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5.0 CONSERVATION STRATEGY

The Conservation Strategy was designed to meet the regulatory requirements of ESA and CESA and to streamline compliance with CEQA, NEPA, and other applicable environmental regulations (see discussion in Section 1). The Conservation Strategy avoids, minimizes, and mitigates adverse effects to Covered Species based on species' and habitat needs and contributes to their recovery. The Conservation Strategy minimizes and mitigates all adverse effects described in Section 4, including direct, indirect, and cumulative effects.

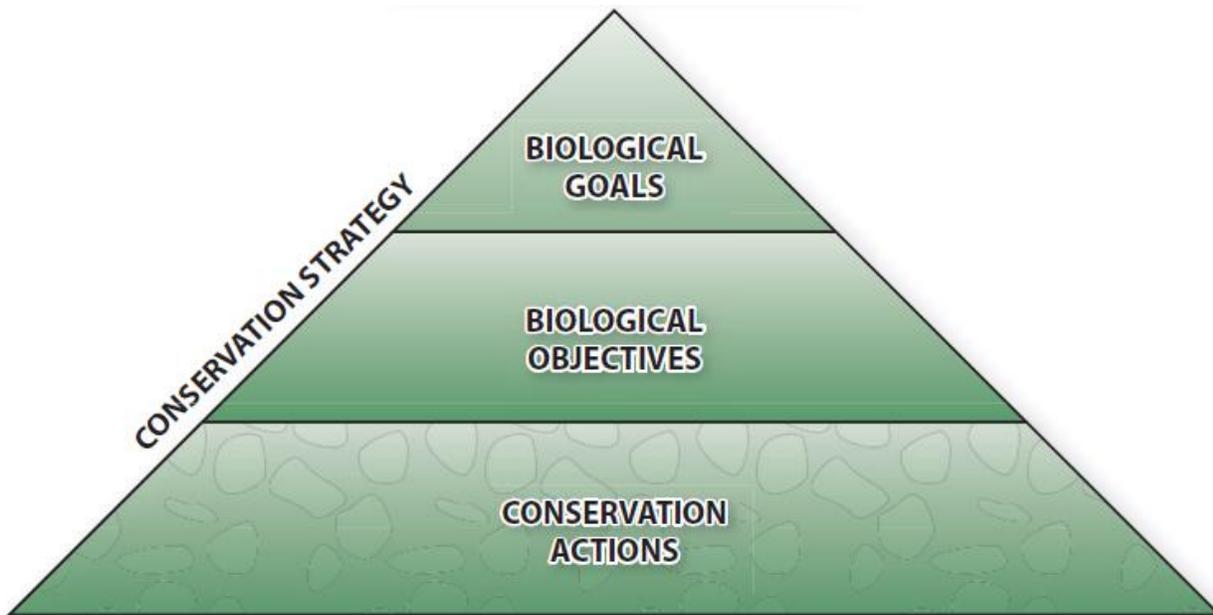
This HCP is habitat-based rather than species-based, meaning that the HCP addresses specific habitat areas or vegetation communities in the Plan Area. The rationale for this habitat-based approach is that by conserving habitat, the HCP implementation would benefit a broader range of species in addition to the Covered Species. Several conservation efforts and recovery plans were used as resources to identify specific actions and sites that have potential for conservation and recovery of Covered Species (see Biological Goals and Scope of this HCP).

5.1 Definitions of Biological Goals, Objectives, and Conservation Actions

A goal is an observable end result having one or more objectives to be achieved within a foreseeable timeframe. Biological Goals are broad, guiding principles based on the conservation needs of the Covered Species. For species listed under the ESA, a source of conservation and recovery goals is a species' recovery plan. The Biological Goals in this HCP were developed based upon the biology of the Covered Species, known threats to the Covered Species, potential effects of the Covered Activities to the Covered Species, and the scope of the HCP. The Biological Goals ensure that the operating Conservation Strategy in the HCP is consistent with conservation and recovery goals established for the Covered Species in compliance with the USFWS's *Five-Point Policy* (65 FR 35242, June 1, 2000).

Biological Objectives are measurable targets that, when implemented, achieve the Biological Goals of the operating Conservation Strategy. They may be expressed as conservation targets or desired conditions; they may be habitat-based or species-based. The Biological Objectives for each Biological Goal were developed based upon the Covered Species' biology (described in Section 3), threats to these species from implementation of the Covered Activities (described in Section 4), and the scope of the HCP. Because this HCP is habitat based, the Biological Goals and Objectives are presented for each Covered Species as it relates to habitat.

The Conservation Actions including Best Management Practices (BMPs) contain detailed information on all aspects of activities to avoid, minimize, and mitigate adverse effects of Covered Activities on Covered Species and manage habitats for Covered Species. They provide a strategy for how the Biological Goals and Objectives will be achieved. Many of the details of the Conservation Actions may be modified during Plan implementation through the Monitoring and Adaptive Management Program (see Section 6), while Biological Goals and Objectives will remain relatively static.



5.2 Biological Goals and Scope of this HCP

This HCP's Conservation Strategy was designed using a multi-scale approach (Table 5- 1). Biological Goals were developed at a large scale that encompasses ecological processes, environmental gradients, biological diversity, and regional wildlife linkages. This scale is called the *watershed or landscape level*. However, the Five Point Policy requires that that Biological Goals demonstrate conservation for Covered Species. LADWP addressed the specific needs of Covered Species for maintenance, protection, and enhancement of individuals and populations. These are *species level goals*. These species goals were then translated onto the habitat of the Covered Species to benefit them through management, enhancement, and creation of habitat types. This scale is called the *natural community or habitat level*. The natural community or habitat level goals were reviewed to ensure they include species level goals. This approach ensured that the Conservation Actions that are focused at the habitat level also address the conservation needs of the Covered Species. Because this is a habitat-based HCP, the Biological Goals for the Covered Species will refer back to the natural community/habitat level.

These Biological Goals are commensurate with LADWP's management activities that are intended to "promote diverse natural communities that are self-sustaining, comply with state and federal law concerning protected species, be consistent with water quality objectives, and control deleterious species" (www.ladwp.com).

The Biological Objectives to attain the Biological Goals are described below (Table 5-1). The Conservation Actions have been developed and implemented through various conservation and land management plans and are consistent with the following documents:

- *Conservation Strategy for the Southwestern Willow Flycatcher on City of Los Angeles Department of Water and Power Lands in the Owens Management Unit* (LADWP 2005),
- *Conservation Strategy for the Bi-State Distinct Population Segment of the Greater Sage-Grouse on City of Los Angeles Department of Water and Power Lands in the Bodie, South Mono, and White Mountains Population Management Units in Inyo and Mono Counties, California* (LADWP 2013),

- *Conservation Strategy for the Yellow-billed Cuckoo on City of Los Angeles Department of Water and Power Lands in Inyo and Mono Counties, California* (LADWP 2015),
- *Recovery Plan for the Owens Pupfish* (USFWS 1984),
- *Draft Recovery Plan for the Least Bell's Vireo* (USFWS 1998a),
- *Owens Basin Wetland and Aquatic Recovery Plan, Inyo and Mono Counties, California* (Owens Pupfish, Owens Tui Chub, Fish Slough Milk-vetch, and Selected Species of Concern) (USFWS 1998b),
- *Southwestern Willow Flycatcher Recovery Plan* (USFWS 2002a),
- *Lower Owens River Project Environmental Impact Report* (LADWP 2004),
- *Final Ad Hoc Yellow-billed Cuckoo Habitat Enhancement Plan* (LADWP 2009),
- *Owens Valley Land Management Plan* (LADWP 2010),
- *Long Term Agreement Regarding Proposed Routine Maintenance Activities for the LORP 1600-2008-0146-R6* (CDFW 2008),
- *Agreement for Routine Maintenance Work in Waterways in Inyo and Mono Counties 1600-2007-0111-R6* (RMA)(CDFW 2013).

Table 5- 1. Biological Goals

BIOLOGICAL GOALS	COVERED SPECIES						
	OSD	OTC	OP	GRSG	YBCU	SWWF	LBVI
LANDSCAPE LEVEL GOALS							
1. Protect and maintain ecological natural processes in riverine, riparian, and upland ecosystems.	X	X	X	X	X	X	X
2. Protect and maintain natural and semi-natural landscapes.	X	X	X	X	X	X	X
3. Maintain or improve opportunities for movement and genetic exchange of native organisms within and between natural communities inside and connecting to areas outside the Plan Area.				X	X	X	X
4. Enhance or restore representative natural and semi-natural landscapes to maintain or increase native biological diversity.	X	X	X	X	X	X	X
HABITAT LEVEL GOALS							
5. Improve the quality of natural waterways and the hydrologic and geomorphic processes that support them to maintain functional aquatic and riparian communities to benefit Covered Species and promote native biodiversity.	X	X	X	X	X	X	
6. Maintain, enhance, and create or restore functional pond, spring, and wetland habitats that benefit Covered Species and promote native biodiversity.	X	X	X				
7. Maintain and enhance functional sagebrush and wet meadow communities that benefit Covered Species and promote native biodiversity.				X			
8. Maintain a functional riparian forest/ scrub community at various successional stages and improve these communities to benefit Covered Species and promote native biodiversity.					X	X	X

SPECIES LEVEL GOALS							
9. Conserve existing populations of Owens and Long Valley Speckled Dace, Owens Tui Chub, and Owens Pupfish and, where possible, increase the overall population size and number of populations in biologically appropriate locations in the Plan Area.	X	X	X				
10. Conserve existing populations of Greater Sage-Grouse where possible, increase the number of individuals, and expand the overall distribution and connectivity of populations in biologically appropriate locations within the Plan Area to maintain viable populations and contribute to the regional recovery of the species.				X			
11. Conserve existing populations of Yellow-billed Cuckoo where possible, increase the number of individuals, and expand the overall distribution of the species in biologically appropriate locations within the Plan Area to contribute to the recovery of the species.					X		
12. Conserve existing populations of Southwestern Willow Flycatcher where possible, increase the number of individuals, and expand the overall distribution of the species in biologically appropriate locations within the Plan Area to contribute to the regional recovery of the species.						X	
13. Provide for the expansion of a breeding population of Least Bell's Vireo into the Plan Area and increase reproductive success of Least Bell's Vireo.							X

Table 5- 2. Biological Goals, Objectives, Conservation Actions, and Monitoring Actions

BIOLOGICAL GOALS AND OBJECTIVES	CONSERVATION ACTIONS	MONITORING ACTIONS ²
Landscape Goal 1. Protect and maintain ecological natural processes in riverine, riparian, and upland ecosystems		
<ul style="list-style-type: none"> - Objective 1.1 Protect the acreage of the broad vegetation communities described in Section 3, allowing for some change from succession or other processes outside of the control of LADWP (i.e., drought or climate change). 	Implementation of watershed management practices, the Owens Valley Land Management Plan, and this HCP.	Vegetation Mapping and Assessment
	Manage Weeds: Monitor and remove undesirable species	Weed Management Monitoring and Reporting
	Prohibit grazing in the Mono Basin	Not Applicable
	Implement grazing management plans including limiting allowable utilization of forage, installing and maintaining fences, temporal restrictions for some non-irrigated lands, restricting placement of supplements (e.g., protein blocks) in riparian habitat, and creating and maintaining off-waterway stock water sources (for more detail see below).	Implementation Monitoring: Utilization monitoring Effectiveness Monitoring: Pasture Condition Scoring, Range Trend monitoring
	Clean up illegal dump sites	Not Applicable
	Enhanced Flows including flows to promote post-fire vegetation recovery and spring peak flows.	Monitoring Water Flows
Landscape Goal 2. Protect and maintain natural and semi-natural landscapes		
<ul style="list-style-type: none"> - Objective 2.1 Protect approximately 310,000 acres of natural and semi-natural landscapes within the Plan Area (all non-urban non-miscellaneous lands; see Appendix A). 	Implementation of watershed management practices, the Owens Valley Land Management Plan, and this HCP.	Vegetation Mapping
	Manage Weeds: Monitor and remove undesirable species	Weed Management Monitoring
	Minimize surface disturbance.	Not Applicable
	Use on-site fill materials whenever possible, or use fill material from noxious weed-free borrow pits.	
	Access areas by foot when roads are not present.	
	Prohibit the development of large recreational areas, overnight camping outside of designated campgrounds off-road vehicle travel, dumping, and firewood gathering.	
	Manage public access, provide public education, coordinate with law enforcement	
	Clean up illegal dump sites	

Landscape Goal 3. Enhance or restore representative natural and semi-natural landscapes to maintain or increase native biological diversity.		
- Objective 3.1 Enhance riparian habitat along 62 miles of the Lower Owens River and various wetland and aquatic habitats including the BWMA, off-river lakes and ponds, and the Delta habitat area.	Implement the Lower Owens River Project Plan as described in the LORP EIR (2004 and 2006).	Vegetation Mapping Implement the Lower Owens River Monitoring and Adaptive Management Plan
	Minimize burning desirable species during prescribed fires in riparian habitats	
- Objective 3.2 Enhance riparian and upland habitats in the Plan Area	Implement the flow management, grazing management, recreation management, weed management, and fire management plans in the Owens Valley Land Management Plan	Vegetation Mapping Implement the Monitoring and Adaptive Management chapter in the Owens Valley Land Management Plan and the Mono Basin Stream and Waterfowl Restoration and Monitoring Plans (may be superseded by Mono Basin Trust)
- Objective 3.3 Enhance spring and seep habitat in the Plan Area.	Implement eight Additional Mitigation Projects.	Vegetation Mapping and Assessment, Implement monitoring program described in the document Additional Mitigation Projects Developed by the MOU Ad Hoc Group (September 2008).
Landscape Goal 4. Maintain or improve opportunities for movement and genetic exchange of native organisms within and between natural communities inside and connecting to areas outside the Plan Area		
- Objective 4.1 Increase permeability for Covered Species in the Plan Area.	Construct, operate, and maintain let down fences or install fence markers on fences in GRSG habitat.	Livestock and Outdoor Recreation Management Monitoring
	Avoid burning in GRSG habitats without proper study	
	Remove fences no longer necessary to manage livestock in GRSG habitat	
	Close unnecessary or redundant roads and create new roads only as absolutely necessary. Use existing roads	Not Applicable
	Maintain culverts to allow flow and also continued connectivity for covered fish species	Monitoring Water Flows
	Restore vegetation on closed roads.	Not Applicable
	Do not pave or repave roads.	Not Applicable

	If any of these activities result in fish being stranded or removed, the fish will be returned to the waterway	Not Applicable
	Only remove beaver dams that are significantly altering flow or inhibiting vegetation development and broadcast any removed material outside the floodplain	Not Applicable
	When removing beaver dams, monitor water quality and stop beaver dam removal if water quality is substantially reduced, air temperature exceeds 95 degrees F or fish stress observed	Not Applicable
Habitat Goal 6. Maintain, enhance, and create or restore functional pond, spring, and wetland habitats that benefit Covered Species and promote native biodiversity.		
- Objective 6.1 Maintain and enhance pond, spring, and wetland habitats (see Appendix F Perennial Lakes and Ponds, Intermittent Man-made Ponds, and Other Waterways).	See 5.1 above. Enhance water flows, implement rotational flooding, conduct undesirable species monitoring and removal at Additional Mitigation Sites.	Monitoring Water Flows Vegetation Mapping Weed Management Monitoring
Habitat Goal 7. Maintain and enhance functional sagebrush and wet meadow communities that benefit Covered Species and promote native biodiversity.		
- Objective 7.1 Protect 73,265 acres of sagebrush habitat.	See 1.1 and 2.1 above	Vegetation Mapping Livestock Management Monitoring Weed Management Monitoring
- Objective 7.2 Protect 8,155 acres of wet meadow habitat.	See 1.1 and 2.1 above	Vegetation Mapping Livestock Management Monitoring Weed Management Monitoring
Habitat Goal 8. Maintain a functional riparian forest/ scrub community at various successional stages and improve these communities to benefit Covered Species and promote native biodiversity.		
- Objective 8.1 Protect 6,402 acres of riparian forest/scrub communities at various successional stages. This includes the proposed critical habitat unit CA-5 and additional areas mapped as potential habitat based on the YBCU species-specific model.	See 1.1 above; implement revegetation activities	Vegetation Mapping In Lower Owens River area, conduct Rapid Assessment Surveys annually and/ or used vegetation imagery to monitor establishment of woody vegetation (e.g., monitor willow-cottonwood recruitment and survival along the Lower Owens River), browsing activity by elk and livestock, and streamside conditions in the riparian corridor
- Objective 8.2 Enhance YBCU habitat at Baker and Hogback Creeks (Baker and Hogback Creek Enhancement Areas). -	Implement YBCU Habitat Enhancement Plan (including planting, regulating outdoor recreation and livestock grazing within exclosures) at Baker and Hogback Creeks	Vegetation Mapping At YBCU habitat enhancement sites, monitoring will determine if the project is meeting the desired suitability and performance goals (see Table 12, LADWP YBCU Habitat Enhancement Plan 2009). Monitoring includes pole planting survival; presence

		and removal of beaver, black locust and other weed species; presence and maintenance of fencing; forage utilization monitoring; range and pasture condition monitoring; a comparison of vegetation response in riparian pastures and non-grazed controls. Annual Reports will include results.
Species Goal 9. Conserve existing populations of Owens and Long Valley Speckled Dace, Owens Tui Chub, and Owens Pupfish and, where possible, increase the overall population size and number of populations in biologically appropriate locations in the Plan Area.		
- Objective 9.1 Maintain or enhance suitable habitat in the Project Area where there are known occurrences of OP.	Provide enhanced flows at Well 368 ¹	Monitor enhanced flows delivered to Well 368
- Objective 9.2 Maintain or enhance suitable habitat in the Project Area where there are known occurrences of OTC.	Leave habitats at AB and CD Springs and Upper Owens Gorge in a natural or semi-natural state	Not Applicable
- Objective 9.3 Maintain or enhance suitable habitat in the Project Area where there are known occurrences of SD.	Rescue stranded fish and return them to waterway	Not Applicable
- Objective 9.4 Allow establishment of additional populations of Covered Fish Species when regulatory assurances are made	LADWP has identified locations where populations could be established (see Table 5- 12)	Not Applicable
Species Goal 10. Conserve existing populations of GRSG where possible, increase the number of individuals, and expand the overall distribution and connectivity of populations in biologically appropriate locations within the Plan Area to maintain viable populations and contribute to the regional recovery of the species.		
- Objective 10.1 Maintain and enhance 31,511 acres of existing habitat for GRSG in the Plan Area.	Close redundant or unnecessary roads Livestock grazing does not occur in Mono Basin	Vegetation Mapping Livestock Management Monitoring Outdoor Recreation Management Monitoring Weed Management Monitoring
- Objective 10.2 Minimize adverse effects of Covered Activities on GRSG	Construct and maintain let-down fences. Install and maintain fence markers. Install and maintain predator perch deterrents, when applicable. Manage outdoor recreation to avoid lek sites including seasonal road closures in Long Valley. Minimize water use for washing porcelain insulators (reducing raven attractants).	Assist CDFW in monitoring GSG populations to determine effectiveness of management actions to minimize mortality

<p>Species Goal 11. Conserve existing populations of YBCU where possible, increase the number of individuals, and expand the overall distribution of the species in biologically appropriate locations within the Plan Area to contribute to the recovery of the species.</p>		
<p>- Objective 11.1 Maintain and enhance 522.7 acres of existing habitat for YBCU in Plan Area/Manage habitat to increase number of YBCU in Plan Area</p>	<p>See 1.1 above For Baker and Hogback Creeks: No OHV activity is allowed. No grazing is allowed between June 1 and September 1 within Baker Creek exclosures except for limited grazing for fire fuel reduction. Outside exclosures, grazing is allowed April 1 and December 1 with maximum utilization rates of 40 percent in riparian habitat and 65 percent in upland habitat. Upland utilization rate is reduced to 50 percent when there is not 60 days of continuous rest between June 1 and September 1. Remove non-native plant species (e.g., locust, etc.). Plant tree willows and cottonwoods.</p>	<p>Vegetation Mapping Avian Habitat Quality Mapping Direct Monitoring of Species Livestock Management Monitoring Monitoring success of tree plantings</p>
<p>- Objective 11.2 Minimize adverse effects of Covered Activities on YBCU</p>	<p>Conduct surveys if Covered Activities are performed during nesting season. Avoid working near active nests by postponing work ; if not possible have a qualified biologist on-site to monitor the area during the Covered Activity and implement measures to minimize nest/chick abandonment (e.g., erecting a visual barrier, erecting a sound barrier, and/or providing a distance buffer between the nest and Covered Activities. .</p>	<p>Record survey results</p>
<p>Species Goal 12: Conserve existing populations of WIFL where possible, increase the number of individuals, and expand the overall distribution of the species in biologically appropriate locations within the Plan Area to contribute to the regional recovery of the species.</p>		
<p>- Objective 12.1 Maintain and enhance 1959.4 acres of existing habitat for WIFL habitat in the Plan Area/Manage habitat to increase number of WIFL in Plan Area.</p>	<p>See 1.1 and 11.1 above</p>	<p>Vegetation Mapping Avian Habitat Quality Mapping Direct Monitoring of Species Livestock, Weed, and Outdoor Recreation Management Monitoring.</p>
<p>- Objective 12.2 Minimize adverse effects of Covered Activities on WIFL</p>	<p>Conduct surveys prior to implementing Covered Activities if work needs to be done during nesting season. Avoid working</p>	<p>Record survey results</p>

	<p>near active nests. Conduct bird surveys prior to beaver dam removal, protect active nests, avoid working in breeding season if endangered species are present. LOR and Additional Mitigation projects are likely to increase habitat.</p>	
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<p>Species Goal 13. Provide for the expansion of a breeding population of LBVI into the Plan Area and increase reproductive success of LBVI</p>		
<p>- - Objective 13.1. Maintain and enhance 706 acres of existing LBVI habitat in the Plan Area.</p>	<p>See 1.1 and 11.1 above</p>	<p>Vegetation Mapping Avian Habitat Quality Mapping Direct Monitoring of Species Livestock, Weed, and Outdoor Recreation Management Monitoring</p>
<p>- Objective 13.2 Minimize adverse effects of Covered Activities on LBVI</p>	<p>Conduct surveys prior to implementing Covered Activities if work needs to be done during nesting season.. Avoid working near active nests. Conduct bird surveys prior to beaver dam removal, protect active nests, avoid working in breeding season if endangered species are present LOR and Additional Mitigation projects are likely to increase habitat. Grazing Management should improve habitat.</p>	<p>Record survey results</p>

¹ At the time of the writing of the Habitat Conservation Plan, the status of Owens pupfish at Fish Slough on LADWP land is unknown.

² Monitoring actions include both compliance/implementation monitoring and effectiveness monitoring (see Section 6).

5.3 Water Gathering and Distribution Facilities and Activities

LADWP performs routine maintenance on waterways to ensure safe water delivery. While performing these necessary water gathering and distribution activities LADWP implements numerous measures designed to avoid, minimize, and mitigate adverse effects and also enhance habitat for Covered Species. River flow management is an important activity for riparian habitat establishment and maintenance. The main objective of river flow management is to avoid rapid changes in water surface levels in the river channel that could result in bank sloughing, cut banks, loss of riparian habitat, loss of sandbars and first level terraces for establishment of willow and cottonwood trees, and adverse impacts to water quality and aquatic organisms (LADWP and Ecosystem Sciences, 2010). LADWP will avoid rapid changes to water surface elevation in the river channel by limiting ramping up rates to no more than 50 cubic feet per second (cfs) per day, and ramping down rates to no more than 25 cfs per day.

Table 5- 3. LADWP's Conservation Actions Associated with Water Gathering and Distribution.

Covered Activities	Direct Physical Effects on the Environment	Direct and Indirect Effects to Riparian Obligate Birds	Direct and Indirect Effects to Greater Sage-grouse	Direct and Indirect Effects to Covered Fishes	Conservation Actions
Dams	Upstream: Saturation of soil and drowning of veg from impoundment; Downstream: Decreased flows in wet season, increased flows in dry season; herbicide use could affect water quality.	Harm from fluctuating water levels at reservoirs may limit the opportunity for growth of riparian habitat; Managed flows may maintain existing riparian habitat but may cause harm by decreasing the establishment of new or replacement riparian habitat; Mortality from extremely high water levels that could flood nests.	Harm from maintaining reservoir levels at maximum capacity may flood meadow habitat.	Harm from fluctuating water levels and managed flows effects are not expected; harm from herbicide use is unknown.	Avoid by inspecting boats for undesirable species (e.g., NZMS, Quagga mussels), by only using herbicides that are licensed for use near waterways, have been tested for toxicity to aquatic organisms, and by following strict regulations for use near municipal water supplies. Minimize downstream impacts by initiating and maintaining average in-channel flows, allowing for annual out-of-channel flow, initiating ramping rates to minimize rapid water level changes and stream bank erosion
Measuring Stations, Flumes, Diversion Structures, Sand Traps, Spillgates, Culverts, Clearing Obstructions, Clearing Channels, Preparing for Runoff, Replacing Facilities, and LORP Seasonal Flows.	Sediment, vegetation, and trash removal from the work area; increased turbidity that is of short duration; maintenance of facilities allows for unobstructed water flow; undesirable species could be spread by equipment used.	Harm from removal of riparian vegetation; harassment from operation of heavy equipment; failure to maintain may cause harm by reducing riparian habitat.	Harassment from operation of heavy equipment; mortality from transport and use of equipment.	Harm from reduced water quality and reduced spawning habitat; mortality from removal of eggs and fish; failure to maintain may cause harm by reducing aquatic habitat.	Avoid by locating stage and storage areas outside waterways, wetland, and riparian habitats; placing sediment on existing spoils sites so material will not wash into the waterway; when no spoils sites are available nearby sediment is removed and transported to an appropriate disposal site; conducting frequent vehicle and equipment monitoring and maintenance to avoid spilling hazardous materials; complying with all litter and pollution laws; using existing stockpile sites when available; ensuring that LADWP's employees, representatives, agents, contractors, and subcontractors have read and are familiar with the terms and conditions of Conservation Actions relative to their activities; by using existing roads to access work areas, by cleaning equipment with a high-pressure washer before traveling between waterways to avoid the spread of invasive species; sharing information as it becomes available regarding the presence of newly observed invasive species (e.g. New Zealand mudsnails, quagga/zebra mussels, etc.) in or near waterways; by diverting water around the worksite or replacing facilities when the waterway is dry. Minimize by confining footprint to smallest area possible and removing vegetation only when necessary; working within time periods outside of nesting or spawning seasons when possible; performing pre-construction surveys if work needs to be done during nesting/spawning season- and delaying the activity until later; limiting channel clearing the length of the entire waterway to only some man-made waterways; having spill containment kits with all equipment and using them as necessary; inspecting any displaced water and vegetation for fish and immediately and carefully rescue stranded fish using nets, buckets, or similar effective means to return them to the waterway or place them in downstream reaches where they are likely to survive; by replacing facilities with similar facilities.

					Mitigate by consulting and preparing a mitigation plan with CDFW before removing any riparian vegetation with DBH equal to or greater than 4 inches and by planting a replacement-to-impact ratio of 3:1 if necessary from a local source; initiating and maintaining average in-channel flows, allowing for annual out-of-channel flow, initiating ramping rates to minimize rapid water level changes and stream bank erosion,
Covered Activities	Direct Physical Effects on the Environment	Direct and Indirect Effects to Riparian Obligate Birds	Direct and Indirect Effects to Greater Sage-grouse	Direct and Indirect Effects to Covered Fishes	Conservation Actions
Spreading Basins	Diverted water may carry SD; No direct or indirect effects anticipated to remaining Covered Species because locations are not in or near habitat for Covered Species; undesirable species could be spread by equipment used.	Harm by promoting the establishment and ongoing seed source for tamarisk; no direct effect to riparian habitat.	No spreading basins in GRSG habitat	Mortality from stranded OSD during water infiltration.	Conservation Actions associated with Spreading Basins include all actions listed under Measuring Stations et al. above.
Mowing	Vegetation removal from the work area; increased turbidity that is localized and of short duration; undesirable species could be spread by equipment used.	Harm from removal of riparian vegetation; harassment from operation of heavy equipment.	Harm from removal of upland vegetation; harassment from operation of heavy equipment; mortality from transport and use of equipment.	Harm from reduced water quality and reduced spawning habitat; mortality from removal of eggs and fish; failure to maintain may cause harm by reducing aquatic habitat.	Conservation Actions associated with mowing include all of those listed under Measuring Stations et al. above. In addition Conservation Actions specific to mowing are described here. Avoid by NOT grading on banks of waterways; Minimize by cutting vegetation down to no lower than 2 inches to leave roots that promote waterway bank stability; leaving intact any native vegetation with DBH of 4 inches or greater;
Slushing	Sediment and aquatic vegetation removal from the work area; increased turbidity that is of short duration; maintenance of facilities allows for unobstructed water flow; undesirable species could be spread by equipment used.	Harassment from operation of heavy equipment	No slushing in GRSG habitat	Harm from reduced water quality and reduced spawning habitat; mortality from removal of eggs and fish; failure to maintain may cause harm by reducing aquatic habitat	Conservation Actions associated with slushing include all of those listed under Measuring Stations et al. above. In addition Conservation Actions specific to slushing are described here. Minimize by removing or allowing cut vegetation to pass downstream to maintain waterway flow and water quality
Burning	Vegetation removal from the work area; increased turbidity and pH that is localized and of short duration; undesirable species are removed; undesirable species may colonize newly denuded areas creating a seed source; undesirable species could be spread by equipment used.	Burning does not occur in woody riparian habitat; harassment from nearby operation of heavy equipment; harm from undesirable species (e.g., acting as a seed source) that could infiltrate woody riparian habitat ; Potential for burns to spread beyond fire line and cause mortality or injury, or harm by impacting riparian habitat.	No burning in GRSG habitat.	Harm from reduced water quality; mortality of eggs and fish; failure to maintain may cause harm by reducing aquatic habitat;	Conservation Actions associated with burning include all actions listed under Measuring Stations et al. above. In addition, Conservation Actions associated with burning include protecting tree resources as much as feasible through the use of fire retardants or creating fire buffers around the trees. Enhance by removing undesirable species

Covered Activities	Direct Physical Effects on the Environment	Direct and Indirect Effects to Riparian Obligate Birds	Direct and Indirect Effects to Greater Sage-grouse	Direct and Indirect Effects to Covered Fishes	Conservation Actions
Atypical Events/Emergencies	Various but could include habitat loss	Loss or degradation of habitat and mortality, injury or harm may occur	Loss or degradation of habitat and mortality, injury or harm may occur	Loss or degradation of habitat and mortality, injury or harm may occur	Conservation Actions associated with Atypical Events include all of those listed under Measuring Stations et al. above when feasible.
Maintain Groundwater Pumps	Vegetation removal from the work area; undesirable species could be spread by equipment used;	Harassment from operation of heavy equipment	No groundwater pump maintenance in GRSG habitat	No groundwater pump maintenance in waterways	Conservation Actions associated with Maintaining Groundwater Pumps include all of those listed under Measuring Stations et al. above.
Removing Beaver Dams	Sediment and vegetation removal from the work area; increased turbidity that is of short duration; undesirable species could be spread by equipment used	Harm from removal of riparian vegetation; harassment from operation of heavy equipment	None Expected	Harm from reduced water quality and reduced spawning habitat; mortality from removal of eggs and fish; failure to maintain may cause harm by reducing aquatic habitat	Conservation Actions associated with beaver dam removal include all of those listed under Measuring Stations et al. above. In addition, Conservation Actions specific to beaver dam removal are described here. Minimize by only removing beaver dams that are causing excessive flooding, restricting flow substantially, or are inhibiting the development of diverse vegetation types on the Lower Owens River; by broadcasting removed materials outside of the floodplain thereby avoiding the creation of spoil sites. Avoid by conducting nesting surveys for covered bird species prior to conducting work, any active birds nests located will be protected (e.g., postpone work until after the nesting season; by conducting water quality monitoring (dissolved oxygen, temperature, pH, and turbidity) at dam locations when the ambient air temperature exceeds 95 degrees Fahrenheit and halting work immediately if fish stress is observed or water quality is substantially reduced; Enhance if beaver activity is causing excessive flooding, restricting flow significantly, or is inhibiting the development of diverse riparian vegetation types

Conservation Actions associated with Water Gathering and Distribution tend to focus on avoidance and minimization. Most mitigation and enhancement for these Covered Activities is described in the Habitat Enhancement/Creation Section.

Timing of these Covered Activities is currently allowed either year round or from late winter to early fall except for the following facilities: A-1 Drain east of diversion to Bishop Creek Canal and west of diversion to Bishop Creek Canal, and B Drain (September 15 to April 15); Fish Slough Return and Keough Ditch (September 1 to March 15); Control Gorge (September 15 to March 15). [CDFW 2013 list of activities 1600 agreement Attachment A]. Although the work windows for Covered Activities may span several months to a year, typical maintenance activities are completed in 1 to 5 days. Main canals and ditches require annual maintenance while facilities associated with natural waterways require maintenance less often.

5.4 Hydroelectric Power Production, Water Storage Facilities, and Power Transmission Activities

LADWP minimizes potential adverse effects from operations and maintenance of existing power infrastructure by using existing roads and not creating new roads.

Table 5- 4. LADWP’s Conservation Actions Associated with Direct and Indirect Effects of Operations and Maintenance of Hydroelectric Power Production, Water Storage Facilities, and Power Transmission

Covered Activities	Direct Physical Adverse Effects on the Environment	Direct and Indirect Adverse Effects to Riparian Obligate Birds	Direct and Indirect Adverse Effects to Greater Sage-grouse	Direct and Indirect Adverse Effects to Covered Fishes	Conservation Actions
Power Line Inspection by helicopter	Localized and temporary increase in noise and air pollution;	Harassment from equipment use	Harassment from equipment use	None anticipated.	None.
Power line clearance by tree-trimming using power tools	Removal of limbs; disease spread	Direct mortality and nest loss; harm from habitat loss; harassment from presence of personnel and equipment;	Harassment from presence of personnel and equipment	Harm from localized and temporary reduction in water quality	Avoid by conducting bird surveys prior to tree trimming, protect active nests; If possible, avoid working in breeding season if Covered Bird Species are present. Minimize by using existing roads, not building new roads and accessing areas by foot when roads are not present
Tower and powerline inspection, washing porcelain insulators	Potential to spread and support undesirable plant species	Localized and temporary harassment from presence of personnel and equipment	Localized and temporary harassment from presence of personnel and equipment	Harm from localized and temporary reduction in water quality	Minimize by using existing roads, not building new roads and accessing areas by foot when roads are not present, using the minimum amount of water necessary
Replacement of poles, cross arms and transformers	Vegetation removal around work area; localized ground disturbance; potential for hazardous material spill;	Localized and temporary harassment from presence of personnel and equipment,	Localized and temporary harassment from presence of personnel and equipment	Localized and temporary harassment from presence of personnel and equipment; harm from localized and temporary reduction in water quality;	None.

These Conservation Actions should prevent further habitat fragmentation.

5.5 Irrigated Agriculture

Irrigated pastures are those portions of a lease where the lessee receives a water allotment for irrigation. Livestock operators are allotted up to 5 acre-feet of water per acre per year to irrigate land previously designated as irrigated pasture. In some years, irrigation of some pastures will not be possible due to minimum flow requirements in creeks, or due to a lack of head to irrigate effectively.

LADWP considers vegetation in irrigated pastures as a crop to be harvested. LADWP implements NRCS Pasture Condition Assessment (Cosgrove et al. 2001) which includes scoring each pasture and adapting pasture management as needed to ensure that both desirable plant and livestock productivity are optimized, while detrimental effects to soil or water resources are minimized as much as possible.

Table 5- 5. LADWP’s Conservation Actions Associated with Irrigated Agriculture

COVERED ACTIVITIES	DIRECT ADVERSE PHYSICAL EFFECTS ON THE ENVIRONMENT	DIRECT AND INDIRECT ADVERSE EFFECTS TO RIPARIAN OBLIGATE BIRDS	DIRECT AND INDIRECT ADVERSE EFFECTS TO GREATER SAGE-GROUSE	DIRECT AND INDIRECT ADVERSE EFFECTS TO COVERED FISHES	CONSERVATION ACTIONS
Mowing	Vegetation removal from the work area; increased turbidity that is localized and of short duration; undesirable species could be spread by equipment used	Harm from removal of riparian vegetation and habitat degradation from introduction of undesirable species; harassment from operation of heavy equipment	Harm from removal of upland vegetation and habitat degradation from introduction of undesirable species; harassment from operation of heavy equipment; mortality from transport and use of equipment	Harm from reduced water quality, reduced spawning habitat, and habitat degradation from introduction of undesirable species; mortality from removal of eggs and fish; failure to maintain may cause harm by reducing aquatic habitat	Avoid by mowing in late summer or fall and not more than once per year to avoid covered birds’ breeding season Minimize by monitoring for and removing some undesirable species (see Weed Management) and implementing Pasture Condition Assessment
Dragging	Undesirable species could be spread by equipment used	Harassment from operation of heavy equipment, harm from habitat degradation from introduction of undesirable species	Harassment from operation of heavy equipment; mortality from transport and use of equipment, harm from habitat degradation from introduction of undesirable species	Harassment from operation of heavy equipment, harm from habitat degradation from introduction of undesirable species	Avoid by dragging in late summer or fall and not more than once per year Minimize by monitoring for and removing some undesirable species (see Weed Management) and implementing Pasture Condition Assessment
Operation and maintenance of irrigation equipment	Undesirable species could be spread by equipment used	Harassment from operation of heavy equipment, harm from habitat degradation from introduction of undesirable species	Harassment from operation of heavy equipment, harm from habitat degradation from introduction of undesirable species	Harassment from operation of heavy equipment, harm from habitat degradation from introduction of undesirable species	Minimize by monitoring for and removing some undesirable species (see Weed Management)
Irrigation including flood and sprinkler systems	Temporal inundation, maintains pastures or croplands, potential spread of species present in waterway,	Harm from habitat degradation from introduction of undesirable species;	Harm from habitat degradation from introduction of undesirable species;	Mortality from stranding; harm from habitat degradation from introduction of undesirable species	Minimize by monitoring for and removing some undesirable species (see Weed Management), and implementing Pasture Condition Assessment Enhance by increasing foraging habitat for Covered Bird Species

1. Increase foraging habitat for Covered bird Species is an ancillary benefit of irrigated agriculture.

Pasture Condition Assessment includes evaluation of pasture followed by identification and implementation of any management modification necessary to improve pasture condition. Pasture condition scoring involves the visual evaluation of 10 indicators, each having five environmental sub-conditions. Example indicators are bare patches, erosion rills, distribution of water throughout pasture, and presence of both desirable and undesirable plant species. Each indicator is rated separately and the scores are combined into an overall pasture score. The overall pasture score can then be divided by the total possible score to give a percent rating (overall score ÷ total possible score × 100 = percent rating). Not all 10 indicators may be appropriate for each individual pasture. In this case, the total possible score will be reduced, but the percent rating will still be comparable. Irrigated fields or pastures that score 80 percent or greater will be considered in good to excellent condition. They will not be subject to any changes in grazing management. Any irrigated field or pasture scoring less than 80 percent will receive a change of management prescription (i.e., changes in forage utilization, livestock numbers, grazing season, or duration of use). Necessary management changes will be determined by LADWP in consultation with the lessee. The condition scoring is only applicable to those portions of pastures or fields that are classified as irrigated on LADWP lease maps. If rare plants occur on irrigated pastures or fields, forage utilization criteria, timing of grazing, and duration of grazing may be modified to allow these species to set seed.

LADWP's recent implementation of Pasture Condition Assessment should keep irrigated pastures in good to excellent condition thereby providing foraging habitat for Covered Bird Species.

5.6 Livestock Grazing

Livestock grazing is an important component of LADWP's land management. LADWP recently developed and implemented grazing management plans for all LADWP grazing leases in the Plan Area. These plans include Conservation Actions to reduce the adverse effects of livestock grazing on Covered Species and their habitats.

Table 5- 6. LADWP's Conservation Actions Associated with Livestock Grazing (including fencing)

Covered Activities	Direct Physical Adverse Effects on the Environment	Direct and Indirect Adverse Effects to Riparian Obligate Birds	Direct and Indirect Adverse Effects to Greater Sage-grouse	Direct and Indirect Adverse Effects to Covered Fishes	Conservation Actions
Livestock grazing	Altering the physical structure of the plant community, plant species composition, plant diversity, and abundance of species; consumption of plant biomass by livestock; undesirable species may colonize newly denuded areas creating a seed source; soil compaction and trampling; alters stream channel morphology and water quality; bank destabilization, increased runoff, sedimentation, and erosion; reduced capacity of soils to hold water	Harm from the reduction or degradation of riparian vegetation; harassment from presence of livestock; mortality from knocking down nests; harm from potentially maintaining altered habitat that favors cowbird use and creating trails that nest predators and people (see Outdoor Recreation below) may use.	Harm from the reduction or degradation of upland vegetation; harassment from presence of livestock; mortality trampling nests;	Harm from reduced water quality (e.g. increased water temperature; nutrient enrichment from urine and feces, etc.) and reduced spawning habitat; mortality from removal of eggs and fish; failure to maintain may reduce aquatic habitat	Avoid by not grazing livestock in Mono Basin and excluding livestock grazing along Baker Creek to protect the creek and associated riparian habitats. Minimize by implementing grazing management plans through agreements with lessees. Plans include limiting allowable utilization of forage, installing and maintaining fences, temporal restrictions for some non-irrigated lands, restricting placement of supplements (e.g., protein blocks) in riparian habitat, and creating and maintaining off-waterway stock water sources
Fencing construction and maintenance	Initial loss of vegetation along new fence lines from mowing, disturbance from heavy equipment, undesirable species could be spread by equipment or the fence line could act as an establishment corridor	Harassment from operation of heavy equipment, harm from reduction of habitat in footprint of fence line	Harm from fragmenting habitat; and potential for mortality and injury from collisions; harassment from operation of heavy equipment; harm from habitat removal in footprint of fence line,	Harassment from operation of heavy equipment	Minimize by installing and using let-down fencing and alternative fence design criteria in GRSG habitat; Enhance by providing a mechanism to separate riparian and upland pastures making it easier to target pasture-specific utilization rates
Supplementation including stock water well development and maintenance	Increases livestock use in a specific area	Harm from reduced or degraded habitat in riparian areas	Increased harassment by livestock and vehicles used for replenishment near supplements	Harm from reduced or degraded habitat in aquatic areas	Avoid by placing supplements and stock water wells outside riparian habitats

Grazing management plans include the following Conservation Actions:

- LADWP constructs and maintains fences or stock water wells to manage livestock distribution (e.g., install fences to separate riparian from upland pastures and exclude livestock from some riparian pastures in summer).
- LADWP has identified a maximum allowable grazing utilization rate, which varies depending on habitat type and season of use, to protect riparian and upland habitats. The average grazing utilization rate is calculated annually for each pasture/field. In Long Valley, the maximum riparian utilization rate is 35 percent because livestock grazing occurs in the summer, which is the growing season. At all other locations where grazing typically occurs outside the growing season, the maximum allowable grazing utilization is 40 percent for herbaceous forage in riparian pastures and 65 percent in upland pastures. However, if an upland pasture is grazed in the summer, it must have a minimum of 60 continuous days of no grazing or utilization is reduced to a maximum of 50 percent.
- From Pleasant Valley Reservoir to Tinemaha Reservoir, riparian pastures are grazed only during the winter months (October through April) to avoid the season of riparian plant establishment and growth as well as nesting season for riparian obligate bird species.

Riparian pastures were created along the Upper Owens River, Convict Creek, McGee Creek and Mammoth Creek in the early 1990s to improve riparian habitat and fisheries (Hill et al. 2002) and ultimately water quality. Livestock graze each riparian pasture once a year. Grazing begins in June on whichever riparian pasture is most suitable, based on forage readiness. Cattle are removed from riparian pastures at the end of the grazing period or when the average utilization of herbaceous forage has reached 30 percent, whichever comes first. Monitoring conducted in riparian pastures includes utilization, fixed photopoints, permanent riparian monitoring transects, and channel cross-section monitoring.

- The seven LORP leases (below Tinemaha) have fenced grazing exclosures (typically about 10 acres) to compare a non-grazed area with grazed areas. The Thibaut lease has the largest exclosure (247 acres) and is located in riparian habitat. Another exclosure (211 acres) is located in upland habitat where no livestock grazing occurs from March 1 to September 1 because of the presence of special status plant species. Within the Waterfowl Management Area of the Thibaut lease, when in a wet cycle the allowable use is 40 percent (i.e., given a riparian utilization level) and in a dry cycle the allowable use is 65 percent (i.e., given an upland utilization level).
- Livestock are allowed to graze the Baker Creek Yellow-billed Cuckoo Habitat Enhancement Area to reduce the fuel load. No grazing is allowed between June 1 and September 1 of any year due to potential Yellow-billed Cuckoo breeding activity.
- Livestock are moved onto the Hogback Lease December 1 and are permitted to use the area until March 31.
- Under current grazing practices, livestock are removed from riparian pastures when either the average utilization rate or the period of use criteria has been met, whichever occurs first. This is required from Pleasant Valley Reservoir to Tinemaha Reservoirs.

LADWP's recent implementation of grazing prescriptions is expected to improve habitat within the Plan Area for Covered Species. The continued implementation of the grazing management plans for all livestock leases will support the health and resiliency of sage-grouse habitat. The riparian grazing

prescription should enhance the survival of riparian shrubs and trees during their first years of growth and achieve LADWP's riparian objectives. Grazing management methods will minimize impacts to the young age classes of riparian willow and cottonwood trees. This will allow the riparian community to develop dense thickets of trees and shrubs. Adaptive Management will allow for necessary grazing adjustments to achieve these enhancements.

Fencing is an effective management tool for livestock grazing and recreation; it can also adversely affect wildlife. For the Greater Sage-Grouse, LADWP has converted approximately 2.5 miles of fencing to let-down fences. The let-down fences are near large leks and occur in areas that receive high use by sage-grouse during winter through spring. LADWP will evaluate all fences within 1.25 miles of occupied leks to determine if collisions are occurring, or for the potential for collisions to occur following guidelines presented in USFWS (2013). Fences adversely affecting sage-grouse will be changed to eliminate or reduce this effect (e.g., marked with flight diverters or converted to let-down fences). Installation of new fencing will be evaluated (e.g., topography, distance from lek, etc.) for the potential impacts to Greater Sage-Grouse. LADWP will remove unnecessary fencing in areas determined to be a high risk for Greater Sage-Grouse.

5.7 Outdoor Recreation (include fencing)

LADWP's recreational management approach is intended to balance the competing interests of preserving the primitive and undeveloped character of the landscape, satisfying legal and organizational commitments, and supporting the local economy. LADWP recognizes that continued access on City lands is desired by multiple interests but recreational activities must be compatible with LADWP's watershed management goals. LADWP will continue to manage the Plan Area for multiple uses therefore recreational activities are managed to minimize adverse effects to other resources including Covered Species and their habitats.

Table 5- 7. LADWP’s Conservation Actions Associated with Outdoor Recreation Management

Covered Activities	Direct Physical Adverse Effects on the Environment	Direct and Indirect Adverse Effects to Riparian Obligate Birds	Direct and Indirect Adverse Effects to Greater Sage-grouse	Direct and Indirect Adverse Effects to Covered Fishes	Conservation Actions
Outdoor Recreation (e.g. picnicking, fishing, hiking, biking, off-highway vehicle use, sightseeing, camping in developed campgrounds, hunting, and bird-watching, etc.)	Increases soil compaction and bank erosion; alters stream channel morphology and water quality; alters plant community structure, species composition, diversity, and abundance; prevents seed germination; increases the spread and establishment of undesirable species, human caused fires and litter (e.g. food scraps, etc.)	Harm from habitat loss via reduction or degradation of riparian vegetation; harassment from presence of people; mortality from knocking down nests; harm from increases in predators and scavengers due to food scraps and garbage	Harm from habitat loss via reduction or degradation of upland vegetation; harassment from presence of people; mortality from trampling nests; harm from increases in predators and scavengers due to food scraps and garbage	Harm from reduced water quality and introduction of non-native predatory species; disturbed spawning habitat causing increased mortality of eggs;	<p>Avoid by prohibiting the following: development of large recreational areas, overnight camping outside of developed campgrounds, campfires and use of camp stoves, off-road vehicle travel, dumping, or firewood gathering in riparian areas (e.g., Owens River, Baker and Hogback creeks, etc.) and sage-grouse habitat;</p> <p>Minimize by implementing a Recreation Plan that manages public access, provides public education, and promotes coordination with law enforcement; monitoring for and removal of some undesirable species (Weed Management), and seasonally closing some areas in Long Valley to protect natural resources including GRSG and its habitat;</p> <p>Minimize by cleaning up trash and illegal dump sites.</p>

LADWP is applying the Recreation Plan in the OVLMP (LADWP 2010) throughout the Plan Area. LADWP has established rules for recreational users to follow, monitors natural and cultural resources for damages caused by recreational use, and takes appropriate corrective action to halt the damage and improve the condition of the natural and cultural resources. Example actions include posting signs and installing kiosks for public information and education; installing barriers and walk-throughs especially along and near the Owens River, by installing fences and creating off-river parking areas, closing and/or rerouting roads away from riparian and aquatic habitats, installing sanitation facilities, confining hiking and cycling to existing trails and posting areas that are off limits, and contacting law enforcement to address violations.

Recreation plan implementation is intended to minimize erosion, improve bank stability, enhance plant biodiversity, and protect wildlife and sensitive plant species and their habitats.

5.8 Road Maintenance and Use by LADWP Staff

LADWP has and may continue to close redundant roads or roads not needed for grazing, recreation, or infrastructure maintenance. Necessary roads are maintained in unpaved condition, graded as needed (typically once per year).

Table 5- 8. LADWP’s Conservation Actions Associated with Road Maintenance

COVERED ACTIVITIES	DIRECT PHYSICAL ADVERSE EFFECTS ON THE ENVIRONMENT	DIRECT AND INDIRECT ADVERSE EFFECTS TO RIPARIAN OBLIGATE BIRDS	DIRECT AND INDIRECT ADVERSE EFFECTS TO GREATER SAGE-GROUSE	DIRECT AND INDIRECT ADVERSE EFFECTS TO COVERED FISHES	CONSERVATION ACTIONS
Road Maintenance including Grading and adding Road Base as needed	Vegetation removal that is localized and of short duration; undesirable species could be spread by equipment or spread along the disturbance corridor (material source for road base is inspected for undesirable species); short term and localized decrease in air quality; potentially fragmenting habitat; increased road kill; increased recreational use	Harm from loss of riparian vegetation on roads and shoulders; harassment from operation of heavy equipment and increased recreational use (see Table 5- 7 Outdoor Recreation)	Harm from loss of upland vegetation on roads and shoulders; harassment from operation of heavy equipment and increased recreation use (see Table 5- 7 Outdoor Recreation); harm from scavengers and predators drawn to road kill	Harm from reduced water quality caused by increased surface runoff; harassment from increased recreational use (see Table 5- 7 Outdoor Recreation)	Avoid by not creating new roads except when needed to respond to an emergency, not paving unpaved roads, and not repaving paved roads; Minimize by disturbing substrates only as necessary; On-site fill materials will be used to the extent possible but if offsite fill materials are necessary, they will be taken from borrow pits located in areas that are free of noxious weeds
Ripping and placement of obstacles for Road Closures	Vegetation removal from the work area that is localized and of short duration; undesirable species could be spread by equipment used or take advantage of disturbance corridor; localized temporary decrease in air quality	Temporary one-time harm from removal of riparian habitat on roads and shoulders; Temporary harassment from operation of heavy equipment	Temporary one-time harm from removal of upland habitat on roads and shoulders; Temporary harassment from operation of heavy equipment	Temporary one-time harassment from operation of heavy equipment	Minimize by closing redundant and unnecessary roads, barricading and rehabilitating roads impacting Greater Sage-Grouse or their habitat; Enhance by possibly restore habitat on closed roads through ripping and reseeding previous road surfaces with native species.
Use of roads by LADWP staff	Localized and temporary noise, air pollution, potential spread of undesirable species	Mortality from collision,	Mortality from collision.	None expected	Minimize by cleaning vehicles that have been in areas with known undesirable plant species

Methods to close roads include placement of obstacles to block access (e.g., boulders, gates, railroad ties), and ripping roads to break up compaction and stimulate revegetation, and possibly reseeding reclaimed road surfaces with native species thereby reducing habitat fragmentation.

Total road miles are not expected to increase substantially within the Plan Area and therefore further habitat fragmentation is not expected.

5.9 Weed Management

LADWP conducts weed management as an ongoing Conservation Action in the Plan Area. This section describes the methods used to identify and remove weeds as well as the conservation actions that avoid, minimize, and mitigate the potential adverse effects of these methods.

Table 5- 9. LADWP’s Conservation Actions Associated with Weed Management

COVERED ACTIVITIES	DIRECT PHYSICAL ADVERSE EFFECTS ON THE ENVIRONMENT	DIRECT AND INDIRECT ADVERSE EFFECTS TO RIPARIAN OBLIGATE BIRDS	DIRECT AND INDIRECT ADVERSE EFFECTS TO GREATER SAGE-GROUSE	DIRECT AND INDIRECT ADVERSE EFFECTS TO COVERED FISHES	CONSERVATION ACTIONS
<p>Surveying-structured surveys on existing roadways and opportunistic surveys on foot or using existing roadways</p>	<p>Undesirable species or disease could be spread by surveyors or equipment used</p>	<p>Harassment from the presence of personnel and the operation of equipment</p>	<p>Harassment from the presence of personnel and the operation of equipment</p>	<p>Harassment from the presence of personnel and the operation of equipment;</p>	<p>Avoid by thoroughly cleaning all equipment with a high-pressure washer before traveling from areas of known infestation to avoid the spread of non-native invasive plant species and their seeds.</p>
<p>Mechanical removal of non-native tree species</p>	<p>Direct removal of vegetation that could be used for feeding, breeding, shelter, or movement between habitats; undesirable species could be spread by equipment used</p>	<p>Mortality from nest loss; harm from removal of vegetation that could be used for feeding, breeding, shelter, or movement between habitats; harassment from personnel using hand or power tools, or the operation of heavy equipment</p>	<p>Harassment from personnel using hand or power tools, or the operation of heavy equipment</p>	<p>Harassment from personnel using hand or power tools, or the operation of heavy equipment; falling limbs may enter the waterway causing mortality or harm from increased sedimentation</p>	<p>Avoid by conducting bird surveys prior to tree trimming, protect active nests; If possible, avoid working during breeding season if covered birds are present. Enhance habitat by removing non-native tree species.</p>
<p>Spraying of herbicide via a low-volume sprayer attached to a vehicle such as an ATV or truck or a low-volume backpack sprayer carried by a person on foot. This does not include aerial spraying.</p>	<p>Mortality of adjacent, non-target species; Undesirable species could be spread by personnel or equipment</p>	<p>Harm from habitat loss from removal of target weeds as well as unintentional removal of adjacent desirable species; harm from habitat loss associated with treatment activities (e.g. ATV tracks); harassment from personnel or operation of heavy equipment</p>	<p>Harm from habitat loss from unintentional removal of adjacent desirable species; harassment from personnel or operation of heavy equipment</p>	<p>Harassment from operation of equipment; harm from herbicide use is unknown</p>	<p>Avoid by following label instructions, making every effort to avoid native vegetation with spray, using existing ATV tracks as access routes whenever possible, and/or avoid entering covered bird species’ habitats during nesting season. Minimize by using herbicides licensed for use near waterways and approved for municipal water supplies when appropriate, restricting herbicide use near known distribution of Covered Fish Species.</p>

					Enhance habitat by removing non-desirable plant species.
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LADWP has an extensive weed monitoring and treatment program. In implementing this program, LADWP identifies, documents, treats, and monitors nonnative weeds within the Plan Area and has staff certified in the treatment of noxious weeds. LADWP conducts annual surveys for weeds typically from March through October to document the location and extent of weed occurrence. For example, to identify the presence of weeds, LADWP conducts surveys along much of the Owens River, around seeps and springs, and after water spreading. In addition, LADWP has trained their staff to identify weed occurrences while conducting operations and maintenance activities, and conducts outreach programs to educate lessees and the public on identification and reporting of noxious weeds. LADWP removes weedy species using the appropriate method for the ecological sensitivity of the site. They have trained their staff when working in areas occupied by Covered Species about the biology of the Covered Species, their habitat requirements, and any avoidance or minimization measures that they will need to implement. For example, when weedy species are located near a special status plant species, a backpack sprayer would be used instead of a truck-mounted sprayer because of ecological sensitivity. LADWP provides information to the Eastern Sierra Weed Management Association database. LADWP arranges for the control of infestations on LADWP administered lands through the pesticide permitting process of the Inyo/Mono Counties Agricultural Commissioner's Office and through discussions with the Eastern Sierra Weed Management Association working group. For monitoring of weed management activities, LADWP conducts monitoring to determine the effectiveness of weed management activities by conducting surveys for at least 5 years to ensure that eradication has been successful. Further, LADWP provides funding to and coordinates with the Inyo County Saltcedar Control Program.

By implementing these weed management activities, LADWP intends to limit the establishment and spread of undesirable plant species in the Plan Area thereby maintaining or improving existing habitat for covered bird species.

5.10 Wildfire Suppression/Management and Prescribed Fire

LADWP is not seeking coverage for wildfire suppression activities. All prescribed fires for the purposes of improving rangeland, wildlife habitat, and/or watershed conditions are conducted under the direction of LADWP. For example, an area with shrub encroachment adjacent to riparian forest/scrub habitat may be burned to remove the shrubs and promote grass and herbaceous growth. Managed burns do not normally include habitats for the SD, OTC, OP, and GRSG or nesting habitats for YBCU, WIFL, and BEVI. For example, to reduce the likelihood of fires, grazing is allowed at the Baker Creek Habitat Enhancement Area but not along the creek to reduce fuel load, but no grazing is allowed during the breeding season (usually June 1 to September 1).

Table 5- 10. LADWP’s Conservation Actions Associated with Preventative Wildfire Management and Prescribed Fire

COVERED ACTIVITIES	DIRECT PHYSICAL ADVERSE EFFECTS ON THE ENVIRONMENT	DIRECT AND INDIRECT ADVERSE EFFECTS TO RIPARIAN OBLIGATE BIRDS	DIRECT AND INDIRECT ADVERSE EFFECTS TO GREATER SAGE-GROUSE	DIRECT AND INDIRECT ADVERSE EFFECTS TO COVERED FISHES	CONSERVATION ACTIONS
Mowing/grading fire breaks	Vegetation removal from the work area; increased turbidity, dust, and noise that is localized and of short duration; undesirable species could be spread by equipment used or take advantage of disturbance corridor; localized temporary	Harm from removal of riparian vegetation; harassment from operation of heavy equipment	Harm from removal of upland vegetation; harassment from operation of heavy equipment;	Harm from reduced water quality	Minimize by using existing disturbance corridors when available and implementing Weed Management
Prescribed burns and post wildfire recovery activities	Reduced air quality; potential for spread and establishment of undesirable species; potential for prescribed fire to spread to unintended areas; vegetation removal	Mortality, injury, and harm from burn; harm from removal of riparian vegetation and temporary fragmentation of habitat	Mortality, injury, and harm from burn; harm from removal of upland vegetation and temporary fragmentation of habitat	Harm from reduced water quality, removal of emergent and riparian vegetation, or increased erosion and sedimentation	Avoid by not allowing burning in riparian habitats and GRSG habitats without proper study and evaluation, using high pressure type sprayers on equipment prior to assigning to incident to help prevent spread of noxious weeds Minimize by LADWP directing all managed burning for the purposes of improving rangeland, wildlife habitat, and/or watershed conditions, requiring written approval from LADWP before burning,; determining the grazing rest, and appropriate flow management needed to allow recovery from fire Enhance by promoting post fire recovery of Covered Species habitat

Although LADWP is not seeking coverage for wildfire suppression activities, LADWP implements measures that minimize and mitigate these activities. LADWP Fire Risk and Control Management Plan provides guidance and direction for wildland fire suppression and prescribed fire, and outlines a number of steps to be taken for reducing natural resource impacts including protecting riparian habitats during an active fire and post-fire mop-up. This fire plan includes specific fire management guidelines such as avoiding putting fire lines through riparian habitat aimed at lessening long-term impacts to riparian areas and promoting the recovery. All wildfires in riparian habitats and Greater Sage-grouse habitats are considered a priority. CDFW and LADWP offices have an agreement in place whereby a LADWP Resource Representative is consulted on all fires on City of Los Angeles lands, and the Resource Representative is a part of the Joint Unified Command for the fire. The wildland fire agencies (CDF, BLM, Forest Service) and LADWP have an "Assistance by Hire" agreement in place to collaborate on suppressing fires (e.g., providing personnel and heavy equipment support). Unintentional fires in riparian woodland areas will be given high priority for fire suppression.

LADWP is seeking coverage for some activities associated with wildfires. After a substantial wildfire within riparian habitat, LADWP resource staff will pursue management actions to facilitate quick recovery of the habitat. These actions include flow, grazing, and recreation management adjustments to promote the recovery of habitat that is preferred by covered bird species. In addition, LADWP maintains fire breaks around communities.

Prescribed fires are intended to improve rangeland, wildlife habitat, and/or watershed conditions. Prescribed fires within riparian obligate bird species habitat avoids nesting habitat and improves foraging habitat.

5.11 Habitat Enhancement and Habitat Creation Activities

This section summarizes ongoing avoidance, minimization, and mitigation activities as well as additional actions that LADWP has identified that would improve conditions for Covered Species. Much of the material in this section is from the Recovery Attainability of Threatened and Endangered Species on City of Los Angeles Land in Inyo and Mono Counties (LADWP 2014; hereafter referred to as Recoverability Document).

Table 5- 11. LADWP’s Conservation Activities Associated with Habitat Enhancement and Habitat Creation

COVERED ACTIVITIES	DIRECT ADVERSE PHYSICAL EFFECTS ON THE ENVIRONMENT	DIRECT AND INDIRECT ADVERSE EFFECTS TO RIPARIAN OBLIGATE BIRDS	DIRECT AND INDIRECT ADVERSE EFFECTS TO GREATER SAGE-GROUSE	DIRECT AND INDIRECT ADVERSE EFFECTS TO COVERED FISHES	CONSERVATION ACTIVITIES
Lower Owens River Project flows	Decreased terrestrial habitat from flooding Potential promotion of undesirable species;	Harm from drowning of extant riparian forest	NA. Project is outside range of GRSG.	Harm from potential reduction in water quality; stranding;	Avoid by performing weed surveys and removing weeds using appropriate methods. Enhance by increasing aquatic and wetland habitats
Additional Mitigation Projects					
Freeman Creek	Decreased terrestrial and upland habitat. Potential promotion of undesirable species.	None expected	NA. Project is outside range of GRSG.	None expected. No Covered Fish are present.	Avoid by performing weed surveys and removing weeds using appropriate methods. Enhance by increasing habitat for riparian obligate birds.
Hines Spring Well 355	Decreased terrestrial and upland habitat. Potential promotion of undesirable species.	None expected.	NA. Project is outside range of GRSG.	None expected. No Covered Fish present.	Avoid by performing weed surveys and removing weeds using appropriate methods; by establishing and maintaining a fence around the riparian area. Enhance by increasing habitat for riparian obligate birds; by increasing habitat for Covered Fish Species.
Hines Spring Aberdeen Ditch	Decreased terrestrial and upland habitat. Potential promotion of undesirable species.	None expected	NA. Project is outside range of GRSG.	None expected. No Covered Fish present.	Avoid by performing weed surveys and removing weeds using appropriate methods; by maintaining riparian fencing. Enhance by increasing habitat for riparian obligate birds.

COVERED ACTIVITIES	DIRECT ADVERSE PHYSICAL EFFECTS ON THE ENVIRONMENT	DIRECT AND INDIRECT ADVERSE EFFECTS TO RIPARIAN OBLIGATE BIRDS	DIRECT AND INDIRECT ADVERSE EFFECTS TO GREATER SAGE-GROUSE	DIRECT AND INDIRECT ADVERSE EFFECTS TO COVERED FISHES	CONSERVATION ACTIVITIES
Additional Mitigation Projects					
North of Mazourka Canyon	Decreased terrestrial and upland habitat. Potential promotion of undesirable species.	None expected	NA. Project is outside range of GRSG.	None expected. No Covered Fish present.	Avoid by performing weed surveys and removing weeds using appropriate methods. Enhance by increasing habitat for riparian obligate birds; by increasing habitat for Covered Fish Species
Homestead	Decreased terrestrial and upland habitat. Potential promotion of undesirable species.	None expected	NA. Project is outside range of GRSG.	None expected. No Covered Fish present.	Avoid by performing weed surveys and removing weeds using appropriate methods. Enhance by increasing habitat for riparian obligate birds; by increasing habitat for Covered Fish Species.
Well 368	Decreased terrestrial and upland habitat. Potential promotion of undesirable species.	None expected	NA. Project is outside range of GRSG.	None expected.	Avoid by performing weed surveys and removing weeds using appropriate methods. Enhance by providing more security to OP refuge site and increasing the amount of available habitat; increasing habitat for riparian obligate birds; investigate the feasibility of using livestock grazing to manage habitat
Diaz Lake	Decreased terrestrial and upland habitat. Potential promotion of undesirable species.	None expected	NA. Project is outside range of GRSG.	None expected. No Covered Fish present.	Avoid by performing weed surveys and removing weeds using appropriate methods. Enhance by increasing habitat for riparian obligate birds.

COVERED ACTIVITIES	DIRECT ADVERSE PHYSICAL EFFECTS ON THE ENVIRONMENT	DIRECT AND INDIRECT ADVERSE EFFECTS TO RIPARIAN OBLIGATE BIRDS	DIRECT AND INDIRECT ADVERSE EFFECTS TO GREATER SAGE-GROUSE	DIRECT AND INDIRECT ADVERSE EFFECTS TO COVERED FISHES	CONSERVATION ACTIVITIES
Additional Mitigation Projects					
Warren Lake	Decreased terrestrial and upland habitat. Potential promotion of undesirable species.	None expected	NA. Project is outside range of GRSG.	None expected. No Covered Fish present.	Avoid by performing weed surveys and removing weeds using appropriate methods. Enhance by increasing habitat for riparian obligate birds.
Enhanced Flows	None expected	None expected	None expected	None expected	Enhance by creating conditions that promote revegetation of riparian forest and shrub communities.
Revegetation Activities	Potential spread of undesirable species	Harm from noise from mechanical equipment	Harm from noise from mechanical equipment	None expected	Avoid by cleaning equipment before transporting to another site Enhance by establishing native vegetation in areas previously degraded or disturbed; use locally collected species when possible.
Rotational flooding	Change in habitat from drying and flooding	None expected	None expected	Harm from potential reduction in water quality or habitat loss from drying; mortality from stranding	Enhance habitat by recycling nutrients; by creating and maintaining open water habitat
Land Management Policy and History of not promoting urban or agricultural development	None expected.	None expected.	None expected	None expected.	Enhance by promoting all landscape and habitat level biological goals, preserving habitat of Covered Species from urban or agricultural development.
YBCU enhancement project (e.g., Baker and Hogback Creeks).	Potential spread of undesirable species	Harassment from personnel	None expected	None expected	Enhance by increasing habitat for Covered Riparian Obligate Bird Species (implementing black locust (<i>Robinia pseudoacacia</i>) removal, pole plantings of cottonwood (Fremont and black [<i>P. balsamifera</i>] and willow (Goodding's [<i>S. gooddingii</i>], red

					[<i>S. laevigata</i>] and arroyo [<i>S. lasiolepis</i>], and building livestock grazing exclosures .
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COVERED ACTIVITIES	DIRECT ADVERSE PHYSICAL EFFECTS ON THE ENVIRONMENT	DIRECT AND INDIRECT ADVERSE EFFECTS TO RIPARIAN OBLIGATE BIRDS	DIRECT AND INDIRECT ADVERSE EFFECTS TO GREATER SAGE-GROUSE	DIRECT AND INDIRECT ADVERSE EFFECTS TO COVERED FISHES	CONSERVATION ACTIVITIES
Additional Mitigation Projects					
Permission to establish SD, OTC, and OP. CDFW would establish the additional populations (see table below). LADWP is not seeking coverage for CDFW's recovery actions.	Potential spread of undesirable species	Harassment from personnel.	Harassment from personnel.	Direct Mortality possible if target fish move out of Refuge Sites;	<p>Minimize by CDFW implementing an appropriate protocol to prevent or deter the spread of undesirable species</p> <p>Enhance by increasing the number of populations and with time increasing the overall population size of Covered Fish Species.</p>
Native Fish Habitat creation, enhancement and maintenance – removing undesirable plants via weed-cutting boats; drying habitat, burning, herbicides or hand tools. This work may be done by either LADWP or CDFW.	Vegetation removal from the work area; increased turbidity and pH that is localized and of short duration; undesirable species could be spread by equipment used or quickly colonize newly denuded areas	Harm from removal of riparian vegetation,; harm from undesirable species (e.g., acting as a seed source) that could infiltrate woody riparian habitat ; Potential for burns to spread beyond fire line and cause mortality or injury, or harm by impacting riparian habitat; Harassment from operation of heavy equipment; burning does not occur in woody riparian habitat;	Harassment from operation of heavy equipment; Mortality from transport and use of equipment; No burning in GRSG habitat	Harm from reduced water quality and reduced spawning habitat; mortality from removal of eggs and fish; Direct mortality from stranding; Harm from herbicide use is unknown; failure to maintain may cause harm by reducing aquatic habitat	<p>Conservation Actions associated with fish habitat enhancement and maintenance include all of those listed under Measuring Stations et al. above. In addition, Conservation Actions will</p> <p>Avoid by NOT grading on banks of waterways;</p> <p>Minimize by leaving intact any native vegetation with DBH of 4 inches or greater, using herbicides licensed for use near waterways and approved for municipal water supplies when appropriate, restricting herbicide use near known distribution of Covered Fish Species;</p> <p>Enhance by removing undesirable species</p>

COVERED ACTIVITIES	DIRECT ADVERSE PHYSICAL EFFECTS ON THE ENVIRONMENT	DIRECT AND INDIRECT ADVERSE EFFECTS TO RIPARIAN OBLIGATE BIRDS	DIRECT AND INDIRECT ADVERSE EFFECTS TO GREATER SAGE-GROUSE	DIRECT AND INDIRECT ADVERSE EFFECTS TO COVERED FISHES	CONSERVATION ACTIVITIES
Additional Mitigation Projects					
<p>Native Fish Habitat creation, enhancement and maintenance - removing undesirable aquatic animals including but not limited to non-native predatory species (e.g., trout, bass, bullfrogs, and crayfish) and hybrid species (e.g., zebra or quagga mussels). Removal methods may include manual removal, traps, electro-shocking, or chemical treatment. This work may be done by either LADWP or CDFW.</p>	<p>Potential spread of undesirable species; increased turbidity and pH that is localized and of short duration;</p>	<p>Harassment from personnel.</p>	<p>Harassment from personnel.</p>	<p>Harm from reduced water quality and reduced spawning habitat; mortality from accidental removal of eggs and fish;</p>	<p>Conservation Actions associated with native fish habitat enhancement and maintenance include all of those listed under Measuring Stations et al. above.</p>

5.12 Covered Fish Species – Establishing Additional Populations

In addition to the habitat enhancement and creation activities described above, LADWP has evaluated its lands to identify locations for establishing additional populations of Covered Fish Species.

Without altering their Covered Activities, LADWP could greatly reduce the threat of extinction for Covered Fish Species by allowing establishment of additional populations and maintaining habitat for these populations at various locations on City lands (Table 5-11). Establishing additional populations and maintenance of habitat are essential for the long term persistence of OTC and OP. Before establishing new populations (including releases into historically occupied habitats) of Covered Fish Species on City lands, because of its mission, LADWP must receive regulatory assurances that they will be able to manage waterways for continued water gathering and distribution activities and if necessary, can return sites to pre-established conditions. USFWS can offer this type of assurance for Covered Fish Species through Safe Harbor Agreements (SHA) and issuance of Enhancement for Survival Permits (50 CFR 17.22(c)(1)) which will be developed alongside this HCP. Currently, CDFW can offer this type of assurance to LADWP through a safe harbor agreement for OTC through the California Safe Harbor Agreement (Fish and Game Code 2089.2). For the OP and SD, CDFW can currently provide this assurance to LADWP only through the NCCP process, which LADWP is not electing to do because of regulatory constraints. California Safe Harbor Agreements cannot apply to OP because OP are a 'fully protected' species in California. Additionally, California Safe Harbor Agreements cannot apply to SD because SD are not listed as state threatened or endangered. However, the OP and SD are included in this HCP with the intent that should conditions change in the future that allow CDFW to offer regulatory assurances for these taxa, the information in this HCP may meet or facilitate these regulatory needs, and the species and document can be adopted or used to speed up the adoption process. LADWP requires regulatory assurances before re-establishment would be implemented at any of the locations identified in Table 5.12.

Locations with potential for establishing Covered Fish Species populations were identified in LADWP's Recoverability Document, which evaluated the locations discussed in the Owens Basin Wetland and Aquatic Recovery Plan and other locations (Table 5- 12). This table has been modified from LADWP's Recoverability Document based on additional information from the Wildlife Agencies. In the Recoverability Document, LADWP considered 46 sites that could be appropriate for the establishment of Covered Fishes. This HCP includes 32 sites that have been identified by LADWP and CDFW as having the highest likelihood of success. Once permission from LADWP is received, CDFW will survey these 32 sites to ensure conditions are appropriate for establishment and will make the final decision in consultation with USFWS regarding which Covered Fish Species to establish at each site. As multiple species introductions have had variable results in the past (Bogan et al. 2002), more than one species may be established at some sites at the discretion of the Wildlife Agencies. Establishment of additional populations of Covered Fish species will not affect LADWP's ongoing operations and maintenance activities and LADWP will not be responsible for cost associated with any translocations. LADWP will not be required to do additional habitat maintenance at these sites beyond that described in the table above.

Table 5- 12. Potential Sites for the Establishment of Covered Fishes (modified from LADWP's Recoverability Document)

POTENTIAL INTRODUCTION SITE	FISH SPECIES			PRIORITY	CHALLENGES	ACTIVITY
	SD	TC	OP			
1 Whitmore Springs	Present				No maintenance needed.	Establish LVSD if extirpation ¹ occurs
2 Little Alkali Spring	x			LVSD	Gambusia sp. present.	Remove <i>Gambusia sp.</i> Establish SD.
3 Hot Creek Hatchery	x	Present			Possible conflict with hatchery demands	Establish OTC if extirpation occurs. CDFW Investigate feasibility with hatchery. Establish SD as applicable.
4 Little Hot Creek	x	Present			None	Establish OTC if extirpation occurs. Establish SD.
5 Layton Springs	x	x		LVSD	Hybrid tui-chubs present	Install fish barrier and remove hybrid tui chubs. Establish LVSD.
6 Owens River Gorge	x	Present		OTC	Deleterious fish species present	Develop series of dams (site ES plan) to enhance OTC habitat. Establish OTC if extirpation occurs. Establish SD as applicable.
7 Fish Slough - NW Spring	x	x	x	OP	Deleterious fish and plant species present	Install fish barrier, remove deleterious plants and fish. Establish SD, OTC OP as applicable.
8 Fish Slough - NE Spring	x	x	x	OTC	None	Establish SD, OTC OP as applicable.
9 Fish Slough - other ponds	x	x	x		Deleterious fish and plant species present	Survey species and habitat present, install fish barrier, remove deleterious plants and fish. Establish SD, OTC OP as applicable.

POTENTIAL INTRODUCTION SITE		FISH SPECIES			PRIORITY	CHALLENGES	ACTIVITY
		SD	TC	OP			
10	Artesian Wells	x	x	x		Deleterious fish and plant species present	CDFW Survey to identify needs site by site. Establish SD, OTC, and OP as applicable.
11	5 Bridges Aggregate Ponds	x	x	x	OTC	None	Establish SD, OTC OP as applicable.
12	WMRS Ponds	x	Present	x		None	Establish OTC if extirpation occurs. Establish SD and/or OP as applicable.
13	Warm Springs	x	x	x	OP	None	Establish SD, OTC or OP as applicable.
14	Cal-Tech Observatory N Springs	x	x	x		None	Establish SD, OTC or OP
15	DG-31	x				Habitat condition unknown	CDFW Survey for feasibility to support fish. Establish SD as applicable.
16	Fish Springs	x	x	x		Possible conflict with hatchery demands	CDFW Investigate feasibility with hatchery. Establish SD, OTC, OP as applicable
17	Homestead Spring	x		x		Habitat condition unknown	CDFW Survey for feasibility to support fish. Establish SD or OP as applicable.
18	Keogh's Hot Springs and Ditch	x	x	x		<i>Gambusia</i> sp. Present	Remove <i>Gambusia</i> sp. Establish SD, TC, SD as applicable.
19	Fuller Meadow	x				Habitat condition unknown	CDFW Survey for feasibility to support fish. Establish SD, TC, and SD as applicable.
20	Tinemaha Toe Drain	x	x	x		None	Establish SD, TC or OP as applicable.

POTENTIAL INTRODUCTION SITE		FISH SPECIES			PRIORITY	CHALLENGES	ACTIVITY
		SD	TC	OP			
21	Hines Spring Aberdeen Ditch	x	x	x		Unknown efficacy of fish barrier	Modify fish barrier as necessary. Establish SD, TC, and OP as applicable.
22	Hines Spring Well 355 Marsh	x	x	x		None	Establish SD, OTC, and OP as applicable.
23	Homestead Project	x	x	x		None	Establish SD, OTC, and OP as applicable.
24	North of Mazourka Project	x		x		None	Establish SD OP as applicable.
25	Well 368			Present		None	CDFW manages deleterious vegetation. Re-establish OP if extirpation occurs.
26	Cottonwood Spring	x	x	x		None	Establish SD, OTC, and OP as applicable.
27	Dirty Socks	x	x	x		None	Establish SD, OTC, and OP as applicable.
28	Horse Pasture Pond	x		x	OSD	None	Establish SD OP as applicable.
29	Lubkin Spring	x		x		None	Establish SD, OTC, and OP as applicable.
30	Reinhackle Spring	x	x	x		Deleterious fish present	Remove deleterious fish and plant species. Establish SD, OTC, and OP as applicable.
31	South Haiwee Reservoir Toe Drain	x	x	x		None	Establish SD, OTC, and OP as applicable.
32	Swede's Pasture	x		x	OSD	None	Establish SD OP as applicable.

¹ Extirpation includes populations that are so low they are likely to go extinct.

CDFW would establish additional populations in coordination with USFWS, and LADWP. Sites in bold are top priorities. Additional sites may be considered in the future.

5.13 Habitat Enhancement and Maintenance for Covered Bird Species

For Covered Bird Species, LADWP is enhancing and maintaining habitat for Covered Bird Species through implementation of various plans and strategies. LADWP's overall land management, which includes flow management, livestock grazing, road maintenance, recreation management, weed management, and fire management activities described in separate sections above, contributes to habitat enhancement for Covered Bird Species. In addition, the Lower Owens River Project and the Additional Mitigation Projects Developed by the Ad Hoc Group (including Hines Spring) are expected to increase habitat for riparian obligate birds. Through implementation of this HCP, LADWP is committing to maintaining and enhancing 31,511 acres of existing habitat for GRSG, 522.7 acres of existing habitat for YBCU, 1959.4 acres of existing habitat for SWWF, and 706 acres of existing LBVI habitat.

GRSG: LADWP and USFWS developed a "Conservation Strategy for the Bi-State Distinct Population Segment of Greater Sage-Grouse on City of Los Angeles Department of Water and Power Lands, North and South Mono Lake Habitat Units. Mono County, California." This Conservation Strategy formalizes the ongoing conservation efforts by the LADWP on its land in Mono County for the Greater Sage-Grouse. These conservation efforts were developed and implemented in coordination with the Bi-State Local Area Working Group for the Greater Sage-grouse. The conservation actions contained in the Conservation Strategy are summarized in Table 5-11 above.

YBCU: LADWP and USFWS developed a "Draft Conservation Strategy for the Yellow-billed Cuckoo on City of Los Angeles Department of Water and Power Lands." One of the main threats to YBCU is loss of riparian forest habitat quantity and quality (USFWS 2013). LADWP has several programs to enhance, maintain, and restore riparian habitat throughout the Plan Area. For example, LADWP has committed to maintaining and enhancing 522.7 acres of existing YBCU habitat predominantly at Hogback Creek and Baker Creek areas. This will be accomplished by appropriate management of Livestock Grazing, Outdoor Recreation, Road Maintenance, Weed Maintenance and Wildfire and Prescribed Fire (specific activities described in those sections). In addition, LADWP has committed to protecting riparian forest/scrub communities including the proposed critical habitat unit CA-5 (79FR 48548) and additional areas mapped as potential habitat based on the YBCU species specific model.

As part of the 1997 MOU, LADWP has implemented the YBCU Enhancement Plan (LADWP 2009) at Hogback and Baker Creeks. At Baker Creek, the YBCU Habitat Enhancement Plan includes a planting schedule to enhance habitat and restore burned habitat, a grazing management plan with two exclosures around the highest quality YBCU habitat, totaling 234.6 acres, and the prohibition of OHV use within these exclosures. Because the enhanced habitat will likely result in an increased volume of fire fuels, a fire break has been added and will be maintained between the Baker Creek project area and the town of Big Pine. In addition to implementing the forage utilization criteria (described in Livestock Grazing Section above), livestock grazing at the Hogback Creek area is set at 40-50 head of livestock from Jan 1- April 30 of each year (+/- 10 days in response to climatic conditions, forage availability and herd management needs). A fence is now in place and will be maintained to keep out any trespassing livestock.

SWWF: LADWP and USFWS developed a "Conservation Strategy for the Southwestern Willow Flycatcher on City of Los Angeles Department of Water and Power Lands in the Owens Management Unit." This Conservation Strategy formalizes the ongoing conservation efforts by the LADWP on its land in the Owens Management Unit for the SWWF. The conservation actions contained in the Conservation Strategy are summarized in the tables above (see tables on Livestock Grazing, Outdoor Recreation Management, Weed Management, and Wildfire/Prescribed Fire Management).

LBVI: Although there are no management actions that have been identified in conservation strategies or management plans specific to the LBVI, LADWP implements management actions that enhance,

maintain, and restore habitats used by LBVI. These include grazing management practices that promote the establishment of native willow habitat adjacent to the Owens River and tributaries, and recreation, weed, and fire management in these areas.

Habitat creation and enhancement associated with the projects described below are expected to benefit the habitats of the three riparian obligate birds.

Under the LORP, LADWP is implementing restoration efforts that include 1) releasing water to the Lower Owens River to enhance native and game fisheries and riparian habitats along 62 miles of the river; 2) providing water to the Owens River Delta to maintain and enhance various wetland and aquatic habitats; 3) enhancing a 1,500-acre off-river area with seasonal flooding and land management to benefit wetlands and waterfowl; and 4) maintaining several off-river lakes and ponds (LADWP 2004, 2006).

Through Section III.A.3 of the 1997 MOU, LADWP has committed 1600 acre-feet of water per year to additional projects to mitigate impacts to springs in the Owens Valley. In 2008, a subgroup of MOU party members clarified these projects in the document Additional Mitigation Projects Developed by the MOU Ad Hoc Group (September 2008). In addition to providing the water to these sites, LADWP also monitors and eradicates undesirable species (including but not limited to saltcedar and pepperweed) at these sites. Specific fencing and grazing management varies by site and is described in Section 2.

LADPW also implements enhanced flows that are voluntary temporary increases in flows along the Owens River and elsewhere. The purpose of the enhanced flows is to stimulate the recovery and regeneration of riparian vegetation. They also include suspension of water diversions along tributaries in Long Valley to pass peak flow in spring.

5.14 Monitoring Activities

LADWP monitors biological and cultural resources throughout the Plan Area. These Covered Activities include fisheries monitoring (e.g., trout surveys), vegetation surveys (e.g., rare plant monitoring), bird surveys, forage utilization surveys, vegetation mapping, monitoring to avoid disturbance to historic and prehistoric resources, monitoring for compliance with best management practices. Implementation of these activities may result in take.

Table 5- 13. Conservation Actions Associated with Monitoring Activities on Covered Species.

Covered Activities	Direct Physical Effects on the Environment	Direct and Indirect Effects to Riparian Obligate Birds	Direct and Indirect Effects to Greater Sage-grouse	Direct and Indirect Effects to Covered Fishes	Conservation Actions
Structured surveys	Undesirable species or disease could be spread by surveyors or equipment used	Harassment from the presence of personnel and the operation of equipment	Harassment from the presence of personnel and the operation of equipment	Harassment from the presence of personnel and the operation of equipment;	Avoid by cleaning and disinfecting equipment; Minimize by staying on existing roadways or conducting opportunistic surveys on foot
Electroshocking	Electric charge emitted into waterway	Harassment from the presence of personnel and the operation of equipment	Harassment from the presence of personnel and the operation of equipment	Harassment from the presence of personnel and the operation of equipment; direct mortality or injury	Avoid by cleaning and disinfecting equipment; Minimize by ensuring proper setting of the equipment

During monitoring activities, LADWP implements management practices that avoid or minimize adverse effects to Covered Species.