“In the past century, the number of elephants in the wild has declined by 50 per cent. Their disappearance could devastate ecosystems and have a lasting impact on the biodiversity of our planet. I hope this programme will inspire and empower you to help protect elephants worldwide.”

Leonardo DiCaprio
Actor and Activist
How to Use This Programme

Elephants Never Forget aims to educate students about wild elephants and their unique role in our shared world. It includes topics related to biodiversity and habitats, as well as some of the issues and challenges elephants face.

Here’s one possible approach to teaching this programme:

1. **Introduce Topic and Develop**
   - **Content Knowledge Film** ([www.vimeo.com/23640203](http://www.vimeo.com/23640203)), Lesson Plan 1, Worksheet 1: Viewing/Reading Guide, Worksheet 2: Film Quiz
   - **Film** View the film with your class to build background and tap into students’ prior knowledge about elephants. Students may use Worksheet 1 to build background around key vocabulary as they watch the video.
     Following the viewing, students may take the short Film Quiz and discuss what they have learned.
   - **Student Magazine** Use suggestions from Lesson 1 to prepare students to read the Student Magazine (pages 20-26) in this guide. During reading, students may also use Worksheet 1 to record information about key vocabulary.

2. **Conduct Lesson Activities** Student Magazine, Lesson Plans, and Worksheets
   - **Lesson 2** focuses on understanding concepts of habitat loss and building empathy for elephants.
   - **Lesson 3** presents activities to support learning about biodiversity and the interactions between elephants and other species in their ecosystems.
     Extend classroom learning with optional Eco-investigation Lesson and Worksheet, pages 17-19.
   - **Lesson 4** and **Worksheet 3: Elephant Rescue** provide a narrative about an elephant rescue with various possible written, dramatic, and discussion-oriented activities.
   - **Lesson 5** guides students to categorise and compare threats to elephants with threats to other animal species – to reflect topics described in the text.
   - **Lesson 6** encourages students to compare threats to animals in the wild.
   - **Lesson 7** and **Worksheet 4: The Daily News** guide students to communicate an argument taking account of different viewpoints, drawing upon on what they have learned through research and debate.

Use the optional suggestions within the lessons as homework or extra projects to reinforce learning. There is also an **Interactive Poster**, perfect for whiteboard or individual student exploration: [www.ifaw.org/world-of-elephants](http://www.ifaw.org/world-of-elephants).
Studies have shown that most children have an affinity for and interest in animals, meaning that lessons with animal content are more likely to capture pupils’ attention, making learning more interesting for children. Teachers can use this interest to develop knowledge and skills relevant to both the national and whole school curriculum.

National Curriculum for England
Specific links to a number of National Curriculum subjects are detailed below. Each lesson in the pack identifies broad subject learning outcomes which can be made more specific using the lists on this chart.

The ‘whole school curriculum’
Children’s interest in animals as well as associated conservation, welfare and environmental issues will offer all schools an opportunity to demonstrate that they deliver that balanced and broadly based curriculum that ‘prepares pupils at the school for the opportunities, responsibilities and experiences of life’.

English
Pupils should be taught to:

Spoken English
• use discussion in order to learn; they should be able to elaborate and explain clearly their understanding and ideas
• become competent in the arts of speaking and listening, making formal presentations, demonstrating to others and participating in debate.
• speak confidently and effectively, including through:
  • giving short speeches and presentations, expressing their own ideas and keeping to the point
  • participating in formal debates and structured discussions, summarising and/or building on what has been said

Reading
• develop an appreciation and love of reading including a wide range of non-fiction in order to gain an understanding of increasingly challenging texts through making inferences and referring to evidence in the text.

Writing
• Write accurately, fluently, effectively and at length for pleasure and information through:
  • notes and polished scripts for talks and presentations
  • a range of other narrative and non narrative texts, including arguments, and personal and formal letters
  • Summarising and organising material, and supporting ideas and arguments with any necessary factual detail

Grammar and Vocabulary
• Pupils should be taught to consolidate and build on their vocabulary and use this in their writing and speech to achieve particular effects

Teachers who have used IFAW’s educational resources judge these lessons as excellent for delivering a range of core skills and competences essential for work based learning, social and emotional development and for community engagement and participation.
## Science – Biology

### Pupils should be taught about:

**Interactions and interdependencies; Relationships in an ecosystem**
- the interdependence of organisms in an ecosystem, including food webs and insect pollinated crops
- the importance of plant reproduction through insect pollination in human food security
- how organisms affect, and are affected by, their environment, including the accumulation of toxic materials

**Genetics and evolution; Inheritance, chromosomes, DNA and genes**
- the variation between species and between individuals of the same species means some organisms compete more successfully, which can drive natural selection
- changes in the environment may leave individuals within a species, and some entire species, less well adapted to compete successfully and reproduce, which in turn may lead to extinction
- the importance of maintaining biodiversity and the use of gene banks to preserve hereditary material.

## Geography

### Pupils should be taught to:

**Human and physical geography**
- understand how human and physical processes interact to influence, and change landscapes, environments and the climate; and how human activity relies on effective functioning of natural systems

**Geographical skills and fieldwork:**
- use fieldwork in contrasting locations to collect, analyse and draw conclusions from geographical data, using multiple sources of increasingly complex information.

## Non-Statutory Personal, Social, Health and Economic Education

The non statutory nature of PSHE offers teachers and students the opportunity to creatively explore the three core themes of the subject through the lens of animal welfare and conservation as well as human interaction with animals.

**The PSHE Association identifies the following core themes for PSHE Education**
- Health and Wellbeing
- Relationships
- Living in the Wider World

These materials can also be useful for schools working towards the Rights Respecting Schools Award, encouraging children to participate in classroom activities and have their opinions heard and, through learning about the rights of others, learn about their own responsibilities to themselves and the wider global community.
**Lesson 1**

**Learning Outcomes:** Students will tap into prior knowledge, make connections as they view a film and read an informational text and demonstrate acquisition of new vocabulary and information about elephants. This lesson meets curriculum aims in English, geography, PSHE and science.

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**Viewing/Reading**

**Before/During Viewing the Film**

1. Allow students to connect to prior knowledge by discussing in pairs what they know about elephants.
2. Show the film.
3. Have students take the Video Quiz with partners or independently.
4. Give each student a copy of Worksheet 1: Viewing/Reading Guide. Read the terms and explain that they are important to elephants and the problems they face. Ask students to write in the second column how they think each term relates to elephants. (You may provide dictionaries for reference.)

**After Viewing the Film**

5. Ask partners to discuss their answers to the Film Quiz and what they wrote in the second column of Worksheet 1: Viewing/Reading Guide. Have students write on their worksheets what they feel is the most important information. They may use the backs of their worksheets if needed.
6. As a group, discuss the video and the students’ responses to the Film Quiz and Worksheet 1: Viewing/Reading Guide. Ask students what they thought were the film’s most important points and summarize these on a class chart.

**Before/During Reading the Student Magazine**

7. Have students preview the text, images and glossary of terms.
8. Have students read the text independently or with partners, pairing strong readers with less able readers.

**After Reading the Student Magazine**

9. After reading, use these question prompts to help students consolidate understanding:
   - How do elephants use their trunks?
   - In what ways are elephants social animals?
   - How do elephants help maintain biodiversity?
   - How do elephants’ tusks help them survive but also put them in danger?
   - How do people both help and harm elephants?

Have students add the information from the reading to their worksheets and help you add to the class chart.

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**Bringing It Home:** Invite your students to imagine and explore – through colourful artwork, an essay, short story, poem, or another creative project – the topic: *A day in a world without elephants.* Submit original student artwork to the Animal Action Art Contest. All the details and an entry form can be found at [www.ifaw.org/art-contest-uk](http://www.ifaw.org/art-contest-uk).
# Worksheet 1
Viewing/Reading Guide

Name _____________________________________________________ Date: ________________________________

**Directions:** Use the boxes to fill in information about how each word relates to elephants.

<table>
<thead>
<tr>
<th>Word</th>
<th>How is the word related to elephants?</th>
<th>What I found out</th>
</tr>
</thead>
<tbody>
<tr>
<td>tusks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>trunk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>communicate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>matriarch</td>
<td></td>
<td></td>
</tr>
<tr>
<td>poaching</td>
<td></td>
<td></td>
</tr>
<tr>
<td>biodiversity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>keystone species</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Most Important Facts**
1. Which of the following is NOT related to today’s elephants?
   - a) a pig
   - b) a manatee
   - c) a woolly mammoth

2. Which adaptation helps elephants cool off on the African savannah?
   - a) padded feet
   - b) large ears
   - c) long tusks

3. Elephant tusks are teeth.
   - a) true
   - b) false

4. How much might an African bull elephant weigh?
   - a) as much as a young child
   - b) as much as 6 children
   - c) as much as 80 people

5. Which of the following is NOT something an elephant could do with its trunk alone?
   - a) carry a tree trunk
   - b) pick up a blade of grass
   - c) drink water

6. Which of the following is a way that elephants help their habitats?
   - a) Elephants create a huge amount of methane gas that cleans the air.
   - b) Elephants produce a huge amount of dung that helps spread plants.
   - c) Elephants make loud vibrations that knock down trees to make room for grass.

7. What best describes how elephants living near people get into conflict?
   - a) When elephants get bored, they chase people, trample crops, and destroy villages.
   - b) When elephants run out of plants, they eat other animals that people hunt for food.
   - c) When elephants run out of space, they move into human areas and both people and elephants can get hurt.

8. What are three ways that elephants have been important to humans in history?
   _______________________________________
   _______________________________________
   _______________________________________

9. What are three threats to elephants today?
   _______________________________________
   _______________________________________
   _______________________________________

10. Why does the author write that it’s important we don’t forget elephants?
    _______________________________________
    _______________________________________
    _______________________________________

What have you learned from the film you just watched?
Answer the questions below.

Name _____________________________________________________ Date: ______________________________

Answers:
1. a; 2. b; 3. a; 4. c; 5. c; 6. b; 7. c; 8. Answers may include: for transportation, heavy lifting, war, and religion; 9. Answers may include: building roads and railways that break up migration routes, destruction of habitat, poaching for the sale of tusks/ivory, climate change effects, and conflicts between people and elephants over living space. It’s your decision!
Learning Outcomes: Students will demonstrate an understanding of concepts of habitat loss and fragmentation gained from reading the text and through role-play and simulation activities. Activities meet curriculum aims in maths, science, English, geography and PSHE.

Introducing the Magazine

1. Read the text sections ‘Big Is Just the Beginning,’ ‘Room to Roam,’ and ‘Climate Change’ aloud.

2. Read the questions below and write them on the board. Ask students to turn and talk to a partner about each question before they discuss it as a group. Model how to find answers in the text and how to infer from text clues.

• What reasons does the text give for loss or fragmentation of elephant habitat? (farming, settlement, climate change, disruptions due to road and railway building)

• How does habitat loss create problems for elephants? (changes access to food and water, increases conflicts with humans, isolates groups, limits mating choices, increases illness)

• What are some things people can do to help elephants’ habitat issues? (make elephant corridors, preserve habitat, use less paper so forests aren’t cut down, use less energy to limit climate change effects, write to leaders, educate others)

3. Ask students to help you create a shared diagram on flipchart paper that lists/illustrates the effects of habitat loss. One example of how your completed chart may look is pictured below.

Habitat Loss Simulation

1. Write the following scenario on the board: A local village has expanded the number of houses and the amount of farmland around it, which has meant a loss of 25 per cent of the elephants’ habitat. What does this mean for the elephants?

2. Ask students to measure the size of the classroom and record the area on the board. Then have students calculate how much area is lost if 25 per cent is removed. Record this.

3. Ask students to create ‘habitat islands’ that are respectively 50 per cent and 25 per cent of the original total area. Help them mark these spaces on the floor with string, rope or removeable masking tape.

4. Assign about 75 per cent of the class to the bigger space and 25 per cent to the smaller space. Conduct regular class activities with students sitting in the reduced spaces. Tell them that the two groups cannot communicate.

5. Discuss with students how losing communication and 25 per cent of their classroom space affected them. How did sitting so close make them feel? Was it harder to go about normal activities? How might elephants feel about the loss of 25 per cent of their habitat? What might they do?

6. Mark off paths that students follow to resources such as reference books, lunch bags, or water fountains. Then close off these ‘corridors.’ Have students attempt to go about their normal activities with their regular classroom ‘routes’ blocked. Make comparisons to elephants cut off from water or a traditional migration route.

Habitat Loss Role-Play

1. Write the following words on flash cards: mothers, babies, food, water, travelling, health, enemies, and communicating.

2. Assign partners and tell students they are elephants. Have each pair pick a card. Explain that each pair is going to discuss how the word on their card relates to them, as elephants, living in two different situations. One elephant is living in a wide, open area that has been unaffected by human settlement. The other elephant is living near a village that has been expanding into his/her habitat.

3. For younger/less able students, you may need to model examples. Say: I picked the card for water. First, I am an elephant living in a wide, open space. I sometimes need to travel a long distance in search of water. There is a drought and I can’t find enough water…. Next, I am an elephant living near people. The water is on the other side of the village. My herd tramped through the village to get to the water. The people got angry and killed some of my herd.

4. After students have discussed the word from the perspective of both elephants, have them create a dialogue, sharing the two elephants’ points of view.
Lesson 3

Elephants & Ecosystem Connections

Learning Outcomes: Students will demonstrate an understanding of the importance of elephants in their ecosystems, the inter-relationships they have with plants and other animals, and the roles they play in maintaining biodiversity. This activity meets curriculum aims in science, English, geography and PSHE.

Ecosystem Connections
1. Have students reread Key Roles of Elephants.
2. Write the question prompts below on the board. Place students in groups to discuss them.
   - What is biodiversity? (biological diversity, a measurement of variation in species, genes, and ecological communities)
   - How do forest elephants help maintain biodiversity in their habitat? (create gaps in vegetation that allow new plants to grow; spread seeds in dung, which germinate and grow)
   - How do savannah elephants affect grazing animals such as zebras and gazelles? How do they affect predators such as lions? How do they affect smaller animals such as birds and insects? (maintain grassland, which feeds grazers and in turn provides food for predators such as lions; create water holes for other animals to drink from)
   - What would happen to animals in forests and grasslands if elephants were to disappear? (ecosystem would be altered; other species that depend on the ecosystem in its current form would die)
3. Have each group create an ecosystem relationships map on a large sheet of flipchart paper that shows the web of connections and interactions between elephants on one side and another animal that shares their habitat (such as the savannah animals listed in the box below left) on the other. You might start by having the groups research one or more of these animals on the Internet or from other sources.
4. Once the maps are complete, call the groups together for a class discussion and ask groups to share their visuals.

Animal Classification and Relationships
1. As a class, brainstorm and list animals and insects that live on the African savannah with elephants. Some are: antelopes, ants, cheetahs, dung beetles, gazelles, hyenas, meerkats, raptors, rhinoceroses, and vultures.
2. Have students suggest ways to organise the animals on the list into categories – for example, by ecological role or niche (producers, herbivores, carnivores, grass eaters, scavengers) or by taxonomic group (birds, insects, mammals).
3. Optional: Have each student research one animal and its relationship to elephants. Assign several students to each chosen animal. After they research individually, have students with the same animal discuss findings in small groups before reporting to the class. As a class, discuss why it is important to biodiversity that elephants survive on the grasslands.

Explore Your World: Eco-investigation
Extend classroom learning by taking your students outside to discover animals, biodiversity and ecosystem connections close to home.

IFAW’s Eco-investigation Lesson and Worksheet is based on basic fieldwork techniques that introduce students to local biodiversity through visual identification during a guided study of an outside area you have identified, such as the school playground, a nearby park, meadow, or conservation area. The lesson also helps promote better understanding of the impact of human activities on animals and habitat.

The Eco-investigation Lesson and Worksheet can be found on pages 17 – 19 of this book.
Introducing the Text

1. Ask students to read the text Elephant Rescue silently.
2. To ensure understanding of the text, use these prompts:
   - What does the fact that the elephants were at the farm suggest about their habitat?
   - What do you know about the way the farmers felt about the elephants?
   - Why did each baby elephant have its own caretaker?
   - Why did the caretakers take the babies on walks together?
3. Allow students to choose from the list of activities on Worksheet 3, Elephant Rescue as a follow-up response to the text. Help choose an activity that they can complete. Work with these students to help them complete the activity or have them work in pairs to complete it. Further discussion of the activities is included below.

Rewrite the Story from an Elephant’s Perspective

Make sure students understand that the text’s point of view is that of an outside observer telling the perspectives of all the participants: the elephants in the herd, the baby, and the workers. To rewrite the text, students need to focus on just the point of view of the baby. Model how they can do this through first-person narrative, allowing them the freedom to change the story at any point if it helps them to write creatively and in character.

First person modelling: Suddenly, I heard loud noises and watched in dismay as the herd ran away. I cried out to tell them to come back and not leave me behind in the hole. I looked up and saw a human peering down at me. What was going to happen to me?, I thought.

Follow up on the writing exercise with a group discussion about how it felt to write from the perspective of the baby elephant. Ask students how it helped them understand the elephant’s situation.

Optional: As variations on the activity, consider having students present the story as a series of text messages or an Internet news feed that is posted as the story unfolds. Or have them recreate the story as a graphic novel. Provide models of whichever text types you have them attempt, and help them recognize the characteristics (such as a limit on number of characters) of the genre.

Write a Mock Interview

1. Provide students with a model of an interview or remind them of interviews they may have seen on news programmes with young people as hosts and reporters.
2. Have students think about the role of the caregivers at the rescue center and what questions they would like to ask them. Ask them to record their questions and answers.
3. Students could then work with a partner to develop a role-play of an interview to present to the class. As an alternative to the role-play, have students write a mock e-mail thread in which one student writes interview questions, the other responds in writing, and then the first asks further questions for clarification.
4. Work with less able students to brainstorm a list of questions they could ask one of the caregivers. Write the questions on the board. Then ask students to respond to the questions orally as if they were caregivers. If necessary, model for students how you would answer one of the questions in the role of a caregiver.

Stage a Mock Rescue

Ask students to read the story and then stage a similar story of an animal rescue. You might choose to split the class in half and have each prepare and perform their own interpretation for the other. Encourage them to change details about the story for dramatic effect, and to add the part of a narrator if they wish. If time allows, give them the option of writing a script or planning loosely and then improvising.

For less able students, help to write a simple script that they can follow as they perform. After the activity, hold a class discussion on how the experience helped them understand the situation of stranded animals and animal rescuers. As an optional variation, have students take on the role of theater critics or reviewers when they are not performing, encouraging them to take notes and later write up short reviews.
Directions: Read the story. Choose a response activity.

The Rescue

In the middle of the night in India, a herd of elephants wandered out of the forest and into a farm looking for food. The elephants came to a deep, muddy ditch at the edge of the fields. Suddenly, a small baby elephant slid down into the ditch. She tried scrambling up the sides of the ditch to get out, but she wasn’t strong enough or big enough to escape. She cried out in fear, calling to the other elephants for help. Her mother and the other elephants tried to help, but the ditch was too deep for them to reach her with their trunks. There was nothing they could do to help the baby, but they stayed nearby to keep her company.

In the morning, farmers saw the elephants near their fields. They grabbed sticks and pots and rushed at the elephants, banging loudly on the pots to scare them away from their crops. The elephant herd was frightened by the noise and ran off, leaving the baby alone in the ditch. Then the farmers heard the cries of the baby elephant. They called for help from the Forest Department, which arrived with a bulldozer to dig away the dirt around the baby elephant. As the little elephant kicked and struggled, workers from the Forest Department finally were able to pull her out.

When a vet checked the baby elephant, he found she was tired and thirsty and scared, but not badly hurt.

The forest workers tried to find the herd and the baby’s mother, but they were gone. The workers knew that the baby wouldn’t be able to survive in the wild on her own, so they loaded her onto the back of their truck and drove her to the Wildlife Rescue Centre in Assam, India.

At the Rescue Centre, the baby elephant had a caregiver who stayed with her all the time, feeding her several times a day. The caregiver even slept near her! The caregivers at the Rescue Centre took the babies they were caring for on walks together so they could learn how to find food and water in the wild. The baby elephant became part of a family of other baby elephants. When these elephants were older, they were all released back into the wild to live together as a herd.

Choose an Activity

- Rewrite the story from the point of view of the baby elephant, telling what the baby elephant thinks and feels.
- Find out more about animal rescues and stage a mock rescue.
- Write an imaginary interview with a caregiver at the Rescue Centre. Then work with a partner to role-play the interview for the class.
- Write a newspaper article, blog entry, or graphic novel about the rescue of the baby elephant.
**Learning Objectives**  Students learn about: relationships between animals and their environment; the structure and function of living things; the diversity and adaptations of organisms in their environment; changes in the environment and their effects on animals. This lesson meets science curriculum aims.

**Lesson plan**

1. Have your students read the Student Handout, or for younger students read aloud, *Ears, Trunks and Tusks: Elephant Adaptation* overleaf.

2. After reading: Begin by asking students if they know the definition of habitat. Record their observations on the board, and then read the following definition:

   An animal’s habitat is the combination of resources (e.g. food, water) and environmental conditions (e.g. temperature) in an area that makes it possible for that species to survive and reproduce.

3. Next, ask students if they know the definition of adaptation. Then share this definition:

   Adaptation is an evolutionary process whereby a species’ characteristics (shape, form, function and behavior) change over time in response to changes in the environment, contributing to an animal’s ability to survive and reproduce.

4. Have each group discuss what they know about how elephants are adapted to the different climate and food sources in their habitats and together fill out a chart like the one below. You may want to have them do more research on the climate and other characteristics, such as vegetation, of the habitats of African Savannah Elephants and Asian Elephants.

<table>
<thead>
<tr>
<th>Animal</th>
<th>Typical facts about their habitats</th>
<th>Facts about their adaptation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>African Savannah Elephant</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Asian Elephant</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. Give each group a pair of pictures of other animals in the same family of species but living in different habitats (e.g. Desert Fox and Arctic Fox; Polar Bear and Asian Black Bear; Mountain Hare and Hare). You may want to include animals common to your country or region.

6. Have each group discuss the different habitats where these animals live. You may want to let each group use sources such as books or the Internet to research the habitat of their animal.

7. Have each group add a new section about this animal to the elephants’ habitat and adaptation. Have them include key facts they have learned about the animal’s habitat and their ideas for the adaptations this animal has evolved in response to their habitat.

8. Call groups together and have them share ideas. You may want to create a large classroom chart like the one below that includes facts on all the animals the groups have researched and discussed.

9. Are there any similarities between the animals living in related habitats (e.g. bigger ears in warmer regions, white coat in the arctic for camouflage)?

10. Discuss the results in comparison with the adaptations of African and Asian elephants.

<table>
<thead>
<tr>
<th>Animal</th>
<th>Typical facts about their habitats</th>
<th>Facts about their adaptation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>African Savannah Elephant</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Asian Elephant</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Polar Bear</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Asian Black Bear</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mountain Hare</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Hare</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

11. Many species of elephants are extinct. One reason for the extinction of the mammoth has been changes in climate. Discuss with the class and add to the classroom chart some key facts about the environment that mammoths lived in during the ice age and how mammoths were adapted to that cold environment (like little ears and thick coat).

   What may have happened to mammoths when the climate changed? (The temperature warmed; the ice sheet melted, they had problems surviving in a warmer climate; food supply changed.)

12. Ask students to imagine what could happen to elephants if climate changes. Discuss probable consequences for the various habitats where elephants live and what that could mean for elephants.

**Extending the Lesson**

For homework or an extension activity, have students select and research the habitat and lifestyle of a favourite animal. Have them identify as many adaptations as possible. Then ask students to share a report of their favorite adaptations with the class.
Elephants live in many different habitats – from the open savannah to dense woods and moist, subtropical forests to desert regions – and they have adapted in many ways to survive the different climatic conditions and types of food and water resources available in the areas where they live.

**How do elephants keep cool?**

Elephants live in warm areas with temperatures up to 49°C a day. They have to cool down quickly to keep their body temperature at a constant level. If they don’t, they could die. Under hot conditions, many animals, including humans, begin to sweat – an excellent cooling mechanism based on evaporation. But elephants can’t sweat because they do not have any sweat glands in their skin. Instead, elephants have evolved their own efficient cooling mechanisms. As adults, elephants are mostly bald and they have wrinkled skin, which helps to keep them cool.

By increasing the surface area of the skin, an elephant’s wrinkles allow more heat to escape. Also, when the elephant heads to the water for a cooling bath or shower, moisture is trapped in all the cracks and crevices of its wrinkly skin, which means it takes much longer to evaporate.

One of the best cooling devices an elephant has are its ears. By flapping their huge ears, elephants can lower their blood temperature by more than 12° C. The back sides of an elephant’s ears are covered with a vast network of capillaries and veins. When hot blood in the elephant’s arteries is filtered through the ears, heat is released and then the cooler blood is returned to the elephant’s body. It’s not uncommon to see an elephant facing into the wind with its ears extended to allow the cool breeze to blow across these hot arteries.

Differing needs to regulate body heat helps to explain the differences between elephant species. African elephants that live on the hot savannah have very big ears and very wrinkly skin. On the other hand, African forest elephants have smaller ears because they don’t need as much help cooling down among the shady, broadleaf trees. Asian elephants, which live in cooler, moister tropical rain forests, have smaller ears and less wrinkly skin than the elephants in Africa.

**Other Elephant Adaptations**

Elephants are the only living members of a group of mammals having a trunk (Proboscidea). Early Proboscideans had a smaller body size and a smaller trunk. The greatest advantage of the modern elephant’s huge body size, which evolved over millions of years, is having few predators. Elephants are so big that most large carnivores will not attack them.

But, this great size can also be a challenge for elephants. The combination of being as tall as 3 metres, while having a very short neck makes it extremely difficult for elephants to reach food and water on the ground or above their heads with their mouths.

So, the elephant’s long trunk has become a very useful tool. The evolution of a long trunk allowed elephants to reach a wider variety of vegetation including leaves, branches and other food high up in trees, which are otherwise only accessible to the tall, long-necked giraffes. For Asian elephants, the most substantial food supply in the tropical and subtropical moist broadleaf forests is found at higher levels about 2.3 metres above the ground.

The evolution of long tusks has also been very advantageous for elephants. Tusks are a great tool for obtaining food, water and salt. Elephants use their tusks like a crowbar to peel and cut down soft wood. In dry seasons when water supplies are scarce, African elephants use their tusks to bore and dig deep holes in parched river beds. They also get the salt and minerals they need by digging with their tusks for soils and stones.

Because of the different climatic conditions, Asian elephants have access to more water resources all year round than elephants in Africa. This might be one reason that Asian elephants have smaller or no tusks.

The so-called ‘desert elephants,’ which live in the desert of Namibia, are not a separate species from other African savannah elephants. But they have unique adaptations to their dry, sandy environment. The desert elephants’ smaller body mass with proportionally longer legs and larger feet allows them to cross miles of sand dunes to reach water.
Learning Outcomes: Students will research threats to animals in the wild and make comparisons between them. They will gather, evaluate, and synthesize data from a variety of sources to communicate their discoveries. This activity meets curriculum aims in science, English, geography and PSHE.

Comparing Animal Threats

1. Place students in groups or pairs. Ask them to list the threats to elephants, along with a short description of how each threat affects elephants and what is being done to protect them. Students can use the text to find and list the different problems elephants face. Remind them to also think back to the video. Then have students recall the main threats to elephants as a group.

2. Write the following research questions on the board: What are the most significant threats to ______ [name of animal]? How does the threat affect the animal? What is being done to protect the animal?

3. Choose a set of threatened animals that students will explore in more detail. Like the elephant, the following animals face danger from poaching and other threats: tigers, whales, rhinoceroses, leopards, gazelles, leatherback turtles, birds of paradise, and scarlet macaws. Write the animal names on the board and decide how many students will research each. Then put the animal names in a hat and have students choose them until the slots for each animal are filled.

4. Ask the groups to consider where they will find information about their animal. IFAW has developed materials on tigers, whales, seals, and other animals that students can access on the IFAW website at www.ifaw.org.

5. Allow time for groups to research their animals, take notes, and prepare an oral presentation. Ask students to present their information to the class on a chart or overhead transparency in the following format.

6. Optional: As a variation on the activity, have students create the chart for display (and comparison), but allow students to make presentations in some non-standard form, such as a dramatic presentation of the threats to their animals.

7. After each presentation, discuss how the threats to the particular animal are similar to or different from those facing elephants and how they relate to the other animals presented by the different groups of students. For example, the elephant and the rhinoceros are under threat because of the poaching of the elephant’s tusks and the rhino’s horns. The leopard, tiger, and gazelle are poached for their skins, and the gazelle, like the rhino, is also poached for its horns. The tiger’s body parts are also used in medicines. Because of habitat destruction, animals like the leopard, tiger, and elephant come into conflict with humans.

8. Prompt students to think about the similarities between habitat-loss conflicts in Africa and Asia and issues caused by loss of habitat in other areas – such as habitat loss bringing animals into contact with people in their own country. Also encourage students to think about how climate changes can create both threats and advantages to certain animals (such as increasing temperatures affecting krill food sources for whales or plant foods for grazing animals).

9. After students present and discuss the problems various animals face. Ask each group to create a chart that compares the problems their chosen animal has with those of the elephant. A partial example follows.

<table>
<thead>
<tr>
<th>Threats</th>
<th>Elephants</th>
<th>Tigers</th>
<th>Whales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poaching</td>
<td>Ivory from tusks</td>
<td>Hides, body parts</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>for medicine</td>
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<tr>
<td>Habitat loss</td>
<td>Human activities</td>
<td></td>
<td>Drift nets can</td>
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<td></td>
<td>crowd out</td>
<td>lead to lack</td>
<td>‘block’ whale</td>
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<tr>
<td></td>
<td>elephants</td>
<td>of food, access to</td>
<td>migration through</td>
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<tr>
<td></td>
<td>and lead to</td>
<td>water holes,</td>
<td>entanglement.</td>
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<td></td>
<td>lack of food,</td>
<td>Fragmentation can</td>
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<td></td>
<td>access to</td>
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<td></td>
<td>water holes</td>
<td>of groups, less</td>
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<td>genetic variation,</td>
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<td>and more health</td>
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<td>problems.</td>
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<td>Conflict with</td>
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<td>humans</td>
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</tr>
<tr>
<td>Climate change</td>
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</tbody>
</table>
**Learning Outcomes:** Students will express and explain their own opinions to others through discussions and debates. They will take account of different viewpoints and draw on what they have learned through research and debate. They will represent the views of others with which they may or may not agree. This lesson meets curriculum aims in English, geography and PSHE.

1. Discuss with the class the following definition:
   The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) 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.

   Using information from the CITES website (www.cites.org) and the ‘Trouble with Tusks’ section of the Student Magazine, explain to the class the role of CITES and how ‘CITES decisions’ have affected elephants.

2. Using the Glossary, highlight key vocabulary, such as poaching and stockpiling. Discuss the notion of illegal and legal ivory.

3. Hand out Worksheet 4: The Daily News, with a fictional newspaper article: Elephant poacher pleads guilty. Have students read it independently or read it aloud with the class.

4. Ask students for their ideas and reactions to the text. You may want to use some of the following question prompts:
   - How do they feel about elephants being poached for their ivory?
   - Can they imagine what will happen to the calf?
   - What are their impressions of Mr. Wachiru? What do they know about him? How do they feel about what he has done?

5. Divide the class into small groups. Assign each group a role from the chart below so they can prepare for the group role-play activity: Who’s to blame?

6. Ask each group to spend some time researching and/or imagining the lives of the people on the role play cards.

7. Have each group make an oral presentation to the class about why the ivory is so important to their role and why elephants should be allowed to be killed for it.

8. After the role play, ask the class to consider the following questions:
   - Who is really to blame for the ivory trade?
   - What should happen to Mr. Wachiru?
   - What should CITES do about the ivory trade?

9. Ask the class to consider their own solutions to protecting elephants and stopping the ivory trade.
A 23-year-old man caught cutting the tusks from a dead female elephant while her distressed calf paced up and down nearby, appeared in Joweri District court today.

Officer Fariki Kamau told the court the accused, Ajuma Wachiru, an unemployed father of three children, had earlier offered to sell tusks to an undercover wildlife officer.

Wachiru — who pleaded guilty — is charged under this country’s Wildlife Act with killing an endangered species and for the illegal trade of ivory.

Officer Kamau explained the elephant was one of about 60 killed by poachers in Njogu National Park every year to fuel the illegal ivory trade.

"The elephant was one of about 60 killed by poachers in Njogu National Park every year to fuel the illegal ivory trade."

— Officer Fariki Kamau

He explained that the ruling had allowed some countries which had stockpiles of ivory to start selling it again.

"Because there is no way to tell the difference between the "legal" stockpiled ivory and that from elephants killed illegally, poachers know they have a good chance of making money from unscrupulous buyers."

An expert from the International Fund for Animal Welfare, which assists wildlife authorities in protecting elephants, said Njogu’s elephant population was under severe threat from the illegal ivory trade.

"The threat to elephants makes the situation for the whole region and its people very grave. Additionally, elephants are a main tourist attraction in the region and therefore, a vital source of revenue for local communities. Everyone in this region would be much worse off without elephants,” he said.

Addressing the court, Mr. Thiongo Odinga, Wachiru’s legal aid counsellor, said Wachiru’s dire financial situation had driven him to kill the elephant with the intention of selling its tusks.

"Although it is obviously very wrong to kill an elephant, Mr. Wachiru is virtually destitute and unable to support his family. Most people in Joweri District live on less than £1 a day — and depend only on what is available in their natural surroundings for survival. It’s not surprising that sometimes people break the law to put food on the table and send their children to school,” he said.

Wachiru pleaded guilty to the charges and will be sentenced tomorrow. He faces a maximum prison sentence of six months and a fine of between Sh500 and Sh2000 (£3.70 – £14.25).
Learning Outcomes: Students will demonstrate an understanding of science fieldwork and the impact of human activity on animals and habitat by participating in a fieldwork project. This activity meets science and biology curriculum aims.

Lesson plan
1. Explain technical terms such as biodiversity, ecosystem, biotic and abiotic, and use real-life examples to help connect students to these concepts.

2. Explain that they will be going outside to a study area you have identified (e.g., the school playground, nearby park, meadow, etc.) to explore local biodiversity through practical field work.

3. Describe the ecology and any human-built features of the study area. Ask your students the following questions (record their answers on the board for future reference): What plants and animals do you expect to find in the study area? What is this based on? (Remind your students that the season, time of day, weather, etc., will influence what is found).

4. Develop a code of conduct (how to behave outside the classroom) when working in and around nature. Remind students that we can affect the behaviour and comfort of animals just by being there. Recommend creating as little disturbance within the study area as possible and taking nothing away from the site.

5. Before entering the study area, hand out the Eco-investigators data collection sheets reproduced from the next page. Have students stand quietly as a group and observe the entire area. Ask them to record overall conditions, such as weather, plants, animals, species interactions, and human impacts or disruptions of the area.

6. Next, divide the class into pairs. Each will be responsible for randomly choosing a 2m by 2m square sample site within the study area. Students can use the rope to mark the perimeter of their sample site. Explain that it is important that sample site size and data collection techniques are standardised so that results can be compared.

7. Explain that each group will be using the sheet to collect as much information as they can on their sample site over a 30-minute period. The combined class results will give them an idea of the community of animals that the whole study area supports.

8. Remind students to look and listen for all types of animals, and signs of animals too, like footprints, scat, browse marks, and even bird songs. Note that they will also have room to record plant types and abiotic – non-living – factors like soil, rocks, rotting stumps, and even dew drops. [Note: you may wish to assign one partner the role of ‘recorder’ and the other as ‘observer,’ and then switch roles after 15 minutes].

9. Emphasise that they are welcome to use field guides – if available – but when filling out the data sheet they don’t have to know the correct names of plants and animals. They can simply describe them. Encourage them to sketch or take photos of all the different components and to record location relative to other components within their sample site.

10. After data collection, give students time to identify the plants and animals they saw in their sample sites using field guides, internet resources, and discussion with others. Discuss the results as a class.

11. Referring back to the list of class expectations, ask the students if they found what they expected. Did they find anything they didn’t expect? Did any groups find something unique from all the others? What were the factors of the study area or sample sites that influenced the overall class results and differences between the results of each group (e.g., animals were hiding from the noise of the class, area on a slope, etc.).

12. Choose a few species found by the class. What were these species doing in the study area? What resources were they using and how? (This is an indication of the habitat needs – food, water, cover, and space – of each species, and will be useful when discussing habitat in the next lesson.) What did they learn about their local ecosystem?

13. Discuss with the class the impacts of human activities on the ecosystems around them. What did they learn about these impacts on some of the species in the study area? What might they do differently now that they know?

Resources
- Biodiversity and ecosystem definitions – see background information on the companion film online at http://vimeo.com/7063703
- Field guides/pictures of animals specific to local region
- Magnifying glasses/binoculars/cameras (optional)
- String or rope to mark study area; rulers and measuring tape
- Eco-investigators data collection sheets reproduced from next page
- Pencils, clipboards, extra sheets of paper for sketches, diagrams etc.
Optional Worksheet

Eco-investigators

Name ___________________________ Sample site no. __________
Date ____________________________ Time ______________________

Weather
(Specify, examples below)

- Sunny
- Light rain or snow
- Light wind
- Cloudy
- Heavy rain or snow
- Strong wind
- Other

Sample site description
(Quickly sketch your site in relation to obvious landmarks — note unique features)

General observations (about the entire study area)

Record as much information as you can about the living and non-living components of your sample site. Include data such as name, description, number of individuals, and location within site.

Attach separate sheets with your sketches, diagrams, and other notes or observations, including human impact or disturbances.

Fungi
(mushrooms, molds, lichen...)

Animalia

VERTEBRATES (mammals, birds, fish, reptiles & amphibians)

INVERTEBRATES (insects, spiders, worms, molluscs...)

Abiotic
Non-living

SOIL (color, texture...)

ROCKS, etc. (size, number...)

SOURCES OF WATER

HUMAN FEATURES

OTHER (leaf litter, logs...)

Plantae
(trees, shrubs, vines, ferns, mosses, grasses, herbs...)

Look for: colour, texture, patterns, shape, and size of leaves, bark, branches; life cycle signs (buds, new growth, flowers, seeds).
1. Compile and graph the results of your study using a bar or line graph. Describe any ‘trends’ that you notice from the graphs.

2. Describe the major ecosystems your study area is located in (e.g., temperate forest, taiga, desert, lake, river, etc.) and list three indicator species you found or might expect to find (e.g., song sparrow, caribou moss, black spruce tree).

3. Describe the climatic conditions in your area (e.g., temperature, precipitation). List three ways that climate, habitat and biodiversity are connected.

4. Make a list of the different groups of animals (such as mammal, bird, and insect classes) that your group found in your study area. What was the most abundant group of species in your study area and why?

5. Choose one species. What was this species doing in your study area? What resources were they using and how?

6. Draw a food web showing the connections between at least five species (plants and animals) you saw in your study area.

7. List any threatened or endangered species that you found in your study area. If you didn’t find any, choose a threatened or endangered species in your region. What conservation measure(s) could you put into practice to help this species thrive?

8. Describe any animal ‘homes’ you found in your area. How did you know they were animal homes?

9. What measures could be put in place to protect or create animal homes in the area?

10. Were there any human-made barriers in the study area restricting wildlife access to food and shelter? What could be done to reduce the disruption?
The first thing people notice about elephants is that they’re big – really big. In fact, elephants are the largest land animals on the planet. But there’s much more to these enormous animals than their size and power. They are also clever and sensitive. Elephants care for their families and live by complex social rules. They appear to remember long-lost relatives and grieve for loved ones long after their deaths. These majestic animals, which can live as long as you and I, are a fascinating mix of strength and gentleness. They are impressively huge, but also incredibly vulnerable. Despite their tremendous power, many populations of wild elephants are fighting to survive. Elephants are the only living members of a group of mammals that includes the extinct American mastodon and the woolly mammoth. Among living mammals, manatees and hyraxes are considered elephant relatives because of the ancestors they share. Today’s elephants fall into two main groups – African and Asian – which are easy to tell apart if you know what to look for. Until recently, scientists considered African and Asian elephants the only two species of living elephants. Then DNA studies suggested that there may be two different species of African elephants – forest and savannah – bringing the total number of living elephant species to three. Savannah elephants are larger than their forest cousins, and they have larger ears as well as tusks that are more curved.

All elephants are herbivores that eat grasses, bark, twigs, leaves, and fruit. They can spend 18 hours each day eating. Because their bodies only make use of about 40 per cent of the food they eat, they must eat large portions. An adult elephant might eat almost 180 kg of food in one day. They need 114–189 litres of water each day and will travel long distances to find it.

Elephants in Africa

- About 3.1 metres tall at shoulder
- Males weigh up to 6000 kg
- Huge ears cover shoulders
- Flat back with a dip in the middle
- Trunk has two finger-like tips for grasping
- Long tusks on both males and females
- Skin is more wrinkled and brownish-grey
- Relatively flat crown of head with no dent in middle
- Lives up to 70 years in the wild

Elephants in Asia

- 2.4 – 3.1 metres tall at shoulder
- Males weigh up to 5000 kg
- Large ears don’t reach shoulders
- Rounded back
- Trunk has one finger-like tip for scooping
- Shorter tusks, only found on some males; females may have very short, blunt tusks called tushes
- Skin is less wrinkled; grey to brown, with pink patches
- Domed crown of head with dent in middle
- Lives up to 60 years in the wild

Believe it or not, these animals are relatives of elephants!
Elephants have complex emotions, and the females in a group share strong bonds. They appear to celebrate the birth of a calf with trumpeting and rumbling. They may take turns shielding an injured calf from bright sunlight or circle around it when a lion is near. Elephants express affection by kissing or wrapping trunks. They play games, such as throwing objects around, either alone or in groups. Elephants may bury dead relatives with leaves and twigs, and people have seen them visit their bones years after a death.

**Key Roles of Elephants**

Scientists consider elephants to be **keystone species** because they play important roles in the **ecosystems** in which they live. They help to support the **biodiversity**, or variety of life, in their living areas.

The eating habits of forest elephants (both in Africa and Asia) create gaps in the vegetation. These gaps allow space for new and different plants to grow, and create pathways for other animals to reach remote areas. In West Africa, forest elephants are the only animals big enough to eat and spread the seeds of large tree species. Many of these trees would not be able to reproduce without the help of elephants. The seeds pass through the elephants’ digestive systems and are dropped in their dung, which fertilises the seeds as they grow into new plants. Scientists predict that at least 30 per cent of these tree species would disappear if elephants disappeared.

Savannah elephants eat the sprouts of woody plants, preventing trees and shrubs from growing out of control. If those woody plants were left alone, their leaves and branches would eventually block sunlight from reaching the grasses, so the grasses would die. Antelopes and other animals that graze on the grasses would disappear without this food source, and so would the **carnivores** that depend on those grazers for food. Also, during the dry season, savannah elephants use their tusks to dig water holes that benefit other animals. These water holes may be the only sources of water in the area.

**Long-Distance Communication**

Elephants communicate by touch and smell as well as through vocalisations – grunting, whistling, bellowing, rumbling, trumpeting, and more. Some elephant vocalisations are **infrasound** – sounds too low in pitch for the human ear to sense. Other elephants may hear these sounds from over 8 km away. This may help separated groups coordinate their movements for weeks at a time without losing communication. Also, female elephants are only ready to breed every few years, so they may use infrasound to let males know when they’re available. Elephants also communicate over long distances by stomping. These sounds may travel 32 kms or more through the ground. Researchers believe that elephants may create these vibrations as warnings about faraway dangers.
Big Is Just the Beginning

Elephant bodies are unusual not only for their size, but also for their many unique features. Among these, their trunks and tusks may be the most noticeable — elephants use these body parts as tools for many purposes, from eating to communicating. The ears and feet of an elephant are also unusual for their size and usefulness. Overall, elephant bodies are very well adapted for life in their wild homes.

Besides having amazing bodies, elephants have impressive brains. One thing their brains help them do is work well together in groups. Elephants live in family groups that include female elephants from several generations, along with young elephants of various ages. Females stay in their groups for life. Males usually leave between the ages of 12 and 17 years old to live alone or together in small herds. After this, they get together with females only for the purpose of mating.

A matriarch leads each family group, and this matriarch is clearly in control. She keeps her group together, ensures its safety, and helps group members find food and water. She makes the group’s major decisions, such as when to charge and when to flee from danger. This matriarch also educates other females about caring for their young and sets an example of leadership for another group member to follow after she dies.

Elephants have remarkable memories. They remember other elephants even after decades of separation. When they are reunited, they sometimes turn in circles, raise their heads high, flap their ears, and trumpet loudly. Elephants also remember places to find food and water. A herd might well survive a drought because the matriarch remembers the location of a faraway water hole.

EARS: Elephants use their ears to cool down—they can pump blood to their ears and release body heat when they fan them. Their ears also help them hear faraway sounds, shoo insects, show feelings, and look bigger when facing enemies. This Asian elephant has big ears; African elephant ears are even bigger.

TUSKS: Some elephants don’t have tusks. But those that do use these overgrown teeth to carry things, pull bark off trees, clear paths, dig for roots and water, fight enemies, and impress other elephants. Tusks keep growing through an elephant’s lifetime.

HAIR: Elephants, like other mammals, have hair, but not very much!

TAIL: Like other large animals, elephants use their tails to shoo insects. A young elephant will sometimes follow its mother by grasping her tail with its trunk.

SKIN: Elephants have sensitive skin that is strongly affected by sunburn and insect bites. For this reason, they roll in mud or give themselves dust showers to get extra protection. Water on their skin cools them when it gets trapped in wrinkles.

FEET: Thick padding on an elephant’s feet softens the blow of each heavy step. Elephants can also ‘listen’ by feeling vibrations in the ground with their feet (and trunks).

MOUTH: Elephants’ molars, or back teeth, are the size of bricks.

TRUNK: A trunk combines an elephant’s nose and upper lip. It has nostrils that run inside its entire length. This useful body part helps an elephant to smell, feed itself, scratch, greet friends, and move or throw objects. A trunk also allows an elephant to give itself a shower of dust or water and to breathe while under water.

ELEPHANTS SIGNAL FRIENDSHIP by resting their trunks on each other’s foreheads.
Room to Roam

Centuries ago, elephants roamed throughout most of Africa. As increasing human populations use more land for farming and living space, the range of elephants has decreased significantly.

In the past century alone, wild elephants have disappeared from at least three African countries where they used to roam. Their range is now limited to savannah, forest, and bush in 37 countries south of the Sahara desert.

The range of Asian elephants has also been greatly reduced due to human activities. Scientists believe they once roamed from Iran to the Indian subcontinent, Southeast Asia and China. But wild elephants have been extinct in West Asia, Java, and most of China for many centuries. They now live in small patches of disconnected habitat in 14 Asian countries.

Because of habitat fragmentation, elephant migration routes get cut off by roads and railways or go through new farms and settlements. This can prevent herds from getting to food, water, and other elephant groups.

One of the dangers of separating the groups is that the elephants have a more limited choice of mates. Having a variety of choices for mating is important to the health of a population because genetic diversity helps a species resist illness and other health problems.

Conservation groups in both Africa and Asia are working to protect elephant habitat and migration routes. They are also conserving strips of land — or elephant corridors — that allow elephants to move from one patch of habitat to another.

Surveys in India have identified 88 elephant corridors in use. More than three-quarters of these are near human settlements and are at risk of being affected by settlement expansion. So conservation groups have stepped up their actions to protect these areas.

Elephants and Us

Elephants have played a significant role in the history, lives, and culture of people for many centuries. Elephants have been employed to do heavy lifting, especially in the logging industry in Asia. People have kept elephants for zoos and circuses. Elephants are worshipped as gods in some religions, celebrated at festivals, and featured in weddings. They have also been ridden by royalty and religious leaders. Safaris use them to carry people and to frighten away predators. And elephants have been trained and used in warfare in China, India, and Thailand, among other places. The ancient general Hannibal reportedly took 37 war elephants when his army crossed the Alps to fight the Roman Republic in 218 BC.

Climate Change

Protecting elephant habitat isn’t just good for elephants – it’s good for the entire planet. When land is cleared, there are no trees to soak up carbon, which contributes to climate change. Therefore, conserving forests for elephants helps protect all the plants and animals that live there and can help reduce climate change impacts. In Africa, scientists predict that global warming will cause some dry regions to become even drier. This will increase the likelihood of terrible droughts that threaten both elephants and people as water supplies dry up and food becomes scarce. Habitat fragmentation only makes matters worse, preventing elephants from migrating to regions where resources are more plentiful.
In Conflict

In recent years, habitat loss has brought elephants and people into increasing conflict. In Africa, for example, only about 16 per cent of elephant habitat is in protected areas. This puts elephants in competition with people for space, food, and water. Elephants sometimes wander into villages and onto farms to find food. Farmers drive elephants away to protect their farms, often killing or injuring the animals in the process. People may also be killed by elephants during these clashes.

In some areas where disappearing habitat puts elephants in direct contact with humans, people may resort to culling, or selective killing, to control elephant populations.

Culling may target individual elephants or entire families. Given elephants’ sensitivity and complex emotions, culling is very disturbing when they witness the slaughters and then survive. ‘Cull orphans’ may suffer from depression, avoidance of other elephants, and increased aggression.

One possible solution is to connect existing large protected areas to create what are called ‘mega-parks’ that would allow elephants to move from place to place without interacting with humans. Although there are no easy fixes, elephant experts are working to find solutions that will stop human-elephant conflicts before they happen rather than reacting to these conflicts as they occur.

To the Rescue

Near India’s Kaziranga National Park, a wildlife rescue and rehabilitation centre helps Asian elephant calves that have been separated from their herds before they are old enough to survive on their own. The calves may be in need of help due to injury or illness, being orphaned as a result of poaching, being stranded due to floods, or falling into drainage ditches. In addition, some calves have been rescued from illegal wildlife traders. Without rehabilitation, these calves would most likely die or face lives in captivity.

Workers try first to bring a separated calf back to its original herd. When that isn’t possible, orphaned calves are hand-raised at the rehabilitation centre until they are one to two years old. Then they are radio-collared and taken to Manas National Park, where they are released into a protected wildlife reserve.

Jumbo Move

Malawi, in southern Africa, is one of the poorest countries in the world and the site of many human-elephant conflicts. In the summer of 2009, IFAW, in partnership with the Malawi government, relocated 83 elephants – including the young calf and its mother pictured below – to Majete Wildlife Reserve. The elephants now have a safe, secure home, and they’re living proof that human-elephant conflicts don’t have to end in violence.

China’s last rain forest, Xishuangbanna (shee-shuang-bahn-nah), is home to fewer than 300 Asian elephants – the last remaining elephants in China. Elephants in China face challenges due to farming, deforestation, and other human activities. In 2003, working with the local government, IFAW began offering small loans to help local people develop new ways to earn money so they wouldn’t need to farm in elephant habitat. IFAW also sponsored an elephant festival in the area to teach local people about elephant conservation.
The Trouble with Tusks

Millions of wild elephants once roamed the continents of Africa and Asia. But elephant populations have declined by more than 50 per cent in the past century. As few as half a million elephants remain in the wild.

One of the biggest reasons for this is the killing of elephants for their ivory tusks. Ivory has been used by people for thousands of years. It is used to make piano keys, billiard balls, fancy chopsticks, Asian stamps, and other luxury trinkets. But the only way to get ivory is from a dead elephant.

By the 1980s, scientists believed that the killing of elephants for their ivory was putting the survival of the elephant species at risk. So, the international trade in elephant ivory was banned following an agreement among governments in 1989.

Unfortunately, elephants are still poached because of the high demand for ivory, the lack of protected habitat, and weak law enforcement in many poor countries.

It is estimated that every year 25,000 to 30,000 African elephants are poached to supply the ivory trade, an average of one elephant every 15 minutes.

Conservation and animal welfare organisations are working on many fronts to protect elephants from poachers. They work with governments to enforce the ivory trade ban, train and equip anti-poaching rangers, and raise public awareness to reduce demand for ivory products.

DNA research is one of the newest weapons in the fight to end elephant poaching. Scientists are now able to examine illegal ivory that has been seized to find out where it is coming from. They compare the ivory with DNA samples from different populations of African elephants to identify areas of high poaching activity and popular smuggling routes. The information makes it possible to focus anti-poaching patrols and money where they’re needed most. And the countries where poaching is most common are being pressured to do more to stop the killings.

Ivory and the Law

In 1989, a treaty called the Convention on International Trade in Endangered Species (CITES) gave all wild elephants the highest level of international legal protection. This effectively banned all international sales of African and Asian elephant parts, including trade in ivory, leather, skin, meat, and hair.

However, a 1997 change allowed stockpiles of ivory from four African nations to be sold. The ivory supposedly came from elephants that had died of natural causes, but many suspect that they had been victims of culling. A second sale of stockpiled ivory took place in 2008.

Selling stockpiled ivory deeply concerns conservationists, who are convinced that it creates the chance for poachers to smuggle illegal ivory into legal markets. It’s impossible for people to tell the difference between legal and illegal ivory. Conservation groups like IFAW believe the trade in ivory must be completely stopped for African and Asian elephants to survive, because legal trade increases demand for ivory, which encourages more illegal poaching.

Internet Trading

The Internet has become an easy place for illegal wildlife trade. Recent IFAW investigations have revealed a shocking amount of illegal online trade in wildlife and wildlife products. In one survey IFAW discovered that close to three-quarters of wildlife products offered online in 11 countries were ivory, like the trinkets pictured here. As a result of these findings, the Internet auction site eBay banned the sale of ivory at the start of 2010 – proof that businesses can join the effort to save elephants. Individuals can help as well, through their choices about what to buy and not buy.
Glossary

**biodiversity**: biological diversity; a measurement of variation in species, genes, and living communities in an area

**carnivores**: meat-eating animals

**conservation**: the protection or careful use of something, such as a species or a natural resource

**DNA**: a type of cell material that passes genetic code from parents to children

**ecosystems**: interacting communities of plants, animals, and the nonliving components of the environments in which these plants and animals live

**elephant corridors**: pathways that elephants travel between habitat areas

**endangered species**: species that are in great danger of dying out completely

**extinct**: no longer living (as in a species that no longer lives on Earth)

**genetic diversity**: variety in the code for inherited traits of an entire species

**habitat fragmentation**: the process of breaking up a habitat into smaller and more disconnected patches

**herbivores**: animals that eat only plants

**holistic**: addressing the whole of something, rather than just a part of it

**keystone species**: species that strongly affect the structure and function of an ecosystem, as a keystone in an arch affects its strength

**matriarch**: the female leader of a family group

**migration**: the movement of animals from one place to another

**poached**: hunted and killed illegally

**range**: the entire area where a type of wild animal lives

**rehabilitation**: restoration to a state of health or normal activity after a period of difficulty

**savannah**: a flat grassland without many trees

**smuggling**: illegally moving goods into or out of a country

**species**: a group of living things that are similar and can have babies

**stockpiles**: large, stored-up supplies
IFAW is an animal welfare and conservation charity that saves individual animals, animal populations and habitats all over the world. This image shows an African elephant mother and calf roaming at the foot of Mount Kilimanjaro in Amboseli National Park, Kenya, where IFAW works with renowned elephant scientist Cynthia Moss. Her findings have provided incredible insights into elephant society, intelligence, and ecology. IFAW also supports community conservation projects with local Masai groups and partners with the Kenya Wildlife Service on anti-poaching efforts.