

Threats to Wildlife Biodiversity

The top 5 threats currently reducing biodiversity can be abbreviated as HIPPO:

Habitat destruction – This is the greatest threat to animals worldwide. As humans grow in population we destroy natural wildlife habitats to instead build our roads, farms/ranches, dams, power plants, homes, parking lots, etc.

Introduced species – When non-native (“exotic”) species are introduced to an ecosystem by people they are usually able to eat more food faster and reproduce more rapidly than the native version. In addition to outcompeting the natives, exotic species may also EAT native species who have no defenses against a predator they did not evolve around.

People overexploit resources – Humans and threatened species are often concentrated in the same areas competing for food. One hundred years ago, there were one billion people in the world. Now there are over 7 billion and we grow by about 200,000 humans every single day! We label wildlife who want our food/shelter as “pests” and kill them. We often waste resources like water and food. We are consuming natural resources, both renewable and nonrenewable, at an alarming rate and competing to the detriment of other species and possibly our own.

Pollution – Pollution kills living organisms and interferes with ecological processes. Arctic animals are reducing in numbers because of global warming caused by exhaust fumes.

Amphibians are declining due to manmade chemicals. Large numbers of birds have been found dead on extremely remote islands due to eating tiny pieces of plastic. Due to worldwide human waste, there is a swirling patch of trash and chemical sludge within the Pacific Ocean that is at least the size of Texas if not larger. Even outer space is polluted by a ring of trash circling Earth!

Overharvesting – When an organism is continually hunted or collected for the pet trade faster than it can reproduce, it will eventually become extinct in the wild. Large, desirable animals usually produce few young and at a slow rate, and are thus incredibly prone to overharvesting.

What are zoos doing to conserve?

Zoos coordinate with each other and with conservation groups to preserve species and habitats for future generations. Zoos actively help provide funding, expertise, and manpower to:

- Purchase habitat lands as natural reserves,
- Sponsor litter clean ups and other habitat restoration projects,
- Fund research projects for threatened species,
- Rescue/rehabilitate injured wildlife and re-release them back into the wild,
- Improve management techniques of wildlife,
- Improve veterinary healthcare,
- Improve husbandry of animals already in human care,
- Increase genetic diversity of animals,
- Increase public education,
- Promote better economic planning,
- and more!

Species Survival Plans (SSP) – These are captive breeding programs carefully managed amongst zoos and aquariums with the ultimate goal of replenishing species that are endangered and/or extirpated in the wild. Participating zoos move males and females of each species between facilities in order to mate. In addition to preventing inbreeding, the program also allows

researchers to study the courtship behavior and breeding patterns of animals in a controlled, scientific setting. Within the visiting public there is disagreement about whether moving animals between zoos for reproduction purposes, **as well as** whether artificial insemination techniques developed to eliminate the **need** to move animals, is humane or correct. However, from the point of view of conservation of endangered species, SSPs have already saved from extinction and successfully re-introduced the following animals back into the wild: black-footed ferrets, California condors, Guam rails, Przewalski's horses, Scimitar-horned Oryx, and Spix's macaws. The Idaho Falls Zoo currently participates in SSP programs for snow leopards, Amur tigers, black-footed penguins, cotton-top tamarins, red-ruffed lemurs, and ring-tailed lemurs.

Professional zoo organizations

The following are the most widely recognized professional organizations that were created to share knowledge amongst zoos and aquariums in order to simultaneously coordinate wildlife conservation efforts and improve the lives of animals in human care. All of them are non-profit.

Association of Zoos and Aquariums (AZA) = An international organization founded in 1924 to promote conservation, education, visitor enjoyment, and scientific research amongst zoos and aquariums. Accreditation is given only to institutions who excel at animal care, and the process involves incredibly strict guidelines of animal welfare, veterinary care, conservation efforts, safety measures, and educational outreach. This group is who created the Species Survival Plan program about 20 years ago. In addition to their network of participating zoos and aquariums, individual membership is also open to anyone who supports the efforts of zoos and aquariums.

International Marine Animal Trainer's Association (IMATA) = An international community formed in 1972 to advance the humane stewardship of marine animals living both in the wild and in human care through communicating current marine biology scientific research findings, rescue efforts, and the latest animal training techniques in aquariums and government organizations. Membership is open to college students, professionals working with marine animals, and anyone interested in learning more about marine animals.

American Association of Zoo Keepers (AAZK) = A mostly U.S. and Canadian group begun in 1967 with the purpose of promoting communication and education amongst North American zookeepers to increase their professionalism, advance animal care, foster personal connections, promote animal welfare, and further conservation projects. In recent years, the organization has created a stand-alone group called the **International Congress of Zookeepers (ICZ)** which has expanded membership to zookeepers in 24 other countries as well.

Association of Zoo and Aquarium Docents & Volunteers (AZADV) = An international collection of zoo volunteers created in 1986 with the purpose of improving their educational presentations through global communication with each other. Anyone who volunteers as a guide or interpreter at any zoo or aquarium in the world is invited to join.

U.S. Laws Protecting Wildlife

CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) is an international agreement between governments. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten their survival. CITES offers varying degrees of protection to more than 30,000 species of animals and plants, whether they are traded as live specimens, body parts such as fur, or dried herbs. Countries adhere voluntarily, forming conservation agreements with the membership. Currently there are 169 countries.

- **Lacey Act of 1900:** The first federal law created in the U.S. to ever protect wildlife. It imposes civil and criminal penalties for illegally trading animals and plants, and covers all species listed by CITES. This act makes it unlawful to buy, sell, acquire, purchase, import, export, or transport any wildlife, plants, or parts taken, sold, or otherwise possessed in violation of any federal, state, international, or tribal law. The protection given includes a broad definition concerning plants/plant products obtained through trespassing, such as products made from illegally logged woods, and it penalizes any guided tours/outfitters who wrongfully profit from protected species. It also helps prevent the spread of exotic species.
- **Migratory Bird Treaty Act of 1918:** Makes it illegal to pursue/hunt, take, kill, possess, transport, sell, offer for sale, buy, or barter any migratory birds, their eggs, their nests, or any of their body parts including feathers without a federal permit. The birds covered are any species naturally occurring within the U.S., Canada, Mexico, Japan, and Russia.
- **Animal Welfare Act of 1966:** Regulates the treatment of animals on public exhibit, commercially transported, used in research, or sold/traded. The law requires a minimum standard for animal care be established and enforced, covers animals even after death, and sets requirements for record keeping and animal identification rules.
- **Marine Mammal Protection Act of 1972:** Protects all marine mammals by making it illegal to feed, approach, harass, restrain, detain even temporarily, capture, collect, tag, hunt, take, kill, or import any marine mammals or any of their body parts. Enforcement is divided between the Department of Commerce and the Department of Interior. The National Oceanic and Atmospheric Administration (NOAA) oversees cetaceans and non-walrus pinnipeds, while the US Fish & Wildlife Service is responsible for all other marine mammals, including polar bears, sea otters, walruses, dugongs, and manatees.
- **The Endangered Species Act of 1973:** Provides broad protection for species of fish, wildlife and plants that are listed as threatened or endangered anywhere in the world. Protection includes the conservation of ecosystems. Provisions are made for listing species within the U.S., as well as creating species recovery plans, monitoring delisted species, purchasing land for conservation goals, and the designation of critical habitat for listed species.
- **Wild Bird Conservation Act of 1992:** Protects exotic birds by limiting or prohibiting importation of exotic bird species covered by CITES. Sets a limit on the importation of species not covered by CITES. Sets standards for qualifying bird breeding facilities. The U.S. is the world's largest importer of exotic birds. The international pet trade in wild-caught exotic birds is significantly contributing to the decline of species in the wild, and the mortality rate associated with the pet trade remains unacceptably high.

Government Agencies

AT THE INTERNATIONAL LEVEL...

- **International Union for Conservation of Nature (IUCN):** Supports scientific research to conserve nature, manages international fieldwork on climate and food needs, and encourages international partnerships to develop policies and laws. It is the world's oldest and largest global environmental organization, consisting of 160 countries.

AT THE FEDERAL LEVEL...

Department of Agriculture (USDA): Oversees issues related to food, agriculture, & natural resources. The USDA maintains quarantine facilities for international importation of hoofstock and birds. It is the agency safeguarding against animal diseases like foot-and-mouth disease, mad cow disease, bird flu, etc.

- **Animal and Plant Health Inspection Service (APHIS):** Is responsible for protecting and promoting U.S. agricultural health, administering the Animal Welfare Act, and carrying out wildlife damage management activities. APHIS requires licensed exhibitors provide their animals with adequate care and treatment in the areas of housing, handling, transportation, sanitation, nutrition, water, general husbandry, vet care, and protection from extreme weather/ temperatures.
- **US Forest Service:** Manages the sale of timber within government lands, oversees national grasslands, and protects any areas designated by Congress as "Wilderness".

Department of Health and Human Services: Works with the USDA to protect humans against zoonotic diseases associated with birds, reptiles, primates, and other animals.

Department of the Interior: Oversees energy and mineral resources, regulates the use of land and water resources, and oversees conservation of wildlife.

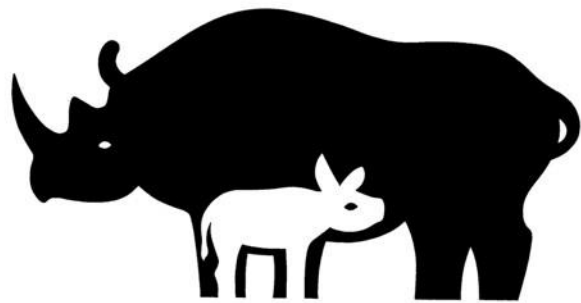
- **US Fish & Wildlife Service (USFWS):** Focuses on protecting and enhancing wildlife, plants and habitats. Monitors and regulates all import or export of wildlife and their parts.
- **National Park Service:** Preserves natural and historic areas for public enjoyment/recreation.
- **US Geological Survey (USGS):** The sole scientific agency of the Department of the Interior. It is a fact-finding organization researching the landscape of the U.S. and its natural resources, including any natural hazards that threaten it.
- **Bureau of Land Management (BLM):** Inherited the unclaimed "undesirable" land leftover after the colonization of the west. Manages wild horse populations within western states, as well as regulates livestock grazing, mining, and energy production on government land.
- **Bureau of Indian Affairs:** Manages all natural resources held by Native American tribes.

AT THE STATE LEVEL...

Idaho Dept. of Fish and Game (IDFG): Issues permits to band, collect, possess, sell or trade wildlife in Idaho.

Idaho Department of Environmental Quality (IDEQ): Was created by the Idaho Environmental Protection and Health Act to preserve the quality of Idaho’s air, land, and water for use and enjoyment today and in the future. It serves to ensure clean environmental resources and to protect human health from the dangers of pollution.

Idaho State Dept. of Agriculture (ISDA): Has decreed that all species of mammals, birds, or reptiles found in the wild that are not species of special concern may be held in captivity in Idaho without a permit so long as the possessor retains proof that the animal was lawfully obtained. Before bringing an animal into Idaho an owner must obtain an import permit and comply with specific caging requirements for the animal.

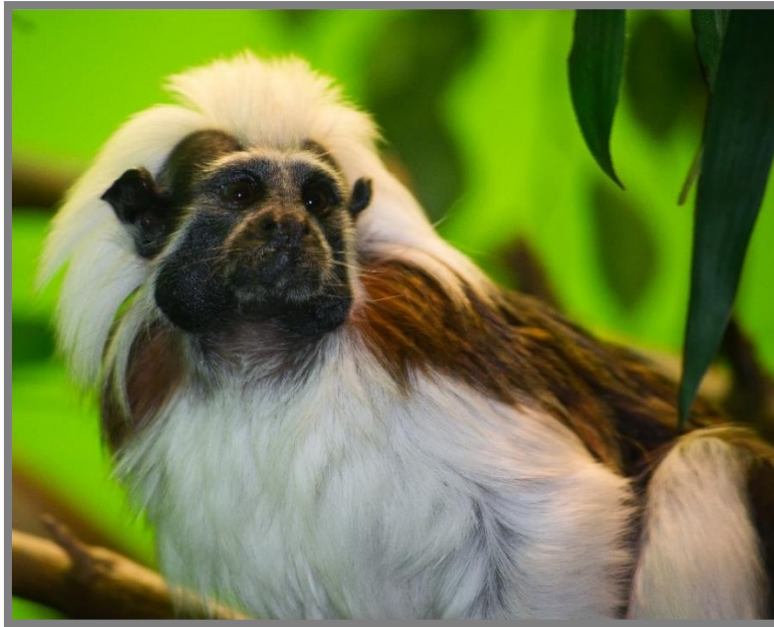


Species Survival Plan



Conservation Terminology

The IUCN Red List classifies species around the world into different categories based on their population size, rate of decline, area of distribution, and the amount of fragmentation.



Endemic = A unique species that only naturally occurs within a very small area. For example, Key deer are endemic to Big Pine island south of Florida and lemurs are endemic to Madagascar.

Extinct = The total loss of a species from the planet. The moment of extinction is the death of the very last individual of that species.

Extirpated = The species has become locally extinct in the area, but still exists elsewhere.

Critically Endangered = Species that are in immediate danger of becoming extinct. This is the highest risk category possible and includes species believed extinct that have yet to be confirmed thru exhaustive surveys. Species in this group have less than 250 individuals left in the wild and their probability of extinction is at least 50% within the next 3 generations.

Endangered = Species with a very high risk of extinction. Species in this group have 2,500 or less individuals left and their probability of extinction is at least 20% within five generations.

Vulnerable = Threatened species very likely to become endangered soon. Rare species of less than 10,000 individuals left with some likelihood of extinction within the next 100 years.

Near Threatened = A species facing enough reduction of population or habitat to already be on the cusp of almost being in the “Vulnerable” category. While not yet threatened with extinction, these are species of concern.

Least Concern = Widespread and abundant species. This is the lowest risk category.