

APPENDIX G2
Functional Survey Groupings

APPENDIX G2 Functional Survey Groupings

Preserve Vernal Pool – Wet Season Surveys

Attribute/Species (Scientific Name)	Survey Type	Survey Window*
Inundation/ponding	Aerial photos/field verification	Winter/Spring
<i>Plants</i>		
Ahart's dwarf rush (<i>Juncus leiospermus</i> var. <i>ahartii</i>)	Wet season	February 15 through April 30
Dwarf downingia (<i>Downingia pusilla</i>)	Wet season	March 1 through May 31
Legenere (<i>Legenere limosa</i>)	Wet season	April 1 through June 30
Pincushion navarretia (<i>Navarretia myersii</i> ssp. <i>myersii</i>)	Wet season	April 1 through May 31
Boggs Lake hedge-hyssop (<i>Gratiola heterosepala</i>)	Wet season	April 1 through July 31
<i>Wildlife</i>		
Vernal pool tadpole shrimp	Wet season	Wet season – winter/spring
Vernal pool fairy shrimp (<i>Branchinecta lynchi</i>)	Wet season	Wet season – winter/spring
Mid-valley fairy shrimp (<i>Branchinecta mesovallensis</i>)	Wet season	Wet season – winter/spring
Ricksecker's water scavenger beetle (<i>Hydrochara rickseckeri</i>)	Wet season	Winter/spring
California tiger salamander (<i>Ambystoma californiense</i>)	Larval surveys – dip netting	March through May
	Adult surveys – drift fences, pitfall traps, night visual	October 15 through March 15
Western spadefoot (<i>Spea hammondi</i>)	Larval surveys	October through May

* Survey windows subject to revision.

Preserve Vernal Pool – Dry Season Surveys

Attribute/Species (Scientific Name)	Survey Type	Survey Window
Residual dry matter	Dry season	Fall
<i>Plants</i>		
Sacramento Orcutt grass (<i>Orcuttia viscida</i>)	Dry season	May 1 through June 30
Slender Orcutt grass (<i>Orcuttia viscida</i>)	Dry season	May 1 through July 31
Sanford's arrowhead (<i>Sagittaria sanfordii</i>)	Dry season	May 1 through September 30

Preserve Riparian Surveys

Attribute/Species (Scientific Name)	Survey Type	Survey Window
CRAM	—	All year
Restoration monitoring	—	All year

APPENDIX G2 (Continued)

Attribute/Species (Scientific Name)	Survey Type	Survey Window
<i>Wildlife</i>		
Cooper's hawk (<i>Accipiter cooperii</i>)	Foraging	All year
	Nesting	March 15 through August 15
White-tailed kite (<i>Elanus leucurus</i>)	Nesting	March 15 through August 15
Swainson's hawk (<i>Buteo swainsoni</i>)	Nesting	March 15 through August 15
Western pond turtle (<i>Actinemys marmorata</i>)	Aquatic/basking sites	June through September (sunny days to observe basking)
Giant gartersnake (<i>Thamnophis gigas</i>)	Aquatic/basking sites	May 1 through September 30
Valley elderberry longhorn beetle (<i>Desmocerus californicus dimorphus</i>)	Exit hole surveys	All year

CRAM = California Rapid Assessment Method

Preserve Vernal-Pool Grassland and Valley Grassland Surveys

Attribute/Species (Scientific Name)	Survey Type	Survey Window
Residual dry matter	—	Fall
<i>Wildlife</i>		
Tricolored blackbird (<i>Agelaius tricolor</i>)	Foraging	All year
	Nesting	March 15 through June 15
Western burrowing owl (<i>Athene cunicularia</i>) (occupied nesting burrows)	Nesting/Wintering	All year
Ferruginous hawk (<i>Buteo regalis</i>)	Foraging	November 1 through February 28
Swainson's hawk (<i>Buteo swainsoni</i>)	Foraging	March 15 through August 15
Northern harrier (<i>Circus cyaneus</i>)	Foraging	All year
	Nesting	March 15 through August 15
White-tailed kite (<i>Elanus leucurus</i>)	Foraging	All year
Loggerhead shrike (<i>Lanius ludovicianus</i>)	Foraging	All year
	Nesting	February 1 through June 30
American badger (<i>Taxidea taxus</i>)	Grassland/savanna	All year
Pallid bat (<i>Antrozous pallidus</i>)	Foraging	April through November
Western red bat (<i>Lasiurus blossevillii</i>)	Foraging	April through November
Yuma myotis (<i>Myotis yumanensis</i>)	Foraging	April through November

Cropland and Irrigated Pasture Preserve Surveys

Attribute/Species (Scientific Name)	Survey Type	Survey Window
Crop type	Mapping/Field Inspection	During growing season
<i>Wildlife</i>		
Greater sandhill crane (<i>Grus canadensis</i>)	Foraging – cropland and irrigated pasture grassland	September 1 through February 15
Loggerhead shrike (<i>Lanius ludovicianus</i>)	Foraging – cropland and irrigated pasture grassland	All year

APPENDIX G2 (Continued)

Attribute/Species (Scientific Name)	Survey Type	Survey Window
Swainson's hawk (<i>Buteo swainsoni</i>)	Foraging – cropland and irrigated pasture grassland	March 15 through August 15
Northern harrier (<i>Circus cyaneus</i>)	Foraging – cropland and irrigated pasture grassland	All year
	Nesting – cropland and irrigated pasture grassland	March 15 through August 15
Tricolored blackbird (<i>Agelaius tricolor</i>)	Foraging – cropland and irrigated pasture grassland	All year
	Nesting – cropland only	–
Western burrowing owl (<i>Athene cunicularia</i>)	Wintering – cropland and irrigated pasture grassland	July 16 through February 14 (non-breeding season)
	Nesting – cropland and irrigated pasture grassland	February 15 through July 15 (breeding season)
White-tailed kite (<i>Elanus leucurus</i>)	Foraging – cropland and irrigated pasture grassland	All year
Pallid bat (<i>Antrozous pallidus</i>)	Foraging – all agricultural land types, roosting – orchards only	April through November
Western red bat (<i>Lasiurus blossevillii</i>)	Foraging – all agricultural lands, roosting – orchards only	April through November

Bat Roost Surveys

Attribute/Species (Scientific Name)	Survey Type	Survey Window
Roost installation inspection	Field verification	Any time
<i>Wildlife</i>		
Pallid bat (<i>Antrozous pallidus</i>)	Roosts	April through November
Yuma myotis (<i>Myotis yumanensis</i>)	Roosts	April through November

APPENDIX G2 (Continued)

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APPENDIX G3

Preserve Management Toolbox

APPENDIX G3

Preserve Management Toolbox

G3.1 Introduction

This appendix presents a management “toolbox” that will be used in the development of individual Preserve Management Plans (PMPs). The Implementing Entity will consult this appendix during PMP preparation to identify those management activities that could apply to their parcels to achieve the measureable objectives and other commitments of the South Sacramento Habitat Conservation Plan (SSHCP) Conservation Strategy. The following describes the toolbox of potential land management methods, their potential applications, and potential limitations to provide information for how and why the methods will be applied. These descriptions do not include discussions of detailed management methods such as timing, frequency, or combining methods. Such details will be incorporated into individual PMPs depending on the selected methods. Following the description of land management methods, the methods are presented in a matrix (Table G3-1) that identifies how they might be used to address threats and stressors to SSHCP land cover types and Covered Species habitats.

G3.2 Routine Preserve Maintenance and Land Management

Routine management refers to a variety of Preserve management activities generally expected to benefit Covered Species and their habitats, including fencing, signage, public education, trash and refuse removal, general inspections, patrols, and enforcement. Most of the routine management activities are related to minimizing the effects of adjacent urban development and associated human activities on biological resources within Preserves.

Patrols also are expected to reduce intentional and accidental fire ignitions (e.g., from discarded cigarettes).

Fencing

Installation and regular inspection of fencing and gates, and immediate repair when necessary, is critical to exclude indirect effects such as trash dumping, off-road-vehicle activity, and trespassing on SSHCP Preserves. Fencing maintenance is also critical for control of livestock that will be used for vegetation management. Internal cross-fencing, if desired to more closely control grazing locations, must be carefully considered to ensure that water remains available for livestock and to avoid restrictions on wildlife travel corridors.

Maintain Agricultural Facilities and Structures

Facilities and structures that are necessary for pre-acquisition agricultural operations on a new SSHCP Preserve should be repaired and maintained, and those for which there is no current or anticipated need should be removed or re-used elsewhere within the SSHCP Preserve System.

APPENDIX G3 (Continued)

Abandoned and derelict structures such as sheds and barns may be used by bats for day roosts, including at least two of the covered bat species (pallid bat (*Antrozous pallidus*) and Yuma myotis (*Myotis yumanensis*)). Therefore, these should only be removed or moved elsewhere if they are unoccupied by bats.

Debris and Trash Removal

All Preserves and Preserve parcels and adjoining areas should be regularly inspected for debris and trash accumulation, including that resulting from agricultural operations on Cropland and Irrigated Pasture Preserves. At a minimum, the Implementing Entity will conduct bi-annual cleanup days to remove trash from each SSHCP Preserve, and will coordinate with the county to have illegal dumping cleared from adjacent roadway shoulders.

If there are stockpiles of what must be retained on a Preserve site, they should be on graveled or bare dirt areas that have been pre-treated with herbicides to control weeds.

Methods for Preserve Fire Breaks

Fire breaks adjacent to public roads are required by Plan Area fire protection districts. Districts recommend fire breaks to be 16 feet in width and created using a disk line or scrape line in the spring or early summer after grass growth has slowed. Disked fire breaks are preferred as they will support plants the following year and scraped breaks do not. Internal fire breaks within Preserve units should be phased out. Fire breaks required for prescribed burns should consist of creating a black line around the prescribed burn area.

Methods to Limit Off-Road Travel

The Implementing Entity will limit off-road-vehicle use by Preserve staff on Preserves to during the wet season. When off-road-vehicle use is required for ranching operations, operators will not drive through vernal pools.

Method to Minimize Impacts from Existing Utility Corridors

Holders of utility easements that traverse Preserves will be escorted by Preserve Managers to ensure that their activities remain within the easements and that access routes are consistent with the PMP.

Install and Maintain Appropriate Signage

All SSHCP Preserve parcels will have signs posted along any fenceline and any gate that adjoins a public road or other public area (e.g., public parks). Sign content is at the discretion of the

APPENDIX G3 (Continued)

Implementing Entity depending on the purpose of the sign (e.g., no trespassing, description of the Preserve), but must include a public information telephone number.

G3.3 Habitat Vegetation Management, Thatch Control, and Non-Native Plant Control

Grazing

Grazing management is expected to be a primary habitat management tool on SSHCP Preserves to control vegetation such as annual grass thatch and some invasive weeds. The primary grazers in the Plan Area will be cattle, but targeted grazing may be conducted using sheep and goats depending on the size of the Preserve and the objective of the grazing (e.g., a specific invasive species or an area not available for cattle grazing). Grazing can have beneficial and adverse effects on natural resources in the SSHCP Preserve System depending on factors such as stocking rates and timing of grazing activities, and grazing management will address both types of effects. Over-grazing and large congregations of grazers can have severe effects on vegetation communities, Covered Species habitat, soil conditions, stormwater runoff, and water quality, and a lack of grazing or under-grazing can result in buildup of thatch, which can reduce habitat quality for SSHCP Covered Species, including altering vernal pool hydrology, altering vegetation community composition, and increasing the risk of catastrophic wildfires. Generally, grazing objectives are expressed as the desired residual dry matter (RDM) left after grazing, but may also include objectives related to protecting certain resources (e.g., Riparian zones, Oak Woodland).

Controlled grazing can be a useful management tool for a variety of natural resources. For example, it can be used to control thatch buildup in the Vernal Pool Grassland, Grassland, and Woodland Savanna land covers. Reducing thatch can maintain vernal pool hydroperiods and allow vernal pool species to complete their aquatic life cycle phases. Reducing thatch also improves growth and recruitment of upland plant species such as annual wildflowers and oak trees (as long as trampling or browsing of seedlings and saplings is controlled); reduces the buildup of fuels that increases the chance of catastrophic wildfires; improves overland movement capabilities of species such as California tiger salamander (*Ambystoma californiense*) and western spadefoot (*Spea hammondi*); and encourages use by burrowing species such as California ground squirrel (*Otospermophilus beecheyi*), gopher, and other rodents whose burrows provide refuge or denning habitats for Covered Species such as tiger salamander, western spadefoot, giant gartersnake (*Thamnophis gigas*), and burrowing owl (*Athene cunicularia*), and provides prey for several of the bird Covered Species.

Managed grazing on SSHCP Preserves will be needed to address potential adverse effects of grazing, including impacts on wetland, riparian, and woodland vegetation (e.g., trampling and

APPENDIX G3 (Continued)

browsing); soil disturbances; invasive exotic species establishment; and water quality impacts where cattle and other grazers may congregate. These are indicated as “inappropriate grazing” effects in Table G3-1.

Managed grazing to avoid adverse effects includes appropriate stocking rates, seasonal timing of grazing activities, rotational grazing patterns, distributing resources such as water and mineral and salt licks to disperse cattle and avoid congregation in sensitive areas (e.g., Wetland and Riparian habitats), and exclusion fences to protect sensitive areas.

Prescribed Burns

Prescribed burns (also called controlled burns) can be used as an alternative to grazing as a Grassland and Vernal Pool Grassland management tool. Prescribed burns may also be used to reduce thatch and reduce fuel loads in Shrub Land cover types. Prescribed burns may improve vegetation communities by reducing total cover (that shades out recruits), removing senescent individuals, controlling pests, and promoting nutrient cycling. It is expected that prescribed burns will primarily be used only in the larger SSHCP Preserves to control thatch, but may also be used as a targeted method to control certain invasive plant species such as medusahead (*Taeniatherum caput-medusae*) and goatgrass (*Aegilops cylindrica*) that are unpalatable to grazers.

Although prescribed burning may be used to control other invasive species, its effectiveness has not been well tested. Factors such as the optimum season(s) to burn and the frequency of burns in the Plan Area need to be investigated. It is unlikely that prescribed burns will be used on a large scale in SSHCP Preserves located in the Urban Development Area because of public safety and air quality concerns, but it may be useful on a smaller scale and/or in more remote areas of the SSHCP Preserve System.

Mowing

Similar to grazing and prescribed burns, mowing may be used to control thatch and invasive species. Mowing generally will be used in the larger-size SSHCP Preserves with Vernal Pool Grassland land cover, and probably will be used on smaller SSHCP Preserves than grazing management and prescribed burning management actions, and where these other land management methods cannot be feasibly used.

Similar to prescribed burning, the optimum seasons and frequency of mowing, and the appropriate mowing heights (e.g., to affect targeted species but avoid inadvertent impacts to species) are resource-specific and will need additional study to understand the most effective applications of mowing.

APPENDIX G3 (Continued)

Manual Removal of Vegetation

Manual removal refers to the use of weed trimmers, raking, hand- or tool-pulling, chainsaws, digging, hand-cutting, and other methods. These typically are used at small scales to target certain vegetation issues. Manual removal may be desirable were large-scale methods could cause substantial damage to sensitive resources such as native riparian species. Raking can be used to reduce thatch in smaller areas where other methods cannot be used, and the other methods are often species-specific removal methods. For example, weed trimmers are effective in cutting back infestations of starthistle (*Centaurea solstitialis*).

Pesticides (Including Herbicides)

As discussed in Chapter 5, pesticide use on SSHCP Preserves is not a SSHCP Covered Activity. However, herbicides may be used for management in targeted situations where potential adverse effects on sensitive resources (e.g., unintended drift, runoff) will not occur and no take of Covered Species is possible. Most of the available herbicides are non-selective for specific types of plants (e.g., glyphosate and paraquat), so they will be limited to targeted situations. Herbicide use is also expensive and labor intensive. Herbicides may be effective when used in conjunction with other removal methods such a “cut-and-spray” of invasive plants. Herbicides will be well-tested at a small scale before applied at a larger scale.

Biological Controls

Biological controls generally refer to use of biological organisms (e.g., pathogens, insects) to control invasive plants and animals. Relatively little is known about effective biological controls for Plan Area management issues, but some research indicates the potential for biological controls for invasive plants such as starthistle, Italian thistle (*Carduus pycnocephalus*), and milk thistle (*Silybum marianum*).

G3.4 Wildlife Management on Preserves

Domestic Animal Control

With the exception of livestock—domestic animals used exclusively in agricultural operations—domestic animals will be prohibited within Preserves. Signs prohibiting the presence of domestic animals within Preserves will be clearly posted along any fenceline and any gate that adjoins a public road or other public area (e.g., public parks). Pet dogs along public roadways or trails crossing or adjacent to Preserves must remain on a leash at all times. The Implementing Entity will monitor for unattended domestic or feral animals that are observed within the Preserves, report the occurrences to the appropriate animal control agencies, and take other necessary steps to legally remove feral animals.

APPENDIX G3 (Continued)

Guard Animals for Herds

Grazing herds (especially sheep, if used) might be protected from naturally occurring predators through use of guard dogs or donkeys. Lethal control of native predator species will not be used on SSHCP Preserves.

Trapping

Trapping refers to a broad set of management tools that may be used to remove invasive wildlife and urban-related predators. For example, brown-headed cowbird (*Molothrus ater*) trapping can be used to reduce nest parasitism; cowbirds are known to parasitize loggerhead shrike (*Lanius ludovicianus*) nests.

Trapping may be used to control bullfrogs (*Lithobates catesbeianus*) and crayfish in aquatic Covered Species breeding habitats.

Trapping may be used to remove certain urban-related non-native predators or non-native pests such as raccoons, opossums, and non-native rats and mice from sensitive areas where they are impacting a SSHCP Covered Species, under the direction or with permission from the California Department of Fish and Wildlife.

Rodent Burrow Management

Burrow management primarily refers to maintaining existing ground squirrel burrows and enhancing burrow availability for use by Covered Species such as California tiger salamander, western spadefoot, giant gartersnake, and burrowing owl. Maintaining and enhancing ground squirrel burrows will be related to other land management activities, such as thatch management. Burrowing mammals tend to be more prevalent where vegetative cover is lower.

Pesticides

The Implementing Entity will ensure that pesticide use will not result in any direct or indirect adverse effects on Covered Species by limiting use of pesticides and controlling application to only where needed. An example of a potential beneficial use of pesticides is Argentine ant control (*Linepithema humile*) (e.g., nest/mound treatments and broadcast application), but only where it can be shown to have no effects on native species, habitats, and other factors such as water quality.

Vector control in Sacramento County refers to mosquito and West Nile virus controls. West Nile virus is known to infect Cooper's hawk (*Accipiter cooperii*) and loggerhead shrike, and raptors such as white-tailed kite (*Elanus leucurus*) could be infected through ingestion of prey such as

APPENDIX G3 (Continued)

smaller birds and rodents or directly by bites. Similar to pesticide use on SSHCP Preserves, vector control has potential for both beneficial and detrimental indirect effects on wildlife, including Covered Species. Although controlling mosquitos to reduce the chance of West Nile virus infections will be beneficial to humans, spraying Preserve habitat with pesticides (e.g., Dibrom) can have harmful effects on water quality and potential direct and secondary toxic effects on wildlife. Releasing mosquitofish (*Gambusia affinis*) can also adversely affect Covered Species such as vernal pool invertebrates, California tiger salamander, and western spadefoot.

G3.5 Management of Aquatic Land Covers on Preserves

Sediment Removal

Sediment removal may be a useful management tool for maintaining aquatic land covers and some semi-aquatic Covered Species—such as California tiger salamander and western pond turtle (*Actinemys marmorata*)—that can benefit from deeper water within a ponded area. For example, deeper water may provide tiger salamanders protection from some predatory birds such as herons and urban-related predators such as raccoons. Sediment removal may be conducted in conjunction with draining Emergent Wetland land cover and open water, described below.

Wetland Draining

Draining primarily is a tool for managing bullfrogs, crayfish, and non-native predatory fish in California tiger salamander and western spadefoot breeding habitats. Perennial wetlands (e.g., stockponds) that are suitable for tiger salamander, western spadefoot, and western pond turtle may benefit from periodic draining in the summer/fall to eliminate non-native predators that require aquatic habitat. Also, wetland draining may control excessive emergent wetland vegetation that degrades aquatic habitat for tiger salamander.

APPENDIX G3 (Continued)

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**Table G3-1
Threats, Stressors, and Potential Management Methods**

Resource	Threats and Management Issues	Potential Management Methods																			
		Vegetation Management and Non-Native Plant Control						Hydrology Management		Wildlife Management						Routine Maintenance					
		Grazing	Prescribed Burns	Mowing	Manual Removal	Herbicides	Biological Controls	Sediment Removal	Wetland Draining	Trapping	Pesticides	Domestic Animals	Vector Control	Burrows	Guard Animals	Fencing	Structures	Trash Removal	Fire Breaks	Off-Road Travel	Maintain Nature Trails
<i>Aquatic Habitats and Species</i>																					
Vernal Pool and Vernal Pool Grassland Watersheds, Vernal Pool Species	Thatch	•	•	•	•	•															
	Invasive plants	•	•	•	•	•	•									•	•		•	•	
	Invasive wildlife						•		•	•	•				•		•				
	Hydrology	•	•	•	•	•														•	
	Nitrogen deposition		•																	•	•
	Inappropriate grazing	•										•			•	•					
	Human activity											•			•	•	•		•	•	•
	Altered fire regime	•	•	•	•	•												•	•	•	•
Other Wetlands	Invasive plants	•			•	•	•									•	•		•	•	
	Invasive wildlife						•		•	•	•				•		•				
	Hydrology	•			•	•		•												•	
	Inappropriate grazing	•									•			•	•	•					
Riparian	Invasive plants	•			•	•	•									•	•		•	•	
	Invasive wildlife						•		•	•	•				•		•				
	Inappropriate grazing	•									•			•	•	•					
	Hydrology	•			•	•														•	
Valley Grassland	Thatch	•	•	•	•	•															
	Invasive plants	•	•	•	•	•	•										•		•	•	
	Inappropriate grazing	•									•			•	•	•					
	Altered fire regime	•	•	•	•	•											•	•	•	•	•
Amphibians	Thatch	•	•	•	•	•															
	Hydrology	•	•	•	•	•		•												•	
	Emergent vegetation				•				•												
	Invasive plants	•	•	•	•	•	•									•	•		•	•	
	Invasive wildlife						•		•	•	•				•		•				
	Inappropriate grazing	•									•			•	•	•					
	Upland refugia	•	•	•	•	•					•			•							
	Human activity										•				•	•	•		•	•	•
	Native predators							•													
	Urban-related predators							•		•	•				•						

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Threats, Stressors, and Potential Management Methods**

Resource	Threats and Management Issues	Potential Management Methods																				
		Vegetation Management and Non-Native Plant Control						Hydrology Management		Wildlife Management						Routine Maintenance						
		Grazing	Prescribed Burns	Mowing	Manual Removal	Herbicides	Biological Controls	Sediment Removal	Wetland Draining	Trapping	Pesticides	Domestic Animals	Vector Control	Burrows	Guard Animals	Fencing	Structures	Trash Removal	Fire Breaks	Off-Road Travel	Maintain Nature Trails	Signage
	Pesticides										•											
	Disease										•											
	Altered fire regime	•	•	•	•												•	•	•	•	•	
Semi-Aquatic Reptiles	Thatch	•	•																			
	Hydrology	•	•	•	•	•		•												•		
	Invasive plants	•	•	•	•	•	•									•		•		•	•	
	Invasive wildlife						•		•	•	•	•			•		•					
	Inappropriate grazing	•										•			•	•						
	Human activity										•				•	•	•			•	•	
	Urban-related predators									•		•			•	•				•	•	
	Pesticides										•											
	Altered fire regime	•	•	•	•	•										•		•	•	•	•	•
	<i>Upland Habitats and Species</i>																					
Woodland	Thatch	•	•	•	•	•																
	Invasive plants	•	•	•	•	•	•									•		•		•	•	
	Invasive wildlife						•		•	•	•				•		•					
	Inappropriate grazing	•										•			•	•						
	Hydrology	•	•	•	•	•														•		
Bird Covered Species	Hydrology	•	•	•	•	•														•		
	Invasive plants	•	•	•	•	•										•		•		•	•	
	Invasive wildlife						•			•	•	•			•		•					
	Inappropriate grazing	•										•			•	•						
	Dens (burrowing owl)	•	•	•	•	•					•			•						•		
	Human activity										•				•	•	•			•	•	
	Urban-related predators									•		•			•	•						
	Pesticides										•											
	Altered fire regime	•	•	•	•	•												•	•	•	•	•
	Disease											•	•									
Mammals	Hydrology	•	•	•	•	•														•		
	Invasive plants	•	•	•	•	•										•		•		•	•	
	Inappropriate grazing	•										•			•	•						
	Human activity										•				•	•	•			•	•	

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Threats, Stressors, and Potential Management Methods**

Resource	Threats and Management Issues	Potential Management Methods																			
		Vegetation Management and Non-Native Plant Control						Hydrology Management		Wildlife Management						Routine Maintenance					
		Grazing	Prescribed Burns	Mowing	Manual Removal	Herbicides	Biological Controls	Sediment Removal	Wetland Draining	Trapping	Pesticides	Domestic Animals	Vector Control	Burrows	Guard Animals	Fencing	Structures	Trash Removal	Fire Breaks	Off-Road Travel	Maintain Nature Trails
	Urban-related predators									•		•					•				
	Pesticides										•										
	Altered fire regime	•	•	•	•	•											•	•	•	•	•
	Disease								•			•	•								

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