



ENVIRONMENTAL CURRICULUM AGES 11–14

LESSON 1: ENDANGERED RAINFOREST ANIMALS

Lesson plan overview

In this lesson, students will meet some of the rainforest's most threatened residents and discover why they are at risk. Through engaging visuals and real-world examples, they will learn what it means for a species to be endangered, explore the human activities and environmental changes that drive species decline, and examine how these threats impact biodiversity and ecosystems. Students will research a rainforest animal of their choice, creating a detailed species profile that documents its conservation status, the threats it faces, and the actions being taken to protect it. They will also practice critical thinking by evaluating different conservation strategies, graph population trends in a math tie-in activity, and use their creativity to design an art tie-in "Wanted" poster. By the end of the lesson, students will not only understand the urgency of protecting endangered species but also feel empowered to be part of the solution.

Educational materials

- **Video:** 'Who's Endangered?'
- **Worksheet:** Species profiles (research and document status, threats, and conservation actions for one rainforest animal)
- **Quiz:** Endangered species (endangered, extinct, habitat loss, etc.)
- **Math tie-in:** Population decline line graph
- **Art tie-in:** Design a rainforest "Wanted" poster
- **Classroom discussion questions:**
 - Why do some species become endangered more quickly than others?
 - What can be done to protect these animals?

WORKSHEET: Species Profiles



Name: _____ Date: _____

Step 1: Meet your animal

Choose one endangered rainforest species to research. You can use resources like the IUCN Red List.

USE ME!

WWW.IUCNREDLIST.ORG

Write the common and scientific name of your animal:

Common name: _____

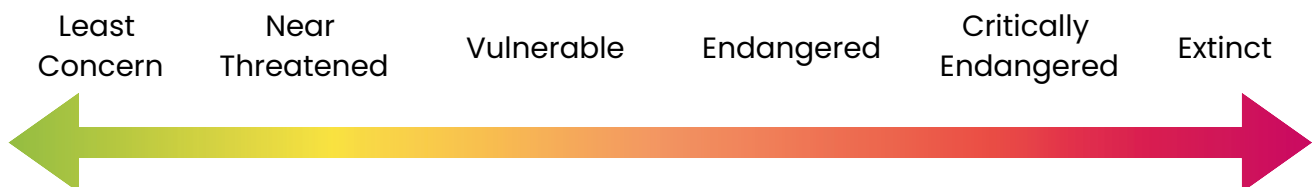
Scientific name: _____

HINT: THIS IS THE LATIN NAME THAT SCIENTISTS USE SO THEY KNOW THEY ARE TALKING ABOUT THE SAME PLANT OR ANIMAL

Draw or paste a picture of your animal here:

Step 2: Status check

Circle the correct conservation status from the IUCN Red List:



WORKSHEET: Species Profile



Step 3: Where do they live?

What part(s) of the rainforest or region do they call home?

Label their range on a map if you can:



Step 4: Why are they in trouble?

List at least three main threats to your species:

Step 5: Why are they important?

How does your species help its ecosystem? (e.g., pollinator, seed spreader, predator)

Step 6: Conservation actions

What is being done to protect them? (List at least two actions.)

WORKSHEET: Species Profile



SOME SPECIES TO PICK FROM

Mammals

- Bornean and Sumatran orangutan—critically endangered apes losing habitat to palm oil plantations
- Jaguar—threatened by deforestation and poaching across Central and South America
- Pygmy slow loris—Southeast Asian primate impacted by wildlife trafficking
- Okapi—rainforest giraffe—relative found only in the Congo Basin
- Bengal tiger—found in India’s mangrove rainforests (Sundarbans), threatened by habitat loss

Birds

- Harpy Eagle—apex predator of Central and South American rainforests
- Scarlet Macaw—threatened by the illegal pet trade and forest loss
- Kakapo (New Zealand parrot)—rare nocturnal parrot with fewer than 250 left
- Helmeted hornbill—Southeast Asian bird hunted for its ivory-like casque

Reptiles and amphibians

- Poison dart frogs—many species (like the golden dart frog) are endangered due to habitat loss and pollution
- Philippine crocodile—one of the rarest crocodile species in the world
- Madagascar rainbow chameleon—threatened by deforestation

Aquatic and semi-aquatic species

- Giant otter—Amazon river mammal threatened by pollution and poaching
- Amazon river dolphin (pink dolphin)—threatened by fishing nets and water pollution

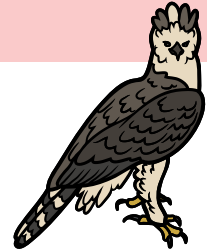


Species Profile: Example Teacher Key & Rubric



Teacher tip:

Encourage students to use specific data—like exact population numbers, percentage decline, or conservation program names—because this reinforces evidence-based reasoning.



Example species: Harpy Eagle

Step 1: Meet your animal

Common name: Harpy Eagle

Scientific name: *Harpia harpyja*

Picture: Large black-and-white eagle with a double crest, hooked beak, powerful talons.

Step 2: IUCN status check

Status: Near Threatened (in some regions considered Endangered due to rapid decline)

Step 3: Where do they live?

Tropical lowland rainforests of Central and South America, especially in the Amazon Basin.

Map Marking: Highlight northern South America, including Brazil, Guyana, Suriname, Venezuela, Colombia, Ecuador, Peru, Bolivia.

Step 4: Why are they in trouble?

- Habitat loss due to deforestation for agriculture and logging
- Hunting by humans (seen as threat to livestock or for trophies)
- Low reproductive rate—only one chick every 2–3 years

Step 5: Why are they important?

- Top predator in the rainforest canopy
- Controls populations of medium-sized mammals (e.g., sloths, monkeys)
- Helps maintain healthy balance in the ecosystem

Step 6: Conservation actions

- Protected areas and national parks in countries like Panama and Brazil
- Education programs to stop hunting and promote eco-tourism

Are they working? Some success where eco-tourism brings income, but deforestation still a major threat.

Worksheet Grading Rubric



Criteria	4 – Excellent	3 – Good	2 – Fair	1 – Needs improvement
Accuracy of information (5 pts)	All facts accurate, based on credible sources	Mostly accurate with 1–2 minor errors	Several inaccuracies or unclear sources	Many facts incorrect or missing
Completeness of sections (5 pts)	All sections fully completed with detailed responses	Most sections complete with adequate detail	Some sections incomplete or too brief	Many sections blank or very incomplete
Use of resources (3 pts)	Cites at least two reliable resources; used effectively	At least one resource cited; mostly reliable	Resource unclear or not cited properly	No clear use of research
Clarity and organization (3 pts)	Writing is clear, organized, and easy to read	Mostly clear; minor issues with flow	Some unclear sentences or poor organization	Very hard to read or follow
Creativity and effort (4 pts)	Strong, thoughtful ideas; neat, visually appealing	Good effort and presentation	Average effort; minimal creativity	Low effort; messy or rushed work

Total Score: _____ / 20

QUIZ: Endangered Species



Name: _____ Date: _____

Part A: Multiple choice (circle the best answer—1 point each)

Which of the following best describes an endangered species?

- a) A species with a large and growing population
- b) A species that is at risk of becoming extinct in the near future
- c) A species that is kept only in zoos
- d) A species that is harmful to the environment

What is the main cause of habitat loss in rainforests?

- a) Earthquakes
- b) Deforestation for agriculture and logging
- c) Ocean pollution
- d) Overfishing

Which organization maintains the Red List of threatened species?

- a) WWF
- b) Rainforest Alliance
- c) IUCN
- d) National Geographic

Which of the following is an example of poaching?

- a) Cutting down a tree for lumber
- b) Hunting an animal illegally for its fur or meat
- c) Planting trees to restore a forest
- d) Building a wildlife sanctuary

Which of the following is NOT a conservation strategy?

- a) Establishing protected areas
- b) Captive breeding programs
- c) Expanding monoculture farming
- d) Wildlife corridors

Part B: Matching



Match the term to its definition (1 point each)

Terms:

Biodiversity _____

Extinct _____

Habitat fragmentation _____

Ecosystem services _____

Threatened species _____

Definitions:

A. The variety of different living things in an area

B. Species that may soon become endangered

C. When a habitat is split into smaller, isolated pieces

D. A species that no longer exists anywhere on Earth

E. Benefits humans receive from nature, like clean air and water

Part C: Short answer (5 points each)

Give two reasons why a rainforest species might become endangered.

Explain one way humans can help protect endangered rainforest animals.

QUIZ: Endangered Species

TEACHER ANSWER KEY



Part A: Multiple choice

b) A species that is at risk of becoming extinct in the near future

Explanation: This is the definition of “endangered.” These species face high risk of extinction without conservation action.

b) Deforestation for agriculture and logging

Explanation: In tropical rainforests, the primary cause of habitat loss is clearing land for farming, cattle ranching, and logging.

c) IUCN

Explanation: The International Union for Conservation of Nature (IUCN) publishes the Red List of Threatened Species.

b) Hunting an animal illegally for its fur or meat

Explanation: Poaching refers to illegal hunting or capturing of wildlife, often for profit.

c) Expanding monoculture farming

Explanation: Monoculture farming decreases biodiversity and contributes to habitat loss, so it is not a conservation strategy.

Part B: Matching

1 → A. The variety of different living things in an area (Biodiversity)

2 → D. A species that no longer exists anywhere on Earth (Extinct)

3 → C. When a habitat is split into smaller, isolated pieces (Habitat fragmentation)

4 → E. Benefits humans receive from nature, like clean air and water (Ecosystem services)

5 → B. Species that may soon become endangered (Threatened species)

Part C: Short answer**Two reasons why a rainforest species might become endangered:**

- Habitat loss (e.g., from deforestation)
- Poaching or illegal wildlife trade
- Climate change altering ecosystems
- Invasive species competing with native animals

(Any two correct examples earn full points)

One way humans can help protect endangered rainforest animals:

- Support and enforce wildlife protection laws
- Create and maintain protected areas
- Buy products with trusted sustainability labels
- Reduce personal consumption of products linked to rainforest destruction

(Any valid conservation action earns full points)

Scoring:

Multiple choice: 1 point each (5 total)

Matching: 1 point each (5 total)

Short answer: 5 points each (10 total)

TOTAL = 20 POINTS

MATH TIE-IN



Population Decline Line Graph

Activity:

Students select one endangered rainforest species (from their Species Profile worksheet or class list) and research its population size at several points in time. Using that data, they will create a line graph to show the population trend over the past decades. (Students can also use the sample data provided in the table below)

Steps:

- Choose a rainforest species (e.g., Bornean orangutan, Scarlet Macaw, anaconda).
- Research population data for at least four different years (e.g., 1980, 1990, 2000, 2010, 2020). If exact data is not available, use estimates from reliable sources (IUCN Red List).
- Plot the data on a coordinate grid:
 - X-axis = years
 - Y-axis = population size
- Draw a line connecting the points.
- Add a title and labels for clarity.
- Write a short interpretation paragraph explaining:
 - Is the population increasing, decreasing, or stable?
 - What might be causing this trend?
- Predict what could happen in the next 20 years if nothing changes.



DATA FOR STUDENTS

Species

Year

Estimated population

Bornean orangutan

1973

288,500

1999

188,500

2016

57,350

2023

47,000

Jaguar (Mexico)

2000

20,000

2010

4,000

2018

4,800

2020

5,100



MATH TIE IN

Population Decline Line Graph



Graph Title: _____

y-axis

x-axis

ART TIE-IN



Rainforest “Wanted” Poster

Activity:

Students will create a “Wanted” poster for an endangered rainforest species to raise awareness about its conservation needs.

Steps:

- Pick an endangered rainforest animal (same as or different from the math activity).
- Draw or print a clear image of the animal.

Include:

- Common and scientific name
- Status (e.g., Endangered, Critically Endangered)
- “Wanted For” = list main threats (e.g., habitat loss, poaching)
- Last seen = regions/countries where it still survives
- Reward = what’s gained if we save it (e.g., healthy forests, pollination, ecosystem balance)

TIPS!

- Use creative fonts, colors, and rainforest-themed borders.
- Present posters in class or display them in the hallway.

