

What is an endangered species?

Endangered species are animals or plants at immediate risk of extinction because of habitat loss, pollution, introduction of other species, or over-exploitation. Animals currently facing extinction include one-third of all the earth's amphibians, nearly half of all freshwater turtles, one in eight species of birds, and one in four mammals. There are also more than 8,000 plant and algae species on the verge of extinction.

What is the *Endangered Species Act*?

The *Endangered Species Act* (ESA) of 1973 currently protects more than 1,200 U.S. plant and animal species found on Federal lists as endangered or threatened with the possibility of becoming endangered. These lists are the List of Endangered and Threatened Wildlife and the List of Endangered and Threatened Plants. An "endangered" species is one that is at risk of extinction throughout all or a significant portion of its range. A "threatened" species is one that is likely to become endangered in the foreseeable future. The National Wildlife Service also maintains a list of U.S. plants and animals that could eventually be added to the federal list.

What laws protect endangered species?

There are international and U.S. laws in effect that offer protection to endangered species. Depending upon the country creating the law, it may be a crime to capture or kill listed species, fail to act to recover them, or harm their habitat or range.

What is the IUCN and what does it do for endangered species?

The International Union for the Conservation of Nature and Natural Resources (IUCN) is the world's largest and most important conservation network. Use of the name "World Conservation Union" began in 1990, but the full name and the acronym still appear together as many people continue to know the Union as IUCN. The IUCN-World Conservation Union maintains a record called the *Red List* of the world's species threatened with extinction. The *Red List* now includes 16,306 species—more than 7,800 animals and more than 8,400 plants—that are critically endangered, threatened, or vulnerable.

What is the role of zoos in protecting endangered species?

The *Endangered Species Act* of 1973 brought public attention to the rate of loss of the world's animals and birds. In response, the American Association of Zoos, Parks, and Aquariums started the *Species Survival Plan* to improve genetic variety and ensure the survival of endangered species. By 2000, 200 survival plans were up and running. Zoos began creating more natural enclosures to house larger groups of animals and improve reproduction rates. Zoo veterinarians play a vital role in monitoring the health of captive animals, in disease research, in physiology studies, and in the breeding of endangered species. Zoo veterinarians use artificial insemination, embryo transfer, in vitro fertilization, and simpler techniques, like hatching eggs of endangered birds in the lab to promote reproduction. As a result, today's zoos offer many beautiful, natural habitat exhibits and veterinarians continue their efforts to protect and promote populations of endangered species.

What else is being done to protect endangered species?

Recovery programs are now in place in many zoos to determine the actions needed to save a species from extinction, especially in light of climate change. In the United States and many other countries, these programs help preserve species through 1) habitat restoration; 2) captive breeding efforts; 3) assisted reproduction efforts; and 4) field research into behavior and reproduction. Saving endangered species in captivity and in the wild involves help from experts in many fields. Wildlife biologists, ecologists, veterinarians, geneticists, clinical pathologists, behavioral biologists, reproductive biologists, environmental educators, captive breeding specialists, geographic information specialists, environmental policy makers, reserve managers, and legislators all work together to develop recovery plans.

One example of zoo veterinarians assisting wild and endangered species:

The Paul Harter Veterinary Medical Center (HVMC) is a state-of-the-art animal hospital located at the Wild Animal Park (San Diego). It has treatment rooms, a central surgery room, intensive care wards, and a special area where X-rays are taken on small and large animals. There are also individual rooms for animals waiting for treatment or recovering from surgery—complete with windows or skylights and even outdoor sunbathing areas!

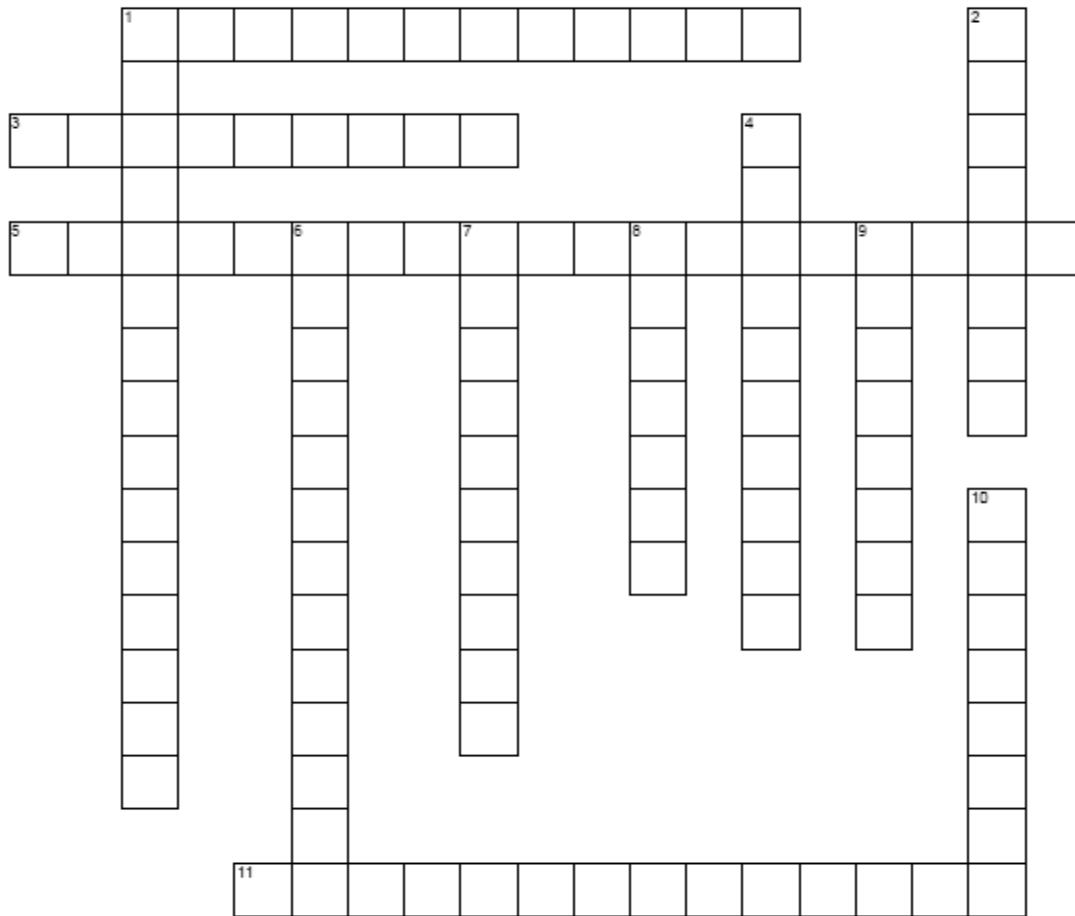
Some of the zoo animals are too big for treatment in the HVMC. Adult elephants, giraffes, and rhinos are treated in their own field exhibits. In fact, San Diego Zoo veterinarians prefer to make "house calls" whenever possible, and that's how most of the park's animal residents are treated. The veterinarians' trucks are equipped just like a mobile hospital, with most of the supplies needed to help care for sick or injured animals. Like humans, animals are more comfortable in their own familiar surroundings, but they can be brought to the HVMC if they cannot be treated safely "at home."

What other areas are under study at American zoos?

- Habitat conservation:
 - o Protect, study, and manage the natural areas that support plant and animal communities
 - o Develop new conservation programs that utilize flagship species to protect associated habitats

- Restoration biology:
 - o Revitalize functional ecosystems by restoring species to the wild
 - o Develop and optimize release programs, including evaluation of sites, candidates, and reintroduction strategies

- Wildlife health:
 - o Enhance the health and well-being of captive and wild populations through research
 - o Identify and characterize new pathogens and develop appropriate prevention and control methods and strategies



ACROSS

- 1** protection, preservation, management, or restoration of wildlife and natural resources
- 3** an animal capable of living both on land and in water
- 5** doctor who diagnoses diseases based on the analysis of body fluids (two words)
- 11** the deliberate release of animals from captivity into the wild

DOWN

- 1** breeding rare or endangered species in controlled environments (two words)

- 2** most important or leading member of a group
- 4** at risk of physical or emotional injury
- 6** variations in weather in a region over long periods of time (two words)
- 7** study of the functions of living organisms and their parts
- 8** the natural environment in which an organism lives
- 9** science that deals with heredity
- 10** an agent that causes disease