Colorado Department of Natural Resources

Species Conservation Trust Fund

2013 Annual Report to the General Assembly

Species Conservation Trust Fund

The Colorado General Assembly created the Species Conservation Trust Fund (SCTF) in 1998 through HB 98-1006. This legislation provides ongoing funding to implement cooperative agreements, recovery programs, and other programs designed to meet Colorado's obligations under the Endangered Species Act (ESA). The Fund is also intended to promote practices designed to conserve species currently listed as threatened or endangered under state law, recover or protect candidate species in order to avoid the need to list those species under the state or federal ESA, and improve the scientific understanding governing federal or state species listing and delisting.

24-33-111 (3), C.R.S. directs the Executive Director of the Colorado Department of Natural Resources (DNR) to report to the General Assembly on the progress and status of activities undertaken to conserve and recover Colorado's native species. This report covers activity from 2008 through 2013 and includes a summary, select outcomes, and a full list of projects funded during these years.

Summary of SCTF 2008-2013

Two divisions in DNR nominate projects to be funded through the SCTF, Colorado Parks and Wildlife (CPW) and the Colorado Water Conservation Board (CWCB). Projects are then approved by the Parks and Wildlife Commission and the Colorado Water Conservation Board before receiving final approval from the General Assembly through the annual SCTF authorization bill.

Since 2008, $13 million has been appropriated to Colorado Parks and Wildlife (CPW) for 34 projects (45% of the total funding amount) and $16 million has been appropriated to Colorado Water Conservation Board (CWCB) for 6 projects (55% of the total funding amount). The funding appropriated to CPW has gone to research and habitat improvements for numerous species including: prairie dogs, Greater and Gunnison sage-grouse, a variety of native fish species, sharp-tailed grouse, Hiawatha grouse, lesser prairie chicken, White-tailed Ptarmigan, Canadian lynx, bats, boreal toad, and the New Mexico Jumping Mouse. CWCB's funding has gone to fund projects under the Platte River Implementation Program, the Upper Colorado River Recovery Implementation Program, the San Juan River Recovery Implementation Program, and native fish conservation.

The vast majority of funding from the SCTF has gone toward habitat improvement (63%) and research (30%), with the remainder funding habitat improvement projects working with landowners (5%), infrastructure improvement (1.6%), and planning (less than 1%). Projects often benefit a wide variety of species. For example, habitat improvement projects geared at one species often improve conditions for a variety of species that occupy the area. Therefore, it is difficult to accurately determine which species have received the greatest amount of funding from the program. However, efforts geared towards specific species include the Greater Sage-Grouse ($2.4 million, or 8.4% of the total) and Gunnison Sage-Grouse ($1.8, or 6.1% of the total). A variety of projects aimed at recovering and improving habitat for native fish species across the state total $3.7 million (9.6%).

Selected Outcomes

The SCTF has funded a wide array of important conservation projects. The following list highlights some of the key accomplishments from the past five years, and the following table provides a more comprehensive picture of outcomes from SCTF projects.

- Facilitated progress on the Platte River Recovery Plan, including implementation of a water action plan that reduces shortage of target flows by 6,950 acre-feet /yr.
- Expedited Section 7 consultations for Colorado River users for a total of 1183 projects.
- Expedited Section 7 consultations for water users in the San Juan basin for a total of 293 projects.
- Developed landscape-scale seasonal habitat maps for Greater Sage Grouse, used widely by state and federal land managers.
- Developed husbandry techniques for Gunnison Sage-grouse captive breeding programs.
- Conducted aerial surveys on Lesser Prairie Chicken which yielded population data integral to the Rangewide Conservation Plan, now being considered by the U.S. Fish & Wildlife Service.
- Completed habitat improvement projects on private land in Lesser Prairie Chicken habitat totaling 9,600 acres.
- Granted Certificates of Inclusion to landowners in Gunnison Sage Grouse habitat encompassing 58,682 acres across the seven GuSG populations.
- Developed and implemented a rangewide Black-tailed Prairie Dog survey protocol that was key to the “not warranted” listing decision.
- Developed and lab tested a plague control vaccine for prairie dogs. A field study of efficacy is underway.

- Restored native cutthroat trout habitat through construction of six in-stream barriers.
- Developed a better understanding of the status, distribution and habitat characteristics of New Mexico Jumping Mouse to better inform the listing process and avoid unnecessary regulations.
- Performed research and extensive surveys for listed or potentially listed plant species to inform federal listing decisions resulting in over 600 newly mapped locations of Colorado's rarest plants, leading in one case to a listing of Threatened rather than Endangered in Garfield County.

Species Conservation Trust Fund Summary of Projects and Outcomes 2008-2013				
Colorado Parks and Wildlife				
Project	**Purpose**	**Outcomes**	**Year(s) Authorized**	**Total Appropriated**
Cutthroat Trout Stream Habitat/Population Reclamation	To restore native cutthroat trout populations primarily through the construction of in-stream barriers to isolate and protect cutthroat trout from invasion by trout from downstream sources.	6 cutthroat barrier projects have been completed to date. Identified appropriate cutthroat trout subspecies for reintroduction efforts.	09-10 11-12	$360,099
Tamarisk Removal	To enable removal of tamarisk and other invasive vegetation and re-vegetation with native riparian plant species.	Improved wildlife habitat and overall ecosystem functioning.	11-12	$100,000
Greater Sage-grouse and Columbian Sharp-tailed Grouse Habitat	To increase available habitat for Greater Sage-grouse (GrSG) and Columbian sharp-tailed grouse (CSTG) in sites that were historically converted to agriculture by applying restoration techniques aimed at recreating natural shrubland communities.	An increase in the amount of suitable habitat for GrSG and CSTG in eastern Moffat and western Routt counties and an increase in the number and stability of these species in these areas, decreasing the likelihood that species will be listed under the Endangered Species Act.	08-09	$500,000
Native Seed Production for Sagebrush Habitat Restoration	To design, construct, and start-up a native seed warehouse and distribution center in western Colorado.	Supporting the long-term success of sage-grouse and other species through the acquisition, storage, and distribution of commercially-produced or wildland collected plant materials.	09-10 10-11 12-13	$971,500
Greater Sage-grouse Habitat Enhancement- Pinyon Juniper Encroachment Removal	To treat the most critical Greater Sage-grouse (GrSG) areas that have been encroached by pinyon-juniper woodlands in order to restore functional GrSG habitat.	An increase in the amount of suitable habitat for several populations of GrSG in Colorado and an increase in the number and stability of GrSG in these areas, decreasing the likelihood that the species will be listed under the Endangered Species Act.	08-09 09-10 10-11	$1,181,505
Native Aquatic Species Restoration Facility Ponds Project	To build additional grow-out ponds to rear native fish species in captivity at the CPW Native Species Hatchery.	None at this time. The project was initiated in 2013.	13-14	$454,000
Gunnison Sage-grouse (GuSG) Candidate Conservation Agreement with Assurances	To provide participating landowners with assurances from the U.S. Fish and Wildlife Service (USFWS) that future land use restrictions will not be imposed on enrolled lands should the species be listed.	CPW has undertaken 33 certificates of inclusion encompassing 58,682 acres across the seven GuSG populations. CPW is currently working with USFWS to assess six additional key properties within the Gunnison Basin (covering more than 14,000 additional acres).	08-09 10-11 11-12 12-13	$971,500

Project	Purpose	Outcomes	Year(s) Authorized	Total Appropriated
Lesser Prairie Chicken Habitat Improvement	The most serious threat to the lesser prairie-chicken (LEPC) is the destruction, modification, and curtailment of its habitat and range. This project was developed to work with private landowners to address these threats and improve habitat for LEPC.	Incentives are provided to private landowners that improve habitat for LEPC on their lands in SE Colorado. To date, contracts are in place with landowners for approximately 9,600 acres of habitat projects.	08-09 11-12 12-13	$400,000
Gunnison Sage-grouse Captive Breeding Program	To develop the husbandry techniques necessary for Gunnison sage-grouse to survive and reproduce in captivity and assess the fate of released birds.	Final reports were prepared in 2012; manuscripts are being submitted for publication in peer-reviewed journals; and a draft manual for managers to maintain Gunnison sage-grouse in captivity is completed.	08-09 09-10 10-11	$568,182
Gunnison Sage-grouse Habitat Baseline Assessment	Provide baseline information and recommended protocols for continued monitoring habitats, and help guide land management decisions to benefit the grouse.	A final report was completed in 2012 and a manuscript has been submitted for publication in a peer-reviewed journal.	08-09 09-10	$250,000
Hiawatha Grouse Study	To increase understanding of Greater sage-grouse ecology and improve management of the species on the Hiawatha Regional Energy Development Project in northwest Colorado (Moffat County) and south-central Wyoming.	Landscape-scale seasonal habitat maps were created; an analysis of sage-grouse habitat selection was conducted; evaluations to determine the effects of GPS transmitters on sage-grouse were completed; and lek buffer distances needed to minimize disturbance to breeding male sage-grouse were determined.	10-11	$475,081
Native Vegetation Restoration in Relation to Rainfall Patterns	To evaluate the effectiveness of soil treatment methods in controlling cheatgrass during restoration of native vegetation under different simulated rainfall patterns.	This project will begin during 2013-14 and will result in management recommendations for using soil treatment methods in various precipitation zones.	13-14	$100,000
Mammal and Breeding Bird Response to Epidemic Bark Beetle Outbreak in Colorado	This project will examine the impacts of beetle infestations (6.6 million acres statewide) on mammal and breeding bird communities inhabiting the subalpine zone in Colorado.	Sampling for mammals species in beetle-killed regions will be applied to inform future management actions and limited conservation dollars to species negatively influenced by this large scale change to Colorado's subalpine forest communities.	10-11 11-12 12-13	$271,000
Lesser Prairie Chicken Rangewide Aerial Survey	To obtain information on trends in distribution and abundance for Lesser Prairie Chicken (LPC) across its 5-state range.	Monitoring population trends for LPC as part of the Rangewide Conservation Plan will be finalized in the fall of 2013. It is hoped that the Rangewide Conservation Plan will be adequate to preclude the need to list the species as either Threatened or Endangered.	11-12	$30,000
Evaluate the Population Status of White-tailed Ptarmigan	To determine the status of White-tailed Ptarmigan in Colorado and map occupied range.	Data collected in this study will be used to demonstrate that ptarmigan populations in Colorado are stable and listing is not warranted.	11-12	$339,000

Project	Purpose	Outcomes	Year(s) Authorized	Total Appropriated
New Mexico Jumping Mouse Distribution Survey	Develop a better understanding of the status, distribution and habitat characteristics of this species in southwest Colorado	A better understanding of this species will improve management and better inform the listing process to avoid regulatory prescriptions which may not contribute to the recovery of the species.	13-14	$66,000
Implementation of State-wide Non-invasive Canada lynx Monitoring Protocol	Develop and implement an efficient, cost effective and statistically rigorous protocol to monitor the status of the reintroduced Canada lynx population in Colorado.	Although recovery goals have not been established by the USFWS for this species, data collected through the continued monitoring may aid in the eventual delisting of the species from the Endangered Species Act.	13-14	$200,000
Map Greater Sage-grouse Seasonal Habitats	To identify and delineate seasonal habitats throughout greater sage-grouse (GrSG) occupied range in Colorado.	Provide updated information on the location, distribution, and relative importance of GrSG seasonal habitats allowing increasingly targeted conservation actions to be implemented. These conservation actions will be key in demonstrating that GrSG are sufficiently protected and do not require listing under the Endangered Species Act.	08-09	$288,201
Irrigation Recharge on South Platte Native Fish Populations	To determine if water diverted from the main stem South Platte River during spring runoff to recharge basins will benefit native eastern plains fish populations. Several species are of conservation concern.	Results indicate that groundwater flows return to the river faster than would be beneficial for late fall in-stream needs.	08-09 09-10	$250,058
Identification of Barriers to Eastern Plains Fishes	To identify river segments without thermal or physical barriers where declining eastern plains species might be reintroduced to prevent federal listing.	Distribution maps and a database containing barrier, temperature, and flow data have been created. Over 13,000 fish have been tagged and tracked. Several reports are in progress.	08-09 09-10 10-11 12-13	$359,409
Development of Plains Fish Monitoring Protocols	To evaluate and test the validity of more efficient sampling methods for locating populations of native eastern plains fish populations.	A sampling protocol was developed and several hundred sample sites have been surveyed. Three reports related to this work were completed in 2012-2013.	08-09 09-10 10-11 11-12 12-13	$514,063
Distribution and abundance of native three-species western slope Colorado streams	To conduct population surveys where current information is lacking on distribution of 3 native species (roundtail chub, flannelmouth sucker and bluehead sucker) in western Colorado streams and rivers. These species are of federal concern.	Sampling has occurred for two seasons in the Colorado and White River Basins. Over 1,000 fish of these species have been marked and 400 larval fish sampling events were conducted. The resulting larval fish samples are currently being analyzed for species composition and abundance.	11-12 12-13	$107,200

Project	Purpose	Outcomes	Year(s) Authorized	Total Appropriated
Three Species Genetics and Inventory in Northwestern Colorado	This study focuses on understanding the genetic diversity of roundtail chub, flannelmouth sucker and bluehead sucker within and among populations in Colorado.	CPW has collected over 1,100 tissue samples from these fish species. DNA of these samples has been amplified and archived, and initial analyses have been conducted. CPW and Utah are cooperatively funding a DNA-based genetic diversity assessment of bluehead sucker.	09-10 11-12 12-13	$185,750
Response of Native Cutthroat Trout to Climate Change	To evaluate potential effects of climate change on native cutthroat trout species.	None at this time. The project started in 2012 and data is being compiled.	09-10 12-13	$59,862
Aquatic Disease Research	To determine impacts of gill lice and other pathogens on trout populations in Colorado.	Gill lice collections have been made at several lakes and reservoirs throughout the state in spring and summer 2013. A laboratory experiment to determine the life cycle of the parasite and susceptibility of different ages and species of fish has been initiated.	12-13	$41,569
Boreal Toad Reintroduction Site Identification	To identify candidate locations suitable for boreal toad reintroduction.	None yet at this time. The project will start in 2013.	13-14	$100,000
Eastern Plains Fish Sampling Analysis	To conduct data analysis on archived fish sampling data collected during eastern plains native fish surveys.	None yet at this time. The project will start in 2013.	13-14	$130,000
Plague Control	To develop, apply, and evaluate tools and strategies for preventively managing plague on a landscape level as needed for species conservation purposes.	Approaches for early plague detection have been developed and used; techniques for burrow dusting have been optimized; 500->1,000 acres of occupied Gunnison's prairie dog habitat has been treated annually; vaccine baiting strategies have been optimized; oral vaccine field safety has been demonstrated; and vaccine field efficacy studies are underway.	08-09 09-10 10-11 11-12 12-13	$1,460,250
Bat White-nose Syndrome Surveillance and Response	To provide baseline data collection on hibernating bat populations and maternity roosts and to implement surveillance protocols detecting White-nosed Syndrome (WNS) in Colorado. Elsewhere in the U.S. WNS has resulted in the death of up to 99% of bats in specific hibernation sites.	Improved bat population and distribution information and early detection of the white-nose fungus will better enable CPW to quickly respond should white-nose syndrome emerge in Colorado.	11-12 12-13	$102,900
Adaptive Wildlife Management - Climate Change	To predict the impacts of climate change on wildlife and habitat, assess vulnerability, and develop and prioritize measures to minimize or mitigate impacts to the extent practicable.	Data on plains reptile species of conservation concern have been compiled; reptile distribution modeling is underway; and reptile conservation area prioritization underway.	09-10	$50,000

Project	Purpose	Outcomes	Year(s) Authorized	Total Appropriated
Statewide Rare Plant Conservation Program Species Conservation Inventory and Planning on CPW Properties	To evaluate, monitor, protect, and research the rarest plant species in the state with the aim of effectively conserving these species and reducing their need for federal listing. To collect information on species presence, location, and habitats used on CPW properties in order to provide agency land managers information to support the conservation and stewardship of rare and sensitive animal and plant species and to enable CPW to implement stewardship practices that can help conserve rare species and reduce the need for federal listing.	Performed research and surveys for listed or potentially-listed plant species to inform federal listing decisions on over 600 newly mapped locations. These efforts resulted in a listing of Threatened rather than Endangered for a plant in Garfield County, and total exclusion of private lands from designated federal Critical Habitat. GIS and field inventory work has lead to the habitat identification occupied by federal and state listed species on 15 of the 41 state parks and monitoring of these populations.	08-09 09-10 10-11 12-13	$1,357,500
Endocrine Disruption in Eastern Plains Fishes	To obtain information on the effects of endocrine disruptors in water supplies on sex ratios and reproductive failure in native fish populations.	Population modeling results using the data from exposure studies and laboratory experiments indicate that exposure to exogenous estrogens could result in population declines due to both reduced reproductive capacity and survival of exposed fish.	08-09 09-10 10-11	$200,000
Management of Fish Passages	To improve and evaluate fish passages construction methods to allow upstream and downstream migration for native fish populations. This work also contains evaluations related to in-stream whitewater park structures.	Swimming performance and fish passage evaluations have been conducted. A complete set of swimming data has been collected for eight species of eastern plains fish. Multiple manuscripts and reports are complete or in progress. Additional work has been completed on the fish passage implications of whitewater parks.	08-09 09-10 10-11 11-12 12-13	$545,049
Implementation of Rangewide Black-tailed Prairie Dog Survey Protocol	Implement the revised rangewide survey protocol for black-tailed prairie dogs (BTPD) in Colorado.	Maintain the 5-year interval for BTPD surveys as agreed to in the Multi-State Conservation Plan for the Black-tailed Prairie Dog in the United States. The conservation strategies included in this plan played a key role in the USFWS's "not warranted for listing decision" for the BTPD.	13-14	$200,000
CPW TOTAL				**$13,189,678**

Colorado Water Conservation Board				
Project	**Purpose**	**Outcomes**	**Year(s) Authorized**	**Total Appropriated**
Native Fish Conservation	The funds expended to date have been used in the construction of the Relief Ditch Diversion Dam. The new diversion structure will reduce entrainment in the canal of both native and sport fish species and provide better access for fish to migrate upriver by reconnecting currently fragmented habitat.	In addition to benefiting fish species, this reconstruction will reduce annual costs and improve water delivery efficiency. Commercial and private boaters will experience safer passage and hunters, anglers and wildlife will all benefit from an improved river corridor environment.	12-13	$1,000,000
Platte River Recovery Implementation Program (PRIP) Funding	To fund the operation of the PRRIP. The goal of the program is to enhance, restore, and protect habitat for whooping crane, least tern, piping plover, and pallid sturgeon.	Meeting or making significant progress toward meeting several of the PRRIP milestones including: • implementation of the Water Action Plan that currently results in an average of 6,950 acre-feet per year of shortage reduction to target flows, and • expedited ESA Section 7 Consultations for South Platte water users (104 expedited ESA Section 7 Consultations in Colorado).	08-09	$10,185,000
Upper Colorado Recovery Implementation Program (UCRIP) Funding	To fund a wide variety of projects in support of the UCRIP, a collaborative conservation partnership working to recover threatened and endangered fish species in the Colorado River and its, while allowing water development to proceed in accordance with state and federal laws and interstate compacts.	Expedited ESA Section 7 Consultations for Colorado River water users. Since 1988, UCRIP has provided expedited ESA Section 7 Consultations for 1183 projects with an estimated 2.12 million acre-feet of existing and future depletions within Colorado.	09-10 10-11 11-12	$3,000,000
White River Management Plan	The UCRIP plans to draft a Management Plan for the White River basin and submit the plan for consideration in the creation of a Programatic Biological Opinion.	Issuance of a favorable PBO would provide for water users in the White River basin the same ESA coverage and expedited consultation benefits already provided under similar opinions for the Yampa, Colorado and Gunnison river basins.	13-14	$250,000
Selenium Management Plan	To reduce selenium locating. Activities to be funded include research, monitoring, evaluation, and selenium reduction methods such as further lining of canals and piping of laterals.	Reduce selenium loading from irrigation runoff and other local sources as part of USFWS Programatic Biological Opinion.	10-11 11-12 13-14	$500,000
CWCB TOTAL				**$14,935,000**