

SECTION I

WYOMING'S SPECIES OF GREATEST CONSERVATION NEED

As indicated within the Congressional guidelines, each state CWCS must discuss the SGCN. Specifically, Element #1 indicates each CWCS must provide “Information on the distribution and abundance of species of wildlife, including low and declining populations as the WGFD deems appropriate, that are indicative of the diversity and health of Wyoming’s wildlife”.

PROCESS FOR SPECIES SELECTION

Over 800 species of wildlife exist in Wyoming. In order to select those species that would be considered in the CWCS, the WGFD developed a process to identify species, including low and declining populations, that are indicative of the diversity and health of Wyoming’s wildlife. The process that ultimately resulted in the identification of Wyoming’s SGCN began with the Wyoming Native Species Status (NSS) matrix. This system was developed in the mid-1980s by WGFD and biologists from other agencies and non-governmental organizations in an effort to identify species of special concern. Initially, the majority of this effort was focused on nongame birds and nongame mammals. In the 1990s, it was expanded to include fishes and amphibians, and the NSS process was endorsed by the WGFC. Reptiles, mollusks, and crustaceans were subsequently incorporated into the NSS process. While WGFD acknowledges that many other systems for identifying priority species exist, WGFD chose this system because it was broadly familiar to scientists and wildlife managers in Wyoming and provides a common foundation for identifying SGCN.

The basis of this classification involves reviewing species’ status as determined by population and habitat variables. For birds and mammals, a 16-cell matrix is used. For fish, reptiles, amphibians and invertebrates, a 9-cell matrix is used. Both are described below.

16-CELL MATRIX (MAMMALS AND BIRDS)

In the 16-cell matrix, the population variables form the y-axis of the matrix and include the following conditions: 1) populations are greatly restricted or declining – extirpation appears possible; 2) populations are declining or restricted in numbers and or distribution – extirpation is not imminent; 3) species is widely distributed: population status and trends are unknown but are suspected to be stable; and 4) populations are either stable or increasing and are not restricted in either numbers or distribution.

The habitat variables form the x-axis of the matrix and include the following conditions: 1) ongoing significant loss of habitat; 2) habitat is restricted or vulnerable, but no recent or ongoing significant loss; species may be sensitive to human disturbance; 3) habitat is not restricted, the habitat is vulnerable but there is no loss, and the species is not sensitive to human disturbance; and 4) habitat is stable and not restricted.

At the intersection of the two most appropriate population and habitat conditions, any given species is given an NSS ranking. For example, a species such as the yellow-billed cuckoo (*Coccyzus americanus*) is ranked as an NSS2 species because its breeding populations are restricted in numbers and distribution, and there is ongoing significant loss of nesting habitat. Conversely, a species such as the hoary bat (*Lasiurus cinereus*) is ranked as an NSS4 species because, although it is widely distributed, it may be sensitive to human disturbance. A copy of the 16-cell matrix is shown in Table 2 below.

Table 2. 16-cell Wyoming Native Species Status matrix.

		HABITAT VARIABLES			
		A On-going significant loss of habitat	B Habitat is restricted or vulnerable but no recent or on-going significant loss; species may be sensitive to human disturbance	C Habitat is not restricted, vulnerable but no loss; species is not sensitive to human disturbance	D Habitat is stable and not restricted
P O P U L A T I O N V A R I A B L E S	1 Populations are greatly restricted or declining - extirpation appears possible	NSS1	NSS2	NSS3	NSS4
	2 Populations are declining or restricted in numbers and/or distribution - extirpation is not imminent	NSS2	NSS3	NSS4	NSS5
	3 Species is widely distributed; population status and trends are unknown but are suspected to be stable	NSS3	NSS4	NSS5	NSS6
	4 Populations are stable or increasing and not restricted in numbers and/or distribution	NSS4	NSS5	NSS6	NSS7

**9-CELL MATRIX
(FISHES, AMPHIBIANS, REPTILES, MOLLUSKS AND CRUSTACEANS)**

Over the course of time, it became evident to biologists in Wyoming that the 16-cell matrix did not effectively meet the needs of all taxa. It was especially problematic for species whose abundance and distribution was confined to aquatic or narrowly defined habitats. As a result, the 9-cell matrix was developed. This matrix is a simplified version of the 16-cell matrix. A copy of this matrix is shown in Table 3, below:

Table 3. 9-cell Wyoming Native Species Status matrix.

	HABITAT DECLINING OR VULNERABLE	HABITAT STABLE	HABITAT INCREASING
RARE Populations are physically isolated and /or extremely low densities throughout historic range. Extirpation appears possible.	<u>NSS1</u>	<u>NSS2</u>	
COMMON Species is widely distributed throughout its native range and populations status is stable.	<u>NSS3</u>	<u>NSS4</u>	<u>NSS5</u>
EXPANDING Species is widely distributed throughout its native range and populations appear to be expanding.		<u>NSS6</u>	<u>NSS7</u>

In the 9-cell matrix, the population variables again form the y-axis of the matrix and include the following conditions: 1) Populations are physically isolated and/or extremely low densities throughout historic range. Extirpation appears possible; 2) Species is widely distributed throughout its native range and populations status is stable; and 3) Species is widely distributed throughout its native range and populations appear to be expanding.

The habitat variables form the x-axis of the 9-cell matrix and include the following conditions: 1) habitat declining or vulnerable; 2) habitat stable; and 3) habitat increasing.

Again, as in the 16-cell matrix, the intersection of the two most appropriate population and habitat conditions, any given species is given a NSS ranking. For example, a species such as the Colorado River cutthroat trout (*Oncorhynchus clarki pleuriticus*) is ranked as an NSS2 species because its habitat is stable, but populations are physically isolated and/or at extremely low densities throughout its historic range. Conversely, a species such as the Great Basin spadefoot (*Spea intermontanus*) is ranked as an NSS4 species due to a lack of quantifiable data on its abundance and distribution.

The great benefit of evaluating species using these two fixed criteria is that it allows individual species to be classified in one of seven NSS categories and plotted within an organizational matrix. The matrix's key function is to identify species in need of additional conservation effort and graphically prioritize those species using the same criteria.

For purposes of the CWCS, species identified as NSS1, NSS2, NSS3 or NSS4 were considered to be SGCN. This list was circulated to partners and stakeholders, and comments were solicited. Many agreed with the draft list. Based on information from other partners and stakeholders, species were either added or deleted. These additions and deletions were relatively few in number and included species classified NSS5-7. Without exception, these were species whose population status and habitat were relatively stable in Wyoming. However, Wyoming represents a significant part of their total ranges.

Several other considerations were important in determining Wyoming's SGCN. First, no species were excluded by virtue of their status as a "game" or "nongame" species. Neither were any wildlife species excluded by virtue of legal status in Wyoming. That is, species considered as "wildlife" and protected under state law were considered along with those considered "predatory animals" and not protected under state law. Species were evaluated primarily on the basis of the status of their conservation need, not political status. Notwithstanding this approach, we have included species with a wide variety of conservation needs. Some Wyoming SGCN exist nowhere else in the world (i.e. Kendall Warm Springs dace). Others are species that may be in some stage of recovery through conservation actions that are continuing at this time (i.e., black-footed ferret). Still others are species that may be common in other parts of their range, but have special significance for Wyoming by virtue of the absence of information on the species in this state (i.e. all mollusks) or by virtue of its potential for listing under the federal Endangered Species Act (i.e. greater sage-grouse). In all, this list represents those species that most nearly meet the designation "Species of Greatest Conservation Need".

The CWCS deals only with species that are legally considered wildlife in Wyoming. Wyoming Statute 23-1-101 (a) (xiii) defines "Wildlife" as all wild mammals, birds, fish, amphibians, reptiles, crustaceans and mollusks, and wild bison designated by the Wyoming Game and Fish Commission and the Wyoming Livestock Board within Wyoming. Currently, there is no statutory authority in Wyoming for insect conservation. As such, insects are not considered in the CWCS. Information on the abundance and distribution of insects in Wyoming is extremely limited, and primarily confined to insect control, not insect conservation. Those updating Wyoming's CWCS in 2010 may be encouraged by the National Acceptance Advisory

Team (NAAT) to consider insects within the next iteration. However, the WGFD has no statutory authority or responsibility to manage insects in Wyoming.

The following list of SGCN is intended to provide a foundation for conserving these species in Wyoming. Crucial management data is lacking for many species. However, the WGFD believes the no differentiation should be made between species for which information is lacking and species which have demonstrated conservation needs. As additional management information becomes available, species may be removed from this list or other species may be added. In any event, the following list is offered not as an indictment of any user group, but rather as a first step to conserving all wildlife in Wyoming.

Species of Greatest Conservation Need

Wyoming has determined 279 species are in greatest conservation need, including 54 mammals, 60 birds, 26 reptiles, 12 amphibians, 40 fishes, 19 crustaceans, and 68 mollusks. Table 4 below summarizes the entire list of species by taxa.

Table 4. Wyoming’s Species Of Greatest Conservation Need

Type	Common Name	Scientific Name
Mammals (54)	Abert's Squirrel *	<i>Sciurus aberti</i>
	Big Brown Bat *	<i>Eptesicus fuscus</i>
	Bighorn Sheep	<i>Ovis canadensis</i>
	Black-footed Ferret *	<i>Mustela nigripes</i>
	Black-tailed Prairie Dog *	<i>Cynomys ludovicianus</i>
	Canada Lynx *	<i>Lynx canadensis</i>
	Canyon Mouse *	<i>Peromyscus crinitus</i>
	Cliff Chipmunk *	<i>Tamias dorsalis</i>
	Dwarf Shrew *	<i>Sorex nanus</i>
	Fisher *	<i>Martes pennanti</i>
	Fringed Myotis *	<i>Myotis thysanodes</i>
	Great Basin Pocket Mouse *	<i>Perognathus parvus</i>
	Grizzly Bear	<i>Ursus arctos</i>
	Hayden's Shrew *	<i>Sorex haydeni</i>
	Hispid Pocket Mouse *	<i>Chaetodipus hispidus</i>
	Hoary Bat *	<i>Lasiurus cinereus</i>
	Idaho Pocket Gopher *	<i>Thomomys idahoensis</i>
	Least Weasel *	<i>Mustela nivalis</i>
	Little Brown Myotis *	<i>Myotis lucifugus</i>
	Long-eared Myotis *	<i>Myotis evotis</i>
	Long-legged Myotis *	<i>Myotis volans</i>
	Marten *	<i>Martes americana</i>
	Meadow Jumping Mouse *	<i>Zapus hudsonius</i>
	Moose *	<i>Alces alces</i>
	Northern Flying Squirrel *	<i>Glaucomys sabrinus</i>
	Northern Myotis *	<i>Myotis septentrionalis</i>
	Olive-backed Pocket Mouse *	<i>Perognathus fasciatus</i>

Type	Common Name	Scientific Name
Mammals	Pallid Bat *	<i>Antrozous pallidus</i>
	Pinyon Mouse *	<i>Peromyscus truei</i>
	Plains Harvest Mouse *	<i>Reithrodontomys montanus</i>
	Plains Pocket Gopher *	<i>Geomys bursarius</i>
	Plains Pocket Mouse *	<i>Perognathus flavescens</i>
	Prairie Vole *	<i>Microtus ochrogaster</i>
	Preble's Shrew *	<i>Sorex preblei</i>
	Pygmy Rabbit *	<i>Brachylagus idahoensis</i>
	Pygmy Shrew *	<i>Sorex hoyi</i>
	River Otter *	<i>Lutra canadensis</i>
	Sagebrush Vole *	<i>Lemmiscus curtatus</i>
	Silky Pocket Mouse *	<i>Perognathus flavus</i>
	Silver-haired Bat *	<i>Lasionycteris noctivagans</i>
	Spotted Bat *	<i>Euderma maculatum</i>
	Spotted Ground Squirrel *	<i>Spermophilus spilosoma</i>
	Swift Fox *	<i>Vulpes velox</i>
	Townsend's Big-eared Bat *	<i>Corynorhinus townsendii</i>
	Uinta Ground Squirrel *	<i>Spermophilus armatus</i>
	Vagrant Shrew *	<i>Sorex vagrans</i>
	Water Shrew *	<i>Sorex palustris</i>
	Water Vole *	<i>Microtus richardsoni</i>
	Western Heather Vole *	<i>Phenacomys intermedius</i>
	Western Small-footed Myotis *	<i>Myotis ciliolabrum</i>
	White-tailed Prairie Dog *	<i>Cynomys leucurus</i>
	Wolverine *	<i>Gulo gulo</i>
	Wyoming Ground Squirrel *	<i>Spermophilus elegans</i>
	Wyoming Pocket Gopher *	<i>Thomomys clusius</i>
Birds (60)	American Bittern	<i>Botaurus lentiginosus</i>
	American Three-toed Woodpecker *	<i>Picoides dorsalis</i>
	American White Pelican	<i>Pelecanus erythrorhynchos</i>
	Ash-throated Flycatcher *	<i>Myiarchus cinerascens</i>
	Bald Eagle	<i>Haliaeetus leucocephalus</i>
	Barrow's Goldeneye *	<i>Bucephala islandica</i>
	Black Rosy-Finch *	<i>Leucosticte atrata</i>
	Black Tern	<i>Chlidonias niger</i>
	Black-backed Woodpecker *	<i>Picoides arcticus</i>
	Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>
	Bobolink	<i>Dolichonyx oryzivorus</i>
	Boreal Owl *	<i>Aegolius funereus</i>
	Brewer's Sparrow	<i>Spizella breweri</i>
	Brown-capped Rosy Finch *	<i>Leucosticte australis</i>
	Burrowing Owl	<i>Athene cunicularia</i>
	Bushtit *	<i>Psaltriparus minimus</i>
	Canvasback	<i>Aythya valisineria</i>

Type	Common Name	Scientific Name
Birds	Caspian Tern	<i>Sterna caspia</i>
	Chestnut-collared Longspur	<i>Calcarius ornatus</i>
	Clark's Grebe	<i>Aechmophorus clarkii</i>
	Columbian Sharp-tailed Grouse	<i>Tympanuchus phasianellus</i>
	Common Loon	<i>Gavia immer</i>
	Dickcissel	<i>Spiza americana</i>
	Ferruginous Hawk *	<i>Buteo regalis</i>
	Forster's Tern	<i>Sterna forsteri</i>
	Franklin's Gull	<i>Larus pipixcan</i>
	Grasshopper Sparrow	<i>Ammodramus savannarum</i>
	Great Blue Heron	<i>Ardea herodias</i>
	Great Gray Owl *	<i>Strix nebulosa</i>
	Greater Sage-Grouse	<i>Centrocercus urophasianus</i>
	Greater Sandhill Crane	<i>Grus canadensis</i>
	Harlequin Duck *	<i>Histrionicus histrionicus</i>
	Juniper Titmouse *	<i>Baeolophus ridgwayi</i>
	Lark Bunting	<i>Calamospiza melanocorys</i>
	Lesser Scaup	<i>Aythya affinis</i>
	Lewis' Woodpecker *	<i>Melanerpes lewis</i>
	Long-billed Curlew *	<i>Numenius americanus</i>
	McCown's Longspur	<i>Calcarius mccownii</i>
	Merlin *	<i>Falco columbarius</i>
	Mountain Plover *	<i>Charadrius montanus</i>
	Northern Goshawk *	<i>Accipiter gentilis</i>
	Northern Pintail	<i>Anas acuta</i>
	Northern Pygmy-Owl *	<i>Glaucidium gnoma</i>
	Peregrine Falcon *	<i>Falco peregrinus</i>
	Pygmy Nuthatch *	<i>Sitta pygmaea</i>
	Redhead	<i>Aythya americana</i>
	Sage Sparrow	<i>Amphispiza belli</i>
	Sage Thrasher	<i>Oreoscoptes montanus</i>
	Scott's Oriole *	<i>Icterus parisorum</i>
	Short-eared Owl	<i>Asio flammeus</i>
	Snowy Egret	<i>Egretta thula</i>
	Swainson's Hawk	<i>Buteo swainsoni</i>
	Trumpeter Swan	<i>Cygnus buccinator</i>
	Upland Sandpiper	<i>Bartramia longicauda</i>
	Virginia Rail	<i>Rallus limicola</i>
	Western Grebe	<i>Aechmophorus occidentalis</i>
	Western Scrub-Jay *	<i>Aphelocoma californica</i>
	White-faced Ibis	<i>Plegadis chihi</i>
	Willow Flycatcher	<i>Empidonax traillii</i>
	Yellow-billed Cuckoo *	<i>Coccyzus americanus</i>
Reptiles (26)	Black Hills Redbelly Snake *	<i>Storeria occipitomaculata pahasapae</i>

Type	Common Name	Scientific Name
	Bullsnake *	<i>Pituophis catenifer sayi</i>
	Cliff Tree Lizard *	<i>Urosaurus ornatus wrighti</i>
	Common Garter Snake *	<i>Thamnophis sirtalis</i>
	Eastern Yellow-bellied Racer *	<i>Coluber constrictor flaviventris</i>
	Great Basin Gophersnake *	<i>Pituophis catenifer deserticola</i>
	Great Plains Earless Lizard *	<i>Holbrookia maculata</i>
	Greater Short-horned Lizard *	<i>Phrynosoma hernandesi hernandesi</i>
	Intermountain Wandering Gartersnake *	<i>Thamnophis elegans vagrans</i>
	Many-lined Skink *	<i>Eumeces multivirgatus</i>
	Midget Faded Rattlesnake	<i>Crotalus viridis concolor</i>
	Northern Plateau Lizard *	<i>Sceloporus undulatus elongatus</i>
	Northern Prairie Lizard *	<i>Sceloporus undulatus garmani</i>
	Northern Sagebrush Lizard *	<i>Sceloporus graciosus graciosus</i>
	Ornate Box Turtle *	<i>Terrapene ornata ornata</i>
	Pale Milksnake *	<i>Lampropeltis triangulum multistriata</i>
	Plains Black-headed Snake *	<i>Tantilla Nigriceps</i>
	Plains Gartersnake *	<i>Thamnophis radix</i>
	Plains Hog-nosed Snake *	<i>Heterodon nasicus nasicus</i>
	Prairie Racerunner *	<i>Cnemidophorus sexlineatus viridis</i>
	Prairie Rattlesnake *	<i>Crotalus viridis viridis</i>
	Red-lipped Plateau Lizard *	<i>Sceloporus undulatus erythrocheilus</i>
	Rubber Boa *	<i>Charina bottae</i>
	Smooth Green Snake *	<i>Opheodrys vernalis</i>
	Western Painted Turtle *	<i>Chrysemys picta bellii</i>
	Western Spiny Softshell *	<i>Apalone spinifera hartwegi</i>
Amphibians (12)	American Bullfrog *	<i>Rana catesbeiana</i>
	Boreal Chorus Frog *	<i>Pseudacris maculata</i>
	Boreal Toad *	<i>Bufo boreas boreas</i>
	Columbia Spotted Frog	<i>Rana luteiventris</i>
	Great Basin Spadefoot *	<i>Spea intermontana</i>
	Great Plains Toad *	<i>Bufo cognatus</i>
	Northern Leopard Frog *	<i>Rana pipiens</i>
	Plains Spadefoot *	<i>Spea bombifrons</i>
	Tiger Salamander *	<i>Ambystoma tigrinum</i>
	Wood Frog *	<i>Rana sylvatica</i>
	Woodhouse's Toad *	<i>Bufo woodhousii</i>
	Wyoming Toad *	<i>Bufo baxteri</i>
Fishes (40)	Arctic Grayling	<i>Thymallus arcticus</i>
	Bigmouth Shiner *	<i>Notropis dorsalis</i>
	Black Bullhead *	<i>Ameiurus melas</i>
	Bluehead Sucker *	<i>Catostomus discobolus</i>
	Bonneville Cutthroat *	<i>Oncorhynchus clarki utah</i>
	Burbot *	<i>Lota lota</i>

Type	Common Name	Scientific Name
Fishes	Central Stoneroller *	<i>Campostoma anomalum</i>
	Channel Catfish *	<i>Ictalurus punctatus</i>
	Colorado River Cutthroat *	<i>Oncorhynchus clarki pleuriticus</i>
	Common Shiner *	<i>Luxilus cornutus</i>
	Finescale Dace *	<i>Phoxinus neogaeus</i>
	Flannelmouth Sucker *	<i>Catostomus latipinnis</i>
	Flathead Chub *	<i>Platygobio gracilis</i>
	Goldeye *	<i>Hiodon alosoides</i>
	Hornyhead Chub *	<i>Nocomis biguttatus</i>
	Iowa Darter *	<i>Etheostoma exile</i>
	Kendall Warm Springs Dace	<i>Rhinichthys osculus thermalis</i>
	Lake Chub *	<i>Couesius plumbeus</i>
	Leatherside Chub *	<i>Gila copei</i>
	Mottled Sculpin *	<i>Cottus bairdi</i>
	Mountain Sucker *	<i>Catostomus platyrhynchus</i>
	Mountain Whitefish *	<i>Prosopium williamsoni</i>
	Northern Pearl Dace *	<i>Margariscus margarita</i>
	Orangethroat Darter *	<i>Etheostoma spectabile</i>
	Paiute Sculpin *	<i>Cottus beldingi</i>
	Plains Minnow *	<i>Hybognathus placitus</i>
	Plains Topminnow *	<i>Fundulus sciadicus</i>
	Quillback *	<i>Carpionodes cyprinus</i>
	River Carpsucker *	<i>Carpionodes carpio</i>
	Roundtail Chub *	<i>Gila robusta</i>
	Sauger *	<i>Sander canadensis</i>
	Shorthead Redhorse *	<i>Moxostoma macrolepidotum</i>
	Shovelnose Sturgeon *	<i>Scaphirhynchus platyrhynchus</i>
	Snake River Cutthroat *	<i>Oncorhynchus clarki ssp.</i>
	Stonecat *	<i>Noturus flavus</i>
	Sturgeon Chub *	<i>Macrhybopsis gelida</i>
	Suckermouth Minnow *	<i>Phenacobius mirabilis</i>
	Western Silvery Minnow *	<i>Hybognathus argyritis</i>
	Westslope Cutthroat	<i>Oncorhynchus clarki lewisi</i>
	Yellowstone Cutthroat *	<i>Oncorhynchus clarki bouvieri</i>
Crustaceans (19)	Beavertail Fairy Shrimp *	<i>Thamnocephalus platyurus</i>
	Circumpolar Fairy Shrimp *	<i>Branchinecta paludosa</i>
	Colorado Fairy Shrimp *	<i>Branchinecta coloradensis</i>
	Crenatethumb Fairy Shrimp *	<i>Streptocephalus mattoxi</i>
	Devil Crayfish *	<i>Cambarus diogenes</i>
	Eastern Alkali Fairy Shrimp *	<i>Branchinecta redingi</i>
	Ethologist Fairy Shrimp *	<i>Eubbranchipus serratus</i>
	Gambelii Crayfish *	<i>Pacifastacus gambelii</i>
	Giant Fairy Shrimp *	<i>Branchinecta gigas</i>

Type	Common Name	Scientific Name
Crustaceans	Greater Plains Fairy Shrimp *	<i>Streptocephalus texanus</i>
	Knobbedlip Fairy Shrimp *	<i>Eubbranchipus bundyi</i>
	Lemon Tadpole Shrimp *	<i>Lepidurus lemmoni</i>
	Longtail Tadpole Shrimp *	<i>Triops longicaudatus</i>
	Neglectus Crayfish *	<i>Orconectes negectus</i>
	New Mexico Fairy Shrimp *	<i>Streptocephalus dorotheae</i>
	Pocked Pouch Fairy Shrimp *	<i>Branchinecta campestris</i>
	Rock Pool Fairy Shrimp *	<i>Branchinecta packardi</i>
	San Francisco Brine Shrimp *	<i>Artemia franciscana</i>
	Versitle Fairy Shrimp *	<i>Branchinecta lindahli</i>
Mollusks (68)	A Land Snail (Hells Canyon) *	<i>Oreohelix strigosa ssp. 1</i>
	Abbreviate Pondsnailed * *	<i>Stagnicola apicina</i>
	Ash Gyro *	<i>Gyraulus parvus</i>
	Ashy Pebblesnailed *	<i>Stagnicola traski</i>
	Ashy Physa *	<i>Physella integra</i>
	Bear Lake Springsnailed *	<i>Pyrgulopsis pilsbryana</i>
	Berry's Mountain Snail *	<i>Oreohelix strigosa berryi</i>
	California Floater *	<i>Anodonta californiensis</i>
	Callused Vertigo Snail *	<i>Vertigo arthuri</i>
	Cave Physa *	<i>Physella spelunca</i>
	Cloaked Physa *	<i>Physa megalochlamys</i>
	Cooper's Rocky Mountain Snail *	<i>Oreohelix strigosa cooperi</i>
	Creeping Ancyloid *	<i>Ferrissia rivularis</i>
	Cylindrical Papershell *	<i>Anodontoides ferussacianus</i>
	Disc Gyro *	<i>Gyraulus circumstriatus</i>
	Dusky Fossaria *	<i>Fossaria dalli</i>
	Fatmucket *	<i>Lampsilis siliquoidea</i>
	Fat-whorled Pondsnailed *	<i>Stagnicola bonnevillensis</i>
	Fragile Ancyloid *	<i>Ferrissia fragilis</i>
	Giant Floater *	<i>Pyganodon grandis</i>
	Glass Physa *	<i>Physa skinneri</i>
	Glossy Valvata *	<i>Valvata humeralis</i>
	Golden Fossaria *	<i>Fossaria obrussa</i>
	Great Basin Rams-horn *	<i>Helisoma newberryi</i>
	Green River Pebblesnailed *	<i>Fluminicola coloradoensis</i>
	Indecisive Vallonia *	<i>Vallonia albula</i>
	Jackson Lake Springsnailed *	<i>Pyrgulopsis robusta</i>
	Keeled Mountain Snail *	<i>Oreohelix carinifera</i>
	Lance Aplexa *	<i>Aplexa elongata</i>
	Marsh Pondsnailed *	<i>S. elodes</i>
	Marsh Rams-horn *	<i>Planorbella trivolvis</i>
	Meadow Rams-horn *	<i>Planorbula campestris</i>
	Mineral Creek Mountain Snail *	<i>Oreohelix pilsbryi</i>

Type	Common Name	Scientific Name
Mollusks	Morgan Creek Mountain Snail *	<i>Oreohelix swopei</i>
	Mossy Valvata *	<i>V. sincera</i>
	Mountain Marshsnail *	<i>Stagnicola montanensis</i>
	Mud Amnicola *	<i>Amnicola limosus</i>
	Niobrara Ambersnail *	<i>Oxyloma haydeni</i>
	Olive Physa *	<i>Physella cooperi</i>
	Pewter Physa *	<i>Physella heterostropha</i>
	Plain Pocketbook *	<i>Lampsilis cardium</i>
	Protean Physa *	<i>Physella virgata</i>
	Pumpkin Physa *	<i>Physella ancillaria</i>
	Pygmy Fossaria *	<i>Fossaria parva</i>
	Pygmy Mountain Snail *	<i>Oreohelix pygmaea</i>
	Ribbed Dagger *	<i>Pupoides hordaceus</i>
	Rock Fossaria *	<i>Fossaria modicella</i>
	Rocky Mountain Dusksnail *	<i>Colligyrus greggi</i>
	Rocky Mountain Physa *	<i>Physella propinqua</i>
	Rocky Mountain Snail *	<i>Oreohelix strigosa</i>
	Rotund Physa *	<i>Physella columbiana</i>
	Rough Rams-horn *	<i>Planorbella subcrenata</i>
	Rustic Pondsnailed *	<i>Stagnicola hinkleyi</i>
	Sharp Sprite *	<i>Promenetus exacuus</i>
	Sierra Ambersnail *	<i>Catinella stretchiana</i>
	Slope Ambersnail *	<i>Catinella wandae</i>
	Star Gyro *	<i>Gyraulus crista</i>
	Striate Disc *	<i>Discus shimekii</i>
	Tadpole Physa *	<i>Physella gyrina</i>
	Two-ridge Rams-horn *	<i>Helisoma anceps</i>
	Umbilicate Sprite *	<i>Promenetus umbilicatellus</i>
	Utah Physa *	<i>Physella utahensis</i>
	Mystery Vertigo *	<i>Vertigo paradoxa</i>
	Western Pearlshell *	<i>Margaritifera falcata</i>
	White Heel Splitter *	<i>Lasmigona complanata</i>
	Widelip Pondsnailed *	<i>S. traski</i>
	Woodland Pondsnailed *	<i>S. catascopium</i>
	Wrinkled Marshsnail *	<i>S. caperata</i>

* Species listed wholly or in part due to absence of data.

Information on each of the Wyoming SGCN is summarized in a species account. The accounts include information on status, abundance, habitat, threats or management problems and important survey needs and conservation actions for each species. Each includes a number of reference publication citations for additional reading. These species accounts appear in Appendix II.

PERIPHERAL SPECIES

A number of the Wyoming's SGCN might be considered "peripheral" to the state. That is, the portion of their range within Wyoming constitutes only a small percentage of their total range. This contributes to the large number of species on the list and their diversity. In part, the diversity of species on this list and of wildlife in Wyoming, in general, can be attributed to the fact that Wyoming lies at the edge of six different ecoregions and their associated fauna, while other states may only contain two or three ecoregions (Comer, et al 2003). Ecoregions are considered to be large geographical areas that share common ecological characteristics such as vegetation, topography, etc. Wyoming also attracts considerable attention because some well-known and important ecotypes (such as the boreal forest) and the associated wildlife are represented in the state. In addition, many species that have not persisted in other states can still be found in Wyoming.

Concern and rhetoric over the importance of peripheral species has received considerable attention for many decades (Simpson 1944, Mayr 1954, 1963, Carson 1959, Stebbins and Major 1965, Levin 1970). Excellent scientific data and analysis of the subject continues to be published in more recent years (Frankle and Soule 1981, Beardmore 1983, Gilpin and Soule 1986, Lawton 1993, Lesica and Allendorf 1995, Furlow and Amrijo-Prewit 1995, Lomolino and Channell 1993, Aranjo and Williams 2001). These recent publications provide empirical data and elaborate on the importance of peripheral populations in relation to speciation, evolution, resiliency to changing environments, the conservation of genetic diversity, and prevention of extinction.

Perhaps the most compelling reason for Wyoming to include peripheral populations in conservation planning efforts is the prevention of extinction or listing under the Endangered Species Act. The concept that a peripheral population might play a significant role in preventing extinction of a species may seem at first to be counter-intuitive. Many biologists assume that habitat at the periphery of a species range is marginal and, in fact, this may often be the case. Yet, history is full of examples where peripheral populations are spared while center-of-range populations become extirpated. Most species of endangered mammals studied experienced population collapses at population centers that spread out toward the peripheries (Lomolino and Channell 1995). There are also well-known examples of birds, like the California Condor (Nielson et al. 2001). This species persisted at the periphery of its historical distribution, which ranged from California to New York. In Wyoming, examples of species avoiding extirpation at the peripheries of their ranges are well known. The black-footed ferret escaped near extinction at the western periphery of its range (Caughley and Gunn 1996). The distribution of the swift fox could well have been classified as peripheral in Wyoming (Crowe 1986) while it was disappearing and being proposed for listing in adjacent eastern states. Today, both species have been successfully translocated and reintroduced from Wyoming sources to cores and peripheries of extirpated ranges. In addition, species on the periphery of their range may have unique genetic variation not found in other segments of the total population.

In Wyoming, conservation efforts must focus on the continuum of core to peripheral species. Wyoming's CWCS, at least in the short term, will focus primarily on core species and on maintaining biological diversity. Future efforts of Wyoming, in cooperation with partners in other states, may focus on species that may be peripheral to Wyoming, but which are extremely important on a range-wide, regional or national scale if such efforts are funded appropriately. In the short-term, efforts to conserve peripheral species will focus on identifying the importance of their habitats and working with private landowners and land management agencies to conserve these habitats.