

Encounter/Outreach – Last Ark

Objectives: Your discussions should include:

- Define the following terms: endangered, extinct, extirpated, SSP, conservation;
- List causes for reduction of animal populations;
- List the four items necessary to the survival of living things (components of habitat);
- Name at least five animals at Potter Park Zoo that are endangered species.
- Explore ways in which zoos and aquariums are cooperating locally, nationally, and internationally to protect vanishing species from extinction;
- Identify things individuals can do to help the environment and endangered species.

Key terms: Endangered, extinct, threatened, extirpated, habitat, conservation, habitat loss, human encroachment, poaching, SSP, scientific captive breeding, reintroduction, specialist, generalist.

What To Take:

Education Animals: ferret, chinchilla, tenrec, parrot, boa constrictor, Eastern fox snake, Eastern box turtle, spotted turtle, opossum (this is a great animal to use to discuss the adaptability of **generalists**).

Artifacts/biofacts: You will want to take a selection of artifacts (garments, carvings, medicine containers, etc) and biofacts (pelts, preserved sea turtles, bald eagle skull, etc.). The artifacts will facilitate discussions involving causes of **extinction, poaching, human encroachment, habitat loss**, illegal trade, cultural differences, etc. Biofacts will allow a discussion of endangered species in addition to the live animals and facilitate topics such as **SSP** (snow leopard, Amur Tiger pelts).

Getting Started: Please keep in mind the following:

Do not just talk about causes for the reduction of animal populations but also talk about positive actions that are being taken by zoos and others to help the situation. It is important that children not be overwhelmed with the weight of this topic and that they understand that adults are working to improve the situation. Ask students to define **endangered** and **extinct**, introduce the term **extirpated**. Have them name some **endangered** species. See if they can name some of the causes of animals becoming **endangered (habitat loss, human encroachment, poaching)**. Have your students define habitat and its four main components. What happens to animals if they cannot find food, water, shelter, and space? At some later point in your presentation discuss: Why is it important to save species? How do zoos help endangered animals? (education, research, **conservation**)

For upper elementary, include a discussion of how **generalists** usually tolerate changes better than animals that are **specialists**.

Following is a detailed chart of the exhibit animals along with some suggestions which point out a few of the many ways in which you can use the animals to highlight and illustrate the concepts and terms listed above. **Remember, these are only suggestions.** Remember to keep your discussion to the appropriate grade level of your audience. Be sure to consult the animal data sheets for more additional information.

Middle/High School: With all the information available in the charts below, you can just go into more depth and details with the information provided.

POTENTIAL FOCUS CONCEPTS	PPZ SPECIES	SSP PPZ	STATUS OF SPECIES & CAUSES FOR THE REDUCTION OF POPULATIONS	WAYS THAT ZOOS, AQUARIUMS, & OTHERS ARE COOPERATING TO PROTECT VANISHING SPECIES
Captive breeding and reintroduction	European ferret		Not listed but use this to talk about Black-footed ferret: Endangered, CITES I; poisoning of prey – prairie dogs, disease.	Black-footed ferret: Once thought to be extinct, a small pop'n was discovered in 1980s in Wyoming which then plummeted due to disease. Remaining 18 were pulled from the wild in mid-'80s. Gov't agencies worked with NA zoos and began captive breeding. Landowners, conservation organizations, and Native Americans are partners in a reintroduction program. In 2007 there were over 600 in the US.
Wild vs. captivity;	Chinchilla		Endangered, CITES I, common in captivity; hunting, habitat destruction and fragmentation.	Save the Wild Chinchillas conservation organization with objectives of educating people, collecting funds, promoting awareness, and fostering research.
Island population issues; collaboration of groups	Pygmy hedgehog tenrec		Not listed; facing habitat destruction, human encroachment, island population issues.	The Madagascar Fauna Group (MFG) is an international consortium of zoos and related institutions working together to conserve Madagascar's lemurs and other wildlife.
Legislation & enforcement; owning a bird	Yellow-naped Amazon parrot		CITES II, most parrot species endangered, all protected in some way, CITES I or II; deforestation, illegal pet trade (nine of ten taken from the wild die in transition).	Legislation halting the import of endangered birds in the United States has been implemented. There remain problems with the enforcement of export restrictions in South American countries. Anyone interested in owning a bird should learn about its needs and be sure it was captive bred.
Purchasing products from animal parts or owning a reptile, invasive species	Common boa constrictor		Threatened, CITES II; habitat destruction, skins still sold to leather trade.	Do not buy products made from wild animal parts. Anyone interested in owning a reptile should learn about its needs and be sure it was captive bred. Many more wild-caught animals die than ever reach pet stores, and those that are fortunate enough to survive are often stressed, malnourished and untamable. Is now an established invasive species in Florida Everglades due to people dumping them there.
Veterinary involvement in field research	Eastern fox snake		Threatened in Michigan, illegal to possess this snake; habitat destruction.	PPZ: Dr. Tara is participating in a research study to learn more about Eastern fox snakes in Michigan. She puts transmitter chips into snakes found in the wild, and they are then returned to where they were found. These chips allow researchers to learn more about the snakes' population, movement, deaths, etc. She is also involved in similar work with Massasauga rattlesnakes in Michigan.
Do not remove animals from the wild; need for increased knowledge	Eastern box turtle		Special Concern in Michigan, protected by law, uncommon to rare in southern and western Lower Peninsula, CITES II; habitat destruction (wetlands) and fragmentation, collecting for pets, road mortality, predation,	More research needed to survey populations and nesting areas in order to adequately protect them. Also to understand population structure and factors that contribute to population viability. Do not remove turtles from the wild.

			long time to reach sexual maturity.	
Need for increased knowledge	Spotted turtle		Threatened in Michigan; habitat destruction, alteration, & fragmentation; collecting for pets (illegal in Michigan).	More research on spotted turtle in Michigan needed, as well as effective long-term strategies for conservation.