



DHOLE CONSERVATION FUND
PRESENTS



Endangered Species

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Dhole Conservation Fund

<http://www.dholes.org/education>



Endangered Species

Overview

Congress passed the Endangered Species Preservation Act in 1966. Seven years later, in 1973, Congress passed a more comprehensive law, the Endangered Species Act (ESA). This legislation allowed for the identification, protection, and recovery of threatened and endangered birds, insects, fish, reptiles, mammals, crustaceans, flowers, grasses, and trees. Not only are the organisms/plants protected by this law, but their habitat, which is required for its survival is as well. The ESA is administered by two federal agencies, the United States Fish and Wildlife Service (FWS) and the National Oceanic and Atmospheric Administration (NOAA). Under the Endangered Species Act (ESA), species may be listed as either endangered or threatened. All species of plants and animals, except pest insects, are eligible for either listing.

Scientists estimate that species are dying out at a rate of 1,000–10,000 times ordinary extinction rates. They believe we are in another mass extinction event. It is crucial to remember that every species plays an important role in its ecosystem. If one species were to become extinct, it could affect the entire ecosystem. Ecosystems are their healthiest when they have the most biodiversity. There are five major causes of extinction: habitat loss, an introduced species, pollution, population growth, and overconsumption.





Endangered Species

Overview - Cont

There are several significant reasons why we should focus on protecting our threatened and endangered species:

1. Medicinal Importance: More than 50% of prescribed medicines are derived from a plant or other natural product. It is estimated that some of these benefits have yet to be discovered.
2. Ecological Advantages: Healthy ecosystems depend on plant and animal species as their baseline. When a species becomes endangered, it is a sign that the ecosystem is failing.
3. Agricultural Value: Protecting the health of our pollinators, is key to a functioning ecosystem. Without them, we would be unable to maintain our crops and farmlands.
4. Aesthetic/Recreational: The American tourism industry is a multi-billion-dollar industry. Every year, millions of people visit our national parks and outdoor areas in the United States and participate in wildlife-related activities.





Endangered Species

Vocabulary

Biodiversity: the variety of life and its processes, including the variety of living organisms and the communities and ecosystems in which they occur

Ecosystem: the living and non-living parts of an area

Endangered: a species is in danger of extinction throughout all or a significant portion of its range.

Endangered Species Act of 1973: Federal legislation intended to provide a means whereby the ecosystems upon which endangered and threatened species depend may be conserved, and provide programs for the conservation of those species, thus preventing the extinction of native plants and animals.

Endemic species: a species native and confined to a certain region; having comparatively restricted distribution.

Environment: the surrounding in which animals and plants live

Extinct species: a species no longer in existence.

Extirpated: a species that is extinct in a state where it was once found, but still exists in other states

Fauna: animal life on earth

Flora: plant life on earth

Habitat: the physical area where an organism lives or its “address”

Habitat loss: when natural habitat is altered so dramatically that it no longer supports the species it originally sustained.

Invasive Species: a species occurring, because of human activities, beyond its accepted normal distribution and which threatens valued environmental, agricultural, or other resources

Overconsumption: a situation where the use of a natural resource has exceeded the sustainable capacity of a system resulting in environmental decline

Pesticides: chemicals that are used to kill various pests

Pollution: that which caused the environment to become unclean or unsafe



Endangered Species

Vocabulary

Population: are all members of the same species in the habitat at one time.

Population Growth: the change in the number of individuals of a species in an area over time

Pugmarks: footprints; specifically, the footprint of a wild mammal

Range: The geographic area a species is known or believed to occupy.

Species: a group of animals that have similar characteristics and can produce offspring

Species Diversity: the variety of species in an ecosystem.

Species Survival Plan® (SSP®): the American Species Survival Plan® or SSP® program was developed in 1981 by the Association of Zoos and Aquariums to help ensure the survival of selected species in zoos and aquariums, most of which are threatened or endangered in the wild

Special Concern: a species that has some problems of limited numbers that need to be closely watched

Reserve: an area of land set aside for the protection of animals and plants

Threatened: a species likely to become endangered within the “foreseeable future.”





Endangered Species

Activity I

Breaking News!

Your students become online news journalists covering the fate of one of the world's critically endangered species: the dhole. Go over the basics of news reporting: the who, what, when, where, why, and how of their stories. As a class practice creating "catchy headlines" for various topics. These could be about something happening in the news today, happening at your school, or about something exciting happening in their lives. Show examples of online articles from Nat Geo Kids, and PBS to give ideas. Use the templates below for their online articles. They will need to do research about dholes and find pictures to use in their articles.

Choose the desired time frame for them to complete and then showcase their work in an "online news session". Provide popcorn or other snacks and have each journalist share their news story. Here at The Dhole Conservation Fund, we would love to see the online news stories that your students create. Please don't forget to share them with us too!

WILDLIFE & BIODIVERSITY

Conserving India's dhole population: Study earmarks 114 talukas

The dhole or Asiatic Wild Dog is a Schedule II species under the Wildlife (Protection) Act, 1972; its populations have been declining of late in India

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By DTE Staff
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NEXT NEWS >



NAME OF YOUR ONLINE NEWSPAPER

Date of your story

Catchy Headline



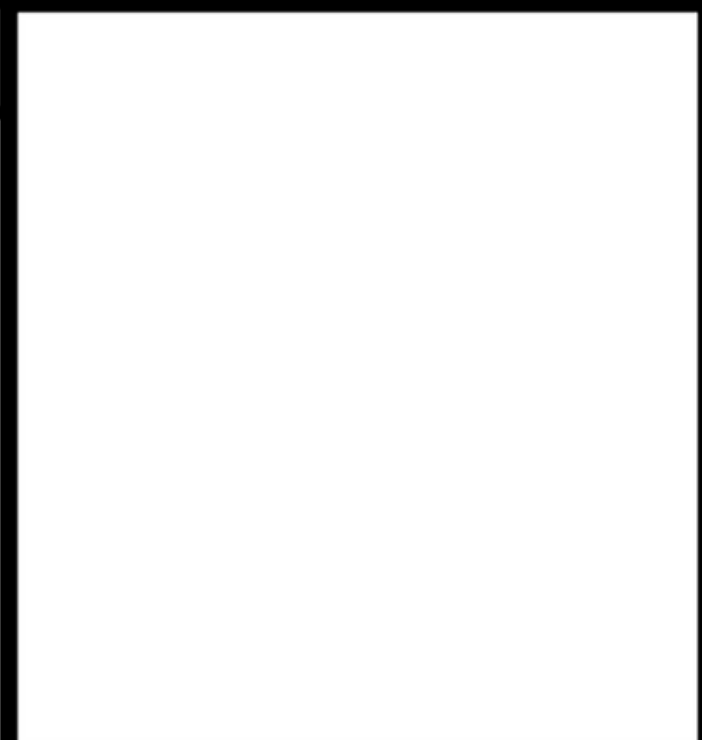
Caption your photo

Caption your photo

Date

Your journal name

Secondary Headline or another new article
headline starts here



Caption your photo

Concluding Headline or another new article headline starts here

About the Journalist Section:

Your Photo Here



Endangered Species

Activity 2

In Search of The Endangered Dhole

Your students become expert scientists as they go tracking the endangered dhole. We cannot always see wildlife when we are on a trail outdoors. But there are other ways to tell what animals may have crossed your path. Be on the lookout for animal scat (poop), evidence of scratch marks on trees, missing fruit from bushes, downed limbs, or branches, and of course look for their tracks! Tracks tell the secret of what an animal may have been doing, where they might live, and more. Snow, mud, and sand are wonderful places to find animal footprints. Each student will be given an animal photo page and the tracks page. Use the online resource from the WWF, Reading Pugmarks, A Pocket Guide for Forest Guards. It has wonderful child-friendly examples of animals found throughout India and how to identify tracks or “pugmarks.”

Animal Tracks to Match:

- Bengal tiger
- Dhole
- Honey badger
- Indian civet
- Indian hare
- Indian otter
- Indian porcupine
- Muntjac deer
- Wild boar



Extension: print out various animal tracks from your area and animal photo cards to go along with each paw print. Students must match the animal to the correct track. You could also place tracks around the room and have students “hike” through the classroom uncovering which animal made each track. Printing them true to size could also give them a sense of the animal’s size.



Dhole



Indian Porcupine



Indian Otter



Bengal Tiger



Honey Badger



Indian Hare



Muntjac deer

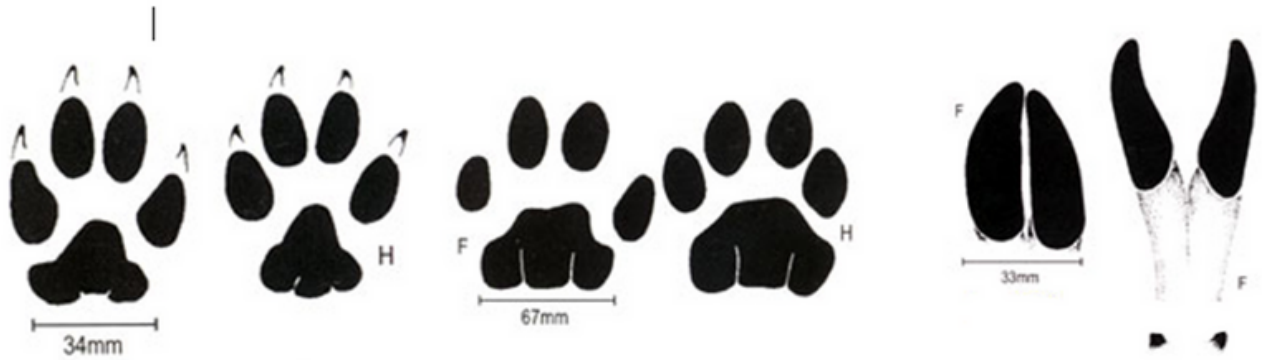


Indian Civet



Wild Boar

Activity 2: In Search of The Dhole
Assignment: Track Worksheet



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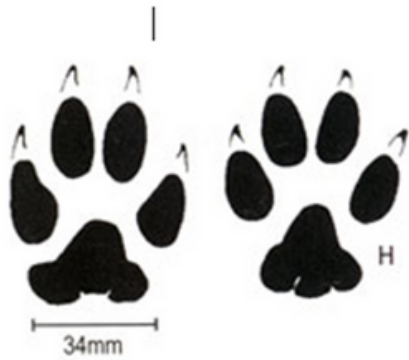
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Activity 2: In Search of The Dhole
Assignment: Track Worksheet

ANSWER KEY



Dhole



Bengal Tiger



Indian Muntjac



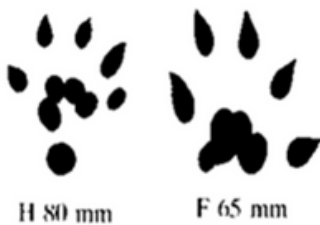
Indian Hare



Wild Boar



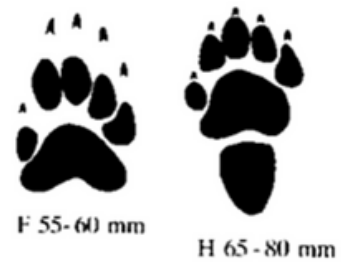
Indian Porcupine



Indian Otter



Indian Civet



Honey Badger



Endangered Species

Activity 3

Endangered Species Board Game

In this activity, each student will get to create their own game board. Brainstorm as a class different parts of board games they may have played and spaces they may have seen (some examples below). You can let students choose their own endangered animal or choose one from a hat. Students can choose whether players move around using dice, spinners, or turning over cards, the creativity is endless. There are free game boards found online, for those children that may have a hard time figuring out where to start. (Or use the option provided here).

The game should feature:

1. pictures of their animal
2. the animal's habitat, prey, home
3. interactive spaces that correspond to the status of the animal in the wild/reasons for their endangerment (habitat loss, hunting/poaching, pet trade).
4. Directions on how to play the game

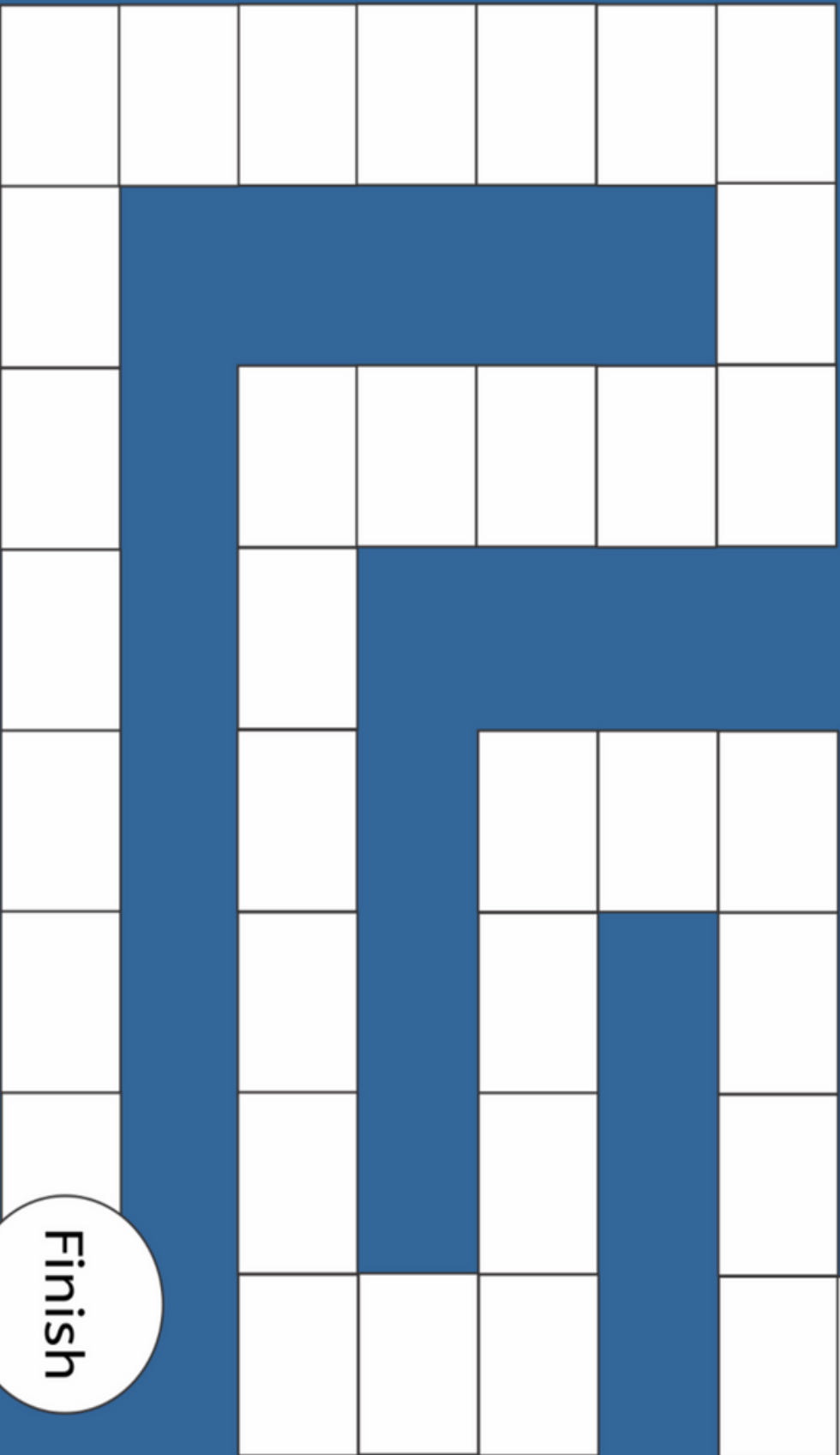
Sample spaces:

- Go back to start
- Lose a turn
- Move ahead ___ spaces
- Move back ___ spaces
- Roll again
- Stay here until you roll a ____
- Switch with the person in 1st place
- Switch with the person in last place



Start

Finish





Endangered Species

Activity 4

Would Your Pack Survive?

Discuss the five major causes of extinction: habitat loss, an introduced species, pollution, population growth, and overconsumption. How are these things affecting wild canids today? Brainstorm characteristics that wild canids have. Discuss the benefits of the different attributes. You can choose to use the keys provided or make one together as a class. Review together.

In this activity, group students in teams of 4–5. Explain that they will be given answer keys that match different colored beads to represent different characteristics of wild canids (chips, gemstones, anything to differentiate the various characteristics will also work). Each group will also be given 3 worksheets: Pack Characteristics, Environmental Challenges, and Survival/Predictions.

1. Once you have grouped each student, place all the attributes (colored beads) into one jar (this could be a plastic water bottle, pitcher, or tube). Shake it gently to mix the colors. Explain to your students that you will distribute them randomly, just as if it were a real population. Distribute 10–15 beads to each group. Give the first beads that come from the jar. It does not matter if they do not receive every color. Not every population will have all the same characteristics. Tell students that these beads represent the attributes available from the original surviving females and their mates.

2. Give each group one of the color-coded charts. Be sure to randomly give out both coded cards #1 and #2. Students must organize the beads by color and then match the color to the characteristic. They should decide the importance of each one and chart them on page 2: Pack Characteristics. Before continuing the activity, based on their charted data they should make a prediction on the success of their pack/offspring. Will they survive extinction?



Endangered Species

Activity 4 - cont

Would Your Pack Survive?

3. Give each group time to go over the Environmental Challenges on Page 3 (start with 5 and if there is time, they can do the next 5). Using their characteristics, they should discuss what they predict might happen to their pack and what would be needed to survive the situation. (Some environmental challenges might require their population to have a combination of characteristics). Answers will be recorded in the table on page 4 Survival/Predictions.

Choose teams to share their pack's characteristics and their chance for survival. Explain that some species have a Species Survival Plan to help prevent their extinction.

Wild Canid Color-Coded Characteristics Card #1

Red = large ears

Purple = lack a keen sense of smell

Black = excellent hearing

Yellow = healthy reproduction

White = thick fur coat

Blue = ability to camouflage

Green = snowshoe paws

Pink = poor eyesight

Orange = poor agility

Brown = light colored fur

Gray = on the large size

Wild Canid Color-Coded Characteristics Card #2

Red = small ears

Purple = keen sense of smell

Black = poor hearing

Yellow = lack of reproduction

White = thin fur coat

Blue = lack ability to camouflage

Green = small paws

Pink = excellent eyesight

Orange = very agile

Brown = dark colored fur

Gray = on the smaller size

Environmental Challenges Page 3:

1. Humans built a mall and wiped-out part of the habitat in which you live. The existing canids from surrounding areas invade yours. Can you defend yourself?
2. In the forested areas you live, there are large cats that prey on the same mammals that you consume. Do your canids have reliable senses, and can you remain unseen from this predator?
3. An interstate has been built is between your population and the hares you need as a primary food source. Would your population survive?
4. To capture hoof stock in your habitat, your canids need to be agile and have strong claws and jaws to hang on to win the fight against this prey species. Can your population keep up?
5. A local farmer built an electric fence surrounding his animals and farmland. This was an easy and consistent meal for your pack. Your population needs good senses to locate new food sources. Would your population be able to find new food?
6. Oil has been dumped into your primary body of water. This has caused a severe decline in your canid population. Because of this the rodent population has increased. Can your canids rebound?
7. Larger predators are known to prey on your offspring. Can your young survive against this nocturnal predator?
8. Hunters frequent your habitat looking for trophies. You'll need a good sense of smell, keen hearing, and excellent eyesight to avoid being taken. Plus, the ability to camouflage is important. Would your canids survive?
9. A new introduced species of canid has encroached your territory. They consume the same prey, use the same denning locations, and have a fast reproduction rate. Would your canids survive?
10. An intruder has captured 5 of your pups to sell in the pet trade. They have also hunted the rodent and hare populations to near extinction. You only have one pup left. How would your population survive?

Survival/Predictions: Will Your Pack Survive? Page 4

Situation #	Survival Y/N	Explain your predictions



Endangered Species

Activity 5 Musical Chairs

This is a fun twist on the popular game of musical chairs. It will require a large space outdoors. Hopefully, this will be a visual example and lead to discussions during each round.

1st Round ~ Arrange chairs back-to-back; everyone will have a chair

- Play music & have it stop
- Explain that everyone is a dhole

2nd Round ~ Quickly brainstorm things that are affecting the endangered dhole population today

- Example: Habitat Loss- roads are being built in their habitat
- Split apart the two rows of chairs
- Take 2 away, 1 from each new side
- Play music & have it stop

3rd Round ~ Example: Hunters are in their territory

- Move chairs & scatter them
- Take 2 away
- Play music & have it stop

4th Round ~ Example: Lack of Prey

- Take 3 away
- Play music & have it stop

5th Round ~ play continues until 1 dhole remains

- Take 2 away
- Play music & have it stop.





Endangered Species

Activity 5 - cont

Musical Chairs

Extension: Give each child a name tag: male dhole, female dhole, dhole pup, different predators/prey of dholes. Play the rounds again and discuss if the population would survive based on the animals left in each round.

Extension 2: continue playing using various endangered species and other types of animals. For snakes, they must hold their arms at their sides, for birds they must keep their arms outstretched.





Adaptations

Writing Prompts

1. Pretend you are in an endangered animal's "paws". What is your daily life like? What obstacles do you face? What are your hopes? Fears?
2. Create a Species Survival Plan (SSP) for the dhole. How would you help them if you could? Why is it important to help save them from extinction? What resources would you need?
3. What is your favorite animal? If they disappeared tomorrow, how would you feel? Why?
4. Write about an animal that is extinct. What would happen you went on vacation and discovered it was alive? How would you feel? Whom would you tell? Why? How would these species affect the animals in their habitat today?
5. Write a poem about the endangered dhole. Please share with The Dhole Conservation Fund.