

Chapter 7: Monitoring

Utmost in priority for achieving the goals of the SWAP is the ability to monitor progress toward benchmark measures of success and population security thresholds for species and habitats. This clearly reflects the need for a comprehensive system that allows information from past and future inventories, surveys, research, and management actions to be accumulated, consolidated at multiple scales, and easily and rapidly distributed and compared to benchmarks. Many of the elements needed for such a system are already in place.

CPW and CNHP maintain databases that house detailed biological and location information on wildlife species and habitats in the state. The Crucial Habitat Assessment Tool (CHAT), developed by the Western Governors' Association and multiple conservation partners, prioritizes habitats by importance to vulnerable wildlife species¹⁷. The Colorado Ownership, Management, and Protection database (COMaP) consolidates ownership data on protected lands in the state¹⁸. These data management tools can be used together to support a comprehensive monitoring program to gauge progress toward conservation goals.

Species Monitoring

For species, Colorado's monitoring will first employ existing surveys and inventories, including monitoring being done by CPW and conservation partners (Table 9). For many of our highest priority SGCN, long-term monitoring efforts are on-going. In addition to the monitoring efforts listed in Table 9, CPW resource stewardship staff conduct a variety of monitoring programs on State Park Lands, including raptor monitoring, bird surveys (including song birds, waterfowl, migratory birds), and presence/absence of small mammals and amphibians. In a number of cases, monitoring or research will need to be the first step when existing status of, and threats to, SGCN are unknown. There are three Tier 1 and 41 Tier 2 vertebrate and mollusk SGCN not currently covered by existing monitoring efforts (identified by blanks in Table 9). Development of monitoring programs will be a priority conservation action for many of these species.

CPW's Colorado Natural Areas Program (CNAP) provides monitoring of rare species, especially rare plants, which is further outlined in the Rare Plant SWAP (Appendix A). CNAP and some state parks also periodically inventory invertebrates and use volunteers to monitor butterflies. However, of the non-mollusk invertebrate SGCN, very few species are regularly monitored (Appendix B), and all of those are monitored only at the local scale. Because CPW does not have

¹⁷ <http://westgovchat.org>

¹⁸ http://centroid1.warnercnr.colostate.edu/COMaP_v9/download_comap9.html

legislative authority over these species groups, we rely upon our conservation partners to fill this gap. The Colorado Butterfly Monitoring Network¹⁹, launched in 2013 by the Butterfly Pavilion, and the Xerces Society's BumbleBee Watch²⁰ are two examples of how Coloradans can help meet this need.

Habitat Monitoring

There are currently very few monitoring programs for habitat at a statewide scale. The U.S. Forest Service's national Forest Inventory and Analysis is implemented across all forest types in Colorado by the Colorado State Forest Service²¹. The Colorado State Forest Service also surveys forest insect and disease outbreaks²². Habitat monitoring on State Parks is conducted by CPW resource stewardship staff through vegetation plot monitoring. CNAP conducts long-term monitoring of numerous representative and rare plant communities which are identified and designated within the state's natural areas system. Federal, state, and local public land managers monitor lands within their jurisdictions to varying degrees, but no formal program exists for monitoring habitats across ownership boundaries. As natural resource stewardship evolves over the coming years, identifying new ways to coordinate monitoring of habitats is needed.

Measuring Conservation Success

To facilitate monitoring the effectiveness of implemented conservation efforts at a statewide scale, periodic assessments of the conservation status of SGCN and key habitats will be conducted following methods developed for the State of Colorado's Biodiversity report (Rondeau et al. 2011). The State of Colorado's Biodiversity presents a measure of the effectiveness of conservation action for select species and ecosystems, following a systematic and repeatable scorecard approach. Methods behind the analysis were developed by the Colorado Natural Heritage Program and The Nature Conservancy, with input from CPW. Species and ecosystems were assessed for *biodiversity status*, *threats*, and current *level of protection*. Each of these three main categories was analyzed according to several sub-categories, as appropriate for plants, animals, and ecosystems. Sub-categories for biodiversity status include indicators of both size and condition (e.g., abundance, number of populations, landscape setting, and so on). Threats were evaluated for scope, severity, and immediacy. Protection status was assessed based on the proportion of known populations on lands that are legally protected from conversion (note that this measure reflects the long-term security of the existing land use in a legal framework; it is not suggestive of the relative quality of a given occurrence).

¹⁹ <http://www.nab-net.org/program/colorado-butterfly-monitoring-network>

²⁰ www.BumbleBeeWatch.org

²¹ <http://csfs.colostate.edu/forest-management/forest-inventory-analysis/>

²² <http://csfs.colostate.edu/forest-management/common-forest-insects-diseases/>

All factors, taken together, were combined to provide an overall indication of how effective past and current conservation actions have been in the context of current land use and human activity, as well as what types of conservation strategies might be most effective in the future. Ultimately, species and ecosystems were categorized as Effectively Conserved, Moderately Conserved, Under Conserved, or Poorly Conserved. It is important to understand that these are relative scores from a statewide perspective. These methods do not address regional, watershed, or local status and context. Likewise, they do not address listing factors associated with the Endangered Species Act, and are not appropriate for that purpose. The strength of the scorecard approach is that it supports periodic re-assessment of ecosystems and species status as a way to evaluate progress toward conservation goals. Rondeau et al. (2011) provides additional details on methods and current results (the Executive Summary for the 2011 report is attached as Appendix G; the full report can be downloaded from <http://www.cnhp.colostate.edu>). Note that conditions have already changed for some species and ecosystems reviewed in the 2011 report. Keeping the analysis as well as the underlying data and assumptions current is a high priority for monitoring the status of SGCN and their habitats and the effectiveness of implemented conservation actions.

Our goal is to update the biodiversity status analysis every five to 10 years. This, in conjunction with scheduled review of the SWAP (especially review of species' status relative to Tier 1 and Tier 2 SGCN designation), will provide the information needed to identify conservation successes and emerging needs, prioritize resource expenditures, and direct partner collaboration.

Table 9. Existing monitoring plans for SGCN.

Focus: SS = Single Species; MS = Multi-species. Agency/Organizations: BCNA = Boulder County Nature Association; BLM = Bureau of Land Management; CNHP = Colorado Natural Heritage Program; CPW = Colorado Parks & Wildlife; IWJV = Intermountain West Joint Venture; RMBO = Rocky Mountain Bird Observatory; UDWR = Utah Division of Wildlife Resources; USACOE = U.S. Army Corps of Engineers; USFS = U.S. Forest Service; USFWS = U.S. Fish & Wildlife Service; USGS = U.S. Geological Service; WAFWA = Western Association of Fish & Wildlife Agencies; WYGF = Wyoming Game & Fish.

For each species that has only blank cells in this table, development of a monitoring plan has been added as a conservation action for the species in Table 7.

Species	Common Name	Document Citation	Focus	Long-term	Geographic Scope	Agency or Organization leads
AMPHIBIANS – TIER 1						
<i>Anaxyrus boreas boreas</i>	Boreal toad (Southern Rocky Mountain population)	(1) Conservation plan and agreement for the management and recovery of the southern Rocky Mountain population of the boreal toad (<i>Bufo boreas boreas</i>). 2001. Boreal Toad Recovery Team, Loeffler, C. (ed.). 76 pp. + appendices. (2) Boreal toad survey and monitoring project summary 1999 - 2012. Lambert and Schneider 2013. Colorado Natural Heritage Program report for Colorado Parks and Wildlife.	SS	X	(1) Multi-state: CO, WY, NM (2) Statewide	(1) CPW and 8 other agency signatories (2) CNHP, CPW
<i>Lithobates pipiens</i>	Northern leopard frog	Dosch, K.L., P.T.J. Johnson, and V. McKenzie. 2008. Northern leopard frog (<i>Lithobates [=Rana] pipiens</i>) sampling protocol for Colorado. University of Colorado, Boulder, CO. 42pp.	SS		Statewide	CPW
BIRDS – TIER 1						
<i>Leucosticte australis</i>	Brown-capped rosy-finch	Indian Peaks four season bird counts, 20 year summary (1982-2001)	MS	X	Local	BCNA
<i>Athene cucularia</i>	Burrowing owl	(1) Integrated Monitoring in BCRs: http://rmbo.org/v3/avian/Projects/IntegratedMonitoringinBirdConservationRegions.aspx (2) Breeding Bird Survey: https://www.pwrc.usgs.gov/bbs/ (3) Raptor Monitoring Strategy, 2015 Draft, Colorado Parks and Wildlife.	MS	X	(1) Multi-state (2) North America (3) Statewide	(1) CPW, USFS, RMBO, BLM (2) USGS (3) CPW

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<i>Tympanuchus phasianellus columbianus</i>	Columbian sharp-tailed grouse	(1) Hoffman, R. W., K. A. Griffin, J. M. Knetter, M. A. Schroeder, A. D. Apa, J. D. Robinson, S. P. Espinosa, T. J. Christiansen, R. D. Northrup, D. A. Budeau, and M. J. Chutter. 2015. Guidelines for the Management of Columbian Sharp-Tailed Grouse Populations and Their Habitats. WAFWA Sage and Columbian Sharp-tailed Grouse Technical Committee, Western Association of Fish and Wildlife Agencies (2) Columbian sharp-tailed grouse conservation plan: Routt, Moffat, and Rio Blanco Counties, Northwest Colorado (3) Annual Lek Surveys - unpublished internal report, no citation	SS	X	Statewide	CPW
<i>Aquila chrysaetos</i>	Golden eagle	(1) Nielson, R. M., Mcmanus, L., Rintz, T., Mcdonald, L. L., Murphy, R. K., Howe, W. H. and Good, R. E. 2014. Monitoring abundance of golden eagles in the western United States. The Journal of Wildlife Management, 78: 721–730. doi: 10.1002/jwmg.704 (2) Raptor Monitoring Strategy, 2015 Draft, Colorado Parks and Wildlife (3) Winter Raptor Survey http://bcna.org/raptorlinks.html	(1) SS (2) MS (3) MS	(2) X (3) X	(1) Western U.S. (2) Statewide (3) Local	(1) USFWS (2) CPW (3) BCNA
<i>Centrocercus urophasianus</i>	Greater sage-grouse	(1) Colorado Greater Sage-Grouse Steering Committee. 2008. Colorado Greater sage-grouse conservation plan. Colorado Parks and Wildlife, Denver, Colorado, USA. (2) Annual Lek Surveys - unpublished internal report, no citation	SS	X	Statewide	CPW
<i>Grus canadensis tabida</i>	Greater sandhill crane	(1) Pacific Flyway wide fall staging counts in production areas (currently limited in Colorado to the upper Yampa River valley, the San Luis Valley, and the Delta vicinity): Subcommittee on Rocky Mountain Greater Sandhill Cranes. 2007. Management plan of the Pacific and Central Flyways for the Rocky Mountain population of greater sandhill cranes. [Joint] Subcommittees, Rocky Mountain Population Greater Sandhill Cranes, Pacific Flyway Study Committee, Central Flyway Webless Migratory Game Bird Tech. Committee [c/o USFWS, MBMO], Portland, OR. 97pp. (2) Yampa Valley breeding population monitoring (a revised monitoring protocol is being pilot tested beginning in 2015): Graham, V. K. 1992. Recovery Plan for the Colorado population of the greater sandhill crane. Colorado Parks and Wildlife, Grand Junction, CO.	SS	X	(1) Multi-state (2) NW Region	(1) USFWS (2) CPW
<i>Centrocercus minimus</i>	Gunnison sage-grouse	(1) Gunnison Sage-Grouse Rangewide Steering Committee. 2005. Gunnison sage-grouse rangewide conservation plan. Colorado Parks and Wildlife, Denver, Colorado, USA. (2) Annual Lek Surveys - unpublished internal report, no citation	SS	X	(1) Range-wide (2) Range in CO	CPW, UDWR

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<i>Tympanuchus pallidicinctus</i>	Lesser prairie-chicken	(1) Range-wide Aerial Surveys: http://www.wafwa.org/documents/LPC-aerial-survey-results-2014.pdf (2) Annual Lek Surveys - unpublished internal report, no citation	SS	X	(1) Range-wide (2) Range in Colorado	(1) WAFWA (2) CPW
<i>Charadrius montanus</i>	Mountain plover	(1) Integrated Monitoring in BCRs: http://rmbo.org/v3/avian/Projects/IntegratedMonitoringinBirdConservationRegions.aspx (2) Breeding Bird Survey: https://www.pwrc.usgs.gov/bbs/	MS	X	(1) Multi-state (2) North America	(1) CPW, USFS, RMBO, BLM (2) USGS
<i>Tympanuchus phasianellus jamesii</i>	Plains sharp-tailed grouse	Annual Lek Surveys - unpublished internal report, no citation.	SS	X	Weld, Logan, Morgan Counties	CPW
<i>Lagopus leucura altipetens</i>	Southern white-tailed ptarmigan	(1) White-tailed ptarmigan 2012-2013 progress report. Seglund, A.E. and P. Street. CPW 35pp. (2) White-tailed ptarmigan summary report 2011 and project proposal 2012-2014. Seglund A.E. CPW 19pps. Reports outline monitoring using occupancy and mark resight techniques.	SS	X	Statewide	CPW
<i>Empidonax traillii extimus</i>	Southwestern willow flycatcher	Federal survey protocol: http://pubs.usgs.gov/tm/tm2a10/	SS		Rangewide	USFWS, USGS
<i>Coccyzus americanus occidentalis</i>	Western yellow-billed cuckoo	Federal survey protocol.	SS		Rangewide	USFWS
FISH – TIER 1						
<i>Etheostoma cragini</i>	Arkansas darter	(1) Colorado Parks and Wildlife. Krieger, D., T. Nesler, C. Bennett, G. Dowler and J. Melby. 2001. Arkansas Darter (<i>Etheostoma cragini</i>) Recovery Plan. Colorado Parks and Wildlife. 23 pp. (2) DRAFT Conservation Plan for the Native Fishes of the Arkansas River Basin, CO. 2013. Colorado Parks and Wildlife.	(1) SS (2) MS	X	Range in CO	CPW
<i>Catostomus discobolus</i>	Bluehead sucker	Range-Wide Conservation Agreement and Strategy for Roundtail Chub (<i>Gila robusta</i>), bluehead Sucker (<i>Castomus discobolus</i>), and Flannelmouth Sucker (<i>Castomus latipinnis</i>). 2005. Prepared fo the Colorado River Fish and Wildlife Council, by Utah Department of Natural Resources. 61pp.	MS	X	Rangewide	Rotating lead, CPW is current chair

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Species	Common Name	Document Citation	Focus	Long-term	Geographic Scope	Agency or Organization leads
<i>Gila elegans</i>	Bonytail chub	Upper Colorado River Endangered Fish Recovery Program. 2014. Recovery Implementation Program Section 7 Consultation, Sufficient Progress, and Historic Projects Agreement, October 15, 1993 (revised March 8, 2000), and Recovery Implementation Program Recovery Action Plan (RIPRAP)	MS	X	Upper Colorado River Basin	USFWS
<i>Hybognathus hankinsoni</i>	Brassy minnow	DRAFT Conservation Plan for the Native Fishes of the South Platte River Basin, CO. 2013. Colorado Parks and Wildlife.	MS	X	So. Platte Basin in CO	CPW
<i>Ptychocheilus lucius</i>	Colorado pikeminnow	(1) Upper Colorado River Endangered Fish Recovery Program. 2014. Recovery Implementation Program Section 7 Consultation, Sufficient Progress, and Historic Projects Agreement, October 15, 1993 (revised March 8, 2000), and Recovery Implementation Program Recovery Action Plan (RIPRAP) (2) San Juan River Basin Recovery Implementation Program. 2014. Long Range Plan.	MS	X	Rangewide in Upper CO Basin incl. San Juan	USFWS
<i>Oncorhynchus clarkii pleuriticus</i>	Colorado River cutthroat trout	CRCT Coordination Team. 2006. Conservation strategy for Colorado River cutthroat trout (<i>Oncorhynchus clarkii pleuriticus</i>) in the States of Colorado, Utah, and Wyoming. Colorado Parks and Wildlife, Fort Collins. 24p.	SS	X	Rangewide	WYGF
<i>Luxilus cornutus</i>	Common shiner	DRAFT Conservation Plan for the Native Fishes of the South Platte River Basin, CO. 2013. Colorado Parks and Wildlife.	MS	X	Range in CO	CPW
<i>Catostomus latipinnis</i>	Flannelmouth sucker	Range-Wide Conservation Agreement and Strategy for Roundtail Chub (<i>Gila robusta</i>), bluehead Sucker (<i>Castomus discobolus</i>), and Flannelmouth Sucker (<i>Castomus latipinnis</i>). 2005. Prepared fo the Colorado River Fish and Wildlife Council, by Utah Department of Natural Resources. 61pp.	MS	X	Rangewide	Rotating lead, CPW is current chair
<i>Platygobio gracilus</i>	Flathead chub	DRAFT Conservation Plan for the Native Fishes of the Arkansas River Basin, CO. 2013. Colorado Parks and Wildlife.	MS	X	Range in CO	CPW
<i>Oncorhynchus clarkii stomias</i>	Greenback cutthroat trout	(1) U.S. Fish and Wildlife Service. 1998. Greenback cutthroat trout recovery plan. U.S. Fish and Wildlife Service, Denver, Colorado. (2) Recovery Outline (in prep)	SS	X	Rangewide	USFWS, CPW
<i>Gila cypha</i>	Humpback chub	Upper Colorado River Endangered Fish Recovery Program. 2014. Recovery Implementation Program Section 7 Consultation, Sufficient Progress, and Historic Projects Agreement, October 15, 1993 (revised March 8, 2000), and Recovery Implementation Program Recovery Action Plan (RIPRAP)	MS	X	Upper Colorado River Basin	USFWS

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<i>Catostomus playtrhynchus</i>	Mountain sucker	Monitoring as part of routine sampling.			Statewide	CPW
<i>Phoxinus eos</i>	Northern redbelly dace	DRAFT Conservation Plan for the Native Fishes of the South Platte River Basin, CO. 2013. Colorado Parks and Wildlife.	MS	X	Range in CO	CPW
<i>Lepomis humilis</i>	Orangespotted sunfish	1) DRAFT Conservation Plan for the Native Fishes of the Arkansas River Basin, CO. 2013. Colorado Parks and Wildlife. 2) DRAFT Conservation Plan for the Native Fishes of the South Platte River Basin, CO. 2013. Colorado Parks and Wildlife.	MS	X	(1) Arkansas Basin in CO (2) South Platte Basin in CO	CPW
<i>Etheostoma spectabile</i>	Orangethroat darter	Monitoring as part of routine sampling.			Statewide	CPW
<i>Hybognathus placitus</i>	Plains minnow	(1) DRAFT Conservation Plan for the Native Fishes of the Arkansas River Basin, CO. 2013. Colorado Parks and Wildlife. (2) DRAFT Conservation Plan for the Native Fishes of the South Platte River Basin, CO. 2013. Colorado Parks and Wildlife.	MS	X	(1) Arkansas Basin in CO (2) So. Platte Basin in CO	CPW
<i>Fundulus sciadicus</i>	Plains topminnow	DRAFT Conservation Plan for the Native Fishes of the South Platte River Basin, CO. 2013. Colorado Parks and Wildlife.				
<i>Xyrauchen texanus</i>	Razorback sucker	(1) Upper Colorado River Endangered Fish Recovery Program. 2014. Recovery Implementation Program Section 7 Consultation, Sufficient Progress, and Historic Projects Agreement, October 15, 1993 (revised March 8, 2000), and Recovery Implementation Program Recovery Action Plan (RIPRAP) (2) San Juan River Basin Recovery Implementation Program. 2014. Long Range Plan.	MS	X	Rangewide in Upper CO Basin incl. San Juan	USFWS
<i>Gila pandora</i>	Rio Grande chub	Monitoring as part of routine sampling.			Statewide	CPW
<i>Oncorhynchus clarkii virginalis</i>	Rio Grande cutthroat trout	RGCT Conservation Team. 2013. Rio Grande cutthroat trout (<i>Oncorhynchus clarkii virginalis</i>) Conservation Strategy. Colorado Parks and Wildlife, Denver, CO.	SS	X	Rangewide	CPW
<i>Catostomus plebeius</i>	Rio Grande sucker	Langlois, D., J. Alves and J. Apker. 1994. Rio Grande sucker recovery plan. Colorado Parks and Wildlife, Denver. 22 pp.	SS	X	Range in CO	CPW

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<i>Gila robusta</i>	Roundtail chub	Range-Wide Conservation Agreement and Strategy for Roundtail Chub (<i>Gila robusta</i>), bluehead Sucker (<i>Castomus discobolus</i>), and Flannelmouth Sucker (<i>Castomus latipinnis</i>). 2005. Prepared for the Colorado River Fish and Wildlife Council, Utah Department of Natural Resources. 61 pp.	MS	X	Rangewide	Rotating lead, CPW is current chair
<i>Phoxinus erythrogaster</i>	Southern redbelly dace	DRAFT Conservation Plan for the Native Fishes of the Arkansas River Basin, CO. 2013. Colorado Parks and Wildlife.	MS	X	Range in CO	CPW
<i>Noturus flavus</i>	Stonecat	DRAFT Conservation Plan for the Native Fishes of the South Platte River Basin, CO. 2013. Colorado Parks and Wildlife.	MS	X	So. Platte Basin in CO	CPW
<i>Phenacobius mirabilis</i>	Suckermouth minnow	(1) DRAFT Conservation Plan for the Native Fishes of the Arkansas River Basin, CO. 2013. Colorado Parks and Wildlife. (2) DRAFT Conservation Plan for the Native Fishes of the South Platte River Basin, CO. 2013. Colorado Parks and Wildlife.	MS	X	(1) Arkansas Basin in CO (2) So. Platte Basin in CO	CPW
MAMMALS – TIER 1						
<i>Ochotona princeps</i>	American pika	American Pika surveys 2008-2012 Colorado Parks and Wildlife. Seglund, A. 33pp. Outlines monitoring protocol using occupancy.	SS	X	Statewide	CPW
<i>Mustela nigripes</i>	Black-footed ferret	Black-footed Ferret Recovery Plan, 2nd revision. 2013. U.S. Fish and Wildlife Service, Denver, CO.	SS	X	Rangewide	USFWS, CPW
<i>Myotis thysanodes</i>	Fringed myotis	(1) NABat (USGS draft) (2) CPW WNS Surveillance Plan, http://cpw.state.co.us/Documents/Research/WildlifeHealth/CPW_BatWNSsurveillanceplan_20112012.pdf (3) Surveillance, monitoring and life history investigations of bats within Colorado, multiple reports	MS	(1) X	(1) Rangewide (2) Site, Statewide (3) Regional	(1) USGS, CPW (2) CPW (3) CPW, BLM, CNHP
<i>Cynomys gunnisoni</i>	Gunnison's prairie dog	Protocol for conducting prairie dog occupancy surveys. 2007. Andelt, W.F. and A.E. Seglund. Colorado Parks and Wildlife. 14pp.	SS	X	Rangewide	CPW
<i>Myotis lucifigus</i>	Little brown bat	(1) NABat (USGS draft) (2) CPW WNS Surveillance Plan, http://cpw.state.co.us/Documents/Research/WildlifeHealth/CPW_BatWNSsurveillanceplan_20112012.pdf (3) Surveillance, monitoring and life history investigations of bats within Colorado, multiple reports	MS	(1) X	(1) Rangewide (2) Site, Statewide (3) Regional	(1) USGS, CPW (2) CPW (3) CPW, BLM, CNHP
<i>Lynx canadensis</i>	Lynx	Protocol for Monitoring Canada Lynx in Colorado. 2014. Ivan, J., and T. Shenk. Colorado Parks and Wildlife. 37 pp.	SS	X	Statewide	CPW, USFS, BLM

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<i>Zapus hudsonius luteus</i>	New Mexico meadow jumping mouse	(1) Species Status Assessment Report for the New Mexico meadow jumping mouse (<i>Zapus hudsonius luteus</i>). 2014. U.S. Fish and Wildlife Service, Albuquerque, NM. (2) USFWS Recovery Outline: New Mexico Meadow Jumping Mouse - status pending http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=A0BX	SS		Rangewide	USFWS
<i>Perognathus fasciatus</i>	Olive-backed pocket mouse					
<i>Zapus hudsonius preblei</i>	Prebles meadow jumping mouse	None currently (development of monitoring plan is an action under the current draft of the Recovery Plan)				
<i>Lontra canadensis</i>	River otter	State of Colorado River Otter Recovery Plan. 2003. Colorado Parks and Wildlife. 51pp. http://cpw.state.co.us/Documents/WildlifeSpecies/SpeciesOfConcern/RecoveryPlans/CDOW2003Riverotterrecoveryplan.pdf#search=river%20otter	SS	X	Basin	CPW
<i>Euderma maculatum</i>	Spotted bat	(1) NABat (USGS draft) (2) CPW WNS Surveillance Plan, http://cpw.state.co.us/Documents/Research/WildlifeHealth/CPW_BatWNSsurveillanceplan_20112012.pdf (3) Surveillance, monitoring and life history investigations of bats within Colorado, multiple reports	MS	(1) X	(1) Rangewide (2) Site, Statewide (3) Regional	(1) USGS, CPW (2) CPW (3) CPW, BLM, CNHP
<i>Corynorhinus townsendii pallascens</i>	Townsend's big-eared bat ssp.	(1) NABat (USGS draft) (2) CPW WNS Surveillance Plan, http://cpw.state.co.us/Documents/Research/WildlifeHealth/CPW_BatWNSsurveillanceplan_20112012.pdf (3) Surveillance, monitoring and life history investigations of bats within Colorado, multiple reports	MS	(1) X	(1) Rangewide (2) Site, Statewide (3) Regional	(1) USGS, CPW (2) CPW (3) CPW, BLM, CNHP
<i>Cynomys leucurus</i>	White-tailed prairie dog	Protocol for conducting prairie dog occupancy surveys. 2007. Andelt, W.F. and A.E. Seglund. Colorado Parks and Wildlife. 14pp.	SS	X	Rangewide	CPW
<i>Gulo gulo</i>	Wolverine					

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REPTILES – TIER 1						
<i>Aspidoscelis neotesselata</i>	Colorado checkered whiptail	Draft Great Plains Reptile Monitoring Protocol (D. Martin)	MS	X	Regional	CSU, CPW
<i>Sistrurus catenatus</i>	Massasauga	Draft Great Plains Reptile Monitoring Protocol (D. Martin)	MS	X	Regional	CSU, CPW
AMPHIBIANS – TIER 2						
<i>Hyla arenicolor</i>	Canyon tree frog					
<i>Scaphiopus couchii</i>	Couch's spadefoot					
<i>Spea intermontana</i>	Great Basin spadefoot					
<i>Gastrophryne olivacea</i>	Great Plains narrowmouth toad					
<i>Anaxyrus debilis</i>	Green toad					
<i>Acris crepitans</i>	Northern cricket frog					
<i>Lithobates blairi</i>	Plains leopard frog					
<i>Lithobates sylvatica</i>	Wood frog					
BIRDS – TIER 2						
<i>Botaurus lentiginosus</i>	American bittern					
<i>Falco peregrinus anatum</i>	American peregrine falcon	(1) Post-delisting Monitoring Plan: http://www.fws.gov/endangered/esa-library/pdf/Peregrineplan2003.pdf (2) Raptor Monitoring Strategy, 2015 Draft, Colorado Parks and Wildlife	(1) SS (2) MS	X	(1) U.S. (2) Statewide	(1) USFWS (2) CPW
<i>Pelecanus erythrorhynchos</i>	American white pelican	(1) http://www.fws.gov/mountain-prairie/species/birds/western_colonial/Atlas_WCWS_interior_1-23-2014_FINAL.pdf (2) Project Colony Watch http://rmb.org/v3/avian/CitizenScience/ColonyWatch.aspx	MS		(1) Interior Western U.S. (2) Colorado	(1) USFWS (2) RMBO

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<i>Haliaeetus leucocephalus</i>	Bald eagle	(1) Post-delisting Monitoring Plan: http://www.fws.gov/midwest/eagle/protect/pdf/BEPDMP_100511_OMB_FINALfor%20posting_Jan2013Final.pdf (2) Raptor Monitoring Strategy, 2015 Draft, Colorado Parks and Wildlife. (3) Winter Raptor Survey http://bcna.org/raptorlinks.html	(1) SS (2) MS (3) MS	X	(1) U.S. (2) Statewide (3) Local	(1) USFWS (2) CPW (3) BCNA
<i>Patagioenas fasciata</i>	Band-tailed pigeon					
<i>Bucephala islandica</i>	Barrow's goldeneye					
<i>Leucosticte atrata</i>	Black rosy-finch					
<i>Cypseloides niger</i>	Black swift					
<i>Chlidonias niger</i>	Black tern	(1) Integrated Monitoring in BCRs: http://rmbo.org/v3/avian/Projects/IntegratedMonitoringinBirdConservationRegions.aspx (2) Breeding Bird Survey: https://www.pwrc.usgs.gov/bbs/	MS		(1) Interior Western U.S. (2) Colorado	(1) USFWS (2) RMBO
<i>Dolichonyx oryzivorus</i>	Bobolink	(1) Integrated Monitoring in BCRs: http://rmbo.org/v3/avian/Projects/IntegratedMonitoringinBirdConservationRegions.aspx (2) Breeding Bird Survey: https://www.pwrc.usgs.gov/bbs/	MS	X	(1) Multi-state (2) North America	(1) CPW, USFS, RMBO, BLM (2) USGS
<i>Aegolius funereus</i>	Boreal owl	Raptor Monitoring Strategy, 2015 Draft, Colorado Parks and Wildlife.	MS	X	Statewide	CPW
<i>Spizella breweri</i>	Brewer's sparrow	(1) Integrated Monitoring in BCRs: http://rmbo.org/v3/avian/Projects/IntegratedMonitoringinBirdConservationRegions.aspx (2) Breeding Bird Survey: https://www.pwrc.usgs.gov/bbs/ (3) 50-years of bird banding data from the Allegra Collister Nature Preserve, Boulder County, 2011	MS	X	(1) Multi-state (2) North America (3) Local	(1) CPW, USFS, RMBO, BLM (2) USGS (3) BCNA
<i>Peucaea cassinii</i>	Cassin's finch	(1) Integrated Monitoring in BCRs: http://rmbo.org/v3/avian/Projects/IntegratedMonitoringinBirdConservationRegions.aspx (2) Breeding Bird Survey: https://www.pwrc.usgs.gov/bbs/	MS	X	(1) Multi-state (2) North America	(1) CPW, USFS, RMBO, BLM (2) USGS

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<i>Aimophila cassinii</i>	Cassin's sparrow	(1) Integrated Monitoring in BCRs: http://rmbo.org/v3/avian/Projects/IntegratedMonitoringinBirdConservationRegions.aspx (2) Breeding Bird Survey: https://www.pwrc.usgs.gov/bbs/	MS	X	(1) Multi-state (2) North America	(1) CPW, USFS, RMBO, BLM (2) USGS
<i>Calcarius ornatus</i>	Chestnut-collared longspur	(1) Integrated Monitoring in BCRs: http://rmbo.org/v3/avian/Projects/IntegratedMonitoringinBirdConservationRegions.aspx (2) Breeding Bird Survey: https://www.pwrc.usgs.gov/bbs/	MS	X	(1) Multi-state (2) North America	(1) CPW, USFS, RMBO, BLM (2) USGS
<i>Buteo regalis</i>	Ferruginous hawk	(1) Integrated Monitoring in BCRs: http://rmbo.org/v3/avian/Projects/IntegratedMonitoringinBirdConservationRegions.aspx (2) Breeding Bird Survey: https://www.pwrc.usgs.gov/bbs/ (3) Raptor Monitoring Strategy, 2015 Draft, Colorado Parks and Wildlife. (4) Winter Raptor Survey: http://bcna.org/raptorlinks.html	MS	X	(1) Multi-state (2) North America (3) Statewide (4) Local	(1) CPW, USFS, RMBO, BLM (2) USGS (3) CPW (4) BCNA
<i>Otus flammeolus</i>	Flammulated owl	Raptor Monitoring Strategy, 2015 Draft, Colorado Parks and Wildlife.	MS	X	Statewide	CPW
<i>Setophaga graciae</i>	Grace's warbler	(1) Integrated Monitoring in BCRs: http://rmbo.org/v3/avian/Projects/IntegratedMonitoringinBirdConservationRegions.aspx (2) Breeding Bird Survey: https://www.pwrc.usgs.gov/bbs/	MS	X	(1) Multi-state (2) North America	(1) CPW, USFS, RMBO, BLM (2) USGS
<i>Ammodramus savannarum</i>	Grasshopper sparrow	(1) Integrated Monitoring in BCRs: http://rmbo.org/v3/avian/Projects/IntegratedMonitoringinBirdConservationRegions.aspx (2) Breeding Bird Survey: https://www.pwrc.usgs.gov/bbs/	MS	X	(1) Multi-state (2) North America	(1) CPW, USFS, RMBO, BLM (2) USGS
<i>Vireo vicinior</i>	Gray vireo	(1) Integrated Monitoring in BCRs: http://rmbo.org/v3/avian/Projects/IntegratedMonitoringinBirdConservationRegions.aspx (2) Breeding Bird Survey: https://www.pwrc.usgs.gov/bbs/	MS	X	(1) Multi-state (2) North America	(1) CPW, USFS, RMBO, BLM (2) USGS
<i>Tympanuchus cupido</i>	Greater prairie-chicken	(1) Greater prairie-chicken inventory assessment. 2005. Stratman, M. Colorado Parks and Wildlife. 15pp. (2) Annual Lek Surveys - unpublished internal report, no citation	SS	X	Rangewide	CPW
<i>Baeolophus ridgwayi</i>	Juniper titmouse	(1) Integrated Monitoring in BCRs: http://rmbo.org/v3/avian/Projects/IntegratedMonitoringinBirdConservationRegions.aspx (2) Breeding Bird Survey: https://www.pwrc.usgs.gov/bbs/	MS	X	(1) Multi-state (2) North America	(1) CPW, USFS, RMBO, BLM (2) USGS

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<i>Calamospiza melanocorys</i>	Lark bunting	(1) Integrated Monitoring in BCRs: http://rmbo.org/v3/avian/Projects/IntegratedMonitoringinBirdConservationRegions.aspx (2) Breeding Bird Survey: https://www.pwrc.usgs.gov/bbs/	MS	X	(1) Multi-state (2) North America	(1) CPW, USFS, RMBO, BLM (2) USGS
<i>Passerina amoena</i>	Lazuli bunting	(1) Integrated Monitoring in BCRs: http://rmbo.org/v3/avian/Projects/IntegratedMonitoringinBirdConservationRegions.aspx (2) Breeding Bird Survey: https://www.pwrc.usgs.gov/bbs/	MS	X	(1) Multi-state (2) North America	(1) CPW, USFS, RMBO, BLM (2) USGS
<i>Sterna antillarum</i>	Least tern	(1) Endangered Species Management Plan for Piping Plovers and Interior Least Terns (John Martin Reservoir Project and John Martin State Park). US Army Corps of Engineers. May 22, 2002 (2) Piping Plover and Interior Least Tern Recovery Plan. State of Colorado, Jennifer Slater. September 1994. http://cpw.state.co.us/Documents/WildlifeSpecies/SpeciesOfConcern/RecoveryPlans/PipingPloverLeastTernRecoveryPlan.pdf (3) Piping Plover and Least Tern Monitoring, Protection, and Habitat Improvement At John Martin Reservoir and Southeast Colorado. Duane Nelson. October 14, 2014, September 30, 2013.	MS	X	CO	(1) CPW (2) US Army Corps of Engineers
<i>Melanerpes lewis</i>	Lewis's woodpecker	(1) Integrated Monitoring in BCRs: http://rmbo.org/v3/avian/Projects/IntegratedMonitoringinBirdConservationRegions.aspx (2) Breeding Bird Survey: https://www.pwrc.usgs.gov/bbs/	MS	X	(1) Multi-state (2) North America	(1) CPW, USFS, RMBO, BLM (2) USGS
<i>Lanius ludovicianus</i>	Loggerhead shrike	(1) Integrated Monitoring in BCRs: http://rmbo.org/v3/avian/Projects/IntegratedMonitoringinBirdConservationRegions.aspx (2) Breeding Bird Survey: https://www.pwrc.usgs.gov/bbs/	MS	X	(1) Multi-state (2) North America	(1) CPW, USFS, RMBO, BLM (2) USGS
<i>Numenius americanus</i>	Long-billed curlew	(1) Integrated Monitoring in BCRs: http://rmbo.org/v3/avian/Projects/IntegratedMonitoringinBirdConservationRegions.aspx (2) Breeding Bird Survey: https://www.pwrc.usgs.gov/bbs/	MS	X	(1) Multi-state (2) North America	(1) CPW, USFS, RMBO, BLM (2) USGS
<i>Rhynchophanes mccownii</i>	McCown's longspur	(1) Integrated Monitoring in BCRs: http://rmbo.org/v3/avian/Projects/IntegratedMonitoringinBirdConservationRegions.aspx (2) Breeding Bird Survey: https://www.pwrc.usgs.gov/bbs/	MS	X	(1) Multi-state (2) North America	(1) CPW, USFS, RMBO, BLM (2) USGS

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<i>Strix occidentalis lucida</i>	Mexican spotted owl	(1) Federal survey protocol: http://www.fws.gov/mountain-prairie/endspp/protocols/MexicanSpottedOwlSurveyProtocol2012.pdf (2) Raptor Monitoring Strategy, 2015 Draft, Colorado Parks and Wildlife.	(1) SS (2) MS	(2) X	(1) Rangewide (2) Statewide	(1) USFWS (2) CPW
<i>Colinus virginianus</i>	Northern bobwhite	Management procedures for northern bobwhites in eastern Colorado. 1984. Snyder, W. Special Report #56. Colorado Parks and Wildlife. 22pp.	SS	X	Statewide	CPW
<i>Accipiter gentilis</i>	Northern goshawk	Raptor Monitoring Strategy, 2015 Draft, Colorado Parks and Wildlife.	MS	X	Statewide	CPW
<i>Circus cyaneus</i>	Northern harrier	(1) Integrated Monitoring in BCRs: http://rmbo.org/v3/avian/Projects/IntegratedMonitoringinBirdConservationRegions.aspx (2) Breeding Bird Survey: https://www.pwrc.usgs.gov/bbs/ (3) Raptor Monitoring Strategy, 2015 Draft, Colorado Parks and Wildlife. (4) Winter Raptor Survey http://bcna.org/raptorlinks.html	MS	X	(1) Multi-state (2) North America (3) Statewide (4) Local	(1) CPW, USFS, RMBO, BLM (2) USGS (3) CPW (4) BCNA
<i>Contopus cooperi</i>	Olive-sided flycatcher	(1) Integrated Monitoring in BCRs: http://rmbo.org/v3/avian/Projects/IntegratedMonitoringinBirdConservationRegions.aspx (2) Breeding Bird Survey: https://www.pwrc.usgs.gov/bbs/	MS	X	(1) Multi-state (2) North America	(1) CPW, USFS, RMBO, BLM (2) USGS
<i>Gymnorhinus cyanocephalus</i>	Pinyon jay	(1) Integrated Monitoring in BCRs: http://rmbo.org/v3/avian/Projects/IntegratedMonitoringinBirdConservationRegions.aspx (2) Breeding Bird Survey: https://www.pwrc.usgs.gov/bbs/	MS	X	(1) Multi-state (2) North America	(1) CPW, USFS, RMBO, BLM (2) USGS
<i>Charadrius melodus</i>	Piping plover	(1) Endangered Species Management Plan for Piping Plovers and Interior Least Terns (John Martin Reservoir Project and John Martin State Park). US Army Corps of Engineers. May 22, 2002 (2) Piping Plover and Interior Least Tern Recovery Plan. State of Colorado, Jennifer Slater. September 1994. http://cpw.state.co.us/Documents/WildlifeSpecies/SpeciesOfConcern/RecoveryPlans/PipingPloverLeastTernRecoveryPlan.pdf (3) Piping Plover and Least Tern Monitoring, Protection, and Habitat Improvement At John Martin Reservoir and Southeast Colorado. Duane Nelson. October 14, 2014, September 30, 2013.	MS	X	CO	(1) CPW (2) USACOE
<i>Falco mexicanus</i>	Prairie falcon	(1) Raptor Monitoring Strategy, 2015 Draft, Colorado Parks and Wildlife. (2) Winter Raptor Survey http://bcna.org/raptorlinks.html	MS	X	(1) Statewide (2) Local	(1) CPW (2) BCNA

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<i>Progne subis</i>	Purple martin	(1) Integrated Monitoring in BCRs: http://rmbo.org/v3/avian/Projects/IntegratedMonitoringinBirdConservationRegions.aspx (2) Breeding Bird Survey: https://www.pwrc.usgs.gov/bbs/	MS	X	(1) Multi-state (2) North America	(1) CPW, USFS, RMBO, BLM (2) USGS
<i>Selasphorus rufus</i>	Rufous hummingbird	Breeding Bird Survey: https://www.pwrc.usgs.gov/bbs/	MS	X	North America	USGS
<i>Amphispiza belli</i>	Sage sparrow	(1) Integrated Monitoring in BCRs: http://rmbo.org/v3/avian/Projects/IntegratedMonitoringinBirdConservationRegions.aspx (2) Breeding Bird Survey: https://www.pwrc.usgs.gov/bbs/	MS	X	(1) Multi-state (2) North America	(1) CPW, USFS, RMBO, BLM (2) USGS
<i>Asio flammeus</i>	Short-eared owl	Raptor Monitoring Strategy, 2015 Draft, Colorado Parks and Wildlife.	MS	X	Statewide	CPW
<i>Buteo swainsoni</i>	Swainson's hawk	(1) Integrated Monitoring in BCRs: http://rmbo.org/v3/avian/Projects/IntegratedMonitoringinBirdConservationRegions.aspx (2) Breeding Bird Survey: https://www.pwrc.usgs.gov/bbs/ (3) Raptor Monitoring Strategy, 2015 Draft, Colorado Parks and Wildlife.	MS	X	(1) Multi-state (2) North America (3) Statewide	(1) CPW, USFS, RMBO, BLM (2) USGS (3) CPW
<i>Bartramia longicauda</i>	Upland sandpiper	(1) Integrated Monitoring in BCRs: http://rmbo.org/v3/avian/Projects/IntegratedMonitoringinBirdConservationRegions.aspx (2) Breeding Bird Survey: https://www.pwrc.usgs.gov/bbs/	MS	X	(1) Multi-state (2) North America	(1) CPW, USFS, RMBO, BLM (2) USGS
<i>Catharus fuscescens</i>	Veery	(1) Integrated Monitoring in BCRs: http://rmbo.org/v3/avian/Projects/IntegratedMonitoringinBirdConservationRegions.aspx (2) Breeding Bird Survey: https://www.pwrc.usgs.gov/bbs/	MS	X	(1) Multi-state (2) North America	(1) CPW, USFS, RMBO, BLM (2) USGS
<i>Oreothlypis virginiae</i>	Virginia's warbler	(1) Integrated Monitoring in BCRs: http://rmbo.org/v3/avian/Projects/IntegratedMonitoringinBirdConservationRegions.aspx (2) Breeding Bird Survey: https://www.pwrc.usgs.gov/bbs/	MS	X	(1) Multi-state (2) North America	(1) CPW, USFS, RMBO, BLM (2) USGS
<i>Charadrius alexandrinus nivosus</i>	Western snowy plover	(1) Snowy Plover Survey Summary, Blanca Wetlands, San Luis Valley, 2014 BLM unpublished report (2) International Snowy Plover Survey Protocol, Discrete Site Survey Methodologies, 2007 USFWS	SS	X	(1) Regional (2) Statewide	(1) BLM (2) USFWS, IWJV

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<i>Plegadis chihi</i>	White-faced ibis	(1) http://www.fws.gov/mountain-prairie/species/birds/western_colonial/Atlas_WCWS_interior_1-23-2014_FINAL.pdf (2) Project Colony Watch http://rmbo.org/v3/avian/CitizenScience/ColonyWatch.aspx	MS		(1) Interior Western U.S. (2) Colorado	(1) USFWS (2) RMBO
<i>Grus americana</i>	Whooping crane	Annual Survey: http://www.fws.gov/refuge/aransas/science/whooping_crane_surveys.html	SS	X	Wintering Grounds	USFWS
FISH – TIER 2						
<i>Etheostoma exile</i>	Iowa darter	DRAFT Conservation Plan for the Native Fishes of the South Platte River Basin, CO. 2013. Colorado Parks and Wildlife.				
<i>Couesius plumbeus</i>	Lake chub	DRAFT Conservation Plan for the Native Fishes of the South Platte River Basin, CO. 2013. Colorado Parks and Wildlife.				
MAMMALS – TIER 2						
<i>Sciurus aberti</i>	Abert's squirrel					
<i>Idionycteris phyllotis</i>	Allen's big-eared bat	(1) NABat (USGS draft) (2) CPW WNS Surveillance Plan, http://cpw.state.co.us/Documents/Research/WildlifeHealth/CPW_BatWNSurveillanceplan_20112012.pdf (3) Surveillance, monitoring and life history investigations of bats within Colorado, multiple reports	MS	(1) X	(1) Rangewide (2) Site, Statewide (3) Regional	(1) USGS, CPW (2) CPW (3) CPW, BLM, CNHP
<i>Martes americana</i>	American marten					
<i>Nyctinomops macrotis</i>	Big free-tailed bat	(1) NABat (USGS draft) (2) CPW WNS Surveillance Plan, http://cpw.state.co.us/Documents/Research/WildlifeHealth/CPW_BatWNSurveillanceplan_20112012.pdf (3) Surveillance, monitoring and life history investigations of bats within Colorado, multiple reports	MS	(1) X	(1) Rangewide (2) Site, Statewide (3) Regional	(1) USGS, CPW (2) CPW (3) CPW, BLM, CNHP

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Species	Common Name	Document Citation	Focus	Long-term	Geographic Scope	Agency or Organization leads
<i>Ovis canadensis</i>	Bighorn sheep	(1) Stiver, J. R. 2011. Bighorn sheep management plan: Data analysis unit RBS-8, Pikes Peak/DomeRock/Beaver Creek Sheep Herd. Colorado Parks and Wildlife. Colorado Springs, CO 42 pp. http://cpw.state.co.us/Documents/Hunting/BigGame/DAU/BighornSheep/RBS-8DAUplan.pdf (2) Stiver, J. R. 2014. Bighorn sheep management plan: Data analysis unit RBS-14, Rampart Herd. Colorado Parks and Wildlife. Colorado Springs, CO. 27 pp. http://cpw.state.co.us/Documents/Hunting/BigGame/DAU/BighornSheep/RBS-14DAUPlanFinal.pdf (3) Diamond, B. and B. Banulis. 2012. Bighorn Sheep Management Plan: Data Analysis Unit RBS-21, San Juans West, Game Management Units S-21 & S-33. Colorado Parks and Wildlife. Montrose, CO. 106 pp. http://cpw.state.co.us/Documents/Hunting/BigGame/DAU/BighornSheep/RBS21DAUplan_SanJuansWest.pdf (4) George, J. L., R. Kahn, M. W. Miller, and B. Watkins. 2009. Colorado Bighorn Sheep Management Plan 2009-2019. Colorado Parks and Wildlife. Denver, CO. 88 pp.	SS	X	Local, Statewide	CPW
<i>Bison bison</i>	Bison					
<i>Cynomys ludovicianus</i>	Black-tailed prairie dog	USGS Protocol, McDonald, L.L., Stanley, T.R., Otis, D.L., Biggins, D.E., Stevens, P.D., Koprowski, J.L., and Ballard, Warren. 2011. Recommended methods for range-wide monitoring of prairie dogs in the United States: U.S. Geological Survey Scientific Investigations Report 2011-5063, 36p.	SS	X	Rangewide	CPW
<i>Thomomys bottae rubidus</i>	Botta's pocket gopher (<i>rubidus</i> ssp)					
<i>Conepatus leuconotus</i>	Common hog-nosed skunk					
<i>Sorex nanus</i>	Dwarf shrew					
<i>Canis lupus</i>	Gray wolf - two subspecies (Northern and Mexican)	Respond to sighting reports - no formal monitoring program				CPW
<i>Ursus arctos</i>	Grizzly bear	Respond to sighting reports - no formal monitoring program				CPW

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<i>Lasiurus cinereus</i>	Hoary bat	(1) NABat (USGS draft) (2) CPW WNS Surveillance Plan, http://cpw.state.co.us/Documents/Research/WildlifeHealth/CPW_BatWNSsurveillanceplan_20112012.pdf (3) Surveillance, monitoring and life history investigations of bats within Colorado, multiple reports	MS	(1) X	(1) Rangewide (2) Site, Statewide (3) Regional	(1) USGS, CPW (2) CPW (3) CPW, BLM, CNHP
<i>Vulpes macrotis</i>	Kit fox	(1) Kit Fox 2007 survey report southwestern region. Seglund A.E. and J. Garner. CPW 17pp. (2) 2008 year-end survey report non-invasive sampling survey results for kit fox in west-central colorado. Reed- Eckert, M. CPW 22pp.	SS	X	Local	CPW
<i>Sorex preblei</i>	Preble's shrew					
<i>Brachylagus idahoensis</i>	Pygmy rabbit					
<i>Sorex hoyi montanus</i>	Pygmy shrew					
<i>Clethrionomys gapperi</i>	Red-backed vole					
<i>Lemmiscus curtatus</i>	Sagebrush vole					
<i>Lepus americanus</i>	Snowshoe hare	SW Region Long term pellet counts (Wait)	SS	X	Basin	CPW
<i>Vulpes velox</i>	Swift fox	Conservation assessment and conservation strategy for swift fox in the United States-2011 update. Dowd Stukel, E., ed. 2011. South Dakota Department of Game, Fish, and Parks, Pierre. 100pp. http://cpw.state.co.us/learn/Pages/SwiftFoxConservationTeam.aspx	SS	X	Rangewide	CPW
<i>Lepus townsendii</i>	White-tailed jackrabbit					
REPTILES – TIER 2						
<i>Thamnophis cyrtopsis</i>	Black-necked gartersnake					
<i>Lampropeltis californiae</i>	California kingsnake	Draft Great Plains Reptile Monitoring Protocol (D. Martin)	MS	X	Regional	CSU, CPW

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<i>Thamnophis sirtalis</i>	Common gartersnake					
<i>Hypsiglena chlorophaea</i>	Desert nightsnake	Draft Great Plains Reptile Monitoring Protocol (D. Martin)	MS	X	Regional	CSU, CPW
<i>Sceloporus magister</i>	Desert spiny lizard					
<i>Gambelia wislizenii</i>	Long-nosed leopard lizard					
<i>Rhinocheilus lecontei</i>	Long-nosed snake	Draft Great Plains Reptile Monitoring Protocol (D. Martin)	MS	X	Regional	CSU, CPW
<i>Crotalus oreganus concolor</i>	Midget faded rattlesnake					
<i>Lampropeltis triangulum</i>	Milksnake	Draft Great Plains Reptile Monitoring Protocol (D. Martin)	MS	X	Regional	CSU, CPW
<i>Rena dissectus</i>	New Mexico threadsnake	Draft Great Plains Reptile Monitoring Protocol (D. Martin)	MS	X	Regional	CSU, CPW
<i>Phrynosoma modestum</i>	Round-tailed horned lizard	Draft Great Plains Reptile Monitoring Protocol (D. Martin)	MS	X	Regional	CSU, CPW
<i>Tantilla horbartsmithi</i>	Smith's black-headed snake					
<i>Phrynosoma cornutum</i>	Texas horned lizard	Draft Great Plains Reptile Monitoring Protocol (D. Martin)	MS	X	Regional	CSU, CPW
<i>Kinosternon flavescens</i>	Yellow mud turtle					
MOLLUSKS – TIER 2						
<i>Ferrissia walkeri</i>	Cloche ancyloid					
<i>Promenetus umbilicatellus</i>	Cockerell					
<i>Anodontooides ferussacianus</i>	Cylindrical papershell					

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<i>Ferrissia fragilis</i>	Fragil ancyloid					
<i>Physa cupreonitens</i>	Hot springs physa					
<i>Uniomerus tetralasmus</i>	Pondhorn					
<i>Acroloxus coloradensis</i>	Rocky Mountain capshell					
<i>Promenetus exacuus</i>	Sharp sprite					
<i>Physa gyrina utahensis</i>	Utah physa					