C	1/7/00	1/19/00	385
		651	C	1/20/00	1/31/00	257
		601	C	2/1/00	2/28/00	553
		601	C	3/1/00	4/13/00	869
	Total Allotment 00029					***8632***
00043	Dillard	70	C	10/17/99	2/28/00	311
		70	C	3/1/00	4/15/00	106
	North Goodwin	121	C	10/15/99	2/28/00	545
		121	C	3/1/00	4/15/00	183
	South Goodwin	46	C	10/15/99	2/28/00	207
		46	C	3/1/00	4/15/00	70
	Total Allotment 00043					***1422***
00046	Bromley	150	C	12/1/99	12/31/99	153
	Hill	150	C	1/1/00	2/28/00	291
		150	C	3/1/00	6/1/00	459
	Sheep Camp	150	C	10/1/99	11/30/99	301
	Total Allotment 00046					***1204***
00053	Calf Shed	3	C	11/1/99	11/5/99	1
		148	C	11/6/99	11/9/99	19
		320	C	11/10/99	12/3/99	252
		320	C	1/8/00	2/28/00	547
		320	C	3/1/00	4/1/00	337
		206	C	4/21/00	4/30/00	68
		171	C	5/1/00	5/19/00	107
		48	C	5/20/00	5/22/00	5
	East Cochora	172	C	10/17/99	11/9/99	136
		497	C	11/22/99	12/16/99	408
		1515	C	12/17/99	12/19/99	149
		1510	C	12/20/99	12/22/99	149

Allotment Number	Pasture Name	Animal Livestock Number	Kind of Livestock	Period Begin	Period End	Animal Unit Months
		1995	C	12/23/99	1/9/00	1181
		1990	C	1/10/00	2/2/00	1570
		1984	C	2/3/00	2/28/00	1696
		1984	C	3/1/00	3/4/00	261
		1978	C	3/5/00	4/14/00	2666
		1973	C	4/15/00	4/26/00	778
	Hostetter	568	C	11/19/99	12/16/99	523
		604	C	4/6/00	4/6/00	20
		235	C	4/7/00	4/9/00	23
	Jobe Back	53	C	10/15/99	12/14/99	106
		54	C	12/15/99	1/5/00	39
		55	C	1/6/00	2/28/00	98
		55	C	3/1/00	4/29/00	108
		5	C	4/30/00	4/30/00	1
		4	C	5/1/00	5/17/00	2
	Padrone	160	C	11/17/99	11/20/99	21
		223	C	11/21/99	12/4/99	103
		263	C	12/5/99	12/11/99	61
		276	C	12/12/99	1/4/00	218
		274	C	1/5/00	2/6/00	297
		272	C	2/7/00	2/28/00	197
		272	C	3/1/00	3/9/00	80
		270	C	3/10/00	5/2/00	479
		194	C	5/3/00	5/3/00	6
		38	C	5/4/00	5/16/00	16
		7	C	5/17/00	5/26/00	2
	Quail Spring	326	C	4/8/00	4/29/00	236
		173	C	4/30/00	5/1/00	11
		93	C	5/2/00	5/4/00	9
		293	C	5/6/00	6/5/00	299
	Red Tank	66	C	10/15/99	10/16/99	4
		224	C	10/17/99	10/23/99	52
		492	C	10/24/99	10/24/99	16
		607	C	10/25/99	10/31/99	140
		641	C	11/1/99	11/14/99	295
		673	C	11/15/99	11/30/99	354
		671	C	12/1/99	12/14/99	309
		674	C	12/15/99	12/31/99	377
		673	C	1/1/00	1/5/00	111
		674	C	1/6/00	2/28/00	1197
		674	C	3/1/00	3/14/00	310
		670	C	3/15/00	4/4/00	463
		66	C	4/5/00	4/26/00	48
		2039	C	4/27/00	5/16/00	1341
		1973	C	5/17/00	5/23/00	454
		1353	C	5/24/00	5/24/00	44
		1090	C	5/25/00	5/25/00	36
		876	C	5/26/00	5/29/00	115
		260	C	5/30/00	6/1/00	26
	School House	450	C	11/18/99	12/3/99	237
		790	C	12/4/99	12/15/99	312

Allotment Number	Pasture Name	Animal Livestock Number	Kind of Livestock	Period Begin	Period End	Animal Unit Months
		320	C	12/16/99	1/8/00	252
		320	C	4/2/00	5/5/00	358
	West Cochora	33	C	11/16/99	11/18/99	3
		37	C	11/19/99	11/20/99	2
		71	C	11/21/99	11/21/99	2
		142	C	11/22/99	11/22/99	5
		182	C	11/23/99	11/23/99	6
		211	C	11/24/99	11/30/99	49
		224	C	12/1/99	12/3/99	22
		311	C	12/4/99	12/4/99	10
		348	C	12/5/99	12/31/99	309
		345	C	1/1/00	1/6/00	68
		351	C	1/7/00	1/7/00	12
		361	C	1/8/00	1/14/00	83
		363	C	1/15/00	2/26/00	513
		362	C	2/27/00	2/28/00	24
		362	C	3/1/00	3/14/00	167
		361	C	3/15/00	4/2/00	226
		356	C	4/3/00	4/4/00	23
		317	C	4/5/00	4/5/00	10
		211	C	4/6/00	4/6/00	7
		206	C	4/7/00	4/20/00	95
	Total Allotment 00053					***21772***
00070	Abbott Canyon	118	C	4/30/00	5/26/00	105
	Goat Spring	67	C	11/21/99	12/30/99	88
		69	C	12/31/99	2/28/00	136
		69	C	3/1/00	4/21/00	118
	Gun Club	111	C	5/28/00	7/21/00	106
	Holding	63	C	11/21/99	12/30/99	64
		67	C	12/31/99	2/28/00	102
		67	C	3/1/00	3/14/00	24
		78	C	3/15/00	4/21/00	75
	Total Allotment 00070					***818***
00092	Phelan	780	S	3/5/00	3/19/00	77
		550	S	6/10/00	7/20/00	148
	Total Allotment 00092					***225***
Total 1999–2000						***40705***

Carrizo Grazing Use 2000–2001 Season

Allotment Number	Pasture Name	Animal Livestock Number	Kind of Livestock	Period Begin	Period End	Animal Unit Months
00018	Canyon	7	C	10/29/00	11/10/00	3
		21	C	11/11/00	11/17/00	5
		42	C	11/18/00	11/20/00	4
		49	C	11/21/00	12/1/00	18
		53	C	12/2/00	1/7/01	64
		9	C	1/8/01	2/28/01	15
		9	C	3/1/01	5/7/01	20
	East Painted Rock	9	C	11/17/00	11/17/00	1
		19	C	11/18/00	11/20/00	2
		33	C	11/21/00	12/28/00	41
		38	C	12/29/00	2/12/01	57
		39	C	2/13/01	2/16/01	5
	Horse	2	H	11/18/00	2/28/01	7
		2	H	3/1/01	5/29/01	6
	Silver Gate	19	C	10/30/00	10/30/00	1
		38	C	10/31/00	12/29/00	75
	Sulphur Spring	12	C	10/19/00	11/10/00	9
		18	C	11/11/00	11/16/00	4
		30	C	11/17/00	11/20/00	4
		50	C	11/21/00	12/28/00	62
		52	C	12/29/00	1/7/01	17
		96	C	1/8/01	2/28/01	164
		96	C	3/1/01	5/6/01	211
		105	C	5/7/01	5/29/01	79
	Tripod	38	C	11/18/00	2/28/01	129
		38	C	3/1/01	5/29/01	112
	West Painted Rock	10	C	12/2/00	12/28/00	9
		43	C	12/29/00	2/15/01	69
		82	C	2/16/01	2/28/01	35
		82	C	3/1/01	5/29/01	243
	Total Allotment 00018					***1471***
00029	Center Well	159	C	3/23/01	3/23/01	5
		172	C	3/24/01	3/26/01	17
		222	C	3/27/01	5/7/01	307
		234	C	5/8/01	5/31/01	185
	Dead Brush	212	C	1/20/01	2/26/01	265
		21	C	2/27/01	2/28/01	1
		21	C	3/1/01	5/29/01	62
	East Cousins	100	C	12/5/00	12/5/00	3
		195	C	12/6/00	12/7/00	13
		210	C	12/8/00	12/18/00	76
		216	C	12/19/00	12/28/00	71
		242	C	12/29/00	12/30/00	16
		251	C	1/1/01	1/21/01	173
		267	C	1/22/01	2/28/01	334
		267	C	3/1/01	4/9/01	351
		225	C	4/10/01	5/23/01	325
	House	57	C	11/10/00	11/15/00	11
		61	C	11/16/00	11/21/00	12

Allotment Number	Pasture Name	Animal Livestock Number	Kind of Livestock	Period Begin	Period End	Animal Unit Months
		159	C	11/22/00	2/28/01	518
		159	C	3/1/01	3/13/01	68
	Kinney-Hahl West	208	C	11/6/00	12/3/00	191
		212	C	12/4/00	12/13/00	70
	Old Adobe	212	C	12/20/00	1/20/01	223
		159	C	3/13/01	3/23/01	58
	Shipping	212	C	12/13/00	12/20/00	56
		191	C	2/27/01	2/28/01	13
		191	C	3/1/01	3/2/01	13
	Total Allotment 00029					***3437***
00043	California Valley	65	C	4/1/01	4/30/01	64
	Total Allotment 00043					***64***
00070	Goat Spring	54	C	3/17/01	4/14/01	51
		49	C	4/21/01	5/26/01	58
	Holding	33	C	12/16/00	2/1/01	40
		64	C	4/7/01	4/20/01	23
		95	C	4/21/01	5/26/01	87
	Total Allotment 00070					***259***
	Quail Spring	122	C	11/19/00	11/19/00	4
		166	C	11/20/00	11/30/00	60
		194	C	12/1/00	12/14/00	89
		193	C	12/15/00	12/31/00	108
		191	C	1/1/01	1/3/01	19
		81	C	1/4/01	1/5/01	5
		22	C	1/6/01	1/21/01	12
	Jobe Back	34	C	12/3/00	12/7/00	6
		85	C	12/8/00	1/3/01	75
		89	C	1/4/01	1/21/01	53
	Calf Shed	169	C	1/18/01	2/3/01	94
		168	C	2/4/01	2/28/01	138
		168	C	3/1/01	3/2/01	11
		64	C	3/3/01	3/11/01	19
	Total Allotment 00053					***693***
00092	Phelan	700	S	2/17/01	2/28/01	55
		700	S	3/1/01	3/9/01	41
		1300	S	3/10/01	3/31/01	188
		700	S	4/1/01	4/3/01	14
		700	S	5/1/01	6/3/01	156
		700	S	7/15/01	8/15/01	147
	Total Allotment 00092					***601***
Total 2000–2001						***6525***

Carrizo Grazing Use 2001–2002 Season

Allotment Number	Pasture Name	Animal Livestock Number	Kind of Livestock	Period Begin	Period End	Animal Unit Months
00018	Canyon	52	C	10/29/2001	12/20/2001	91
		54	C	12/21/2001	02/28/2002	124
		54	C	03/01/2002	03/30/2002	53
	Horse	2	H	11/1/01	2/28/02	8
		2	H	3/1/02	4/20/02	3
	Silver Gate	10	C	11/9/01	11/9/01	1
		12	C	11/10/01	11/10/01	1
		61	C	11/11/01	2/28/02	221
		61	C	3/1/02	4/13/02	88
	Air Strip	27	C	11/19/01	12/20/01	28
		29	C	12/21/01	2/2/02	42
		12	C	4/6/02	4/20/02	6
	East Painted Rock	48	C	11/11/01	2/28/02	174
		48	C	3/1/02	4/6/02	58
	West Painted Rock	48	C	4/6/02	4/20/02	24
	Sulphur Spring	50	C	11/4/01	12/20/01	77
		52	C	12/21/01	2/28/02	120
		52	C	3/1/02	3/30/02	51
	Tripod	9	C	12/9/01	12/15/01	2
		31	C	12/16/01	12/18/01	3
		50	C	12/19/01	12/20/01	3
		52	C	12/21/01	2/28/02	120
		52	C	3/1/02	3/30/02	51
	Total Allotment 00018					***1349***
00026	Selby	119	C	11/03/2001	11/8/01	23
		188	C	11/09/2001	11/14/01	37
		197	C	11/15/2001	11/26/01	78
		203	C	11/27/2001	1/15/02	334
	Coyote	203	C	01/15/2002	2/15/02	214
	Ranch	203	C	02/15/2002	2/28/02	93
		203	C	03/01/2002	3/15/02	100
	Total Allotment 00026					***879***
00029	West Well	116	C	11/15/2001	11/20/01	23
		148	C	11/21/2001	11/22/01	10
		166	C	11/23/2001	12/2/01	55
		173	C	12/03/2001	12/7/01	28
		175	C	12/08/2001	12/11/01	23
		176	C	12/12/2001	1/20/02	231
		183	C	01/21/2002	2/21/02	193
	Old Corral North	183	C	02/21/2002	2/28/02	48
		183	C	03/01/2002	3/2/02	12
	Kinney-Hahl West	183	C	03/02/2002	4/20/02	301
	Shipping	60	C	01/15/2002	1/22/02	16
		183	C	04/20/2002	4/23/02	24
		93	C	04/24/2002	5/1/02	24
	House	180	C	11/29/2001	12/9/01	65
		183	C	12/10/2001	12/18/01	54

Allotment Number	Pasture Name	Animal Livestock Number	Kind of Livestock	Period Begin	Period End	Animal Unit Months
		185	C	12/19/2001	12/27/01	55
		188	C	12/28/2001	2/22/02	352
	Center Well	239	C	12/05/2001	12/16/01	94
		242	C	12/17/2001	12/24/01	64
		340	C	12/25/2001	12/27/01	34
		500	C	12/28/2001	1/14/02	296
		530	C	01/15/2002	2/28/02	784
		419	C	03/01/2002	3/1/02	14
		395	C	03/02/2002	3/3/02	26
		145	C	03/04/2002	3/5/02	10
	Old Adobe	60	C	01/22/2002	2/28/02	75
		60	C	03/01/2002	3/1/02	2
		84	C	03/02/2002	4/4/02	94
	Total Allotment 00029					***3007***
00043	South Goodwin	13	C	11/13/01	11/22/01	4
		26	C	11/23/01	11/30/01	7
		50	C	12/1/01	2/25/02	143
	Dillard	65	C	12/3/01	2/15/02	160
	North Goodwin	65	C	2/15/02	2/28/02	30
		65	C	3/1/02	3/15/02	32
	Total Allotment 00043					***376***
00046	Sheep Camp	156	C	11/01/2001	12/2/01	164
		3	C	12/03/2001	2/28/02	9
		153	C	03/01/2002	3/5/02	25
	Brumley	153	C	12/04/2001	2/28/02	438
		153	C	03/01/2002	3/4/02	20
	Hill	153	C	03/01/2002	5/1/02	312
	Total Allotment 00046					***968***
00053	Big Tank	79	C	12/19/01	12/19/01	3
		136	C	12/20/01	1/26/02	170
	Calf Shed	64	C	11/13/01	12/14/01	67
		254	C	12/15/01	12/28/01	117
	Hostetter	87	C	11/9/01	11/9/01	3
		111	C	11/10/01	11/10/01	4
		201	C	11/11/01	11/12/01	13
		137	C	11/13/01	11/13/01	5
		127	C	11/14/01	11/17/01	17
		144	C	11/18/01	11/19/01	9
		148	C	11/20/01	11/30/01	54
		151	C	12/1/01	12/2/01	10
		3	C	12/12/01	2/28/02	8
		3	C	3/1/02	3/23/02	2
	Jobe Back	27	C	12/12/01	2/28/02	70
		27	C	3/1/02	3/15/02	13
	MU House	27	C	3/16/02	4/18/02	30
	Quail Spring	473	C	3/12/02	3/21/02	156
		393	C	3/22/02	3/22/02	13
		156	C	3/23/02	3/23/02	5
		4	C	3/24/02	3/28/02	1
		316	C	4/10/02	4/10/02	10

Allotment Number	Pasture Name	Animal Livestock Number	Kind of Livestock	Period Begin	Period End	Animal Unit Months
		154	C	4/11/02	4/16/02	30
		110	C	4/17/02	4/17/02	4
		104	C	4/18/02	4/24/02	24
	Red Tank	143	C	11/19/01	11/24/01	28
		333	C	11/24/01	11/26/01	33
		337	C	11/27/01	11/30/01	44
		363	C	12/1/01	12/12/01	143
		479	C	12/13/01	2/28/02	1228
		476	C	3/1/02	3/11/02	172
	School House	190	C	12/2/01	12/15/01	87
	East Cochora	316	C	3/25/02	4/9/02	166
	West Cochora	175	C	12/29/01	1/3/02	35
		180	C	1/4/02	1/26/02	136
		316	C	1/27/02	2/28/02	343
		316	C	3/1/02	3/24/02	249
	Total Allotment 00053					***3502***
00070	Holding	61	C	01/12/2002	1/25/02	28
		66	C	01/26/2002	2/28/02	74
		66	C	03/01/2002	4/17/02	104
	Goat Spring	16	C	01/12/2002	1/25/02	7
		52	C	01/26/2002	2/28/02	58
		52	C	03/01/2002	4/26/02	97
	Abbott Canyon	85	C	04/28/2002	5/15/02	50
	Total Allotment 00070					***418***
Total 2001–2002						***10499***

Carrizo Grazing Use 2002–2003 Season

*** No grazing was allowed during the 2002–2003 season.

Carrizo Grazing Use 2003–2004 Season

Allotment Number	Pasture Name	Animal Livestock Number	Kind of Livestock	Period Begin	Period End	Animal Unit Months
00018	Canyon	65	C	1/18/04	1/25/04	17
		67	C	1/26/04	2/28/04	75
		67	C	3/1/04	4/25/04	123
		85	C	3/30/04	4/25/04	75
	Sulphur Spring	107	C	1/9/04	2/28/04	179
		107	C	3/1/04	3/29/04	102
	Tripod	72	C	1/9/04	2/28/04	121
		72	C	3/1/04	3/29/04	69
	Horse	2	H	2/1/04	2/28/04	2
		2	H	3/1/04	4/25/04	4
	Air Strip	14	C	2/1/04	2/20/04	9
		21	C	2/21/04	2/28/04	6
		21	C	3/1/04	3/29/04	20
	Total Allotment 00018					***802***
00029	House	87	C	4/8/04	5/7/04	86
		3	C	5/8/04	5/20/04	1
	Total Allotment 00029					***87***
00046	Hill	166	C	1/8/04	2/28/04	284
		166	C	3/1/04	4/14/04	246
	Total Allotment 00046					***530***
00070	Goat Spring	28	C	1/17/04	2/28/04	40
		28	C	3/1/04	3/13/04	12
	Total Allotment 00070					***52***
Total 2003–2004						***1471***

Carrizo Grazing Use 2004–2005 Season

Allotment Number	Pasture Name	Animal Livestock Number	Kind of Livestock	Period Begin	Period End	Animal Unit Months
00029	Shipping	149	C	3/23/05	3/29/05	34
		357	C	3/30/05	4/18/05	235
		565	C	4/19/05	4/20/05	37
		45	C	4/27/05	4/27/05	1
	Kinney-Hahl	565	C	4/20/05	4/26/05	130
		520	C	4/27/05	5/26/05	513
	Total Allotment 00029					***950***
Total 2004–2005						***950***

Carrizo Grazing Use 2005–2006 Season

Allotment Number	Pasture Name	Animal Livestock Number	Kind of Livestock	Period Begin	Period End	Animal Unit Months
00046	Hill	145	C	2/8/06	2/28/06	100
		145	C	3/1/06	4/13/06	210
	Total Allotment 00046					***310***
	Hostetter	21	C	3/4/06	4/8/06	25
		32	C	4/9/06	5/4/06	27
		66	C	4/17/06	4/17/06	2
		132	C	4/18/06	4/18/06	4
		146	C	4/19/06	4/19/06	5
		211	C	4/20/06	4/20/06	7
		276	C	4/21/06	5/4/06	127
		17	C	5/15/06	5/18/06	2
		22	C	5/19/06	5/27/06	7
		30	C	5/28/06	5/30/06	3
		44	C	5/31/06	6/4/06	7
		57	C	6/5/06	6/12/06	15
		66	C	6/13/06	6/16/06	9
		81	C	6/17/06	6/19/06	8
		276	C	6/20/06	6/21/06	18
		113	C	6/20/06	6/21/06	7
	Red Tank	276	C	5/4/06	6/20/06	436
		32	C	5/4/00	6/20/00	50
	Hanline	81	C	6/20/06	6/21/06	5
	Total Allotment 00053					***764***
Total 2005–2006						***1074***

Carrizo Grazing Use 2006–2007 Season

*** No grazing was allowed during the 2006–2007 season.

Carrizo Grazing Use 2007–2008 Season

Allotment Number	Pasture Name	Animal Livestock Number	Kind of Livestock	Period Begin	Period End	Animal Unit Months
00029	Center Well	231	C	03/17/08	05/08/08	100
		3	C	05/09/08	06/10/08	3
		2	C	06/11/08	06/11/08	1
Total 2007–2008						***104***

Appendix O

Standard Operating Procedures and Implementation Guidelines for Projects Affecting the Biological Environment

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Standard Operating Procedures and Implementation Guidelines for Projects Affecting the Biological Environment

Species Reintroduction

- Priorities for species reintroduction would be determined by developing a list of regionally and locally extirpated species. Probability of a successful reintroduction, based on habitat suitability and environmental conditions, would be considered when establishing priorities for species reintroductions.
- Develop a reintroduction strategy in cooperation with managing partners and other experts, including the U.S. Fish and Wildlife Service (USFWS), as appropriate. Strategies should be designed to detail population objectives being sought, minimize the possible changes in genetic composition of native species inhabiting the Monument, address contingencies should a population start to impact another species or plant community in adverse and unpredicted ways, and outline monitoring strategies necessary to evaluate success of the reintroduction.
- Explore options for increasing herd size and distribution of native ungulates within the limits of natural carrying capacity.
- Work with the Condor Recovery Team to implement recovery actions for California condor recovery.

Restoration

- Initiate studies to further our understanding of soil-vegetation relationships and historical distributions of plant communities to help plan restoration efforts.
- Establish test restoration plots throughout the Monument to determine the most promising techniques for reintroducing native species, the biotic and abiotic factors that influence community composition, and the effects of restoration efforts on native and sensitive species.
- Match local genotypes, as close as practical, when choosing seeds and other materials for habitat restoration. Allow limited development of greenhouses and/or small nursery plots for the production of propagation materials. Encourage native seed and plant growers to develop Carrizo Plain plant materials for use in restoration activities.
- Adjust grazing prescriptions or eliminate grazing altogether from reintroduction sites, to protect populations of vulnerable sensitive species (if necessary).
- Identify opportunities for restoration by mapping roads and fuel breaks to be abandoned, previously cultivated fields, overgrazed areas, and other areas where the vegetation community has been degraded or destroyed or where natural revegetation rates are not satisfactory.
- Adjust grazing prescriptions or eliminate grazing following restoration treatments, if necessary to protect populations of vulnerable species and/or facilitate establishment of newly planted sites.

Surface Disturbance

- Vegetation removal and surface disturbance would be minimized. Surface rehabilitation measures would be applied when needed to protect the soil surface. Hand clearing would be emphasized over heavy equipment.

- When applicable, soil crusts would be removed prior to construction and redeposited at the completion of the project.
- Authorizations for new surface-disturbing activities would encourage the use of existing disturbed areas, avoiding impacts to listed species and minimizing impacts to significant cultural and paleontological resources, riparian communities, and sensitive species. Natural drainage patterns would be maintained to the greatest extent possible. Large draws and drainages with saltbush would be avoided as much as possible.
- Soil-disturbing activities would be avoided during periods of runoff, or when soils are wet and muddy, in order to minimize damage.
- Upon completion of construction of a project, unused roads and work sites would be restored where appropriate and signs or barriers could be installed to prevent continued travel on construction roads.
- Roads and well pads in areas of extremely unstable bedrock formations and active landslides would be precluded or would require special design criteria. Civil engineering studies or geotechnical studies would be required to determine feasibility prior to road and drill pad construction.
- All surface-disturbing activities would be designed to minimize wind and water erosion. Consistency with state air pollution laws would be maintained.
- Work area boundaries would be delineated with flagging, temporary fencing, or other marking to minimize surface disturbance associated with vehicle straying. Alternately, sensitive resources would be flagged for avoidance.

Species and Habitat Surveys

- Surveys for sensitive resources would be done prior to any activities that have potential to affect natural communities and sensitive species. Sensitive resource locations encountered during surveys would be marked for avoidance. Disturbance to San Joaquin kit fox dens, giant kangaroo rat burrows, San Joaquin antelope squirrel burrows, and burrows used by blunt-nosed leopard lizards would be avoided to the greatest extent possible. Disturbance to occupied burrowing owl burrows would be avoided to the greatest extent possible. Areas supporting the longhorn fairy shrimp or other sensitive aquatic species would be avoided to the greatest extent possible. Personnel familiar with the sensitive resource could be required to be present during construction activities. Should additional species become listed in the future, habitat features associated with these species would also be avoided as much as possible.
- Surveys should be conducted at the appropriate time of year to detect sensitive species. At the discretion of BLM, existing information, in lieu of a site specific survey, could be used to determine project impacts and mitigation.
- If it has been longer than 30 days between the last biological survey and the proposed start of construction, BLM biologists may require additional surveys for sensitive species. Surveys would be conducted by qualified personnel familiar with the target species

Vehicle and Aircraft Use

- Off-road vehicle travel must be specifically authorized for a given project. Off-road vehicle travel would be discouraged and limited to the minimum necessary. Off-road vehicle routes would be selected to minimize damage to burrows, dens, sensitive plant habitat, and shrubs.
- Vehicle speed limits would be limited to the minimum reasonable speed to reduce potential for road kills.

- No aircraft will be operated in a manner that could disturb wildlife within the Monument, unless in the performance of official duties or authorized by BLM.
- Coordinate with appropriate federal agencies to restrict low altitude flights over the Monument to protect sensitive resources.

Work Site Requirements

- Pets would not be permitted on a project site during project activities, unless confined or leashed.
- All trash would be disposed of in closed containers and regularly removed from the project site to an approved disposal facility.
- All persons involved in project construction work would be informed of listed species in the project area and specific measures that must be taken to avoid impacts to these species. Participants would be required to sign a document acknowledging their understanding of these protective measures.

Resource Protection

- Apply Livestock Management Guidelines as necessary to meet or exceed the rangeland health standard for species.
- New fence construction would be minimized to avoid impacts to pronghorn. Fences in pronghorn habitat areas would be modified to meet BLM standards for pronghorn passage.
- New development within 1/4 mile of springs, guzzlers, or riparian areas would be avoided whenever possible. This restriction is intended to minimize wildlife disturbance at key water locations and to limit impacts to sensitive watersheds. Activities that could be allowable in these areas include spring developments, water pipelines, fences, and project maintenance and repair. Power lines, roads, and other linear developments could be allowed, with suitable mitigation, to cross riparian areas where there are no viable alternatives.
- Riparian areas should be fenced or otherwise protected to prevent degradation. Water diversions would divert the minimum necessary amount. Float valves or other devices would be installed to control diversion amounts. Water for livestock use would be piped at least ¼ mile from the riparian zone. If possible, livestock waters would be kept on year-round for use by wildlife.
- Exploration, construction, and development activities would have seasonal restrictions imposed within a ½-mile radius around raptor nest sites. Seasonal restrictions would allow for undisturbed courtship, nest building, incubation, and fledging. This seasonal restriction could last as long as six months, depending upon species. Restrictions could be imposed around high use areas during other seasons.
- New wells and power lines would not be developed within 100 yards of ridge lines to minimize potential impacts to condors.
- Artificial perches will be minimized and eliminated where practicable in grassland and shrubland habitats.
- Authorizations for surface-disturbing activities near sensitive plants would require avoidance of those plants, or restrictions for all or a portion of the time period from germination to seed dispersal. Inventories for sensitive plant species would be conducted in order to identify areas to avoid. Topsoil and topography would be restored when the project is completed.

- Extant populations of sensitive plant species would be avoided to the greatest extent practicable. Sensitive plants in the vicinity of planned activities will be temporarily fenced or prominently flagged to prevent inadvertent encroachment by vehicles and equipment during the activity.
- If extant populations of sensitive plants cannot be avoided, surface disturbance would be scheduled after seed set and prior to germination. Collection of seed, with reseeding undertaken at the site following the activity, during seasonal time-frames, and when weather conditions are favorable for germination and growth, may also be required. If deemed appropriate, topsoil would be stockpiled and replaced or translocated as soon as practicable after project completion.
- Timing of activities would be planned to minimize impacts to sensitive resources to the extent practical. The following are examples of actions that could be taken:
  - If burrows used by blunt-nosed leopard lizards could be collapsed, the activity would be planned for when blunt-nosed leopard lizards are active and outside their burrows.
  - If nesting birds could be impacted, the activity would commence after the nesting season.
  - If habitat of sensitive annual plant species is involved, activity would be planned for after seed set.
- Actions would be minimized during evening hours when some listed species are active and vulnerable to vehicle or equipment induced injury or mortality.
- Projects that involve trenching should generally be scheduled during blunt-nosed leopard lizard inactive periods (Oct - Mar) to reduce pitfall mortality, or should require several trench inspections per day. Escape ramps would be provided in all trenches, pits, and water troughs. Trenches and pits could also be covered with plywood or similar material, and would be inspected regularly to remove entrapped animals. A final inspection of each trench and pit would be made before backfilling.
- Vehicle speed will not exceed 20 miles per hour on BLM-administered roads in endangered species habitats. BLM would request vehicle speeds on county roads be reduced in appropriate areas with high wildlife populations or vehicle strikes to avoid future collisions with wildlife.
- Pipe ends, culverts, and similar structures with a diameter of at least three inches would be thoroughly inspected for entrapped animals before being moved, capped, or buried. Any animals found inside would be allowed to escape before the pipe or culvert is moved, capped, or buried. During construction, all partially installed pipe ends, culverts, and similar structures would remain covered unless closely attended by a monitor.
- Disturbance to San Joaquin kit fox dens, giant kangaroo rat burrows, San Joaquin antelope squirrel burrows, burrowing owl burrows, badger dens, and burrows used by blunt-nosed leopard lizards would be avoided to the greatest extent practicable. Personnel familiar with the sensitive resource would be required to be present during construction activities. The following buffers will be established:
  - 50 feet – active giant kangaroo rat precincts, San Joaquin antelope squirrel burrows, badger dens, and burrows used by blunt-nosed leopard lizards
  - 100 feet – known, occupied, and potential non-natal kit fox dens; occupied burrowing owl burrows outside the breeding season
  - 200 feet – unoccupied natal kit fox dens, occupied burrowing owl burrows during the breeding season
- If impacts to active giant kangaroo rat precincts cannot be avoided, the animals would be trapped no greater than seven days prior to ground disturbance for five consecutive nights. On the day following

the fifth trap night, burrows would be carefully excavated. Depending on the nature of the project, captured animals would be held and released after construction is complete or released into unoccupied but suitable habitat. Artificial burrow systems could be installed in the release area, if necessary.

- In areas where blunt-nosed leopard lizards have been observed or are expected to occur, burrows likely to harbor blunt-nosed leopard lizards would be carefully excavated. Excavation would occur no more than seven days prior to construction. If a blunt-nosed leopard lizard is encountered during these excavations it would be allowed to escape unharmed. If eggs are found in the burrows, the USFWS would be contacted for further guidance.
- Disturbance to or destruction of San Joaquin kit fox dens should be minimized to the maximum extent practicable between January 1 and April 30 to reduce disruption of kit fox breeding activities.
- If destruction to a San Joaquin kit fox den is unavoidable, the USFWS and California Department of Fish and Game (CDFG) would be notified. Destruction of known or suspected natal or pupping dens would be avoided during the breeding season (November 1 to July 31). Destruction of natal or pupping dens known to be occupied would not be permitted until the den has been vacated.
- Prior to the destruction of any known San Joaquin kit fox den, the den would be monitored for at least three consecutive days to determine its current status. Activity would be monitored by placing tracking medium at the entrance(s) and by spotlighting. If no activity is observed during this period, the den would be destroyed immediately to preclude subsequent use. If kit fox activity is observed at the den during this period, the den would be monitored for five consecutive days from the time of observation to allow any resident animal to move to another den during normal activities. Use of the den would be discouraged by partially plugging the entrance(s) with soil in such a manner that any resident animal can escape easily. Destruction of the den would begin when the animal has moved to a different den. If the animal is still present after five or more consecutive days of plugging and monitoring, the den could be excavated. Excavation of the den would be conducted when it is temporarily vacant, for example during the animals' normal foraging activities. Destruction of the den would be accomplished by careful excavation until it is certain that there are no kit foxes inside. The den would be fully excavated and then filled with dirt and compacted to ensure that kit foxes cannot reenter or use the den during the construction period. If a kit fox is discovered inside the den, the excavation activity would cease and the animal would be allowed to escape.
- Any person handling listed species must have a permit issued by the CDFG and/or the USFWS. All persons monitoring listed species or monitoring in the vicinity of listed species would be advised of the need to reduce surface disturbance and harassment to the maximum extent possible.
- These guidelines could be revised or updated if the USFWS or the CDFG issue new or revised species survey or protection guidelines.

Hazardous Materials

- All spills of hazardous materials within endangered species habitats shall be cleaned up immediately.
- All oil spills would be contained closest to the source as possible.

Third-Party Authorizations (see also Minerals SOPs)

- A worker or participant education program would be required for all third party authorizations. The education program would include identification of sensitive species and their habitats, project or event mitigation measures and stipulations, reporting requirements, and penalties for failure of compliance.

- If biological issues have been identified for a project, a biological monitor could be required to minimize project impacts. The biological monitor would be responsible for field crews to be in compliance with protection measures, performing surveys in front of crews as needed to locate and avoid sensitive species and habitat features, and monitoring project mitigation compliance. Biological monitors would be required to be present on site during initial surface disturbing actions.
- Geophysical exploration will use small (for example, tractor-mounted or ATV/UTV pulled) or heliportable shot hole drills on BLM lands within the Monument rather than vibroseis rigs to generate source points. Vibroseis may be used on existing roads with BLM approval.
- In addition to avoidance and mitigation measures, compensation would be required for third party authorizations for activities that are unrelated to the management of the Monument. Compensation offsets the unavoidable effects of project impacts to resources. Protection of additional habitat outside the immediate project area is a common compensation measure. Compensation will be located within the Monument boundary. A standard ratio between the acres impacted and acres to be protected is established. The following compensation ratios have been established for San Joaquin Valley species:
  - Temporary habitat disturbance 1.1 to 1
  - Permanent habitat disturbance 3 to 1.
  - Vernal pools 5 to 1.
  - Seasonally filled natural depressions 1.1 to 1 (temporary) or 3 to 1 (permanent).
  - Compensation would not be required for manmade depressions.
- Any new compensation ratios established by the USFWS or CDFG would be used.
- In addition to the compensation requirement, a replacement component would be required for third party authorizations that disturb habitat on public lands. The replacement component consists of replacing the acres disturbed at a ratio of 1:1. It is necessary to both compensate and replace the disturbed lands to avoid a net loss in the area of habitat conserved in the Carrizo Plain National Monument. Without the provision of replacing conserved habitat in addition to compensating for the disturbance, the Monument could potentially lose acres of habitat that had been previously protected.
- BLM will work with utility companies to configure or modify power lines to eliminate raptor electrocutions to the greatest extent practicable.

Blunt-Nosed Leopard Lizard Requirements

- Avoid burrows that may be used by blunt-nosed leopard lizards.
- Locations of activities with potential to collapse or block burrows (such as sleeper placement; stockpile, storage, and parking areas; trenching) will be approved by the biological monitor.
- The biological monitor may allow certain activities in burrow areas if, in the judgment of the biological monitor, the combination of soil hardness and activity impact is not expected to collapse burrows. Activities authorized by the biological monitor in burrow areas will be documented and included in any report.
- Roadway sections where blunt-nosed leopard lizards have been observed or are likely to occur should be clearly marked to prevent workers from driving off the road and over burrows. Barriers, such as fencing, may also be installed.
- A brief description of measures taken to avoid burrow collapse will be included in any report, including the post-construction report.

- In addition, for project activities that occur during the blunt-nosed leopard lizard active season (approximately April 15 to October 15), the following will apply:
  - BLM will be notified that blunt-nosed leopard lizard active season measures are being implemented.
  - When possible, conduct project activities at night or during blunt-nosed leopard lizard inactivity periods (generally when temperatures are below 77 °F and above 99 °F).
  - All personnel will be advised to reduce speeds on sections of the access/egress route with potential to support blunt-nosed leopard lizards.
  - All vehicle operators will check under vehicles and equipment prior to operation.
  - Any trenches or pits will be inspected by the biological monitor in the morning, late afternoon, at the end of the work day, and prior to backfilling to free any blunt-nosed leopard lizards that may become entrapped. Trenches or holes should have at least one escape ramp for each 1,000 feet of open trench. Escape ramps should be earthen and at a slope no steeper than 1:1.
  - A flashing barrier may be installed around the work area to prevent blunt-nosed leopard lizards from entering the work area. The flashing barrier will be constructed of 18-inch or wider flashing, buried 6-inches in depth, and reinforced with rebar or fence posts. Silt fencing will be used to isolate areas inside the exclusion fence. If a blunt-nosed leopard lizard is subsequently found within the fenced area, the fence will be removed (in that area) and the lizard will be allowed to leave the exclusion zone. Surveys will continue until blunt-nosed leopard lizards are no longer observed inside the flashing barrier (that is, no evidence for one to two weeks dependent upon the discretion of the biologist). Barrier installation may occur prior to emergence of blunt-nosed leopard lizards providing that no burrows are destroyed. Avoid burrows during barrier construction. Surveys will occur when temperatures are sufficient for leopard lizards to be above ground. The flashing barrier will remain in place until drilling and sump closure activities have been completed.
- Burrows that cannot be avoided may be destroyed under the following circumstances:
  - If a blunt-nosed leopard lizard is observed exiting a burrow, the burrow may be immediately destroyed. The burrow should be carefully excavated under the supervision of a qualified biologist to verify that is it unoccupied and immediately destroyed.
  - Burrows inside a flashing barrier may be destroyed after the survey and monitoring requirements described above for flashing barriers has been met. Burrows should be carefully excavated under the supervision of a qualified biologist to verify that is it unoccupied and then destroyed.
  - If any burrows are destroyed, the following information will be included in the post construction compliance report: the dimensions of the area impacted by burrow destruction/excavation; number of burrows destroyed/excavated; results of burrow excavation, including any observations of wildlife in excavated burrows; and any other information deemed useful by the consulting biologist.
- The biological monitor shall check the project area and access route daily during the blunt-nosed leopard lizard active season to determine the presence or absence of lizards in the work area. If blunt-nosed leopard lizards are observed in the project area or along the access route, the biological monitor will take action to avoid impacts to lizards.
- If a blunt-nosed leopard lizard is observed at the project site or along the access/egress route, the biological monitor will notify BLM of the actions being undertaken. Initial notification may be by phone message. Written documentation, including GPS coordinates of lizard observations, will be

included in any reports. The post-construction report will include a map showing the location, date, and time of any blunt-nosed leopard lizard observations.

- Roadway sections where blunt-nosed leopard lizards have been observed should be clearly marked to prevent workers from driving off the road into blunt-nosed leopard lizard habitat or over burrows. Barriers, such as fencing may also be installed.
- The biological monitor must be on site during appropriate temperatures for blunt-nosed leopard lizard activity. The biological monitor will escort all traffic through any area where blunt-nosed leopard lizards have been observed. Biological monitors will complete daily compliance reports. Daily compliance reports will be summarized and included in the weekly report sent to BLM.
- Large vehicles (such as tankers, water trucks, drilling rigs) must be escorted to and from the work site by a biological monitor during appropriate temperatures for blunt-nosed leopard lizard activity.
- The biological monitor will provide BLM with a brief weekly report describing any actions taken to avoid blunt-nosed leopard lizard impacts. This report may be submitted by email to BLM.
- All reports must be submitted by the biological monitor conducting the work in the field or be reviewed by the field biological monitor. Alternately, the original report prepared by the field biological monitor may be attached to the report.
- Upon determination by the biological monitor that temperature patterns at the project site no longer support blunt-nosed leopard lizard activity for the season and receipt of BLM concurrence, these active season measures may be discontinued.
- If blunt-nosed leopard lizards have been observed in the project area or along the access route, and operations and maintenance activities will continue into the next blunt-nosed leopard lizard active season, an Operations and Maintenance (O&M) Plan will be submitted to BLM. The O&M Plan will outline the practices and mitigation measures that will be implemented to avoid impacts to blunt-nosed leopard lizards for O&M activities.

Giant Kangaroo Rat Requirements

- Avoid active precincts by a buffer of 50 feet. Actions within the buffer zone will be limited to vehicle and equipment operation on existing roads. Foot traffic or ATV/UTV cross country travel may be authorized if travel routes are designated by a biological monitor to avoid burrows and travel will be limited to crushing of herbaceous vegetation with negligible soil disturbance. All travel along routes will be conducted under the supervision of a biological monitor. Actions within buffer zones will be confined to daylight hours.
- If active precincts cannot be avoided, the area will be trapped no greater than seven days prior to ground-disturbing activities for five consecutive nights. On the day following the fifth trap night, burrows will be carefully excavated. Captured animals will be marked and may be released into enclosed artificial burrow systems outside the work area the following night. All work will be supervised by a USFWS-qualified biologist. At anytime during the year, the USFWS and BLM may adjust or decide to discontinue the capture and release program.

Adaptive Management

- Develop and conduct monitoring throughout the Monument to evaluate the efficacy of the management activities in maintaining and enhancing native species and natural communities.
- Use monitoring data, field observations, or other information to evaluate and, if needed, modify management practices.

Invasive and Non-Native Species

- Coordinate with managing partners and local county weed districts for the control and eradication of exotic species.
- Educate the public about the need to control invasive species.
- Determine location and extent of populations of exotic species and implement a prioritized control strategy.
- Aggressively control specific exotic species considered to be a threat to biotic communities.
- Keep a current mapping of all noxious weed infestations on the Monument.
- Commit to long-term monitoring and treatment of problematic infestations such as yellow star-thistle.
- Use an integrated pest management approach in the control of invasive species, including biological, mechanical, chemical, and other accepted control methods.
- Develop a weed control strategy designed to minimize herbicide use and the impact on non-target species.
- Provide appropriate safety equipment for herbicide applications and ensure that applicators have had proper safety training.
- Evaluate and minimize impacts to cultural resources when planning and implementing weed control measures.
- Evaluate the threats from and the value of non-native tree species and eradicate when appropriate. Consider historic, recreational, and wildlife value of trees when evaluating potential control measures.
- Encourage livestock operators, research teams, fire crews, equestrians, and other authorized users and Monument visitors to employ management practices that minimize the spread of weeds (such as cleaning equipment prior to entering the monument). Incorporate best practice requirements into stipulations for use authorizations. Promote or require the use of certified weed-free hay and feed on the Monument.
- If necessary to meet the mission and vision, consider control of exotic animal species such as red fox, wild pig, rock doves, and starlings
- If necessary to protect populations of rare native species, implement control measures to minimize negative impacts from native animal species such as coyotes, ravens, and cowbirds.
- Prohibit the release of non-native animal species other than those introduced specifically for the purpose of biological control of specific noxious weeds, or those released during legal hunts as regulated by CDFG. If individuals of non-native animal species are discovered (other than biological control agents), eradicate them before the species becomes established.
- Prohibit the placement of non-native apiaries on the Monument.

Adaptive Management

- Develop and conduct monitoring throughout the Monument to evaluate the efficacy of the management activities in maintaining and enhancing native species and natural communities.
- Use monitoring data, field observations, or other information to evaluate and, if needed, modify management practices.

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Appendix P

Minerals
Standard Operating Procedures / Best Management Practices / Implementation Guidelines and Conditions of Approval

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Minerals
Standard Operating Procedures / Best Management Practices / Implementation Guidelines and Conditions of Approval

The following are examples of standard operating procedures (SOPs), best management practices (BMPs), implementation guidelines, and conditions of approval that will be employed on all existing federal leases and private mineral developments, subject to the limits of BLM authority and the right of the owners/lessees to have reasonable access and development. This is not intended to be a comprehensive list of all measures that could or will be applied to existing and new oil and gas operations, and the wording may be modified to address site-specific circumstances.

Implementation Guidelines

- All oilfield activities that occur on land where BLM has an interest, whether mineral or surface estate, will be conducted with the least impact practicable to sensitive resources, while still permitting those activities that are legally allowed.
- Wells that are not commercially developed will be reclaimed to natural contours and revegetated as soon as appropriate; that is, restoration methods will consider timing of planting, acceptable species and evaluation criteria, and will be tailored to area-specific resource conditions and be compatible with the monument proclamation.
- Applications for Permit to Drill (APDs), Sundry Notices (leasehold activities requiring surface disturbance), and Final Abandonment Notices will be reviewed using the existing NEPA approval process, including timely posting on the web at: http://www.blm.gov/ca/forms/nepa/search.php?fo=Bakersfield.
- Timely plugging and abandonment of depleted wells will be required. This includes plugging the well bore with cement, removing all materials and equipment, and recontouring/revegetation as specified in the conditions of approval.
- Design roads, well pads, and facilities to impact and fragment the least acreage practicable. New facilities will be designed to maintain natural drainage and runoff patterns, reduce visual impacts, and reduce hazards to wildlife, especially California condors. Encourage operators to modify existing facilities when necessary to achieve the above objectives, and consider providing BLM funds to assist if requiring modifications is beyond BLM's authority on existing leases. Impacts associated with noncommercial wells will be restored as soon as appropriate using BLM restoration methods.
- Only geophysical activities that do not result in damage to the objects of the Proclamation will be authorized. Such activities will include walking out and/or the use of helicopters to deploy geophone lines. On a case by case basis, ATVs could be used to deploy geophone lines. Other activities will include limiting all source points (vibroseis and shot holes) to existing roads. On a case by case basis, drilling of shot holes using heliportable or small portable drills for underground detonation will be allowed off-road. After the data gathering phase, resource specialists will evaluate impacts and recommend remediation when appropriate.
- Good housekeeping requirements will be enforced (that is, operators will be required to maintain a neat and orderly appearance of sites, remove junk and trash, and otherwise minimize landscape intrusions).
- Sufficiently impervious secondary containment, such as containment dikes, containment walls, and drip pans, must be constructed and maintained around all qualifying petroleum facilities, including

tank batteries and separation and treating areas consistent with the Environmental Protection Agency's Spill Prevention, Control, and Countermeasure regulation (40 CFR 112).

- Chemical containers must not be stored on bare ground, exposed to the sun and moisture. Labels must be readable. Chemicals containers must be maintained in good condition and placed within secondary containment in case of a spill or high velocity puncture.
- Pipelines will be placed within existing disturbed rights-of-way, such as road shoulders, whenever feasible.
- Roads will be designed to an appropriate standard no higher than necessary to accommodate their intended functions.
- New wells and roads will be located in areas where cut and fill will be minimized to the extent practicable.
- Operators will be encouraged/required to place multiple wells on a single pad where feasible in order to minimize unnecessary disturbance.
- Operators will be required to maintain clean well locations and to remove trash, junk, and other materials not in current use.
- After extracting small amounts of mineral materials (typically dirt or sand and gravel) for emergency/administrative purposes, equipment operators will be required to blend the excavated area back in with the surrounding area. Small amounts of minerals can be collected by individuals from Soda Lake with prior permission obtained from BLM. These individuals will be restricted to use of hand tools to dig through the saline crust into the underlying black mud that contains the crystals.
- Other BMPs that may be applied to operations at the CPNM can be found on the web at: http://www.blm.gov/wo/st/en/prog/energy/oil_and_gas/best_management_practices.html

Conditions of Approval

The following describes recognized engineering practices for the routine operation of oil and gas exploration and development activities, known as conditions of approval. These standard procedures are described in the Federal Onshore Orders and further clarified in the Code of Federal Regulations (43 CFR).

Standard regulations could be supplemented with additional conditions of approval. The additional conditions of approval address sensitive issues within the Bakersfield Field Office. Critical issues underlying the federal regulations and supplemental conditions of approval are the protection of usable aquifers, mineral zones including hydrocarbons, surface environmental issues, site safety and well control, and site reclamation.

Bureau inspection and monitoring of oil field activity will occur in the following phases of oil and gas development:

a. Geophysical/seismic
b. Drilling a new well
c. Temporary abandonment of a producing well (idle well)
d. Plugging and abandonment of a well
e. Surface reclamation

No special conditions of approval are normally added for routine producing operations. The following describes the conditions of approval applicable to each of the oil and gas development phases on existing federal oil and gas leases recognized as valid existing rights within the Monument.

Drilling a New Well

After an APD has been received by the Bakersfield Field Office, a review of engineering design as well as potential effects to sensitive resources will be undertaken. During the review stage of an oil and gas project, either the operator or BLM will note special conditions on the application. When necessary, modified proposals will be developed cooperatively with the applicant to ensure that the modified project still meets the applicant's objective. Any special conditions will be attached to the APD by BLM and the applicant will be informed within seven days of receipt of the APD if there are deficiencies that need to be corrected. In addition to Bureau-wide regulations, the BLM Bakersfield Field Office has developed its own local procedures. These could include, but are not limited to:

Steam Injectors. All steam injection wells within a 300-foot radius of a new location must be shut-in a minimum of three days prior to the spudding of a new well.

Conductor Pipe. A minimum of 50 feet of conductor pipe is to be set and cemented to the surface. The conductor pipe must be equivalent to or exceed the properties of A-25 grade line pipe.

Diverter. Prior to spud, a diverter system will be installed on the conductor pipe and function tested. The test will be recorded in the drilling log. The diverter system, at a minimum, will consist of an annular type preventer (minimum working pressure 1,000 psi), two inch (2”) (minimum internal diameter—ID) kill lines, and six inch (6”) (minimum ID) diverter lines with no internal restrictions or turns. A full opening, hydraulically controlled valve will be installed in the diverter line which will automatically open when the annular preventer is closed. The accumulator system will have sufficient capacity to close the annular preventer and open the hydraulically-controlled valve.

Remote controls for the diverter system will be located on the rig floor and readily accessible to the driller. Remote controls will be capable of closing the annular preventer and opening the hydraulically controlled valve. Master controls will be located at the accumulator and will be capable of closing and opening the annular preventer and opening the hydraulically controlled valve. The diverter system will be function-tested daily and the test recorded in the drilling log.

General Casing and Cementing. A Subsequent Report (Form 3160-5) detailing the size, weight, and grade of the casing; the amount and type of cement, including additives; and a copy of the service company's materials ticket and job log will be submitted to BLM within five (5) business days following the cementing of the casing string. Each casing string (except conductor pipe) shall be pressure tested, prior to drilling out the casing shoe, to 0.22 psi/ft of casing string length or 1,000 psi, whichever is greater, but not to exceed 70% of the internal yield pressure of the casing. The casing pressure test will be recorded in the drilling log. The wait-on-cement time for each casing string must be adequate to achieve a minimum of 500 psi compressive strength at the casing shoe prior to drilling out.

Drilling Fluids. Sufficient quantities of drilling fluid (mud and water) must be maintained at the well site, at all times, for the purpose of controlling steam kicks.

Temporary Abandonment of a Producing Well (Idle Well)

Oil and gas exploration and development is a cyclical business, with periods of high and low levels of activities. On occasion, an operator may decide to temporarily shut-in producing wells and wait for

conditions to improve. The highly viscous nature of most Kern County crude oil, typical low well head pressures, and the relatively low corrosive properties of the fluids (low-sulfur crude) make the known dangers of shutting in a well for long periods and then bringing it back on-line less of a mechanical problem here in the Field Office Area than in other producing regions of the country. By approximately 1990, a large number of wells were remaining idle for longer and longer periods. Monitoring and correction of the problem has been successfully undertaken by the California Division of Oil, Gas, and Geothermal Resources and the local BLM Field Office. The following additional conditions *may* be required prior to the temporary abandonment of a producing oil/gas well, service well, or an injection well.

Zone Isolation. The requirement to isolate the producing interval (General Requirement #4) is waived. This waiver is based on the information submitted with the application and the geologic data in Volume II - California Oil and Gas Fields, (field name) which indicates the absence of usable water aquifers above the producing horizon in (section in which well is located).

Mechanical Integrity of Casing. The mechanical integrity of the casing may be determined using the ADA pressure test method.

Fluid Surveys. A fluid level survey will be performed at six (6) month intervals during the period the well is temporarily abandoned. A copy of the survey shall be submitted to BLM within five (5) business days of the survey.

Monitoring of Wellhead Pressures and Temperatures. Wellhead pressure and temperature will be continuously monitored throughout the period the well is temporarily abandoned. Any pressure / temperature change will be promptly reported to BLM.

Isolation of the Producing Interval. The producing interval will be isolated by setting a plug in the casing within 100 feet above the producing interval if a rising fluid level, an increasing wellhead pressure, or an increasing wellhead temperature is detected. The plug could be either a retrievable or drillable-type bridge plug or a cement plug of at least 100 feet in length.

Plugging and Abandonment of a Well

No additional conditions are typically attached to the abandonment of a well in California. Onshore Orders describe the plugging procedure. While final abandonment will normally be witnessed by BLM, no final above-ground site marker is currently required by the Bakersfield Field Office.

Surface Reclamation

Conditions for the recovery of an oil well site are unique to each area's ecosystem and habitat. The following examples of conditions of approval have been developed for use within the Bakersfield Field Office Area. The applicability of any or all of these conditions of approval will be determined based on site-specific conditions.

General. The operator (or holder) shall prepare a seedbed by: (a) scarifying the disturbed area, (b) distributing topsoil uniformly, or (c) disking the topsoil, as directed by the BLM authorized officer (use one as appropriate).

The operator will recontour the disturbed area and obliterate all earthwork by removing embankments, backfilling excavations, and grading to re-establish the approximate original contours of the land in the area of operation.

The operator will uniformly spread topsoil over all unoccupied disturbed area (outside the ditch line, fence line, and work area). Spreading will not be done when the ground or topsoil is frozen or wet.

The operator will seed all disturbed area, using an agreed-upon method suitable for the location using locally collected seed. Seeding shall be repeated if a satisfactory stand is not obtained as determined by the BLM authorized officer upon evaluation after the first growing season.

The operator will arrange to have a biologist available to assist the construction workers in the identification and avoidance of endangered species.

Producing Wells. Site reclamation for producing wells will be accomplished for portions of the site not required for continued operation of the well. The following measures are typical reclamation requirements:

- Reclamation of drilling fluid pit (mud pit)
- Cut and fill slope vegetation
- Site fencing
- Berm removal and site grading
- Polluting substances, contaminated materials moved offsite or buried

Nonproducing Wells. Rehabilitation on the entire site will be required and will commence as soon as practical, dependent upon prevailing weather conditions. Cut and fill slopes will be reduced and graded to blend to the adjacent terrain.

Drilling fluids held within pits may be allowed to dry. Fluids that will not dry must be removed. All polluting substances or contaminated materials such as oil, oil-saturated soils, and gravels must be removed to an approved site.

Drainages must be reestablished and temporary measures will be required to prevent erosion to the site until vegetation is established.

After final grading and before replacement of topsoil, the entire surface of the site will be scarified to eliminate slippage surfaces and to promote root penetration. Topsoil will then be spread over the site to achieve an approximate uniform, stable thickness consistent with the established contours.

Permanent Well Abandonment. The surface management agency is responsible for establishing and approving methods for surface rehabilitation and determining when this rehabilitation has been satisfactorily accomplished. At this point, a Subsequent (Final) Report of Abandonment will be approved.

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Appendix Q

Grazing Implementation Table Alternative 1

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Grazing Implementation Table – Alternative 1

Type of Authorization	Allotment Number	Allotment Name	Pasture Name	BLM Acres in CPNM[1]	BLM Acres outside CPNM[2]	Kind of Livestock	Season of Use	% PL [2]	AUMs in CPNM[3]	AUMs outside CPNM
Section 15	15	North Temblor	American	141	3,473	Cattle	AFA (rest 3)	68	31	707
			Anderson	141	4,320	Cattle	AFA	68	31	1,041
			Big Mendiburu	0	200	Cattle	AFA	18	0	44
			Crocker Canyon	606	890	Cattle	AFA	43	135	306
			East Beef	0	6	Cattle	AFA	2	0	2
			Grain	0	93	Cattle	AFA	21	0	21
			Holding Field	0	20	Cattle	AFA	50	0	4
			Homestead	0	40	Cattle	AFA	7	0	9
			Lower Telephone	0	1,232	Cattle	12/1-5/31	29	0	274
			Mitchell Field	0	317	Cattle	AFA	23	0	70
			Panorama	(320)	0	Cattle	EOU	13	(71)	0
			Rattlesnake	0	114	Cattle	AFA	19	0	25
			Recruit Grade	(2,117)	0	Cattle	12/1-5/31	55	(432)	0
			Santa Fe	504	4,322	Cattle	AFA (rest 4)	72	112	928
			Schoolhouse	0	39	Cattle	AFA	8	0	12
			Seventeen Canyon	847	5,421	Cattle	AFA (rest 2)	84	188	1,273
			Shell Field	0	54	Cattle	AFA	17	0	12
			South Anderson	(776)	0	Cattle	AFA, EOU	36	(164)	0
			South Beef	0	0	Cattle	AFA	0	0	0
			South Field	742	5,421	Cattle	AFA (rest 1)	90	165	1,120
			Sylvia	582	507	Cattle	AFA	48	129	26
			Tank Field	(80)	0	Cattle	EOU	12	(18)	0
			Upper Telephone	0	590	Cattle	AFA	23	0	131
			Victoria	(1,650)	0	Cattle	12/1-5/31	85	(364)	0
			West Beef	0	356	Cattle	AFA	35	0	91
	Total North Temblor, #15			3,563	27,415	-	-	-	791	6,096
	3655	Wood Canyon	All pastures	95	109	Cattle	12/1-5/31	100	2	3
	22	McKittrick Summit	All pastures	(160)	0	Cattle	12/1-5/31	100	(40)	0
	31	Sulphur Canyon	All pastures	(16,970)	0	Cattle	12/1- 5/31	93	(2,295)	0
	39	Chimineas Ranch South	All pastures	(2,391)	2,591	Cattle	undetermined	100	(350)	380
	44	Selby Ranch	North Selby	(6,332)	0	Cattle	12/1-3/31	100	(398)	0
			South Selby	(20,228)	0	Cattle	12/1-5/31	100	(2,782)	0
	Total Selby Ranch, #44			(26,560)	0	Cattle	-	-	(3,182)	0
	96	Maricopa	Bitterwater	335	1,577	Cattle/Sheep	12/1-5/31	63	57	262
			City	0	682	Cattle	AFA	53	0	114

Type of Authorization	Allotment Number	Allotment Name	Pasture Name	BLM Acres in CPNM[(1)]	BLM Acres outside CPNM[(2)]	Kind of Livestock	Season of Use	% PL [(2)]	AUMs in CPNM[(3)]	AUMs outside CPNM
			-	-	-	Sheep	12/1-5/31	-	-	-
			Kitty Litter	72	1,595	Cattle	AFA	100	11	267
			-	-	-	Sheep	12/1-5/31	-	-	-
			Rixie	0	140	Cattle	AFA	14	0	23
			Upper	(251)	0	Cattle	12/1-5/31	17	(42)	0
			Wagy	523	455	Cattle	AFA	32	86	77
	Total Maricopa, #96			929	4,799	-	-	-	146	751
Total Section 15	**4 Allotments**		**-**	**4,587**	**34,914**	**-**	**-**	**-**	**939**	**7,227**
Vegetation Management	18	Washburn Ranch	Airstrip	(679)	0	Cattle	As prescribed	100	(385)	0
			Back Canyon	(1,123)	0	Cattle	As prescribed	100	(540)	0
			East Painted Rock	(880)	0	Cattle	As prescribed	100	(400)	0
			Horse	(121)	0	Cattle/Horse	As prescribed	100	(105)	0
			Silver Gate	(1,518)	0	Cattle	As prescribed	100	(580)	0
			Sulphur Spring	(939)	0	Cattle	As prescribed	100	(515)	0
			Tripod	(908)	0	Cattle	As prescribed	100	(395)	0
			Washburn Compound	(35)	0	-				
			West Painted Rock	(825)	0	Cattle	As prescribed	100	(430)	0
	Total Washburn, #18			(6,804)	0	-	-	100	(3,350)	0
	26	Painted Rock	Coyote	(2,218)	0	Cattle	As prescribed	100	(1,065)	0
			Ranch	(3,027)	0	Cattle	As prescribed	100	(1,430)	0
			Selby	(2,267)	0	Cattle	As prescribed	100	(1,165)	0
	Total Painted Rock, #26			(7,570)	0	-	-	-	(3,660)	
	29	KCL	Centerwell	(4,865)	0	Cattle	As prescribed	100	(2,442)	0
			Dead Brush	(2,222)	0	Cattle	As prescribed	100	(1,020)	0
			East Cousins	(2,336)	0	Cattle	As prescribed	100	(1,200)	0
			House	(1,788)	0	Cattle	As prescribed	100	(875)	0
			Kinney-Hahl	(1,680)	0	Cattle	As prescribed	100	(858)	0
			Old Adobe	(395)	0	Cattle	As prescribed	100	(270)	0
			Old Corral East	(1,100)	0	-	Unavailable	100	(550)	0
			Old Corral North	(1,349)	0	Cattle	As prescribed	100	(735)	0
			Sand Canyon	(3,499)	0	Cattle	As prescribed	100	(1,890)	0
			Shipping	(658)	0	Cattle/Horse	As prescribed	100	(320)	0
			South Cousins	(1,120)	0	Cattle	As prescribed	100	(560)	0
			West Panorama	(1,200)	0	Cattle	As prescribed	100	(560)	0
			West Well	(4,671)	0	Cattle	As prescribed	100	(2,340)	0
	Total KCL, #29			(25,783)	0	-	-	-	(13,070)	0

Type of Authorization	Allotment Number	Allotment Name	Pasture Name	BLM Acres in CPNM[(1)]	BLM Acres outside CPNM[(2)]	Kind of Livestock	Season of Use	% PL [(2)]	AUMs in CPNM[(3)]	AUMs outside CPNM
	43	Goodwin Ranch	California Valley	(1,095)	0	Cattle	As prescribed	100	(162)	0
			Dillard	(296)	0	Cattle	As prescribed	100	(525)	0
			Elk Canyon	(1,129)	0	Cattle	As prescribed	100	(600)	0
			Horse	(57)	0	Horse	As prescribed	100	(28)	0
			North Goodwin	(1,403)	0	Cattle	As prescribed	100	(815)	0
			South Goodwin	(1,245)	0	Cattle	As prescribed	100	(340)	0
	Total Goodwin Ranch, #43			(5,800)	0	-	-	-	(2,470)	0
	46	Saucito Ranch	Brumley	(1,369)	0	Cattle	As prescribed	100	(740)	0
			Hill	(1,306)	0	Cattle	As prescribed	100	(660)	0
			Sheep Camp	(1,092)	0	Cattle	As prescribed	100	(550)	0
	Total Saucito Ranch, #46			(3,757)	0	Cattle	-	-	(1,950)	0
	53	Temblor-Caliente	Big Tank	(320)	0	Cattle	As prescribed	100	(160)	0
			Calf Shed	(1,808)	0	Cattle	As prescribed	100	(1,180)	0
			Cochora Horse	(329)	0	Cattle/Horse	As prescribed	100	(170)	0
			East Cochora	(12,773)	0	Cattle	As prescribed	100	(6,905)	0
			Hanline	(160)	0	Cattle	As prescribed	100	(80)	0
			Hostetter	(973)	0	Cattle	As prescribed	100	(540)	0
			Jobe Back	(418)	0	Cattle	As prescribed	100	(200)	0
			MU Horse	(99)	0	Cattle/Horse	As prescribed	100	(70)	0
			MU House	(289)	0	Cattle	As prescribed	100	(140)	0
			Padrone	(5,464)	0	Cattle	As prescribed	100	(3,460)	0
			Quail Spring	(10,804)	0	Cattle	As prescribed	100	(5,590)	0
			Red Tank	(7,054)	0	Cattle	As prescribed	100	(3,220)	0
			Schoolhouse	(2,063)	0	Cattle	As prescribed	100	(1,040)	0
			Van Matre	(1,940)	0	-	Unavailable	100	(970)	0
			West Cochora	(11,690)	0	Cattle	As prescribed	100	(5,620)	0
	Total Temblor-Caliente, #53			(54,244)	0	-	-	-	(28,375)	0
	70	Carrizo Ranch	Abbott Canyon	(3,306)	0	Cattle	As prescribed	100	(1,070)	0
			Bernard	(160)	0	Cattle	EOU	33	EOU	0
			Goat Spring	(643)	0	Cattle	As prescribed	100	(480)	0
			Gun Club	(1,073)	0	Cattle	As prescribed	53	(1,020)	0
			Holding	(330)	0	Cattle	As prescribed	100	(180)	0
	Total Carrizo Ranch, #70			(5,477)	0	-	-	-	(2,750)	0
	92	Phelan	Phelan	(4,755)	0	Sheep	As prescribed	100	(4,200)	0
	?????	Fault	Fault	(3,277)	0	-	Unavailable	100	(1,639)	0
Total Vegetation Management	**0 Allotments**		-	**0**	**0**	-	-	-	**0**	**0**

Type of Authorization	Allotment Number	Allotment Name	Pasture Name	BLM Acres in CPNM[(1)]	BLM Acres outside CPNM[(2)]	Kind of Livestock	Season of Use	% PL [(2)]	AUMs in CPNM[(3)]	AUMs outside CPNM
Grand Totals	**4 allotments**			**4,587**					**939**	

Table definitions:

(1) Acreage figures for allotment 15 from 2008 legal descriptions.

(2) Acreage figures and %PL forage accepted from allotment 15 carrying capacity calculations table.

(3) Total AUM figures accepted from allotment 15 carrying capacity calculations table, CPNM portions derived from (1).

AFA: As Forage Available, an unspecified season of use.
AUM: Animal Unit Month, the forage it takes to maintain an animal unit (example: cow and calf) for one month.
EOU: Exchange of Use, an agreement that allows BLM land to be used by livestock in exchange for BLM controlling livestock use of private land elsewhere.
%PL: Percent of the forage coming from public lands in each pasture.
Rest 1: Pasture is part of a rest rotation pasture system where each pasture is rested for 12 months before being grazed again.

Shading shows values for pastures within allotments that will be designated "unavailable for livestock grazing" under this alternative. There may be other lands "unavailable for livestock grazing" outside of these allotments. See grazing map for each alternative.

Appendix R

Grazing Implementation Table
Alternative 2
Proposed Plan

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Grazing Implementation Table (Alternative 2, Proposed Plan)

Type of Authorization	Allotment Number	Allotment Name	Pasture Name	BLM Acres in CPNM[1]	BLM Acres outside CPNM[2]	Kind of Livestock	Season of Use	% PL [2]	AUMs in CPNM [3]	AUMs outside CPNM
Section 15	15	North Temblor	American	141	3,473	Cattle	AFA (rest 3)	68	31	707
			Anderson	141	4,320	Cattle	AFA	68	31	1,041
			Beef	0	356	Cattle	AFA	35	0	91
			Big Mendiburu	0	200	Cattle	AFA	18	0	44
			Crocker Canyon	606	890	Cattle	AFA	43	135	306
			Crocker Holding	0	6	Cattle	AFA	2	0	2
			Homestead	0	40	Cattle	AFA	7	0	9
			House	0	20	Cattle	AFA	50	0	4
			Lower Telephone	0	1,232	Cattle	12/1-5/31	29	0	274
			Mitchell Field	0	317	Cattle	AFA	23	0	70
			Panorama	80	0	Cattle	EOU	12	18	0
			Rattlesnake	0	114	Cattle	AFA	19	0	25
			Recruit Grade	2,117	0	Cattle	12/1-5/31	55	432	0
			Santa Fe	504	4,322	Cattle	AFA (rest 4)	72	112	928
			Schoolhouse	0	39	Cattle	AFA	8	0	12
			Seventeen Canyon	847	5,421	Cattle	AFA (rest 2)	84	188	1,273
			Shell Field	0	54	Cattle	AFA	17	0	12
			South Anderson	776	0	Cattle	AFA, EOU	36	164	0
			South Beef	0	0	Cattle	AFA	0	0	0
			South Field	742	5,421	Cattle	AFA (rest 1)	90	165	1,120
			Sylvia	582	507	Cattle	AFA	48	129	26
			Tank	0	93	Cattle	AFA	21	0	21
			Upper Telephone	0	590	Cattle	AFA	23	0	131
			Van Matre	320	0	Cattle	EOU	13	71	0
			Victoria	1,650	0	Cattle	12/1-5/31	85	364	0
	Total North Temblor, #15			8,506	27,415	-	-	-	1,840	6,096
	3655	Wood Canyon	All pastures	95	109	Cattle	12/1-5/31	100	2	3
	22	McKittrick Summit	All pastures	160	0	Cattle	12/1-5/31	100	40	0
	31	Sulphur Canyon	All pastures	16,970	0	Cattle	12/1- 5/31	93	2,295	0
	39	Chimineas Ranch South	All pastures	2,391	2,591	Cattle	undetermined	100	350	380
	44	Selby Ranch	North Selby	6,332	0	Cattle	12/1-3/31	100	398	0
			South Selby	20,228	0	Cattle	12/1-5/31	100	2,782	0
	Total Selby Ranch, #44			26,560	0	Cattle	-	-	3,182	0
	96	Maricopa	Bitterwater	335	1,577	Cattle/Sheep	12/1-5/31	63	57	262
			City	0	682	Cattle	AFA	53	0	114
			-	-	-	Sheep	12/1-5/31	-	-	-

Type of Authorization	Allotment Number	Allotment Name	Pasture Name	BLM Acres in CPNM[1]	BLM Acres outside CPNM[2]	Kind of Livestock	Season of Use	% PL [2]	AUMs in CPNM [3]	AUMs outside CPNM
			Kitty Litter	72	1,595	Cattle	AFA	100	11	267
			-	-	-	Sheep	12/1-5/31	-	-	-
			Rixie	0	140	Cattle	AFA	14	0	23
			Upper	251	0	Cattle	12/1-5/31	17	42	0
			Wagy	523	455	Cattle	AFA	32	86	77
	Total Maricopa, #96			1,180	4,799	-	-	-	188	751
Total Section 15	**7 Allotments**		**-**	**55,862**	**34,914**	-	-	-	**7,897**	**7,227**
Vegetation Management	18	Washburn Ranch	Airstrip	679	0	Unrestricted	As prescribed	100	385	0
			Back Canyon	1,123	0	Unrestricted	As prescribed	100	540	0
			East Painted Rock	880	0	Unrestricted	As prescribed	100	400	0
			Horse	121	0	Unrestricted	As prescribed	100	105	0
			Silver Gate	1,518	0	Unrestricted	As prescribed	100	580	0
			Sulphur Spring	939	0	Unrestricted	As prescribed	100	515	0
			Tripod	908	0	Unrestricted	As prescribed	100	395	0
			Washburn Compound	35	0	-				
			West Painted Rock	825	0	Unrestricted	As prescribed	100	430	0
	Total Washburn, #18			6,804	0	-	-	100	3,350	0
	26	Painted Rock	Coyote	2,218	0	Unrestricted	As prescribed	100	1,065	0
			Ranch	3,027	0	Unrestricted	As prescribed	100	1,430	0
			Selby	2,267	0	Unrestricted	As prescribed	100	1,165	0
	Total Painted Rock, #26			7,570	0	-	-	-	3,660	
	29	KCL	Centerwell	4,865	0	Unrestricted	As prescribed	100	2,442	0
			Dead Brush	2,222	0	Unrestricted	As prescribed	100	1,020	0
			East Cousins	2,336	0	Unrestricted	As prescribed	100	1,200	0
			House	1,788	0	Unrestricted	As prescribed	100	875	0
			Kinney-Hahl	1,680	0	Unrestricted	As prescribed	100	858	0
			Old Adobe	395	0	Unrestricted	As prescribed	100	270	0
			Old Corral East	1,100	0	Unrestricted	As prescribed	100	550	0
			Old Corral North	1,349	0	Unrestricted	As prescribed	100	735	0
			Sand Canyon	3,499	0	Unrestricted	As prescribed	100	1,890	0
			Shipping	658	0	Unrestricted	As prescribed	100	320	0
			South Cousins	1,120	0	Unrestricted	As prescribed	100	560	0
			West Panorama	1,200	0	Unrestricted	As prescribed	100	560	0
			West Well	4,671	0	Unrestricted	As prescribed	100	2,340	0
	Total KCL, #29			25,783	0	-	-	-	13,070	0
	43	Goodwin Ranch	California Valley	1,095	0	Unrestricted	As prescribed	100	162	0
			Dillard	296	0	Unrestricted	As prescribed	100	525	0

Type of Authorization	Allotment Number	Allotment Name	Pasture Name	BLM Acres in CPNM[1]	BLM Acres outside CPNM[2]	Kind of Livestock	Season of Use	% PL [2]	AUMs in CPNM [3]	AUMs outside CPNM
			Elk Canyon	1,129	0	Unrestricted	As prescribed	100	600	0
			Horse	57	0	Unrestricted	As prescribed	100	28	0
			North Goodwin	1,403	0	Unrestricted	As prescribed	100	815	0
			South Goodwin	1,245	0	Unrestricted	As prescribed	100	340	0
	Total Goodwin Ranch, #43			5,800	0	-	-	-	2,470	0
	46	Saucito Ranch	Brumley	1,369	0	Unrestricted	As prescribed	100	740	0
			Hill	1,306	0	Unrestricted	As prescribed	100	660	0
			Sheep Camp	1,092	0	Unrestricted	As prescribed	100	550	0
	Total Saucito Ranch, #46			3,757	0	-	-	-	1,950	0
	53	Temblor-Caliente	Big Tank	320	0	Unrestricted	As prescribed	100	160	0
			Calf Shed	1,808	0	Unrestricted	As prescribed	100	1,180	0
			Cochora Horse	329	0	Unrestricted	As prescribed	100	170	0
			East Cochora	12,773	0	Unrestricted	As prescribed	100	6,905	0
			Hanline	160	0	Unrestricted	As prescribed	100	80	0
			Hostetter	973	0	Unrestricted	As prescribed	100	540	0
			Jobe Back	418	0	Unrestricted	As prescribed	100	200	0
			MU Horse	99	0	Unrestricted	As prescribed	100	70	0
			MU House	289	0	Unrestricted	As prescribed	100	140	0
			Padrone	5,464	0	Unrestricted	As prescribed	100	3,460	0
			Quail Spring	10,804	0	Unrestricted	As prescribed	100	5,590	0
			Red Tank	7,054	0	Unrestricted	As prescribed	100	3,220	0
			Schoolhouse	2,063	0	Unrestricted	As prescribed	100	1,040	0
			Van Matre	1,940	0	Unrestricted	As prescribed	100	970	0
			West Cochora	11,690	0	Unrestricted	As prescribed	100	5,620	0
	Total Temblor-Caliente, #53			54,244	0	-	-	-	28,375	0
	70	Carrizo Ranch	Abbott Canyon	3,306	0	Unrestricted	As prescribed	100	1,070	0
			Bernard	160	0	Unrestricted	EOU	33	EOU	0
			Goat Spring	643	0	Unrestricted	As prescribed	100	480	0
			Gun Club	1,073	0	Unrestricted	As prescribed	53	1,020	0
			Holding	330	0	Unrestricted	As prescribed	100	180	0
	Total Carrizo Ranch, #70			5,477	0	-	-	-	2,750	0
	92	Phelan	Phelan	4,755	0	Unrestricted	As prescribed	100	4,200	0
	?????	Fault	Fault	3,277	0	Unrestricted	As prescribed	100	1,639	0
Total Vegetation Management	**9 Allotments**		**-**	**117,467**	**0**	**-**	**-**	**-**	**61,464**	**0**
Grand Totals	**16 allotments**			**173,329**					**69,361**	

Table definitions:
(1) Acreage figures for allotment 15 from 2008 legal descriptions.
(2) Acreage figures and %PL forage accepted from allotment 15 carrying capacity calculations table.
(3) Total AUM figures accepted from allotment 15 carrying capacity calculations table, CPNM portions derived from (1).

AFA: As Forage Available, an unspecified season of use.
AUM: Animal Unit Month, the forage it takes to maintain an animal unit (example: cow and calf) for one month.
EOU: Exchange of Use, an agreement that allows BLM land to be used by livestock in exchange for BLM controlling livestock use of private land elsewhere.
%PL: Percent of the forage coming from public lands in each pasture.
Rest 1: Pasture is part of a rest rotation pasture system where each pasture is rested for 12 months before being grazed again.

Shading shows values for pastures within allotments that will be designated “unavailable for livestock grazing” under this alternative. There may be other lands “unavailable for livestock grazing” outside of these allotments. See grazing map for each alternative.

Appendix S

Grazing Implementation Table Alternative 3

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Grazing Implementation Table – Alternative 3

Type of Authorization	Allotment Number	Allotment Name	Pasture Name	BLM Acres in CPNM[1]	BLM Acres outside CPNM[2]	Kind of Livestock	Season of Use	% PL [2]	AUMs in CPNM [3]	AUMs outside CPNM
Section 15	15	North Temblor	American	141	3,473	Cattle	AFA (rest 3)	68	31	707
			Anderson	141	4,320	Cattle	AFA	68	31	1,041
			Big Mendiburu	0	200	Cattle	AFA	18	0	44
			Crocker Canyon	606	890	Cattle	AFA	43	135	306
			East Beef	0	6	Cattle	AFA	2	0	2
			Grain	0	93	Cattle	AFA	21	0	21
			Holding Field	0	20	Cattle	AFA	50	0	4
			Homestead	0	40	Cattle	AFA	7	0	9
			Lower Telephone	0	1,232	Cattle	12/1-5/31	29	0	274
			Mitchell Field	0	317	Cattle	AFA	23	0	70
			Panorama	320	0	Cattle	EOU	13	71	0
			Rattlesnake	0	114	Cattle	AFA	19	0	25
			Recruit Grade	2,117	0	Cattle	12/1-5/31	55	432	0
			Santa Fe	504	4,322	Cattle	AFA (rest 4)	72	112	928
			Schoolhouse	0	39	Cattle	AFA	8	0	12
			Seventeen Canyon	847	5,421	Cattle	AFA (rest 2)	84	188	1,273
			Shell Field	0	54	Cattle	AFA	17	0	12
			South Anderson	776	0	Cattle	AFA, EOU	36	164	0
			South Beef	0	0	Cattle	AFA	0	0	0
			South Field	742	5,421	Cattle	AFA (rest 1)	90	165	1,120
			Sylvia	582	507	Cattle	AFA	48	129	26
			Tank Field	80	0	Cattle	EOU	12	18	0
			Upper Telephone	0	590	Cattle	AFA	23	0	131
			Victoria	1,650	0	Cattle	12/1-5/31	85	364	0
			West Beef	0	356	Cattle	AFA	35	0	91
	Total North Temblor, #15			8,506	27,415	-	-	-	1,840	6,096
	3655	Wood Canyon	All pastures	95	109	Cattle	12/1-5/31	100	2	3
	22	McKittrick Summit	All pastures	160	0	Cattle	12/1-5/31	100	40	0
	31	Sulphur Canyon	All pastures	16,970	0	Cattle	12/1- 5/31	93	2,295	0
	39	Chimineas Ranch South	All pastures	2,391	2,591	Cattle	undetermined	100	350	380
	44	Selby Ranch	North Selby	6,332	0	Cattle	12/1-3/31	100	398	0
			South Selby	20,228	0	Cattle	12/1-5/31	100	2,782	0
	Total Selby Ranch, #44			26,560	0	Cattle	-	-	3,182	0
	96	Maricopa	Bitterwater	335	1,577	Cattle/Sheep	12/1-5/31	63	57	262
			City	0	682	Cattle	AFA	53	0	114
			-	-	-	Sheep	12/1-5/31	-	-	-

Type of Authorization	Allotment Number	Allotment Name	Pasture Name	BLM Acres in CPNM[1]	BLM Acres outside CPNM[2]	Kind of Livestock	Season of Use	% PL [2]	AUMs in CPNM [3]	AUMs outside CPNM
			Kitty Litter	72	1,595	Cattle	AFA	100	11	267
			-	-	-	Sheep	12/1-5/31	-	-	-
			Rixie	0	140	Cattle	AFA	14	0	23
			Upper	251	0	Cattle	12/1-5/31	17	42	0
			Wagy	523	455	Cattle	AFA	32	86	77
	Total Maricopa, #96			1,180	4,799	-	-	-	188	751
Total Section 15	**7 Allotments**		**-**	**55,862**	**34,914**	**-**	**-**	**-**	**7,897**	**7,227**
Vegetation Management	18	Washburn Ranch	Airstrip	679	0	Unrestricted	As prescribed	100	385	0
			Back Canyon	1,123	0	Unrestricted	As prescribed	100	540	0
			East Painted Rock	880	0	Unrestricted	As prescribed	100	400	0
			Horse	121	0	Unrestricted	As prescribed	100	105	0
			Silver Gate	1,518	0	Unrestricted	As prescribed	100	580	0
			Sulphur Spring	939	0	Unrestricted	As prescribed	100	515	0
			Tripod	908	0	Unrestricted	As prescribed	100	395	0
			Washburn Compound	35	0	-				
			West Painted Rock	825	0	Unrestricted	As prescribed	100	430	0
	Total Washburn, #18			6,804	0	-	-	100	3,350	0
	26	Painted Rock	Coyote	2,218	0	Unrestricted	As prescribed	100	1,065	0
			Ranch	3,027	0	Unrestricted	As prescribed	100	1,430	0
			Selby	2,267	0	Unrestricted	As prescribed	100	1,165	0
	Total Painted Rock, #26			7,570	0	-	-	-	3,660	
	29	KCL	Centerwell	4,865	0	Unrestricted	As prescribed	100	2,442	0
			Dead Brush	2,222	0	Unrestricted	As prescribed	100	1,020	0
			East Cousins	2,336	0	Unrestricted	As prescribed	100	1,200	0
			House	1,788	0	Unrestricted	As prescribed	100	875	0
			Kinney-Hahl	1,680	0	Unrestricted	As prescribed	100	858	0
			Old Adobe	395	0	Unrestricted	As prescribed	100	270	0
			Old Corral East	1,100	0	Unrestricted	As prescribed	100	550	0
			Old Corral North	1,349	0	Unrestricted	As prescribed	100	735	0
			Sand Canyon	3,499	0	Unrestricted	As prescribed	100	1,890	0
			Shipping	658	0	Unrestricted	As prescribed	100	320	0
			South Cousins	1,120	0	Unrestricted	As prescribed	100	560	0
			West Panorama	1,200	0	Unrestricted	As prescribed	100	560	0
			West Well	4,671	0	Unrestricted	As prescribed	100	2,340	0
	Total KCL, #29			25,783	0	-	-	-	13,070	0
	43	Goodwin Ranch	California Valley	1,095	0	Unrestricted	As prescribed	100	162	0
			Dillard	296	0	Unrestricted	As prescribed	100	525	0

Type of Authorization	Allotment Number	Allotment Name	Pasture Name	BLM Acres in CPNM[(1)]	BLM Acres outside CPNM[(2)]	Kind of Livestock	Season of Use	% PL [(2)]	AUMs in CPNM [(3)]	AUMs outside CPNM
			Elk Canyon	1,129	0	Unrestricted	As prescribed	100	600	0
			Horse	57	0	Unrestricted	As prescribed	100	28	0
			North Goodwin	1,403	0	Unrestricted	As prescribed	100	815	0
			South Goodwin	1,245	0	Unrestricted	As prescribed	100	340	0
	Total Goodwin Ranch, #43			5,800	0	-	-	-	2,470	0
	46	Saucito Ranch	Brumley	1,369	0	Unrestricted	As prescribed	100	740	0
			Hill	1,306	0	Unrestricted	As prescribed	100	660	0
			Sheep Camp	1,092	0	Unrestricted	As prescribed	100	550	0
	Total Saucito Ranch, #46			3,757	0	-	-	-	1,950	0
	53	Temblor-Caliente	Big Tank	320	0	Unrestricted	As prescribed	100	160	0
			Calf Shed	1,808	0	Unrestricted	As prescribed	100	1,180	0
			Cochora Horse	329	0	Unrestricted	As prescribed	100	170	0
			East Cochora	12,773	0	Unrestricted	As prescribed	100	6,905	0
			Hanline	160	0	Unrestricted	As prescribed	100	80	0
			Hostetter	973	0	Unrestricted	As prescribed	100	540	0
			Jobe Back	418	0	Unrestricted	As prescribed	100	200	0
			MU Horse	99	0	Unrestricted	As prescribed	100	70	0
			MU House	289	0	Unrestricted	As prescribed	100	140	0
			Padrone	5,464	0	Unrestricted	As prescribed	100	3,460	0
			Quail Spring	10,804	0	Unrestricted	As prescribed	100	5,590	0
			Red Tank	7,054	0	Unrestricted	As prescribed	100	3,220	0
			Schoolhouse	2,063	0	Unrestricted	As prescribed	100	1,040	0
			Van Matre	1,940	0	Unrestricted	As prescribed	100	970	0
			West Cochora	11,690	0	Unrestricted	As prescribed	100	5,620	0
	Total Temblor-Caliente, #53			54,244	0	-	-	-	28,375	0
	70	Carrizo Ranch	Abbott Canyon	3,306	0	Unrestricted	As prescribed	100	1,070	0
			Bernard	160	0	Unrestricted	EOU	33	EOU	0
			Goat Spring	643	0	Unrestricted	As prescribed	100	480	0
			Gun Club	1,073	0	Unrestricted	As prescribed	53	1,020	0
			Holding	330	0	Unrestricted	As prescribed	100	180	0
	Total Carrizo Ranch, #70			5,477	0	-	-	-	2,750	0
	92	Phelan	Phelan	4,755	0	Unrestricted	As prescribed	100	4,200	0
	?????	Fault	Fault	3,277	0	Unrestricted	As prescribed	100	1,639	0
Total Vegetation Management	**9 Allotments**		-	**117,467**	**0**	-	-	-	**61,464**	**0**
Grand Totals	**16 allotments**			**173,329**					**69,361**	

Table definitions:
(1) Acreage figures for allotment 15 from 2008 legal descriptions.
(2) Acreage figures and %PL forage accepted from allotment 15 carrying capacity calculations table.
(3) Total AUM figures accepted from allotment 15 carrying capacity calculations table, CPNM portions derived from (1).

AFA: As Forage Available, an unspecified season of use.
AUM: Animal Unit Month, the forage it takes to maintain an animal unit (example: cow and calf) for one month.
EOU: Exchange of Use, an agreement that allows BLM land to be used by livestock in exchange for BLM controlling livestock use of private land elsewhere.
%PL: Percent of the forage coming from public lands in each pasture.
Rest 1: Pasture is part of a rest rotation pasture system where each pasture is rested for 12 months before being grazed again.

Shading shows values for pastures within allotments that will be designated "unavailable for livestock grazing" under this alternative. There may be other lands "unavailable for livestock grazing" outside of these allotments. See grazing map for each alternative.

Appendix T

Grazing Implementation Table
No Action Alternative

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Grazing Implementation Table – No Action

Type of Authorization	Allotment Number	Allotment Name	Pasture Name	BLM Acres in CPNM[1]	BLM Acres outside CPNM[2]	Kind of Livestock	Season of Use	% PL [2]	AUMs in CPNM [3]	AUMs outside CPNM
Section 15	15	North Temblor	American	141	3,473	Cattle	AFA (rest 3)	68	31	707
			Anderson	141	4,320	Cattle	AFA	68	31	1,041
			Big Mendiburu	0	200	Cattle	AFA	18	0	44
			Crocker Canyon	606	890	Cattle	AFA	43	135	306
			East Beef	0	6	Cattle	AFA	2	0	2
			Grain	0	93	Cattle	AFA	21	0	21
			Holding Field	0	20	Cattle	AFA	50	0	4
			Homestead	0	40	Cattle	AFA	7	0	9
			Lower Telephone	0	1,232	Cattle	12/1-5/31	29	0	274
			Mitchell Field	0	317	Cattle	AFA	23	0	70
			Panorama	320	0	Cattle	EOU	13	71	0
			Rattlesnake	0	114	Cattle	AFA	19	0	25
			Recruit Grade	2,117	0	Cattle	12/1-5/31	55	432	0
			Santa Fe	504	4,322	Cattle	AFA (rest 4)	72	112	928
			Schoolhouse	0	39	Cattle	AFA	8	0	12
			Seventeen Canyon	847	5,421	Cattle	AFA (rest 2)	84	188	1,273
			Shell Field	0	54	Cattle	AFA	17	0	12
			South Anderson	776	0	Cattle	AFA, EOU	36	164	0
			South Beef	0	0	Cattle	AFA	0	0	0
			South Field	742	5,421	Cattle	AFA (rest 1)	90	165	1,120
			Sylvia	582	507	Cattle	AFA	48	129	26
			Tank Field	80	0	Cattle	EOU	12	18	0
			Upper Telephone	0	590	Cattle	AFA	23	0	131
			Victoria	1,650	0	Cattle	12/1-5/31	85	364	0
			West Beef	0	356	Cattle	AFA	35	0	91
	Total North Temblor, #15			8,506	27,415	-	-	-	1,840	6,096
	3655	Wood Canyon	All pastures	95	109	Cattle	12/1-5/31	100	2	3
	22	McKittrick Summit	All pastures	160	0	Cattle	12/1-5/31	100	40	0
	31	Sulphur Canyon	All pastures	16,970	0	Cattle	12/1- 5/31	93	2,295	0
	39	Chimineas Ranch South	All pastures	2,391	2,591	Cattle	undetermined	100	350	380
	44	Selby Ranch	North Selby	6,332	0	Cattle	12/1-3/31	100	398	0
			South Selby	20,228	0	Cattle	12/1-5/31	100	2,782	0
	Total Selby Ranch, #44			26,560	0	Cattle	-	-	3,182	0
	96	Maricopa	Bitterwater	335	1,577	Cattle/Sheep	12/1-5/31	63	57	262
			City	0	682	Cattle	AFA	53	0	114
			-	-	-	Sheep	12/1-5/31	-	-	-

Type of Authorization	Allotment Number	Allotment Name	Pasture Name	BLM Acres in CPNM[1]	BLM Acres outside CPNM[2]	Kind of Livestock	Season of Use	% PL [2]	AUMs in CPNM [3]	AUMs outside CPNM
			Kitty Litter	72	1,595	Cattle	AFA	100	11	267
			-	-	-	Sheep	12/1-5/31	-	-	-
			Rixie	0	140	Cattle	AFA	14	0	23
			Upper	251	0	Cattle	12/1-5/31	17	42	0
			Wagy	523	455	Cattle	AFA	32	86	77
	Total Maricopa, #96			1,180	4,799	-	-	-	188	751
Total Section 15	**7 Allotments**		**-**	**55,862**	**34,914**	**-**	**-**	**-**	**7,897**	**7,227**
Vegetation Management	18	Washburn Ranch	Airstrip	679	0	Cattle	As prescribed	100	385	0
			Back Canyon	1,123	0	Cattle	As prescribed	100	540	0
			East Painted Rock	880	0	Cattle	As prescribed	100	400	0
			Horse	121	0	Cattle/Horse	As prescribed	100	105	0
			Silver Gate	1,518	0	Cattle	As prescribed	100	580	0
			Sulphur Spring	939	0	Cattle	As prescribed	100	515	0
			Tripod	908	0	Cattle	As prescribed	100	395	0
			Washburn Compound	35	0	-				
			West Painted Rock	825	0	Cattle	As prescribed	100	430	0
	Total Washburn, #18			6,804	0	-	-	100	3,350	0
	26	Painted Rock	Coyote	2,218	0	Cattle	As prescribed	100	1,065	0
			Ranch	3,027	0	Cattle	As prescribed	100	1,430	0
			Selby	2,267	0	Cattle	As prescribed	100	1,165	0
	Total Painted Rock, #26			7,570	0	-	-	-	3,660	
	29	KCL	Centerwell	4,865	0	Cattle	As prescribed	100	2,442	0
			Dead Brush	2,222	0	Cattle	As prescribed	100	1,020	0
			East Cousins	2,336	0	Cattle	As prescribed	100	1,200	0
			House	1,788	0	Cattle	As prescribed	100	875	0
			Kinney-Hahl	1,680	0	Cattle	As prescribed	100	858	0
			Old Adobe	395	0	Cattle	As prescribed	100	270	0
			Old Corral East	(1,100)	0	-	Unavailable	100	(550)	0
			Old Corral North	1,349	0	Cattle	As prescribed	100	735	0
			Sand Canyon	3,499	0	Cattle	As prescribed	100	1,890	0
			Shipping	658	0	Cattle/Horse	As prescribed	100	320	0
			South Cousins	1,120	0	Cattle	As prescribed	100	560	0
			West Panorama	1,200	0	Cattle	As prescribed	100	560	0
			West Well	4,671	0	Cattle	As prescribed	100	2,340	0
	Total KCL, #29			25,783	0	-	-	-	13,070	0
	43	Goodwin Ranch	California Valley	1,095	0	Cattle	As prescribed	100	162	0
			Dillard	296	0	Cattle	As prescribed	100	525	0

Type of Authorization	Allotment Number	Allotment Name	Pasture Name	BLM Acres in CPNM[(1)]	BLM Acres outside CPNM[(2)]	Kind of Livestock	Season of Use	% PL [(2)]	AUMs in CPNM [(3)]	AUMs outside CPNM
			Elk Canyon	1,129	0	Cattle	As prescribed	100	600	0
			Horse	57	0	Horse	As prescribed	100	28	0
			North Goodwin	1,403	0	Cattle	As prescribed	100	815	0
			South Goodwin	1,245	0	Cattle	As prescribed	100	340	0
	Total Goodwin Ranch, #43			5,800	0	-	-	-	2,470	0
	46	Saucito Ranch	Brumley	1,369	0	Cattle	As prescribed	100	740	0
			Hill	1,306	0	Cattle	As prescribed	100	660	0
			Sheep Camp	1,092	0	Cattle	As prescribed	100	550	0
	Total Saucito Ranch, #46			3,757	0	Cattle	-	-	1,950	0
	53	Temblor-Caliente	Big Tank	320	0	Cattle	As prescribed	100	160	0
			Calf Shed	1,808	0	Cattle	As prescribed	100	1,180	0
			Cochora Horse	329	0	Cattle/Horse	As prescribed	100	170	0
			East Cochora	12,773	0	Cattle	As prescribed	100	6,905	0
			Hanline	160	0	Cattle	As prescribed	100	80	0
			Hostetter	973	0	Cattle	As prescribed	100	540	0
			Jobe Back	418	0	Cattle	As prescribed	100	200	0
			MU Horse	99	0	Cattle/Horse	As prescribed	100	70	0
			MU House	289	0	Cattle	As prescribed	100	140	0
			Padrone	5,464	0	Cattle	As prescribed	100	3,460	0
			Quail Spring	10,804	0	Cattle	As prescribed	100	5,590	0
			Red Tank	7,054	0	Cattle	As prescribed	100	3,220	0
			Schoolhouse	2,063	0	Cattle	As prescribed	100	1,040	0
			Van Matre	(1,940)	0	-	Unavailable	100	(970)	0
			West Cochora	11,690	0	Cattle	As prescribed	100	5,620	0
	Total Temblor-Caliente, #53			54,244	0	-	-	-	28,375	0
	70	Carrizo Ranch	Abbott Canyon	3,306	0	Cattle	As prescribed	100	1,070	0
			Bernard	160	0	Cattle	EOU	33	EOU	0
			Goat Spring	643	0	Cattle	As prescribed	100	480	0
			Gun Club	1,073	0	Cattle	As prescribed	53	1,020	0
			Holding	330	0	Cattle	As prescribed	100	180	0
	Total Carrizo Ranch, #70			5,477	0	-	-	-	2,750	0
	92	Phelan	Phelan	4,755	0	Sheep	As prescribed	100	4,200	0
	?????	Fault	Fault	(3,277)	0	-	Unavailable	100	(1,639)	0
Total Vegetation Management	**8 Allotments**		-	**114,190**	**0**	-	-	-	**59,825**	**0**
Grand Totals	**15 allotments**			**170,052**					**67,722**	

Table definitions:
(1) Acreage figures for allotment 15 from 2008 legal descriptions.
(2) Acreage figures and %PL forage accepted from allotment 15 carrying capacity calculations table.
(3) Total AUM figures accepted from allotment 15 carrying capacity calculations table, CPNM portions derived from (1).

AFA: As Forage Available, an unspecified season of use.
AUM: Animal Unit Month, the forage it takes to maintain an animal unit (example: cow and calf) for one month.
EOU: Exchange of Use, an agreement that allows BLM land to be used by livestock in exchange for BLM controlling livestock use of private land elsewhere.
%PL: Percent of the forage coming from public lands in each pasture.
Rest 1: Pasture is part of a rest rotation pasture system where each pasture is rested for 12 months before being grazed again.

Shading shows values for pastures within allotments that will be designated "unavailable for livestock grazing" under this alternative. There may be other lands "unavailable for livestock grazing" outside of these allotments. See grazing map for each alternative.

Appendix U

Specific Livestock Management Guidelines

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This table was excerpted from page 54 of the Caliente RMP of 1997. It is applicable to Section 15 allotments only under No Action, Alternative 1, and Alternative 3.

ALLOTMENT LOCATION	SPECIFIC RESOURCE	LIVESTOCK MANAGEMENT GUIDELINE
Within SJV listed species habitat	Mulch Readiness	500 lbs/ac. and 2" green growth, or 700 lbs/ac. without green growth.
	Mulch Threshold	500 lbs/ac.
	Saltbush Scrub	Dec.1 - May 31 season of use and 20% max. utilization, or meets form class, foliage density, and reproductive uniformity criteria.
	Other key perennials	Undefined season of use and 50% max. utilization.
Outside SJV listed species habitat (includes CACO habitat)	Mulch Readiness	Add 2" green growth to min. threshold level, or add 200 lbs/ac. without green growth.
	Mulch Threshold	Level determined based on range site requirements.
	All Key perennials	50% max. utilization.
Riparian areas	Poor - Fair condition	Nov. 1 - May 31 season of use, 50% max. utilization.
	Good - Excellent condition	Maintain current season of use, 50% max. utilization.
Known CACA population		No grazing unless in approved study or research shows grazing beneficial.
High potential CACA habitat		No grazing during critical flowering period Feb. 15 - Apr. 30.
Known LECO population		No grazing unless in approved study or research shows grazing beneficial. Grazing may be allowed outside a study with USF&W approval.
Known ERHO population		No special restrictions.
If other species become listed		Prescription that takes into account specific species requirements.

Mulch Readiness = Livestock turn out criteria for annual residual dry matter.
Mulch Threshold = Livestock removal criteria for annual residual dry matter.

CACA = California jewelflower, *Caulanthus californicus*
CACO = California condor
ERHO = Hoover´s woolly star, *Eriastrum hooveri*
GKR = giant kangaroo rat
LECO = San Joaquin woolly threads, was *Lembertia congdonii*, now *Monolopia congdonii*
SJV = San Joaquin Valley

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Appendix V has been removed from the PRMP/FEIS.

The letter designations used in the Draft RMP/EIS for other appendices were retained for continuity; there is no Appendix V in this PRMP/FEIS.

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Appendix W

Carrizo Plain National Monument Vascular Plant List

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Carrizo Plain National Monument Vascular Plant List

The following list is derived from a number of sources: regional floras, previous Carrizo lists, herbarium collections from major California herbaria, or specimens recently collected by BLM and CDFG staff and contractors. A species list compiled by Dr. Elizabeth Painter (Santa Barbara Botanic Garden) was particularly useful. Question marks that follow ssp. or var. indicate that the subspecies or variety was not mentioned in the original listing and, at this point, is not ascribable. Species and family names follow the usage in the second edition of the Jepson Manual and the Jepson Online Interchange for California Floristics (http://ucjeps.berkeley.edu/interchange.html).

Status designations: e = exotic; ro = ranch ornamental.

The accession number comes from the following sources:

- Consortium of California Herbaria (http://ucjeps.berkeley.edu/consortium/about.html).
- GW: Greg Wilvert collections deposited at California Polytechnic State University, San Luis Obispo.
- GB: George Butterworth, CDFG
- SFV = voucher in Herbarium, Department of Biology, California State University, Northridge.

Species	Status	Accession #
Marsileaceae		
Pilularia americana A. Braun		PGM6283
Pteridaceae		
Adiantum jordanii Müll. Hal.		
Pellaea andromedifolia (Kaulf.) Fée		CDA15185
Pellaea mucronata (D.C. Eaton) D.C. Eaton var. mucronata		
Pentagramma triangularis (Kaulf.) Yatsk., Windham & E. Wollenw ssp. triangularis		GW 414
Ephdraceae		
Ephedra californica S. Watson		CDA13618
Ephedra viridis Coville		CDA16336
Cupressaceae		
Callitropsis nevadensis (Abrams) D.P. Little or Callitropsis stephensonii (C.B. Wolf) D.P. Little	ro	
Callitropsis sargentii (Jeps.) D. P. Little	ro	GB
Juniperus californica Carrière		UC1134269
Pinaceae		
Pinus halepensis Mill.	ro	
Pinus monophylla Torr. & Frém.		CDA539
Pinus radiata D. Don	ro	
Adoxaceae		
Sambucus nigra L. ssp. caerulea (Raf.) Bolli		GW 400
Amaranthaceae		
Amaranthus albus L.	e	CDA3264

Species	Status	Accession #
Anacardiaceae		
Schinus molle L.	ro	
Toxicodendron diversilobum (Torr. & A. Gray) Greene		
Apiaceae		
Apiastrum angustifolium Nutt.		GW 359
Bowlesia incana Ruiz & Pav.		CDA16361
Conium maculatum L.	e	SFV
Daucus pusillus Michx.		
Eryngium aristulatum Jeps. var. hooveri Y. Sheikh		CDA16069
Eryngium spinosepalum Mathias		
Eryngium vaseyi J.M. Coult & Rose		UC1122960
Lomatium caruifolium (Hook. & Arn.) J.M. Coult & Rose		SBBG94408
Lomatium macrocarpum (Torr. & A. Gray) J.M. Coult & Rose		SFV
Lomatium mohavense (J.M. Coult & Rose) J.M. Coult & Rose		
Lomatium utriculatum (Torr. & A. Gray) J.M. Coult & Rose		CDA13602
Perideridia pringlei (J.M. Coult & Rose) A. Nelson & J.F. Macbr.		SBBG83799
Sanicula bipinnata Hook. & Arn.		
Yabea microcarpa (Hook. & Arn.) Koso-Polj.		GW 360
Apocynaceae		
Apocynum cannabinum L.		SBBG98350
Asclepias eriocarpa Benth.		
Asclepias erosa Torr.		GW 508
Asclepias fascicularis Decne.		
Nerium oleander L.	e	
Asteraceae		
Achillea millefolium L.		
Achyrachaena mollis Schauer		SBBG112554
Acroptilon repens (L.) DC.	e	
Agoseris grandiflora (Nutt.) Greene		
Agoseris heterophylla (Nutt.) Greene var. cryptopleura (Nutt.) Greene		UC1315028
Agoseris retrorsa (Benth.) Greene		JEPS35311
Ambrosia acanthicarpa Hook.		GW 530
Ambrosia salsola (A. Gray) Strother & B.G. Baldwin		CDA15093
Ancistrocarphus filagineus A. Gray		CDA15177
Anisocoma acaulis Torr. & A. Gray		UC1276302
Anthemis cotula L.	e	SFV
Artemisia californica Less.		UC1285241
Artemisia douglasiana Besser		
Artemisia dracunculus L.		
Artemisia tridentata Nutt. ssp. tridentata		

Species	Status	Accession #
Baccharis douglasii DC.		
Baccharis pilularis DC.		GW 534
Baccharis salicifolia (Ruiz & Pav.) Pers.		
Blennosperma nanum (Hook.) S.F. Blake var. nanum		JEPS10147
Blepharizonia laxa Greene		RSA216746
Brickellia nevinii A. Gray		RSA201732
Centaurea melitensis L.	e	GW 484
Centaurea solstitialis L.	e	
Centromadia fitchii (A. Gray) Greene		CDA15443
Centromadia pungens (Hook. & Arn.) Greene ssp. pungens		CDA16061
Chaenactis fremontii A. Gray		SBBG120315
Chaenactis glabriuscula DC. var. glabriuscula		JEPS34161
Chaenactis glabriuscula DC. var. lanosa (DC.) H.M. Hall		UC1315067
Chaenactis stevioides Hook. & Arn.		CDA15162
Chaenactis xantiana A. Gray		UC1285247
Chorizanthe spinosa S. Watson		GW 447
Cirsium occidentale (Nutt.) Jeps. var. venustum (Greene) Jeps.		UC1119205
Cirsium vulgare (Savi) Ten.	e	
Conyza canadensis (L.) Cronquist		
Coreopsis bigelovii (A. Gray) H.M. Hall		CDA15180
Coreopsis calliopsidea (DC.) A. Gray		CDA14257
Corethrogyne filaginifolia (Hook. & Arn.) Nutt.		CDA16071
Deinandra pallida (D.D. Keck) B.G. Baldwin		UC1315070
Deinandra pentactis (D.D. Keck) B.G. Baldwin		CDA7806
Eastwoodia elegans Brandegee		SBBG109951
Eatonella nivea (D.C. Eaton) A. Gray		UCR143150
Encelia actoni Elmer		GW 368
Ericameria cuneata (A. Gray) McClatchie var. spathulata (A. Gray) H.M. Hall		
Ericameria linearifolia (DC.) Urbatsch & Wussow		CDA15094
Ericameria nauseosa (Pursh) G.L. Nesom & G.I. Baird var. hololeuca (A. Gray) G.L. Nesom & G.I. Baird		
Erigeron foliosus Nutt. var. foliosus		GW 489
Eriophyllum confertiflorum (DC.) A. Gray var. confertiflorum		SBBG8167
Eriophyllum multicaule (DC.) A. Gray		CDA16079
Eriophyllum pringlei A. Gray		CDA16828
Gnaphalium palustre Nutt.		UC454334
Grindelia camporum Greene var. camporum		
Gutierrezia californica (DC.) Torr. & A. Gray		CDA16063
Hazardia stenolepis (H.M. Hall) Hoover		
Helianthus annuus L.		
Heterotheca sessiliflora (Nutt.) Shinn. ssp. echioides (Benth.) Semple		CDA7942

Species	Status	Accession #
Holocarpha heermannii (Greene) D. D. Keck		GW 514
Isocoma acradenia (Greene) Greene var. bracteosa (Greene) G.L. Nesom		JEPS83687
Isocoma menziesii (Hook. & Arn.) G.L. Nesom var. menziesii		
Lactuca serriola L.	e	
Lagophylla ramosissima Nutt.		SFV
Lasthenia californica DC. ex Lindl.		CDA14256
Lasthenia debilis (Greene ex A. Gray) Ornduff		UC1314940
Lasthenia ferrisiae Ornduff		CDA16360
Lasthenia fremontii (A. Gray) Greene		JEPS18087
Lasthenia glabrata Lindl. ssp. coulteri (A. Gray) Ornduff		SBBG8515
Lasthenia gracilis (DC.) Greene		SBBG81970
Lasthenia microglossa (A.DC.) Greene		CDA15182
Lasthenia minor (A.DC.) Ornduff		CDA15628
Layia glandulosa (Hook.) Hook. & Arn.		JEPS7494
Layia heterotricha (DC.) Hook. & Arn.		SBBG61199
Layia jonesii A. Gray		UCR97544
Layia munzii D.D. Keck		CDA13626
Layia pentachaeta A. Gray ssp. albida D.D. Keck		
Layia pentachaeta A. Gray ssp. pentachaeta		SBBG54860
Layia platyglossa (Fisch. & C.A. Mey.) A. Gray		CDA20978
Lepidospartum squamatum (A. Gray) A. Gray		GW 527
Lessingia glandulifera A. Gray var. glandulifera		UC1069811
Lessingia lemmonii A. Gray var. lemmonii		GW 442.1
Lessingia lemmonii A. Gray var. ramulossima (A. Nelson) Ferris		GW 513
Lessingia tenuis (A. Gray) Coville		SD116567
Logfia filaginoides (Hook. & Arn.) Morefield		SFV
Logfia gallica Coss. & Germ.	e	SFV
Madia elegans Lindl.		
Madia radiata Kellogg		RSA176910
Malacothrix californica DC.		CDA15136
Malacothrix coulteri A. Gray		SBBG83804
Malacothrix floccifera (DC.) S.F. Blake		GW 268
Malacothrix glabrata A. Gray		UC1276299
Matricaria discoidea DC.	e	
Matricaria occidentalis Greene	e	CDA11382
Micropus californicus Fisch. & C.A. Mey.		CDA16367
Microseris campestris Greene		CHSC67882
Microseris douglasii (DC.) Schultz-Bip.		CDA15161
Microseris elegans A. Gray		JEPS15304
Monolopia congdonii (A. Gray) B.G. Baldwin		CDA13604

Species	Status	Accession #
Monolopia gracilens A. Gray		SBBG48630
Monolopia lanceolata Nutt.		CDA16334
Monolopia stricta Crum		CDA13793
Packera breweri (Burtt Davy) W.A. Weber & Á. Löve		CAS235726
Pentachaeta fragilis Brandegee		RSA201700
Pseudognaphalium beneolens (Davidson) Anderb.		
Pseudognaphalium californicum (DC.) Anderb.		CDA16368
Pseudognaphalium luteoalbum (L.) Hilliard & B. L. Burtt	e	SFV
Pseudognaphalium stramineum (Kunth) Anderb.		UCR29428
Psilocarphus brevissimus Nutt. var. brevissimus		
Psilocarphus chilensis A.Gray		UC1070089
Psilocarphus oregonus Nutt.		UC1070083
Pulicaria paludosa Link		CDA7615
Rafinesquia californica Nutt.		UC1070092
Senecio californicus DC.		GW 191
Senecio flaccidus Less. var. douglasii (DC.) B.L. Turner & T.M. Barkeley		JEPS31124
Senecio vulgaris L.	e	SFV
Solidago velutina DC. ssp. californica (Nutt.) Semple		
Sonchus asper (L.) Hill ssp. asper	e	GW 153
Sonchus oleraceus L.	e	GW 320
Stebbinsoseris heterocarpa (Nutt.) K.L. Chambers		
Stephanomeria exigua Nutt. ssp. carotifera (Hoover) Gottlieb		JEPS31122
Stephanomeria exigua ssp. coronaria		CDA17486
Stephanomeria exigua ssp. exigua		GW 481
Stephanomeria pauciflora (Torr.) A. Nelson		UC771699
Stephanomeria virgata Benth. ssp. pleurocarpa (Greene) Gottlieb		CDA16065
Stylocline gnaphaloides Nutt.		CDA16083
Uropappus lindleyi (DC.) Nutt		UCR101018
Xanthium spinosum L.		
Xanthium strumarium L.		
Berberidaceae		
Berberis pinnata Lag.		
Boraginaceae		
Amsinckia douglasiana A. DC.		CDA13622
Amsinckia menziesii (Lehm.) A. Nelson & J.F. Macbr. var. intermedia (Fisch. & C.A. Mey.) Ganders		SJSU3411
Amsinckia menziesii (Lehm.) A. Nelson & J.F. Macbr. var. menziesii		UC547746
Amsinckia spectabilis Fisch. & C.A. Mey.		UC455989
Amsinckia tessellata A. Gray var. gloriosa (Suksd.) Hoover		UC455992
Amsinckia tessellata A. Gray var. tessellata		JEPS86727
Amsinckia vernicosa Hook. & Arn. var. furcata (Suksd.) Hoover		CDA16190

Species	Status	Accession #
Amsinckia vernicosa Hook. & Arn. var. vernicosa		CDA13624
Cryptantha barbigera (A. Gray) Greene		SBBG107364
Cryptantha circumscissa (Hook. & Arn.) I.M. Johnst.		CDA15138
Cryptantha decipiens (M.E. Jones) A. Heller		
Cryptantha flaccida (Lehm.) Greene		CDA15105
Cryptantha intermedia (A. Gray) Greene		CDA15090
Cryptantha microstachys (A. Gray) Greene		SBBG11813
Cryptantha muricata (Hook. & Arn.) A. Nelson & J.F. Macbr.		CDA15106
Cryptantha nemaclada Greene		CDA13621
Cryptantha nevadensis A. Nelson & P. B. Kenn.		SBBG107290
Cryptantha oxygona (A. Gray) Greene		CDA17365
Cryptantha pterocarya (Torr.) Greene		SJSU3424
Emmenanthe penduliflora Benth. var. penduliflora		GW 147
Eucrypta chrysanthemifolia (Benth.) Greene		SBBG107814
Heliotropium curassavicum L.		GW 452
Nama californicum (A. Gray) J. Bacon		SD71227
Nemophila menziesii Hook. & Arn.		RSA344390
Nemophila pedunculata Douglas ex Benth.		GW 413
Pectocarya heterocarpa (I.M. Johnst.) I.M. Johnst.		SJSU3353
Pectocarya linearis ssp. ferocula		GW 330
Pectocarya penicillata (Hook. & Arn.) A. DC.		CDA13616
Pectocarya setosa A. Gray		CDA15176
Phacelia affinis A. Gray		UC1285312
Phacelia cicutaria Greene var. hispida (A. Gray) J.T. Howell		GW 379
Phacelia ciliata Benth		CDA13598
Phacelia cryptantha Greene		SBBG95285
Phacelia distans Benth.		SBBG107037
Phacelia douglasii (Benth.) Torr.		CDA15087
Phacelia egena (Brand) J.T. Howell		GW 365
Phacelia fremontii Torr.		JEPS108367
Phacelia imbricata Greene		SBBG107394
Phacelia ramosissima Lehm. var. ?		
Phacelia tanacetifolia Benth.		CDA15089
Phacelia vallis-mortae J. Voss		UC1314929
Pholistoma membranaceum (Benth.) Constance		CDA13603
Plagiobothrys acanthocarpus (Piper) I.M. Johnst.		CDA15633
Plagiobothrys arizonicus (A. Gray) A. Gray		
Plagiobothrys canescens Benth.		CDA13606
Plagiobothrys leptocladus (Greene) I.M. Johnst.		CDA16201
Plagiobothrys nothofulvus (A. Gray) A. Gray		

Species	Status	Accession #
Plagiobothrys tenellus (Nutt.) A. Gray		
Plagiobothrys trachycarpus (A. Gray) I.M. Johnst.		UC455996
Brassicaceae		
Arabis pulchra M.E. Jones var. pulchra		SD71171
Athysanus pusillus (Hook.) Greene		RSA14347
Capsella bursa-pastoris (L.) Medikus	e	GW 198
Caulanthus anceps (Greene) Payson		JEPS54050
Caulanthus californicus (S. Watson) Payson		CHSC67198
Caulanthus coulteri S. Watson var. coulteri		CDA17361
Caulanthus inflatus S. Watson		CDA15107
Caulanthus lasiophyllus (Hook. & Arn.) Payson		CDA16343
Caulanthus lemmonii S. Watson		POM203587
Chorispora tenella (Pallas) DC.		SBBG120312
Descurainia pinnata (Walter) Britton ssp. menziesii (DC.) Detl.		JEPS85864
Descurainia sophia (L.) Webb	e	CDA15097
Draba verna L.		
Erysimum capitatum (Douglas ex Hook.) Greene var. capitatum		JEPS53559
Guillenia lasiophylla (Hook. & Arn.) Greene		GW 243
Heterodraba unilateralis (M.E. Jones) Greene		CDA11383
Hirschfeldia incana (L.) Lagr.-Fossat	e	CDA16339
Hornungia procumbens (L.) Hayek		CDA11385
Hornungia procumbens (L.) Hayek		RSA201674
Lepidium dictyotum A. Gray var. acutidens A. Gray		CDA11384
Lepidium dictyotum A. Gray var. dictyotum		CDA11386
Lepidium draba L. ssp. draba		
Lepidium fremontii S. Watson		SBBG48632
Lepidium jaredii Brandegee ssp. jaredii		CDA13600
Lepidium lasiocarpum Torr. & A. Gray var. lasiocarpum		
Lepidium nitidum Torr. & A. Gray var. nitidum		CDA16834
Lepidium nitidum Torr. & A. Gray var. oreganum (Greene) C.L. Hitchc.		UC455706
Nasturtium officinale R. Br.		
Sinapis arvensis L.	e	
Sisymbrium altissimum L.	e	GW 7
Sisymbrium irio L.	e	SBBG80349
Sisymbrium orientale L.	e	CDA16084
Stanleya pinnata (Pursh) Britton		SBBG11240
Thysanocarpus curvipes Hook.		CDA15171
Thysanocarpus laciniatus Torr. & A. Gray		GW 215
Tropidocarpum gracile Hook.		SBBG17226

Species	Status	Accession #
Cactaceae		
Cylindropuntia californica (Torr. & A. Gray) F. M. Knuth		
Opuntia spp.	ro	
Campanulaceae		
Nemacladus californicus (A. Gray) Mori		UC1276318
Nemacladus secundiflorus G.T. Robbins		SD111942
Nemacladus twisselmannii J.T. Howell		
Caprifoliaceae		
Lonicera subspicata Hook. & Arn. var. denudata Rehder		GW 524
Caryophyllaceae		
Herniaria hirsuta L. var. cinerea (DC.) Loret & Barrandon	e	CDA15134
Loeflingia squarrosa Nutt.		CDA15133
Minuartia douglasii (Torr. & A. Gray) Mattf.		CDA15183
Spergula arvensis L.	e	
Spergularia atrosperma R. Rossbach		
Spergularia rubra (L.) J. Presl & C. Presl	e	
Spergularia salina J. Presl & C. Presl		CDA16836
Stellaria media (L.) Vill.	e	
Stellaria nitens Nutt.		CDA15086
Chenopodiaceae		
Allenrolfea occidentalis (S. Watson) Kuntze		CDA11380
Atriplex argentea Nutt. var. mohavensis M.E. Jones		CDA16019
Atriplex canescens (Pursh) Nutt. ssp. canescens		GW 385
Atriplex confertifolia (Torr. & Frém.) S. Watson		CDA16138
Atriplex coronata S. Watson var. coronata		JEPS90681
Atriplex coronata S. Watson var. vallicola (Hoover) S.L. Welsh		CHSC67919
Atriplex fruticulosa Jeps.		JEPS13579
Atriplex lentiformis (Torr.) S. Watson		GW 515
Atriplex natrophila ined.		UC1136246
Atriplex phyllostegia (Torr.) S. Watson		GW 441
Atriplex polycarpa (Torr.) S. Watson		GW 519
Atriplex rosea L.	e	UCSB38589
Atriplex serenana A. Nelson var. serenana		GW 504
Atriplex spinifera J.F. Macbr.		CDA15625
Atriplex suberecta I. Verd.	e	
Bassia hyssopifolia (Pallas) Kuntze	e	
Chenopodium album L.	e	
Chenopodium berlandieri Moq.		CDA16018
Chenopodium californicum (S. Watson) S. Watson		CDA15108
Grayia spinosa (Hook.) Moq.		SBBG51137

Species	Status	Accession #
Krascheninnikovia lanata (Pursh) A. Meeuse & A. Smit		CDA15091
Monolepis nuttalliana (Schult.) Greene		CDA16833
Salsola damascena Botsch.	e	CDA3174
Salsola tragus L.	e	CDA16020
Salsola X gobicola Iljin.	e	CDA16068
Suaeda moquinii (Torr.) Greene		GW 393
Suaeda nigra (Raf.) J. F. Macbr.		CDA16359
Cleomaceae		
Isomeris arborea Nutt.		SBBG103504
Convolvulaceae		
Cuscuta californica Hook. & Arn. var.?		GW 314
Convolvulus arvensis L.	e	GW 437
Cressa truxillensis Kunth		UCSC568
Crassulaceae		
Crassula aquatica (L.) Schsnl.		
Crassula connata (Ruiz & Pav.) A. Berger		GW 225
Dudleya cymosa (Lemaire) Britton & Rose ssp. ?		
Dudleya lanceolata (Nutt.) Britton & Rose		GW 453
Cucurbitaceae		
Cucurbita foetidissima Kunth		
Marah fabaceus (Naudin) Greene		CDA13607
Ericaceae		
Arctostaphylos glauca Lindl.		CDA15186
Euphorbiaceae		
Chamaesyce ocellata (Durand & Hilg.) Millsp.		CDA16067
Chamaesyce polycarpa (Benth.) Millsp.		
Croton setigerus Hook.		
Euphorbia spathulata Lam.		GW 356
Fabaceae		
Astragalus asymmetricus E. Sheldon		UC455618
Astragalus didymocarpus Hook. & Arn. var. didymocarpus		UC1285208
Astragalus douglasii (Torr. & A. Gray) A. Gray var. douglasii		
Astragalus lentiginosus Hook. var. idriensis M.E. Jones		
Astragalus lentiginosus Hook. var. nigricalycis M.E. Jones		CDA13610
Astragalus macrodon (Hook. & Arn.) A. Gray		POM318267
Astragalus oxyphysus A. Gray		CDA13627
Glycyrrhiza lepidota Pursh		
Lotus humistratus Greene		SFV
Lotus salsuginosus Greene		CDA17360
Lotus scoparius (Nutt.) Ottley var. scoparius		

Species	Status	Accession #
Lotus strigosus (Nutt.) Greene		CDA16369
Lotus wrangelianus Fisch. & C.A. Mey.		SD144462
Lupinus albifrons Benth. var. albifrons		GW 251
Lupinus bicolor Lindl.		SFV
Lupinus microcarpus Sims var. horizontalis (A. Heller) Jeps		JEPS108081
Lupinus microcarpus Sims var. microcarpus		CDA13623
Lupinus nanus Benth.		CDA13605
Lupinus succulentus W.D.J. Koch		
Medicago muricata All.	e	CDA20524
Medicago polymorpha L.	e	
Medicago sativa L.	e	
Melilotus indicus (L.) All.	e	
Prosopis glandulosa Torr. var. torreyana (L.D. Benson) M.C. Johnst.		
Robinia pseudoacacia L.	ro	
Trifolium albopurpureum Torr. & A. Gray		CDA85
Trifolium depauperatum Desv. var. amplectens (Torr. & A. Gray) McDermott		UCSB33552
Trifolium fragiferum L.	e	
Trifolium gracilentum Torr. & A. Gray var. gracilentum		GW 182
Trifolium willdenovii Sprengel		UC454714
Vicia benghalensis L.	e	
Fagaceae		
Quercus douglasii Hook. & Arn.		UC1135439
Quercus john-tuckeri K. Nixon & C.H. Mull.		CDA16077
Quercus X alvordiana Eastw.		UC1135486
Frankeniaceae		
Frankenia salina (Molina) I.M. Johnst.		CDA16023
Fumariaceae		
Fumaria parviflora Lam.		CDA16203
Garryaceae		
Garrya flavescens S. Watson		UC1296262
Gentianaceae		
Zeltnera exaltata (Griseb.) G. Mans.		
Geraniaceae		
California macrophylla (Hook. & Arn.) J.J. Aldasoro, C. Navarro, P. Vargas, L. Sáez, & C. Aedo		SBBG67635
Erodium botrys (Cav.) Bertol.	e	
Erodium brachycarpum (Godr.) Thell.	e	
Erodium cicutarium (L.) L'Hér. ex Aiton	e	GW 2
Erodium moschatum (L.) L'Hér. ex Aiton	e	GW 133
Grossulariaceae		
Ribes quercetorum Greene		UC524080

Species	Status	Accession #
Juglandaceae		
Juglans hindsii Jeps. ex R.E. Sm.	ro	
Lamiaceae		
Acanthomintha obovata Jeps. ssp. cordata Jokerst		SBBG98983
Acanthomintha obovata ssp. cordata		SBBG83999
Marrubium vulgare L.	e	GW 434
Mentha arvensis L.	e	
Monardella breweri A. Gray		
Salvia carduacea Benth.		CDA15158
Salvia columbariae Benth.		CDA17353
Salvia leucophylla Greene		
Salvia mellifera Greene		
Stachys albens A. Gray		
Trichostema lanceolatum Benth.		CDA16062
Trichostema ovatum Curran		GW 490
Loasaceae		
Mentzelia affinis Greene		JEPS41164
Mentzelia albicaulis Hook		
Mentzelia dispersa S. Watson		
Mentzelia gracilenta Torr. & A. Gray		PGM6252
Mentzelia laevicaulis (Hook.) Torr. & A. Gray		
Mentzelia pectinata Kellogg		CDA15100
Mentzelia veatchiana Kellogg		UC1224773
Lythraceae		
Punica granatum L.	ro	
Malvaceae		
Eremalche exilis (A. Gray) Greene		JEPS68599
Eremalche parryi (Greene) Greene ssp. kernensis (C. B. Wolf) D. M. Bates		CDA16837
Eremalche parryi (Greene) Greene ssp. parryi		PGM6276-A
Malva parviflora L.	e	GW 76
Malvella leprosa (Ortega) Krapov.		GW 469
Meliaceae		
Melia azedarach L.	ro	
Moraceae		
Maclura pomifera (Raf.) C. Schneider	ro	
Myrtaceae		
Eucalyptus polyanthemos Schauer	ro	
Eucalyptus tereticornis Sm.	ro	
Nyctaginaceae		
Abronia pogonantha Heimerl		UC1315012

Species	Status	Accession #
Mirabilis laevis (Benth.) Curran var. crassifolia (Choisy) Spellenb.		JEPS108374
Mirabilis multiflora (Torr.) A. Gray var. pubescens S. Watson		
Oleaceae		
Forestiera pubescens Nutt.	ro	
Onagraceae		
Camissonia campestris (Greene) P.H. Raven ssp. campestris		JEPS101952
Camissonia contorta (Douglas) Kearney		SJSU3409
Camissonia kernensis (Munz) P. H. Raven		SJSU3355
Camissonia strigulosa (Fisch. & C.A. Mey.) P.H. Raven		JEPS89954
Camissoniopsis hirtella (Greene) W.L. Wagner & Hoch		
Camissoniopsis intermedia (P.H. Raven) W.. Wagner & Hoch		
Camissoniopsis micrantha (Hornemann ex Sprengel) W.L. Wagner & Hoch		SJSU3412
Clarkia cylindrica (Jeps.) H. Lewis & M. Lewis ssp. cylindrica		GW 398
Clarkia modesta Jeps.		
Clarkia purpurea (Curtis) A. Nelson & J.F. Macbr. ssp. quadrivulnera (Douglas) H. Lewis & M. Lewis		UC1122415
Clarkia tembloriensis Vasek ssp. tembloriensis		UCR2094
Clarkia unguiculata Lindl.		
Epilobium canum (Greene) P.H. Raven ssp. canum		
Epilobium ciliatum Raf. ssp. ciliatum		GW 485
Epilobium pygmaeum (Speg.) Hoch & P.H. Raven		GW 455
Eremothera boothii (Douglas) W.L. Wagner & Hoch ssp. decorticans (Hooker & Arnott) W.L. Wagner & Hoch		JEPS31676
Eulobus californicus Nuttall ex Torrey & A. Gray		UC1529031
Oenothera deltoides Torr. & Frém. ssp. cognata (Jeps.) W.M. Klein		
Tetrapteron graciliflorum (Hooker & Arnott) W.L. Wagner & Hoch		CDA13617
Tetrapteron palmeri (S. Watshon) W.L. Wagner & Hoch		CDA16139
Orobanchaceae		
Castilleja attenuata (A. Gray) T.I. Chuang & Heckard		JEPS77732
Castilleja brevistyla (Hoover) T.I. Chuang & Heckard		CDA14258
Castilleja densiflora (Benth.) T.I. Chuang & Heckard ssp. densiflora		JEPS77729
Castilleja densiflora (Benth.) T.I. Chuang & Heckard ssp. gracilis (Benth.) T.I. Chuang & Heckard		UC1315041
Castilleja exserta (A. Heller) T.I. Chuang & Heckard ssp. exserta		JEPS10330
Castilleja foliolosa Hook. & Arn.		CDA15181
Castilleja plagiotoma A. Gray		CDA17359
Castilleja subinclusa Greene ssp. subinclusa		JEPS24859
Cordylanthus rigidus (Benth.) Jeps. ssp. rigidus		
Papaveraceae		
Dendromecon rigida Benth.		
Eschscholzia caespitosa Benth.		SBBG120311
Eschscholzia californica Cham.		UC455323

Species	Status	Accession #
Eschscholzia hypecoides Benth.		JEPS91058
Eschscholzia lemmonii Greene ssp. lemmonii		GW 175
Platystemon californicus Benth.		CDA13614
Stylomecon heterophylla (Benth.) G.C. Taylor		CDA15175
Phrymaceae		
Mimulus aurantiacus Curtis var. pubescens (Torr.) D.M. Thomps.		UC1315001
Mimulus fremontii (Benth.) A. Gray		SJSU3416
Mimulus guttatus DC.		GW 352
Plantaginaceae		
Antirrhinum ovatum Eastw.		JEPS3471
Callitriche marginata Torr.		PGM5146
Collinsia bartsiifolia Benth. var. bartsiifolia		UC1736366
Collinsia bartsiifolia Benth. var. davidsonii (Parish) Newsom		CDA15135
Collinsia heterophylla Buist ex Graham		CDA15165
Collinsia sparsiflora Fisch. & C. A. Mey. var. collina (Jeps.) Newsom		
Keckiella breviflora (Lindl.) Straw var. breviflora		GW 499
Penstemon centranthifolius (Benth.) Benth.		GW 254
Plantago elongata Pursh		CDA16140
Plantago erecta E. Morris		GW 19
Plantago ovata Forsskal		
Platanaceae		
Platanus racemosa Nutt.	ro	
Polemoniaceae		
Allophyllum gilioides (Benth.) A.D. Grant & V.E. Grant ssp. violaceum (A. Heller) A.G. Day		GB
Eriastrum densifolium (Benth.) H. Mason ssp. austromontanum (T.T. Craig) H. Mason		
Eriastrum densifolium (Benth.) H. Mason ssp. elongatum (Benth.) H. Mason		UC1315057
Eriastrum diffusum (A. Gray) H. Mason		
Eriastrum eremicum (Jeps.) H. Mason ssp. eremicum		
Eriastrum hooveri (Jeps.) H. Mason		SBBG95298
Eriastrum pluriflorum (A. Heller) H. Mason		POM209673
Gilia achilleifolia Benth.		SBBG109452
Gilia aliquanta A.D. Grant & V.E. Grant		SBBG106783
Gilia austro-occidentalis (A. D. Grant & V. E. Grant) A. D. Grant & V. E. Grant		CDA16082
Gilia brecciarum M.E. Jones ssp. brecciarum		JEPS86048
Gilia brecciarum M.E. Jones ssp. jacens (A.D. Grant & V.E. Grant) A.G. Day		
Gilia capitata Sims ssp. abrotanifolia (Greene) V.E. Grant		
Gilia clivorum (Jeps.) V.E. Grant		CDA16200
Gilia inconspicua (Sm.) Sweet		SJSU3349
Gilia latiflora (A. Gray) A. Gray ssp. latiflora		GW 317

Species	Status	Accession #
Gilia latiflora (A. Gray) A. Gray ssp. cuyamensis A.D. Grant & V.E. Grant		CDA15179
Gilia malior A.G. Day & V.E. Grant		
Gilia ochroleuca M.E. Jones ssp. bizonata A.D. Grant & V.E. Grant		SBBG107068
Gilia tenuiflora Benth. ssp. amplifaucalis A. D. Grant & V. E. Grant		SBBG96151
Gilia tenuiflora Benth. ssp. tenuiflora		SBBG107288
Gilia tricolor Benth. ssp. diffusa (Congdon) H. Mason & A.D. Grant		
Leptosiphon aureus (Nutt.) Benth. ex E. Vilm. ssp. decorus (A. Gray) J.M. Porter & L.A. Johnson		
Leptosiphon bicolor Nutt.		
Leptosiphon liniflorus (Benth.) J.M. Porter & L.A.Johnson		CDA15188
Leptosiphon parviflorus Benth.		CDA16081
Linanthus bigelovii (A. Gray) Greene		UC575292
Linanthus dichotomus Benth.		UC455664
Loeseliastrum schottii (Torr.) Timbrook		SBBG109255
Microsteris gracilis (Hook.) Greene		UC564191
Navarretia atractyloides (Benth.) Hook. & Arn.		
Navarretia jaredii Eastw.		RSA549971
Saltugilia australis (H. Mason & A.D. Grant) L.A. Johnson		
Polygonaceae		
Aristocapsa insignis (Curran) Reveal & Hardham		JEPS99139
Centrostegia thurberi A. Gray		RSA201616
Chorizanthe douglasii Benth.		RSA450333
Chorizanthe membranacea Benth.		
Chorizanthe polygonoides Torr. & A. Gray var. longispina (Goodman) Munz		SBBG95309
Chorizanthe uniaristata Torr. & A. Gray		JEPS108265
Chorizanthe watsonii Torr. & A. Gray		UC1296192
Chorizanthe xanti S. Watson var. xanti		JEPS108370
Eriogonum angulosum Benth.		CDA16066
Eriogonum baileyi S. Watson var. baileyi		GW 512
Eriogonum cithariforme S. Watson		JEPS108337
Eriogonum clavatum Small		JEPS85795
Eriogonum covilleanum Eastw.		JEPS108373
Eriogonum davidsonii Greene		
Eriogonum elongatum Benth. var. elongatum		UC771743
Eriogonum fasciculatum Benth. var. fasciculatum		SBBG95344
Eriogonum fasciculatum Benth. var. polifolium (Benth.) Torr. & A. Gray		JEPS86555
Eriogonum gossypinum Curran		JEPS108267
Eriogonum gracile Benth. var. gracile		UC1296105
Eriogonum gracillimum S. Watson		CDA13625
Eriogonum heermannii Durand & Hilg. var. heermannii		UC1296099
Eriogonum maculatum A. Heller		JEPS108234

Species	Status	Accession #
Eriogonum nudum Douglas ex Benth. var. indictum (Jeps.) Reveal		
Eriogonum ordii S. Watson		JEPS108365
Eriogonum roseum Durand & Hilg.		CDA16070
Eriogonum temblorense J.T. Howell & Twisselm.		JEPS108269
Eriogonum twisselmannii (J.T. Howell) Reveal		
Eriogonum viridescens A. Heller		JEPS108268
Hollisteria lanata S. Watson		CDA13792
Lastarriaea coriacea (Goodman) Hoover		CDA15154
Mucronea perfoliata (A. Gray) A. Heller		CDA15189
Polygonum aviculare L. ssp. depressum (Meisn.) Arcang.	e	
Pterostegia drymarioides		GW 194
Rumex crispus L.	e	
Rumex hymenosepalus Torr.		CDA15098
Portulacaeae		
Calandrinia ciliata (Ruiz & Pav.) DC.		GW 100
Calyptridium monandrum Nutt.		GW 98
Claytonia exigua Torr. & A. Gray ssp. exigua		CDA16362
Claytonia gypsophiloides Fisch. & C.A. Mey.		
Claytonia parviflora Hook. ssp. parviflora		CDA16366
Claytonia parviflora Hook. ssp. viridis (Davidson) John M. Mill. & K.L. Chambers		CDA15170
Claytonia perfoliata Willd. ssp. perfoliata		GW 10
Primulaceae		
Androsace elongata L. ssp. acuta (Greene) G.T. Robbins		JEPS13780
Dodecatheon clevelandii Greene ssp. insulare H.J. Thomps.		JEPS9500
Ranunculaceae		
Delphinium gypsophilum Ewan ssp. gypsophilum		RSA148059
Delphinium hesperium A. Gray ssp. pallescens (Ewan) H. Lewis & Epling		
Delphinium parishii A. Gray ssp. pallidum (Munz) M. J. Warnock		UC1296251
Delphinium parryi A. Gray ssp. parryi		SJSU3394
Delphinium parryi A. Gray ssp. purpureum (H. Lewis & Epling) M.J. Warnock		
Delphinium patens Benth. ssp. hepaticoideum Ewan		RSA201571
Delphinium patens Benth. ssp. montanum (Munz) Ewan		UC1296247
Delphinium recurvatum Greene		JEPS23375
Myosurus minimus L.		RSA201716
Rhamnaceae		
Rhamnus ilicifolia Kellogg		
Rosaceae		
Malus sylvestris Mill.	ro	
Prunus fasciculata (Torr.) A. Gray var. fasciculata		

Species	Status	Accession #
Rubiaceae		
Galium andrewsii A. Gray ssp. andrewsii		
Galium angustifolium A. Gray ssp. angustifolium		GW 384
Galium aparine L.		CDA15178
Salicaceae		
Populus fremontii S. Watson ssp. fremontii		
Salix babylonica L.	ro	
Salix exigua Nutt.		GW 333
Salix gooddingii C.R. Ball		GW 77
Salix laevigata Bebb		CDA16370
Salix lasiolepis Benth.		GB
Sapindaceae		
Koelreuteria elegans (Seem.) A.C. Sm.	ro	
Saxifragaceae		
Lithophragma cymbalaria Torr. & A. Gray		
Lithophragma parviflorum (Hook.) Torr. & A. Gray var. parviflorum		RSA608219
Simaroubaceae		
Ailanthus altissima (Mill.) Swingle	ro	
Solanaceae		
Datura wrightii Regel		GW 507
Lycium andersonii A. Gray		JEPS8047
Nicotiana glauca Graham	e	
Nicotiana quadrivalvis Pursh		GW 480
Solanum elaeagnifolium Cav.	e	
Solanum umbelliferum Eschsch.		JEPS8415
Tamaricaceae		
Tamarix aphylla (L.) H. Karst	e	UCR148810
Tamarix ramosissima Ledeb.	e	GW 332
Ulmaceae		
Ulmus spp.	ro	
Zelkova serrata (Thunb.) Makino	ro	
Urticaceae		
Hesperocnide tenella Torr.		SJSU3603
Parietaria hespera B.D. Hinton var. ?		
Urtica dioica L. ssp. holosericea (Nutt.) Thorne		
Urtica urens L.		
Valerianaceae		
Plectritis macrocera Torr. & A. Gray		
Verbenaceae		
Verbena lasiostachys Link var. scabrida Moldenke		GW 492

Species	Status	Accession #
Viscaceae		
Phoradendron bolleanum (Seem.) Eichler.		CDA16074
Phoradendron juniperinum A. Gray		
Phoradendron serotinum (Raf.) M.C. Johnst. ssp. tomentosum (DC.) Kuijt		CDA16076
Agavaceae		
Hesperoyucca whipplei (Torr.) Trelease		SBBG95551
Alliaceae		
Allium campanulatum S. Watson		SBBG838
Allium crispum Greene		SJSU3333
Allium diabolense (Ownbey & Aase ex Traub) McNeal		UC1296369
Allium howellii Eastw. var. howellii		SBBG852
Allium lacunosum S. Watson var. davisiae (M.E. Jones) McNeal & Ownbey		SJSU3337
Allium peninsulare Lemmon		JEPS99219
Cyperaceae		
Bolboschoenus maritimus (L.) Palla ssp. paludosus (A. Nelson) T. Koyama		
Carex douglasii Boott		
Eleocharis parishii Britton		UCR29110
Schoenoplectus pungens (Vahl) Palla		
Juncaceae		
Juncus balticus Willd.		GW 331.1
Juncus bufonius L. var. bufonius		GW 131
Juncus mexicanus Willd. ex Schult. & Schult. f.		
Juncus textilis Buchenau		
Juncus xiphioides E. Mey.		GW 454
Liliaceae		
Calochortus clavatus S. Watson var. pallidus (Hoover) P.L. Fiedl. & Zebell		
Calochortus splendens Benth.		GW 419
Calochortus venustus Dougl. ex Benth.		GW 418
Fritillaria agrestis Greene		SBBG83798
Fritillaria biflora Lindl. var. biflora		GB
Poaceae		
Achnatherum speciosum (Trin. & Rupr.) Barkworth		SJSU3391
Avena barbata Link	e	
Avena fatua L.	e	GW 292
Bromus arenarius Labill.	e	CDA15095
Bromus berteroanus Coll	e	SBBG81545
Bromus diandrus Roth	e	UCD58588
Bromus hordeaceus L.	e	UCSB45035
Bromus madritensis L. ssp. rubens (L.) Husnot	e	CDA16338
Bromus tectorum L.	e	

Species	Status	Accession #
Cynodon dactylon (L.) Pers.	e	
Deschampsia danthonioides (Trin.) Munro		SBBG54837
Distichlis spicata (L.) Greene		UCD64450
Elymus elymoides (Raf.) Swezey ssp. elymoides		
Elymus glaucus Buckley ssp. ?		
Gastridium ventricosum (Gouan) Schinz & Thell.	e	
Hordeum depressum (Scribner & J.G. Sm.) Rydb.		UCR170959
Hordeum murinum L.	e	UCSB41229
Hordeum murinum L. ssp. leporinum (Link) Arcang.	e	GW 211
Koeleria phleoides (Vill.) Pers.	e	SFV
Lamarckia aurea (L.) Moench	e	
Leymus triticoides (Buckley) Pilger		GW 442
Lolium multiflorum Lam.	e	
Lolium perenne L.	e	
Melica californica Scribn.		
Melica imperfecta Trin.		SBBG109259
Muhlenbergia rigens (Benth.) Hitchc.		
Nassella cernua (Stebbins & Love) Barkworth		CDA16341
Nassella pulchra (Hitchc.) Barkworth		
Phalaris canariensis L.	e	
Phragmites australis (Cav.) Steud.		
Poa annua L.	e	
Poa bulbosa L.	e	
Poa secunda J. Presl ssp. secunda		JEPS75050
Polypogon monspeliensis (L.) Desf.	e	GW 258
Schismus arabicus Nees	e	SBBG95312
Schismus barbatus (L.) Thell.	e	GW 203
Scribneria bolanderi (Thurber) Hackel		SBBG109878
Sorghum bicolor (L.) Moench	e	
Sorghum halepense (L.) Pers.	e	
Triticum aestivum L.	e	
Vulpia bromoides (L.) Gray	e	
Vulpia microstachys (Nutt.) Munro var. ciliata (Beal) Lonard & Gould		CDA13609
Vulpia microstachys (Nutt.) Munro var. confusa (Piper) Lonard & Gould		UC1024740
Vulpia microstachys (Nutt.) Munro var. pauciflora (Beal) Lonard & Gould		SBBG86448
Vulpia myuros (L.) C.C. Gmel. var. hirsuta Hack.	e	GW 256
Ruppiaceae		
Ruppia maritima L.		CDA876
Themidaceae		
Bloomeria crocea (Torr.) Coville		GW 176

Species	Status	Accession #
Brodiaea terrestris Kellogg ssp. kernensis (Hoover) T.F. Niehaus		SFV
Brodiaea terrestris Kellogg ssp. terrestris		
Dichelostemma capitatum (Benth.) A.W. Wood ssp. capitatum		GW 117
Muilla maritima (Torr.) S. Watson		CDA15166
Typhaceae		
Typha domingensis Pers.		GW 483
Zannichelliaceae		
Zannichellia palustris L.		

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Appendix X

Visitation Adaptive Management Strategy and Painted Rock Adverse Impacts Time-Line & Permit

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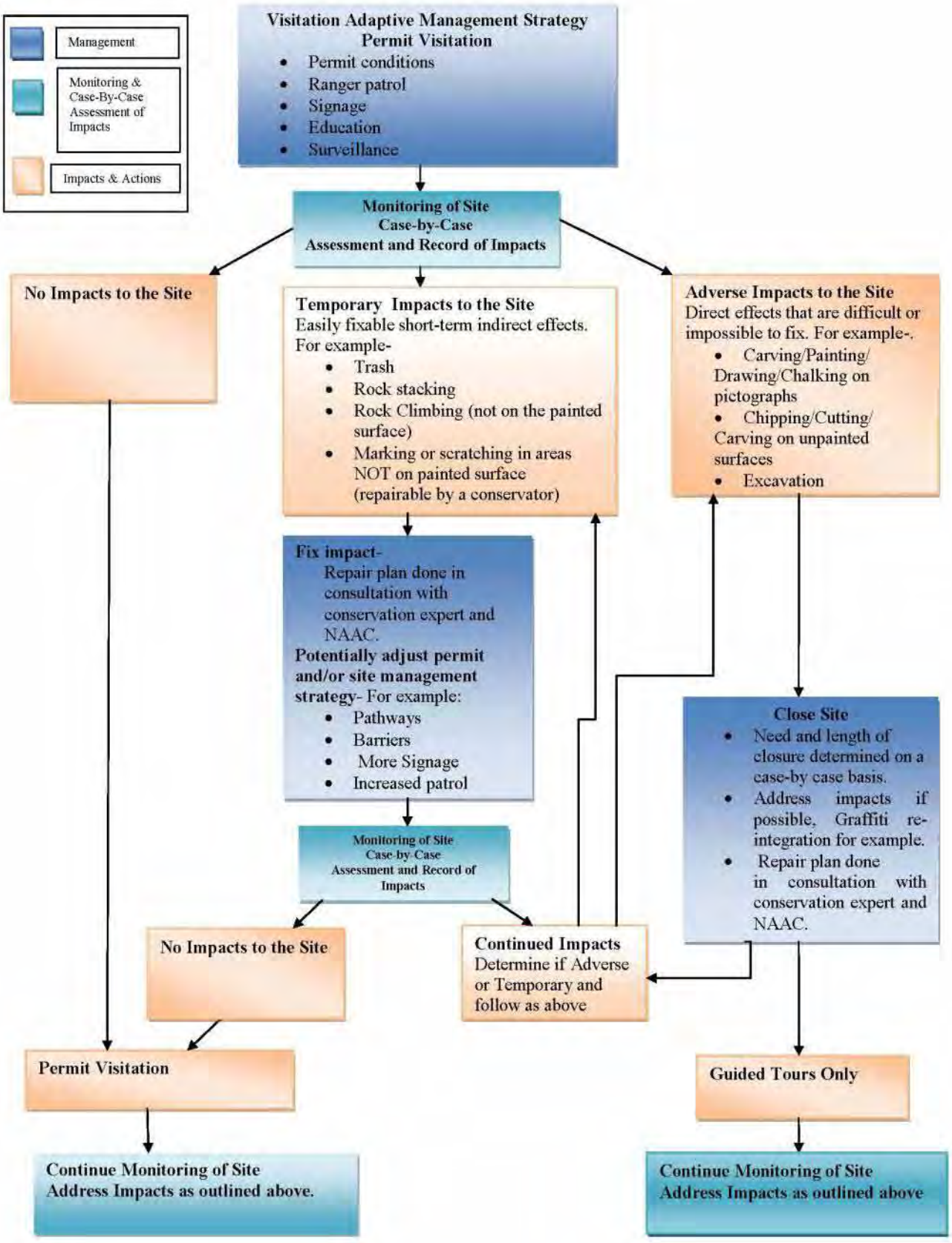
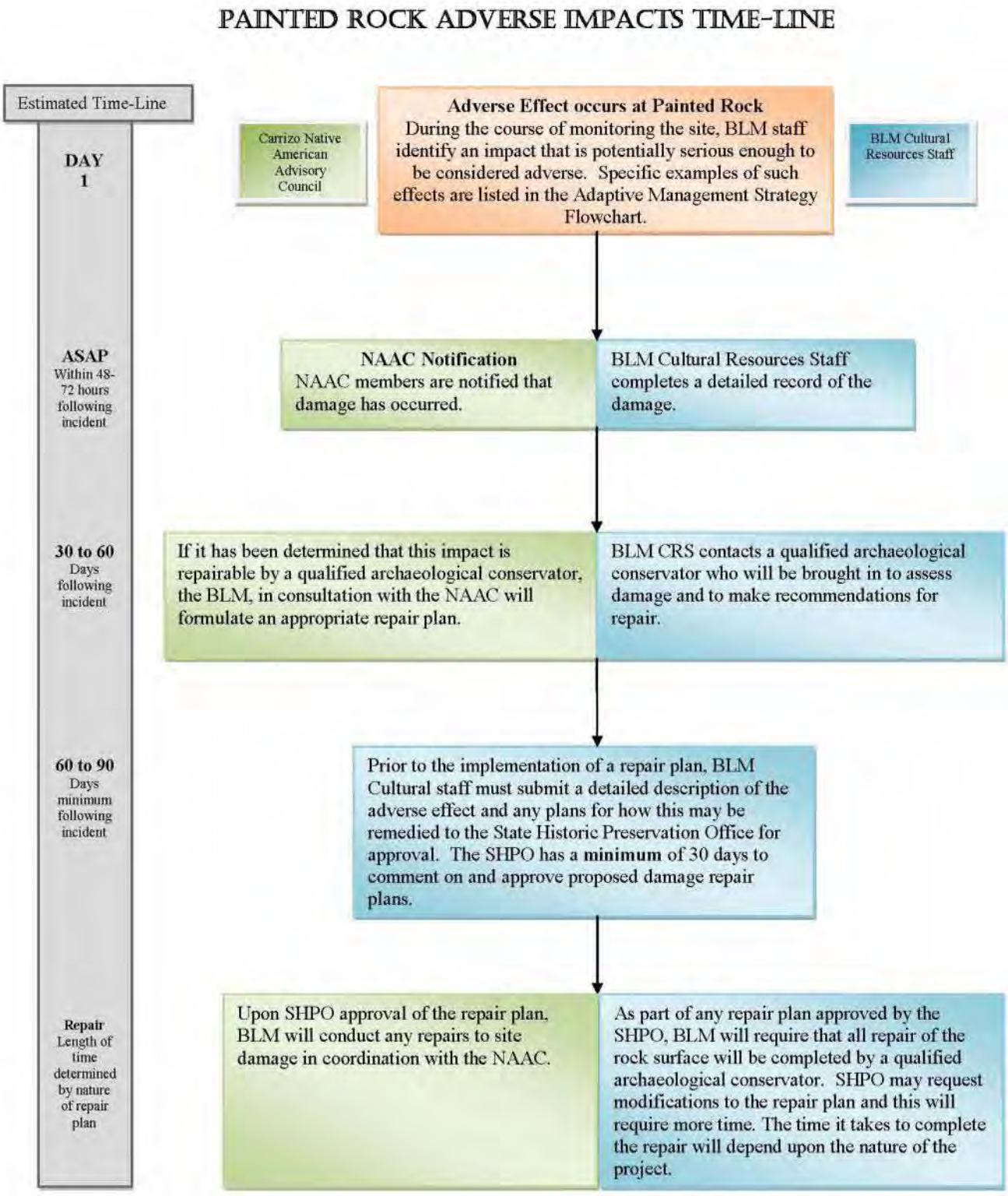

Management
Monitoring & Case-By-Case Assessment of Impacts
Impacts & Actions
Visitation Adaptive Management Strategy
Permit Visitation
Permit conditions
Ranger patrol
Signage
Education
Surveillance
Monitoring of Site
Case-by-Case
Assessment and Record of Impacts
No Impacts to the Site
Temporary Impacts to the Site
Easily fixable short-term indirect effects.
For example-
Trash
Rock stacking
Rock Climbing (not on the painted surface)
Marking or scratching in areas NOT on painted surface (repairable by a conservator)
Adverse Impacts to the Site
Direct effects that are difficult or impossible to fix. For example-.
Carving/Painting/ Drawing/Chalking on pictographs
Chipping/Cutting/ Carving on unpainted surfaces
Excavation
Fix impact-
Repair plan done in consultation with conservation expert and NAAC.
Potentially adjust permit and/or site management strategy- For example:
Pathways
Barriers
More Signage
Increased patrol
Close Site
Need and length of closure determined on a case-by case basis.
Address impacts if possible, Graffiti re-integration for example.
Repair plan done in consultation with conservation expert and NAAC.
Monitoring of Site
Case-by-Case
Assessment and Record of Impacts
No Impacts to the Site
Continued Impacts
Determine if Adverse or Temporary and follow as above
Permit Visitation
Guided Tours Only
Continue Monitoring of Site
Address Impacts as outlined above.
Continue Monitoring of Site
Address Impacts as outlined above


PAINTED ROCK ADVERSE IMPACTS TIME-LINE
Estimated Time-Line
DAY 1
ASAP Within 48-72 hours following incident
30 to 60 Days following incident
60 to 90 Days minimum following incident
Repair Length of time determined by nature of repair plan
Carrizo Native American Advisory Council
Adverse Effect occurs at Painted Rock
During the course of monitoring the site, BLM staff identify an impact that is potentially serious enough to be considered adverse. Specific examples of such effects are listed in the Adaptive Management Strategy Flowchart.
BLM Cultural Resources Staff
NAAC Notification
NAAC members are notified that damage has occurred.
BLM Cultural Resources Staff completes a detailed record of the damage.
If it has been determined that this impact is repairable by a qualified archaeological conservator, the BLM, in consultation with the NAAC will formulate an appropriate repair plan.
BLM CRS contacts a qualified archaeological conservator who will be brought in to assess damage and to make recommendations for repair.
Prior to the implementation of a repair plan, BLM Cultural staff must submit a detailed description of the adverse effect and any plans for how this may be remedied to the State Historic Preservation Office for approval. The SHPO has a minimum of 30 days to comment on and approve proposed damage repair plans.
Upon SHPO approval of the repair plan, BLM will conduct any repairs to site damage in coordination with the NAAC.
As part of any repair plan approved by the SHPO, BLM will require that all repair of the rock surface will be completed by a qualified archaeological conservator. SHPO may request modifications to the repair plan and this will require more time. The time it takes to complete the repair will depend upon the nature of the project.

PAINTED ROCK ACCESS PERMIT

Carrizo Plain National Monument

3801 Pegusus Dr.
Bakersfield Ca. 93308
(661) 391-6048

*Name _____ *Date of permit use _____

*Address _____ *# in Party _____

_____ **Vehicle License Plate:**

*Phone # _____ *State _____ *Number _____

Email (optional) _____ *Drivers License # _____

* = Required information

- All Required information must be filled out to be a valid permit.
- Read all instructions and permit conditions before signing.
- The Permitee upon signing and his/her group, acknowledge and agree to all the conditions on the back of this permit.
- Permits must be signed by an adult eighteen years of age or older.
- One copy of the permit will be placed in a visible spot on permitee's dashboard and another copy will be kept with the permitee / group.
- Permittee will provide the number of people authorized under the permit (not to exceed 19 individuals per permit).
- Your permit is subject to verification by the BLM Law Enforcement Ranger. Inconsistencies on your permit may result in a citation.
- Permittee will sign-in, date, and identify Permit Number on the trail register at the trailhead.
- **Failing to abide by any conditions contained on this permit may result in federal prosecution.**

_____ _____

Signature Date

Permit Conditions:

- Permittee will inform all individuals in his/her group of the conditions required of all persons in the party.
- Permittee will not collect or disturb archaeological and historical resources, including, but not limited to rock paintings/ petroglyphs, rock features, soils, natural resources, and artifacts (1, 4).
- Permittee will not touch or come into physical contact with rock paintings/petroglyphs and rock surfaces adjacent to rock paintings (1, 3, 4).
- Permittee will not walk, crawl and climb on any rock surface or boulder on the archaeological site (1, 2, 3).
- Permittee will stay on designated access trail.
- Permitee will only access the site from designated trail.
- Permittee will not take still or video photography of rock paintings/ petroglyphs for commercial purposes (2).
- Permittee will not access the site from dusk (30 minutes after sunset) to dawn (30 minutes before sunrise) (2, 3).
- Permittee will not access Painted Rock and the trail to the site with horses, dogs, non- motorized and motorized bikes and vehicles (2, 3).
- Permittee will not conduct cache type activities at Painted Rock (2).
- There will not be more than 25 visitors at a time allowed within the rock alcove (horseshoe) when more than one group is visiting the site .
- The discharge of firearms and campfires are not allowed at Painted Rock and the *Painted Rock Exclusion Zone* (2, 3).
- Wildlife and plants will not be disturbed and the collection of biological resources is prohibited (4).
- Painted Rock may be closed or subject to access restrictions during sensitive periods of bird nesting (3).
- Permittee will not discard trash at Painted Rock or public land in the Monument (5).
- The permittee agrees to indemnify and hold harmless the United States for any and all liability, including injury to persons or damage to property, which may result directly or indirectly from the use permitted (5).
- **Failing to abide by any conditions contained on this permit may result in federal prosecution. Regulations, laws, and supplemental rules on next page.**

Federal Regulations, Laws, Supplemental Rules Referenced

(1) Archaeological Resources Protection Act (ARPA) of 1979 (P.L. 96-95; 93 Stat. 721; 16 U.S.C. 470aa et seq.) as amended (P.L. 100-555; P.L. 100-588) provides civil and felony-level penalties for the unauthorized excavation, removal, damage, alteration, defacement, or the attempted unauthorized removal, damage, alteration, or defacement of any archaeological resource, more than 100 years of age, found on public lands. The act also prohibits the sale, purchase, exchange, transportation, receipt, or offering of any archaeological resource obtained from public lands.

(2) Carrizo Plain National Monument Resource Management Plan, Supplemental Rule.

(3) 43 Code of Regulations (CFR), 8364.1, closure and restriction orders by authorized officer to protect persons, property, and public land resources.

(4) 43 CFR, 8365.1-5, unless otherwise authorized, no person shall willfully deface, disturb, remove or destroy .....structures, or any scientific, cultural, archaeological or historic resource, natural object, plants, soil , rocks or minerals, or cave resources except as permitted.

(5) 43 CFR 2932.40-.41, Special Recreation Permit stipulations and terms.

Appendix Y

Bureau of Land Management Spill Reporting and Cleanup Guidelines

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RF

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
California State Office
2800 Cottage Way, Room E-2845
Sacramento, California 95825-1889

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:

January 8, 1992

3160
CA-922.7

Instruction Memorandum CA-92-124
Expires: 9/30/93

TO: All District Managers

From: Deputy State Director, Mineral Resources

Subject: Oil and Gas Guidelines for Undesirable Events (NTL-3A)

These guidelines apply to events occurring on onshore Federal and Indian oil and gas leases, or on fee and State lands within federally supervised unitized or communitized areas. They are based on guidelines contained in the Bureau's Notice to Lessee No. 3A (NTL-3A).

The objectives for NTL-3A are:

A) to document the cause and number of undesirable events.
B) to reduce the number of occurrences.
C) to ensure that those events which do occur are promptly contained, and necessary clean-up is accomplished.
D) to determine and report hydrocarbons lost on the Monthly Report of Operations (MMS-3160).

Major (Class 1) Undesirable Events require immediate notification to District Offices or Resource Area Offices. The undesirable event will be reported within a maximum of 24 hrs and followed up with a written report within 15 days. A field investigation shall be done within 24 hours without delay.

Class 1 events are defined as:

A: Oil, saltwater, and toxic liquids or any combination resulting in a spill of 100 or more barrels of liquid; however, with the exception of a spill entirely contained by a facility firewall.
B: Equipment failures or other accidents which result in venting of 500 or more MCF of gas.
C: Any fire which consumes the volumes mentioned above.
D: Any spill, venting, or fire, regardless of the volume involved, which occurs in sensitive areas; for example, parks, wildlife refuges, lakes, streams, urban and suburban areas.
E: Accidents which involve a fatal injury.

F: Any blowout.

Medium (Class 2) Undesirable Events do not have to be reported within 24 hrs, but must be followed up with a written report within 15 days. Field Investigations shall be initiated at the discretion of the Authorized Officer.

Class 2 events are defined as:

A: Oil, saltwater and toxic liquids or any combination which discharge at least 10 but less than 100 barrels of liquid in a nonsensitive area, or 100 barrels or more contained by a facility firewall.
B: Equipment failures or other accidents which result in venting of at least 50 but less than 500 Mcf of gas in nonsensitive areas.
C: Any fire which consumes volumes specified in the above category.
D: Each accident involving a major or life threatening injury.

Minor (Class 3) Undesirable Events do not require a written report. These small incidents are resolved by the Environmental Scientist or Petroleum Engineering Technician out in the field.

Class 3 events are defined as:

A: Oil, saltwater, and toxic liquid spills, or any combination which result in a discharge of less than 10 barrels of liquid in nonsensitive areas.
B: Equipment failures or other accidents which result in the venting of less than 50 mcf of gas in nonsensitive areas.
C: Any fire which consumes the above volumes of liquid and/or gas.

Upon the request of a District or Resource Area Engineer a copy of the Spill Control and Countermeasure Plan is required to be submitted by the operating company.

Again, all volumes of oil spilled, gas vented, and all hydrocarbons consumed by fire or otherwise lost must be reported on the Monthly Report of Operations (MMS-3160).

I have attached an undesirable event form and a statewide organization chart to help track these incidents.

If you have any questions, please call John Mesrobian at FTS-460-4735.

Attachment
Report of Undesirable Event (1 pp)
Organization Chart (2 pps)

Robert M. Anderson

Distribution
WO-610, PB, Rm 601
SC-324

CCICC INCIDENT # FIRE #

3160 UE - REPORT OF UNDESIRABLE EVENT (NTL-3A)				
Date of Occurrence:		Time of Occurrence: (*Use 24 hour clock)		
Date Reported/BLM: Received by:		Time Reported/BLM: (*Use 24 hour clock)		
State: CALIFORNIA		County:		
QtrQtr:	Section:	Twn:	Rng:	Meridian:
Operator:	Person Reporting:	Phone: (661)		
	Field Contact Rep.:	Phone: (661)		
Surface Ownership: *(circle one)* FEDERAL INDIAN FEE STATE				
Lease#: Unit Name or CA#:		Well#/Facility Name:		ROW#
Spill Prevention Plan: *YES, NO* Secondary Containment (if at facility): *YES, NO*				
Cause of Event:				
Type of Event: *(Circle all that apply)*	*FATALITY, INJURY, FIRE, BLOWOUT, PROPERTY DAMAGE, TOXIC FLUID SPILL, OIL&TOXIC FLUID SPILL, SALTWATER&TOXIC FLUID SPILL, OIL SPILL, SALTWATER SPILL, OIL&SALTWATER SPILL, GAS VENTING, FLUID SPILL INTO HABITAT/VEGETATION, Other:*			
Volumes of Pollutants: BBL OIL, WATER, TOXIC FLUID, MCF, ETC. *(attach operator=s report)*	Discharged or Consumed:			
	Recovered:			
Time Required to Control Event *(in hours)*:				
Action to Control Event: *(Description of Resultant Damage, Clean-up Procedures, and Dates-attach operator=s report)*				
Cause and Extent of Personnel Injured:				
Action Taken to Prevent Recurrence:				
Federal, State, and Local Agencies Notified by OPERATOR: *(CHECK EACH NOTIFIED)*				
OES___ Control #_____; BLM___; DOGGR___; CUPA___; KCEHD___; NRC___; RWQCB___; DOE___; Other				
Person Operator Notified at BLM: Name: Faxed to:		TITLE: DATE:	TIME:	
BLM Field Contact: Name:		TITLE: DATE:	TIME:	
Entered into *AFMSS* by:		Date:		
BLM HAZMAT or SUPERVISOR USE ONLY				
Date Reported to Area Manager:		Date Reported to Sacramento:		
NTL-3A Classification:		Date of On Site Inspection:		
Wildlife Classification: *YES, NO*		HAZMAT Classification: *YES, NO*		
Remarks:				

OES Phone #: 1-800-852-7550 BLM Phone #: (661)391-6130

COPIES TO: LEASE FILE PET AREA: 1 2 3 4 5 HAZMAT/SAFETY___ SURFACE COMPLIANCE___ ENGINEERING___ AFMSS ENTRY___ DISPATCH___ OTHER_____

10-10-08 KV

GUIDELINES FOR CLEAN-UP OF HEAVY CRUDE OIL ON FEDERAL LEASES

This document is a summary of BLM guidelines for cleaning up Heavy crude oil releases in California. Action must be taken in the first few hours of a spill or release to reduce or eliminate any hazard to human health and safety, property and the evironment. If an incident is life threatening, the operator or BLM personnel should immediately contact 911.

In some situations, EPA requires the preparation of a Spill Prevention Control and Countermeasure Plan for a facility (40 CFR 112). These must address engineering and operational protective measures, which will control and contain releases and avoid impacts on BLM lands.

I. Guidelines for clean-up of spills on developed surfaces

Developed surfaces are graded roads, tank batteries, well or compressor pads or other barren compacted work surfaces. The development of all roads, pads, and work surfaces must be approved by BLM, in advance, through submission and approval of a Sundry Notice.

When spills occur and remain on developed surfaces, the clean-up work may be conducted with any type of equipment as soon as the spill is detected, the material is identified, and the health and safety of workers and the public is assured. Notify BLM by telephone or fax according to the spill reporting procedures.

II. Guidelines for clean-up of spills on undeveloped surfaces and sensitive areas

Undeveloped surfaces are potential wildlife habitat and are considered to be sensitive areas. Sensitive areas also include wildlife and urban parks, designated natural areas, wildlife refugees; urban and suburban areas which include homes, offices, shops, schools, and farms; lakes, ponds, ephemeral streams and tributaries with or without flowing or standing water; and any actual or potential wildlife/endangered species habitat impacted by the release or cleanup.

When spills occur on undeveloped surfaces, the Operator shall contact BLM immediately at 661-391-6130. This phone call is necessary even when the size of the spill would not normally require a phone call under the reporting requirements. Rapid containment and control is critical and must be done in a manner that minimizes impacts.

The BLM Supervisory PET, or other BLM staff if the SPET cannot be reached, will ask for a description of the situation and the Operators plans for containment and clean-up. BLM may give a verbal approval for the initial limited critical action necessary to rapidly contain and control the spill. Inspection of the spill site and coordination with resource specialists and/or regulatory agencies may be necessary to evaluate the overall clean-up plan before approval is given. The Operators clean-up plan will be approved when BLM and any appropriate state and local agency determines that the plan adequately controls and cleans up the spill and provides sufficient protection for the affected resources. The Operator shall be prepared to provide BLM with a written copy of the clean-up plan and Site Health and Safety Plan if requested.

The Operator must provide a qualified on-site Hazardous Materials Incident Commander (IC) for the duration of the spill response. Where BLM resources are impacted, BLM will also provide a Hazardous Materials Incident Commander who will share command equally with the Operator's IC. When a release impacts waters of the State or endangers public health and safety, the California Department of Fish and Game, California Office of Emergency Services, USCG, or EPA may designate an IC to relieve the Operator and/ or BLM IC and direct the emergency response.

The following clean-up procedures are recommended for heavy crude oil spills.

1. Flush immediately with clean, hot water where the oil has flowed down drainage channels. Hot produced water is acceptable in emergency clean-up situations as long as the oil is contained in the drainage and the oil/water mixture is removed by vacuum truck. Establish a location next to a road or road crossing to dig a bell hole for water and oil recovery by vacuum trucks. The water and crude oil will be taken back to the wash tank on the lease where the spill occurred.

2. After hot flushing is no longer effective, hand crews will remove any remaining oil by shovel and buckets. Oil soaked soil and vegetation will be taken by bucket to the nearest developed surface for temporary staging. Oily materials will be relocated to a BLM approved road mix or disposal site.

3. All work should minimize the disturbance of vegetation. Salt bush will be cleaned by trimming any oil soaked portion. Entire salt bushes may not be removed unless approved by an on-site qualified BLM representative. All oil under and around the bases of shrubs will be removed by hand.

4. All workers will be instructed to avoid any animal burrows and to immediately report all animal deaths caused by the spill to the Operator's supervisor and the BLM staff.

5. Any entry of equipment on undeveloped surfaces will require prior approval by BLM personnel. Verbal approval may be granted when the Operator initially contacts BLM by phone if it's necessary for rapid containment and control.

6. BLM personnel may conduct inspections at any time during and after the clean-up operations. BLM's guidance on clean-up activities will be communicated by the BLM inspector or BLM Incident Commander (IC).

7. The Operator will notify BLM when the clean up is complete and BLM will conduct a surface inspection. Backfill all excavations and re-contour. A Subsequent Report of Undesirable Events may be requested.

These guidelines have been developed for heavy crude (<20 API) oil spills. Emergency response to releases of light crude oil and other hazardous materials are regulated by 40 CFR Part 300 and corresponding California regulations. Refer to the Reportable Quantities found in 40 CFR 302 and 355.

Reference: 29CFR1910.120(q), 49CFR171-180, 40 CFR Part 300, CCR-Section 1722(h), PRC-Sections 3233 and 3106, PRC-Section 3236, PRC-Section 3236.5

10/10/08

Appendix Z

Cooperative Management Agreement for the Carrizo Plain National Monument

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COOPERATIVE MANAGEMENT AGREEMENT FOR THE CARRIZO PLAIN NATIONAL MONUMENT

This Cooperative Management Agreement (" **Agreement**") is made among and entered into as of the date signed, by the U.S. Bureau of Land Management (hereinafter referred to as "**BUREAU**"), the California Department of Fish and Game ("**DEPARTMENT**"), and The Nature Conservancy (referred to as "**CONSERVANCY**"), a District of Columbia nonprofit corporation. Once executed, each signatory becomes a "**PARTY**" and all of the signatories shall collectively be referred to as "**PARTIES**."

This Agreement is based on the following representations and statements of purpose:

PURPOSE

The purpose of this Agreement is to define relationships and identify some of the roles and responsibilities of the BUREAU, the DEPARTMENT and the CONSERVANCY in managing the Carrizo Plain National Monument (which for purposes of this Agreement includes all Department and Conservancy in-holdings) ("**CPNM**"). The actions described herein were largely identified in a long-term Carrizo Plain Natural Area Plan (the "**Natural Area Plan**") completed by the PARTIES in 1996. However, the establishment of the CPNM in 2001 created the mandate for the BUREAU to write a Resource Management Plan ("**RMP**") that will supersede the Natural Area Plan. This Agreement will aid the PARTIES in working together to meet the management objectives of the RMP and related management concerns on the CPNM.

It is anticipated that the RMP will describe the PARTIES' desire to coordinate the management of lands they own within the CPNM, but it will not specify the PARTIES' responsibilities. This Agreement will not supersede any portions of the RMP, but rather is intended to augments it by describing some specific responsibilities of the PARTIES. The PARTIES acknowledge that their respective interests are subject to different authorities and policies, and that this Agreement is intended by the PARTIES to define an administrative process and facilitate cooperation among them to the greatest extent possible.

AUTHORITY

This Agreement is entered into under the following authorities of the PARTIES, among others:

BUREAU: The Federal Land Policy and Management Act (FLPMA), 1976; section 102(a)(8). This
Section of FLPMA provides, where appropriate, for the protection and conservation of public lands in their natural condition that will provide food and habitat for fish and wildlife.

CONSERVANCY: Articles of Incorporation of The Nature Conservancy, a District of Columbia non- profit corporation.

DEPARTMENT: The California Department of Fish and Game, which as a State trustee Agency has jurisdiction over the conservation, protection and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species pursuant to Sections 1801,1802, and 1900 of the California Fish and Game Code.

THEREFORE, the PARTIES mutually agree as follows:

I. APPLICATION OF THIS AGREEMENT

This Agreement provides for the cooperative management of (a) the CPNM lands owned by the PARTIES as of the date of this agreement (shown in Exhibit 1), and (b) other lands within the boundaries of the CPNM, if acquired by one of the PARTIES in the future.

II. MISSION AND VISION

The following summarize the PARTIES' Mission and Vision for the CPNM:

Mission

The mission within the CPNM is to (a) protect and enhance the indigenous species and natural communities, within a dynamic and fully functioning ecosystem, (b) conserve the unique geologic, paleontologic and cultural resources, and (c) provide opportunities for compatible scientific, cultural, educational and recreational activities (collectively, the "**Mission**").

Vision

The vision is to cooperatively employ management strategies that enable the PARTIES to accomplish the Mission ("**Vision**"). The management of the CPNM should conserve the integrity of the CPNM as an ecological system and natural landscape with its full array of natural and cultural features and protect and enhance the full spectrum of physical and chemical processes necessary to support indigenous species, biological diversity, and ecological function and processes within the natural range of variation.

The Mission is the guiding principle for management of the CPNM and will not change significantly over time. The Vision provides for management strategies that will help the PARTIES accomplish the Mission. Both the Mission and Vision were developed to be consistent with the January 2001 Presidential Proclamation that established the CPNM. The Proclamation cited the following as the purpose of the CPNM: protect the largest undeveloped remnant of San Joaquin Valley grassland ecosystem, providing for the long-term conservation of the endemic plant and animal species; a refuge for endangered, threatened and rare plant and animal species, as well as important populations of pronghorn antelope and tule elk; Soda Lake, the largest remaining alkali wetland in Southern California; geologic processes and the San Andreas fault; significant fossil assemblages; and, archeological and cultural resources.

This Agreement and the Operating Agreements (as defined below) are dedicated to performance of the Mission and implementation of the Vision.

III. COMMON RESPONSIBILITIES AND ADMINISTRATION

In accordance with their respective rights, responsibilities, and authorities, and in applying their respective expertise, skills, and knowledge, the PARTIES agree to the following:

A. The PARTIES will:

1. operate in an atmosphere of openness and willing cooperation;

2. set goals and objectives that serve the Mission and establish criteria by which the PARTIES will be able to measure success in attaining the PARTIES' goals and objectives;

3. manage adaptively by basing management decisions on the then best available scientific knowledge and measures of the success of previous actions;

4. restore degraded natural systems and emphasize natural processes in management practices, whenever possible;

5. manage human activities to protect natural and sensitive resources;

6. promote public participation in educational and management activities to foster an understanding of, and support for, the CPNM's resources, the Mission and the role of the PARTIES in conserving the natural resources for the future.

B. To carry out this Agreement, and ensure the coordinated management of the CPNM that the PARTIES anticipate will be described in the RMP, each PARTY will designate a representative who will serve on a CPNM management team. Each PARTY will provide the other PARTIES with 30-days prior written notice if it elects to change its designated representatives.

C. The designated representatives shall meet quarterly or as often as the PARTIES deem necessary. The BUREAU shall convene meetings of the PARTIES and shall preside at all such meetings; provided, however, that if another PARTY is required to schedule a meeting pursuant to this Agreement that PARTY shall be responsible for convening and presiding at such meeting.

D. The PARTIES will strive to reach consensus on the issues described in this Agreement. In the event that the designated representatives are unable to reach consensus, or should one or more of the PARTIES not be satisfied that particular issues are being addressed, or should one PARTY have a grievance concerning the process of addressing issues of mutual concern; the PARTIES shall collaborate in good faith to resolve the dispute.

IV: OPERATING AGREEMENTS

To implement this Agreement in the most effective manner, Operating Agreements will be utilized to outline the PARTIES' specific procedural and technical working relationships. The following operating agreements have been developed, attached to, and made a part of this Agreement (collectively, "**Operating Agreements**").

A. Resource Management Plan (attached as Exhibit 2)
B. Grazing Operations (attached as Exhibit 3)

Other operating agreements may be developed, and the existing Operating Agreements may be modified or deleted, only with the unanimous written consent of the PARTIES.

V: AMENDMENT PROCESS

This Agreement may be amended only as follows.

A. Any PARTY may propose an amendment by providing a written copy of the proposed amendment to the other PARTIES. No amendment shall become effective unless, and until, it has been approved in writing by all of the PARTIES.

B. Any oral or written understanding that is not incorporated into this Agreement by amendment shall be without force or effect and may not be utilized for the purpose of interpreting any provision of this Agreement.

C. The addition of new parties to this agreement shall require an amendment in accordance with the requirements of this section.

VI. APPLICABILITY OF STATE AND FEDERAL LAW

Notwithstanding any other provision herein, this Agreement is subject to, and shall not be interpreted to be inconsistent with, any requirement of the federal Endangered Species Act (16 U.S.C. Section 1531 et seq.) or any other applicable federal, state, or local law or regulation.

VII. INDEMNIFICATION

Each PARTY shall indemnify and hold each and every other PARTY and their officers, agents, employees, and independent contractors free and harmless from any liability whatsoever, to the extent based or asserted upon any act or omission of said PARTY pursuant to this Agreement, to the extent that such damage, injury, or death is not caused in part by the negligence of another PARTY, or their officers, agents, employees, or independent contractors. As used throughout this paragraph, "officers" includes, but is not limited to, any person who is a member of a PARTY's governing body or who exercises executive responsibility.

VIII. TERM OF THIS AGREEMENT

This Agreement shall become effective, as of the date of the last signature below, and shall supersede the original cooperative agreement among the PARTIES, which was dated Jan. 23, 1997.

A. Any PARTY may withdraw from this Agreement by delivery of a notice of intent to withdraw at least sixty (60) days prior to the proposed withdrawal date.

B. After the withdrawal date, the withdrawing PARTY shall have no further obligations under this Agreement except for those obligations extending beyond the initial term and those costs, if any, incurred prior to the withdrawal date and properly chargeable to the withdrawing PARTY.

C. Withdrawal of any PARTY shall not terminate this Agreement as to the remaining PARTIES.

D. If not all the parties to the original agreement sign this Agreement, than with respect to

the PARTIES that sign this Agreement, this Agreement shall serve as such PARTIES' notice of intent to withdraw, pursuant to Section X of the original cooperative agreement. By signing this Agreement below, each of the PARTIES aggress that this Agreement supersedes the original cooperative agreement in its entirety and in all respects and the original cooperative agreement is of no further force and effect.

IX. EXECUTION

This Agreement may be executed in three (3) duplicate originals, each of which is to be considered an original.

X. AVAILABILITY OF FUNDS

Implementation of this Agreement by any PARTY shall be subject to the availability to that PARTY of available (and in the case of the BUREAU, appropriated) funds. The PARTIES shall endeavor to obtain funds for carrying out as many provisions of this Agreement as feasible. However, the unavailability or reduced availability of funding from any one of the PARTIES shall not operate to suspend or terminate this Agreement. Whenever possible, the PARTIES shall reduce the scope of activities to adapt to changes in available funding, rather than terminate or suspend an activity. The PARTIES recognize that the performance of each other under this Agreement may, from time to time, be unavoidably curtailed due to lack of funding. Each PARTY shall, at is sole discretion, make its own determination as to whether its respective organization has funding available.

XI. ELECTED OFFICIALS NOT TO BENEFIT

No member of or delegate to the Congress or resident commissioner shall be entitled to any share or part of this Agreement, or to any benefit that may arise from it.

XII. SEVERABILITY

If any provision of this Agreement is judicially determined or held to be invalid for any reason, that invalidity shall not, however, be imputed to any other provision of this Agreement that was not so determined or held to be invalid.

Timothy Z. Smith
Bakersfield Field Office Manager
Bureau of Land Management

4/23/09
(Date)

Jeff Single
Regional Manager, Central Region
Department of Fish and Game

4/24/09
(Date)

Michael Sweeney
California State Director
The Nature Conservancy

4/25/09
(Date)

Exhibit 1
Map of CPNM Lands

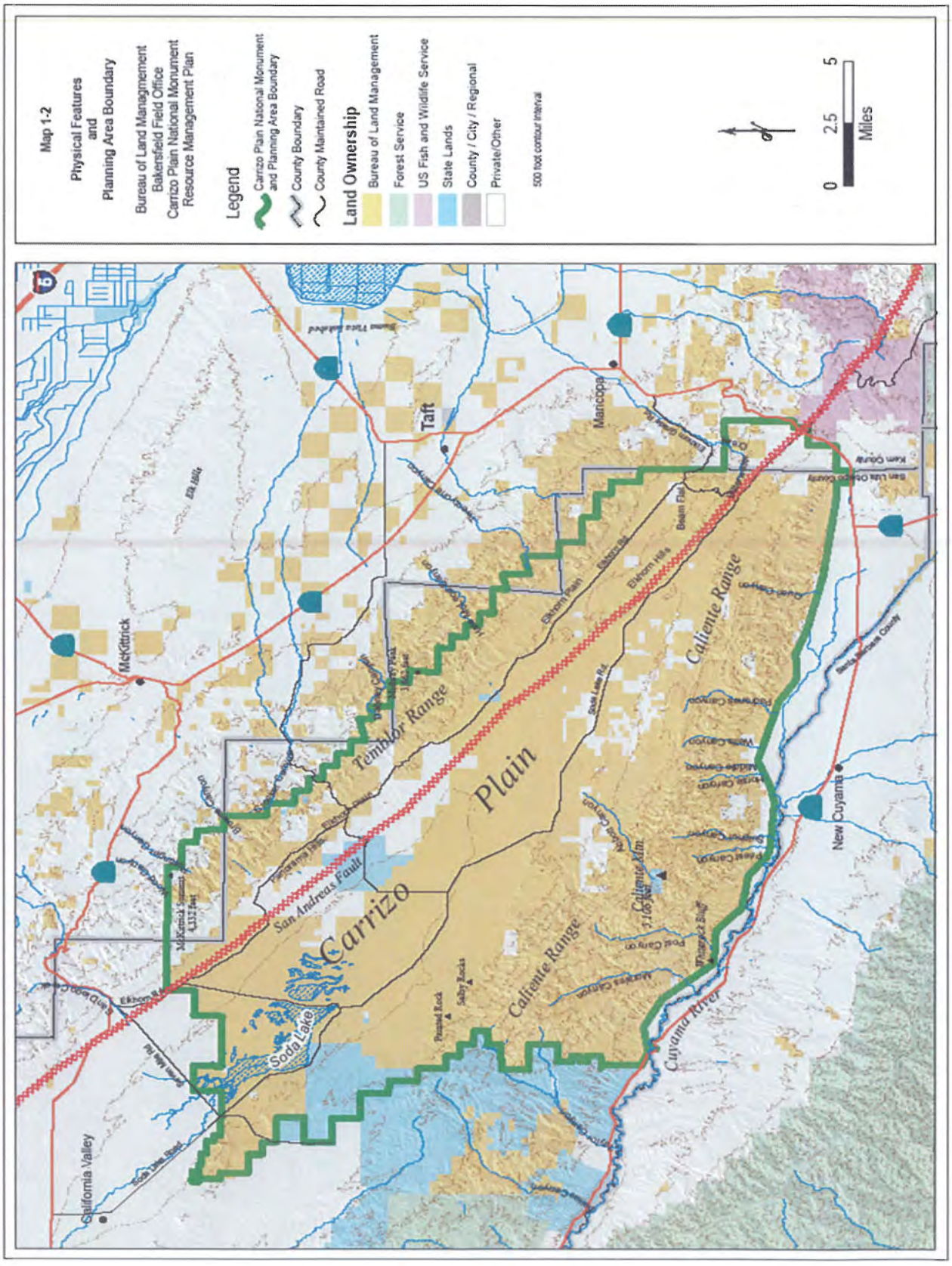

Exhibit 2

Resource Management Plan
Operating Agreement

This Operating Agreement provides a coordinated framework for each PARTY's resource management planning efforts for lands within the CPNM.

The procedures in this Operating Agreement shall be carried out in a cooperative manner. The following guidelines shall apply to each PARTY's resource management planning:

1. Each PARTY will perform the resource management planning efforts on its properties with the input of the other PARTIES and may request assistance from the other PARTIES.

    a. Each PARTY will schedule meetings with the other PARTIES regarding the planning efforts on its property. Efforts to accommodate schedules and optimize participation shall be made.
    b. The PARTY scheduling the meeting shall set and distribute agendas and distribute supporting materials as necessary.
    c. The PARTY scheduling the meeting will convene and preside over the meetings pertaining to its planning efforts.
    d. Each PARTY shall be responsible for coordinating the review of the other PARTIES' planning efforts and the regulatory and legal aspects of its own plan preparation.

2. Timelines for each PARTY's management planning process will be developed in conjunction with the other PARTIES. The timelines will be developed with consideration of the other PARTIES' level of participation and the expected time for comments and review and will incorporate flexibility as demanded by complex planning processes.

3. Each PARTY will send a representative to participate in scoping meetings.

4. Each PARTY shall be responsible for determining its own internal requirements for approving its own and the other PARTIES' planning efforts. Without limiting the generality of the foregoing, each PARTY shall independently decide what level of internal authorization it needs prior to issuing letters of concurrence, signing planning documents and providing permission for the placement of logos on planning documents.

5. The PARTIES will strive for consensus in development of the planning process, schedule and content of plans.

6. The Bureau will extend cooperating agency status to tribal, state and local governments as well as other federal agencies, to help in the preparation of its resource management efforts. (43 CFR 1610.0-5(e)).

Exhibit 3

Grazing Management Operating Agreement

This Operating Agreement provides a coordinated framework for the management of livestock grazing on the Carrizo Plain National Monument (CPNM). This Operating Agreement covers livestock grazing activities for all lands within the CPNM initiated or regulated by any of the PARTIES. Livestock grazing shall be used to achieve the Mission; as opposed to the production of livestock forage.

The PARTIES shall cooperate on grazing management, as appropriate, subject to the responsibilities imposed on each PARTY by its own policies, procedures and regulations on lands under their jurisdictions within the CPNM. The PARTIES will comply with the following:

1. The PARTIES will collaborate on the continual development of the "Conservation Target Table" specific to the CPNM that the RMP may describe or require. This Table will be guided by the fundamental goal of maintaining, restoring and enhancing the natural communities and ecosystem of the CPNM, as expressed in the Mission and Vision.

2. The PARTIES will collaborate on the identification of conservation priorities and the development and updating of specific management objectives for the CPNM.

3. Natural communities in the CPNM are highly susceptible to the effects of annual climatic factors and require adaptive management. Therefore, the PARTIES will collaborate to base livestock grazing management decisions on the then best available data.

4. In order for the Bureau to more effectively implement the administration of grazing (as it is anticipated the RMP will outline), the majority of the CPNM will be managed under the Free Use grazing regulations. The PARTIES will develop consensus on an annual meeting schedule for the following:

- Periodic meetings to review refine and amend resource criteria utilized to support grazing decisions in the Free Use areas. These criteria include but are not limited to: threatened and endangered species, vegetative structure and composition, research, supporting infrastructure, practical considerations of grazing operator, timing of grazing, soils, restoration goals, resource protection criteria, other policy or management considerations and monitoring needs/efforts.
- An annual (August-September) grazing meeting to review the results of the prior year's decisions and recommend actions for the coming year.
- The Bureau will schedule meetings or conference calls to discuss any deviations from the implemented grazing prescriptions for the current grazing season. The PARTIES will respond in a timely manner as decisions often need to be made quickly.

- As additional lands are acquired within the CPNM, the PARTIES will work together to evaluate these parcels for their resource values and determine each new parcels availability for grazing, as outlined under grazing management in the RMP, and the appropriateness of each new parcel's inclusion under the Free Use grazing regulations.

5. The PARTIES will collaborate, cooperate and coordinate scientific research on flora and fauna and utilize results to inform resource management priorities germane to potential grazing practices.

The PARTIES will strive for consensus in making decisions regarding grazing including the tasks identified above.

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MAPS

Bureau of Land Management, Bakersfield Office, Carrizo Plain National Monument

Map 1-2 Physical Features and Planning Area Boundary

Map 2-1 Painted Rock Exclusion Zone
Map 2-2 Alternative 1 Recreation Management Zones and Route Designations
Map 2-3 Alternative 2-Proposed Plan Recreation Management Zones and Route Designations
Map 2-4 Alternative 3 Recreation Management Zones and Route Designations
Map 2-5 Lands Managed for Wilderness Characteristics
Map 2-6 Alternative 1 Livestock Grazing
Map 2-7 Proposed Plan and Alternative 3 Livestock Grazing Allocations
Map 2-8 No Action Alternative Livestock Grazing

Map 3-1 Carrizo Plain Subregions
Map 3-2 Special Status Animals
Map 3-3 Pronghorn and Elk Habitat
Map 3-4 Vegetation Types
Map 3-5 Special Status Plants
Map 3-6 Fire History and Prescribed Burns
Map 3-7 Fire Protection Providers
Map 3-8 General Soil Map Units
Map 3-9 Hydrographic Features
Map 3-10 Generalized Geology
Map 3-11 National Register of Historic Places
Map 3-12 Grazing Allotments
Map 3-13 Pastures
Map 3-14 Visitor Services and Recreation
Map 3-15 Recreation Opportunity Spectrum
Map 3-16 Oil and Gas Wells within the Carrizo Plain National Monument
Map 3-17 Producing Oil Fields
Map 3-18 Land Ownership Status
Map 3-19 Land Status and Withdrawals
Map 3-20 Infrastructure

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Bureau of Land Management
Bakersfield Field Office
Carrizo Plain National Monument

Map 1-2
Physical Features
and
Planning Area Boundary

Carrizo Plain National Monument
Proposed RMP/EIS

Bureau of Land Management
Bakersfield Field Office

Legend

- Carrizo Plain National Monument
- County Maintained Road
- San Andreas Fault

Land Ownershp

- Bureau of Land Management
- US Forest Service
- US Fish and Wildlife Service
- State
- County/State/Regional
- Private/Other

500 Foot Contour Interval

0 2.5 5
Miles

California Valley
1,965 feet
Soda Lake Road
Seven Mile Rd
San Diego Creek
Elkhorn Rd
58
McKittrick Summit
4,332 feet
Wood Canyon
Pottinger Canyon
McKittrick
1,051 feet
Elk Hills
Browns Canyon
Cracker Canyon
Panorama Hills
Elkhorn Plain
Temblor Range
Soda Lake
1,919 feet
San Andreas Fault
Carrizo
Plain
Dabney Canyon
Midway Peak
3,662 feet
Hale McLeod Canyon
Twenty one Canyon
Taft
987 feet
5
33
119
Painted Rock
Selby Rocks
Caliente Range
Soda Lake Rd.
Elkhorn Plain
Elkhorn Rd.
Elkhorn Hills
Maricopa
883 feet
166
Beam Elat
Elkhorn Grade Rd.
Bitterwater Creek
Abbott Canyon
Caliente Mtn.
5,106 feet
Whiterock Bluff
Cuyama River
Priest Canyon
Sulphur Canyon
Horse Canyon
Middle Canyon
Wells Canyon
Padrones Canyon
Quail Canyon
New Cuyama
2,120 feet
Santa Barbara County
San Luis Obispo County
Kern County
33
N
W
E
S

Goodwin Educational Center

Selby Road

Soda Lake Road

Painted Rock

Selby Rocks

Selby Campground

Caliente Mtn. Rd.

Map 2-1
Painted Rock Exclusion Zone

Carrizo Plain National Monument
Proposed RMP/EIS

Bureau of Land Management
Bakersfield Field Office

Legend

Carrizo Plain National Monument

County Maintained Road

Exclusion Area Perimeter

Presently Fenced

Road

To be signed

Land Ownershp

Bureau of Land Management

US Forest Service

US Fish and Wildlife Service

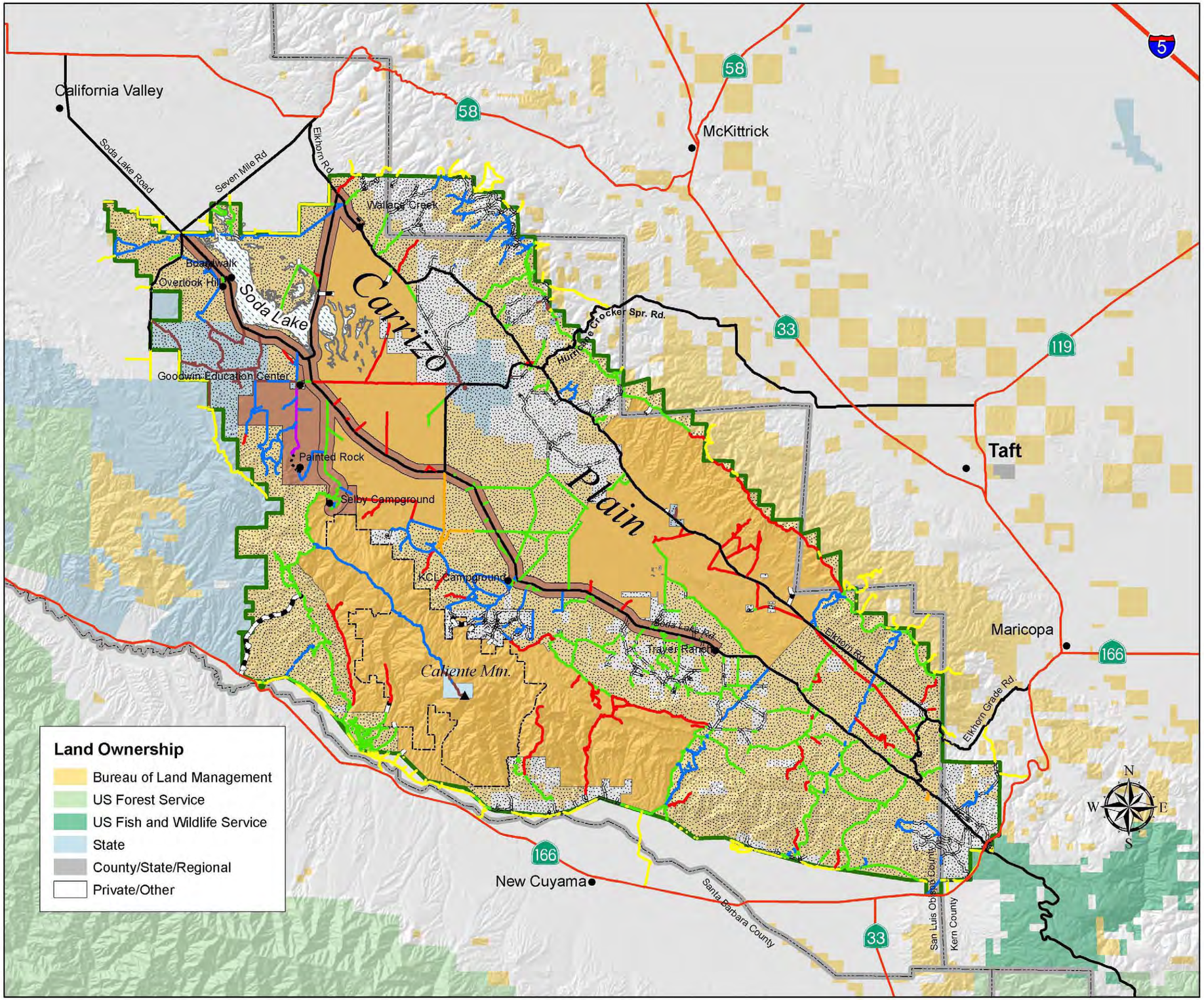
State

County/State/Regional

Private/Other

0 0.5 1

Miles



Map 2-2
Alternative 1

Recreation Management Zones and Route Designations

Bureau of Land Managmement
Bakersfield Field Office
Carrizo Plain National Monument
Resource Management Plan

Legend

- CPNM Boundary
- Caliente Mtn. WSA

Route Designations

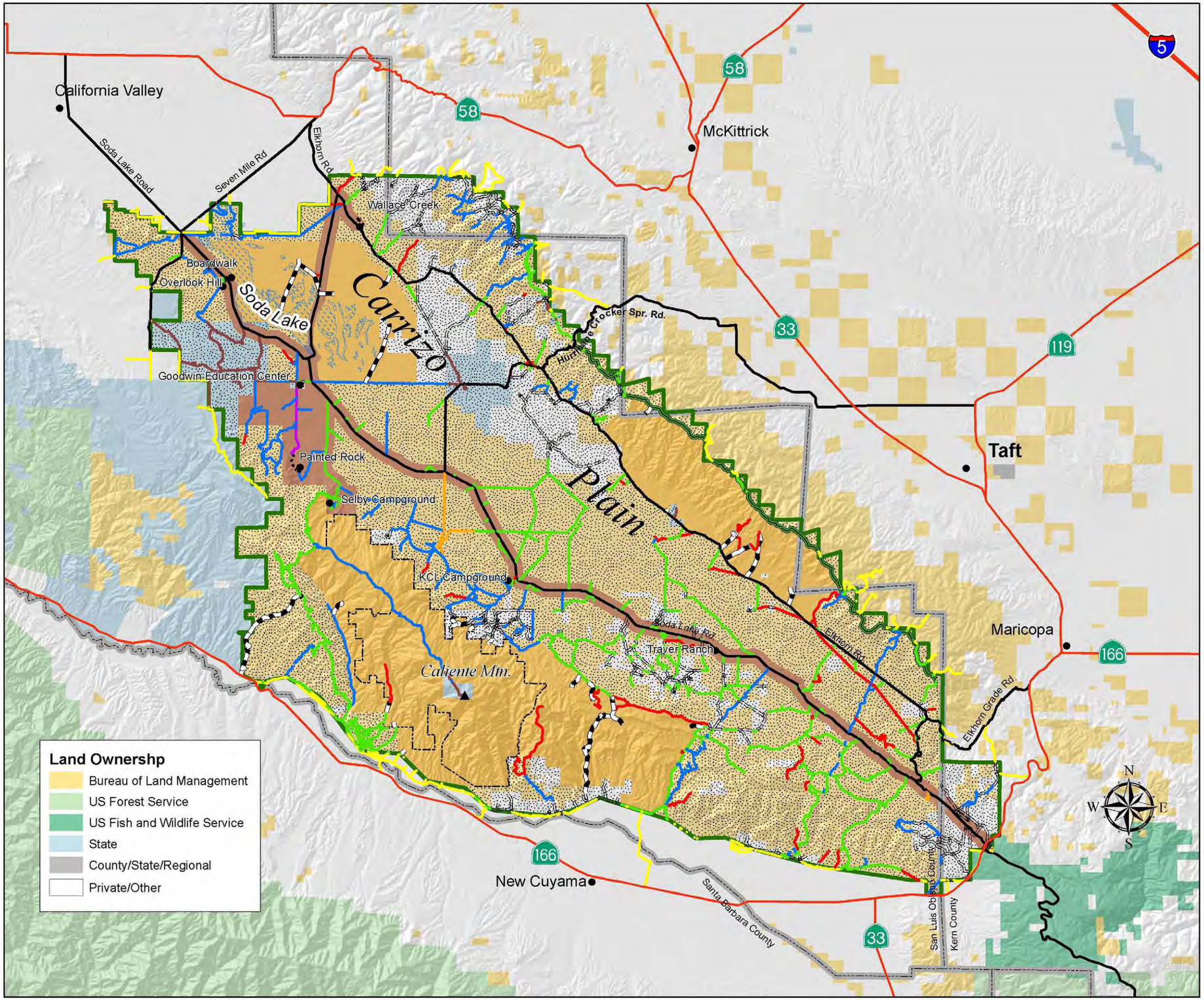
- State Highways
- County Roads
- Motorized (Street-legal only)
- Motorized. Closed Seasonally: March 1 - July 15.
- Non Motorized
- Authorized Use Only.
- Closed
- Non-mechanized.
- Pedestrian use.
- Routes on State Lands
- Routes on Private Lands
- Routes outside CPNM

Recreation Management Zones

- Front Country
- Primitive / Lands Managed for Wilderness Characteristics
- Back Country

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

0 2.5 5
Miles



Map 2-3
Alternative 2 - Proposed Plan

Recreation Management Zones and Route Designations

Carrizo Plain National Monument
Proposed RMP/EIS

Bureau of Land Management
Bakersfield Field Office

Legend

- CPNM Boundary
- Caliente Mtn. WSA

Route Designations

- State Highways
- County Roads
- Motorized
- Motorized (Street-legal only)
- Motorized. Closed Seasonally: March 1 - July 15.
- Non Motorized
- Authorized Use Only.
- Closed
- Non-mechanized.
- Pedestrian use.
- Routes on State Lands
- Routes on Private Lands
- Routes outside CPNM

Recreation Management Zones

- Front Country
- Primitive / Lands Managed for Wilderness Characteristics
- Back Country

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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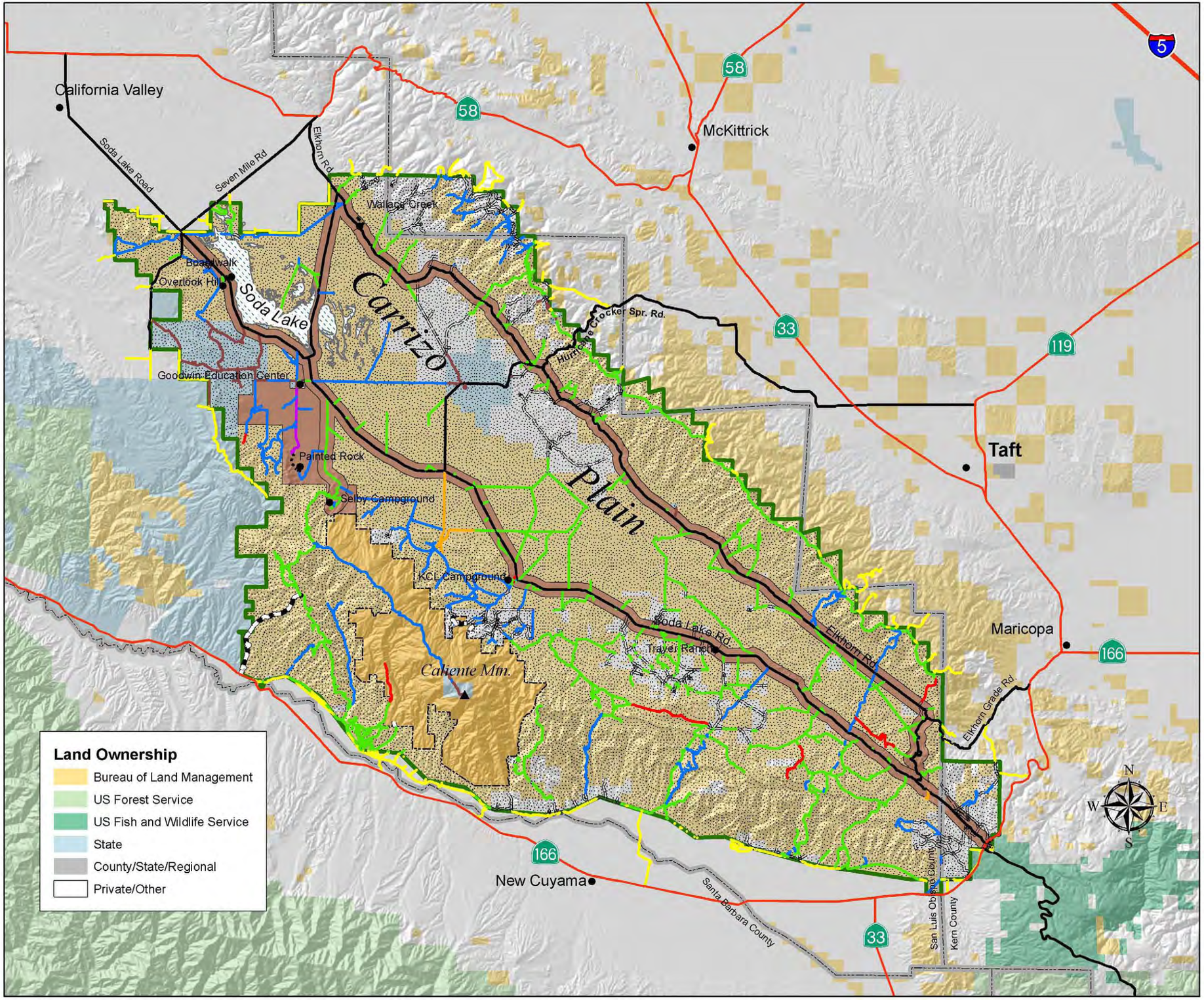
Miles



Map 2-4
Alternative 3

Recreation Management Zones and Route Designations

Bureau of Land Managmement
Bakersfield Field Office
Carrizo Plain National Monument
Resource Management Plan

Legend

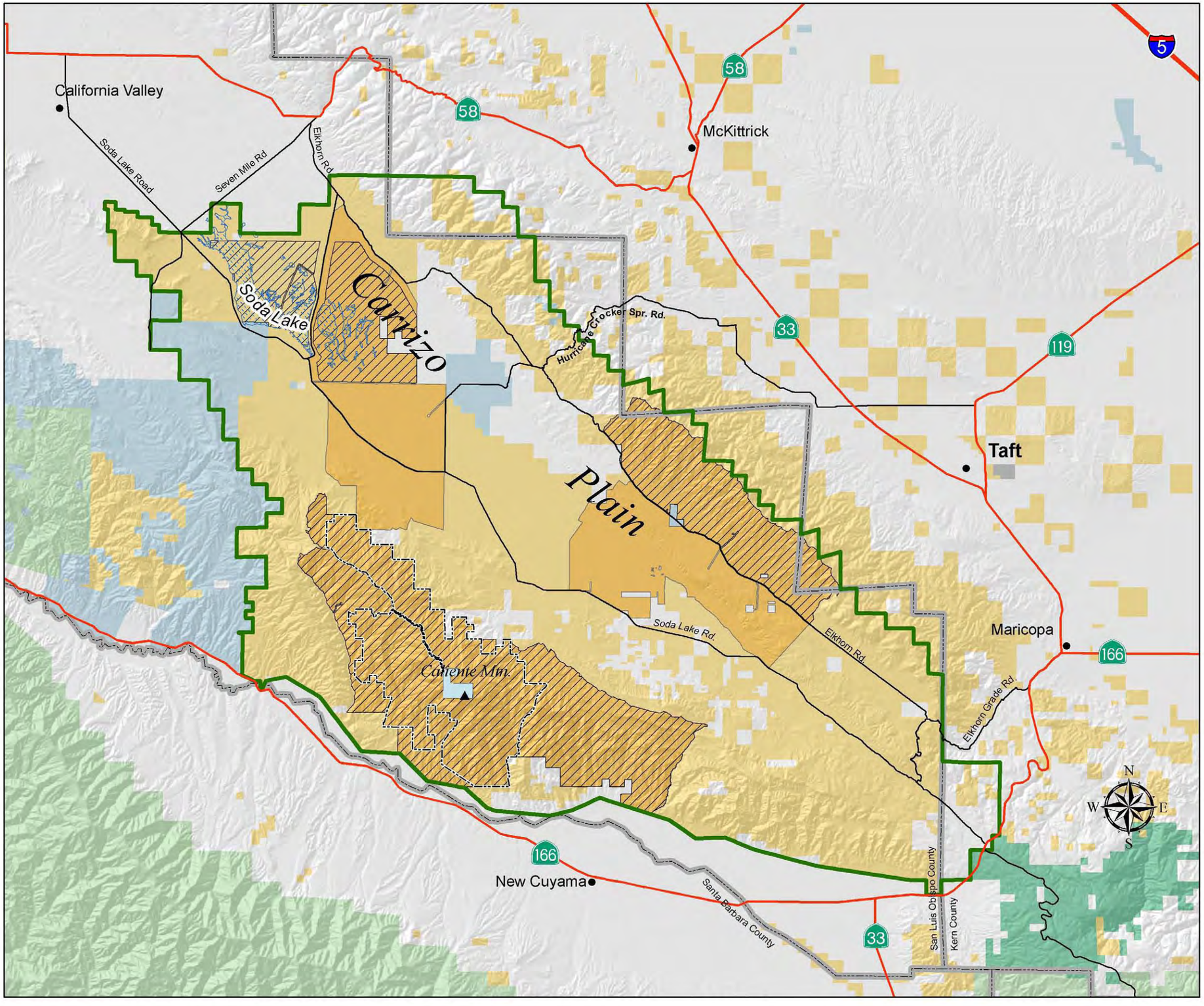
- CPNM Boundary
- Caliente Mtn. WSA

Route Designations

- State Highways
- County Roads
- Motorized (Street-legal only)
- Non Motorized
- Motorized. Closed Seasonally: March 1 - July 15.
- Authorized Use Only.
- Closed
- Non-mechanized.
- Pedestrian use.
- Routes on State Lands
- Routes outside CPNM
- Routes on Private Lands

Recreation Management Zones

- Front Country
- Primitive / Lands Managed for Wilderness Characteristics
- Back Country



Map 2-5
Lands Managed for Wilderness Characteristics

Carrizo Plain National Monument
Proposed RMP/EIS

Bureau of Land Management
Bakersfield Field Office

Legend

Carrizo Plain National Monument

County Maintained Road

Lands Managed for Wilderness Characteristics

Proposed Plan

Alternative 1

Alternative 3: Caliente Mtn. WSA

Land Ownershp

Bureau of Land Management

US Forest Service

US Fish and Wildlife Service

State

County/State/Regional

Private/Other

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

0 2.5 5

Miles

Map 2-6
Alternative 1

Livestock Grazing

Bureau of Land Managmement
Bakersfield Field Office
Carrizo Plain National Monument
Resource Management Plan

Legend

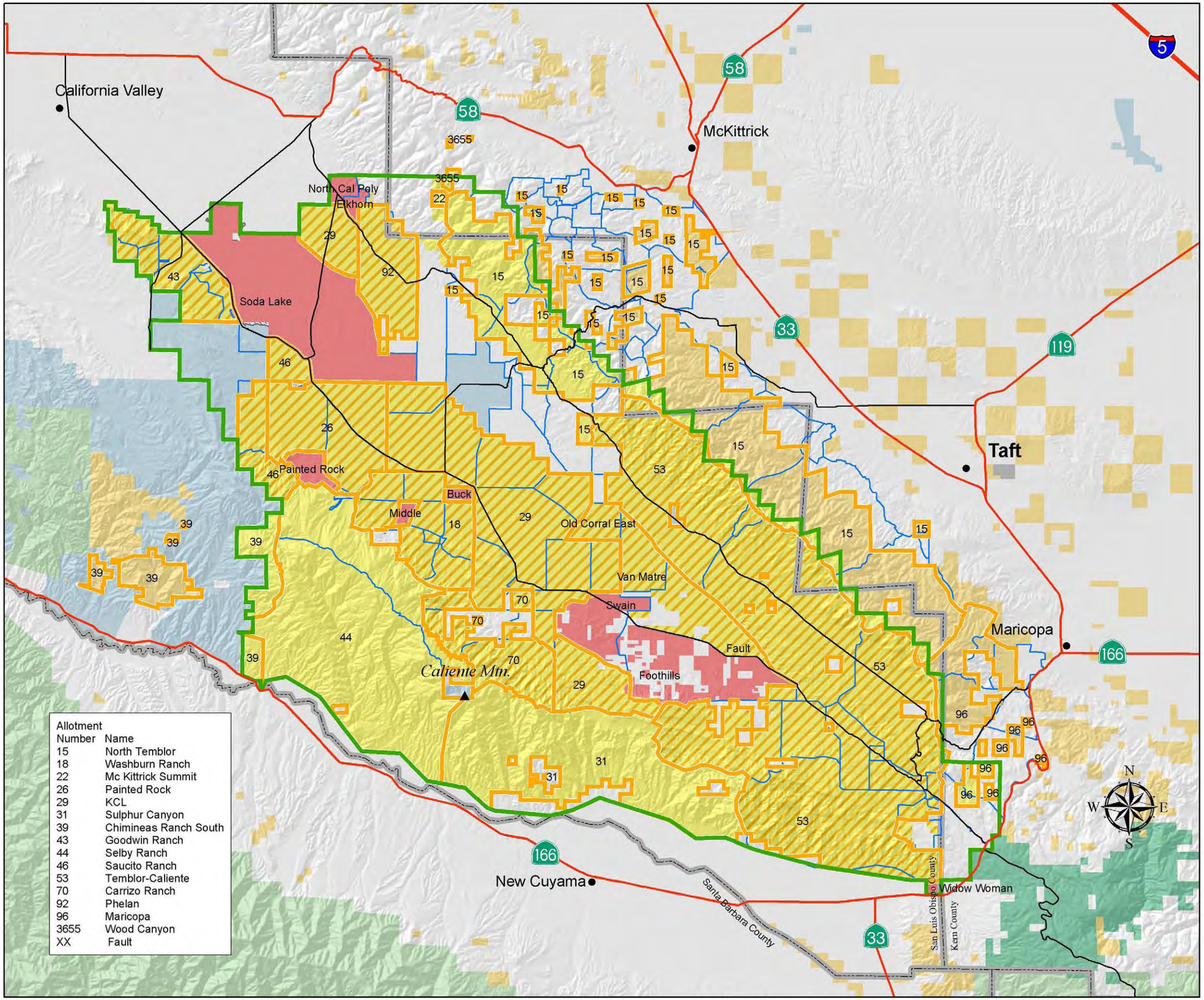
- Carrizo Plain National Monument
- County Maintained Road
- Grazing Allotments
- Pastures
- Available
- Unavailable

Land Ownership

- Bureau of Land Management
- US Forest Service
- US Fish and Wildlife Service
- State
- County/State/Regional
- Private/Other

0 2.5 5
Miles

California Valley
McKittrick
Taft
Maricopa
New Cuyama
Caliente Mtn.
Santa Barbara County
San Luis Obispo County
Kern County



Map 2-7
Proposed Plan
and Alternative 3

Livestock Grazing Allocations

Carrizo Plain National Monument
Proposed RMP/EIS

Bureau of Land Management
Bakersfield Field Office

Legend

- Carrizo Plain National Monument
- County Maintained Road
- Grazing Allotments
- Pastures
- Unavailable
- Available, Only Veg. Mgmt.
- Available

Land Ownershp

- Bureau of Land Management
- US Forest Service
- US Fish and Wildlife Service
- State
- County/State/Regional
- Private/Other

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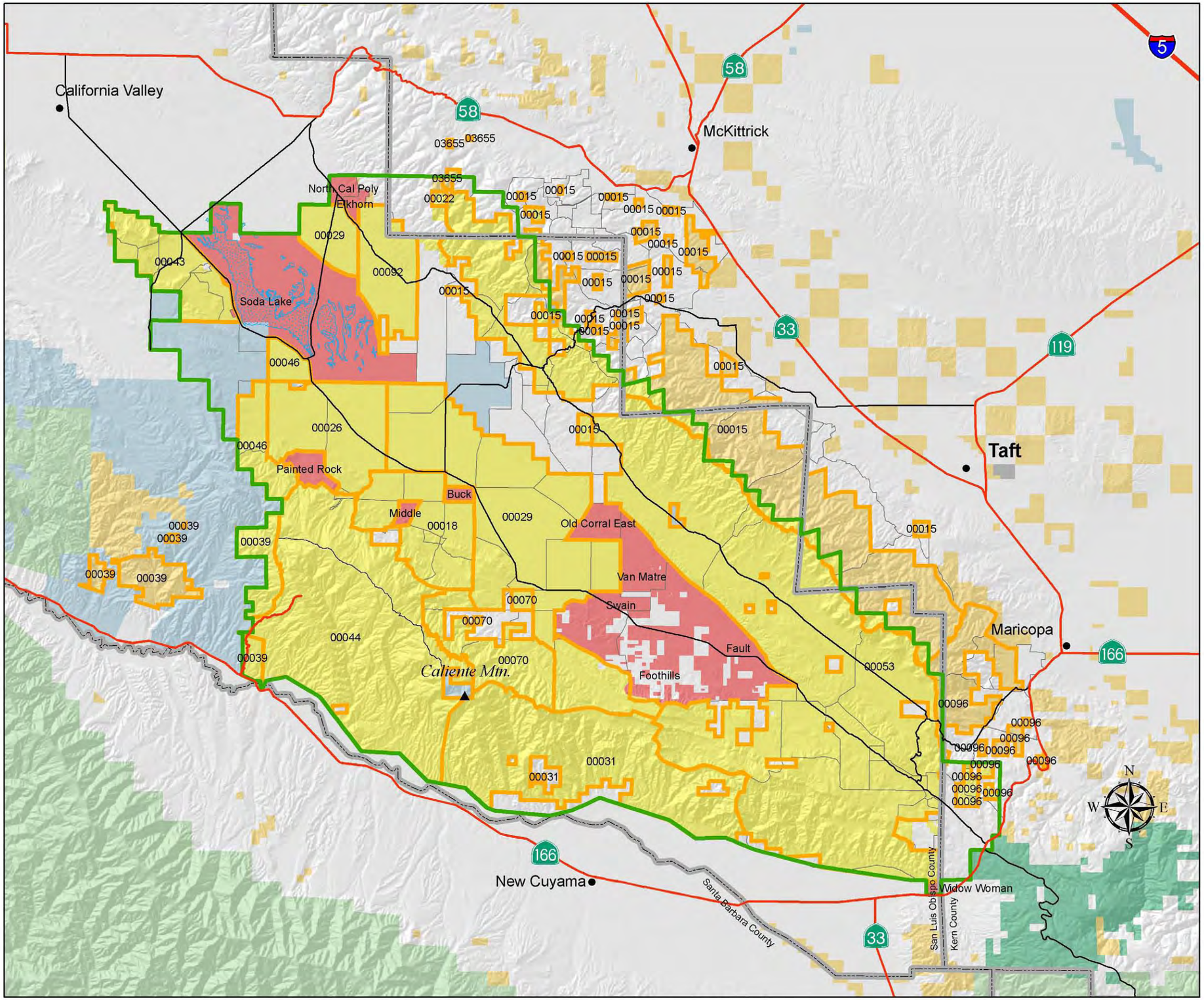
BUREAU OF LAND MANAGEMENT



Map 2-8
No Action Alternative

Livestock Grazing

Bureau of Land Managmement
Bakersfield Field Office
Carrizo Plain National Monument
Resource Management Plan

Legend

- Carrizo Plain National Monument
- County Maintained Road
- Grazing Allotments
- Pastures
- Available
- Unavailable

Land Ownership

- Bureau of Land Management
- US Forest Service
- US Fish and Wildlife Service
- State
- County/State/Regional
- Private/Other

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

0 2.5 5
Miles

Map 3-1
Carrizo Plain Subregions

Carrizo Plain National Monument
Proposed RMP/EIS

Bureau of Land Management
Bakersfield Field Office

Legend

- Carrizo Plain National Monument
- County Maintained Road

California Valley
McKittrick
Taft
Maricopa
New Cuyama
Caliente Mtn.

Soda Lake Sink
Carrizo Plain-North
Caliente Foothills North
Carrizo Plain Central
Temblor Range
Panorama Hills - Elkhorn Plain
Caliente Foothills South
Caliente Mountain North
Caliente Mountain South

58
5
33
119
166

Santa Barbara County
San Luis Obispo County
Kern County

N
W
E
S

0 2.5 5
Miles

California Valley
McKittrick
Taft
Maricopa
New Cuyama
Caliente Mtn.
Santa Barbara County
San Luis Obispo County
Kern County
58
5
33
119
166
A
B
1
2
C
3
D
N
W
E
S

Map 3-2
Special Status Animals

Carrizo Plain National Monument
Proposed RMP/EIS

Bureau of Land Management
Bakersfield Field Office

Legend

Carrizo Plain National Monument
County Maintained Road

Potential Habitat and Species Locations

Blunt-nosed Leopard Lizard
Giant Kangaroo Rat &
San Joaquin Antelope Squirrel
San Joaquin Kit Fox
Designated Critical Habitat for
Longhorn and Vernal Pool
Fairy Shrimp
Longhorn Fairy Shrimp Locations
(Branchinecta longiantenna)

Core Areas for Species Status Species

Core Area Boundary
BNLL, GKR, SJKF, SJAS
Core Area Boundary
MOPL

Key to Species

BNLL - Blunt-nosed Leopard Lizard
GKR - Giant Kangaroo Rat
MOPL - Mountain Plover
SJAS - San Joaquin Antelope Squirrel
SJKF - San Joaquin Kit Fox

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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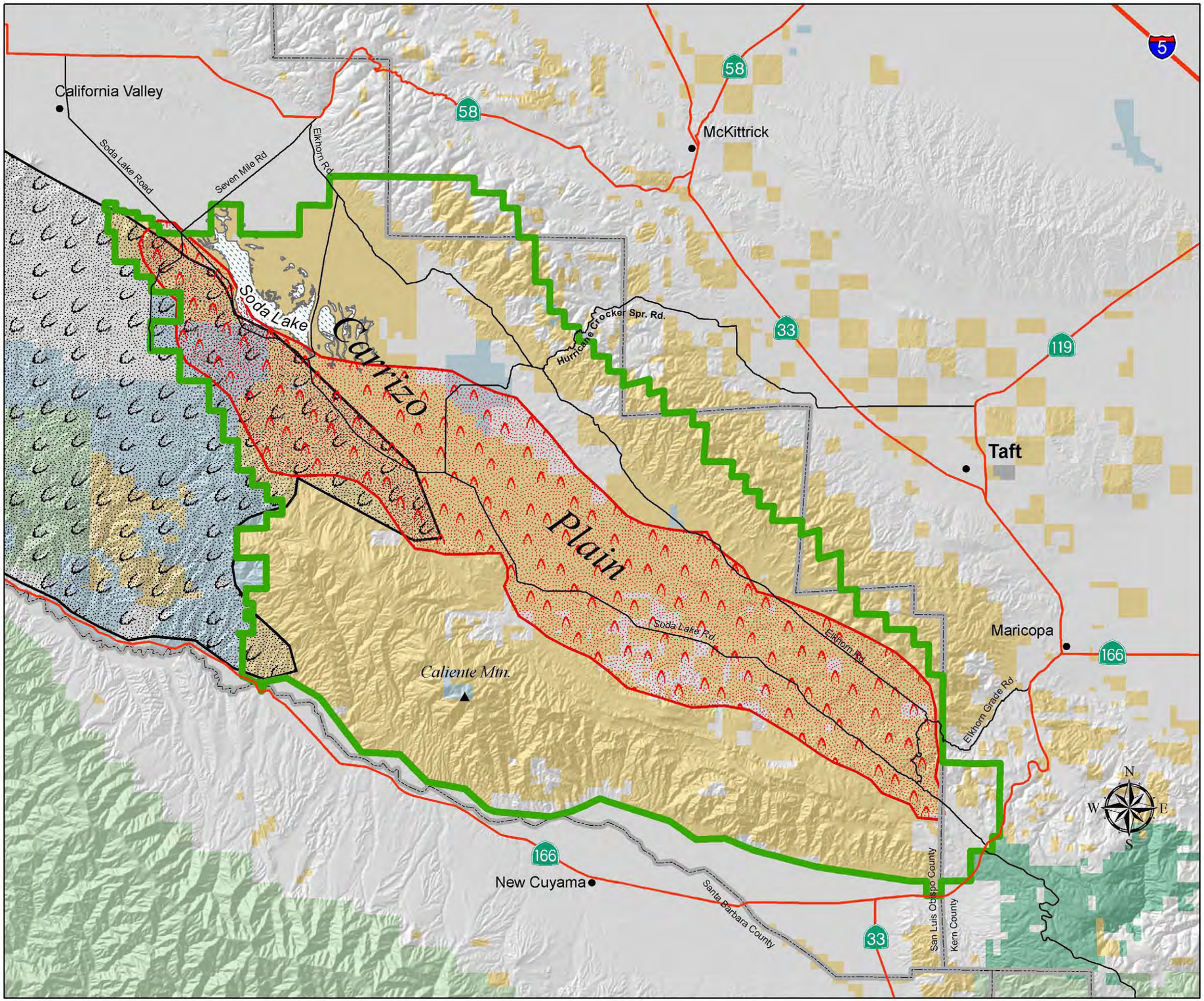
Miles



Map 3-3
Pronghorn and Elk Habitat

Carrizo Plain National Monument
Proposed RMP/EIS

Bureau of Land Management
Bakersfield Field Office

Legend

- Carrizo Plain National Monument
- County Maintained Road
- Pronghorn Habitat
- Elk Habitat

Land Ownership

- Bureau of Land Management
- US Forest Service
- US Fish and Wildlife Service
- State
- County/State/Regional
- Private/Other

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

0 2.5 5
Miles

Map 3-4
Vegetation Types

Carrizo Plain National Monument
Proposed RMP/EIS

Bureau of Land Management
Bakersfield Field Office

Legend

- Carrizo Plain National Monument
- County Maintained Road
- Soda Lake
- Non-native grassland

Scrub Communities

- Valley Sink Scrub
- Spiny saltbush scrub
- Interior Coast Range Saltbush Scrub
- Valley Saltbush Scrub
- Diablan sage scrub
- Upper Sonoran subshrub scrub

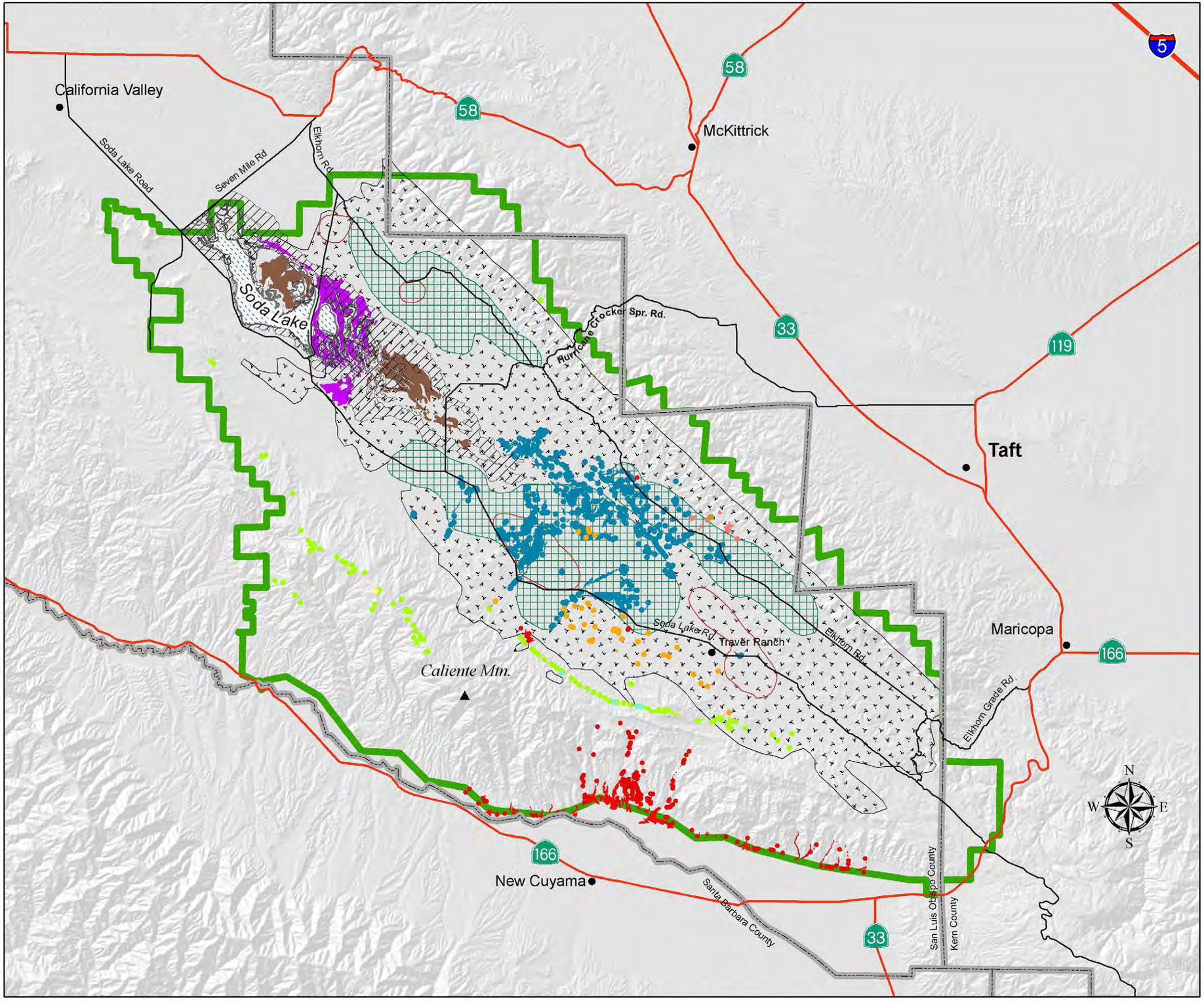
Woodlands

- Juniper-oak cismontane woodland
- Cismontane juniper woodland and scrub

0 2.5 5
Miles

N
W E
S

California Valley
McKittrick
Taft
Maricopa
New Cuyama
Soda Lake
Carrizo
Plain
Caliente Mtn.
Soda Lake Road
Seven Mile Rd
Elkhorn Rd
Hurricane Crocker Spr. Rd.
Soda Lake Rd.
Elkhorn Rd.
Elkhorn Grade Rd.
Santa Barbara County
San Luis Obispo County
Kern County
58
5
33
119
166



Map 3-5
Special Status Plants

Carrizo Plain National Monument
Proposed RMP/EIS

Bureau of Land Management
Bakersfield Field Office

Legend

- Carrizo Plain National Monument
- County Maintained Road

Federally Endangered

- Caulanthus californicus
- Monolopia congdonii
- Eriastrum hooveri

BLM Sensitive Plants

- Delphinium recurvatum
- Eriogonum temblorense
- Layia heterotricha
- Layia munzii
- Lepidium jaredii

Other Sensitive Plants

- Acanthomintha obovata ssp. cordata
- Amsinckia vernicosa var. furcata
- Antrrinum ovatium

- Mountain Plover core area
- Suitable T&E Habitat
- T & E Species Core Mgmt. Area

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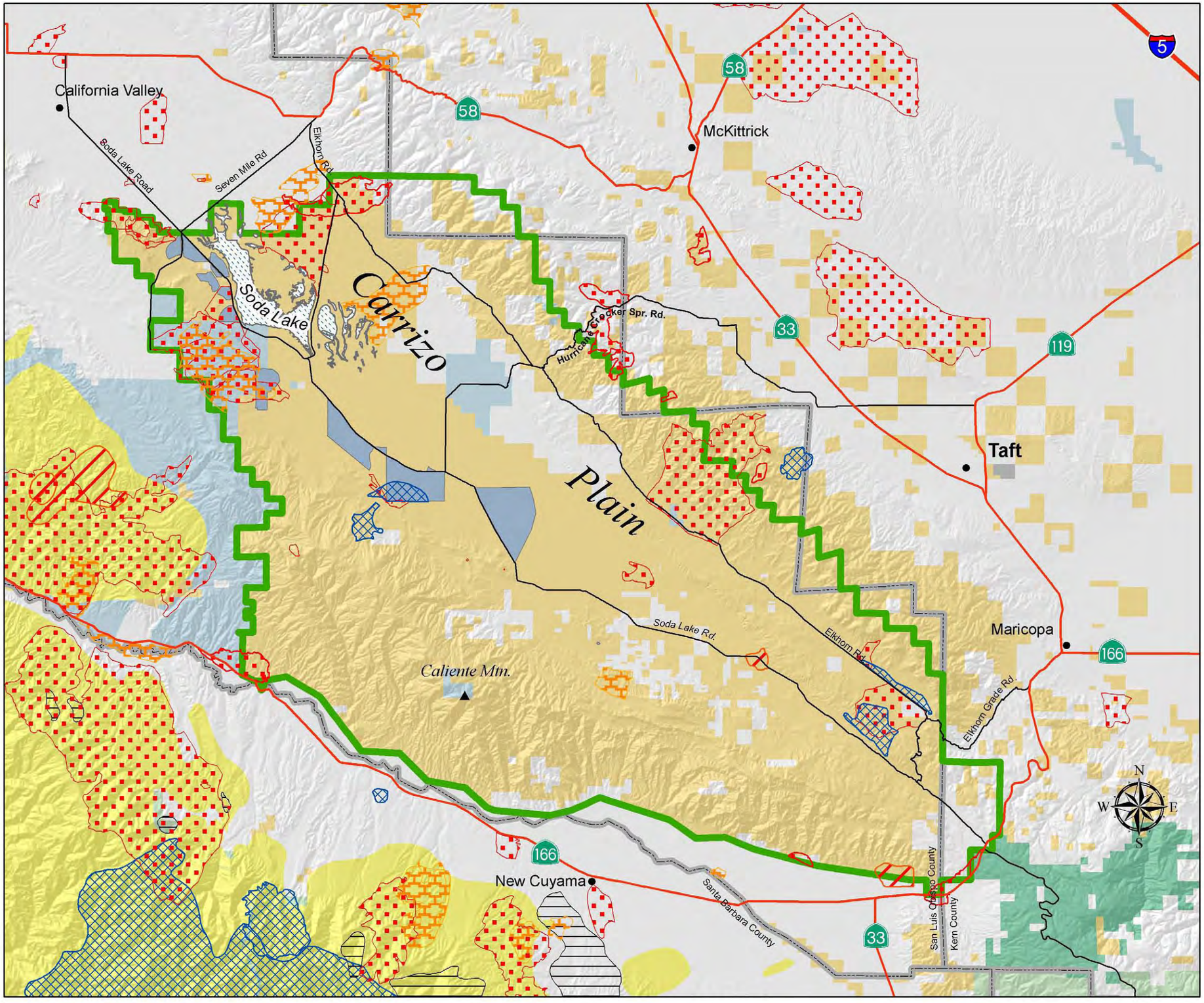
Miles



Map 3-6
Fire History and Prescribed Burns

Carrizo Plain National Monument
Proposed RMP/EIS

Bureau of Land Management
Bakersfield Field Office

Legend

Carrizo Plain National Monument

County Maintained Road

Fires by Time Period

YEAR

- 1990-2000
- 1975-1990
- 1960-1975
- 1945-1960
- 1930-1945
- 1915-1930
- Prescribed Burns

Land Ownershp

- Bureau of Land Management
- US Forest Service
- US Fish and Wildlife Service
- State
- County/State/Regional
- Private/Other

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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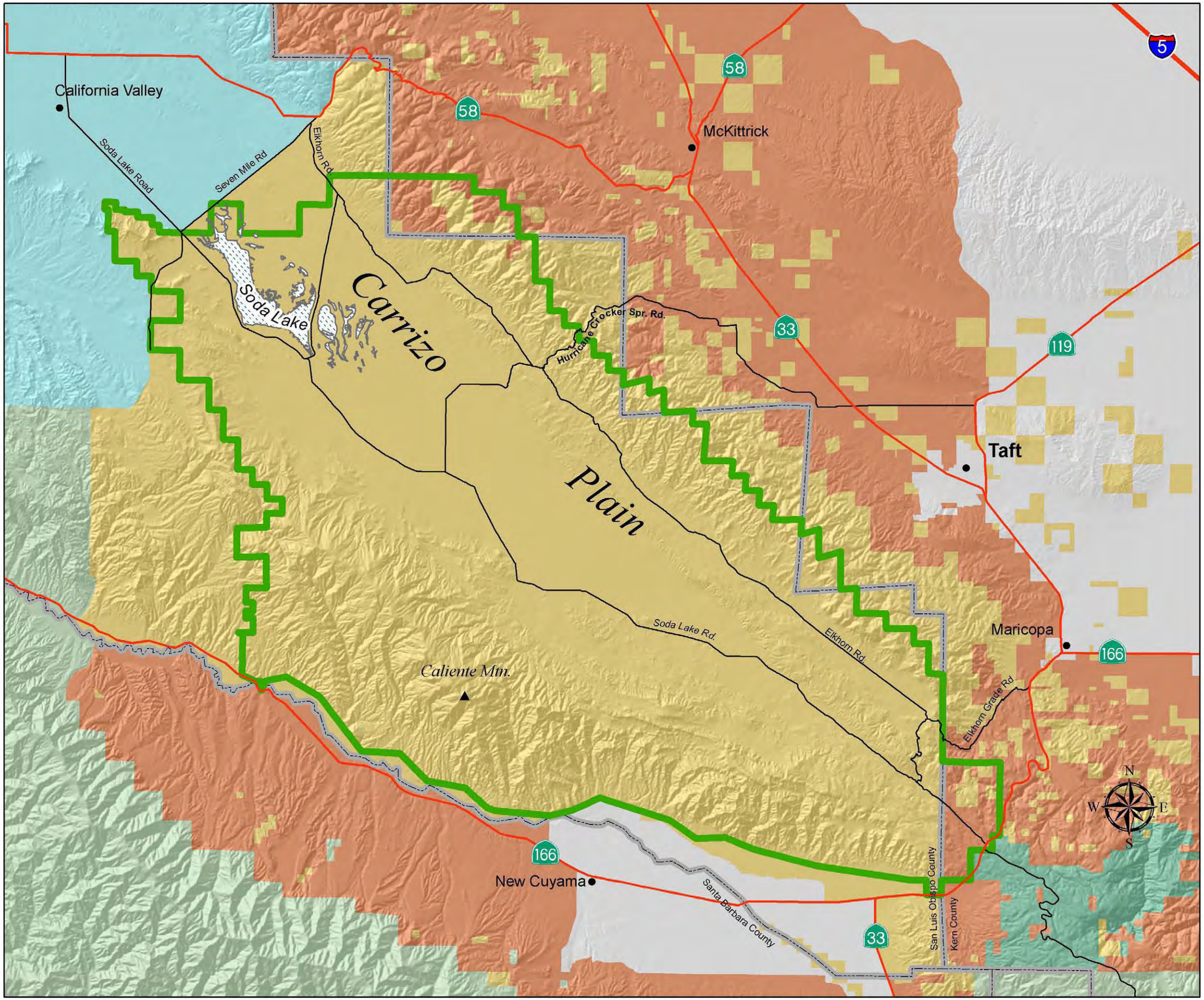
Miles



Map 3-7
Fire Protection Providers

Carrizo Plain National Monument
Proposed RMP/EIS

Bureau of Land Management
Bakersfield Field Office

Legend

- Carrizo Plain National Monument
- County Maintained Road

Fire Protection Providers

- Bureau of Land Management
- Los Padres National Forest
- US Fish & Wildlife Service
- State Responsibility Area, CalFire.
- State Responsibility Area Covered by Counties under Contract (Santa Barbara Co. and Kern Co.)
- Local Government (City, County or Rural Fire Dept.)

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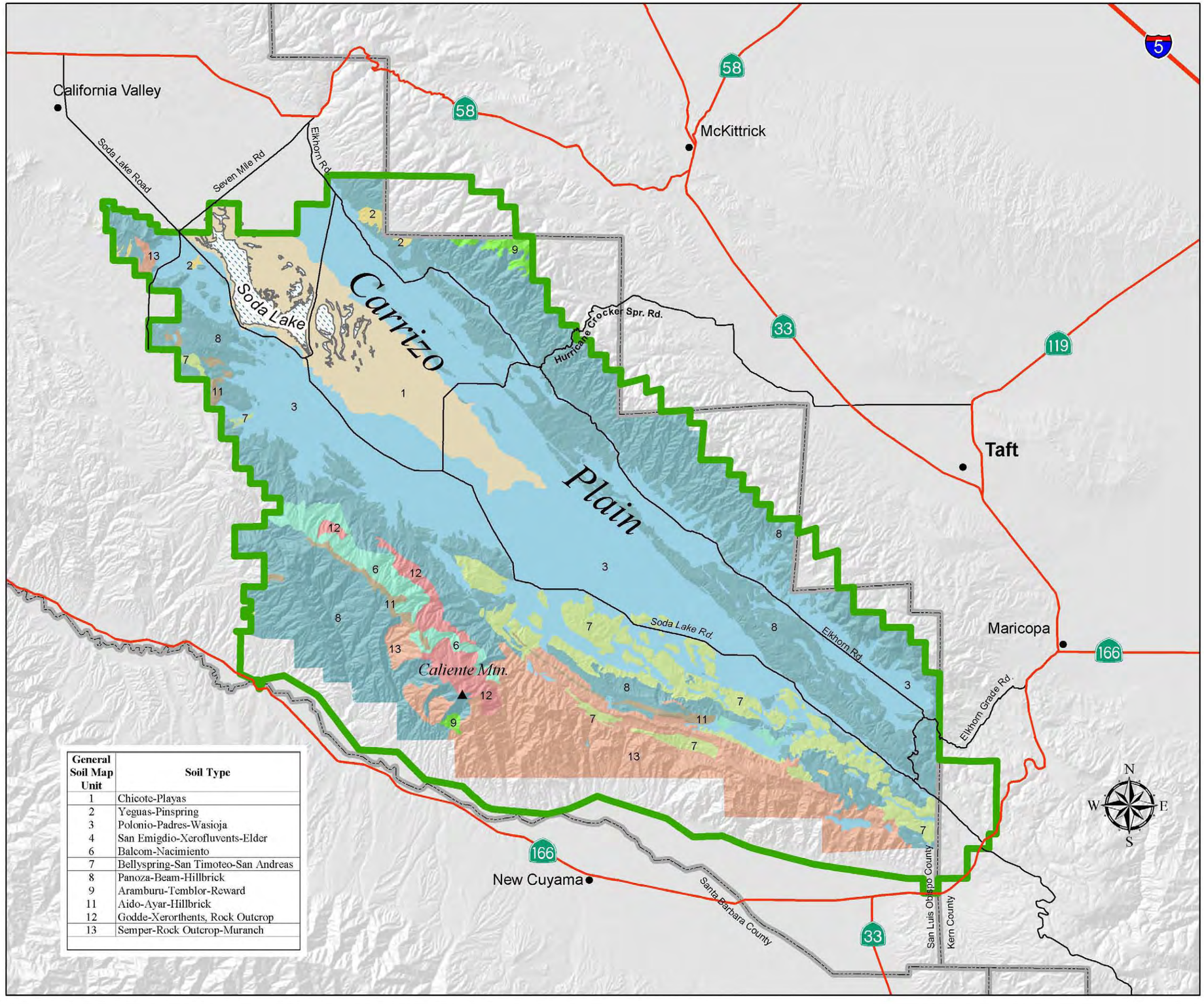
0 2.5 5
Miles



General Soil Map Unit	Soil Type
1	Chicote-Playas
2	Yeguas-Pinspring
3	Polonio-Padres-Wasioja
4	San Emigdio-Xerofluvents-Elder
6	Balcom-Nacimiento
7	Bellyspring-San Timoteo-San Andreas
8	Panoza-Beam-Hillbrick
9	Aramburu-Temblor-Reward
11	Aido-Ayar-Hillbrick
12	Godde-Xerorthents, Rock Outcrop
13	Semper-Rock Outcrop-Muranch

Map 3-8
General Soil Map Units

Carrizo Plain National Monument
Proposed RMP/EIS

Bureau of Land Management
Bakersfield Field Office

Legend

Carrizo Plain National Monument

County Maintained Road

Soil Map Units

Playa Bottom

1 2

Alluvial Flats and Fans

3

Hills and Mountains

6 11
7 12
8 13
9

Unmapped Soils in CPNM

U.S. DEPARTMENT OF THE INTERIOR
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0 2.5 5
Miles

Map 3-9
Hydrographic Features

Carrizo Plain National Monument
Proposed RMP/EIS

Bureau of Land Management
Bakersfield Field Office

Legend

- Carrizo Plain National Monument
- County Maintained Road

Hydrographic Sub-basins

- Carrizo Plain
- Cuyama
- Estrella
- Middle Kern-Upper Tehachapi-Grapevine
- Santa Maria
- Tulare-Buena Vista Lakes
- Springs

U.S. DEPARTMENT OF THE INTERIOR
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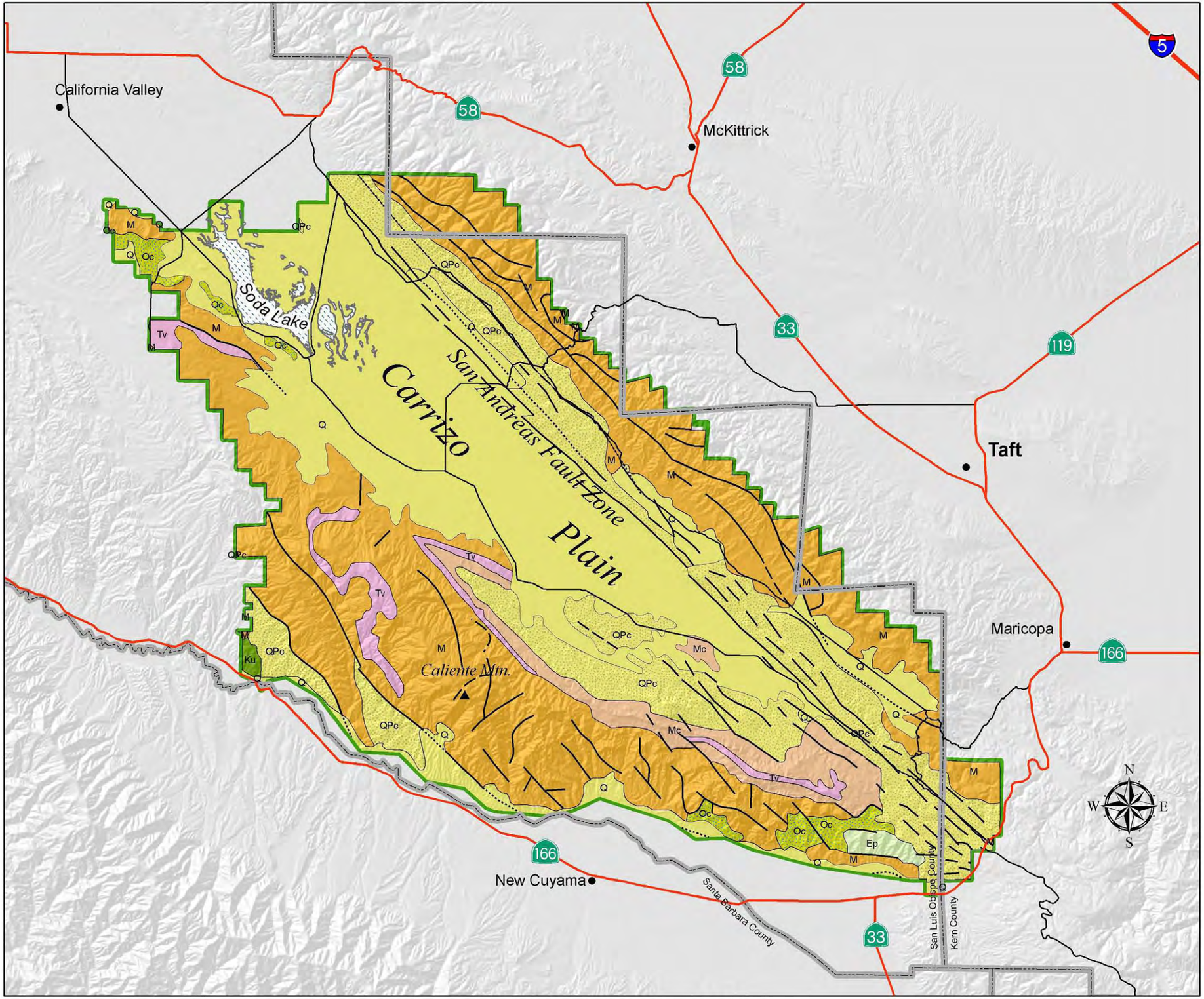
0 2.5 5
Miles

California Valley
McKittrick
Taft
Maricopa
New Cuyama
Soda Lake
Carrizo Plain
Caliente Range
Temblor Range
San Andreas Fault
Cuyama River
McKittrick Summit
4,332 feet
Caliente Mtn.
5,106 feet
Midway Peak
3,662 feet
Painted Rock
Selby Rocks
Beam Flat
San Diego Creek
Soda Lake Road
Seven Mile Rd
Elkhorn Rd
Wood Canyon
Pottinger Canyon
Browns Canyon
Crocker Canyon
Panorama Hills
Elkhorn Plain
Dabney Canyon
Hale-McLeod Canyon
Twentynine Canyon
Gallos Canyon
Taylor Canyon
Morales Canyon
Post Canyon
Abbott Canyon
Soda Lake Rd
Elkhorn Hills
Elkhorn Grade Rd
Buttonwater Creek
Priest Canyon
Sulphur Canyon
Horse Canyon
Middle Canyon
Wells Canyon
Padrones Canyon
Quail Canyon
Santa Barbara County
San Luis Obispo County
Kern County
5
58
33
119
166
N
S
E
W



Map 3-10
Generalized Geology

Carrizo Plain National Monument
Proposed RMP/EIS

Bureau of Land Management
Bakersfield Field Office

Legend

- Carrizo Plain National Monument
- County Maintained Road

Faults

- Fault, certain
- Fault, approx. located
- fault, concealed
- thrust fault, certain
- thrust fault, approx. located

Geology

- Q - Quaternary Alluvium
- QPc - Pliocene / Pleistocene alluvium
- Tv - Tertiary volcanic flows
- M - Miocene marine sediments
- Mc - Miocene nonmarine sediments
- Oc - Oligocene nonmariine sediments
- Ep - Paleocene marine sediments
- Ku - Upper Cretaceous marine sediments

N W E S

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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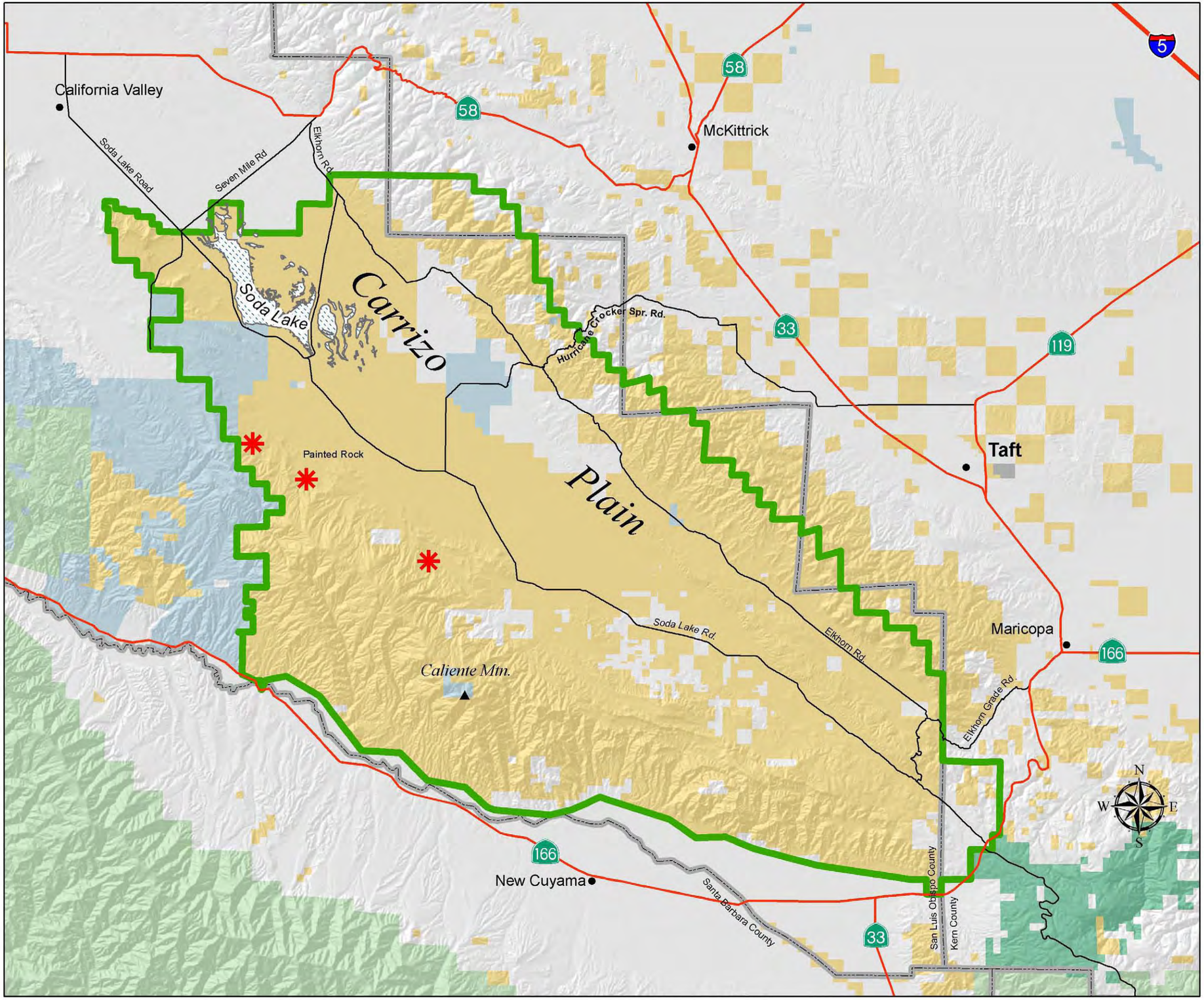
Miles



MAP 3-11
National Register of Historic Places

Carrizo Plain National Monument
Proposed RMP/EIS

Bureau of Land Management
Bakersfield Field Office

Legend

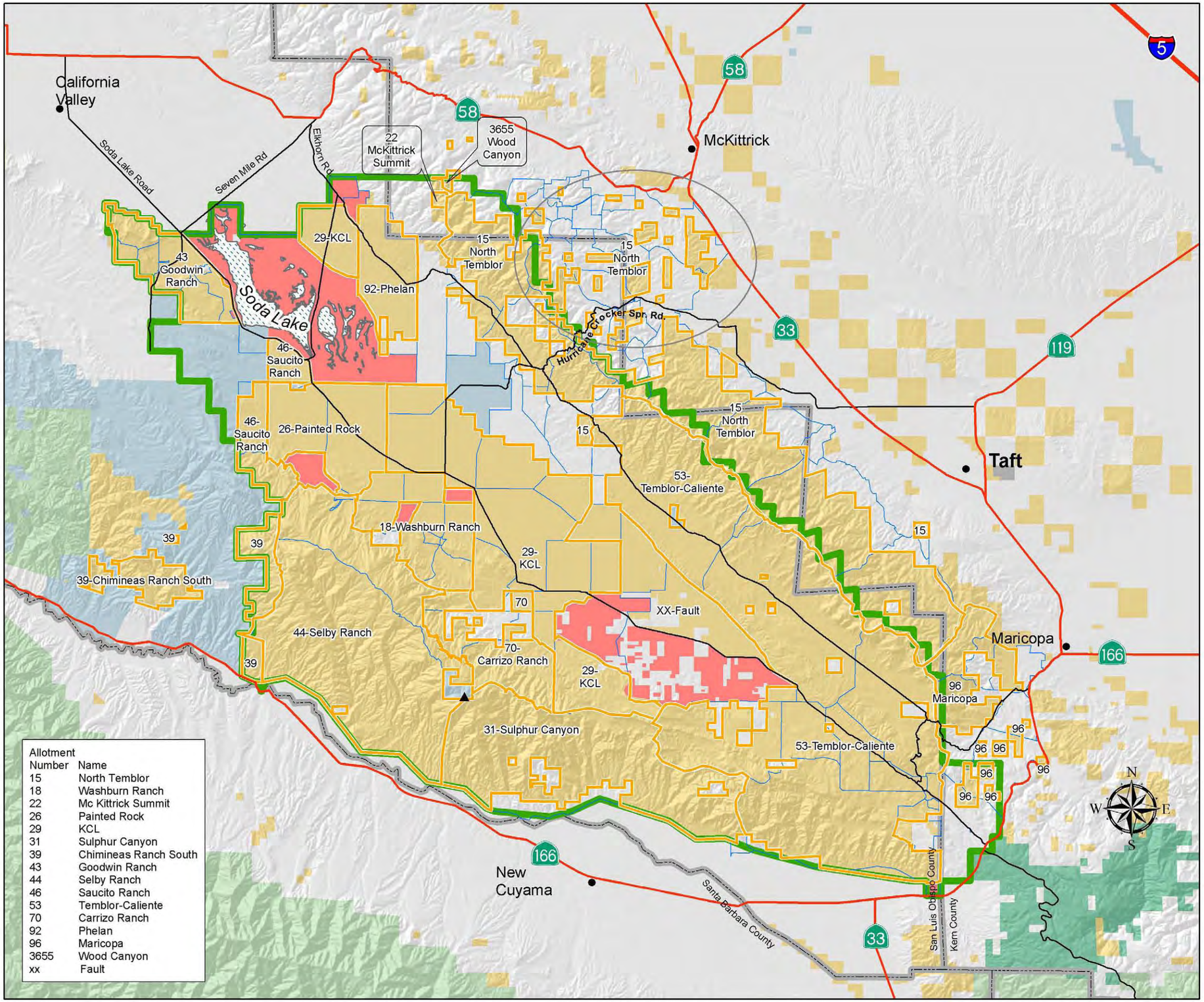
- Carrizo Plain National Monument
- County Maintained Road
- National Register Districts

Land Ownershp

- Bureau of Land Management
- US Forest Service
- US Fish and Wildlife Service
- State
- County/State/Regional
- Private/Other

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

0 2.5 5
Miles



Map 3-12
Grazing Allotments

Carrizo Plain National Monument
Proposed RMP/EIS

Bureau of Land Management
Bakersfield Field Office

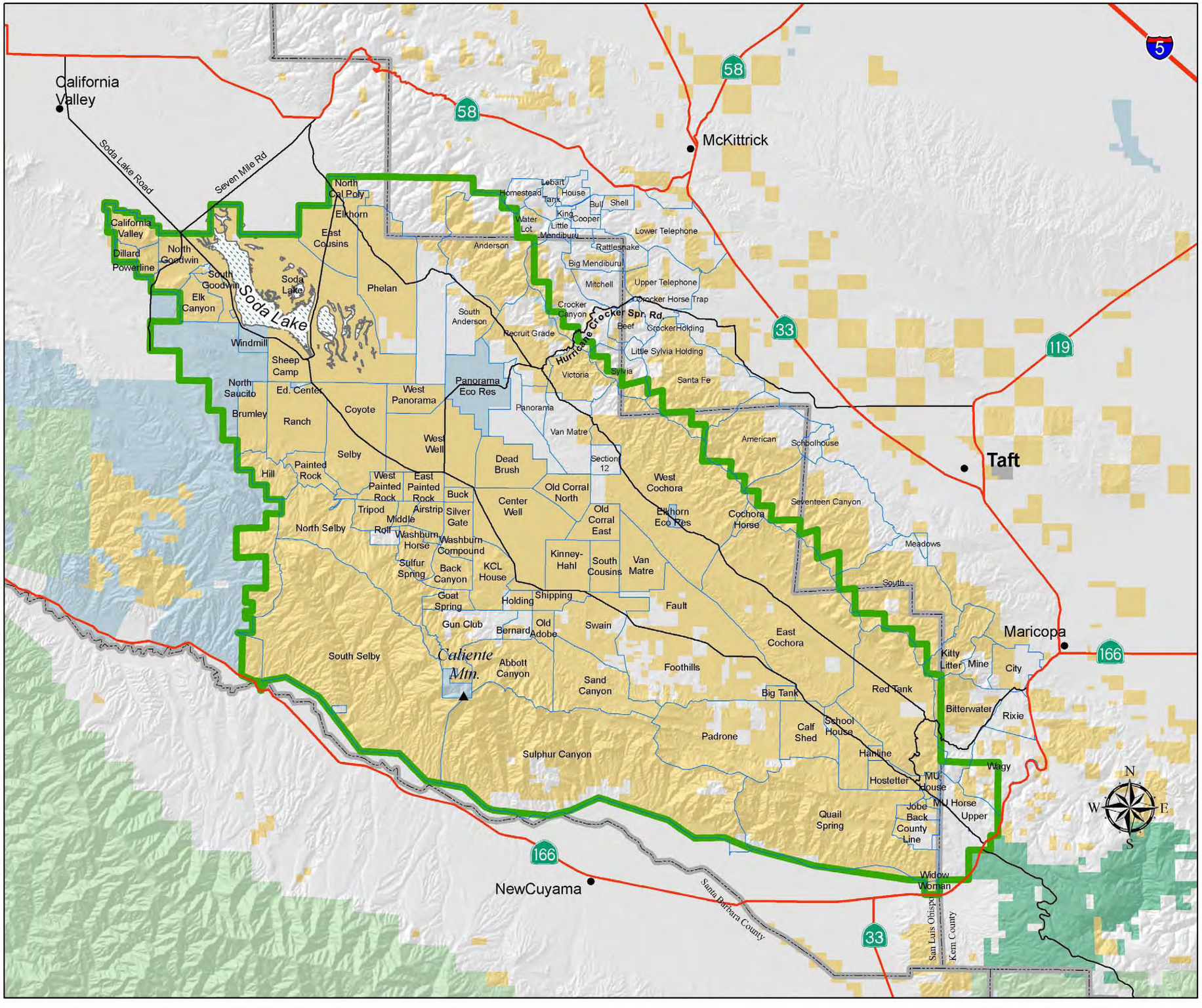
Legend

- Carrizo Plain National Monument
- County Maintained Road
- Grazing Allotments
- Pastures
- Unavailable

Land Ownershp

- Bureau of Land Management
- US Forest Service
- US Fish and Wildlife Service
- State
- County/State/Regional
- Private/Other

0 2.5 5
Miles



Map 3-13
Pastures

Carrizo Plain National Monument
Proposed RMP/EIS

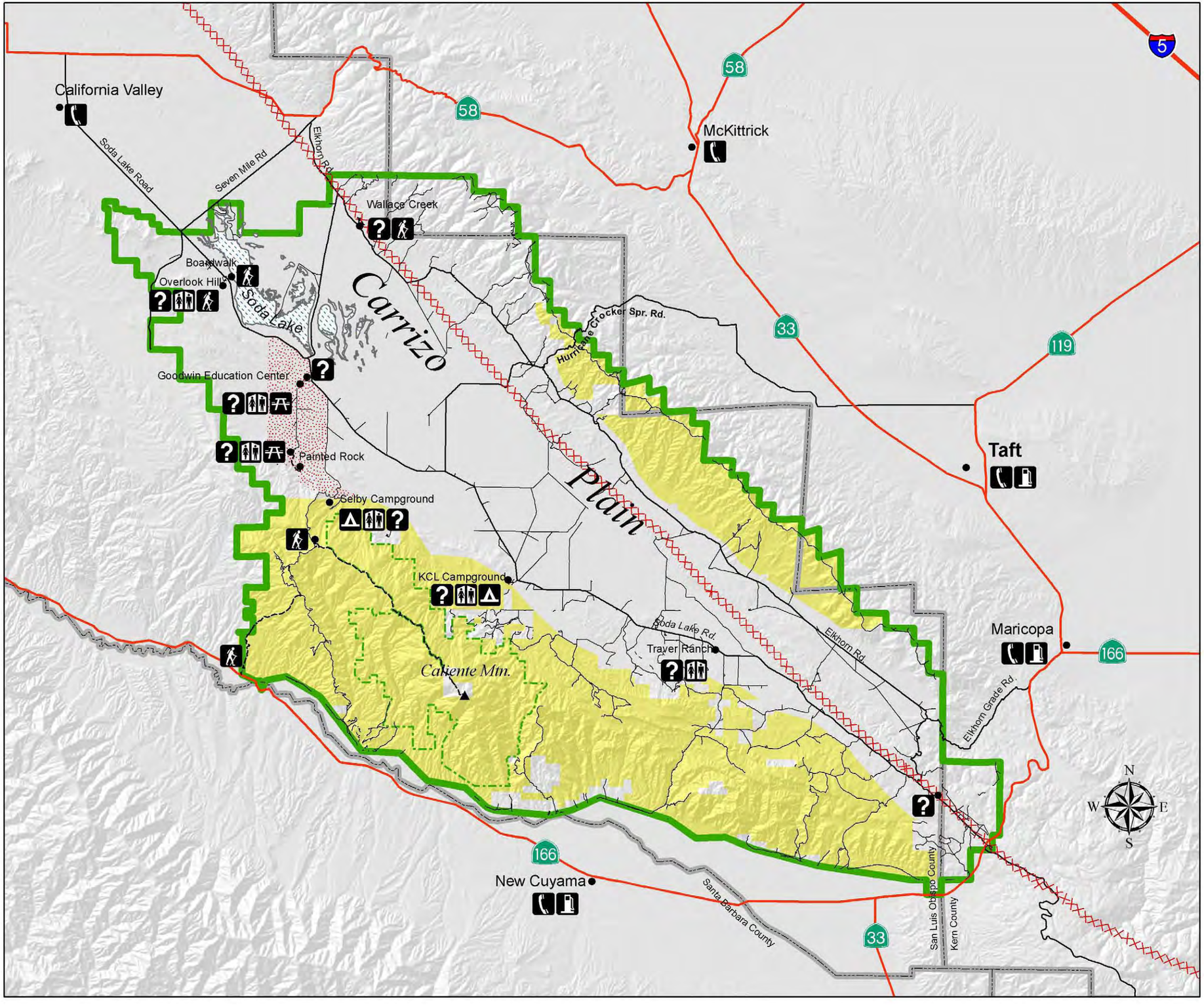
Bureau of Land Management
Bakersfield Field Office

Legend

- Carrizo Plain National Monument
- County Maintained Road
- Pastures

Land Ownershp

- Bureau of Land Management
- US Forest Service
- US Fish and Wildlife Service
- State
- County/State/Regional
- Private/Other



Map 3-14
Visitor Services and Recreation

Carrizo Plain National Monument
Proposed RMP/EIS

Bureau of Land Management
Bakersfield Field Office

Legend

- Carrizo Plain National Monument
- County Maintained Road
- Foot Trails
- Open Routes
- San Andreas Fault
- No Hunting Zone
- Dispersed Camping Area

NOTE: Some roads shown here as open cross private land and access may be restricted by the property owners.

0 2.5 5
Miles

Map 3-15
Recreation Opportunity Spectrum

Carrizo Plain National Monument
Proposed RMP/EIS

Bureau of Land Management
Bakersfield Field Office

Legend

- Carrizo Plain National Monument
- County Maintained Road

Recreation Class

- Roaded Natural
- Semi-primitive, motorized
- Semi-primitive, non-motorized

California Valley
Soda Lake Road
Seven Mile Rd
Elkhorn Rd
58
McKittrick
5
Wallace Creek
Boardwalk
Overlook Hill
Soda Lake
Carrizo
Plain
Hurricane Crocker Spr. Rd.
33
119
Goodwin Education Center
Roaded Natural
Painted Rock
Taft
Selby Campground
KCL Campground
Soda Lake Rd.
Traver Ranch
Elkhorn Rd.
Maricopa
166
Caliente Mtn.
Elkhorn Grade Rd.
Semi-primitive, non-motorized
Semi-primitive, motorized
N
W
E
S
166
New Cuyama
Santa Barbara County
33
San Luis Obispo County
Kern County

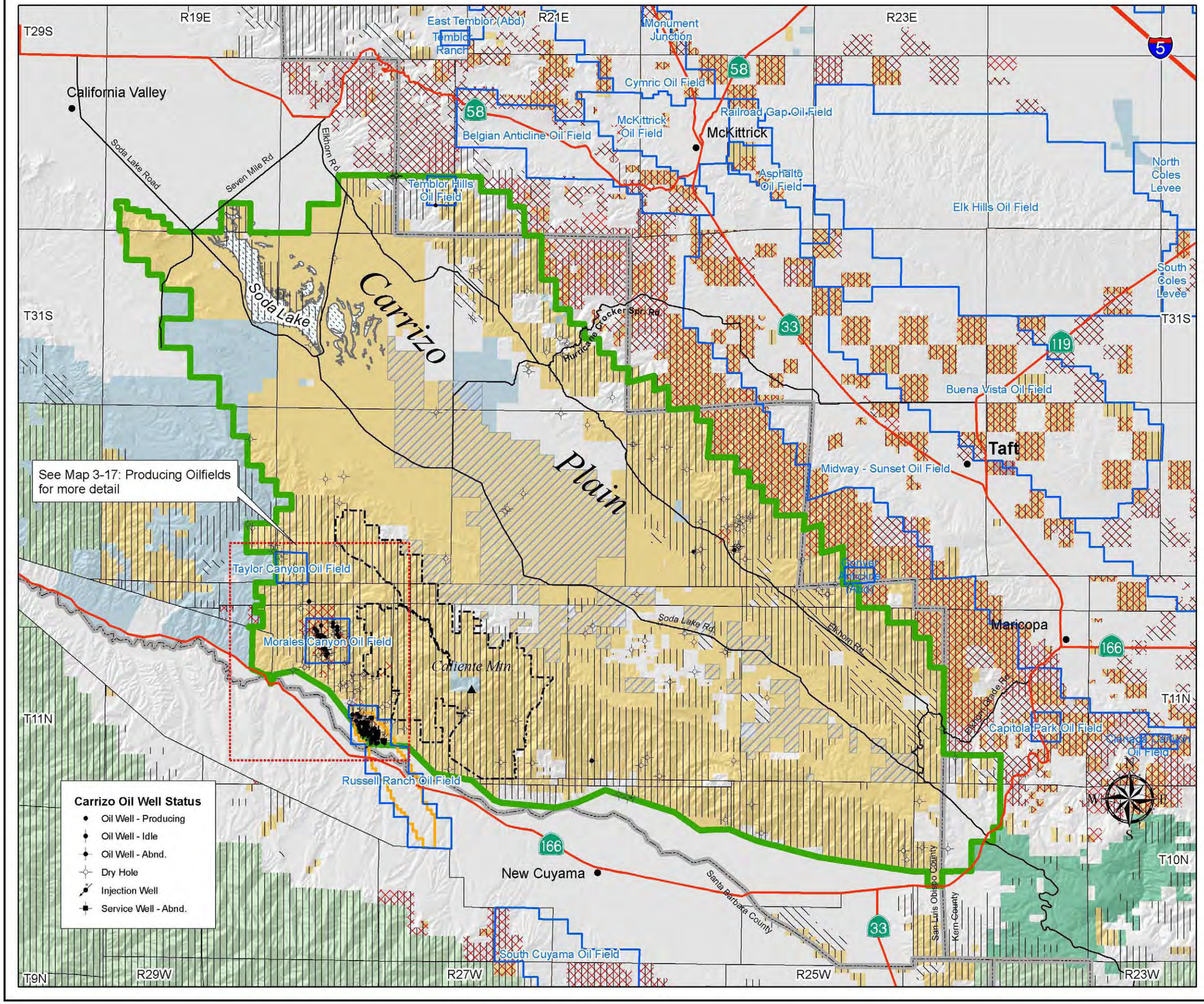
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

0 2.5 5
Miles

Map 3-16
Oil and Gas Wells within the Carrizo Plain National Monument

Carrizo Plain National Monument
Proposed RMP/EIS

Bureau of Land Management
Bakersfield Field Office



Legend

- Carrizo Plain National Monument
- County Maintained Road
- Occidental Petroleum Minerals
- Russell Ranch Unit
- Administrative Oilfield Boundary
- Federal Oil & Gas Leases

U.S. Mineral Estate

- All minerals Reserved
- Oil and gas Reserved
- Sodium and or Potassium

Land Ownership

- Bureau of Land Management
- US Forest Service
- US Fish and Wildlife Service
- State
- County/State/Regional
- Private/Other

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

0 2.5 5
Miles

Map 3-17
Producing Oil Fields

Carrizo Plain National Monument
Proposed RMP/EIS

Bureau of Land Managment
Bakersfield Field Office

Legend

Carrizo Oil Wells

- Producing Oil Well
- Oil Well - Idle
- Oil & Gas Fields (Pool Extent)
- Caliente Mtn. Wilderness Study Area
- Oil Field-Admin. Boundary
- Russell Ranch Oil & Gas Unit
- Federal Oil and Gas Leases

U.S. Mineral Estate

- All Minerals
- Oil and Gas

Land Ownership

- Bureau of Land Management
- US Forest Service
- US Fish and Wildlife Service
- State
- County/State/Regional
- Private/Other

R19E
R20E
T32S
T12N
T11N
R28W
Taylor Canyon Field (Abandoned)
Morales Canyon Field
Russell Ranch Field
CACA16474
CALA088968
CALA088009
CALA087942
CALA089047
CALA087326
CALA087463
San Luis Obispo County
Santa Barbara County
0 0.5 1
Miles
8 June 2009
Carrizo Plain National Monument
Enlarged Area
Producing Oil Fields

Map 3-18
Land Ownership Status

Carrizo Plain National Monument
Proposed RMP/EIS

Bureau of Land Management
Bakersfield Field Office

Legend

- Carrizo Plain National Monument
- County Maintained Road
- BLM Land Acquisitions

Land Ownershp

- Bureau of Land Management
- US Forest Service
- US Fish and Wildlife Service
- State
- County/State/Regional
- Private/Other

0 2.5 5
Miles

California Valley
McKittrick
Taft
Maricopa
New Cuyama
Caliente Mtn.
Soda Lake
Carrizo Plain
Soda Lake Road
Seven Mile Rd
Elkhorn Rd
Hurricane Crocker Spr. Rd.
Soda Lake Rd
Elkhorn Grade Rd.
Santa Barbara County
San Luis Obispo County
Kern County
58
5
33
119
166
N
W
E
S

Map 3-19
Land Status and Withdrawals

Carrizo Plain National Monument
Proposed RMP/EIS

Bureau of Land Management
Bakersfield Field Office

Legend

- Carrizo Plain National Monument
- County Maintained Road
- Carrizo Plain Natural Area ACEC
- Federal Minerals
- Nat'l Cooperative Land & Wildlife Mgmt Area

Land Ownership

- Bureau of Land Management
- US Forest Service
- US Fish and Wildlife Service
- State
- County/State/Regional
- Private/Other

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

0 2.5 5
Miles

California Valley
McKittrick
Taft
Maricopa
New Cuyama
Soda Lake
Carrizo Plain
Caliente Mtn.
Soda Lake Road
Seven Mile Rd
Elkhorn Rd
Soda Lake Rd.
Elkhorn Rd.
Lokern Gradient
Santa Barbara County
San Luis Obispo County
Kern County
5
58
33
119
166
N
S
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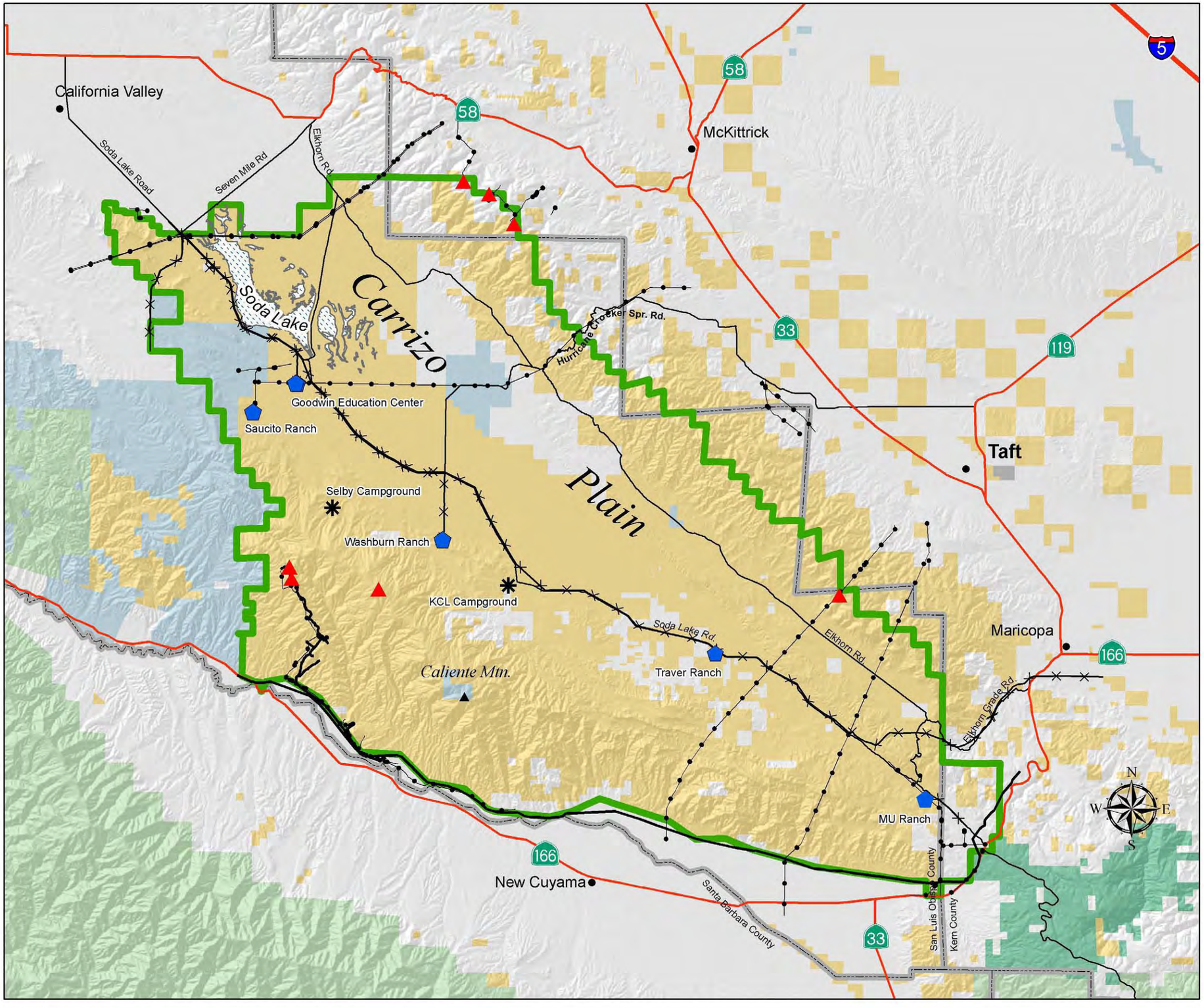

Map 3-20
Infrastructure

Carrizo Plain National Monument
Proposed RMP/EIS

Bureau of Land Management
Bakersfield Field Office

Legend

- Carrizo Plain National Monument
- County Maintained Road
- BLM Facility
- campground
- Communication site

Service Lines

- Oil pipeline
- Power line
- Telephone

Land Ownership

- Bureau of Land Management
- US Forest Service
- US Fish and Wildlife Service
- State
- County/State/Regional
- Private/Other

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