

4 Human Impact

Introduction

The texts in Unit 4 provide a window on some of the root causes of human impact on the environment, from air and water pollution to hunting, human population growth, natural resource consumption, and habitat destruction. The authors of these texts use different ways of approaching these subjects as writers: through essays, book chapters, song lyrics, and a valedictory address. The authors' points of view are also varied, ranging from very personal experiences to a global overview. As students read these passages, encourage them to identify examples of human environmental impact in the place where they live, and to try out different ways of communicating ideas and information as well as different means of conveying and eliciting emotions.

Objectives

1. Students will read and analyze in order to explore how authors use different types of writing to convey information, ideas, and emotions related to human impact on the environment.
2. Students will engage in a variety of different types of writing—from essay to poetry to multimedia presentation—to evaluate, explain, and provide their own points of view on current impacts on the environment, locally and globally.

Core Passages and Images

Close Reading Passage: from *Silent Spring*, by Rachel Carson (pages 366–367, 374–376)

1. “The Last Passenger Pigeon,” by Gene Stratton-Porter (pages 196–199)

2. from *The Population Bomb*, by Paul R. Ehrlich (pages 434–437)
3. from *The Tragedy of the Commons*, by Garrett Hardin (pages 438–439)
4. from *The Tragedy of the Commons*, by Garrett Hardin (pages 440–441)
5. Mills College Valedictory Address, by Stephanie Mills (pages 469–472)
6. “Big Yellow Taxi,” by Joni Mitchell, and “Mercy Mercy Me (The Ecology),” by Marvin Gaye (pages 490–492)
7. from *Encounters with the Archdruid*, by John McPhee (pages 493–494)
8. from *The End of Nature*, by Bill McKibben (pages 718–719)
9. from *The Ninemile Wolves*, by Rick Bass (pages 760–762)
10. Image 39: Donora, Pennsylvania, on November 3, 1948
11. Image 40: Insecticidal fogging machine
12. Image 41: Cleveland firemen battle a blaze
13. Image 54: Dead bird covered in oil
14. Image 57: Stephen Shore, *Second Street East and South Main Street, Kalispell, Montana, August 22, 1974*
15. Image 75: Robert Glenn Ketchum, *The Chainsaws of Summer*
16. Image 82: Mitch Epstein, *Amos Coal Power Plant, Raymond, West Virginia*

Standards

Common Core State Standards

RI.9-10.1 Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.

RI.9-10.2 Determine a central idea of a text and analyze its development over the course of the text, including how it emerges and is shaped and refined by specific details; provide an objective summary of the text.

RI.9-10.3 Analyze how the author unfolds an analysis or series of ideas or events, including the order in which the points are made, how they are introduced and developed, and the connections that are drawn between them.

RI.9-10.4 Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the cumulative impact of specific word choices on meaning and tone (e.g., how the language of a court opinion differs from that of a newspaper).

RI.9-10.5 Analyze in detail how an author’s ideas or claims are developed and refined by particular sentences, paragraphs, or larger portions of the text (e.g., a section or chapter).

RI.9-10.6 Determine an author's point of view or purpose in a text and analyze how an author uses rhetoric to advance that point of view or purpose.

RI.11-12.1 Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.

RI.11-12.2 Determine two or more central ideas of a text and analyze their development over the course of the text, including how they interact and build on one another to provide a complex analysis; provide an objective summary of the text.

RI.11-12.3 Analyze a complex set of ideas or sequence of events and explain how specific individuals, ideas, or events interact over the course of the text.

Ri.11-12.4 Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze how an author uses and refines the meaning of a key term or terms over the course of a text (e.g., how Madison defines *faction* in *Federalist No. 10*).

RH.9-10.3 Analyze in detail a series of events described in a text; determine whether earlier events caused later ones or simply preceded them.

RH.9-10.6 Compare the point of view of two or more authors for how they treat the same or similar topics, including which details they include and emphasize in their respective accounts.

RH.9-10.9 Compare and contrast treatments of the same topic in several primary and secondary sources.



Busy Street in India

RH.11-12.9 Integrate information from diverse sources, both primary and secondary, into a coherent understanding of an idea or event, noting discrepancies among sources.

RL.9-10.7 Analyze the representation of a subject or key scene in two different artistic mediums, including what is emphasized or absent in each treatment (e.g., Auden's "Musée des Beaux Arts" and Breughel's *Landscape with the Fall of Icarus*).

RST.9-10.7 Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.

W.9-10.2 Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.

W.9-10.9 Draw evidence from literary or informational texts to support analysis, reflection, and research.

W.11-12.2 Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.

W.11-12.3 Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.

Next Generation Science Standard

HS-ESS3-6 Use a computational representation to illustrate the relationships among Earth systems and how those relationships are being modified due to human activity.



Motivate

Ask students to examine Images 39, 40, 41, 54, 57, 75, and 82 and to read the caption for each photo. Each photo shows a different way human activity has had a detrimental impact on the environment. Invite students to discuss the photos in small groups and then to share their ideas with the class. Ask students to consider these questions:

- How are the environmental impacts shown in the photos similar? How are they different?
- Based on their preexisting knowledge, do students think the examples of human impact in these photos have occurred often in American history, or are they unusual incidents? Are they still occurring today?
- What are some other ways humans have an impact on the environment? If students were assigned to add to this collection by photographing scenes in their local environment, what sorts of pictures would they take?



Lake Powell and Glen Canyon in Ariz.

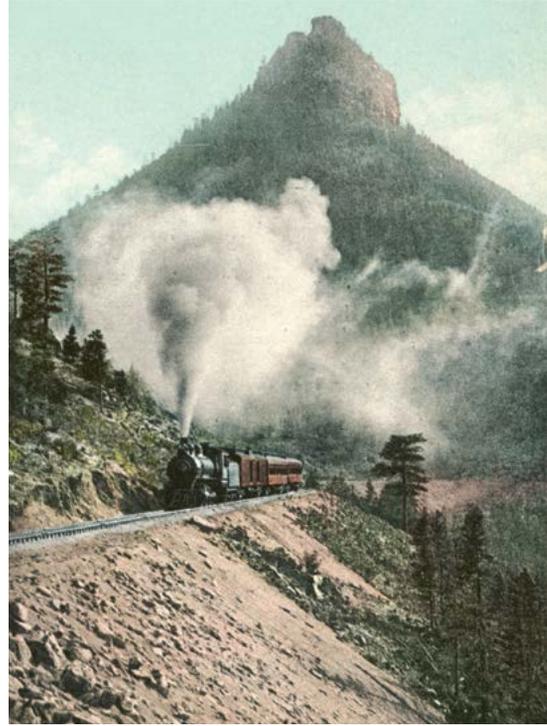


Explore

Each activity in this section focuses on the work of an individual author. Activities in later sections involve comparing the works of more than one author. Activities marked with an asterisk (*) are more suited to strong readers.

1. Have students read the part of **Gene Stratton-Porter's *The Last Passenger Pigeon*** beginning with "One of the things . . ." on page 196 and ending with ". . . after she had been mounted" on page 199. Then ask them to write a summary of how the author's family upbringing influenced her ideas about the passenger pigeon and her reaction to its extinction. (RI.9-10.6; RI.11-12.2; W.9-10.2)
2. *After they have completed their close reading of the passage from **Rachel Carson's *Silent Spring*** (pages 366–367, 374–376), have students reread the introduction to the passage (page 365) and research the actions and responses *Silent Spring* has inspired. Have students write a short essay explaining some of the main effects of *Silent Spring* on the American environmental movement. Ask students to detail the influence of specific elements from the passage they read on these responses and effects. (RH.11-12.9; W.9-10.2)
3. Have students read the section "The Many People" on pages 435–437 of the passage from **Paul R. Ehrlich's *The Population Bomb***. In this section, Ehrlich discusses the "doubling time" for the global population. Have students work individually to use Ehrlich's data to create a graph or chart showing the changes in the doubling rate over time. Then have a class discussion about the meaning and possible future implications of this trend. (RST 9-10.7; HS-ESS3-6)

4. *Have students read pages 493–494 in the passage from **John McPhee’s *Encounters with the Archdruid***. Lake Powell, which McPhee describes in the midst of its creation, is different from the human impacts described in other texts in this unit. The lake was created purposely, whereas many of the other impacts are accidental by-products of other human activities. Ask students to consider how this difference affects their views of the lake, as well as the views of the author and those he presents on behalf of Domin and Brower. As a class, discuss the benefits and costs of building the lake. Encourage students to extend their ideas beyond the benefits and costs explicitly mentioned in the text. (RI.11-12.3)



St. Peter's Dome on the C.S. & C.C. Short Line, Colo. (1901)

Close Reading

Rachel Carson's *Silent Spring* (pages 366–367, 374–376)

 Lexile®: measure = 1290L

Vocabulary

blight, *n*, a thing that spoils or damages

maladies, *pl n*, diseases or ailments

moribund, *adj*, at the point of death

granular, *adj*, resembling or consisting of small grains or particles

specter, *n*, a ghost; something widely feared as a possible unpleasant or dangerous occurrence

DDT (abbreviation) dichlorodiphenyltrichloroethane, *n*, a synthetic organic compound introduced in the 1940s and used as an insecticide

Parathion, *n*, a highly toxic synthetic compound containing phosphorus and sulfur, used as an agricultural insecticide

foliage, *n*, plant leaves

bludgeon, *n*, a thick stick with a heavy end, used as a weapon

authoritarian, *n*, a person favoring or enforcing strict obedience to authority, especially that of the government, at the expense of personal freedom

Close Reading Comprehension Questions

Have students read the Close Reading Text, the passage from **Rachel Carson's *Silent Spring***, on their own. Direct students to reread the section of the passage called "A Fable for Tomorrow" on pages 366 and 367 and the part from "England is by no means . . ." on page 374 through the end of the passage on page 376. Have them work in their groups to answer the following close reading questions:

1. Based on the excerpts you have read, summarize the central idea of *Silent Spring*. Then explain how these parts of the text support this idea. *Humans are causing destruction to the environment and the creatures that live there. "A Fable for Tomorrow" discusses a world that loses its wildlife. The part of the text that discusses pesticides demonstrates actual, specific effects of real human actions on wildlife.* (RI.9-10.2)
2. Why did Rachel Carson write the section "A Fable for Tomorrow" in the form of a fable within the larger context of the book *Silent Spring*? Did the use of a fable within the larger text advance her purpose or point of view? Why or why not? *Possible answer: The section "A Fable for Tomorrow" shows what can happen if the warnings and information in the rest of the book are not taken seriously. As a simple fable or story, it introduces the book's larger issues and concerns in a way that is clear and easy to understand.* (RI.9-10.5; RI.9-10.6)



Farmer spraying pesticides

3. According to pages 374 and 375, what are two ways pesticides can harm birds? *Birds are killed as a side effect of the use of DDT intended to kill insects in rice fields. Birds are specifically targeted by other pesticides, which may also have other unintended victims.* (RI.9-10.1)
4. In the part of the passage on pages 374–376, what steps does Carson follow to build her argument about the harmfulness of pesticides? *She begins with the accidental poisoning of birds, then works up to the purposeful poisoning of birds, and finally explores the human decision-making and values that led to those outcomes.* How does the final paragraph of the passage engage the reader? *It makes it seem as if the reader is a victim who is being harmed by decisions about pesticide use that the reader had no part in making.* (RI.9-10.3)



Passenger Pigeon



On the Drive, Pineries of Minnesota (c. 1867–75), by B. F. Upton



Close Reading Comprehension Questions

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2. Why did Rachel Carson write the section “A Fable for Tomorrow” in the form of a fable within the larger context of the book *Silent Spring*? Did the use of a fable within the larger text advance her purpose or point of view? Why or why not?
3. According to pages 374 and 375, what are two ways pesticides can harm birds?
4. In the part of the passage on pages 374–376, what steps does Carson follow to build her argument about the harmfulness of pesticides? How does the final paragraph of the passage engage the reader?



Comparing Texts

1. *Have students read the passage from **Paul R. Ehrlich's *The Population Bomb*** (pages 434–437) and **Stephanie Mills's *Mills College Valedictory Address*** (pages 469–472). The introduction to Mills's speech suggests a link between her ideas and Ehrlich's. Have students write a short explanatory essay to compare and contrast the two texts. Encourage students to explore the ways Ehrlich's ideas may have influenced Mills, as well as the ways in which the details they emphasize or include differentiate their ideas. (RH.9-10.6; W.9-10.9; W.11-12.2)
2. After students read the song lyrics (pages 490–492), find recordings of **Joni Mitchell** singing “**Big Yellow Taxi**” and **Marvin Gaye** singing “**Mercy Mercy Me (The Ecology)**.” (Both recordings are easily located online.) Assign students to listen to both recordings as homework and/or play them in class. Then, have students write a paragraph comparing and contrasting the style, content, and emphasis of the two songs, as well as how the experience of listening to them sung is different than simply reading the text. (RL.9-10.7; W.9-10.2; W.9-10.9)
3. Have students write a short explanatory essay comparing **Rick Bass's** description of the fate of wolves in the American West in the passage from ***The Ninemile Wolves*** (pages 760–762) to **Rachel Carson's** warnings in the passage from ***Silent Spring*** (pages 366–367, 374–376). Ask students to cite ways in which Bass's work provides additional evidence for Carson's ideas. (RH.9-10.9; W.9-10.2)



Making Connections to Today

Hold a class discussion in which you encourage students to brainstorm ways of adopting the perspective or even the identity of another person or life form. As a class, generate a list of questions or suggestions that would be helpful to the process of adopting a different or even alien point of view. Such questions or suggestions might include:

- What are the things you see/hear/feel in your new identity?
- What are your needs in your new identity?
- What makes you happy/sad in your new identity?
- What are you afraid or proud of?
- Who, if anybody or anything, do you rely upon?

Then, ask students to imagine that they are a person or an animal experiencing a human impact on the environment that is occurring today. Have each student write a narrative from the point of view of the chosen person or animal. Each narrative should use well-chosen details and imagined sequences of events to convey information and emotions to the reader.



Amos Coal Power Plant, Raymond, W.V.

You may wish to offer students the option of writing in the form of a song or valedictory address, using Joni Mitchell, Marvin Gaye, or Stephanie Mills as inspiration.

Have students share their work with each other and provide comments, and have writers revise their work accordingly. Then, stage a reading to which you invite parents and/or other special guests. (W.11-12.3)



Core Passages Assessment Questions

Have students answer these questions individually. Questions are printed on separate pages that can be reproduced for students.

Question #	Correct Answer(s)	Standard(s)
1	D	(RI.9-10.3)
2	C	(RI.11-12.1)
3	A	(RI.9-10.6)
4	A	(RI.9-10.4)
5	C	(RI.9-10.1)
6	A	(RI.9-10.1)
7	C	(RI.9-10.4)
8	D	(RI.11-12.4)
9	B	(RH.9-10.3)

UNIT 4



Human Impact

Core Passages Assessment Questions

1. Reread the excerpt from **Gene Stratton-Porter's *The Last Passenger Pigeon*** (pages 196–199). Based on this text, which event contributed to the pigeon's extinction?
 - A People preferred the taste of pigeons to the taste of doves.
 - B Hunters used guns to hunt pigeons, rather than poles and bags.
 - C People counted their wealth by the number of pigeons they had.
 - D Hunters filled bags with pigeons and caused the birds needless suffering.
2. Reread the excerpt from **Gene Stratton-Porter's *The Last Passenger Pigeon*** (pages 196–199). Based on this text, what is the irony of the last passenger pigeon being stuffed and “preserved for future generations” at the Smithsonian?
 - A The Smithsonian had contributed to the extinction of the pigeons.
 - B Future generations were unlikely to care about passenger pigeons.
 - C People had failed to preserve the species itself for future generations.
 - D Stuffing and mounting the pigeon was not an effective way to preserve its body.

3. In the section “The Problem” in the passage from **Paul R. Ehrlich’s *The Population Bomb*** (pages 434–435), what is the effect of the author’s repetition of the word “people”?
- A It expresses the author’s feeling that the planet is becoming too crowded.
 - B It expresses the author’s uncertainty that overpopulation is a serious issue.
 - C It expresses the author’s fear of his audience failing to pay attention to his warning.
 - D It expresses the author’s idea that controlling population is everyone’s responsibility.
4. Reread from page 438 to “. . . brings ruin to all” on page 439 of the passage from **Garrett Hardin’s *The Tragedy of the Commons***. Based on this passage, what does Hardin’s term “tragedy of the commons” mean?
- A individuals’ overuse of shared resources
 - B the community’s failure to help individuals in need
 - C the community’s inability to police shared resources
 - D individuals’ inability to contribute to each other’s needs
5. Reread the section “Pollution” in the passage from **Garrett Hardin’s *The Tragedy of the Commons*** (pages 440–441). According to the author, why does having private property fail to solve the problem of pollution?
- A Property owners do not care if their property becomes polluted.

- B** The costs to property holders are not yet high enough to discourage pollution.
 - C** The effects of pollution on air and water reach far beyond a polluter's personal property.
 - D** Dividing property among individual owners does not address the tragedy of the commons.
- 6.** Reread **Stephanie Mills's Mills College valedictory address** (pages 469–472). What does Mills predict will be a consequence of the rising human population?
- A** famine and death
 - B** increased productivity
 - C** changing family structures
 - D** a lower value on human life
- 7.** Reread pages 718–719 in the passage from **Bill McKibben's *The End of Nature***. In the passage, what does “the sound of the saw” represent?
- A** natural forces at work
 - B** the noises of the forest
 - C** human impact on nature
 - D** changes in temperature and rainfall
- 8.** Reread pages 718–719 in the passage from **Bill McKibben's *The End of Nature***. Which definition best expresses the way McKibben uses the term “nature”?
- A** timeless forces in the world that can never be changed
 - B** any forces that help shape human experience of the world

- C** forces in the world that humans can influence without realizing it
 - D** wild forces that shape human experience but are beyond human control
9. Reread pages 760–762 in the passage from **Rick Bass’s** *The Ninemile Wolves*. According to this passage, what was a consequence of humans’ decimation of the buffalo?
- A** Wolves became extinct.
 - B** Wolves began to kill cattle.
 - C** Wolves started to attack humans.
 - D** American wolves moved to Canada.