

Appendix K. Conservation Measures from Fish and Wildlife Service Biological Opinions

Endangered Species Act

The Endangered Species Act of 1973, as amended (ESA), provides for the protection of threatened, endangered and proposed threatened or endangered (T/E) species of plants and animals. The following requirements are prescribed in BLM Manual 6840:

- The BLM shall conserve T/E species and the ecosystems upon which they depend and shall use existing authority in furtherance of the purposes of the ESA. Specifically the BLM shall:
 1. Determine, to the extent practical, the occurrence and distribution of all T/E species on BLM public lands and evaluate the significance of these habitats in the conservation of those species.
 2. Identify BLM public lands that are essential habitat and designated critical habitat of T/E species and prescribe management for the conservation of these habitats in land use plans.
 3. Develop and implement management plans that will ensure the conservation of T/E species and their habitats.
 4. Evaluate ongoing management activities to ensure T/E species conservation objectives are being met.
 5. Ensure that all activities affecting the populations and habitats of T/E species are designed to be consistent with recovery needs and objectives.
- Ensure that all actions authorized, funded, or carried out by the BLM are in compliance with the ESA. To accomplish this, the BLM shall:
 1. Screen all proposed actions to determine whether T/E species or their habitat may be affected. Normally the environmental analysis process is used.
 2. Initiate consultation with the U.S. Fish & Wildlife Service (FWS) as appropriate for those that may affect T/E species or their habitats.
 3. Until the consultation proceedings are completed and a final decision has been reached, the BLM shall not carry out any actions that would cause irreversible or irretrievable commitment of resources or reduce the future management options for the species involved.
 4. Ensure that no BLM action will adversely affect the likelihood of recovery of any T/E species.
- Cooperate with the FWS in planning and providing for the recovery of T/E species. To accomplish this the BLM shall:

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1. Participate on recovery teams and in recovery plan preparation, as well as State or regional working teams responsible for T/E species recovery.
2. Review technical and agency drafts of recovery plans for species affected by BLM management to ensure that proposed actions assigned to the BLM are technically and administratively feasible and consistent with the BLM's mission and authority.
3. Ensure that the decisions, terms, and conditions of land-use plans, as well as more detailed site-specific plans, prepared for lands covered by previously approved recovery plans are consistent with meeting recovery plan objectives.
 - Retain in Federal ownership all habitats essential for the survival or recovery of any T/E species, including habitat used historically by these species.
 - Species proposed for listing as T/E and proposed critical habitat shall be managed with the same level of protection provided for T/E species except that formal consultations are not required. The BLM shall confer with the FWS on any action that will adversely affect a proposed species or proposed critical habitat.
 - Candidate species will be managed so as not to contribute to the need for them to become listed as threatened or endangered.

Conservation Measures for the Sonoran Pronghorn

The conservation measures below have been developed through U.S. Fish and Wildlife Service Biological Opinions and are adopted in this plan, as amended, below.

Measures from the Plan Amendment for the Lower Gila South RMP (02-21-85-F-069) and an Amended Proposed Action for the Five Livestock Grazing Allotments in the Vicinity of Ajo, Arizona (02-21-94-F-192) 2004:

Sonoran Pronghorn (FE).

- **FE-1.** Install, operate, and maintain forage enhancement plots, in cooperation and coordination with the Sonoran Pronghorn Recovery Team as funding becomes available.
- **FE-2.** Install, operate, and maintain ground-level drinking troughs and associated existing wells on the Cameron allotment area in cooperation and coordination with the recovery team. Design, site selection, prioritization and implementation will be subject to recovery team review and will fully comply with facility maintenance guidelines for the Sonoran pronghorn and funding availability.
- **FE-3.** The BLM will only authorize ephemeral grazing on the Coyote Flat II and Childs Allotments in accordance with ephemeral use criteria contained in the Arizona Land Health Standards when the following conditions are met:
 1. Ephemeral forage on the Coyote Flat II and Childs allotments is not an important part of ephemeral available to pronghorn, either in terms of forage quality or acreage of greenup because it is abundant and occurs across the range of the Sonoran pronghorn;
 2. The U.S. Sonoran pronghorn population must be above 100 animals and increasing; and

3. Prior to authorizing ephemeral grazing, the BLM will work with the U.S. Fish and Wildlife Service (FWS) and the Arizona Game and Fish Department (AGFD) in evaluating the above conditions.
- **FE-4.** Continue implementing the drought policy developed in 2003 Instruction Memorandum AZ-020-03-003 Lower Sonoran Field Office Drought Policy for Four Ajo Block Allotments and Sentinel Allotment for the Coyote Flat II, Childs and Sentinel allotments.
 - **FE-5.** The BLM will, in coordination with the Sonoran Pronghorn Recovery Team, install, operate, and maintain forage enhancement plots in at least two locations and as many as eight locations in pronghorn habitat. Design, site selection, prioritization, and implementation will be subject to recovery team oversight and funding availability.
 - **FE-6.** The BLM will operate and maintain the four existing wells on the Cameron Allotment area for listed species management. Timing of the maintenance will be coordinated with the Sonoran Pronghorn Recovery Team to avoid adverse impacts and will also fully comply with the facility maintenance guidelines contained in the conservation measures for CFPO.
 - **FE-7.** The BLM will, in coordination with the Sonoran Pronghorn Recovery Team, install, operate, and maintain ground-level drinking troughs at existing wells on the Cameron allotment area. Design, site selection, prioritization, and implementation will be coordinated with the Sonoran Pronghorn Recovery Team and subject to funding availability.
 - **FE-8.** The BLM will remove all interior fences and cooperate with Organ Pipe Cactus National Monument (OPCNM) and Cabeza Prieta National Wildlife Refuge (CPNWR) in the removal of common boundary fences with the Cameron allotment area.
 - **FE-9.** The BLM, in coordination with AGFD, will modify existing dirt tanks to minimize conditions conducive to biting midge propagation, subject to an evaluation of need and feasibility assessment.
 - **FE-10.** The BLM will continue to seek funding to complete the ongoing study on the potential of disease transmission from livestock to pronghorn.
 - **FE-11.** The BLM will identify areas of heavy recreational impacts and, to the extent practicable, initiate measures to rehabilitate these areas. Implementation will be subject to availability of funding.
 - **FE-12.** The BLM will enforce a maximum 14 day camping limit, or more restrictive as determined by the RMP, in the Ajo Special Recreation Management Area (SRMA), and direct all camping activities to the Gunsight Wash camping area.
 - **FE-13.** The BLM will continue to implement the annual seasonal closure to public use between March 15 and July 15, or as agreed upon by the Sonoran Pronghorn Recovery Team excluding the camping area at Gunsight Wash. The area to be closed is the area west of state route 85 and south of the Darby Well/Scenic Loop Road/Chico Shunie Road. (Area defined as the Cuerda de Lena WHA, ACEC and/or Ajo SRMA in the various Draft RMP alternatives).
 - **FE-14.** The BLM will consult with FWS concerning all vehicle routes within Sonoran pronghorn habitat during the travel management route designation process to be conducted within 5 years after the completion of the Lower Sonoran-SDNM Draft RMP.

- **FE-15.** The BLM will continue to support the priority recovery items for Sonoran pronghorn as recommended by the Sonoran Pronghorn Recovery Team.

Conservation Measures for Fire Management Activities

From the Arizona Statewide Plan Amendment for Fire, Fuels and Air Quality Management:

During fire-suppression actions, resource advisors may be designated to coordinate concerns regarding federally protected species and to serve as liaisons between the field office managers and the incident commanders or the incident management team. They also serve as field contact representatives responsible for coordination with the FWS. The resource advisors will have the necessary information on federally protected species and habitats in the area and the available conservation measures for the species. They will be briefed on the intended suppression actions for the fire and will provide input on which conservation measures are appropriate. The incident commander has the final decision making authority on implementation of conservation measures during fire-suppression operations.

For fire-suppression activities, a protocol for consultation has been developed as a part of the biological opinion (BO) for the Arizona Statewide Plan Amendment for Fire, Fuels and Air Quality Management. This programmatic consultation contains conservation measures and prescriptions for use in fire-suppression activities. Emergency consultation should only be needed when suppression actions fall outside of these prescriptions. The BO outlines coordination needs for emergency response actions that may affect a listed/proposed species or critical habitat.

The following protocols will apply:

- The BLM will contact the appropriate FWS biologist as soon as practical once a wildfire starts and a determination is made that a federally protected species or its habitat could be affected by the fire or fire-suppression activities.
- The FWS will work with the BLM during the emergency response to apply the appropriate conservation measures.
- If conservation measures cannot be applied during the suppression activities, the BLM will consult with the responding agency after the fact on any suppression actions that may have affected the federally protected species or its habitat.
- If conservation measures are adhered to, the BLM will report on the actions taken and the effects to the species and its habitat following the fire, but no further consultation on that incident will be required.

Because of the number of species located within the area and the variety of fire-suppression and fire-management activities, conflicts may occur in attempting to implement all conservation measures for every species potentially affected by a particular activity.

Implementing these conservation measures effectively depends on the number of federally protected species and their individual life history or habitat requirements within a particular location that is being affected by either fire-suppression or a proposed fire management activity. This would be particularly true for timing restrictions on fuels treatment activities if the ranges of several species with differing restrictions overlap, making effective implementation of the activity unachievable. Resource advisors (in coordination with the FWS), fire management officers

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or incident commanders, and other resource specialists will coordinate to determine which conservation measures are implemented during a particular activity. If conservation measures for a species cannot be implemented, the BLM is required to initiate Section 7 consultation with the FWS for that particular activity.

The BLM will update and maintain fire management plans to include site-specific actions for managing wildfire and fuels in accordance with Federal fire policies and this plan. These plans will be coordinated with the FWS and the Arizona Game and Fish Department (AGFD) to address site-specific concerns for federally protected species. These plans will incorporate the conservation measures. Consultation with the FWS will occur with these project-level plans, as necessary.

Wildland Fire Suppression (FS)

The following conservation measures will be implemented during fire-suppression operations unless firefighter or public safety or the protection of property, improvements, or natural resources render them infeasible during a particular operation. Each conservation measure has been given an alphanumeric designation for organizational purposes (e.g. FS-1). Necessary modifications of the conservation measures or impacts to federally protected species and habitat during fire-suppression operations will be documented by the resource advisor and coordinated with the FWS.

- **FS-1.** Protect known locations of habitat occupied by federally listed species. Minimum impact suppression tactics (MIST) will be followed in all areas with known federally protected species or habitat.
- **FS-2.** Resource advisors will be designated to coordinate natural resource concerns, including federally protected species. They will also serve as a field contact representative responsible for coordination with the FWS. Duties will include identifying protective measures endorsed by the field office manager, and delivering these measures to the incident commander; surveying prospective campsites, aircraft landing and fueling sites; and performing other duties necessary to ensure adverse effects to federally protected species and their habitats are minimized. On-the-ground monitors will be designated and used when fire-suppression activities occur within identified occupied or suitable habitat for federally protected species.
- **FS-3.** All personnel on the fire (firefighters and support personnel) will be briefed and educated by resource advisors or designated supervisors about listed species and the importance of minimizing impacts to individuals and their habitats. All personnel will be informed of the conservation measures designed to minimize or eliminate take of the species present. This information is best identified in the incident objectives.
- **FS-4.** Permanent road construction will not be permitted during fire-suppression activities in habitat occupied by federally protected species. Construction of temporary roads is approved only if necessary for safety or the protection of property or resources, including federally protected species habitat. Temporary road construction should be coordinated with the FWS, through the resource advisor.
- **FS-5.** Crew camps, equipment staging areas, and aircraft landing and fueling areas should be located outside of listed species habitats, and preferably in locations that are disturbed. If camps must be located in listed species habitat, the resource advisor will be consulted to

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ensure habitat damage and other effects to listed species are minimized and documented. The resource advisor should also consider the potential for indirect effects to listed species or their habitat from the siting of camps and staging areas (e.g., if an area is within the water flow pattern, there may be indirect effects to aquatic habitat or species located off-site).

- **FS-6.** All fire management protocols to protect federally protected species will be coordinated with local fire-suppression agencies that conduct fire-suppression on BLM-administered lands to ensure that the agency knows how to minimize impacts to federally protected species in the area.
- **FS-7.** The effectiveness of fire-suppression activities and conservation measures for federally protected species should be evaluated after a fire when practical, and the results shared with the FWS and AGFD. Revise future fire-suppression plans and tactical applications as needed and as practical.

Fuels Treatments (Prescribed Burning and Other Fuels Management) (FT)

The following conservation measures are mandatory when implementing wildland fire use, prescribed fires, and the proposed vegetation treatments (mechanical, chemical, biological):

- **FT-1.** Biologists will be involved in the development of prescribed burn plans and vegetation treatment plans to minimize effects to federally protected species and their habitats within, adjacent to, and downstream from proposed project sites. Biologists will consider the protection of seasonal and spatial needs of federally protected species (e.g., avoiding or protecting important use areas or structures and maintaining adequate patches of key habitat components) during project planning and implementation.
- **FT-2.** MIST will be followed in all areas with known federally protected species or habitats.
- **FT-3.** Pre-project surveys and clearances (biological evaluations/assessments) for federally protected species will be required for each project site before implementation. All applicable conservation measures will be applied to areas with un-surveyed suitable habitat for federally protected species, until a survey has been conducted by qualified personnel to clear the area for the treatment activity.
- **FT-4.** Use of motorized vehicles during prescribed burns or other fuels treatment activities in suitable or occupied habitat will be restricted, to the extent feasible, to existing roads, trails, washes, and temporary fuel breaks or site-access routes. If off-road travel is deemed necessary, any cross-country travel paths will be surveyed prior to use and will be closed and rehabilitated after the prescribed burn or fuels treatment project is completed.
- **FT-5.** As part of the mandatory fire briefing held prior to prescribed burning, all personnel (firefighters and support personnel) will be briefed and educated by resource advisors or designated supervisors about listed species and the importance of minimizing impacts to individuals and their habitats. All personnel will be informed of the conservation measures designed to minimize or eliminate take of the species present.

Rehabilitation and Restoration (RR)

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- **RR-1.** When rehabilitating important areas for federally listed species that have been damaged by fire or other fuels treatments, the biologist will give careful consideration to minimizing short-term and long-term impacts. Someone who is familiar with fire impacts and the needs of the affected species will contribute to rehabilitation plan development. Appropriate timing of rehabilitation and spatial needs of federally listed species will be addressed in rehabilitation plans.
- **RR-2.** Seed from regionally native or sterile alien (non-native) species of grasses and herbaceous vegetation will be used in areas where reseeding is necessary following ground disturbance to stabilize soils and prevent erosion by both wind and water.
- **RR-3.** Sediment traps or other erosion control methods will be used to reduce or eliminate influx of ash and sediment into aquatic systems.
- **RR-4.** Use of motorized vehicles during rehabilitation or restoration activities in suitable or occupied habitat will be restricted, to the extent feasible, to existing roads, trails, or washes, and to temporary access roads or fuel breaks created to enable the fire suppression, prescribed burn, or fuels treatment activities to occur. If off-road travel is deemed necessary, any cross-country travel paths will be surveyed prior to use and will be closed and rehabilitated after rehabilitation or restoration activities are completed.
- **RR-5.** All temporary roads, vehicle tracks, skid trails, and off-road vehicle (ORV) trails resulting from fire suppression and the proposed fire management activities will be rehabilitated (water bars, etc.), and will be closed or made impassible for future use.
- **RR-6.** Burned area emergency rehabilitation (BAER) activities and long-term restoration activities should be monitored, and the results provided to the FWS and AGFD. Section 7 consultation for BAER activities will be conducted independently, if necessary.
- **RR-7. (Recommended)** Develop public education plans that discourage or restrict fires and fire-prone recreation uses during high fire-risk periods. Develop brochures, signs, and other interpretive materials to educate recreationists about the ecological role of fires, and the potential dangers of accidental fires.

Wildland Fire Suppression & Rehabilitation in Riparian and Aquatic Habitats (RA)

The following conservation measures will be implemented during fire-suppression operations in riparian, wetland, or aquatic habitats, unless firefighter or public safety, or the protection of property, improvements, or natural resources, render them infeasible during a particular operation. Necessary modifications of the conservation measures or impacts to federally protected species and habitat during fire-suppression operations will be documented by the resource advisor, and coordinated with the FWS. The BLM's 1987 policy statement on riparian area management defines a riparian area as "an area of land directly influenced by permanent water. It has visible vegetation or physical characteristics reflective of permanent water influence. Lakeshores and stream banks are typical riparian areas. Excluded are such sites as ephemeral streams or washes that do not exhibit the presence of vegetation dependent upon free water in the soil."

- **RA-1.** During wildfire suppression, apply MIST within riparian areas. Fire-suppression actions in riparian areas should be prioritized to minimize damage to stands of native

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vegetation from wildfire or suppression operations. To the extent possible, retain large, downed woody materials and snags that are not a hazard to firefighters.

- **RA-2.** Fire suppression and rehabilitation in riparian corridors will be coordinated with the resource advisor or qualified biologist approved by the BLM.
- **RA-3.** Site-specific implementation plans that include project areas with federally protected aquatic or riparian-obligate species will specify fire management objectives and wildland fire-suppression guidance, taking into account the special concerns related to these species.
- **RA-4.** In riparian areas, use natural barriers or openings in riparian vegetation where possible as the easiest, safest method to manage a riparian wildfire. Where possible and practical, use wet firebreaks in sandy overflow channels rather than constructing fire lines by hand or with heavy equipment.
- **RA-5.** Construction or development of a crossing for motorized vehicles across a perennial stream will not be permitted, unless an established road already exists or where dry, intermittent sections occur.
- **RA-6.** Avoid the use of fire retardants or chemical foams in riparian habitats or within 300 feet of aquatic habitats, particularly sites occupied by federally protected species. Apply operational guidelines as stated in the Interagency Standards for Fire and Fire Aviation Operations 2003 (or updates), “Environmental Guidelines for Delivery of Retardant or Foam Near Waterways,” Chapter 8 (pp. 8-13 through 8-15).
- **RA-7.** When using water from sources supporting federally protected species, care must be taken to ensure adverse impacts to these species are minimized or prevented. Unused water from fire abatement activities will not be dumped in sites occupied by federally protected aquatic species to avoid introducing non-native species, diseases, or parasites.
- **RA-8.** If water is drafted from a stock tank or other body of water for fire suppression, it will not be refilled with water from another tank, lakes, or other water sources that may support non-native fishes, bullfrogs, crayfish, or salamanders.
- **RA-9.** Use of containment systems for portable pumps to avoid fuel spills in riparian or aquatic systems will be required.
- **RA-10. (Recommended)** Develop and implement restoration plans for affected riparian or aquatic areas, including long-term monitoring, to document changes in conditions in the riparian zone and watershed that maintain flood regimes and reduce fire susceptibility. Monitor stream water quality and riparian ecosystem health to determine effects of wildfire and fire management activities. Coordinate efforts and results with the FWS and AGFD.

Fuels Treatments (prescribed fire; mechanical, chemical, and biological treatments)

The following conservation measures are mandatory when implementing wildland fire use, prescribed fires, and the proposed vegetation treatments (mechanical, chemical, and biological) within riparian, wetland, or aquatic habitats.

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Fuels Treatments (prescribed fire; mechanical, chemical, and biological treatments)

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- **RA-11.** All conservation measures for wildland fire suppression (RA-1 to RA-11) also apply to fuels treatment activities (prescribed fire; mechanical, chemical, and biological treatments) in riparian, wetland, and aquatic habitats.
- **RA-12.** Fire management treatments within or adjacent to riparian and aquatic habitats will be designed to provide long-term benefits to aquatic and riparian resources by reducing threats associated with dewatering and surface disturbance, or by improving the condition of the watershed and enhancing watershed function.
- **RA-13.** For priority fire/fuels management areas (e.g., WUIs) with federally protected species or designated critical habitat downstream, BLM biologists and other resource specialists, as appropriate, in coordination with FWS and AGFD, will determine:
 1. The number of acres and the number of projects or phases of projects to occur within one watershed per year.
 2. An appropriately-sized buffer adjacent to perennial streams in order to minimize soil and ash from entering the stream.
 3. Where livestock grazing occurs in areas that have been burned, specialists will determine when grazing can be resumed. Such deferments from grazing will only occur when necessary to protect streams from increased ash or sediment flow into streams¹.

Species Specific Conservation Measures: .

In addition to the general conservation measures, the following species-specific conservation measures will be applied during wildfire suppression to the extent possible, and will be required during fuels treatment activities (wildland fire use, prescribed fire, vegetation treatments). Necessary modifications of the conservation measures or impacts to federally protected species and habitat during fire suppression operations will be documented by the resource advisor, and coordinated with the FWS.

Birds

Cactus ferruginous pygmy-owl (CO).

- **CO-1.** Treatment of riparian habitat, Sonoran desert/desert scrub, or mesquite-invaded grasslands under 4,000 feet in elevation that may support nesting cactus ferruginous pygmy owls will only occur during the non-nesting season of August 1 to January 31, unless pre-project surveys indicate the area does not support pygmy-owls or mitigation plans approved by the FWS have alleviated negative consequences.
- **CO-2.** Develop mitigation plans in coordination with the FWS for fuels treatment projects (prescribed fire; vegetation treatments) that may adversely affect cactus ferruginous pygmy-owls or their habitat. Mitigation plans for prescribed fire shall limit to the extent practicable the possibility that fire would spread to riparian habitats. Mitigation plans will be approved by the FWS.
- **CO-3. (Recommended)** To the extent possible, maintain habitat features necessary to support breeding populations of the pygmy-owl within their historic range and review ongoing fire management activities for effects on essential habitat features needed by cactus ferruginous

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pygmy-owls. Modify activities, where necessary, to sustain the overall suitability of the habitat for the owls. Priority will be given to activities in or near occupied or recently (w/in the last 10 years) occupied habitat.

- **CO-4.** Development or other disturbing activities should not occur within 400 meters (0.25 miles) of an active nest site during the most sensitive periods of the breeding season (February 1 through July 31). Development or disturbance planned to occur within 100 meters (330 feet) of any known pygmy-owl nest site should be evaluated on a site-specific basis, but significant modification of habitat within this area should be avoided year-round.

Southwestern willow flycatcher (WF).

- **WF-1.** Implement the conservation measures for Fire Management Activities in Riparian and Aquatic Habitats.
- **WF-2.** Except where fires are active in occupied habitat, minimize unnecessary low-level helicopter flights during the breeding season (April 1 – September 30). Approach bucket dip sites at a 90-degree direction to rivers to minimize flight time over the river corridor and occupied riparian habitats. Locate landing sites for helicopters at least ¼ mile from occupied sites to avoid impacts to willow flycatchers and their habitat.
- **WF-3.** Minimize use of chainsaws or bulldozers to construct fire lines through occupied or suitable habitat except where necessary to reduce the overall acreage of occupied habitat or other important habitat areas that would otherwise be burned.
- **WF-4.** Implement activities to reduce hazardous fuels or improve riparian habitats (prescribed burning or vegetation treatments) within occupied or found to be occupied habitat for southwestern willow flycatchers only during the non-breeding season (October 1 to March 31).
- **WF-5.** Avoid developing access roads that would result in fragmentation or a reduction in habitat quality. Close and rehabilitate all roads that were necessary for project implementation (see RR 5).
- **WF-6.** Prescribed burning will only be allowed within ½ mile of occupied or found to be occupied habitat when weather conditions allow smoke to disperse away from the habitat when birds may be present (breeding season of April 1 – September 30).
- **WF-7.** Vegetation treatment projects adjacent to occupied or found to be occupied habitat will only be conducted when willow flycatchers are not present (October 1 – March 31).
- **WF-8.** The following reasonable and prudent measure, terms, and conditions are necessary and appropriate to minimize take of southwestern willow flycatchers:
 1. Minimize the effects of harassment, harm, and mortality to southwestern willow flycatchers.
 2. In cooperation with FWS and using guidance from southwestern willow flycatcher recovery plan, the BLM shall incorporate the elements recommended for fire risk evaluation and planning into its fire management plans for all current flycatcher breeding sites on or adjacent to BLM-administered lands.
 3. If additional sites become occupied, the BLM shall include them in the yearly fire management plans in cooperation with FWS, prior to the next wildfire season.

Yellow-billed cuckoo (YC).

- **YC-1.** Implement the conservation measures for Fire Management Activities in Riparian and Aquatic Habitats.

Yuma clapper rail (CR).

- **CR-1.** Implement the conservation measures for Fire Management Activities in Riparian and Aquatic Habitats.
- **CR-2.** Any prescribed fire or vegetation treatment project in occupied or suitable marsh habitat would only occur between September 1 and March 15 to avoid the Yuma clapper rail breeding and molting seasons.
- **CR-3.** Mechanical removal of overstory habitat (Tamarisk) could occur as early as August 15, after the breeding season for Yuma clapper rails.
- **CR-4.** Herbicide application would not occur in Yuma clapper rail habitat and drift-inhibiting agents would be used to assure that the herbicide does not enter adjacent marsh areas.
- **CR-5.** The following reasonable and prudent measure, terms, and conditions are necessary and appropriate to minimize take of Yuma clapper rail:
 1. Minimize disturbance to Yuma clapper rails during prescribed fire activities.
 2. To allow for a better estimate of the number of birds in the affected area, the BLM or their designated representative shall conduct surveys of the site to be prescribed burned during the breeding season prior to the burn. Since prescribed fires would be conducted during September to March, the surveys shall be done the preceding March to May.

Fish

The following conservation measure will be implemented for all federally protected fish species that may be affected by the Proposed Action during fire suppression to the extent possible, and are mandatory for wildland fire use, prescribed fire, and vegetation treatment activities:

- **FI-1.** The BLM will cooperate with other agencies to develop emergency protocols to decrease the impacts of fire suppression and fuels treatment activities on federally listed fish species. Emergency protocols will include appropriate agency contacts, a list of facilities that can hold fish, sources of equipment needed (e.g., sampling gear, trucks) and how to address human health and safety issues.

Currently, there are no federally listed fish species within the Lower Sonoran Planning area.

Flowering Plants

The following conservation measures for known locations and un-surveyed habitat of all federally protected plant species within the planning area will be implemented during fire suppression to the extent possible, and are mandatory for wildland fire use, prescribed fire, and vegetation treatment activities:

- **PL-1.** Known locations and potential habitat for plant populations will be mapped to facilitate planning for wildland fire use, prescribed fires, and vegetation treatments, and to ensure protection of these populations during fire suppression.
- **PL-2.** The BLM will coordinate with FWS to delineate buffer areas around plant populations prior to prescribed fire and vegetation treatment activities. The BLM will coordinate with FWS during any emergency response and wildland fire use activities to ensure protection of plant populations from fire and fire-suppression activities.
- **PL-3.** During fire suppression, wildland fire use, and prescribed fire in habitat occupied by federally protected plant species, no staging of equipment or personnel will be permitted within 100 meters of identified individuals or populations, nor will off-road vehicles be allowed within the 100-meter buffer area, unless necessary for firefighter or public safety or the protection of property, improvements, or other resources (see FS-7). Primary threats to many of these plant species are trampling or crushing from personnel and vehicles.
- **PL-4.** No prescribed burning will be implemented within 100 meters of identified locations or un-surveyed suitable habitat for federally protected and sensitive plant populations unless specifically designed to maintain or improve the existing population.

There are no additional species-specific conservation measures for the federally protected plant species Acuña Cactus (*Echinomastus erectocentrus* var. *acunensis*).

Mammals

Lesser long-nosed bat (LB).

- **LB-1.** Instruct all crew bosses (wildfire suppression, wildland fire use, prescribed fire, and vegetation treatments) in the identification of agave and columnar cacti and the importance of their protection.
- **LB-2.** Prior to implementing any fuels treatment activities (prescribed fire, vegetation treatments), pre-project surveys will be conducted for paniculate agaves and saguaros that may be directly affected by fuels management activities.
- **LB-3.** Protect long-nosed bat forage plants—saguaros and high concentrations of agaves—from wildfire and fire-suppression activities, and from modification by fuels treatment activities (prescribed fire, vegetation treatments), to the greatest extent possible. Agave concentrations are contiguous stands or concentrations of more than 20 plants per acre. Avoid driving over plants, piling slash on top of plants, and burning on or near plants. Staging areas for fire crews or helicopters will be located in disturbed sites, if possible.
- **LB-4.** No seeding/planting of nonnative plants will occur in any wildfire rehabilitation site or fuels treatment site with paniculate agaves or saguaros.
- **LB-5.** A mitigation plan will be developed by the Bureau in coordination with the FWS for prescribed fires or fuels management projects (mechanical, chemical, biological treatments) within 0.5 mi of bat roosts or in areas that support paniculate agaves or saguaros. The mitigation plan will ensure that effects to bat roosts and forage plants are minimized and will include monitoring of effects to forage plants. The plan will be approved by the FWS.

- **LB-6. (Recommended)** BLM personnel should examine concentrations of agaves (including shindagger (*A. schottii*) within each proposed fuels treatment area, and blackline or otherwise protect from treatments any significant concentrations of agaves that appear to be amidst fuel loads that could result in mortality greater than 20 percent (>50% for *A. schottii*). BLM personnel should use their best judgment, based on biological and fire expertise, to determine which significant agave stands are prone to mortality greater than 20 percent (>50% for *A. schottii*) (see conservation measures FT-1 and FT-3).
- **LB-7. (Recommended)** the BLM should continue to support and cooperate in the investigations of agave relationships to livestock grazing, and of the effects of prescribed fire on paniculate agaves.

Reptiles

Desert tortoise, Sonoran population (DT).

Implement management actions for the Desert Tortoise, Sonoran population, as appropriate as developed by the Rangewide Strategy.

¹ The Interagency Burned Area Emergency Stabilization and Rehabilitation Handbook, Exhibit 4-2, BLM supplemental guidance, page 5 of 9 (<http://fire.r9.fws.gov/ifcc/ESR/handbook/4PolicyGuidance.htm>) establishes the following policy for livestock exclusion following burns: Exclusion of livestock is critical for the recovery of burned vegetation or establishment and maintenance of new seedlings and use of these areas should not be permitted until the vegetation recovers or is established. Both re-vegetated and burned but not re-vegetated areas will be closed to livestock grazing for at least two growing seasons following the season in which the wildfire occurred to promote recovery of burned perennial plants or facilitate the establishment of seeded species. Livestock permittees must be informed of the closure early during the plan preparation process, and livestock closures will be made a condition or term on the grazing license or permit through the issuance of grazing decision (see 43 CFR 4160). Livestock closures for less than two growing seasons may be justified on a case-by-case basis based on sound resource data and experience. Livestock management following seedling establishment or burned area recovery should maintain non-native and native species to meet land use (including Standards for Rangeland Health and Guidelines for Grazing Management) or activity plan objectives.