



World View Fellows: *OVERBook* Project on the Environment and Sustainability: Study Guide

Title: Nature v. Overpopulation: Justice for Mother Nature

Study Guide Theme: Rights of Nature

Featured Photos:



Cows and Smoke



Darkening Skies



Garbage Cows



Seal in Net



Shark Fins



Sorting Garbage



Toxic Landscape



Trash Wave

Overview: Students will use discussion techniques to developing essential questions related to the “Rights of Nature.” Students will grapple with the ideas of responsibility and protection of nature. Using the *OVERBook* images, students will connect the impact human activity has on the health of organisms and environments. Lastly, students will research an endangered species and discuss the ways that humans are working to remediate species decline.

Grade level(s): High School (9th- 12th grade)

Subject(s): Science/ Earth and Environmental Science/ Ecology/ Global Studies/ Social Studies

Corresponding National Standards:

Next Generation Science Standards http://www.nextgenscience.org/search-standards?keys=&tid%5B%5D=107&tid_3%5B%5D=94	
HS-LS4-5.	Evaluate the evidence supporting claims that changes in environmental conditions may result in (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species
HS-LS4-6.	Create or revise a simulation to test a solution to mitigate adverse impacts of human activity on biodiversity.
RST.11-12.7	Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem. <i>(Common Core ELA/ Literacy)</i>

Corresponding Global Competency Skills: List which global competency skills are addressed in the study guide (<https://asiasociety.org/education/what-global-competence>)

- **Investigate the World-** Globally competent students are aware, curious, and interested in learning about the world and how it works.
- **Recognize Perspectives-** Globally competent students recognize that they have a particular perspective, and that others may or may not share it.
- **Communicate Ideas-** Globally competent students can effectively communicate, verbally and non-verbally, with diverse audiences.
- **Take Action-** Globally competent students have the skills and knowledge to not just learn about the world, but also to make a difference in the world.

Essential Question(s):

- What are the rights of nature? Who establishes them? Who protects them?
- How have nature's rights presently and historically been protected or violated?
- How can we mitigate the negative impacts human populations have on nature?

Materials: Suggested materials include computer(s) for each student/group, projector, printed copies of OVERBook images, and printed copies of handouts.

Theme	Rights of Nature	
Time	Two consecutive 1-hour class periods	
Scope and Sequence	Student Prior Knowledge: Students may have a general working knowledge of ecosystems and the complex relationships in place between population of organisms within an ecosystem. Students have experience working in groups and discussing complex ideas.	
	Lesson Sequence <u>Day 1:</u> <ul style="list-style-type: none"> • Rights of Nature Reading: <i>Wild Law</i> • Question Formulation Technique (QFT) • Gallery Walk: Photograph Analysis • Wrap-up Discussion <u>Day 2:</u> <ul style="list-style-type: none"> • Standing up for Nature <ul style="list-style-type: none"> ○ Individual Reflection • Taking Action <ul style="list-style-type: none"> ○ PSA Flyers: Endangered Species Report 	Time <u>Day 1:</u> 10 minutes 15 minutes 25 minutes 10 minutes <u>Day 2:</u> 15 minutes 45 minutes
Resources	<ul style="list-style-type: none"> • Rights of Nature_OVERBook PowerPoint Presentation • Printed copies of the OVERBook Photographs (full page, color print) 	
Learning Outcomes	<ul style="list-style-type: none"> • Students will use discussion techniques to developing essential questions related to the “Rights of Nature.” • Students will grapple with the ideas of responsibility over and protection of nature. • Using the OVERBook images, students will connect the impact human activity has on the health of organisms and environments. • Students will research an endangered species and discuss the ways that humans are working to remediate species decline. 	

The Rights of Nature

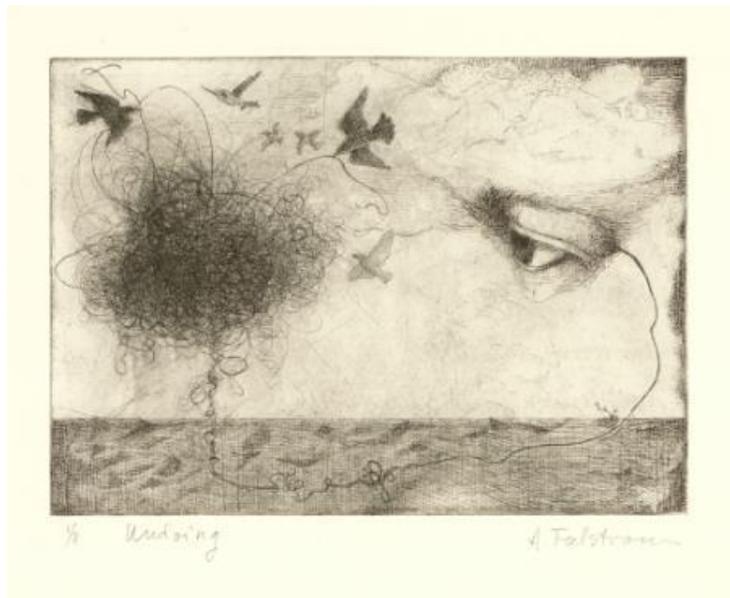
Student Handout

Wild Law (an excerpt) By Cormac Cullinan

DRAWINGS by AMY FALSTROM

IT WAS THE SUDDEN RUSH of the goats' bodies against the side of the *boma* that woke him. Picking up a spear and stick, the Kenyan farmer slipped out into the warm night and crept toward the pen. All he could see was the spotted, sloping hindquarters of the animal trying to force itself between the poles to get at the goats — but it was enough. He drove his spear deep into the hyena.

The elders who gathered under the meeting tree to deliberate on the matter were clearly unhappy with the farmer's explanation. A man appointed by the traditional court to represent the interests of the hyena had testified that his careful examination of the body had revealed that the deceased was a female who was still suckling pups. He argued that given the prevailing drought and the hyena's need to nourish her young, her behavior in attempting to scavenge food from human settlements was reasonable and that it was wrong to have killed her. The elders then cross-examined the farmer carefully. Did he appreciate, they asked, that such killings were contrary to customary law? Had he considered the hyena's situation and whether or not she had caused harm? Could he not have simply driven her away? Eventually the elders ordered the man's clan to pay compensation for the harm done by driving more than one hundred of their goats (a fortune in that community) into the bush, where they could be eaten by the hyenas and other wild carnivores.



The Rights of Nature: Guided Discussion

Teacher's Guide

Question Formulation Technique: Developing Essential Questions

The Question Formulation Technique (QFT) is a class discussion tool that helps students develop their own set of essential questions. Typically, QFT is used at the beginning of a lesson, and students work in groups (4-5 groups) to generate the essential questions that will guide the rest of the lesson.

Use the accompanying PowerPoint presentation to guide your students through the QFT process.

- **Step 1: Establish Community Norms**
 - Because QFT is discussion based, it is important to establish rules for respectfully discourse in your class. Consider the suggested norms in the presentation.
- **Step 2: Developing Essential Questions**
 - Here, students are instructed how to generate *questions* related to the stimulus statement, called the “Q-Focus.”
- **Step 3: Q-Focus**
 - The Q-Focus is a stimulus statement to which students will brainstorm questions in response.
- **Step 4: Categorize and Improve**
 - Discuss with your students the difference between open-ended and close-ended questions and the pros and cons of each.
 - Have students identify and label their questions as either open or closed-ended, and then change the working change an “O” to a “C” and a “C” to an “O.”
- **Step 5: Prioritize and Explain**
 - Have students choose 3 questions that are the most important to your group and briefly discuss why they chose these?
 - Each group will then choose ONE question to present to the class for consideration.
 - You may consider slightly guiding this process slightly so that group’s have a variety of essential questions to consider in the next phase of the discussion.
 - Have students write their ONE essential question on a poster or marker board to display to the class.

Gallery Walk

- Stations or posters are set up around the classroom, on the walls or on tables.
- Each student is given a sticky note pad to write questions/ answers/ comments about the items in the “Gallery.”
- Students travel from station to station responding to:
 - Essential questions they wrote from the previous activity (approximately 4-5 questions)
 - Photographs from the OVERBook (8 images)
- After students have had enough time to adequately reflect on the questions and photographs, the teacher should lead a class discussion. Consider the questions suggested in the accompanying PowerPoint presentation.

Standing up for Nature

Student Handout

Individual Reflection

- In your opinion, in which photograph are nature's rights most violated? Why?

- What other organisms and ecosystems are impacted by the acts depicted in this image?

- What country is this photograph taken?

- Research to find out what laws are in place to protect subject(s) in the photograph (animals, water, land, etc.).

- Research to find out, are there laws similar in the United States? Why or why not?

Taking Action

PSA Announcement Flyers:

- Students will research either an endangered species OR an endangered ecosystem to share with their peers.
- Have students create PSA (Public Service Announcement) Flyers to post around their community. (see example)

ENDANGERED SPECIES REPORT

Student Handout

Background

In the last half of the 20th century humans increasingly became aware that habitat destruction and pollution of the general environment was having a profound effect on other species and ecosystem around the globe. In fact, some suggest that the rate of species extinction we are currently witnessing is similar in magnitude to more natural extinctions occurring between each geological era (i.e. the extinction of the dinosaurs at the end of the Mesozoic).

International laws protecting these species and their habitats has grown in recent years. In 1973, President Richard Nixon signed the Endangered Species Act into law protecting a more general group of organisms. Since that time, a great number of species have become listed as federally threatened or endangered species. When a species becomes listed, an extensive report called a "recovery plan" is required by the EPA.

Objective

1. You will become knowledgeable about the Endangered Species Act in general, and how the Act has been applied in the specific case of an organism that you choose.
2. You will become knowledgeable of the complete life history of a chosen endangered organism.

Assignment

You are responsible for creating a PSA (Public Serve Announcement) Flyer on an endangered species of your choice. Use the following website to choose your organism on the North American ESL:

<https://www.fws.gov/endangered/species/us-species.html>

Endangered Species Report Rubric	Possible	Score	Comments
PSA Flyer Handout: All headings are covered, and information is relevant and accurate, pictures are used to support information.	4		
• Physical Description	2		
• Habitat Description	2		
• Behavioral Description	2		
• Ecological Role & Importance in their Habitat	2		
• Primary Causes for Listing	2		
• Current Research and Mitigation Efforts	2		
• References	2		
Format: • Document formatted properly • PSA Flyer is neat and organized	4		
Total	22		

ENDANGERED SPECIES REPORT

Leatherback Sea Turtle

SAMPLE

Dermochelys coriacea

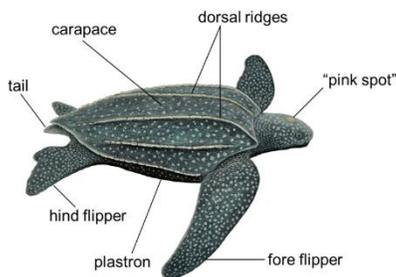


Class: Reptilia
Family: Dermochelyidae

Lead Region: Southeast Region
Date Listed: June 2nd, 1970

Physical Description

An adult leatherback turtle can reach 4-8 feet in length, and can weigh from 500-2000 pounds. Its shell is composed of a mosaic of small bones covered in rubbery skin with seven lateral ridges. Their skin is black with pale spotting. Adults usually have a pink spot on the dorsal surface of the head. Their fins are paddle like, also containing pale spotting.



Habitat Description

The leatherback is the most ocean dwelling turtles out of all of the other sea turtles. They swim in open oceans, and not near seaweed. Adult females prefer sandy nesting beaches backed with vegetation. They use the rough waves to pull themselves up onto shore, and prefer proximity to deep water.

Behavioral Description

Due to their smooth, leathery skin and lateral ridges, Leatherbacks are able to swim very fast.

They are also known to be long distance travelers, being able to swim up to 3,000 miles. Adults are protected by predators because of their scaly and thick skin, covering their whole body. In order to feed on jellyfish, they are able to swim down up to 3500 feet. Females are very slow and defenseless on beaches when laying their eggs. It also takes some time before all of their eggs are laid.



Ecological Role & Importance in their Habitat

Leatherbacks regulate the abundance of jelly fish and invertebrates in the ocean, along with the population of other primary consuming sea dwellers.

Primary Causes for Listing

The main reasons of listing are due to humans. There are poachers, people who take their eggs and sell them to the public. Poachers also kill Leatherback turtles for their meat, and earn money by selling this. Other factors include coastal development that restricts the turtles from laying their eggs, beachfront lighting which steers the hatchlings the wrong way, nest predation by other animals, marine pollution, and watercraft.

Current Research and Mitigation Efforts

Nest protection efforts and habitat protections have established in order to maximize the amount of eggs laid. Longline fishery has also been restricted so that Leatherback turtles will not get stuck in the nets. Many communities have developed lighting ordinances to reduce hatchling disorientations.



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