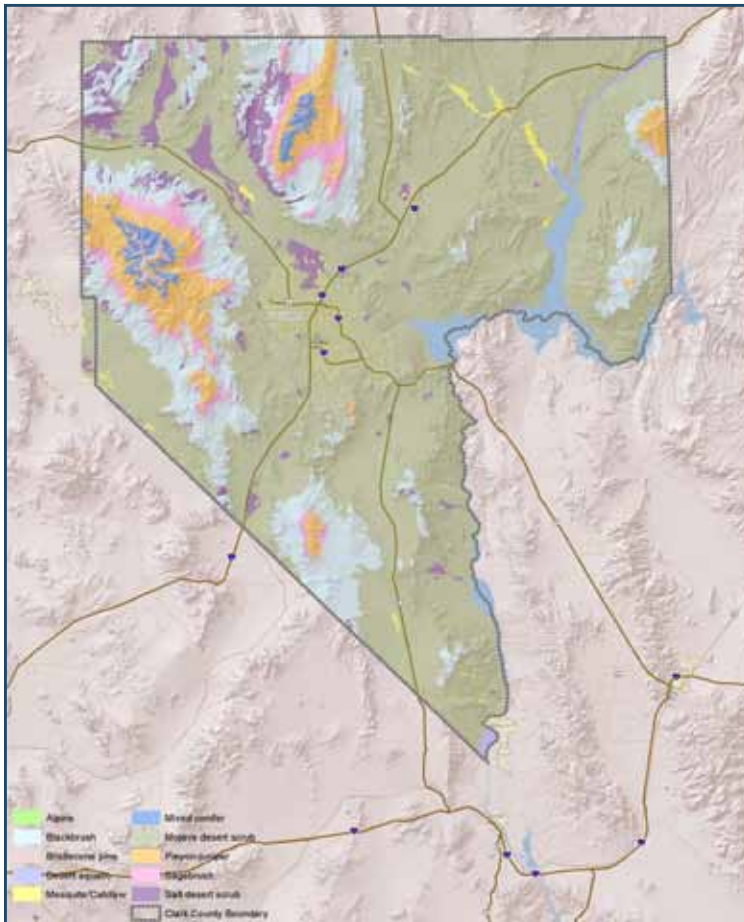


# Mitigation under the Current MSHCP

## Mitigation under the Current MSHCP

The conservation and mitigation strategy outlined in the Clark County Multiple Species Habitat Conservation Plan (MSHCP) is focused on landscape-scale mitigation that conserves healthy, functioning ecosystems and the species that are supported by them. The MSHCP plan area is organized by elevation and range into 12 ecological zones and vegetation types:



Ecosystems Defined in the MSHCP

- Alpine
- Bristlecone Pine
- Mixed Conifer (White Fir, Ponderosa Pine, Ponderosa Pine/Mountain Shrub)
- Pinyon-Juniper (Mountain Shrub, Pinyon Pine, Pinyon Juniper, Juniper)
- Sagebrush (Sagebrush and Sagebrush/Perennial Grasslands)
- Blackbrush (Blackbrush and Hopsage)
- Salt Desert Scrub
- Mojave Desert Scrub (Creosote-Bursage and Mojave Mixed Scrub)
- Mesquite/Catclaw
- Desert Riparian/Aquatic (Lowland Riparian, including Muddy and Virgin River systems and Las Vegas Wash)
- Springs
- Other (sand dune, gypsiferous soil, rock outcrop, dry lake bed and playa, barren, agriculture, non-native grassland, urban)

The MSHCP segregates covered species into groups that use each ecosystem type. Specific and general threats to these ecosystems were identified and then compared with existing laws, and regulations to determine what additional conservation measures were needed to ensure adequate conservation of the ecosystems for each covered species.

Ecosystems used by Covered Species													
COMMON	SCIENTIFIC		Alpine	Bristlecone Pine	Mixed Conifer	Pinyon Juniper	Sagebrush	Blackbrush	Salt Desert Scrub	Mojave Desert Scrub	Mesquite-Catclaw Acacia	Desert Riparian and Aquatic	Spring
Silver-haired bat	<i>Lasiorycteris noctivagans</i>	Mammal			Y	Y			Y		Y	Y	Y
Long-eared myotis	<i>Myotis evotis</i>	Mammal			Y	Y	Y		Y		Y	Y	Y
Long-legged myotis	<i>Myotis volans</i>	Mammal			Y	Y	Y						Y
Palmer's chipmunk	<i>Neotamias palmeri</i>	Mammal		Y	Y	Y							
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	Bird										Y	
Southwestern Willow Flycatcher	<i>Empidonax traillii extimus</i>	Bird										Y	
American Peregrine Falcon	<i>Falco peregrinus anatum</i>	Bird			Y	Y	Y					Y	
Blue Grosbeak	<i>Guiraca caerulea</i>	Bird										Y	
Phainopepla	<i>Phainopepla nitens</i>	Bird									Y	Y	
Summer Tanager	<i>Piranga rubra</i>	Bird										Y	
Vermilion Flycatcher	<i>Pyrocephalus rubinus</i>	Bird									Y	Y	
Arizona Bell's Vireo	<i>Vireo bellii arizonae</i>	Bird										Y	
Glossy snake	<i>Arizona elegans</i>	Reptile				Y			Y	Y			
Banded gecko	<i>Coleonyx variegatus</i>	Reptile				Y	Y	Y		Y	Y	Y	
Sidewinder	<i>Crotalus cerastes</i>	Reptile							Y	Y	Y		
Speckled rattlesnake	<i>Crotalus mitchellii</i>	Reptile				Y	Y	Y	Y	Y			
Mojave green rattlesnake	<i>Crotalus scutulatus scutulatus</i>	Reptile						Y		Y			
Great Basin collared lizard	<i>Crotaphytus insularis bicinctores</i>	Reptile				Y	Y	Y	Y	Y	Y	Y	
Desert iguana	<i>Dipsosaurus dorsalis</i>	Reptile							Y	Y	Y		
Western red-tailed skink	<i>Eumeces gilberti rubricaudatus</i>	Reptile			Y	Y	Y	Y			Y	Y	
Large-spotted leopard lizard	<i>Gambelia wislizenii wislizenii</i>	Reptile				Y	Y	Y	Y	Y			
Desert tortoise	<i>Gopherus agassizii</i>	Reptile					Y	Y	Y	Y			
California (common) king snake	<i>Lampropeltis getula californiae</i>	Reptile							Y	Y			
Western leaf-nosed snake	<i>Phyllorhynchus decurtatus</i>	Reptile							Y	Y			
Western long-nosed snake	<i>Rhinocheilus lecontei lecontei</i>	Reptile							Y	Y			
Sonoran lyre snake	<i>Trimorphodon biscutatus lambda</i>	Reptile			Y	Y				Y			
Relict leopard frog	<i>Rana onca</i>	Amphibian										Y	Y
Spring Mountains acastus checkerspot	<i>Chlosyne acastus robusta</i>	Invertebrate			Y	Y	Y						
Dark blue butterfly	<i>Euphilotes ancilla purpura</i>	Invertebrate			Y	Y	Y						Y
Morand's checkerspot butterfly	<i>Euphydryas anicia morandi</i>	Invertebrate		Y	Y	Y							
Spring Mountains comma skipper	<i>Hesperia comma mojavensis</i>	Invertebrate		Y	Y	Y	Y						Y
Spring Mountains icarioides blue	<i>Icaricia icarioides austinorum</i>	Invertebrate		Y	Y	Y	Y						Y
Mt Charleston blue butterfly	<i>Icaricia shasta charlestonensis</i>	Invertebrate		Y	Y								
Nevada admiral	<i>Limenitis weidemeyerii nevadae</i>	Invertebrate		Y	Y	Y							Y
Spring Mountains springsnail	<i>Pyrgulopsis deaconi</i>	Invertebrate											Y
Southern Nevada springsnail	<i>Pyrgulopsis turbatrix</i>	Invertebrate											Y
Carole's silverspot butterfly	<i>Speyeria zerene carolae</i>	Invertebrate		Y	Y	Y	Y						

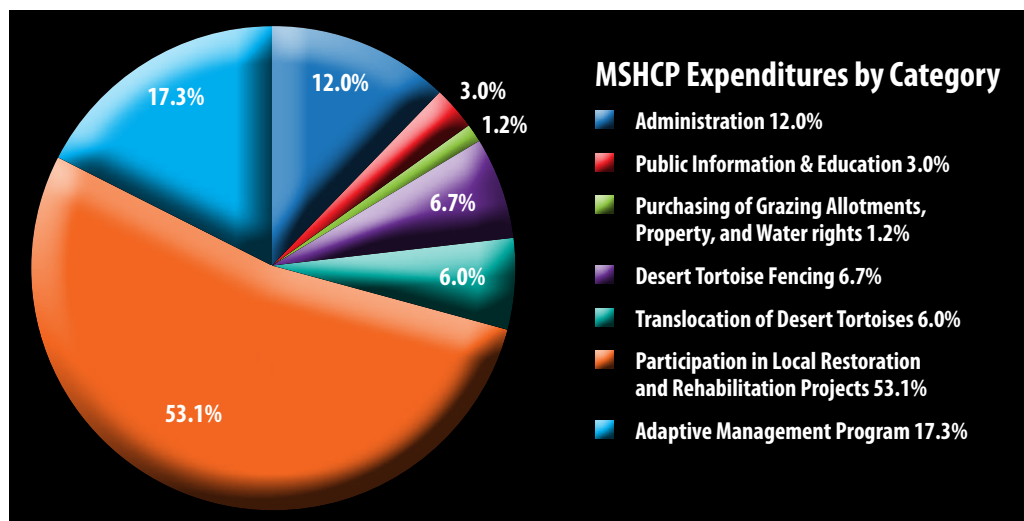
Ecosystems used by Covered Species															
COMMON	SCIENTIFIC		Alpine	Bristlecone Pine	Mixed Conifer	Pinyon Juniper	Sagebrush	Blackbrush	Salt Desert Scrub	Mojave Desert Scrub	Mesquite-Catclaw Acacia	Desert Riparian and Aquatic	Spring		
Rough angelica	<i>Angelica scabrida</i>	Vascular plant			Y										Y
Charleston pussytoes	<i>Antennaria soliceps</i>	Vascular plant	Y	Y											
Sticky ringstem	<i>Anulocaulis leiosolenus</i>	Vascular plant							Y	Y					
Las Vegas bearpoppy	<i>Arctomecon californica</i>	Vascular plant							Y	Y					
White bearpoppy	<i>Arctomecon merriamii</i>	Vascular plant						Y	Y	Y					
Rosy king sandwort	<i>Arenaria kingii</i> ssp. <i>rosea</i>	Vascular plant		Y	Y										
Clokey milkvetch	<i>Astragalus aequalis</i>	Vascular plant			Y	Y	Y								
Threecorner milkvetch	<i>Astragalus geyeri</i> var. <i>triquetrus</i>	Vascular plant								Y					
Clokey eggvetch	<i>Astragalus oophorus</i> var. <i>clokeyanus</i>	Vascular plant			Y	Y									
Spring Mountain milkvetch	<i>Astragalus remotus</i>	Vascular plant				Y	Y	Y		Y					
Alkali mariposa lily	<i>Calochortus striatus</i>	Vascular plant								Y				Y	
Clokey paintbrush	<i>Castilleja martinii</i> var. <i>clokeyi</i>	Vascular plant		Y	Y										
Clokey thistle	<i>Cirsium clokeyi</i>	Vascular plant	Y	Y	Y										Y
Jaeger whitlowgrass	<i>Draba jaegeri</i>	Vascular plant	Y	Y											
Charleston draba	<i>Draba pauciflora</i>	Vascular plant	Y	Y											
Inch high fleabane	<i>Erigeron uncialis</i> ssp. <i>conjugans</i>	Vascular plant		Y	Y	Y	Y								
Forked (Pahrump Valley) buckwheat	<i>Eriogonum bifurcatum</i>	Vascular plant							Y		Y				
Sticky buckwheat	<i>Eriogonum viscidulum</i>	Vascular plant								Y					
Clokey greaseweb	<i>Glossopetalon clokeyi</i>	Vascular plant			Y										
Smooth pungent greaseweb	<i>Glossopetalon pungens</i> var. <i>glabra</i>	Vascular plant				Y	Y								
Pungent dwarf greaseweb	<i>Glossopetalon pungens</i> var. <i>pungens</i>	Vascular plant				Y	Y								
Red Rock Canyon aster	<i>Ionactis caelestis</i>	Vascular plant			Y										
Hidden ivesia	<i>Ivesia cryptocaulis</i>	Vascular plant	Y												
Jaeger ivesia	<i>Ivesia jaegeri</i>	Vascular plant		Y	Y										
Hitchcock bladderpod	<i>Lesquerella hitchcockii</i>	Vascular plant	Y	Y	Y										
Blue Diamond cholla	<i>Cylindropuntia multigeniculata</i>	Vascular plant								Y					
Charleston pinewood lousewort	<i>Pedicularis semibarbata</i> var. <i>charlestonensis</i>	Vascular plant		Y	Y										
White-margined beardtongue	<i>Penstemon albomarginatus</i>	Vascular plant						Y		Y					
Charleston beardtongue	<i>Penstemon leiophyllus</i> var. <i>keckii</i>	Vascular plant	Y	Y	Y										
Jaeger beardtongue	<i>Penstemon thompsoniae</i> var. <i>jaegeri</i>	Vascular plant			Y	Y									
Parish's phacelia	<i>Phacelia parishii</i>	Vascular plant							Y						
Clokey mountain sage	<i>Salvia dorrii</i> var. <i>clokeyi</i>	Vascular plant		Y	Y	Y									
Clokey catchfly	<i>Silene clokeyi</i>	Vascular plant	Y	Y											
Charleston tansy	<i>Sphaeromeria compacta</i>	Vascular plant	Y	Y											
Charleston kittentails	<i>Synthyris ranunculina</i>	Vascular plant	Y	Y	Y										Y
Charleston grounddaisy	<i>Townsendia jonesii</i> var. <i>tumulosa</i>	Vascular plant	Y	Y	Y	Y									
Limestone violet	<i>Viola purpurea</i> var. <i>charlestonensis</i>	Vascular plant		Y	Y	Y									

Ecosystems used by Covered Species			Alpine	Bristlecone Pine	Mixed Conifer	Pinyon Juniper	Sagebrush	Blackbrush	Salt Desert Scrub	Mojave Desert Scrub	Mesquite Catclaw	Acacia	Desert Riparian and Aquatic	Spring
COMMON	SCIENTIFIC													
Limestone violet	<i>Viola purpurea</i> var. <i>charlestonensis</i>	Vascular plant		Y	Y	Y								
No common name	<i>Anacolia menziesii</i>	Non-vascular plant				Y	Y							
No common name	<i>Claopodium whippleanum</i>	Non-vascular plant				Y								
No common name	<i>Dicranoweisia crispula</i>	Non-vascular plant			Y	Y								
No common name	<i>Syntrichia princeps</i>	Non-vascular plant				Y								

### Measures to Minimize and Mitigate the Impacts of Take

The specific mitigation measures that were developed through the MSHCP are:

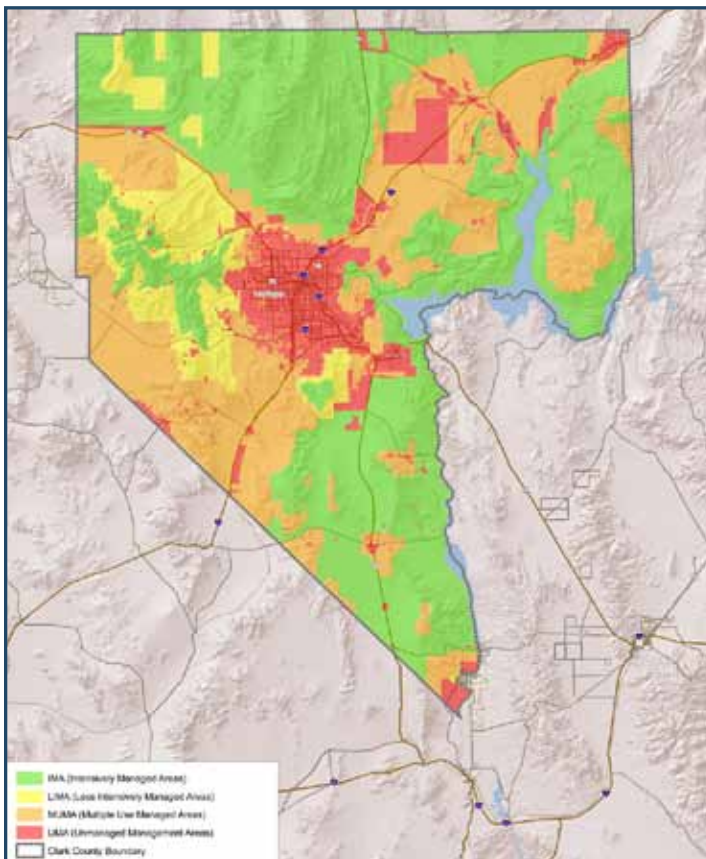
- Impose a \$550 per-acre development fee on all non-federal properties throughout Clark County which involve a permit issued by one or more of the Permittees
- Expend \$4.1 million during each biennial period to fund conservation measures, minimize and mitigate the impacts of take of covered species, to develop the Adaptive Management Program (AMP), and to administer the MSHCP
- Implement a public information and education program (i.e. Mojave Max)
- Purchase and retire grazing allotments and associated water rights from interested sellers
- Make funds available to acquire conservation easements or other interests in real property or water
- Construct, monitor, and maintain wildlife barriers along roadways
- Implement large-scale translocation pilot program for displaced desert tortoises
- Participate in and fund local rehabilitation and enhancement programs (i.e. Muddy River and Las Vegas Wash)
- Manage and minimize off-highway vehicle use on federal lands in the County



In addition to the agreement to participate in the AMP, federal and state land managers will implement a total of approximately 650 specific conservation measures. The conservation measures include:

- Public information and education
- Research
- Inventory
- Monitoring
- Protective measures
- Restoration and enhancement measures
- Land use policies and actions

These incorporate agreements such as the Spring Mountains National Recreation Area Conservation Agreement, the Blue Diamond Cholla Conservation Agreement, the U.S. Bureau of Land Management (BLM) Las Vegas Resource Management Plan, and other existing general management plans.



Conservation Management Areas

### Conservation Management Areas

Mitigation under the current MSHCP relies on a reserve system of public lands that are defined by their levels of management. These conservation management areas are defined in the MSHCP as Intensively Managed Areas (IMAs), Less Intensively Managed Areas (LIMAs), Multiple Use Managed Areas (MUMAs) and Unmanaged Areas (UMAs). The IMAs and LIMAs represent the “reserve system” in Clark County, with MUMAs providing conservation value as corridors, connections, and buffers for the IMAs and LIMAs where management preserves the quality of habitat sufficiently to allow for unimpeded use and migration of the resident species in the IMAs and LIMAs. In summary, the goal for each covered species is no net unmitigated loss or fragmentation of habitat, primarily within IMAs and LIMAs, or MUMAs where a substantial proportion of the species habitat occurs within MUMAs.



