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COTONI-COAST DAIRIES AREA PROFILE

A. Resource Conditions

The existing conditions of the public land resources are summarized in this chapter to provide an overview of the best available information on the status, condition, trend, and forecast for resources and resource uses on the Cotoni-Coast Dairies property. The BLM uses this information to develop management goals and objectives in the RMP Amendment.

2.1 Regional Context:

The Santa Cruz Mountains, like most of central California, are marked by Mediterranean-type weather patterns (cool moist winters followed by warm dry summers). The Cotoni-Coast Dairies unit of the California Coastal National Monument is situated in what the local residents call Santa Cruz County's "North Coast" or "Slow Coast" about 10 miles north of Santa Cruz on the upland side of the Pacific Coast Highway (Highway 1). The area is sparsely populated but serves as a major destination for visitors from the surrounding communities on weekends and holidays because there are approximately 7 million people in the neighboring San Francisco Bay Area within 100 miles of this scenic stretch of coastline.

The original property was divided by the Coast Dairies Land Company (CDLC) into coastal parcels that are west of Highway 1, agricultural lots, and the 5,843-acre "upland parcels" that were donated to the BLM. The coastal parcels are now part of the California State Park system, and the agricultural lots are leased by CDLC. The Santa Cruz Regional Transportation Commission and Land Trust of Santa Cruz County have been coordinating with multiple local, state, and federal agencies to develop a network of recreational trails to expand and improve access to public lands.

Much of the Cotoni-Coast Dairies is a pastoral landscape marked by riparian drainages. There are six perennial streams on Cotoni-Coast Dairies: Molino Creek, Ferrari Creek, San Vicente Creek, Liddell Creek, Yellow Bank Creek, and Laguna Creek. Between these drainages, there are broad marine terraces that have been historically used for livestock grazing, agriculture, and mining. The BLM-administered portion extends approximately two miles east from the boundary of Highway 1.

Two unincorporated communities border Cotoni-Coast Dairies: Davenport, which is located on Highway 1, and Bonny Doon, which is east (or upland) from Cotoni-Coast Dairies. Just to the south of Cotoni-Coast Dairies is the 4,000-acre Wilder Ranch State Park, and to the north is the 3,200-acre Swanton Pacific Ranch, owned by California Polytechnic State University (Cal Poly) and operated as a working ranch and school forest. A consortium of conservation groups (Sempervirens Fund, Save the Redwoods League, Peninsula Open Space Trust, and the Land Trust of Santa Cruz County) manage approximately 9,000 acres of private lands east of Cotoni-Coast Dairies where a public access plan is currently being developed.

2.2 Fish and Wildlife

a. Indicators

Key indicators of natural fauna at the Cotoni-Coast Dairies can include any and all elements of a fairly intact ecological interdependent model. This includes herbivores (black-tailed mule deer), top predators (mountain lion), mesopredators (bobcat, coyote, grey fox, raccoon, badger), small herbivorous mammals (brush rabbit, dusky-footed woodrat, California ground squirrel, deer mice), small carnivorous mammals including mustelids (long-tailed weasel, striped skunk), moles and shrews, and bats.

Other vertebrate groups that play essential ecosystem roles are reptiles (northern and southern alligator lizard, coast and aquatic garter snake, southern pacific rattlesnake, yellow-bellied racer, western fence lizard, northwestern/southwestern pond turtle), woodland salamanders (Ensatina, arboreal salamander, Santa Cruz black salamander, California slender salamander), and aquatic- breeding amphibians (California red-legged frog, Sierra chorus frog, California newt, rough-skinned newt, Pacific giant

salamander). Birds species include riparian forms such as hermit thrush, Wilson's warbler, black-headed grosbeak; grassland species such as grasshopper sparrow; other sparrows (white-crowned, golden crowned), and habitat generalists such as California and spotted towhee, red-tailed hawk, red-shouldered hawk, Northern harrier, great horned owl, western screech owl, various woodpeckers including pileated woodpecker, American robin, brewer's and red-winged blackbirds, and corvids such as scrub and Stellar's jays. Fish include the salmonids coho salmon, steelhead trout, non-anadromous rainbow trout, as well as other fish species, including roach, hitch, stickleback, and freshwater sculpin. Invertebrates are also crucial faunal elements, and include both terrestrial and aquatic mollusks (snails, slugs and bivalves), and arthropods (crustaceans including crayfish; lepidopterans, coleopterans, odonates, orthopterans).

Absence of any of these expected species would indicate less-than-desired ecosystem function and biodiversity, but the absence of the remaining top predator (mountain lion) and the primary herbivore (black-tailed mule deer) would be expected to have a major cascading effects on many other wildlife species and flora on the Monument. Aquatic species such as steelhead and coho salmon are key indicators of functioning creeks, as are a host of aquatic invertebrates (odonata, hemipteran, coleopteran, neuropteran).

Key indicators by habitat.

Faunal indicator species are here addressed in the framework of mesohabitats defined in the Vegetation section. Although animal species do not necessarily exist in a one-to-one relationship with the defined vegetation associations, the vegetation model is generally useful for defining the habitats for which these species can indicate ecosystem function and the desired faunal diversity / historical condition.

Key indicators are here generally defined as species that are particularly sensitive to population declines following habitat degradation. Ecosystem indicators are other fauna which, when present, suggest either positive or negative ecosystem function. Native fauna are assumed to suggest positive ecosystem function, whereas nonnative species are assumed to indicate negative ecosystem function, by definition.

Mountain lions are expected in every habitat at Coast Dairies and can be considered an "umbrella species" for the Property.

Freshwater Stream (including Central Coast arroyo willow riparian forest, Red alder riparian forest, Coast Live Oak riparian forest from Vegetation above and an additional category proposed here, "Redwood riparian"). Key faunal indicators would include pond turtles, foothill yellow-legged frogs, Pacific giant salamanders, Santa Cruz black salamanders, steelhead trout. Ecosystem indicators may include an intact stream invertebrate fauna, native freshwater molluscs, and native crayfish.

Freshwater seep / freshwater pond / seeps

Key indicators would include California red-legged frog and pond turtle. Ecosystem indicators include native species such as California and rough-skinned newt, Sierra chorus frog, Santa Cruz garter snake, sora, invertebrates including coleoptera (Ditiscidae), hemiptera (Belostomatidae), odonata (dragonflies and darners), copepods and eubranchiopods.

Open Uplands including rocky slopes or flat terraces

Certain species will be ubiquitous to the unforested areas of the Property, including western fence lizard, northwestern rattlesnake, and northern harrier.

Non-native herbaceous / Mustard-radish-poison hemlock / California annual grassland / Coyote brush scrub

This habitat is an early successional shrub and nonnative grass and forb community and will tend to have early successional generalist species such as brush rabbit, yellow-bellied racer, gopher snake, pocket gopher, coyote, bobcat, and a mix of native and nonnative invertebrates.

California coastal native perennial

This primordial habitat may be expected to host a diverse community of native insects and rodents. One key indicator would be American badger.

California sagebrush / Mixed chaparral / ridgetop rock outcrops and barrens

Key indicators could be Blainville's horned lizard and night snake. Ecosystem indicators may include Gilbert's skink, California whiptail, Allens and rufous hummingbirds.

Coast live oak woodland / Mixed evergreen forest / Mixed conifer

Faunal composition of these habitats is fairly similar. Key indicators include arboreal salamander. Leaf-litter animals such as the California slender salamander and micro-arthropods are ecosystem indicators, as are deer.

Redwood Forest

Key indicators would include the marbled murrelet, band-tailed pigeon, banana slug, and *Ensatina*. Leaf-litter micro-arthropods are ecosystem indicators. It is important to note that Santa Cruz Mountains redwood habitats are depauperate with respect to the more extensive forests to the north. Key indicators of redwood forests north of San Francisco Bay, including spotted owl, white-footed vole, redbacked vole, clouded salamander, and torrent salamander are not historically known from the Santa Cruz Mountains.

b. Current Condition.

Data on presence or absence of most of the indicator species is sparse. Data on specific areas used or preferred on-site are lacking for the majority of both relatively common and rare wildlife species. Quantitative estimates of populations of any wildlife species are mostly unavailable with the exception of some of the sensitive fauna, such as California red-legged frog and the salmonids.

Mountain lions have been actively studied through radiotelemetry both on-site and in the greater Santa Cruz mountain region. The effort is supported by CDFW and the University of California, Santa Cruz and information is available on the project website (<http://www.santacruzpumas.org/>).

Ecosystem Indicators

Intact leaf-litter fauna are expected in the oak woodland and redwood forest habitats but have not been sampled. Banana slugs have been recorded from the site but terrestrial snails have not been sampled.

Intact stream invertebrates are expected from the creeks but have not been sampled. Aquatic molluscs (snails and bivalves, both native and nonnative) and crayfish have not been sampled.

California newts, rough-skinned newts, Santa Cruz garter snakes, northwestern rattlesnakes, and coast garter snakes have been positively recorded from the Property.

Dusky-footed woodrat and long-tailed weasel have been positively documented from the Property.

The lack of development is conducive to a generally complete fauna composition. Processes that depress native fauna in otherwise undeveloped areas can include non-native species (i.e. brown cowbirds, bullfrogs, and house cats), as well as nonnative vegetation. Bullfrogs have not been documented in any drainage. House cats are expected in the environs of the town of Davenport and the small community on Laguna Creek and are expected to have a negative effect on riparian birds, and have been noted in the “Cheese Barn.” Brown cowbirds are likely present and would also negatively impact riparian birds due to their brood parasitism.

The coastal watersheds and streams support cold water fisheries. Areas with limited or constrained riparian areas typically exhibit warmer temperatures, less stream stability, and lower numbers of native fish. The California Department of Fish and Wildlife and National Marine Fisheries Service published results of salmonid surveys in the San Vicente Watershed Salmonid Recovery Plan, completed in 2014.

Cold water fisheries are included in Molino, Ferrari, San Vicente, Liddell, Yellow Bank, Laguna, and ‘Y’ creeks. Each of these watersheds supports or has the potential to support steelhead and coho salmon fisheries, though there are substantial impediments or challenges for salmonid recovery in each creek, given current conditions.

Cotoni-Coast Dairies streams are managed as wild fisheries and maintained by natural recruitment, though the National Marine Fisheries Service has been stocking San Vicente Creek with coho salmon from a hatchery on nearby Scotts Creek since 2009. The City of Santa Cruz includes San Vicente Creek, Liddell Creek and Laguna Creek in their Salmonids HCP and have conducted intensive surveys for aquatic wildlife in those creeks.

Raptors

Cotoni-Coast Dairies also includes habitat of considerable value to raptors. Specific raptor species that utilize habitats present on and adjacent to this site include: golden eagle, hawks (red-tailed, red-shouldered, Swainson’s, ferruginous, and sharp-shinned), northern harrier, prairie falcon, American kestrel, owls (short-eared, long-eared, and burrowing), and loggerhead shrikes. Threats to raptors include poisoning, vehicle collisions, habitat loss, illegal hunting, illegal trading and egg collecting, power lines and towers, falconry, a reduced prey base, and disturbance of nesting and roosting sites.

Adult raptors have few predators and may live for up to 20 to 30 years. In common with other long-lived avian species, raptors have a low reproduction rate and high mortality among young birds. Approximately one-quarter of raptors survive their first year, and only half of these will reach maturity and raise their own young. With a reduction in adult survivorship due to the causes mentioned above, the population of the affected species declines as a result.

c. Trends.

San Vicente Creek and Laguna Creek will remain the NOAA Fisheries focus for recovery of coho salmon populations. Reference: NOAA Fisheries Service. Volume 1: Recovery Plan for the Evolutionarily Significant of Central California Coast Coho Salmon. 2012.

d. Forecast.

In the absence of urban or industrial development the wildlife profile at Cotoni-Coast Dairies is unlikely to experience radical change. Lack of management of ponds could cause local extirpations of some species such as California red-legged frogs and California and rough-skinned newts.

Regarding the forecast for coho salmon in this region, NOAA Fisheries notes: “the lack of demonstrably viable populations...and substantial gaps in the distribution of coho salmon throughout the CCC ESU [Central California Coast Evolutionarily Significant Unit] strongly indicate that this ESU is currently in danger of extinction.”

e. Key features.

Coastal terraces and their associated grasslands are a key faunal association at Cotoni-Coast Dairies. Coastal scrub, mixed deciduous / conifer, coast redwood, and coastal riparian are other key features. Cotoni-Coast Dairies does not contain extensive sand deposits, hard chaparral, maritime chaparral, caves, vernal pools or sag pools, freshwater or saltwater marshlands, oak savannah, sandy beaches, rocky intertidal, or estuaries, and wildlife associated with those habitats are sparse or nonexistent. Coast Dairies likely historically contained estuaries and the restoration of estuaries is a potential management action. Coastal species present in southern Santa Cruz County such as California tiger salamander, common garter snake, or legless lizard are not known to be present and are not expected.

Habitat fragmentation is a key consideration for managing lands for maintaining and increasing wildlife populations. In this area, features which are most relevant in terms of habitat fragmentation include: Highway 1 and other well-travelled paved roads, as well as adjacent residential neighborhoods and businesses.

2.3 Vegetation

a. Indicators.

Dominant vegetation types at Cotoni-Coast Dairies are a function of local climate (primarily average annual precipitation), topography (slope and aspect), soils (depth), and local hydrology, all of which are involved in water-energy balance and environmental filtering which determines what plant species dominate where on the landscape (**Figure 1**). There is a strong local gradient of average annual precipitation from the lowest elevations on Terrace 2 (26 inches annual average) to the highest elevations in the Uplands (43 inches) (TPL 2001, 2004). Due to the maritime climate (temperature buffering) of

Cotoni-Coast Dairies being located on the coast, there is little average annual temperature change across all elevations of Cotoni-Coast Dairies.

Cotoni-Coast Dairies has dramatic topography owing to its location at the western edge of the Santa Cruz Mountains (geologic uplift) and naturally high rate of downcutting of drainages due to high average annual precipitation (> 50 inches) in the mountains (TPL 2001, 2004). The slope across Cotoni-Coast Dairies varies from virtually level to very gentle on Terraces 2 and 3 to very steep in the uplands. Drainages that dissect Cotoni-Coast Dairies in a NE to SW direction create a series of steep north facing and south facing aspects that act as a primary environmental filter determining plant species distribution and dominance across the landscape.

b. Current Conditions.

More drought tolerant plant species dominate at lower elevations (lower average annual rainfall), on south facing slopes (warmer; more xeric), and areas where the soil depth is very shallow and well-drained (low water holding capacity). Less drought tolerant (more mesic) plant species occur at higher elevations (higher average annual rainfall), on north facing slopes (cooler; more mesic), and areas where the soil depth is deeper (higher water holding capacity). Historic and current land management practices including farming, livestock grazing, wildfire, and quarrying (disturbances) have also greatly influenced the vegetation of Cotoni-Coast Dairies. Wildfire was used historically by Native Americans to manage the coastal grasslands and other vegetation of Cotoni-Coast Dairies (TPL 2001, 2004). Following significant European settlement of Cotoni-Coast Dairies after 1850, wildfire suppression has resulted in greatly reduced wildfire return interval. The last major wildfire at Cotoni-Coast Dairies was in 1948 (TPL 2001).

Dominant vegetation types at Cotoni-Coast Dairies [from areas with lower average annual precipitation to areas with higher average annual precipitation] include – non-native mustard-radish-thistle-poison hemlock patches, California non-native annual grassland, California coastal native perennial grassland, coyote brush scrub, California sagebrush, non-native shrub patches, coast live oak woodland, mixed chaparral, mixed evergreen forest, mixed conifer forest, and redwood forest. Mustard-radish-thistle-poison hemlock patches and California non-native annual grassland dominate on Terrace 2 and some areas of Terrace 3 where farming occurred historically. Some areas of Terrace 3 where farming did not occur still retain a substantial proportion of native perennial grasses and forbs.

Coyote brush scrub, California sagebrush, and coastal scrub primarily occur on steeper slopes around the edges of terraces and higher in elevation above the terraces on warmer, drier, south facing slopes of drainages. Coast live oak woodland, mixed chaparral, mixed evergreen forest, mixed conifer forest, and redwood forest occur on steeper slopes, particularly wetter north facing slopes, in the upland portions of Cotoni-Coast Dairies. The uplands receive the highest average annual precipitation due to high topography and additionally are at the average elevation of the coastal fog belt and intercept substantial fog drip.

c. Trends.

Historic logging of coast redwood (*Sequoia sempervirens*) and Douglas fir (*Pseudotsuga menziesii*) around 1900 resulted in removal of the old growth forest (TPL 2001, 2004). Second and third growth of the forest

is vigorous and near climax, but does not yet provide the habitat conditions of old growth forest to support marbled murrelets. Limestone and shale quarrying in the Uplands of San Vicente Creek and Liddell Creek has removed the soil and chaparral and forest vegetation. Vegetation recruitment on the quarry floors and on tailings piles has consisted primarily of a mix of non-native annual and perennial grasses and forbs; non-native shrubs including French broom (*Genista monspessulana*) and pampas grass (*Cortaderia jubata*); pioneer native woody species including coyote brush and California sagebrush; and planted (restoration), native trees including knobcone pine (*Pinus attenuata*) and Douglas fir.

Dominant vegetation types in perennial seeps and around perennial water bodies includes freshwater seep and freshwater wetland. Freshwater seeps and wetlands at Cotoni-Coast Dairies are dominated by rushes (*Juncus*), sedges (*Carex*) and cattails (*Typha*). Localized seeps and associated wetland vegetation occur on Molino Terrace 2 and Ferrari Terrace 2. An old stock pond impounds water from a spring at Molino Terrace 2.

d. Forecast.

Historic creek channel modification at Yellow Bank Creek has resulted in channel incision and sedimentation and vegetation overgrowth of former freshwater wetlands there, particularly at lower Yellow Bank Creek. Therefore, BLM is agreed that a series of off-channel ponds would be monitored and maintained for a period of 20-years for California red-legged frog (*Rana aurora draytonii*) habitat mitigation in cooperation with the US Fish and Wildlife Service, PG&E, and the Santa Cruz Resource Conservation District. A wetland pond was constructed at Liddell Creek as mitigation for CEMEX activities (TPL 2001, 2004; Figure III-8, Wetland Mitigation Pond). The status of this mitigation pond is unknown. There is an existing quarry tailings pile sediment pond at Lat. 37.020748, Lon. -122.159443 at the Bonny Doon quarry with emergent wetland vegetation including *Carex* and *Typha*.

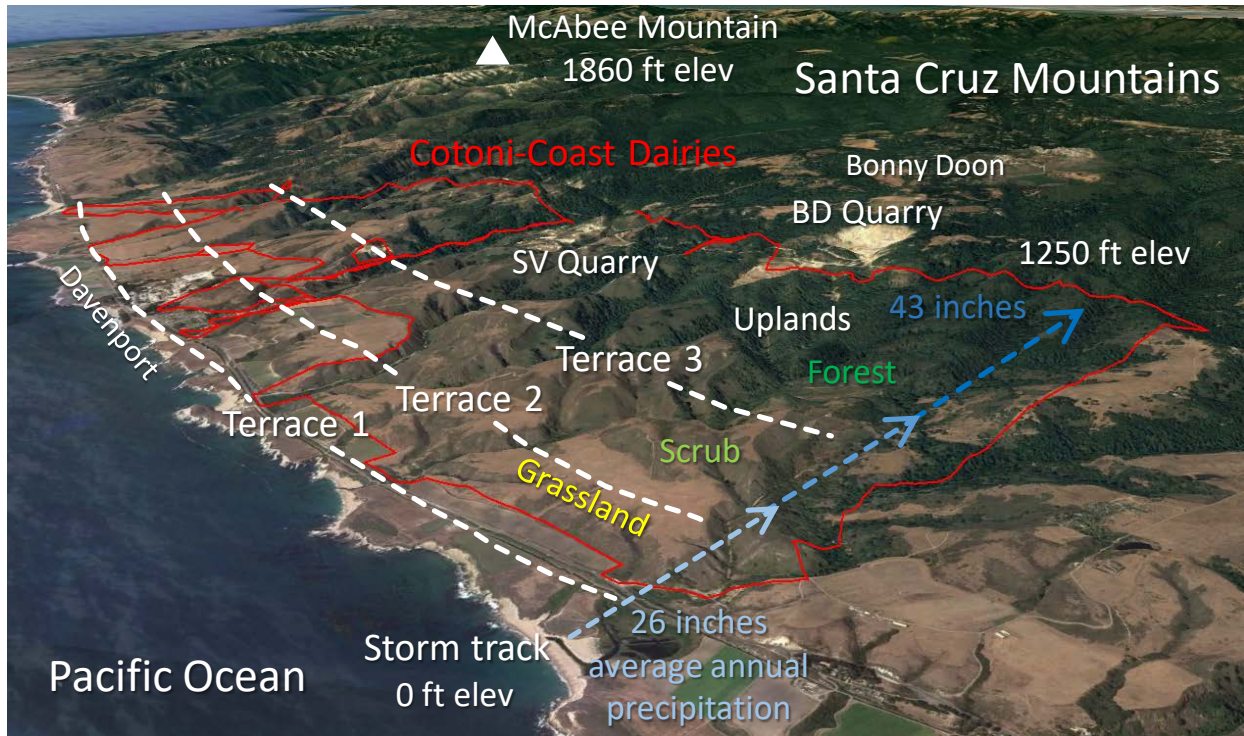


Figure 1. The influence of topography and precipitation on vegetation types at Cotoni-Coast Dairies. The lowest elevations of Cotoni-Coast Dairies near the coast have the lowest average annual precipitation and the highest elevations inland into Santa Cruz Mountains have the highest average annual precipitation. This gradient in water availability results in dominance of grassland and other herbaceous vegetation at the lower elevations, scrub at middle elevations, and woodland, chaparral, and forest at the highest elevations.

Table 1. Herbaceous vegetation types present at Cotoni-Coast Dairies. These vegetation types dominate Terraces 2 and 3, at the lowest average annual precipitation range of Cotoni-Coast Dairies and also the most disturbed due to historic farming and current livestock grazing. Compiled from vegetation types listed in TPL 2001 and 2004 and cross-walked to vegetation types described in Sawyer et al. 2009 and Barbour et al. 2007. Non-native vegetation types noted with red text.

WETLANDS Alliance	NON-NATIVE HERBACEOUS Alliance		NATIVE HERBACEOUS Alliance
Freshwater seep/Freshwater wetland	Mustard-radish-thistle-poison hemlock patches	California annual grassland	California coastal native perennial grassland
<i>Carex densa</i> Provisional Herbaceous Alliance	<i>Brassica (nigra)</i> Semi-Natural Herbaceous Stands	<i>Avena (barbata, fatua)</i> Semi-Natural Herbaceous Stands	<i>Danthonia californica</i> Herbaceous alliance
<i>Eleocharis macrostachya</i> Herbaceous Alliance	<i>Conium maculatum-Foeniculum vulgare</i> Semi-Natural Herbaceous Stands	<i>Bromus (diandrus, hordeaceus)-Brachypodium distachyon</i> Semi-Natural Herbaceous Stands	<i>Eschscholzia (californica)</i> Herbaceous Alliance
<i>Juncus lescurii</i> Herbaceous Alliance	<i>Brassica nigra</i>	<i>Lasthenia californica-Plantago erecta-Vulpia microstachys</i> Herbaceous Alliance	<i>Juncus patens</i> Provisional Herbaceous Alliance
<i>Juncus (oxymeris, xiphioides)</i> Provisional Herbaceous Alliance	<i>Brassica nigra-Bromus diandrus</i>	<i>Festuca perrenis</i> Semi-Natural Herbaceous Stands	<i>Nassella pulchra</i> Herbaceous Alliance
<i>Juncus patens</i> Provisional Herbaceous Alliance	<i>Raphanus sativus</i>	<i>Avena barbata</i>	<i>Danthonia californica</i>
<i>Schoenoplectus californicus</i> Herbaceous Alliance	<i>Conium maculatum</i>	<i>Avena barbata-Bromus hordeaceus</i>	<i>Eschscholzia californica</i>
<i>Typha (angustifolia, domingensis, latifolia)</i> Herbaceous Alliance	<i>Foeniculum vulgare</i>	<i>Lasthenia californica-Lupinus bicolor-Layia platyglossa-Bromus spp.</i>	<i>Juncus patens</i>
<i>Carex densa</i>		<i>Festuca perrenis</i>	<i>Nassella pulchra</i>
<i>Eliocharis macrostachya</i>		<i>Festuca perrenis-Bromus hordeaceus</i>	<i>Nassella pulchra -Avena spp.- Bromus spp.</i>
<i>Juncus lescurii</i>			<i>Nassella pulchra-Festuca perrenis (- Trifolium spp.)</i>
<i>Juncus xiphioides</i>			<i>Nassella pulchra/Baccharis pilularis</i>
<i>Juncus patens</i>			
<i>Schoenoplectus californicus</i>			
<i>Typha latifolia</i>			

Table 2. Woody shrub vegetation types at Cotoni-Coast Dairies. Coastal scrub types dominates the dry drainage slopes at the edges of Terraces 2 and 3, at intermediate average annual rainfall for Cotoni-Coast Dairies. Chaparral occurs in the understory of woodland and forest. Non-native shrub patches occur within drastically disturbed areas of uplands including road edges and quarries. Compiled from vegetation types listed in TPL 2001 and 2004 and cross-walked to vegetation types described in Sawyer et al. 2009 and Barbour et al. 2007. Non-native vegetation types noted with red text.

COASTAL SCRUB Alliance		CHAPARRAL Alliance	NON-NATIVE SHRUB Alliance
Coyote brush scrub	California sagebrush	Mixed chaparral	Non-native shub patches
<i>Baccharis pilularis</i> Shrubland Alliance	<i>Artemisia californica</i> Shrubland Alliance	<i>Chrysolepis chrysophylla</i> Shrubland alliance	Broom (<i>Cystis scoparius</i>) Semi-Natural Shrublands
<i>Frangula californica</i> Shrubland Alliance	<i>Diplacus aurantiacus</i> Shrubland Alliance	<i>Heteromeles arbutifolia</i> Shrubland alliance	<i>Cortaderia (jubata, selloana)</i> Semi-Natural Herbaceous Stands
<i>Lupinus arboreus</i> Shrubland Alliance	<i>Acmispon glaber</i> Shrubland Alliance	<i>Chrysolepis chrysophylla</i> - <i>Arctostaphylos glandulosa</i>	
<i>Lotus scoparius</i> Shrubland Alliance	<i>Toxicodendron diversilobum</i> Shrubland Alliance	<i>Chrysolepis chrysophylla/Vaccinium ovatum</i>	
<i>Morella californica</i> Shrubland Alliance	<i>Artemisia californica</i>	<i>Heteromeles arbutifolia</i> - <i>Artemisia californica</i>	
<i>Rosa californica</i> Shrubland Alliance	<i>Artemisia californica</i> - <i>Diplacus aurantiacus</i>		
<i>Rubus (parviflorus, spectabilis, ursinus)</i> Shrubland Alliance	<i>Diplacus aurantiacus</i>		
	<i>Acmispon glaber</i>		
<i>Baccharis pilularis</i>	<i>Toxicodendron diversilobum</i> /herbaceous		
<i>Baccharis pilularis</i> /Annual grass-herb	<i>Toxicodendron diversilobum</i> - <i>Diplacus aurantiacus</i>		
<i>Baccharis pilularis</i> / <i>Danthonia californica</i>	<i>Toxicodendron diversilobum</i> - <i>Baccharis pilularis</i> - <i>Rubus parviflorus</i>		
<i>Baccharis pilularis</i> / <i>Nassella pulchra</i>			
<i>Baccharis pilularis</i> / <i>Scrophularia californica</i>			
<i>Baccharis pilularis</i> - <i>Artemisia californica</i>			
<i>Baccharis pilularis</i> - <i>Eriophyllum staechadifolium</i>			
<i>Baccharis pilularis</i> - <i>Frangula californica</i> - <i>Rubus parviflorus</i>			
<i>Baccharis pilularis</i> - <i>Toxicodendron diversilobum</i>			
<i>Frangula californica</i> ssp. <i>californica</i> - <i>Baccharis pilularis</i> / <i>Scrophularia californica</i>			
<i>Lupinus arboreus</i>			
<i>Lupinus arboreus</i> / <i>Bromus diandrus</i>			
<i>Lotus scoparius</i>			
<i>Morella californica</i>			
<i>Rosa californica</i> - <i>Baccharis pilularis</i>			
<i>Gaultheria shallon</i> - <i>Rubus spectabilis</i> - <i>Rubus parviflorus</i>			
<i>Rubus parviflorus</i> - <i>Rubus spectabilis</i> - <i>Rubus ursinus</i>			
<i>Rubus parviflorus</i>			
<i>Rubus spectabilis</i>			
<i>Rubus ursinus</i>			

Table 3. Woodland and forest vegetation types at Cotoni-Coast Dairies. Woodland and forest occurs at the highest average annual precipitation range and highest elevations of Cotoni-Coast Dairies. Compiled from vegetation types listed in TPL 2001 and 2004 and cross-walked to vegetation types described in Sawyer et al. 2009 and Barbour et al. 2007.

WOODLAND Alliance	FOREST Alliance		
Coast live oak woodland	Mixed evergreen forest	Mixed conifer forest	Redwood forest
<i>Quercus agrifolia</i> Woodland Alliance	<i>Pinus attenuata</i> Forest Alliance	<i>Pseudotsuga menziesii</i> Forest Alliance	<i>Sequoia sempervirens</i> Forest Alliance
<i>Quercus agrifolia</i> /grass	<i>Arbutus menziesii</i> Forest Alliance	<i>Pseudotsuga menziesii</i> - <i>Lithocarpus densiflorus</i> Forest Alliance	<i>Sequoia sempervirens</i> / <i>Arbutus menziesii</i>
<i>Quercus agrifolia</i> /coastal sage scrub	<i>Lithocarpus densiflorus</i> Forest Alliance	<i>Pseudotsuga menziesii</i>	<i>Sequoia sempervirens</i> - <i>Alnus rubra</i> / <i>Rubus spectabilis</i>
<i>Quercus agrifolia</i> /chaparral	<i>Umbellularia californica</i> Forest Alliance	<i>Pseudotsuga menziesii</i> / <i>Corylus cornuta</i>	<i>Sequoia sempervirens</i> - <i>Arbutus menziesii</i> / <i>Vaccinium ovatum</i>
<i>Quercus agrifolia</i> / <i>Artemisia californica</i>	<i>Corylus cornuta</i> var. <i>californica</i> Shrubland Alliance	<i>Pseudotsuga menziesii</i> / <i>Gaultheria shallon</i>	<i>Sequoia sempervirens</i> - <i>Lithocarpus densiflorus</i> / <i>Vaccinium ovatum</i>
<i>Quercus agrifolia</i> / <i>Heteromeles arbutifolia</i>	<i>Arbutus menziesii</i> - <i>Umbellularia californica</i> -(<i>Lithocarpus densiflorus</i>)	<i>Pseudotsuga menziesii</i> - <i>Quercus agrifolia</i>	<i>Sequoia sempervirens</i> - <i>Pseudotsuga menziesii</i> / <i>Arbutus menziesii</i>
<i>Quercus agrifolia</i> / <i>Heteromeles arbutifolia</i> - <i>Toxicodendron diversilobum</i>	<i>Lithocarpus densiflorus</i> / <i>Corylus cornuta</i>	<i>Pseudotsuga menziesii</i> - <i>Umbellularia californica</i> / <i>Toxicodendron diversilobum</i>	<i>Sequoia sempervirens</i> - <i>Pseudotsuga menziesii</i> / <i>Gaultheria shallon</i>
<i>Quercus agrifolia</i> / <i>Toxicodendron diversilobum</i>	<i>Lithocarpus densiflorus</i> / <i>Gaultheria shallon</i>	<i>Pseudotsuga menziesii</i> - <i>Lithocarpus densiflorus</i>	<i>Sequoia sempervirens</i> - <i>Pseudotsuga menziesii</i> / <i>Vaccinium ovatum</i>
<i>Quercus agrifolia</i> / <i>Toxicodendron diversilobum</i> -(<i>Corylus cornuta</i>)	<i>Lithocarpus densiflorus</i> / <i>Vaccinium ovatum</i>	<i>Pseudotsuga menziesii</i> - <i>Lithocarpus densiflorus</i> / <i>Toxicodendron</i> - (<i>Lonicera hispidula</i>)	<i>Sequoia sempervirens</i> - <i>Pseudotsuga menziesii</i> - <i>Umbellularia californica</i>
<i>Quercus agrifolia</i> / <i>Toxicodendron diversilobum</i> /grass	<i>Lithocarpus densiflorus</i> - <i>Arbutus menziesii</i>	<i>Pseudotsuga menziesii</i> - <i>Lithocarpus densiflorus</i> / <i>Gaultheria shallon</i>	<i>Sequoia sempervirens</i> - <i>Umbellularia californica</i>
<i>Quercus agrifolia</i> - <i>Arbutus menziesii</i> / <i>Corylus cornuta</i> - <i>Rubus</i> spp.	<i>Lithocarpus densiflorus</i> - <i>Umbellularia californica</i>	<i>Pseudotsuga menziesii</i> - <i>Lithocarpus densiflorus</i> / <i>Corylus cornuta</i>	<i>Sequoia sempervirens</i>
<i>Quercus agrifolia</i> - <i>Arbutus menziesii</i>	<i>Umbellularia californica</i>		<i>Sequoia sempervirens</i> - <i>Lithocarpus densiflorus</i> / <i>Carex globosa</i> - <i>Iris douglasiana</i>
<i>Quercus agrifolia</i> - <i>Arbutus menziesii</i> - <i>Toxicodendron diversilobum</i>	<i>Umbellularia californica</i> / <i>Toxicodendron diversilobum</i>		
<i>Quercus agrifolia</i> - <i>Arbutus menziesii</i> - <i>Umbellularia californica</i>	<i>Umbellularia californica</i> - <i>Arbutus menziesii</i>		
<i>Quercus agrifolia</i> - <i>Umbellularia californica</i> / <i>Toxicodendron diversilobum</i>	<i>Umbellularia californica</i> - <i>Lithocarpus densiflorus</i>		
<i>Quercus agrifolia</i> - <i>Arbutus menziesii</i> / <i>Corylus cornuta</i>	<i>Umbellularia californica</i> - <i>Quercus agrifolia</i> / <i>Toxicodendron diversilobum</i> -(<i>Corylus cornuta</i>)		
<i>Quercus agrifolia</i> - <i>Umbellularia californica</i>			
<i>Quercus agrifolia</i> - <i>Umbellularia californica</i> / <i>Toxicodendron diversilobum</i>			

Table 4. Riparian forest vegetation types and non-native planted trees at Cotoni-Coast Dairies. Riparian forest occurs in all perennial drainages of Cotoni-Coast Dairies. Monterey pine, Monterey cypress, and eucalyptus have been planted around historic structures, especially in the lowland areas of Terrace 2. Compiled from vegetation types listed in TPL 2001 and 2004 and cross-walked to vegetation types described in Sawyer et al. 2009 and Barbour et al. 2007. Non-native vegetation types noted with red text.

RIPARIAN FOREST Alliance			SEMI-NATURAL WOODLAND Stands
<i>Coast live oak riparian forest</i>	<i>Red alder riparian forest</i>	<i>Central Coast arroyo willow riparian</i>	<i>Eucalyptus semi-natural Woodland stand</i>
<i>Quercus agrifolia</i> Woodland Alliance	<i>Alnus rubra</i> Forest alliance	<i>Salix lasiolepis</i> Shrubland Alliance	
<i>Quercus agrifolia</i> - <i>Salix lasiolepis</i>	<i>Alnus rubra</i> / <i>Salix lasiolepis</i>	<i>Salix lasiolepis</i>	
	<i>Alnus rubra</i> / <i>Gaultheria shallon</i>	<i>Salix lasiolepis</i> / <i>Rubus</i> spp.	



Figure 2. Coastal grassland (grazed) on Terrace 2. Limited cover of mustard-radish-thistle patches.

e. Key features.

There is moderate invasion of cape ivy (*Delairea odorata*) into some of the perennial drainages, particularly San Vicente Creek. Additionally, old man’s beard (*Clematis vitalba*) has begun to invade San Vicente Creek, but is not known to occur in the other perennial drainages at Cotoni-Coast Dairies.

2.4 Special Status Species

Special status species include those plant and animal species federally listed as Threatened, Endangered, Proposed, or Candidate, as well as BLM, California Native Plant Society List 1B species, Federal and State of California sensitive plant and animal species. The BLM and the State of California coordinate activities related to the protection and enhancement of federally and state sensitive listed species. These actions include ongoing efforts to survey population levels, protect critical habitats, and determine potential areas for habitat restoration and recovery activities. The BLM also coordinates and consults with the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) for activities related to the protection and enhancement of federally listed species on Cotoni-Coast Dairies.

a. Indicators.

Migratory Birds

Cotoni-Coast Dairies contain habitats for multiple species of migratory birds. The USFWS Migratory Nongame Birds of Management Concern that are known to occur on or nearby Cotoni-Coast Dairies include the ferruginous hawk (*Buteo regalis*), short-eared owl (*Asio flammeus*), burrowing owl (*Athene cunicularia*), California thrasher (*Toxostoma redivivum*), loggerhead shrike (*Lanius ludovicianus*), mountain plover (*Charadrius montanus*), and tri-colored blackbird (*Agelaius tricolor*). Marbled murrelet surveys have been conducted extensively in the Scott Creek watershed, but no records exist for the Cotoni-Coast Dairies property.

Amphibians

Currently, there are 21 amphibian species classified as endangered or threatened and 11 species waiting to be listed according to the USFWS Division of Environmental Quality (<http://contaminants.fws.gov/issues/Amphibians.cfm>, 2005). Overall frog and salamander numbers are declining and the cause, or causes, have not been determined. However, loss of habitat and habitat degradation, urbanization, pollution, and disease are factors that have been implicated in this decline. The federally threatened California red-legged frog occurs on-site. Many common species, including the western toad, pacific chorus frog, and California newt also occur or have the potential to occur on-site.

Foothill yellow-legged frogs are not presently known from the Property, nor are Santa Cruz black salamanders. Pacific giant salamanders are likely to occur but have not been documented.

California red-legged frog

The Cotoni-Coast Dairies property is known to support populations of the Federally-threatened California red-legged frog and is designated as critical habitat for the species. The US Fish and Wildlife Service's Recovery Plan for California Red-legged Frog designates the entirety of Cotoni-Coast Dairies as "core areas", with Davenport noted as a "hydrologic sub-area." [page 142]. Reference: U.S. Fish and Wildlife Service. 2002. Recovery Plan for the California Red-legged Frog (*Rana aurora draytonii*). U.S. Fish and Wildlife Service, Portland, Oregon. viii + 173pp.

Fish

Anglers are prohibited from fishing the coastal streams on Cotoni-Coast Dairies by the California Department of Fish and Wildlife because the central coast coho ESU and central coast steelhead ESU, both federally threatened, are known to occur in these streams. Research and management efforts are currently underway to improve the status of all listed species. Habitat for these species has historically included all small coastal stream and rivers along the California coast. These waters seasonally represent spawning and rearing habitats.

Table 5: Listed Fish Species

Species	Origin	Status
Central Coast Steelhead ESU, <i>Oncorhynchus mykiss</i>	Native	Nongame, Federally Threatened
Central Coast Coho ESU, <i>Oncorhynchus kisutch</i>	Native	Nongame, Federally Threatened, State Endangered
Tidewater goby, <i>Eucyclobobius newberryi</i>	Native	Nongame, Federally endangered

Plants

Special Status plant species are those that are Federally-listed, State-listed, or California Rare Plant Rank (CRPR) list 1B. There are currently no known Special Status plant species at Cotoni-Coast Dairies.

San Francisco popcorn flower (*Plagiobothrys diffusus*; CRPR 1B.1), Santa Cruz clover (*Trifolium buckwestiorum*; CRPR 1B.1), Marsh scorzonella (*Microseris paludosa*; CRPR 1B.2), Choris's popcorn flower (*Plagiobothrys chorisianus* var. *chorisianus*; CRPR 1B.2), and Santa Cruz microseris (*Stebbinsoseris decipiens*; CRPR 1B.2) have low to moderate potential to occur on Cotoni-Coast Dairies due to occurrence of these species in the vicinity of Cotoni-Coast Dairies and presence of some potential habitat for the species (TPL 2001, 2004; CCH 2018; Calflora 2018; Jepson eFlora 2018). Several months of survey in summer 2017 did not locate any of these species at Cotoni-Coast Dairies.

b. Current Condition.

Each wildlife species has certain habitat requirements. A description of the diversity of habitats and current condition for each type is located in the Vegetation section of this report. When habitat quality decreases, wildlife species are adversely affected and population numbers are predicted to decline.

c. Trends.

Historic documents discuss copious numbers of the salmonid species in the streams in this general area, which are indicative of long term declines in the region as compared to current conditions. More recent data suggests salmonid restoration efforts are increasing fish numbers in waterways on-site.

Population size trends are not well known for most of the species known on the project site or in the surrounding areas. Research and management efforts are currently underway to improve the status of all listed species. The majority of relevant work documenting current species status has focused on salmonids and red legged frogs.

Human populations are anticipated to grow in surrounding areas, which indicates additional threats to wildlife following increased development and use of roads.

d. Forecast.

If appropriate restoration activities are undertaken, population sizes of certain species are forecast to increase. For example, removing barriers to fish passage in certain watersheds would be anticipated to increase salmonid numbers.

It is anticipated that invasive plants may increase in abundance on-site without effective treatment methods. This trend is anticipated to continue to adversely affect the wildlife species that depended on the habitats that were present on-site prior to invasive plant invasions.

e. Key features.

Habitat fragmentation is a key consideration for managing lands for maintaining and increasing wildlife populations. In this area, features which are relevant in terms of habitat fragmentation include: Highway 1 and other well travelled paved roads, as well as adjacent residential neighborhoods and businesses. Certain other features have impacted the habitats as well such as invasive grasses and other plants, the historic quarrying and logging and agricultural uses of the land.

Certain features such as the railroad trestle and the construction of Highway 1 and Swanton Road have adversely impacted the historic connectivity of waterways onsite with the ocean. Research and management efforts are currently underway to improve the status of all listed species utilizing the Cotoni-Coast Dairies lands. BLM could increase these efforts to promote wildlife species recovery onsite and in the surrounding region through a variety of methods. There is also additional opportunity to work collaboratively towards this goal with appropriate organizations. For every direct threat to wildlife onsite, there will be opportunities to reduce these threats based on how the site is designed to be used by the public. There will be opportunities to incorporate adaptive management strategies and techniques to respond to situations specific to wildlife species.

BLM has been evaluating infrastructure options that are less threatening to wildlife that did not exist previously. For example, the possibility of raptors perishing from getting their talons stuck in certain older models of signs and fence posts will not occur as BLM installs improved models.

e. Key features.

The BLM recently completed an outline of initial observations, methods and points of discussion for creating an invasive weed control plan (Weed Management Initial Assessment – Coast Dairies, October 2018).

2.5 Riparian Areas and Wetlands

a. Indicators.

Indicators of riparian health include connectivity of riparian zone waterways with the ocean; abundance of native vegetation as compared to infestation by invasive plant species; levels of sediment due to slides on-site and upstream; riparian bird presence and abundance on BLM lands and in surrounding region, amount of trash onsite, and locations of aquatic invasive species.

Freshwater seeps and freshwater wetlands at Cotoni-Coast Dairies are supported by local perennial water sources including seeps and springs (**Table 6**). Riparian forests occur in perennial drainages at Cotoni-Coast Dairies (**Table 7**). The perennial drainages are fed by rainfall runoff from the Santa Cruz Mountains above Cotoni-Coast Dairies, as well as seeps and springs.

Table 6. Freshwater wetland vegetation types at Cotoni-Coast Dairies. Compiled from vegetation types listed in TPL 2001 and 2004 and cross-walked to vegetation types described in Sawyer et al. 2009 and Barbour et al. 2007.

WETLANDS Alliance
Freshwater seep/Freshwater wetland
<i>Carex densa</i> Provisional Herbaceous Alliance
<i>Eleocharis macrostachya</i> Herbaceous Alliance
<i>Juncus lescurii</i> Herbaceous Alliance
<i>Juncus (oxymeris, xiphioides)</i> Provisional Herbaceous Alliance
<i>Juncus patens</i> Provisional Herbaceous Alliance
<i>Schoenoplectus californicus</i> Herbaceous Alliance
<i>Typha (angustifolia, domingensis, latifolia)</i> Herbaceous Alliance
<i>Carex densa</i>
<i>Eliocharis macrostachya</i>
<i>Juncus lescurii</i>
<i>Juncus xiphioides</i>
<i>Juncus patens</i>
<i>Schoenoplectus californicus</i>
<i>Typha latifolia</i>

Table 7. Riparian forest vegetation types at Cotoni-Coast Dairies. Compiled from vegetation types listed in TPL 2001 and 2004 and cross-walked to vegetation types described in Sawyer et al. 2009 and Barbour et al. 2007.

RIPARIAN FOREST Alliance		
<i>Coast live oak riparian forest</i>	<i>Red alder riparian forest</i>	<i>Central Coast arroyo willow riparian</i>
<i>Quercus agrifolia</i> Woodland Alliance	<i>Alnus rubra</i> Forest alliance	<i>Salix lasiolepis</i> Shrubland Alliance
<i>Quercus agrifolia</i> - <i>Salix lasiolepis</i>	<i>Alnus rubra</i> / <i>Salix lasiolepis</i>	<i>Salix lasiolepis</i>
	<i>Alnus rubra</i> / <i>Gaultheria shallon</i>	<i>Salix lasiolepis</i> / <i>Rubus</i> spp.

Seasonal freshwater seeps (freshwater seep [Holland, 1986]) are commonly found in grasslands at the heads of major creeks and tributaries. ECR Figure 3.1-1 depicts freshwater seeps that were observed on the Property. Freshwater seeps form on soil surfaces underlain by Santa Cruz Mudstone (the most abundant geologic type underlying the Coast Dairies Property [ECR, Section 4.2]), Santa Margarita Sandstone, and Lompico Sandstone. These are areas where water is present at or near the ground surface due to relatively permeable, poorly cemented, and friable sandstone formations. The presence of these soils indicates numerous freshwater seeps are likely present on the Property. The two largest areas of observed seepage occur in the Molino Creek watershed near the Warrenella Road Extension, and in the Yellow Bank Creek watershed near Liddell Pipeline Road.

b. Current Condition.

Freshwater wetland vegetation and riparian forest vegetation is in relatively good condition, but riparian communities remain altered due to the effects of logging and stream diversion. These effects include trampling, and placement of above- and below-ground infrastructure, including conveyor belts, dams, bridges, and pipelines.

c. Trends.

In general, the current trend of the riparian areas is stable without indication of significant progression towards a worse condition than that inherited from previous land owners following the impacts due to historic land use practices including extensive forestry and mining.

The current trend of riparian forest vegetation is largely stable with slow progression towards an adverse condition due to minor to moderate invasion of Cape ivy. Treatment would require extensive work in some areas with high infestation, and checking and less extensive treatment for other areas with initial infestation.

d. Forecast.

The trajectory of freshwater wetland vegetation under the current management regime is projected to remain stable. The trajectory of riparian forest vegetation under the current management regime is projected to degrade over time without intervention due to slow invasion of Cape ivy and Old man’s beard. Control of non-native plant species with manual removal and herbicide application may reverse the negative trajectory.

e. Key features.

Watersheds with perennial streams and less obvious features where water has been deliberately or inadvertently impounded, which may provide aquatic habitat for listed species.

2.6 Fire Management

a. Indicators.

Fire is an integral part of the ecosystem of California's Central Coast. It has shaped the landscape and has been a part of the human interaction with the land for approximately 11,000 years. The local fuels, weather, topography and ignition patterns have been stable for much of that time. The Cotoni-Coast Dairies property is made up of a gradient of ecotypes with varying fire return intervals and levels of fire dependence for continued sustainability. For the grassland terraces and Redwood overstory this has been a disturbance and fire return interval of 5-20 years with usually a low to mixed severity burn intensity. The pine and mixed conifer forest has also had a fairly regular return interval of 11-50 years and the tree line has been a barrier to fire spread because of the lack of understory fuels.

b. Current Condition.

Fuel breaks are currently constructed and being maintained in two locations on Cotoni-Coast Dairies. From north to south the current fuel breaks are: Warrenella Road which includes several branch roads, and Bonny Doon road. Warrenella Road is a significant road for access and fire suppression. The road forks into three branches maintained at varying levels that may be improved upon for access in the future. There is also a PG&E substation along Warrenella Rd. that is on private land surrounded by BLM-administered lands. This power substation is currently one of the most likely sources of fire starts [i.e. unintended ignitions].

Bonny Doon road is a county maintained road that traverses [or bisects] the property connecting the rural community of Bonny Doon to State Highway 1. While it is not designed or maintained primarily for fire use, it would function both as a barrier to spread and for emergency access for suppression in the event of a wildfire.

c. Trends.

The primary source for fire in the area has been human caused for as long as there is a written record. In the absence of human caused fire the primary cause of fire is lightning. This moves the fire return interval up to 100-150 years and mixed to high severity burning. These are often stand replacing fires in drought years under extreme conditions.

Fires were regularly ignited by first the local tribes, then loggers, and then farmers from 9,000 BCE until the mid-1940's. Since then fire has more often been excluded and is returning to a pre-human fire regime with a lower frequency and higher intensity of fires.

Fire pre-suppression work is focused on limiting likely ignition sources and higher fire danger areas. The most likely fire sources are human starts. These may be from multiple ignition types: infrastructure, recreation, WUI and intentional. Infrastructure has two main ignition sources. It will likely either be linked to the powerlines or the roadways. The powerlines are the responsibility of the PG&E utility company to

maintain and mitigate fire hazard. The roadways are a combination of responsibilities from either the existing rights-holders, the county of Santa Cruz, and/or the BLM.

Historically recreation has been a very low hazard for ignitions on the Coast Dairies property, but if areas are open to the public and recreation activities [that result in open-flames or sparks] are allowed then the chances of accidental ignition would increase.

In the Wildland Urban Interface (WUI) there are two types of hazards from ignition. Fires may start on the BLM-administered lands and threaten or damage structures, or fires may start on private and result in resource damage on the Cotoni-Coast Dairies unit of the CCNM. In either case there are added hazards to first responders and public from WUI fires.

Lightning is the only natural source of ignition and it is unlikely. From historic fire records in the area the property is only likely to experience fires from lightning every 100-150 years. Mitigation measures for other ignition sources would also be effective at reducing damage from lightning caused fires.

d. Forecast.

Current fuels conditions and residential developments in the area make it challenging to use fire the way it has existed on the landscape for the last several thousand years. To maintain the structure and characteristics of ecotypes that are currently out on the land the BLM can use several management tools to cause disturbance, improving forest health and protecting the human infrastructure in the area.

For example, grazing on terraces and coastal grasslands will help to prevent the encroachment of woody shrubs and trees. Another option for these areas is to do small to moderate sized prescribed burning, which returns nutrients to the soil, improves habitat for native plants and animals, and reduces thatch that can create higher fire intensities when it does burn.

Fire can also be used in conjunction with other management practices to support other functions on this unit of the Monument. As an example, undesired brush and woody debris can be disposed of through piling and burning. This can be a benefit to the botany program to reduce weeds or with the archeology program to protect historic structures and sites. Cut and pile techniques have already been used successfully on Cotoni-Coast Dairies to promote meadow restoration and cultural site protection.

The use of fuel breaks can allow first responders to gain rapid access to fire management zones within the Coast Dairies unit of the CCNM, and provide some level of barrier to fire spread. Fuel breaks are most effective when fires are small and/ or less intense, so strategic placement around likely ignition sources will improve their effectiveness. For example, addition of gravel to the dirt road surrounding the PG&E substation would add a small fuelbreak in this key location.

Additional fuel break construction, mostly along existing roadways, would improve access for first responders, and give fire managers more options for prevention and suppression of fires. Two areas currently being considered are along San Vicente road and Laguna road. Both of these would improve access to likely fire start locations and assist in the suppression of wildfires. Roads and areas that are

designated and maintained as fuel breaks in the future should focus on protection of the Wildland Urban Interface (WUI) and/or infrastructure that is within the monument.

Other parts of a fire management system that need continued investment include a reliable radio and/or telecommunication network, agreements for water sources (there are no viable water sources within the Monument), agreements for fire suppression, and the personnel from BLM to oversee and manage the prevention, and suppression of wildfires.

e. Key features.

Warrenella Road is the primary fuelbreak maintained by BLM on the Cotoni-Coast Dairies property.

2.7 Cultural and Heritage Resources

The “Coast Dairies” name recalls the historic namesake for the property when it was owned by a consortium of Swiss families that managed the property in absentia. The landscape of Coast Dairies has been shaped by these past ranching and dairying operations as well as logging, farming, mining, and even homesteading.

There are several pre-European contact era (“prehistoric”) and historic era resource types on the Cotoni-Coast Dairies Unit of the California Coastal National Monument. The integrity of the resources overall are fair to poor, primarily impacted from historic mining exploration and development activities or ranching/homesteading.

The BLM desires to have all cultural resources evaluated and managed. In order to achieve this goal a classification system was created for allocating allowable uses at each site (**Table 8**). Indicative factors to describe resource conditions are principally based on observed site characteristics and site monitoring by BLM staff and trained Volunteers (California Archaeological Site Stewardship Program).

Table 8. BLM Cultural Resource Use Allocations and Desired Outcomes Matrix

Use Allocation	Desired Outcome
Scientific use	Preserved until research potential is realized
Conservation for future use	Preserved until conditions for use are met
Traditional use	Long-term preservation
Public use	Long-term preservation, on-site interpretation
Experimental use	Protected until used
Discharged from management	No use after recordation; not preserved

In 2016 a Memorandum of Understanding (MOU) was signed between the BLM Central Coast Field Office and the Amah Mutsun Land Trust (AMLT) for the Cotoni-Coast Dairies Unit of the California Coastal National Monument. At the time of the signing, the Unit was not part of the Monument but the MOU is still valid. The AMLT entered into this MOU with the BLM Central Coast Field Office to facilitate the preservation and continuity of local Native heritage. The MOU provides assurances that the traditional ceremonies and cultural practices of the Amah Mutsun Tribal Band (AMTB) will continue within its traditional territory. Furthermore, the MOU fosters the perpetuation of Traditional Ecological Knowledge (TEK) and traditional resource and environmental management (TREM) through activities that include

landscape and ethnobiological resource stewardship by AMTB members and AMLT affiliates as well as education, interpretation, research, and the sharing of AMTB cultural practices with tribal members and members of the public. The MOU reinforces that AMTB members are encouraged to engage in their traditional ceremonial activities, environmental resources stewardship, and resource gathering practices on public lands and to share elements of their traditions, culture and history with visitors as appropriate. The involvement of AMTB members and the AMLT in the protection and preservation of shared public resources stimulates increased education opportunities and community involvement. The MOU does not preclude consultation with other California Indian people or affect BLM's option to enter into similar MOUs with other California Indian groups.

b. Current Condition.

The area covered by the Cotoni-Coast Dairies Unit of the California Coastal National Monument is ecologically diverse and the topography can be extremely varied. Soil types have a limited range but can have very different textures, granularities, and depositional scenarios resulting in a large range of soil compaction conditions that can vary throughout the Management Area. Consequently any physical protection treatment for archeological resources will have different implementation requirements (e.g., hand vs. equipment installation).

There are three types of projects that can be implemented for cultural resources management:

Protection: For individual cultural properties or for classes of cultural properties requiring similar measures within a manageable spatial unit;

Information: Such as inventory or test excavations where needed to provide a basis for refining evaluations and allocations to use categories;

Interpretation: In which cultural properties are developed for public visitation.

Opportunities to enhance existing partnerships with local tribal community and interested public, specifically non-Federally recognized individual Costanoan/Ohlone California Indians, the Amah Mutsun Tribe, local community members of Davenport and Bonny Doon, avocational historical societies, and BLM Volunteers who have successfully graduated from the California Archaeological Site Stewardship Program (CASSP).

d. Forecast.

Recommended actions and desired outcomes for the known cultural resources on the Cotoni-Coast Dairies Unit of the California Coastal National Monument encourage the use and monitoring through a unique partnership with the Amah Mutsun Tribal Band (AMTB).

Other opportunities may include the expansion of the partnership with Agricultural History Project to potentially restore or interpret stand-alone structural elements or objects of the Mocettini Cheese Barn resource.

2.8 Air Quality

The Cotoni-Coast Dairies unit is located in the North Central Coast Air Basin (NCCAB). The NCCAB is composed of Monterey, Santa Cruz, and San Benito counties and covers an area of more than 5,100 square miles. In the summer, the Pacific High pressure cell is dominant and causes persistent west and northwest winds over the entire California coast. In the fall, north or east winds can develop, transporting pollutants from either the San Francisco Bay area or the Central Valley into the NCCAB. During the winter, air flows in a southeasterly direction out of the Salinas and San Benito Valleys, especially during night and morning hours. The average annual temperatures in degrees Fahrenheit are relatively stable and range from winter lows in the upper 30s to summer highs in the middle 70s.

a. Indicators

Federal and state standards have been established for ozone, CO, NO₂, sulfur dioxide (SO₂), lead, and fine particulates (PM₁₀ and PM_{2.5}). Table 3.3-2 summarizes the current federal and state standards for each of these pollutants. Standards have been set at levels intended to protect public health. California standards are generally more restrictive than federal standards. Depending on whether the standards are met or exceeded, the local air basin is classified as in “attainment” or in “nonattainment.”

b. Current Conditions

As shown in the table below, the NCCAB is in attainment or unclassifiable status for all federal ambient air quality standards (AAQS). For state AAQS, the NCCAB is currently in nonattainment status for respirable particulate matter (PM₁₀), and transitional nonattainment status for ozone. An area is designated transitional nonattainment if, during a single calendar year, the state standard is not exceeded more than three times at any monitoring location within the district.

Pollutant	Averaging Time	California Standards	Federal Standards
Ozone (O ₃)	1 Hour	Nonattainment - transitional	No federal standard
	8 Hour		Attainment
Respirable Particulate Matter (PM ₁₀)	Annual Arithmetic Mean	Nonattainment	No federal standard
	24 Hour		Unclassified ¹
Fine Particulate Matter (PM _{2.5})	Annual Arithmetic Mean	Attainment	Attainment
	24 Hour	No state standard	
Carbon Monoxide (CO)	8 Hour	Unclassified	Unclassified/Attainment
	1 Hour		
Nitrogen Dioxide (NO ₂)	Annual Arithmetic Mean	No state standard	Attainment
	1 Hour	Attainment	No federal standard
Lead	Calendar Quarter	No state standard	Attainment
	30 Day Average	Attainment	No federal standard
	Rolling 3-month Average	No state standard	Attainment

¹ Unclassified; indicates data are not sufficient for determining attainment or nonattainment.

Attainment = Meeting air quality standards

Nonattainment = Exceeding air quality standards

Source: CARB 2015, USEPA 2017

c. Trends

Populations more sensitive to air pollution than others include children, the elderly, and persons with respiratory diseases. Scattered rural residences are located adjacent to Cotoni-Coast Dairies, including the farm building complexes. According to the Monterey Bay Air Resources District's (MBARD) Guidelines, air quality impacts occur if projects emit more than 82 lbs/day of PM10 nearby or upwind of sensitive receptors. Ozone impacts during construction are less likely to occur because projects using typical construction equipment are accommodated in the emission inventories of federally and state-required air plans.

d. Forecast

The atmospheric conditions on the North Coast of Santa Cruz County are expected to be consistent with current conditions.

e. Key features.

None identified.

2.9 Water Resources

There are six perennial streams on the Cotoni-Coast Dairies property: Molino Creek, Ferrari Creek, San Vicente Creek, Liddell Creek, Yellow Bank Creek, and Laguna Creek. Several of these streams have their watershed entirely or almost entirely on the Property. The larger streams, Laguna Creek and San Vicente Creek, however, have watershed areas that extend beyond the National Monument. The largest of the Coast Dairies watersheds, San Vicente, is about 10 square miles. The streams tend to exhibit "flashy"

(rapidly rising and falling) winter flows in response to storm events, which themselves are intensified by the orographic effect of the mountains. As the dry season progresses and the soil dries out, the streams continue to be fed by seeps and springs.

The average annual rainfall ranges between approximately 40-60 inches from the areas near the coast up towards the headwaters of the drainages located within the Cotoni-Coast Dairies property. Assuming the watershed has a total surface area of 34.8 square miles (90.1 km²) or 22,272 acres (9,013 hectares), plus an average saturated thickness of 330 feet (100 meters), and void volume of two (2) percent of the rock mass, a total available storage volume of 146, 995 acre-feet (181,315,665 m³) is derived for the groundwater system supporting the Cotoni-Coast Dairies property.

Due to the geologic material in which the groundwater is held (primarily fractured granitic and metamorphic facies) – the character of the water quality for the Cotoni-Coast Dairies would be expected to be one of low dissolved solids (< 500mg/L Total Dissolved Solids (TDS). In regard to the surface water features found within the Cotoni-Coast Dairies property, the reader is referred to the ECR (ESA 2001).

A summary of the various permitted water uses is provided below:

City of Santa Cruz – Pipeline ROW

There are agreements between Coast Dairies and the City of Santa Cruz whereby Coast Dairies uses water from Laguna Creek from four ¾-inch outlets (“faucets”). This agreement originates from an Indenture dated 1889 between the City of Santa Cruz and Jeremiah Respini, who quitclaimed to the City of Santa Cruz all of his riparian rights to Laguna Creek, excepting the faucets. The land was apparently deeded to Coast Dairies, although that document was unavailable. Coast Dairies tenants Jose Ramirez and Bill Wrangle use water from two faucets attached to Santa Cruz Water District (“SCWD”) pipes in the Laguna watershed to fill a stock trough. They also take water through a pipe from an unnamed Laguna tributary that is pumped to a storage tank. It is unclear how the other two faucets referenced in the above referenced 1889, 1953, and 1964 agreements are currently utilized.

County of Santa Cruz - Water Tank Site (Marine View)

- 14’ Wide Maintenance Road Easement to allow access from water tank site to Marine View Road.
- 10’ Wide Water Line Easement; from water tank site to Ocean/Marine View Intersection

Davenport County Sanitation

Easement for installation & maintenance of an underground fresh water pipeline and appurtenant facilities – Marine View

The City and County of Santa Cruz

The City of Santa Cruz has had rights to Liddell Spring and Liddell Creek, on the Coast Dairies Property, since 1917. The City’s easement also includes a water pipeline and access to the waterline for

maintenance purposes. This includes an access road with a 10-foot right of way around the pipes. Water rights on the Coast Dairies Property are discussed in Section 5.1 of the ECR (ESA 2001).

Additional research on existing water use and diversions on the Cotoni-Coast Dairies property was compiled by the Santa Cruz Resource Conservation District in 2013. These studies indicate current and future demands for water resources posed by development within the watershed.

d. Forecast.

The groundwater system sustains the flora and fauna in the area and base flows of the perennial drainages. Residential development up-gradient of the Cotoni-Coast Dairies property and other future demands for the groundwater in the watersheds of the Cotoni-Coast Dairies properties may result in decreased base flows of perennial streams.

The property's ability to sustain a fishery could become the legacy of the National Monument. The temperature and salinity of the streams on the property are dependent upon the base flows capable of supporting salmonid species on the property.

e. Key features.

The Coast Dairies Land Company retained the water rights on the Cotoni-Coast Dairies Property. Future use and allocations would be subject to the review and approval of appropriate local, State, and Federal agencies. Numerous wells, water diversions, and associated infrastructure have been located on Cotoni-Coast Dairies. Notably, the City of Santa Cruz has several water intake stations onsite used to provide potable water to the City of Santa Cruz and surrounding areas. There are also several ponds and water impoundment areas that provide aquatic habitat for listed species on the property.

The ECR (ESA 2001) focused on the surface drainages ability to support a sustainable fishery. Substantial work is demonstrated throughout the report on the character of the drainages and their ability to provide habitat for salmonids.

2.10 Geology and Soils

The most easily observed geomorphic feature by the general public of Cotoni-Coast Dairies property is a series of three stair-step marine terraces (TPL 2001, 2004). Terrace 1 is elevated about 100 feet above sea level, Terrace 2 is elevated about 300 feet, and Terrace 3 is elevated about 600 feet. It is difficult to determine whether climatic fluctuation or tectonic uplift was predominantly responsible for formation of the terraces (TPL 2001, 2004). Marine terraces form by wave action that erodes away a relatively flat bench. Formation of these terraces is associated with high-energy erosion of a sheer sea cliff and deposition of near-shore marine sediments on the newly eroded bench. As sea level falls or tectonic forces uplift the land surface, the wave-cut platform is raised above sea level and exposed. This uplift also exposes the near-shore sediments that were deposited on the bench during its formation.

Terrace 1, the lowest and youngest terrace, is located at the level of HWY 1 and Davenport. Only small portions of Terrace 1 are contained within Cotoni-Coast Dairies. Terrace 2 and 3 are well-represented within Cotoni-Coast Dairies. The terraces are incised and eroded by the major drainages of Molino Creek,

Ferrari Creek, San Vicente Creek, Liddell Creek, Yellow Bank Creek, and Laguna Creek. Terrace 3 is heavily incised and dissected by drainages with only relatively small areas of the flat terrace remaining.

The topographic landscape of the Cotoni-Coast Dairies property is geologically dynamic with aforementioned described marine terraces being evidence of the ongoing up-lift of the Santa Cruz Mountain. The current estimated rate of uplift for the Santa Cruz Mountains between 0.8 and 1.0 cm/yr can be found in numerous publications related to the 1989 Loma Prieta earthquake and Dr. Gerald Weber (UCSC Professor of Geology (emeritus)) has provided an excellent discussion on the rate of uplift for the specific marine terraces located at the Cotoni-Coast Dairies property in his published field trip for the area (USGS Bulletin 2188, <https://pubs.usgs.gov/bul/b2188/>).

The soil series present at Cotoni-Coast Dairies are largely determined by the geology (parent material), topography, local climate, and vegetation. Soil series on the terraces include Elkhorn, Watsonville, and Pfeiffer (Bowman and Estrada 1980; SoilWeb 2018). The soil series on steep slopes of the drainages that incise the terraces is dominated by Bonnydoon. Soil series of the uplands in the woodlands and forest includes Santa Lucia, Ben Lomond, Lompico, and Maymen. Soils of the grassland terraces and woodland and forested uplands is quite deep – greater than 3 feet – in comparison to that of coastal scrub which is quite shallow – less than 1 foot. The soil texture across Cotoni-Coast Dairies is predominately loam and varies from sandy loam to clay loam. The forest soil series Santa Lucia, Ben Lomond, Lompico, and Maymen contain thick A horizons (1 foot) with high organic matter content and well-developed, deep B horizons (2 feet).

Soil series of the quarries is most closely allied to the poorly developed, very shallow and well-drained (xeric) Bonnydoon soil series. The deep A and B horizons of the Santa Lucia, Ben Lomond, Lompico, and Maymen soil series that were originally present at the sites of the Bonny Doon limestone and San Vicente shale quarries was stripped off and side cast down the hillslopes to expose the bedrock for quarrying. Removal of the topsoil effectively reset the soil formation point back to zero. Natural soil formation processes would require a few to several centuries to rebuild the soil conditions back similar to Santa Lucia, Ben Lomond, Lompico, and Maymen. Deed restrictions for Cotoni-Coast Dairies prohibit future quarrying and mining. Reclamation of the Bonny Doon quarry on the property is ongoing through a lease agreement with CEMEX. There are not currently any reclamation efforts underway for the San Vicente quarry, as abandonment of this site predates current regulations regarding mine and quarry reclamation.

The erosion hazard of the banks and steep hillsides immediately adjacent to the perennial creeks is rated as high (TPL 2001, 2004). The erosion hazard of well-vegetated coastal scrub, woodland, and forest slopes is rated as moderate. The erosion hazard of coastal grasslands on the gently sloping terraces is rated as low.

Geology at the landscape scale is not significantly affected by land use. Locally, large volumes of limestone were removed from the Bonny Doon quarry (Uplands of Liddell Creek) and large volumes of shale were removed from the San Vicente quarry (Uplands of San Vicente Creek) for cement production. Relative to the total volume of material contained in the geologic formation, the total quantity of rock removed

through quarrying was relatively small. Deed restrictions for Cotoni-Coast Dairies prohibit future quarrying and mining.

Due to the superficial nature (a thin veneer) of soils over geology (parent material; bedrock), soils can be greatly affected by land use. Soils are the foundation of ecosystems, serving a critical ecological support function of substrate for anchoring and to provide nutrient and water supply (soil moisture) for plant growth. Removal of vegetation can expose soils, resulting in soil erosion and loss of the terrestrial ecosystem function, as well as negative effects to aquatic ecosystems through sedimentation.

Overall, the current condition of soil resources across the entire Cotoni-Coast Dairies is good, except for the Boony Doon and San Vicente quarries. The deep A and B horizons of the Santa Lucia, Ben Lomond, Lompico, and Maymen soil series that was originally present on the quarry sites was stripped off to expose the limestone and shale bedrock (**Figures 3 and 4**). Removal of the topsoil effectively reset the soil formation start point to zero. This has resulted in the remaining drastically disturbed soil to be most closely allied to the poorly developed, very shallow (low water holding capacity) and well-drained (xeric) Bonnydoon soil series. Due to the low water holding capacity of the Bonnydoon soil series, it is generally only capable of supporting coastal scrub vegetation. Natural soil formation processes would require a few to several centuries to rebuild the soil conditions back similar to Santa Lucia, Ben Lomond, Lompico, and Maymen. Active soil rebuilding through deep amendment with organic matter (surface apply and deep rip 1 to 2 feet) would greatly accelerate restoration of soil function similar to Santa Lucia, Ben Lomond, Lompico, and Maymen to support conifer forest revegetation.



Figure 3. Limestone quarry tailings pile in Liddell Creek watershed. Lat. 37.022618, Lon. -122.157659.



Figure 4. Shale quarry pit in the San Vicente Creek watershed. Lat. 37.029337, Lon. -122.172955.

The trajectory of soils under the current management regime is projected to remain stable. Although the soils within the quarries are drastically disturbed and shallow, the herbaceous and shrub vegetative cover is sufficiently high and the porosity of the underlying shale is sufficiently high, so as to prevent significant soil erosion. The natural rate of soil formation would require a few to several centuries to rebuild the soil conditions back similar to Santa Lucia, Ben Lomond, Lompico, and Maymen. Active soil rebuilding through deep amendment with organic matter (surface apply and deep rip) would greatly accelerate restoration of soil function similar to Santa Lucia, Ben Lomond, Lompico, and Maymen to support conifer forest revegetation.

e. Key features.

None identified.

2.11 Paleontological Resources

a. Indicators.

Known fossil resources within the rock formations at Cotoni-Coast Dairies are very sparse and primarily limited to the Santa Margarita sandstone. Recovered and identified fossils include the marine vertebrate - sirenian (sea cow; *Dusisiren jordani*; bones); terrestrial plant – pine tree (*Pinus remorata*; ovule cone); and invertebrates - foraminifera (microscopic shells; UCMP 2018). No fossilized wood or other significant fossilized plant material is expected to be present on Cotoni-Coast Dairies. Few if any invertebrate bivalve or gastropod shells (“seashell fossils”) are expected to be present on Cotoni-Coast Dairies. No macrofossils are known to occur with the limestone or shale quarried to supply the CEMEX plant.

b. Current Condition.

Since fossils are contained within geologic formations and geology at the landscape scale is not significantly affected by land use, dispersed fossil resources within geologic formations is not significantly affected by land use. Locally, large volumes of limestone were removed from the Bonny Doon quarry (Uplands of Liddell Creek) and large volumes of shale were removed from the San Vicente quarry (Uplands of San Vicente Creek) for cement production. Relative to the total volume of material contained in the geologic formation, the total quantity of rock removed through quarrying was relatively small, therefore the potential quantity of fossils adversely impacted by quarrying was relatively small. Deed restrictions for Cotoni-Coast Dairies prohibit future quarrying and mining. Due to the lack of macrofossils known to occur at Cotoni-Coast Dairies, the potential for fossil resources to have been impacted by casual or recreation collection is believed to be insignificant.

c. Trends.

Geology at the landscape scale is not significantly affected by land use and additionally, deed restrictions for Cotoni-Coast Dairies prohibit future quarrying and mining, therefore, there would be no future potential impacts to any fossil resources that may occur. Additionally, due to the lack of macrofossils in geologic formations at Cotoni-Coast Dairies, there is little to no potential for recreational (casual use) collection of plant (fossilized wood) or invertebrate (seashell) fossils at Cotoni-Coast Dairies.

d. Forecast.

Geology at the landscape scale is not significantly affected by land use and additionally, deed restrictions for Cotoni-Coast Dairies prohibit future quarrying and mining, therefore, there would be no future potential impacts to any fossil resources that may occur. Additionally, due to the lack of macrofossils in geologic formations at Cotoni-Coast Dairies, there is little to no potential for recreational (casual use) collection of plant (fossilized wood) or invertebrate (seashell) fossils at Cotoni-Coast Dairies.

e. Key features.

Santa Margarita Sandstone.

2.12 Visual Resources

The BLM's Visual Resource Inventory (VRI) standards were incorporated into the TPL's Resource Protection and Access Plan (ref. Figure III-9, p. III-51). The BLM's Central Coast Field Office conducted a supplemental inventory in 2017-2018 in anticipation of the Cotoni-Coast Dairies land use planning evaluation. The broad view of the Pacific Ocean and sweeping marine terraces are the key scenic features of the Cotoni-Coast Dairies unit of the California Coastal National Monument. Specific habitats generally noted as visually appealing include: redwood groves, oak woodland groves, riparian areas with perennial streams, and coastal grasslands. All of these habitats are present in multiple areas on-site.

During the resource management process, the visual resource class boundaries and objectives can be established, and the BLM will consider visual resources when authorizing additional on-site infrastructure.

B. Resource Uses

2.13 Livestock Grazing

There are currently 3 cooperative agreements for prescriptive livestock grazing within the Coast Dairies properties. The current agreements are established for 2 year terms and are set to expire December 31, 2018. The 3 cooperative agreements are listed below:

Cooperator	Pasture Acres	Pasture Name(s)	# of Head
Ramirez/Wrankle	190	Marina	
	80	Delones	
Total	270		34
Pastorino	150	Borego	
	500	Big Ranch (Lower Newtown)	
	100	Upper Newtown	
Total	750		90
Williams	180	Yellow Bank Creek	25

Cattle grazing is authorized year round. The number of head includes cows, bulls, and non-nursing steers and heifers. Livestock will be removed or numbers reduced if BLM determines vegetation is at a level that cannot sustain the livestock that are turned out. If vegetation is abundant, BLM may allow an increase in the number of livestock turned out. Every month the grazing cooperators send in an Actual Use Statement (form 4130-5) that includes the number of cattle turned out the day(s) cattle were moved in or out of the pasture. As part of the Cooperative Agreements, each grazing cooperator agrees to:

- Maintain fences on property.
- Maintain livestock watering facilities in grazed pastures.
- Limit off road ATV use to times when cattle are moved or gathered and fence and water maintenance.
- Maintain existing roads and keep them clear of brush and debris.
- Will provide periodic mowing to control invasive vegetation and exotic species.
- Abate severe thistles at the corrals.
- Repair corrals as needed.

Grazing cooperators must contact BLM prior to any major maintenance or improvements to the property for review and approval. The Yellow Bank Creek and Marina pastures use the corrals at Yellow Bank. The cattle in the Delones pasture uses the corrals near Laguna Creek or the corrals on the terrace above Marina Ranch road. The cattle at the Borego, Big Ranch (Lower Newtown), and Upper Newtown pastures use the corrals near the Cheese Barn, north of Warrenella Road.

Cattle have access to portions of Laguna Creek, Yellow Bank Creek, and Molina Creek for water along with seasonal streams and small ponds. Water is also piped to water troughs in the Marina Laguna Creek pastures. Water troughs are also located at the corrals at Yellow Bank and the Cheese Barn. The Conservation Grazing Plan prepared by David Amme (1999), entitled Range Survey and Conservation Grazing Program for Coast Dairies & Land Co., outlines a multi-year model program where controlled livestock grazing could be used to protect the grasslands and oak woodland habitat, increase habitat biodiversity, control exotic annuals and invasive weeds and protect wetland riparian values. The plan calls for implementation of adequate infrastructure to allow livestock to rotate between pastures, rather than free grazing, to allow native perennial grasses and herbaceous plants to recover vigor and establish seedlings.

The forecast is that grazing will continue at Cotoni-Coast Dairies. BLM will work with cooperators on additional needs, such as fencing, waterlines, maintenance of existing infrastructure, and potential use of pesticides near corrals, tanks, buildings, gates, or fences to reduce flashy fuels and propagation of invasive plants.

c. Key features.

None identified.

2.14 Lands and Realty

The BLM currently administers multiple lease agreements, varying in size from less than an acre to nearly 1,000 acres (Cemex), and several dozen easements and agreements that existed prior to public ownership of Cotoni-Coast Dairies. The majority of the easements in the planning area allow utility service to adjacent private parcels, ingress/egress road access, gas and water pipelines and appurtenant water facilities (City of Santa Cruz) and lease agreement between Cemex and Coast Dairies.

b. Forecast.

There will be maintenance requests from existing rights holders, which may fall outside of their existing easements and require a new (or temporary) right-of-way. The BLM would only authorize new land use applications for permits or leases that are consistent with the management of the National Monument's objects and values. The land tenure program may be used to target the acquisition of lands with high resource values or public access.

c. Key features.

Unauthorized occupancy, development on the Monument boundaries, and garbage dumping are likely to continue to present management issues.

County of Santa Cruz - Water Tank Site (Marine View)

- 14' Wide Maintenance Road Easement to allow access from water tank site to Marine View Road.
- 10' Wide Water Line Easement; from water tank site to Ocean/Marine View Intersection

Davenport County Sanitation

Easement for installation & maintenance of an underground fresh water pipeline and appurtenant facilities – Marine View

The City and County of Santa Cruz

The City of Santa Cruz has had rights to Liddell Spring and Liddell Creek, on the Coast Dairies Property, since 1917. The City's easement (identified as E-2) also includes a water pipeline and access to the waterline for maintenance purposes (Santa Cruz County, 1999). This includes an access road with a 10-foot right of way around the pipes (Bentley, 2001).

CalTrans

Highway 1 extends along the western edge of the Coast Dairies Property. CalTrans holds and maintains a right-of-way for Highway 1 and the immediate surrounding area in order to perform maintenance when necessary. Cal Trans has an existing parking area along Laguna Road which is believed to be part of their ROW. Caltrans has jurisdiction over any improvements made at these parking areas and has the right to require encroachment permits for proposed ingress and egress to the parking lots connecting with the highway. Temporary easements are sometimes required to allow for maintenance structures, such as sound walls, to be placed along Highway 1.

The Union Pacific Railroad has a narrow right-of-way along the railroad tracks at Davenport Beach and Bluff, Panther, Bonny Doon, Yellow Bank, and Laguna Creek.

Residential Lease

The Coast Dairies Property also includes a parcel that is leased to residential tenants who had previously lived on the Property for many years. This individual resides at 1000 Cement Plant Road and holds a lifelong lease. (BLM Case #CACA 055891)

PG&E

PG&E maintains power line easements on the Coast Dairies Property that originate at their substation on Warranella Road. These power lines connect to and serve the RMC Davenport Cement Plant exclusively. PG&E is permitted to remove any trees or brush that is within the easement area or that otherwise may be endangering the facility. PG&E generally contacts our office prior to any maintenance projects to make sure there are no issues/concerns. This includes tree removals, vegetation clearance, pole replacements, line replacements. There are currently 15 documented PG&E easements in the BLM records with additional easements requiring research and documentation.

Cemex Lease with Coast Dairies

Portions of the Property are encumbered with a lease between Cemex successor of RMC Pacific Materials (RMC) and Coast Dairies Land Company for cement plant and mining operations. The main leasehold, which includes the covered belt conveyor corridor, occupies approximately 766 acres of land. The current

leasehold started December 2, 1968 and extends until December 2, 2018, with options to renew for 25 years and then for an additional 24 years. The Cemex plant is no longer in operation and the leased lands are currently being reclaimed.

Leased areas include the shale quarry, waste disposal areas, 3.5 mile long conveyor belt system, and appurtenant electrical facilities. In an agreement dated January 15, 1996, RMC was authorized to install 5 groundwater monitor wells on the Coast Dairies Property that was not covered under the leased lands.

2.15 Travel and Transportation Management

a. Current Levels

The Pacific Coast Highway (State Route 1) was straightened and leveled beginning in the late 1930s. Regional access to the Coast Dairies public lands is provided by State Route (SR) 1. SR-1 provides access to San Francisco to the north and Monterey to the south. Though the highway is oriented in an east-to-west direction at the intersection with Laguna Road, it is primarily aligned in a north-to-south direction for interregional travel. The highway is two lanes wide and the speed limit is 55 mph.

The only other primary transportation routes serving the Cotoni-Coast Dairies unit (and surrounding areas) include Bonny Doon Road and Swanton Road, which are both two-lane county roads. Improved routes on or adjacent to Cotoni-Coast Dairies include Warrenella Road, Cement Plant Road, San Vicente Creek Rd., and Laguna Road. The majority of other existing access routes are either farm roads used by existing rights-holders to provide access to other properties, grazing operations, reclamation activities, or maintenance and operations of facilities. These routes are secured by locked gates at public road frontages.

b. Forecast

It will be important to determine the locations of any existing infrastructure; underground pipes locations – to minimize and avoid potential problem as any future work projects take place on the Cotoni-Coast Dairies property. There are two bridges previously used for vehicle access over San Vicente Creek Rd.. The BLM's engineer team condemned the bridge further upstream on San Vicente Creek. The lower bridge was allowed to remain in use with a 6000 pound not-to-exceed load rating. While still in use, the lower bridge is scheduled for replacement.

At the Yellow Bank Creek and Laguna Creek portions of the Coast Dairies property, the two-lane highway is at a level-grade sufficient to allow a clear line of sight for a minimum of 11 seconds when approaching from the north-bound and/or south-bound directions. There is an existing (unimproved) parking area that is immediately adjacent to the east side of SR 1 and the intersection of Laguna Road. The unimproved parking area has a barrier chain and pylons. There are two points where vehicles enter or exit: onto SR 1, or onto Laguna Road. Currently, this parking area is primarily used by the public to access the ocean.

There are numerous existing roads in the Yellow Bank Creek and Laguna Creek watersheds, including numerous routes (or ways) used by grazing leaseholders and the City of Santa Cruz Water Department. Section 4.2.8.2 of the Existing Conditions Report (ESA 2001) describes the road network at Coast Dairies.

Figure III-5 of the Long-Term Resource Protection and Access Plan (ESA 2004) also maps the road network in the project area.

The California Department of Transportation (Caltrans) published the Transportation Concept Report (TCR) for SR 1 in April 2006. The 2006 TCR and associated Fact Sheet for SR 1 in Santa Cruz County (Caltrans, September 2007), identify the 17-mile stretch of SR 1 from the City of Santa Cruz to the San Mateo County line as Segment 19. Annual ADT for Segment 19 in 2000 was 8,000, and the forecast for 2025 is 12,000 annual ADT. In 2007, Segment 19 operated at LOS D, but is projected to decline to LOS E by the year 2025. The TCR says Segment 19 will remain a two-lane conventional highway and that new access points should be minimized.

The TCR identifies Wilder Ranch State Park, Henry Cowell Redwoods State Park, Davenport, and Big Basin Redwoods State Park as the major traffic generators on Segment 19.

2.16 Recreation Resources

a. Current Levels.

Public access to Cotoni-Coast Dairies is currently limited to guided hikes while the BLM develops a management plan for the property that will ensure public safety and protection of resources.

b. Forecast.

With a growing population and increased visitation to the Central California coast, the demand for sustainable hiking, biking and equestrian trails is increasing. Cotoni-Coast Dairies is no exception to this trend.

For the next 8-12 years, remediation efforts will be occurring within the central portion of the BLM Cotoni-Coast Dairies property. Remediation boundaries are approximately Bonny Doon Rd to the Southeast and Warrenella Rd to the Northwest. This will effectively divide the property into two distinct areas as it will be undesirable to have the public recreating within this central portion during remediation activities for health and safety concerns.

With the remediation efforts in mind, the feasibility of multiple areas for public access are being considered given their access to public roads and highways and desirable geographic features. In 2018, the BLM partnered with the Land Trust of Santa Cruz County to commission an engineering study of potential access points for the property, which was called the Feasibility Study. This study examined 10 potential access points, which were presented to the public in two workshops in December 2018 (RRM 2018). A workshop report summarizing public input on this study was completed by the BLM.

c. Key features.

- Access points along the Highway 1 corridor are problematic due to decreased line of sight for entrance and egress at most potential locations.
- Sensitive cultural and natural resources are present throughout the property. In order to mitigate impacts to these areas careful attention needs to be made with regards to parking areas and trail alignments.
- Agricultural lands limit width of easement on access roads in some potential parking areas for visitor access.

- The BLM will need to work within Caltrans requirements for ingress and egress off of Highway 1 in order to develop an access road 200 feet South of mile marker 26.40 for potential parking area on the terrace North of Laguna Creek.
- San Vicente Redwoods property is currently planning development upslope of the northern end of the Cotoni-Coast Dairies property. Multi-use trails in the Molino Creek area would allow interconnectivity between the two properties.

Coordination with adjacent California State Parks and San Vicente Redwoods will be necessary to establish connections with regional recreation trails currently in place or developed for future use.

C. Special Designations

National Conservation Lands

The CCNM is a component of the BLM's National Conservation Lands (NCL). The mission of the NCL is to conserve, protect, and restore these nationally significant landscapes that are recognized for their outstanding cultural, ecological, and scientific values.

NCL are part of an active, vibrant landscape where people live, work, and play. They offer exceptional opportunities for recreation, solitude, wildlife viewing, exploring history, scientific research, and a wide range of traditional uses. The NCL sustain these remarkable landscapes of the American spirit for the future.

The California Coastal National Monument

The California Coastal National Monument (CCNM) extends from the Oregon border near Crescent City, CA approximately 1,100 miles south into Orange County, California. The CCNM spans the administrative boundaries of five (5) BLM Field Offices, including the Arcata, Ukiah, Central Coast, Bakersfield, and Palm Springs Field Office(s).

Presidential Proclamation No. 7264 established the California Coastal National Monument (CCNM) on January 11, 2000, under the authority of the Antiquities Act of 1906 (34 Stat. 225, 16 U.S.C. 431). The Proclamation directed the BLM to protect "all unappropriated or unreserved lands and interest in the lands owned or controlled by the United States in the form of islands, rocks, exposed reefs, and pinnacles above mean high tide within 12 nautical miles of the shoreline of the State of California."

Following designation of the CCNM, the BLM began developing a CCNM Resource Management Plan (RMP) to establish guidance, objectives, policies and management actions for the offshore rocks, exposed reefs, islands and pinnacles along the 1,100 mile coastline of California. The RMP was completed in September of 2005, establishing management direction for a variety of resources and uses within the monument.

On-Shore Expansion

The CCNM boundary was enlarged by Presidential Proclamation No. 9089 on March 11, 2014. Point Arena-Stornetta Public Lands became the first onshore unit of the CCNM, and the BLM was directed to protect its coastal bluffs and shelves, tide pools, onshore dunes, coastal prairies, riverbanks, and the mouth and estuary of the Garcia River. On January 12, 2017 the CCNM's boundary was further expanded by Presidential Proclamation No. 9563 to include six additional areas along the California coast containing significant scientific or historic resources: Trinidad Head, Waluplh-Lighthouse Ranch, Lost Coast Headlands, Cotoni-Coast Dairies, Piedras Blancas, and Orange County Rocks and Islands.

D. Social and Economic Conditions

The majority of the population in Santa Cruz County is located centrally in the urban and residential development areas. Land uses in the county are predominately open space, which accounts for approximately 75 percent of the land uses (293,300 acres). This is followed by agricultural lands (54,400 acres or 14 percent), residential land (15,500 acres or 4 percent), developed non-residential uses (5,800 acres or 2 percent), and parks, recreation and open space (5,400 acres or 1 percent). The North Coast area is used widely for recreational purposes, including hiking, running, biking, walking, surfing, and equestrian use.

The small unincorporated community of Davenport has a population of approximately 400 people and includes residences, shops, restaurants, lodging, other visitor serving retail uses and Pacific Elementary School, a small public school (US Census 2010a). The City of Santa Cruz is located approximately 1.0 mile south of the southern terminus of the Project corridor, and 11 miles south of Davenport. The City of Santa Cruz was estimated to have a 2016 population of approximately 65,000 (US Census 2017).