Web-enabling the SWAP for New Mexico

Ginny Seamster
New Mexico Department of Game and Fish
Invasive and Problematic Species:

- Determine the current distribution and impact on SGCN and disturbance regimes of invasive and problematic species and diseases. Potential collaborators: BLM, NRCS, USFS, SLO, private landowners.

- Design and implement protocols for early detection of invasive and problematic species and diseases. Quickly respond to detection. Potential collaborators: BLM, BOR, ACOE, USFWS, USFS, NRCS, NMDA, Soil and Water Conservation Districts, SFD, SLO, private landowners.

- Eradicate or control existing non-native and invasive species before they become established. Potential collaborators: BLM, BOR, ACOE, USFWS, USFS, NRCS, NMDA, Soil and Water Conservation Districts, SFD, SLO, private landowners.

- Determine historic and current SGCN habitats that have been infested with cheatgrass (Bromus tectorum) and restore them to native species. Promote land management strategies that will inhibit the further spread of cheatgrass. Potential collaborators: BLM, SLO, tribal resource management entities.

- Determine relationships between non-native and native riparian plant species. Potential collaborators: USFWS, USGS, universities.

- Inform anglers about the damage of invasive species. Enforce batfish regulations to prevent introduction of non-native species. Potential collaborators: USFS, anglers.

- Restore native riparian plants (e.g., cottonwood and willow) and natural riparian ecosystem processes and functions following tamarisk removal or biocontrol, and ensure maintenance of adequate water supply for native plants. At sites with low water availability, restoration of native xeric habitats may be more appropriate than wetland plants. Potential collaborators: BLM, BOR, ACOE, USFWS, SLO, NMD, universities, private land managers, non-profit organizations.

- Stage and balance tamarisk removal and native habitat restoration over time, to avoid rapid loss of xeric riparian habitats for wildlife until native habitats can be developed. (Seigle et al. 2013). Potential collaborators: BLM, BOR, ACOE, USFWS, SLO, NMD, universities, private land managers, non-profit organizations.

- Protect sustain, and proactively restore existing stands of native riparian vegetation that may serve as important refugia in areas currently or likely to be affected by the tamarisk beetle,
6 Ecoregions
47 Habitats
235 SGCN
Development: ........................................
Agriculture and Aquaculture: ...........
Energy and Mining: ..........................
Transportation and Utilities: .........
Biological Resource Use: ..............
Human Intrusions and Disturbance: ...
Natural System Modifications: .......
Invasive and Problematic Species: ...
Pollution: ........................................
Climate Change: .............................
GOAL:
Facilitate regional collaboration

EPA Ecoregions (Level II)
National Vegetation Classification (Macrogroups)
IUCN and Conservation Measures Partnership Threats
GOAL:
Making connections between SGCN, habitats, and conservation actions
GOAL:
Facilitating State Wildlife Grant proposal writing (internal and external) and project development
Easy Navigation

Welcome to the State Wildlife Action Plan for New Mexico, your portal for exploring the conservation needs and opportunities for New Mexico's wildlife and their habitats.

- Learn about Species of Greatest Conservation Need and where they live.
- Read about Threats and Potential Conservation Actions.
- Explore Conservation Opportunity Areas.

https://nmswap.org
Species $\rightarrow$ Actions

Habitats $\rightarrow$ Species

Habitats $\rightarrow$ Actions
Species ➔ Actions

Species considered for inclusion as Species of Greatest Conservation Need (SGCN) had to occur within the state (www.bison-m.org) and meet at least one of the following conditions:

- Amphibians
- Birds
- Crustaceans
- Fish
- Mammals
- Molluscs
- Reptiles

Reptiles

- Western River Cooter
- New Mexico Ridge-nosed Whiptail
- Mexican Gartersnake
- Narrow-headed Gartersnake
- Giant Spotted Whiptail
- Arizona Black Rattlesnake
Western River Cooter (Pseudemys gorguji) is a small (up to 24 cm carapace length) freshwater turtle that occurs in the Rio Grande and Pecos River drainages from New Mexico to Texas and northeastern Mexico. They have recently been detected at several sites along the Black River in southeastern New Mexico. They are often found basking on logs, muddy banks, and overhanging vegetation.

**Ecoregions**

- Chihuahuan Desert

**Habitats**

- Arid West Interior Freshwater Emergent Marsh
- Chihuahuan Desert Scrub
- Southwest Riparian Forest
- Perennial Cold Water Streams
- Perennial Lakes, Cirques, Ponds

**Threats and Conservation Actions**

Related Resources

- Ecoregions
- Habitats
- Threats and Conservation Actions

More species information from Bison-M.org
Species ➔ Actions

Threats and Conservation Actions

Result for: Pollution

Pollution

Participate in public involvement opportunities when proposed developments might threaten the persistence of SGCN.

Assess the magnitude, frequency, timing, duration, and rate of change of flow and the effects of hydrologic alterations on different types of riparian systems. Determine flows needed to sustain SGCN and their habitats, and the effects of flow stabilization by upstream dams. Work with agencies that manage dams and reservoirs to ensure amounts and patterns of flows needed for persistence of SGCN. Potential collaborators: ACOE, BOR, USFWS, USGS, NMOSE, universities, private industry.

Evaluate and mitigate the effects of excess generation of heat, light, and/or sound from sources such as power plants, urban areas, and highways on SGCN and their habitats. Potential collaborators: local utilities, private industry.

Evaluate and mitigate the effects of pollutants in runoff from housing and urban areas, industrial areas, and agricultural areas (e.g., sewage, nutrients, toxic chemicals, sediment) on SGCN and their habitats. This includes solid waste that may entangle wildlife. Potential collaborators: EPA, NMED, municipalities, local governments.

Work with appropriate agencies to enforce mining and energy development regulations, Best Management Practices, and safeguards that protect water quality and minimize mortality of SGCN. Potential collaborators: BLM, EMRND, NMED.

Assess impacts to habitat and SGCN from mining and energy development activities. These impacts may include direct mortality, pollution from transport of extracted or waste products, and sediment runoff from roads. Potential collaborators: BLM, USFS, SLO, EMNRD, NMED, local governments, energy and mining companies.

Determine effects of agro- and petrochemicals, and urban runoff, on SGCN fish. Potential collaborators: EPA, NMED, NMDA.
Habitat → Species

Habitats

Conservation strategies for SGCs revolve around understanding and effectively managing the terrestrial and aquatic habitats they occupy. Ideally, habitats are identified within and among ecosystems and watersheds to provide a focus for addressing conservation threats, actions, and identifying conservation opportunities for target species.

SWMP Aquatic Habitats:
- Perennial and ephemeral waters found in streams, lakes, reservoirs, marshes, and wetlands
- There are eight specific aquatic habitats in New Mexico that were mapped using the National Hydrography Dataset and aerial photography from the National Agriculture Imagery Program
- They are described in terms of occurrence, temperature ranges, and environment following state standards.
- Aquatic habitats are a priority because of New Mexico’s limited water supplies and surrounding land use impacts.

Aquatic Terrestrial Habitats:
- Grouped into six general forms with 33 different habitats
- Matched based on SWMP’s (2008)
- Linked to the US National Vegetation Classification System (USNVC) to provide detailed information on composition and ecology
- ArcView reflects their habitat scales and needs for conservation (Tier 2 through 4) most to least urgent (Tier 5: non-habitat) with riparian and wetland habitats ranking highest.
Perennial Warm Water Streams (PWWS) are natural courses of flowing water containing dissolved and suspended nutrients and other materials that normally support communities of plants and animals within the channel and the riparian vegetation zone. Water temperatures generally are too warm to support trout, but instead support species such as bass and catfish.

More information from US National Vegetation Classification

Species that live in Perennial Warm Water Streams:
- Chiricahua Leopard Frog
- Plain-bellied Water Snake
- Mexican Gartersnake
- Narrow-headed Gartersnake

https://nmswap.org
Habitat → Actions

Threats And Conservation Actions

Threats are defined as factors that can adversely affect the long-term persistence of Species of Greatest Conservation Need (SGCN). Many are anthropogenic but they also may be associated with natural processes. Additionally, human activities may be positive or neutral for some species under certain conditions. Whether activities are positive or negative depends on the length of occurrence (both intra- and inter-annual), period of the year in which a particular activity occurs, location where it occurs, its spatial extent, and its intensity. How severely a negative activity impacts a SGCN is also dependent on the ability of the affected species to respond and adapt to the activity such that survival and reproduction is unaffected.

Here you can find conservation actions for the threats identified in the SWAP.

In the green boxes below you can choose threats and see conservation actions for each threat. You can also see threats per ecoregion, habitat, and species.

Result for: Perennial Warm Water Streams, Climate Change

Climate Change

Determine ecology, distribution, status, and trends of, and threats to SGCN (especially invertebrates that are not currently monitored, riparian-obligate species, and rare native fishes) and their habitats. Use this information to develop and implement effective monitoring protocols and conservation actions. Potential collaborators: BLM, USFWS, universities, non-profit organizations, private industry.

https://nmswap.org
Ecoregions

An ecoregional framework was adapted based on Griffith et al. (2006) to support collaborative, multi-jurisdictional conservation planning and implementation of conservation actions for SGCN and their habitats. These ecoregions are areas of general similarity in ecosystems and in the type, quality, and quantity of environmental resources.

Ecoregions:
- Contain a focused set SGCN and the terrestrial habitats they occupy
- Provide a tailored analysis of Threats and Conservation Actions for those species and habitats
- Region-specific Conservation Opportunity Areas (COAs) to help operationalize conservations actions at local scales

Chihuahuan Desert Ecoregion

Habitats

- Ephemerai Marshes/Ciñegas/Springs
- Chihuahuan Desert Scrub
- Warm-Dessert Arroyo Riparian Scrub
- Great Plains Floodplain forest
- Perennial Cold Water Streams
- Perennial Lakes, CIcneas, Ponds
- Introduced Annual Grassland
- Chihuahuan Semi-Desert Grassland
- Arid West Interior Freshwater Emergent Marsh
- Perennial Warm Water Reservoirs
- Ephemeral Catchments
- Warm Desert Lowland Riparian Shrubland
- Cliff, Screw & Rock Vegetation
- Southwest Riparian Forest
- Perennial Warm Water Streams
- Perennial Marsh/Ciñegas/Spring/Seep

Species of Greatest Conservation Need in the Chihuahuan Desert Ecoregion

https://nmswap.org
Conservation Opportunity Areas (COA) are areas in the State considered to have superior potential for conserving SGCN. Like all other components of the State Wildlife Action Plan (SWAP), COAs provide a non-regulatory tool to help focus and prioritize statewide actions to locations where conservation actions may maximize opportunities to prevent future listings of species, and to promote recovery of species that have already been listed. This landscape-level view of high biodiversity areas within New Mexico is not intended as a substitute for individual project decisions, or to preclude the need for site-specific assessments that may be considered in funding decisions by the Department and other resource managers. However, COAs can serve a vital function in prioritizing wildlife and habitat restoration efforts to the most critical wildlife needs within a state, as directed by the congressional language for the State Wildlife Grants (SWG) Program and its companion SWAPs.

Search:

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<th>Name</th>
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<tr>
<td>Big Hatchet Mountains</td>
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<td>Jemez Mountains</td>
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<td>Lower Gila River</td>
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<tr>
<td>Lower Pecos and Black Rivers</td>
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<tr>
<td>Mescalero Sands</td>
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https://nmswap.org
Conservation Opportunity Areas

Zuni Mountains

The Zuni Mountains Conservation Opportunity Area (COA) encompasses 110,750 ha (273,669 ac) west of Grants. Most (75%) of it is managed by USFS; 22.5% is privately-owned. It contains one Important Bird Area (Blackrock and Nutria Lakes) and two TNC refugia (Rio Nutria, Zuni Mountains), but none of its lands are protected. Landcover includes 14 native vegetation habitats plus open water, developed, and agricultural lands. Two habitats are dominant: Rocky Mountain Lower Montane Forest (60%) and Intermountain Juniper Woodland (36.5%). Perennial aquatic habitat includes 59 km (37 mi) of warm water streams.

### Habitats

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<th>Habitat Name</th>
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https://nmswap.org
Conservation Opportunity Areas

State Wildlife Action Plan for New Mexico

22 November 2016

Zuni Mountains

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<tr>
<th>Habitat</th>
<th>Tier</th>
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<td>1,381.5</td>
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<td>Madrean Lowland Evergreen Woodland</td>
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<td>Montane-Subalpine Wet Shrubland &amp; Wet Meadow</td>
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<tr>
<td>Open Water</td>
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Spatial Component
Macrogroups

NMDGF SWAP WebApp
New Mexico State Wildlife Action Plan

Legend 2

SWAP_Habitats

SWAP Macrogroups:
- Arid West Interior Freshwater Emergent Marsh
- Chihuahuan Desert Scrub
- Chihuahuan Semi-Desert Grassland
- Cliff, Scape & Rock Vegetation
- Developed & Urban
- Great Plains Floodplain Forest
- Great Plains Mixedgrass Prairie
- Great Plains Sand Grassland & Shrubland
- Great Plains Shortgrass Prairie
- Herbaceous Agricultural Vegetation
- Intermountain Arroyo Riparian Scrub
- Intermountain Dry Shrubland & Grassland
- Intermountain Juniper Woodland

Project Development
Grants

Zoom to

SWAP Habitat 1: Chihuahuan Desert Scrub
SWAP Habitat 2: Chihuahuan Semi Desert Grassland

United States
Mexico

-110 241 32 245 Degrees
Chihuahuan Desert Scrub [M086] occurs mostly at 1,000-2,000 m (3,280-6,560 ft) elevation in the Chihuahuan Desert ecoregion. It may also be found in all other ecoregions except the Southern Rocky Mountains ecoregion. It is a moderate to sparse xeromorphic shrub community characterized by a sparse to dense tall shrub layer dominated or co-dominated by whitethorn acacia (Acacia constricta), viscid acacia (A. neovernicosa), tarbush, and creosote. Other species may include catclaw acacia (A. greggii), sand sagebrush (Artemisia filifolia), fourwing saltbush (Atriplex canescens), Torrey’s jointfiir (Ephedra torreyana), longleaf jointfiir (E. trifurca), ocotillo (Fouquieria splendens), cactus apple (Opuntia engelmanii), mariola (Parthenium incanum), soaptree yucca (Yucca elata), Torrey’s yucca (Y. torreyi), skeleton-leaf goldeneye (Viguiera stenoloba), and lechuguilla (Agave lechuguilla). Many stands of this habitat type lack an herbaceous understory layer and develop a pebbly desert pavement on the soil surface, sometimes with scattered grasses and forbs. If present, the understory is a sparse to moderately dense herbaceous layer dominated by grasses including black grama, bush muhly (Muhlenbergia porteri), curlyleaf muhly (M. setifolia), tobosagrass (Plethurus mutica), burrograss (Scleropogon brevifolius), and mesa dropseed (Sporobolus flexuosus). Forb species often are present, but have low cover. Stands of this habitat occur in broad desert basins and plains and extend up onto dissected gravelly alluvial fans, pediments (baJadas), and foothills. Substrates include coarse-textured loams on well-drained, gravelly plains, slopes with soils that are typically non-saline and calcareous, sandy plains, copice dunes, and sandsheets. Soils are fine-textured (silt, clay loams, and clays), often saline, on alluvial flats and around playas, as well as in river floodplains. Stands can extend upslope on to colluvial slopes with cobly skeletal soils. Drought is a relatively common occurrence in this desert scrub, generally occurring every 10 to 15 years and lasting two to three years, with occasional long-term drought periods.
Conservation Opportunity Areas
Search by Location
Search by Location
Search by Location
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Explore Conservation Opportunity Areas.
NM Crucial Habitat Assessment Tool

- CHAT data informed the development of Conservation Opportunity Areas in the NM SWAP and can also inform project planning at the landscape scale.

[Image: NM Chat map showing crucial habitat areas]

Project Development

http://nmchat.org/map/
NM Conservation Information System

http://www.wildlife.state.nm.us/conservation/
BISON-M

- Web-based SQL Server database
- Over 6,800 species accounts
- Accounts contain information on species distribution, biology, and ecology
- All species accounts have a list of references, more recent references hyperlink to pdfs

https://bison-m.org/Index.aspx
# Species Account

## Yellow-billed Cuckoo (western pop)

### Summary

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<td>Name</td>
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<td>Coccyzus</td>
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<td>Species</td>
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<tr>
<td>Synonyms</td>
<td>Western yellow-billed cuckoo; PajarO Vaquero Pico Amarillo (Spanish), Coccyzus americanus (Western DPS)</td>
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| Legal Status | • Federal: Migratory Bird Treaty Act  
                • Federal: Threatened  
                • State NM: Species of Greatest Conservation Need (SGCN) |
| Species Distribution | AZ: Extant  
                         • CO: Species occurs(ed)  
                         • NM: Extant  
                         • TX: Species occurs(ed)  
                         • UT: Species occurs(ed) |
| Habitat Association | AERIAL, LOWLANDS, RIPARIAN, TERRESTRIAL |
| Food Habits  | • GENERAL CARNIVORE-eats animals  
                         • INVERTEVORE-eats invertebrates |

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https://bison-m.org/Index.aspx
Share with Wildlife

- Grant program funds wildlife habitat enhancement, research, education, and rehabilitation projects
- Focus on species without funding from other sources
- Since 2005, research projects focused on Species of Greatest Conservation Need
- Inform next SWAP revision (2026)

http://www.wildlife.state.nm.us/conservation/share-with-wildlife/
NM Environmental Review Tool

- Portal to trigger project reviews to evaluate species potentially impacted by a proposed project and provide guidelines to mitigate those impacts.

[Image: NM Environmental Review Tool interface]

https://nmert.org/
Riparian Map

- Dataset to inform technical guidance reviews of projects that may impact or restore riparian areas

https://nhnm.unm.edu/riparian/nmripmap/
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