

Activities since the 2010 State Wildlife Action Plan

State Wildlife Action Plans (SWAP) are comprehensive strategies designed to maintain the health and diversity of wildlife within a state including preventing the need for the listing of new species under the Endangered Species Act. Wyoming's first SWAP was completed in 2005 (at that time SWAPs were referred to as Comprehensive Wildlife Conservation Strategies). This plan was revised and approved by the Wyoming Game and Fish Commission in January 2010 and later approved by the U.S. Fish and Wildlife Service (USFWS) in July 2011. Developing a SWAP is required in order to receive funding through the federal State Wildlife Grant (SWG) program. The intent of the SWAP is to not only direct the Wyoming Game and Fish Department's (WGFD) activities, but also to serve as a guide for the combined efforts of government agencies, conservation organizations, academia, tribes, and individuals in conserving Wyoming's Species of Greatest Conservation Need (SGCN). Wyoming's SWAP is also part of a national framework of similar plans established in all U.S. states and territories.

Revision of SGCN List

Wyoming's SGCN list was revised for the 2017 SWAP. Starting in September 2015, all wildlife species under the jurisdiction of the WGFD were evaluated to determine their SGCN status. A revised list of SGCN was presented to the Wyoming Game and Fish Commission for approval in January 2016. The 2017 SGCN list identifies 229 SGCN. This includes 80 birds, 51 mammals, 28 fish, 9 amphibians, 24 reptiles, 8 crustaceans, and 29 mollusks. Mollusks and crustaceans include five and one groups of species respectively. In the 2010 SWAP, 180 species received the SGCN designation. The 2010 SWAP list included 56 birds, 46 mammals, 30 fish, 8 amphibians, 21 reptiles, 5 crustaceans, and 14 mollusks. The complete 2017 list of Wyoming SGCN and information about the SGCN designation process is found in the introduction to the Wyoming Species of

Greatest Conservation Need chapter of the SWAP (Page IV – i - 1).

New and Revised Species Accounts

Each SGCN identified in the SWAP has a species account that provides information on the species and its conservation needs. New species accounts were created for SGCN not identified in the 2010 SWAP. Species accounts are stored in databases which are continually updated. Drafts are printed and submitted to the USFWS for approval with each revision of the SWAP.

For the 2017 SWAP, bird and mammal species accounts were jointly produced by the WGFD and the Wyoming Natural Diversity Database (WYNDD). In the past, both organizations produced and maintained documents similar to species accounts. Establishing one official SGCN for the state was believed to reduce confusion and duplication as well as to facilitate information sharing. For these species accounts, new sections were added to the previous format including an expanded section on regulatory and conservation status, taxonomic and physical descriptions, phenology, intrinsic and extrinsic vulnerabilities, and ecological information needs.

WYNDD will update and maintain bird and mammal species accounts going forward. These species accounts, which are available to the public electronically, were submitted and approved by the USFWS with the 2017 SWAP. Going forward, electronic versions will identify which information was included with the 2017 SWAP and which has been added subsequently.

Fish, reptile, amphibian, mollusk, and crustacean species account formats remained unchanged since the 2010 SWAP, but accounts were updated with new information as it became available.

Improved Terrestrial Habitat Prioritization Identification Process

Providing improved maps for conservation planning was a priority for the 2017 SWAP revision. A revised terrestrial SGCN habitat priority identification process was established to meet these goals based on four electronic map layers:

1. SGCN richness
2. Habitat intactness
3. Land ownership of various habitat types
4. SWAP terrestrial habitat types.

All maps are electronically available to the public individually and in combination to enable users to receive SGCN geographic data in relation to their project needs. Mapping layers are provided through the Natural Resource and Energy Explorer (NREX) application. This allows maps to be accessed by users without GIS software.

A summary reporting function is also being created for all GIS mapping hexagons and associated delineated project boundaries that displays:

1. Total number of SGCN species,
2. Species by sorted by Conservation Tier and Wyoming Native Species Status rank,
3. Links to SWAP terrestrial SGCN species accounts,
4. Endangered Species Act listed species,
5. Percent SWAP terrestrial habitat type,
6. Land management status, and
7. Habitat intactness.

This mapping system is planned to be completed by the second quarter of 2017. More information about the terrestrial habitat prioritization identification process is found in the introduction to the Terrestrial Habitat Types and Aquatic Basins chapter of the SWAP (Page III – i - 2).

Vulnerability Analysis of Wyoming Terrestrial SGCN and Habitats

The Wyoming Chapter of the Nature Conservancy, WYNDD, and WGFD completed research evaluating the vulnerability of

Wyoming 2010 SGCN and the 11 SWAP terrestrial habitat types to climate change, residential development, energy development, and wildlife disease, as well as cumulative vulnerability to all four of these stressors. Vulnerability was investigated by evaluating each species' potential exposure and sensitivity to these threats. Research results are found within the Leading Conservation Challenges sections on energy development, rural development, and climate change, as well as within all terrestrial habitat chapters. Research results were also incorporated into the SGCN identification process for the 2017 SWAP. The complete report can be viewed at: <http://www.nature.org/media/wyoming/wyoming-wildlife-vulnerability-assessment-june-2014.pdf>

Sensitive Species Funding Sources

The WGFD has received more than \$3,190,000 from the SWG program for fiscal years 2011-2016.

State budgets for the 2011–2012, 2013-2014 and 2015-2016 biennium provided general fund appropriations to the WGFD for all aspects of its nongame/sensitive species program. Over that period, the Wyoming Legislature awarded \$4.4 million to the department for maintenance and operations, including existing personnel and administrative support, and \$688,000 in direct general fund appropriations for specific SGCN project work. This funding, in conjunction with \$5.56 million from the Governor's Endangered Species Account, has aided the WGFD with inventory work to fill data gaps for SGCN and to address Endangered Species Act listing petitions. These dollars are also important for matching SWG program funds, which require a 35% contribution from the state for most projects. General fund appropriations for the support of the WGFD's nongame/sensitive species program were eliminated in the second year of the 2017-2018 biennium budget.

The USFWS continued their memorandum of agreement with the State of Wyoming and the WGFD in fiscal years 2011 through 2013 to facilitate coordination on sensitive species

projects, including projects on current or potentially listed threatened or endangered species. Projects initiated during this period include researching habitat and species vulnerability, determining the origins of burbot and sauger in the Wind River, and assessing spruce fir habitat in Wyoming, among others. The WGFD has received a total of \$778,000 as a result of this agreement through fiscal year 2016.

Lastly, in 2005, the Wyoming Legislature created the Wyoming Wildlife and Natural Resource Trust (WWNRT) to “enhance and conserve wildlife habitat and natural resource values throughout the state.” The WWNRT is funded by donations, legislative appropriations, and the interest earned on a permanent account. The WGFD and the Wyoming Game and Fish Commission have been able to use WWNRT grants to augment SWG funding to support various SGCN monitoring and recovery efforts.

Strategic Habitat Plan

In early 2015, the WGFD revised its Strategic Habitat Plan (SHP). The recent revision of the SHP incorporates SGCN into the planning process and includes SGCN considerations in identifying “crucial” and “enhancement” areas as well as prioritizing projects for funding. Moreover, the mitigation policy developed by the Wyoming Game and Fish Commission for species and habitats that are being unavoidably impacted by growth, development, and land use changes includes SGCN. The WGFD Habitat Technical Advisory Group’s role in developing both the SHP and SWAP allowed for coordination between the two plans.

SGCN Projects

Detailed information about SWAP-related projects conducted since 2010 can be found in this plan within individual species accounts and in the “Conservation Initiatives” topic heading of aquatic basins and, to a lesser extent, terrestrial habitat types. Annual reports are completed for all bird and mammal SWAP projects and can be found at <https://wgfd.wyo.gov/Hunting/Job-Completion-Reports>. The following are

examples of some, but not all, SWAP-related projects since 2010.

Birds and Mammals

Funding was utilized to conduct numerous large scale bird monitoring efforts within the state. These include colonial waterbird surveys, Integrated Bird Monitoring in Conservation Regions (IMBCR), juniper obligate birds surveys, and grassland bird monitoring. Baseline and trend data was collected for bald eagle, golden eagle, ferruginous hawk, common loon, greater sage-grouse, long-billed curlew, peregrine falcon, trumpeter swan, American bittern, mountain plover, upland sandpiper, burrowing owl, great gray owl, black rosy-finch, and goshawk. Sage-grouse habitat-use studies, including investigations into brood rearing locations, summering and wintering habitats, and seasonal movements have been completed. Research has also been conducted on the risk of nest abandonment by raptors due to human disturbances. The effects of energy development, including from wind power, on birds is being studied. Sage-grouse, golden eagles, and ferruginous hawks are receiving special attention for this research.

SWG grants have also supported baseline data collection and surveys on water voles, white-tailed prairie dog, several species of bats, pika, fisher, shrews, juniper obligate mammals, pocket mice, pygmy rabbit, and swift fox. Annual surveys were completed on black-footed ferrets to determine their status and distribution at reintroduction sites, to map ferret habitat, and to make additional reintroductions.

Multiple projects have been initiated to study wolverines in Wyoming. A wolverine study in the Yellowstone ecosystem researched wolverine densities, population viability, habitats important to wolverine persistence, travel corridors between isolated mountain ranges, effects of human recreation, reproductive and survival rates, and mortality factors. Similarly, a study on the effects of winter recreation trails on small and mid-sized mammals, including lynx and wolverine, was conducted. The WGFD, in cooperation with Washington,

Idaho, and Montana has initiated a landscape wolverine occupancy monitoring project. This project incorporates standardized survey protocols to monitor wolverine populations across their range. The project also focuses on identifying population connectivity and genetic variation. A study to develop GIS models of caves which might be susceptible to colonization of white-nose was conducted. SWG funds were additionally utilized to examine the feasibility of utilizing guard hairs to identify shrew species.

Fish

Numerous projects to better understand and conserve the state's native fish have been undertaken since the 2010 SWAP (see Conservation Initiatives section of Aquatic Basins for individual project descriptions). Notable examples include a study to better understand how intermittency influences prairie fish communities (Compton and Hogberg 2017), and a complete inventory of Northern leatherside chub (Schultz and Cavalli 2012), and assessment of mountain whitefish (Edwards 2014) in the state.

Projects to remove nonnative fishes that were negatively influencing SGCN were completed to conserve endemic populations of Colorado River and Yellowstone cutthroat trout as well as roundtail chub, flannel mouth sucker and bluehead sucker (see Conservation Initiatives section of Aquatic Basins for individual project descriptions).

Reptiles and Amphibians

The WGFD Herpetologist and numerous grant funded crews completed significant progress in defining the distribution and relative abundance of reptiles and amphibians in the state. cursory inventories have now been completed in most of the Aquatic Basins of the state and have allowed for a narrowing focus of effort towards specific species and habitat types. Monitoring regimes for reptiles and amphibians are in development and in depth studies of several SGCN have been completed (see Conservation Initiatives section of Aquatic Basins). Notable accomplishments include inventories of

northern Wyoming herptiles (Snoberger and Walker 2016) and Southeastern Wyoming herptiles (Snoberger and Walker 2013).

Mollusks and Crustaceans

Considerable strides were made in inventorying native mussels in Wyoming. cursory surveys were completed in all of the Aquatic Basins of the state with an emphasis on sites where historic evidence exists for mussel presence (see Conservation Initiatives section of Aquatic Basins). Notable accomplishments include inventories of native mussels in the Platte drainage (Mathias 2015), Bear and Snake drainages (Mathias 2014), and Wind-Bighorn drainages (Mathias 2016). Numerous new observations and first attempts to describe relative abundance resulted in NSS classification of all but one native mussel.

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