

APPENDICES

Appendix A. Glossary of terms used in the CWCS for New Mexico.

Abiotic resource use- The use of non-living natural resources. Example: Hard-rock mining.

Adaptive management- A natural resources management process under which planning, implementation, monitoring, research, evaluation and incorporation of new information are combined into a management approach that is: 1) based on scientific findings and the needs of society, 2) treats management actions as experiments, 3) acknowledges the complexity of these systems and scientific uncertainty, 4) uses the resulting new information to modify future management methods and policy.

Aestivate- The condition of dormancy or torpidity.

Agrading- Increasing the surface substrate level.

Alien species- Species that are not native to the ecosystem.

Amphibians- An animal, such as a frog, which lives both on land and in water but must lay its eggs in water.

Animal herbivory- The utilization of forage by domestic or wild animals.

Anostracans- An order of crustaceans, known as fairy shrimps or brine shrimps. These organisms range up to about 4 in (100 mm) long, but usually are much smaller.

Anthropogenically induced- Human-caused impacts to natural resources.

Apache Highlands Ecoregion- The Apache Highlands Ecoregion extends from central to southeastern Arizona into southwestern New Mexico, the western tip of Texas, and northern Mexico. This ecoregion contains 30 million acres and is known as the Sky Islands Mountain Archipelago.

Area-sensitive species- Those species whose life history needs are influenced by spatial requirements.

Argillic soil horizon- A subsurface soil layer with an accumulation of silicate clays.

Arizona-New Mexico Mountains Ecoregion- The Arizona-New Mexico Mountains Ecoregion encompasses the highlands of eastern Arizona and central and western New Mexico covering 29 million acres of land.

Arthropod- Any of numerous invertebrate animals of the phylum Arthropoda, including insects, crustaceans and arachnids that are characterized by a chitinous exoskeleton and a segmented body to which jointed appendages are articulated in pairs.

Astatic- Without orientation or directional characteristics. Having no tendency to change position.

ATV- All-terrain vehicle.

Avifauna- The birds of a specific region or period.

Avulsion- Any sudden cutting off or separation of land or abrupt change in the course of a stream, generally by breaking through the stream banks during a flood, including the formation of a cutoff meander.

Bajadas- A geologic term for alluvial sediment at the base of a mountain that extends outward from the base onto the floodplain. A bajada can be relatively narrow, made up of two or three fans, or a broad, extensive, continuous alluvial slope consisting of many fans. The upper boundary of a bajada is commonly merged with a pediment slope.

Bioaccumulation- The accumulation of toxic substances, such as a chemicals or metals, found in tissues of a living organism.

Biodiversity- The number and variety of organisms found within a specified region.

Biomass- The total mass of living material within a given unit of area.

- Biological soil crusts-** The community of organisms living at the surface of desert soils. Major components are cyanobacteria, green algae, microfungi, mosses, liverworts and lichens.
- BISON-M database-** A natural history database containing information on 1,166 species in New Mexico and some species in Arizona and Colorado.
- Bivalves-** A mollusc (such as a clam) that has a shell consisting of two hinged sides.
- Boolean overlay-** An analysis procedure in GIS where overlaying spatial data from two or more map layers are used to create new features and attributes from the input layers. Spatial data layers are queried using Boolean logic and may be added, subtracted, or multiplied together.
- Boreal forest-** Post-pliocene conifer forests consisting of pines and fir trees.
- Bosque-** The forested area on either side of a watercourse, typically in the Southwest.
- Brackish-** Water having less salt than seawater, but still undrinkable.
- Branchiopods-** Any of various aquatic crustaceans of the subclass Branchiopoda, such as the fairy shrimp and water fleas, characterized by a segmented body and flattened, leaf-like thoracic appendages.
- Calcic soil horizon-** A mineral soil horizon with evidence of calcium carbonate deposition.
- Caliche-** A layer of hard alkaline clay typically used for road building.
- Canadian Watershed-** The Canadian River tributaries flow east and southeast from their origins on the east slopes of the Sangre de Cristo cordillera of northern New Mexico and southern Colorado. The watershed encompasses about one-sixth the land area of the state or about 44,000 km².
- Carrying capacity-** Maximum number of individuals that a given environment can support without detrimental effects.
- Catostomids-** The sucker family that includes approximately 61 species in the order.
- Cypriniformes-** They are the most abundant fishes in North America.
- Centrarchids-** The sunfish family that includes 30 species in the order Perciformes. The bass and crappie are included, and all are native only to North America.
- Channel morphology-** The shape and structure of streambeds.
- Channelization-** Mechanical redirecting of a streambed in more or less a straight line.
- Chaparral-** A vegetation type consisting of mostly evergreen shrubs.
- Charismatic species-** Larger high-profile animals that receive a lot of public attention.
- Chihuahuan Desert Ecoregion-** The Chihuahuan Desert Ecoregion encompasses approximately 70 million hectares from San Luis Potosi, Mexico north to southwestern Texas and southern New Mexico.
- Chihuahuan Mesquite Upland Scrub-** An upland shrubland that is concentrated in the grassland-shrubland transition in foothills and piedmont slopes in the Chihuahuan Desert.
- Chihuahuan Semi-Desert Grasslands-** A broadly defined desert grassland, mixed shrub-succulent or xeromorphic tree savanna that is typical of the Borderlands of Arizona, New Mexico and northern Mexico.
- Cienega-** A swampy or typically wet area supported by a spring or other water source. Also called a wetland, marsh, or swamp.
- Closed basins-** A geographic area where all surface waters drain into a basin with no outlet.
- Colorado Plateau Ecoregion-** The Colorado Plateau Ecoregion encompasses the four corners region of Arizona, Colorado, New Mexico, and Utah. The ecoregion contains 48.5 million acres.
- Consumptive biological use-** The removal of biological natural resources such as hunting, fishing and logging.
- Coppicing-** To cut back or burn woody plants to produce shoots from stumps or roots.

CRP-Conservation Reserve Program- A federal program that pays landowners not to produce agricultural products or graze livestock on a piece of land.

Crustaceans- Predominantly aquatic arthropods of the class Crustacea, including lobsters, crabs, shrimps, and barnacles, characteristically having a segmented body, a chitinous exoskeleton, and paired, jointed limbs.

CWCS- Comprehensive Wildlife Conservation Strategy.

Cyprinidae- The minnow and carp family, which makes up the largest fish family with more than 2000 species in the order Cypriniformes.

Cyst- An encapsulated minute organism that is going into a resting or spore-like stage.

Degrading- Lower the surface substrate level.

Disjunct habitats- Habitats that are not adjacent, separated.

Delisting- Removing a species from either the federal or state Endangered Species list.

Desertification- The transformation of arable or habitable land to desert, by a change in climate or destructive land use.

Desiccation- Permanent decrease or disappearance of water caused by a variety of factors.

Diapausing- Periods of physiologically enforced dormancy between periods of activity.

Disjunctive- Serving to separate or divide.

Disturbance forests- An event that causes change in structure and composition of the forest such as fire, flood, wind, or earthquake or mortality caused by insect, disease outbreaks, Forest disturbance can also be human caused such as timber harvest.

Dog-hair thickets-Very dense stands of same-age woody vegetation. Optimum growth by individual plants is inhibited by the environmental conditions.

Ecological sustainability- A human system of natural resource use that can be maintained into the future. The long-term maintenance of ecosystem functions, processes and services over time.

Ecosystem- A plant and animal community together with its environment, functioning as a unit.

Ecosystem integrity- Incorporates the concept of functioning and resilience. Five goals of ecosystem integrity were defined by Grumbine (1994) including 1) maintaining viable populations 2) ecosystem representation 3) maintaining ecological processes 4) protecting evolutionary potential and 5) accommodating human uses.

Edaphic conditions- Relating to soil, especially as it affects living organisms.

Embayment- A bay or bay like shape.

Endangered species- Species present in such small numbers that they are at risk of extinction.

Endemic- Native to or confined to a certain region.

Endorheic basin- A drainage pattern of a basin or region in which little or none of the surface drainage leaves the basin.

Ephemeral- Channel or basin which carries water only during and immediately after periods of rainfall or snowmelt.

Ephemeral natural catchments- A natural water collecting feature that accumulates water temporarily after rainfall events.

Episodic fires- Fires that occur at relatively predictable intervals.

Equilibrium- A condition in which all influences are canceled by others, resulting in a stable, balanced, or unchanging system.

Exotic species- Species that are not native to the ecosystem, introduced from elsewhere.

Extant populations- Still existing, not destroyed, lost, or extinct.

Extinct- No longer existing or living.

Extirpated- Locally destroyed or exterminated.

Exurbia- A residential area outside of a city and beyond suburbia.

Fauna- The animals of a particular region or period, considered as a group.

Fellfields- The environment of a slope, usually alpine or tundra, where the dynamics of freeze and thaw cycles and wind give rise to characteristic plant forms.

Flora- Plants considered as a group, especially the plants of a particular country, region, or time.

Flow regime- The flow of a moving body of water, i.e. river or stream, over time and space.

Founder population- Typically the original, small population that occurs when a species invades a new area. The concept of a founder population is usually used in a context of subsequent population growth.

Gastropods- Any of various molluscs of the class Gastropoda, such as the snail, slug, cowrie, or limpet, characteristically having a single, usually coiled shell or no shell at all, a ventral muscular foot for locomotion, and eyes and feelers located on a distinct head.

Geographically Isolated Wetlands- Wetlands that are completely surrounded by upland at the local scale. For this document, we've included large endorheic basins, complexes of wetlands within a single basin, and individual isolated wetlands.

Gila Watershed- The watershed lies within southwest New Mexico and is comprised of two major streams, the Gila and San Francisco rivers.

GIS- Geographic Information Systems.

Graminaceous plants- Herbaceous plants with hollow jointed stems and narrow long-bladed leaves commonly known as grasses.

Habitat- The area or environment where an organism or ecological community normally lives or occurs.

Habitat conversion- The alteration or change of a habitat by anthropogenic or natural means.

Headcutting- The early stage of an erosional process that creates arroyos.

Hectare- A metric unit of area equal to 2.471 acres.

Herbaceous plants- Soft, green plant containing little woody tissue.

Herbivorous animals- Plant-eating animals.

Herpetofauna- The reptiles and amphibians of a specific region or period.

Hibernacula roosts- The winter shelter of a hibernating bat colony.

Hybridization- The act of mixing different species or varieties of animals or plants and to produce hybrids.

Hydrologic regimes- The movement of water, including atmospheric, ground and surface water over time, distance and space.

Hydroperiods- The period during which a soil is waterlogged.

Ictaluridae- The North American catfish family in the order Siluriformes containing approx. 45 species. They are scaleless fish and usually dark in color.

Improper grazing practices- Practices that reduce long-term plant and animal productivity, and include both domestic livestock and wildlife.

Incised channel- A land surface that had been deeply down-cut by flowing water forming a narrow channel with steep sides.

Indicative species- Species indicative of New Mexico's diverse life zones, habitats, and natural heritage.

Instream flow-A legal term for allowing water to remain in aquatic habitats to maintain aquatic wildlife.

Intermountain Basins Big Sagebrush Shrubland- Cold desert located in the northwestern to north central part of New Mexico, typically occurring in broad basins between mountain ranges, plains and foothills.

Inundation- Flooding, by the rise and spread of water, of a land surface that is not normally submerged.

Introgression- Backcrossing of hybrids of two plant populations to introduce new genes into wild populations.

Invasive species- An alien species whose introduction causes or is likely to cause economic or environmental harm or harm to human health.

Invertebrates- Animals that have no spinal column.

Island Mountains- Mountain ranges isolated by broad valleys in which other ecosystems are located. As a result, the mountain ecosystems are isolated from each other, and species can develop in parallel.

Jurisdictional waters- Waters that fall under the jurisdiction of the Clean Water Act which strives to preserve and protect water quality and quantity. Not all wetlands or waters of the state are considered Jurisdictional Waters.

Keystone species- Species that have a large overall effect on ecosystem structure or function. This effect is disproportionately large relative to species abundance. Examples include prairie dogs, beaver and bison.

Ladder fuels- Plants of varying heights that allows a ground fire to reach the lower branches of trees and spread to the canopy.

Lotic habitats- Habitat in moving water.

Lowhead diversion dam- Diversion dam is a structure placed across a stream to divert water into another waterway. In a lowhead dam, the water above is not high above the turbines, if present.

Macroinvertebrates- Larger-than-microscopic invertebrate animals. Freshwater macroinvertebrates include aquatic insects, worms, clams, snails, and crustaceans.

Madrean Archipelago Region- A biogeographic region that includes south east Arizona, southwest New Mexico, and Northern Mexico and contains floral and faunal influences from the Sierra Madre Mountains of Mexico.

Madrean Encinal- An oak dominated woodland and savanna within the Madrean Archipelago/Sky Island Region.

Madrean Pine-Oak Conifer-Oak Forest and Woodland- A pine/oak forest or woodland, and mixed conifer/oak forest or woodland within the Madrean Archipelago/Sky Island Region.

Marsh- A type of wetland, featuring grasses, rushes, reeds, typhas, sedges, and other herbaceous plants in a context of shallow water.

Mesic riparians- A moist vegetative habitat on the banks of rivers, streams and seeps.

Mesohabitats- Localized physiographic (streams, seeps, cliffs) or physiognomic (forests) features.

Metapopulation- A theory that assumes an environment consists of discrete patches of suitable habitat surrounded by unsuitable habitat, interconnected through patterns of gene flow, extinction, and recolonization.

Mimbres Watershed- The Mimbres River occupies a small basin in southwest within Grant County, New Mexico. It headwaters on west and south-facing slopes of the Black Range, flows southward, and dissipates onto the desert.

Modification of Natural Processes- Drought is a process that influences all habitats in the southwest. Most of forested systems have low resistance to drought. Riparian areas have high likelihood of being altered by extended drought periods.

Molluscanfaunal- The molluscs of a specific region or period.

Molluscs- Aquatic invertebrates, including shellfish and snails, typically having a soft unsegmented body, a mantle, and a protective calcareous shell.

Monsoonal rain events- Weather system that influences large climatic regions. In the Southwest it is typically characterized by heavy summer rainfall and thunderstorms.

Montane- Of, growing in, or inhabiting mountain areas.

Morphology- The form and structure of an organism or one of its parts.

Native species- Originating and adapted in a certain place or region, indigenous.

Natural hydrograph- The physical conditions, boundaries, flow, and related characteristics of surface waters unaffected by man.

Neotropical migrant- Bird species wintering in the tropical regions of the New World that migrate to the temperate regions of North America to breed.

NGOs-Non-government organizations

NMDGF-New Mexico Department of Game and Fish.

Non-consumptive biological use- Recreational enjoyment of biological natural resources such as bird watching, catch-and-release fishing and wildlife photography.

Non-native species- Species that are not native to the ecosystem, introduced from elsewhere.

Noxious weeds-Plant species harmful to living things; injurious to health of other plants or animals.

Obligate- Plants or animals able to exist or survive only in a particular environment or by assuming a particular role.

Palustrine marshes- All nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichen.

PCA- Prairie-chicken Area, owned by the State Game Commission for protection of prairie chicken habitat.

Pecos Watershed- The Pecos River originates in North Central New Mexico. Flowing southward it encompasses 50,022 km² within the state.

Perennial- Body of water, which contains water at all times except during extreme drought.

Perennial 1st and 2nd order stream- First and second order perennial streams are typically small headwater streams in New Mexico. First order streams have no other tributaries; they are the start of the river system. Second order streams are formed when at least two first order streams join.

Perennial 3rd and 4th order stream- Third and fourth order streams in New Mexico are typically mid-sized streams, formed when at least two second order streams join, then when at least two third order streams join.

Perennial 5th order stream- Fifth order streams are the largest rivers in New Mexico, including the San Juan, Pecos and Rio Grande. The joining of at least two fourth order streams forms fifth order streams.

Perennial graminoids- Grasses and grass-like plants such as sedges and rushes that grow from the same rootstock every year.

Perennial large reservoir- Perennial large reservoirs in New Mexico are natural or man-made impoundments. They include the lower Pecos River reservoirs and Elephant Butte Reservoir.

Perennial spring/seep/marsh/cienega- Variety of wetted, slow or not flowing habitats. These can vary from deep spring pools to wide, shallow marshes.

Phytophagous insect species- Insects that feed on plants or plant matter.

Piscivores-Habitually feeding on fish; fish-eating.

PIT tags-Passive Infrared Transponder. Tiny identification chips which are harmlessly injected into an animal for permanent identification.

Plant species with C₃ and C₄ photosynthetic pathways- C₃ plants are typically shrubs and trees, while C₄ plants are predominantly grasses. They respond differently to changes in atmospheric gases, temperature and soil moisture.

Playa- A nearly level, generally dry surface in the lowest part of an arid basin with internal drainage. When its surface is covered by shallow water, it is called a playa lake.

Population energetics- The estimated daily energy expenditure that animals need for survival; including energy from food and reserves

Prairie chicken leks- A mating and ritualistic display area for prairie chickens.

Prescribed burning- Planned burning by land management agencies under specific weather conditions to remove excess plant material and replicate natural fire regimes.

Pulmonate- Possessing lungs or lung-like organs.

Ranid frog- Member of a large family of frogs characterized by slightly dilated transverse sacral processes.

Recruitment- Renew or restore the health or vitality of a species with new members.

Reproductive phenology- Periodic biological phenomena, such as flowering, breeding, and migration, in relation to climatic conditions.

Reptile- Any of various cold-blooded, usually egg-laying vertebrates such as snakes, lizards or turtles, having an external covering of scales or horny plates and breathing by means of lungs.

Rio Grande Watershed- The state's largest watershed originates in the San Juan Mountains of southern Colorado and flows south through central New Mexico for the entire length of the State.

Riparian habitat- Vegetative habitat on the banks of rivers, streams and seeps.

Riverine- Located on or inhabiting the banks of a river.

Rocky Mountain Alpine-Montane Wet Meadow- High-elevation communities found throughout the Rocky Mountains and intermountain regions, dominated by herbaceous species found on wetter sites with very low-velocity surface and subsurface flows.

Rocky Mountain Montane Mixed Conifer Forest and Woodland- Highly variable habitat of the montane zone of the Rocky Mountains. These are mixed-conifer forests occurring at elevations ranging from 1200 to 3300 m.

Salterns- A large, shallow basin where brackish water is evaporated by solar heat, leaving salt deposits.

San Juan Watershed- The San Juan River watershed is almost entirely within San Juan County, New Mexico. The river originates in the San Juan Mountains of southwestern Colorado, enters New Mexico northeast of Farmington, flows westward to exit the state near Four Corners.

Sangre de Cristo cordillera-The Sangre de Cristo mountain range.

Savannas- Grassland habitats broken intermittently by trees or shrubs.

Seep- A generally small area where water percolates slowly to the surface.

Seral stages- A transitory plant community that develops during ecological succession from bare ground to the climax stage.

SGCN- Species of Greatest Conservation Need.

Shin-oak motts-Growing clumps or hedges of shinnery oak.

Solifluction- A type of permanently frozen earthflow often found in Periglacial environments. During warm seasonal periods, the surface layer melts and literally slides across the frozen under layer slowly moving downslope.

Southern Rocky Mountains Ecoregion- The Southern Rocky Mountains Ecoregion encompasses nearly 40 million acres across portions of southern Wyoming, central Colorado, and northern New Mexico.

Southern Shortgrass Prairie Ecoregion- This area is dominated by immense expanses of grasses including blue grama (*Bouteloua gracilis*) and buffalo grass (*Buchloe dactyloides*).

Species Related Threats- Included threats are commercial trade, indiscriminate harvest, disease, hybridization, competition with native species, pet trade, and fluctuations in prey base.

Sphaeriid- Minute bog beetles, a small family of coleopteran insects in the suborder Myxophaga.

Spring- The location where an underground source of water emerges from the ground.

Stand replacing crown fires- Intense wildfires fires that reach the crowns of trees and kill entire stands; often resulting in a habitat conversion to grasslands or shrublands.

Steppe- A vast semiarid grass-covered plain, as found in southeast Europe, Siberia, and central North America.

Stochastic events- Events occurring at random or variable intervals.

Subalpine- Relating to, inhabiting, or growing in mountainous regions just below the timberline.

SWANCC Supreme Court decision- A Supreme Court decision that limited the U. S. Army Corps of Engineers Clean Water Act authority over a man-made water feature.

SWReGAP- Southwest Regional Gap Analysis Project, a mapping assessment of land cover, habitats, (floral and faunal) biodiversity, and land management status for the five-state region of AZ, CA, NV, NM, and UT. (<http://fws-nmcfwru.nmsu.edu/swregap/>).

Sympatric- Occurring in the same area.

Talus slopes- Sloping mass of broken rock debris at the base of a cliff.

Tank- Man-made structure designed to hold water from a runoff event or pump.

Taxa- A taxonomic category or group, such as a phylum, order, family, genus, or species

Threatened species- Species of plants or animals of concern that have the potential of becoming endangered.

Tobosa swales- A species of grass that occurs primarily in shallow draws.

Trophic dynamics- Interactions of organisms at different levels of biological organizations within food webs.

Tularosa Watershed- The closed basin covers approximately 13,000 km² in south central New Mexico in the northern Chihuahuan Desert.

Ungulates- Animals belonging to the orders Perissodactyla and Artiodactyla composed of the hoofed mammals such as horses, cattle, deer, elk, and pigs.

Uplisting- Elevating a species from threatened to endangered under either the federal or state endangered species list.

Ustic soils- A soil moisture regime where moisture is limited but present at times suitable for plant growth. Ustic soils are moist for more than 180 cumulative days per years or for 90 or more consecutive days.

Vertebrates- Animals that have a spinal column.

Voracious- Having a huge appetite.

Watershed- Region draining into a river, river system, or other body of water.

Western Great Plains Sand Sagebrush- Found mostly in southeastern areas of New Mexico. The climate is semi-arid to arid. Soils are well-drained, deep and sandy. They are associated with dune systems and ancient floodplains.

Western Great Plains Shortgrass Prairie- Found primarily in the eastern third of New Mexico and occurs primarily on flat to rolling uplands with loamy, ustic soils ranging from sand to clay.

Wildland urban interface- Zone of contact between human development and undeveloped forested habitats.

Xeric habitat- Habitats found in arid regions.

Xeric riparian areas- Dry vegetative habitat on the banks of rivers, streams and seeps.

Zuni Watershed- Drains about 3,400 km² as it flows from its headwaters in west-central New Mexico to the Little Colorado River in Arizona. Continuous flow is absent from the headwaters downstream to the Arizona/New Mexico border. Surface flow is only continuous during heavy spring run-off.