



TEACHER GUIDE

THE
GREEN
AMENDMENT

TEACHER GUIDE

MAYA K. VAN ROSSUM



This publication is provided by the Delaware Riverkeeper Network free to schools, environmental action groups, and nonprofit organizations. The Delaware Riverkeeper Network provides education on a variety of environmental topics. To find out how your school or organization can join the Green Amendment movement or to invite Maya van Rossum to visit your group, visit: www.mayavanrossum.green or www.delawariverkeeper.org.

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TEACHING

The Green Amendment

Teaching the material in *The Green Amendment* is a vital step in preparing a new generation to defend their rights to a clean and healthy environment. This important book—and the Study Guide that accompanies it—can be used to support instruction in a variety of disciplines, including civics, environment, science, policy, law, history, and social studies.

To use the text, teachers would benefit by assigning each chapter and then setting aside class time to discuss the Think About It, Research, and Take Action! activities. Many of the Research and Take Action! activities call on students to pursue assignments outside of class, either independently or in small groups. However, teachers can use class time for students or groups to present, report on, and discuss their findings. The Teacher’s Guide includes suggestions on how students can present their results more broadly with their school or their communities.

Teachers can assign this book to their students in print, audio, or ebook form. The book is available at amazon.com, barnesandnoble.com, Audible, or at local bookstores. For classroom copies of ten or more, teachers may contact the publisher for special rates at info@disruptionbooks.com. The educational guides are free to all and may be downloaded from the author’s website at mayavanrossum.green.

Before beginning this section of your curriculum, you might consider reaching out to the author to see if you can schedule a talk where she can meet with students, teachers, and parents to talk about environmental rights, about students’ experience in studying the topic, and to answer questions about environmental protection and community engagement in its protection. Scheduling a school-wide or district-wide talk that includes the larger community, complemented by a visit with your classroom to talk more intimately, could generate increased understanding of, and enthusiasm for, the issue and subject matter. Please reach the author via her website at mayavanrossum.green.

INTRODUCTION

OBJECTIVE

After reading and analyzing the introduction, students will be able to:



Identify some of the dangers of fracking and explain how the Delaware Riverkeeper Network used language in the state constitution to overturn a state law that allowed fracking to proliferate throughout communities.

SUMMARY

In the introduction, environmental activist Maya K. van Rossum explains some of the dangers of fracking to extract natural gas from shale. She also details the legal efforts of the Delaware Riverkeeper Network to convince the Pennsylvania Supreme Court to declare provisions of a state law unconstitutional, claiming they violated a part of the state constitution that guarantees the people's right to a clean and healthy environment. She concludes by arguing that enacting similar amendments to other state constitutions and the U.S. Constitution would provide more secure grounds for protecting the environment than relying on laws and regulations, which focus on managing rather than preventing environmental harm, and which industrial interests can manipulate. An important message in both the introduction and throughout the book is that while the rights to clean water, clean air, and a healthy environment are fundamental needs of all people, they are not given the same level of constitutional recognition and protection as other fundamental freedoms we hold dear, such as the rights to free speech and freedom of religion. The different constitutional recognition and protection of environmental rights opens an opportunity for an array of differing educational perspectives, including civics, environment, science, policy, law, history, and social studies.

Reading and Discussion Questions

1. According to van Rossum, what arguments did gas companies use to try to convince landowners to sign leases that would allow fracking on their property?

(Answer: They declared that natural gas was a cleaner energy source than coal; that fracking posed no risk of harming the environment, the land, or people; and that the lease agreement would generate income for the landowners.)

2. The Delaware River Basin Commission (DRBC) issued a moratorium on fracking that would end when the Commission issued regulations it determined would both allow fracking and would meet legal standards for protecting the water resources of the Delaware River basin. Why, then, did the Delaware Riverkeeper Network continue its work against fracking in the Delaware Valley?

(Answer: van Rossum points out that a vote of just five members of the DRBC could pass the regulations that would lift the moratorium and allow fracking to take place and that, regardless of the assertion of regulators, fracking cannot in fact be made environmentally safe. Therefore, a solution that would forever ban fracking was needed.)

3. Why was the “medical gag rule” of Pennsylvania’s Act 13 particularly troublesome to opponents of fracking?

(Answer: By preventing doctors from revealing harmful health effects related to fracking, the rule effectively protected the gas industry from publication of negative information that could be used in efforts to block fracking.)

4. What is van Rossum’s main message in the introduction?

(Answer: A Green Amendment is the surest way to provide for protection of the environment, but winning ratification of such an amendment requires popular support.)

CHAPTER 1

LIVING IN THE SACRIFICE ZONE

OBJECTIVE

After reading and analyzing the chapter, students will be able to:



Assess the variety and severity of different environmental threats and the obstacles that prevent people, communities, and government officials from addressing them.

SUMMARY

In Chapter 1, van Rossum makes a case for the multiple ways the environment is being damaged throughout the nation and around the world. Environmental damage threatens human health and well-being, drives plant and animal species to extinction, and inflicts irreparable ecological harm, damaging every aspect of people's lives and communities. She concludes the chapter by underscoring the need for a Green Amendment as the most secure way to combat environmental harm.

PROCEDURE

Instruct students to read the Study Guide Summary, Key Ideas, and Words to Know after reading Chapter 1 of *The Green Amendment*. Alternatively, you can assign these sections of the Study Guide as a primer activity for students to read before reading the chapter.

Reading and Discussion Questions

THE NEW SACRIFICE ZONES

1. Public officials in Manchester, Texas, told Rosaria Marquina that her children were safe in the elementary school because “with constant exposure [to chemicals and pollutants], they develop natural defenses within their bodies.” How would you respond to that claim?

(Possible answer: No evidence is provided to substantiate that claim, which seems to be a false analogy based on the ability of the body’s immune system to develop disease resistance to infectious agents. It creates a false equivalence between man-made pollution and environmental degradation, and illness resulting from natural causes. It is a false narrative designed to deflect responsibility from industry or ineffectual environmental regulations.)

2. How does the evidence van Rossum presents about Manchester, Texas, relate to mathematician Dave Pruett’s claim that “we’re all in the sacrifice zone now”?

(Answer: Standing alone, this example does not prove Pruett’s assertion, but it provides anecdotal evidence of the extent of environmental damage in one community that is made stronger by the scientific data and other examples provided in the chapter and book.)

MORE DANGEROUS THAN WAR

1. The author cites multiple environmental threats in this section, including air pollution, water pollution, and the accumulation of heavy metals in people’s bodies and their established or possible links to death, disease, or disability. Which of these problems do you think is most important? Why?

(Possible answer: Water pollution is the most serious because of the prediction that half the world’s people will lack access to fresh water by 2030. Alternatively, no one threat is more serious than others, given the serious health consequences of each type of environmental pollution or harm. Even if you address all issues of air pollution, water pollution, or heavy metals in the environment, the other forms of pollution or degradation will still be present individually or synergistically to affect people and communities.)

1. What would you say to critics of van Rossum’s work who say that many of the problems she cites are chiefly the problems of poorer or less developed countries?

(Answer: The author provides statistics showing severe environmental problems in the United States, including water pollution affecting 200,000 Americans.)

VICTIMS OF THE ANTHROPOCENE

1. Why do you think van Rossum introduces the issue of threats to sturgeon in the Delaware and Hudson rivers and deforestation around the world?

(Possible answer: She hopes to instill a sense of humans’ responsibility for the health and survival of other species. She seeks to demonstrate that there are other ways people are harmed by damage to the environment, including other species, beyond just illness. These include, for example, diminished recreation, lost jobs, and economic value, and spiritual and emotional loss.)

2. What does van Rossum mean in referring to a “species holocaust”?

(Answer: She is referring to the massive extinctions of plants and animals taking place now.)

3. Is it appropriate for scientists to call the current period of earth’s history the Anthropocene era? Why or why not?

(Possible answer: It is appropriate to use that label because human activity is having such a profound impact on the earth’s environment and on the potential survival of other species.)

THEY PAVED PARADISE AND PUT UP A ROUTE EXTENSION

1. What is the purpose of the story about the construction of a highway extension in Trenton, New Jersey?

(Answer: The author wants to demonstrate some of the ways that development impacts children and communities, in this case by cutting them off from access to the little bit of nature once available to this urban and low-income community. This example, like others in the book, helps to demonstrate that without a Green Amendment recognizing the rights to a healthy environment, legislators, regulators, and the laws they are implementing fail to consider the many values of environmental protection.)

2. Do you agree with the argument that modern, urban humans' lack of interaction with the natural world is dehumanizing? Why or why not?

(Possible answer: I agree because separation from the natural world prevents people from fully developing all of their senses, from experiencing the many emotions nature produces, from developing an array of physical and emotional skills that result from activity in natural settings, and from reflections that help them gain perspective on their lives.)

LOCKED IN

1. How would you respond to van Rossum's son's question about why we don't put solar panels on all houses?

(Possible answer: Corporate power and lack of consumer demand perpetuate reliance on fossil fuels. People don't fully appreciate the harm being inflicted by a variety of fossil fuels in use today, such as fracked natural gas. People don't have access to clean energy sources because they are not available in their communities, they don't have the financial resources to install them, and/or their government officials are not ensuring the ability to access solar energy or other clean energy sources.)

2. Why is growing lack of interest in outdoor recreation and the natural world concerning?

(Answer: Research has documented that time in nature enhances the ability of children to learn in school and to develop a variety of physical, social, and problem-solving skills. The converse is also true: a lack of access to nature and time outdoors diminishes the ability of children to develop these skills. Environmentalists fear that people less interested in the natural world will be less likely to want to protect it in the decisions they make in their daily lives, including whether to get involved in local actions and activities to protect nature.)

THE OLD WEAPONS AREN'T WORKING

1. Why is the current system of laws that are focused on requiring companies to obtain permits regarding air and water pollution an inadequate means of protecting the environment?

(Answer: Because the laws are structured to make permitted pollution and degradation the end goal, rather than being focused on preventing environmental degradation. In other words, this results in laws that are designed to manage the how, when, and where of pollution and degradation, rather than to prevent pollution and degradation.)

2. How does van Rossum make the case for the need for Green Amendments in this chapter?

(Possible answer: She first presents multiple examples of the prevalence and dangers of pollution or habitat destruction, she then exposes the inadequacy of reliance on the legislative and regulatory models for protecting the environment currently in use/in place, and then discusses how Green Amendments could result in greater protections by securing better legal protections as well as higher community expectations for protection.)

Using the Student Guide



Think About It

Assign the Think About It questions. Allow class time for students to discuss their answers. (Pacing: set aside about 20 minutes discussion per question, allowing the discussion to continue for additional time if students are fully engaged.)

1. What do you think about the decision to create “sacrifice zones”? Is there a reason that would be important enough to justify the destruction of nature or making the air unsafe to breathe or water unsafe to drink? Why do you think companies and governments decided (and continue to decide) that it was important to choose industry, fossil fuels, or overly damaging development projects over nature and healthy air or clean water?

Encourage students to begin their discussion by deciding whether they are going to be considering answers from the perspective of government officials or business interests. Making this decision up front will help them more easily focus their discussion. Or you may encourage them to ponder both perspectives, but ensure they are being clear about which perspective they are answering.

Students might suggest that governments favor companies over the environment because economic growth can lead to job or wage growth, which can produce voter satisfaction and thus contribute to politicians remaining in office. Some might point out that political leaders might ignore the importance of environmental protection because they have a short-term focus and the problems build up over time, or they are the beneficiaries of corporate political donations. You might make this question the focus of a class debate, encouraging students to make the case either for or against environmental protection as a top priority

when considering how to encourage economic growth. For example, *governments should focus on economic growth only if the environment is not damaged; or governments should recognize that economic growth is dependent on, and enhanced by, environmental health; or governments should focus on environmental protection even at the expense of economic growth; or government action that advances economic growth regardless of environmental harm is defensible always/often/sometimes/hardly ever/never.*

Students might suggest that businesses have an obligation to focus only on profit making in order to serve their employees or shareholders regardless of environmental impacts. Or, they might take a broader view of corporate responsibility that includes an obligation to protect the environment because they are part of a community, and all members of that community depend on clean water, clean air, and healthy environments. Or, they may assert that there is no choice to be made; they might focus instead on challenging the statement that government and communities need to choose between the economy or the environment and that economic health is dependent on and advanced by environmental health, including historic and present-day examples that prove the point. In the context of a class debate exercise, you could encourage students to specifically frame out their perspective on the business obligation to environmental protection and then make the case to their classmates. After completion of the debate, you might ask students to think about/identify which perspectives most resonated with them and why.

2. The author describes many ways that our water, air, and earth have been damaged despite laws to protect the environment. What are your personal beliefs about the value of the environment? After reading this chapter, do you feel more strongly, less strongly, or the same about finding ways to help protect our environment?

As an alternative to in-class discussion, create an online discussion board for students to post their thoughts on the meaning or importance of the environment to them. Set a range of 200 to 250 words for contributions so that each contribution has a chance of equal weight. Encourage students to respond—courteously and thoughtfully—to each other’s posts.



Research Activities

Assign the Research Activities. You might wish to designate a class period for students to carry out Research Activities and Take Action! activities or to report on and discuss their results.

1. With your classmates, use the Internet to make a list of local environmental organizations. Assign one organization to each student or small group, then research the organizations to find out: their main focus, how they raise awareness, if they participate in local government to support or oppose legislation, and what they feel is threatening the local environment. Present your findings to the class, and vote on which organization you feel is the most interesting. Ask your teacher to invite a speaker from the organization to visit your class.

Divide the class into groups, give each group some time to conduct initial research to identify the groups, and then assign the in-depth research on particular groups to individual students. (If the class is too large, have each group collaborate to report on just one environmental group.) Then give students independent time to do that research before reassembling to discuss their findings. Caution them to make their presentations about the groups succinct and focused; you might set a time limit of two to three minutes so the activity does not absorb too much class time.

2. What is an important body of water in your state or community? Identify some key properties of this body of water: How does this ocean, lake, stream, or river support your community?

- Is it a source of drinking water?
- Is it a recreational resource?
- Do animals depend on it?
- Does it provide economic benefits to the community?

Using the websites for your local newspaper, your local water authority, and your state government, find out about the health of this body of water and if the quality of the water is at risk.

- Identify what actions or activities are taking place that are either harming the quality of the water or helping to improve it.
- How are laws advancing this harm or helping to address it?
- Are strategies other than environmental protection laws being used to protect or clean up pollution problems or other harms associated with the waterway?
- If the water is polluted, what communities are being harmed, and how are they being harmed (do not limit yourself to human communities)?

Have students create a water health report on the chosen body of water. Encourage them to include charts or graphs that specify the body of water's health on more than one measure. You could assign them to work in groups, with each group member analyzing the body of water in terms of a distinct criterion or issue.



Take Action

Assign the Take Action! activities. Projects that require more time may need to be presented to the class in sessions devoted to another chapter.

1. Identify an endangered species of animal or plant in your state or county. How has this species' habitat been affected by pollution and/or environmental change? Create a list of actions you and your classmates can take to help protect this animal or plant. List things you can do every day—like avoiding the use of plastic bags and straws, supporting protective government action, or planting things that attract and support your chosen animal—as well as ways you can raise money or volunteer. Share the list with your class and ask them to help you protect your chosen species. With your classmates, post your lists in your classroom or share them online.

Assign students a brief reflection on the project—a one-page report or summary with the headings: Findings, Goal, Actions Taken, Outcome. As a follow-up activity, encourage them to create public service announcements or flyers to acquaint other students with the endangered species and steps that can be taken to protect it.

2. The author believes that spending time in nature improves our quality of life, especially for children. Test this idea for yourself. Find a natural space near where you live. It might be a park, a garden, a forest, a shore, or a special tree on the grounds of your school. Spend at least one hour without your phone, music, or other distractions. You might hike, explore, or just sit quietly. Try to focus on your surroundings. How do you feel afterward? What if you spent time in a natural space each week? What benefits might you get from taking time to connect with nature? Or, do some research into what experts identify as the benefits of spending time in nature, and create a fact sheet you can share with your class, school, and community. Do you think this is a worthwhile effort? If so, consider ways to help make it happen.

Invite students to write a reflection on their experience and post it on a class discussion board. Encourage them to continue the practice throughout the term and to post further reflections. For students who create a fact sheet about the benefits of spending time in nature, ask them to distribute the sheet to their classmates, their families, and people in the community. Or, ask the class to combine their work into a master fact sheet and post it for others.

CHAPTER 2

THE RIGHT TO A HEALTHY ENVIRONMENT

OBJECTIVE

After reading and analyzing the chapter, students will be able to:



Compare and contrast language in different constitutions related to environmental health and assess the strengths and weaknesses of different formulations.

SUMMARY

In Chapter 2, the author evaluates the degree of protection for the environment provided by the language in different state constitutions. She wishes to demonstrate the need to make the language of such an amendment a true protection of the right to a clean environment and not just a policy goal. She uses different examples of successful and unsuccessful court actions to support the comparisons.

PROCEDURE

Instruct students to read the Study Guide Summary, Key Ideas, and Words to Know after reading Chapter 2 of The Green Amendment. Alternatively, you can assign these sections of the Study Guide as a primer activity for students to read before reading the chapter.

Reading and Discussion Questions

A BRIEF HISTORY OF ENVIRONMENTAL CONSTITUTIONALISM

1. Why was Montana’s constitutional provision to “maintain” a healthy environment so important to the state supreme court decision to strike down the permits allowing the Seven-Up Pete mining venture to work along the Blackfoot River?

(Answer: The constitutional language allowed the court to act to prevent environmental damage. Those interested in protecting the environment did not have to wait for damage to occur.)

2. What is distinctive about the environmental protection clause in the Montana and Pennsylvania state constitutions, compared to the environmental provisions in other states? Why is that difference important?

(Answer: These two state constitutions establish the right to a clean and safe environment as a fundamental, inalienable, individual right of all people of the state that is recognized in the Bill of Rights/Declaration of Rights section of their constitution. That is important because any person living in the state can claim protection. It also means the right is recognized and protected with the same high legal standards that are used to protect other fundamental rights, like the right to free speech.)

3. What was the significance of the failed attempt to block construction of the observation tower at Gettysburg National Military Park under the environmental protection clause of Pennsylvania’s constitution?

(Answer: The failed effort—which was flawed because it was based on a weak set of facts and harms—resulted in a Pennsylvania Supreme Court ruling that declared the Pennsylvania Environmental Rights Amendment to be a statement of policy, and in so doing removed its legal strength to challenge violations of the environmental right in the future.)

A COMPELLING STATE INTEREST

1. Why was the “compelling state interest” principle in the Montana Supreme Court’s decision in the Cape France case so significant?

(Answer: The principle established that only a “compelling state interest” could be invoked to allow an action that violated the state constitution’s right to a clean environment. That created a high bar for any project that threatened the environment. But it also provided a pathway for the state to render decisions that did impact the environment in constitutional ways if there was a compelling, identified, and supported reason for doing so.)

2. Based on the discussion in this chapter, do you think the environmental clauses in Virginia’s and Michigan’s state constitutions are absent, “aspirational,” or “justiciable”? Why?

(Answer: Virginia’s and Michigan’s are aspirational because they merely declare the importance of a clean environment as a policy goal.)

A PERSONAL CALL TO ACTION

1. What does the author mean in describing state constitutions as more “volatile” than the U.S. Constitution, and how does this distinction contribute to her call for acting to ratify state Green Amendments before pursuing a federal one?

(Answer: They are more “volatile” in that they are more frequently and more easily amended. The great difficulty in ratifying an amendment to the U.S. Constitution—demonstrated by the scarcity of such amendments since the Bill of Rights—makes state action preferable because it is more likely to succeed in the near term.)

2. Given that state constitutions are “volatile,” do you agree with the author’s assessment that a state Green Amendment would have more “stability” than reliance on the legislative and executive branches to protect the environment?

(Possible answers: Yes, because while state constitutions may be more frequently amended than the federal constitution, it does not mean that amending a state constitution is an easy feat, and it is more difficult to amend a state constitution than to pass or roll back legislation or regulations. Given the more difficult pathway for amending a constitution, once a Green Amendment is ratified, it is unlikely to be replaced or voided by a less strict constitutional provision, both because of the complexity of the process but also because it would require legislators and the public to advance and support a message that people should not have a recognized right to clean water and clean air. No, because the fact that state constitutions are open to amendment means they can be amended again to undo any protections provided by a Green Amendment.)

Using the Study Guide



Think About It

Assign the Think About It questions. Allow class time for students to discuss their answers. (Pacing: set aside about 20 minutes discussion per question, allowing the discussion to continue for additional time if students are fully engaged.)

- 1. What does it mean for a right to be inalienable? Should the right to clean water and air be recognized as an inalienable right just as the rights to free speech and freedom of religion are recognized as inalienable?**

An inalienable right is a universal human right; one that cannot be taken away and one that does not have to be granted with legislation. In the United States, we consider the right to life, liberty, and the pursuit of happiness to be inalienable rights. Students should provide arguments for why or why not the right to clean water and air should be an inalienable right.

- 2. The author tells us that environmental provisions are most effective when they include the rights of future generations. Why do you think it is important to include future generations in environmental rights provisions?**

Students might suggest that long-term thinking is essential to considering the environmental impact of any decision because environmental problems often take a considerable amount of time to develop, but once they reach a critical point, they can be extremely costly to resolve. Students may also consider the moral obligation to protect children and that a failure to consider future generations violates that moral ethic.

- 3. Many of the countries that have not adopted environmental rights provisions in their constitutions are wealthy nations, like the United States and Canada. Why would wealthy nations fail to adopt environmental rights amendments, while smaller or less wealthy nations, such as Ecuador or Portugal, include such protections in their constitutions?**

Students might suggest that entrenched economic interests have more influence in wealthy nations and that these interests—such as large industries and corporations—have powerful influence over policymakers.



Research Activities

Assign the Research Activities. You might wish to designate a day of instruction for students to carry out Research Activities and Take Action! activities or to report on and discuss their results.

1. Review the rights listed in Article 1 of the U.S. Constitution. Do you think the rights listed there are more or less important than the right to access clean water, clean air, and for preserving healthy forests, wetlands, plant, and animal species? Why might the right to free speech have been included in the U.S. and state constitutions when they were first written and not the right to a healthy environment? Discuss and defend our conclusions.

Students should consider their own state constitution to review the array of rights it includes. While all states include fundamentals like the rights to free speech and freedom of religion, each state constitution is quite different. Some states, for example, include the right to gamble. Others include the right to divorce, and still others the right to a sound education. Students may consider the history of the country and the state of the environment at the time the federal constitution and their own state constitution was drafted—recognizing that it would be hard for early communities to anticipate the level of impact people would have on the environment and therefore the need to recognize environmental rights. Students may also consider that the history of the United States has, as a fundamental principle, the right to free speech because as a colony it was not a well-recognized right. In fact, those that spoke out against England often found themselves in serious trouble. But, students should also be encouraged to look at the quality of water in England and in the cities built early in this nation’s history, as they are likely to realize that clean water was already an issue of concern for many at the time.

2. The author describes state environmental protection language used in the Montana and Virginia constitutions. You can read the states’ provisions here:

Virginia: <https://law.lis.virginia.gov/constitution/article11/section1/>

Montana: http://leg.mt.gov/bills/mca/title_0000/article_0090/part_0010/section_0010/0000-0090-0010-0010.html

What are some similarities in the two provisions?

The author points out that the Montana provision obligates the state to preserve and protect its environmental resources, while Virginia’s does not. What language in the provisions do you think contributes to this major difference?

Students should recognize that the Montana constitution directs action—“the state and each person shall maintain and improve”—while the Virginia constitution only sets environmental protection as a principle or goal—“it shall be the policy of the Commonwealth to conserve, develop, and utilize its natural resources.” The Montana language is stronger because it recognizes the environmental rights as inalienable rights in the bill of rights section of the constitution, and as such these rights cannot be violated by the state (without meeting the compelling state interest standard) and have the same legal strength as other fundamental/civil rights. The provision is also clear in that it requires specific actions, particularly on the part of the state. As a follow-up, have students individually or in groups review environmental language in other state constitutions, including their home state. Then ask them to draft the language of a proposed Green Amendment. Instruct them to date the draft and preserve it. They can revisit it as they read further into the book to see if they wish to revise the language to address any unanticipated problems or to sharpen the principle. You can encourage them to consider the guidance materials provided at www.forthegenerations.org, including the checklist that is intended to help guide the drafting of effective Green Amendments.



Take Action!

Assign the Take Action! activities. Projects that require more time may need to be presented to the class in sessions devoted to another chapter.

- 1. Interview a friend. Choose one person in your life to whom you enjoy talking about important issues. Ask this person what protections they think we have, under the law, to live in a healthy environment. Was your friend surprised to learn that there was no constitutional right to a healthy environment? Discuss with them whether they think the right to drink clean water, breathe clean air, and live in a healthy environment should be recognized as an inalienable right and protected the same way we protect speech rights and gun rights. Does your friend support constitutional provisions for the environment? Why or why not?**

Share your findings with the class. Identify with your class the arguments that could change the minds of those who don't believe that constitutional protection is needed for the environment.

Invite students to report to the class what they found in discussing the issue with their friends. Extend the discussion to consider what arguments offered by students seemed to be most successful in convincing others of the need for a Green Amendment and what continuing objections or reservations respondents had to the idea.

2. Compare your regional provisions. Review the constitutional provisions in your state and other states that surround yours.

You can find the provisions by searching the Internet—type in your state’s name and constitution.

What do you think about the constitutional language they have regarding the environment? Is it in the Declaration of Rights? What about the language makes it sound strong or sound weak?

The author has created a “For the Generations” initiative (fortheGenerations.org) that helps promote grassroots organizing around constitutional environmentalism and helps organize and craft effective Green Amendments that will be viewed as strong law, not just good public policy. Compare the language in the state provisions to the checklist for green amendments found on the For The Generations website. Which elements from the checklist are missing in the state constitutions you reviewed? Which are present?

Delve into the latter questions as a way of trying to determine how best to devise a Green Amendment strategy. What language would such an amendment need to garner widespread support? Only clean water, clean air, and healthy environments. Or might there be an interest in adding fishing, a stable climate, or other concepts that would make the provision appeal to a broader audience? What arguments need to be provided to convince large numbers of people to support it?

CHAPTER 3

FRACKING AWAY OUR FUTURE

OBJECTIVE

After reading and analyzing the chapter, students will be able to:



Analyze the dangers of fracking and ascertain the status of fracking operations in various parts of the country.

SUMMARY

In Chapter 3, the author uses anecdotal evidence, such as the detailed accounts of the impact of fracking on the Greenwood and Lisak farms, as well as scientific studies to substantiate the claims that fracking is dangerous where it occurs and contributes to climate change—despite industry claims to the contrary. The author also details people’s thwarted attempts to get assistance from state governments, as well as the misplaced support of fracking by federal policymakers, to buttress her argument that passage of Green Amendments is needed to combat fracking since legislative and regulatory frameworks are inadequate.

PROCEDURE

Instruct students to read the Study Guide Summary, Key Ideas, and Words to Know after reading Chapter 3 of *The Green Amendment*. Alternatively, you can assign these sections of the Study Guide as a primer activity for students to read before reading the chapter.

Reading and Discussion Questions

THE UNITED STATES OF ARABIA

1. How do Terry Greenwood’s and Jenny Lisak’s stories demonstrate the inequity between the powers of industry versus people?

(Answer: The gas companies have greater access to government officials than private people. Laws give gas companies rights through laws and regulations that people feel powerless to challenge. In the case of Terry, it was the right to drill because Pennsylvania law allowed someone else to own and lease the mineral rights under his property. In the case of Jenny, the laws and agencies gave the fracking companies the ability to spread toxic frack waste on their local roads in a way that created serious health and environmental hazards. The right of companies to frack at all impacted the environments and communities that directly affected the lives of Terry, Jenny, and their families.)

2. What combination of arguments made fracking so appealing to landowners and policymakers?

(Answer: Fracking promised to provide abundant energy that would allow the United States to become independent of foreign sources of energy, to produce energy that was cleaner than coal, to generate needed income for rural Americans who were reeling from economic hard times, and to avoid environmental damage because it was allegedly safe.)

MORE DANGEROUS THAN IT LOOKS

1. In Chapter 2, the author quotes attorney Jordan Yeager as saying that the new Pennsylvania law, Act 13, that allowed fracking to happen in every part of every community, including residential and environmental protection zones, “would have led to the wholesale mass industrialization of huge swaths of the state.” What evidence in this chapter supports that claim?

(Answer: The details about the fracking industry itself, the amount of land it requires for well pads, roadways, wastewater storage; the level of pollution into air and water it causes; and the scale of fracking operations in the areas where it is allowed to advance show how landscapes are substantially altered by the industry when and where fracking occurs.)

2. How was the Lisaks' problem similar to and different from Terry Greenwood's problem?

(Answer: In both cases, severe environmental damage was caused by fracking, which altered the landscape and the environment. The Lisaks were being exposed to activities taking place on public property [e.g. roadways] or the property of others, while Terry was impacted by activity happening on his own private property. The Lisaks had no say because of the laws that allowed the frack wastewater to be spread on public roadways and that allowed fracking to pollute the air on private lands where they had permission to operate. In Terry's case, he was forced to endure the impacts of fracking on his own property because Pennsylvania law allowed the person who owned the mineral rights that laid underneath Terry's property to lease access to the fracking industry despite the impacts it would have on the surface of the land that Terry owned.)

THE SCIENTIFIC CONSENSUS AGAINST FRACKING

1. The author cites a scientist who studied the health impacts of fracking and said, "Cancer has a long latency, so you're not seeing an elevation in cancer in these communities." How does this statement suggest one of the major hurdles of research into the health effects of pollutants in general?

(Answer: If it takes many years to identify negative health effects of pollutants, the damage can be extensive even before it can be identified. The inability to affirmatively link individual illnesses to a particular pollution exposure provides opportunity for opponents to argue there is no proof of harm, and therefore no regulation is necessary until the issue has been more thoroughly studied.)

2. Which impact of fracking do you think is most dangerous: the effects on human and animal health, the impact on water supplies, the damage to the landscape, or the air pollution? Why?

(Students can make a plausible case for any of these impacts. After they have presented their opinions, encourage the students to think about cumulative impacts and the idea that fracking is so insidious because it touches so many aspects of our lives, environment, and communities. Encourage consideration of the synergistic effects of the impacts, such as how the damage, e.g. the multiple pollution sources, can result in increased harm as compared to if only one kind of contaminant or pathway of harm was at issue. Encourage dialogue about how the wealth of harmful impacts and pathways prevents the industry from being able to advance safely. For example, if a new technology could reduce

climate-changing methane emissions, we would have the issues of hazardous air pollution, water pollution, water withdrawals, land use impacts, noise and light impacts, etc.)

THE FRACKED-UP LEGAL LANDSCAPE

1. What is dangerous about the “Halliburton loophole” in the 2005 Energy Policy Act?

(Answer: It allows the industry to be exempt from major environmental protection laws, like the Safe Drinking Water Act, thereby removing important protections that apply to other industries. This renders the industry less safe, but it also gives the fracked gas industry an unfair competitive advantage in that it does not have to bear the costs associated with complying with all environmental protection laws, while other industries do.)

2. The author talks about local efforts to ban the industry from their communities. She explains how state government, the courts, and regulatory officials in Texas, Colorado, and Ohio overturned, undermined, and/or banned such efforts, stripping from local authorities and residents their ability to prevent the industry from invading their towns. Do these efforts by the courts and state governments seem fair or right? Are they consistent with the United States founders’ beliefs in democracy and the right of people to have a role in government?

(Answer: Students can be encouraged to consider these questions from both the perspective of an industry that believes it should have the right to operate where it sees fit, and the perspective of individuals who are harmed by the ramifications of the industry’s operations. Suggest the students reflect on the founding of the country where people were upset about England’s government that ruled them without offering an opportunity for a say in the laws being passed and enforced, especially laws that had a direct and profound impact on their daily lives [such as taxation].)

3. Why is methane a major concern in relation to climate change?

(Answer: Though methane is less prevalent in the atmosphere than carbon dioxide, it has a relatively greater impact on the greenhouse effect and has a greater impact in the short term because the atmosphere “responds more quickly to changes in methane emissions.” Scientists are clear that what happens in the next ten to twenty years will dictate whether we reach a temperature threshold that will have cascading impacts on the climate and our environment. As a result, the stronger near-term effects that methane has as compared to carbon dioxide are significant and meaningful.)

TOWARD A FRACK-FREE FUTURE?

1. What does the discussion in this chapter suggest about the power of grassroots movements? What does it say about the limits to that power?

(Answer: In the chapter, the author explains how publicizing and presenting information has generated support for the movement against fracking, but she also makes clear that the industry is very powerful and that policymakers generally support the industry.)

Using the Study Guide



Think About It

Assign the Think About It questions. Allow class time for students to discuss their answers. (Pacing: set aside about 20 minutes discussion per question, allowing the discussion to continue for additional time if students are fully engaged.)

1. The author relates that Terry Greenwood’s mantra was “water is more important than gas.” What did Greenwood mean by that statement? What environmental issues other than fracking do you think it could apply to?

Students should recognize that Greenwood thinks the preservation of water resources is vital to life, whereas gas is only one of many pathways for creating energy. Water cannot be replaced or substituted; gas, for purposes of energy, can be. A growing number of options are available for energy generation that are significantly protective of the environment. Encourage students to think of other human actions that potentially threaten water supplies—failure to conserve, which depletes the resource through unnecessary overuse; deforestation, which can contribute to water running off the land rather than being absorbed into the land and replenishing groundwater supplies; industrial pollution and agricultural runoff, which pollute water supplies; and urbanization, which also results in loss of groundwater and increased pollution.

1. In Chapter 1 we learned that environmental destruction can have *future* impact in addition to *current* impact. What is the future impact of fracking? Which aspect of the fracking issue—current dangers or future impact—do you think is more serious? Why?

The future impact of fracking includes: climate change, earthquakes, prevalence of radioactive materials in the environment, sickness in animals and humans, loss of drinking water supplies, loss of critical habitat for a variety of animal species, increased rates of crime—particularly against women—and increased risk of cancer for people in areas affected by fracking operations.

2. Thomas Jefferson once said that “an educated citizenry is a vital requisite for our survival as a free people.” With this in mind, what do you think about the fracking industry’s reliance on nondisclosure agreements and the use of proprietary chemicals to limit information about the effects of fracking? Are those practices consistent with an open democracy? Are those practices consistent with the government’s obligation to protect the health and safety of their communities? Should they be allowed?

According to the author, the fracking industry can have long-term impacts on the water supply and can lead to seismic activity (particularly as the result of underground injection for frack wastewater disposal) that could prove a long-term danger. Fracking can affect the key decisions people need to make in their every day lives, such as deciding where to live; determining whether drinking local water is safe; deciding if they want to agree to a lease for fracking on their property; or whether to vote for a candidate that supports or opposes fracking. Nondisclosure agreements and other elements of secrecy used by the industry prevent people from making informed and/or good decisions that could protect their community and their very lives. Encourage the students to develop an opinion on whether the secrecy strategies used by the fracking industry are in keeping with fundamental issues of fairness and democracy.



Research Activities

Assign the Research Activities. You might wish to designate a day of instruction for students to carry out Research Activities and Take Action! activities or to report on and discuss their results.

1. The author explains how fracking contaminates waterways, including drinking water used by people and animals. Research reports about water-quality protections in your state. What examples of water pollution did you find? What examples of drinking water pollution did you read about in your state? Based on your findings, do you think your state has strong enough environmental protections for water quality?

To avoid duplication of effort, assign individual students to particular states and then have the class pool its findings, creating a chart or graphic that facilitates comparisons. Then have the class vote regarding the degree of strictness of your state’s regulations.

2. Is fracking taking place in your state or region? Use the Internet or other resources to find out. As part of your research, determine what waterways and watersheds are affected by fracking. Create a map of your state or region that shows the major impacts fracking is having on communities, agriculture, and/or businesses. Identify areas where there is a community group speaking out on the fracking issue. What are their key messages? How do the major impacts that you identified compare to the impacts in their communities?

If students have difficulty locating fracking operations, point them to this website: <https://earthjustice.org/features/campaigns/fracking-across-the-united-states>. It not only provides a map of current fracking activity but also shows areas where fracking activity could occur. Symbols on the map indicate the sites of “fraccidents”—fracking-related accidents—and provide details about those incidents.

3. Use www.followthemoney.org or www.votesmart.org to find out what groups and individuals contributed in the most recent election year to the people who represent your community in the state legislature and in Congress. Are any of these groups or individuals tied to the energy industry? Do you think the contributions are impacting the positions of legislators? What reasons support your opinion?

Divide the class into groups and assign each group a member of Congress (one of your state’s two senators or the district’s representative) or the state legislature. Have the groups focus on those assigned individuals rather than researching all public officials. You could also add a group researching the governor. In an election year, if the candidates have been identified, expand the activity to include those running for the office that are not incumbents.



Take Action

Assign the Take Action! activities. Projects that require more time may need to be presented to the class in sessions devoted to another chapter.

1. Contact Your Power Company. Are you concerned about fracking? Find out if the company that supplies power to your home uses natural gas obtained from fracking as part of its energy mix. Find out if the company includes clean energy strategies, such as wind or solar, in their energy mix. Compare the amounts of each kind of energy. Develop a newsletter for your class or community that talks about where the community's energy is coming from as a result of your research and the present and future implications of that energy source.

The power company's website should provide the needed information about the energy mix. If that information is not available, encourage students to contact the public information office to obtain the data. Letters and petitions could be sent to the same office to both request the information, if needed, and/or to request an energy mix that focuses more heavily on clean energy options like wind and solar.

2. Have a Panel Discussion. Form a group with other students to stage a panel discussion focused on fracking. Give each panel member a topic to present such as the environmental impact of the fracking infrastructure (roads, pipelines, etc.), the threat to water supplies posed by the quantity of water needed for fracking as well as the impact on water quality, health risks, seismological concerns, and the issue of emissions and greenhouse gases. Consider whether you want to include a panelist who would speak in favor of the industry. Why do you think it is or is not important to have the pro-fracking position represented on your panel? Have one member of the group act as moderator, introducing the panelists, taking questions from the audience, and assigning each question to an appropriate panel member.

Work together with other group members to plan the panel, including determining how much time each panel member will have to speak, securing a time and place for the event, and promoting it to the student body

The panel discussion activity will, by necessity, be a multiple-day activity, setting aside some time for forming groups and making assignments, out-of-class time for research into the various topics, and additional time at another class session for a planning meeting before the actual panel discussion. Divide long-term activities like this one up among class members so time commitments are similar for all students.

CHAPTER 4

THE PERILS OF PIPELINES

OBJECTIVE

After reading and analyzing the chapter, students will be able to:



Describe the dangers posed by natural gas pipelines and the relative weakness of natural gas pipeline regulations and licensing; develop strategies for addressing concerns about pipeline construction.

SUMMARY

In Chapter 4, the author explores the harmful impacts of pipelines that serve the natural gas industry, including the workings of pipeline laws and regulations, as well as the practices and policies of the Federal Energy Regulatory Commission (FERC), charged with oversight of energy-related projects, including interstate natural gas pipelines. FERC, the author contends, has a poor record of taking into account the concerns of communities, of addressing factual inaccuracies or incomplete information in energy companies' filings, or in assuring consideration of alternative proposals for addressing claimed energy needs. According to the author, FERC is viewed by the public as a rubber stamp for approving pipeline projects, meaning it is always approving and rarely rejecting.

PROCEDURE

Instruct students to read the Study Guide Summary, Key Ideas, and Words to Know after reading Chapter 4 of *The Green Amendment*. Alternatively, you can assign these sections of the Study Guide as a primer activity for students to read before reading the chapter.

Reading and Discussion Questions

PIPELINE POLITICS

1. Why did the Minisink, New York, activists opposed to the compressor station think they would prevail in their lawsuit brought to the U.S. Court of Appeals for the District of Columbia?

(Answer: They thought they had a winning case due to the combination of the potential health and safety risks of the compressor and its proposed location near residential communities; plus the fact that they had proposed an alternative site—one that one FERC commissioner called superior to the energy company’s location.)

2. Why was the Delaware Riverkeeper Network’s victory over the Tennessee Gas Pipeline Company’s Northeast Upgrade Project (NEUP) in the U.S. Court of Appeals for the District of Columbia a limited victory?

(Answer: While it established the principles that the FERC had to consider cumulative impacts of a project and that industry actors could not segment a pipeline in environmental impact filings in order to obscure that cumulative impact, it came too late to spare the Delaware Valley the NEUP pipeline, as it had already been built by the time the court rendered its decision.)

3. What do the Tennessee Gas Pipeline Company’s multiple violations of regulations and the \$800,000 fine levied by the Pennsylvania Department of Environmental Protection suggest about energy companies’ concern for the environment?

(Answer: The two circumstances suggest that energy companies make enough money from operations that they can afford to pay fines rather than work hard to avoid violations, and as a result violations and associated fines are not a good incentive for complying with environmental protection laws. According to the author, it is also a reflection of how little care or concern pipeline companies have for their harmful impacts on the environment or communities.)

ACCIDENTS HAPPEN

1. Which alternative seems worse, having an existing gas pipeline built before 1940 in your community or learning about government approval of a project to construct a new pipeline in your community? Why?

(Students might express concern about the environment, climate, and property impacts of a new pipeline, along with the reduced safety record of new pipelines. Students might prefer the older pipeline, given the better safety record of those pipelines, but may also note that the pipeline would be aging each year and could be weakening from rust, as was the case in Salem Township, Pennsylvania.)

IS THE CONSTITUTION PIPELINE CONSTITUTIONAL?

1. If the power of eminent domain is to be used to advance the public good, how can it be used to advance a pipeline that has so much community opposition and was even rejected by a state? Should environmental harm be part of the consideration in whether something advances the public good? What role should the availability of alternative sources of energy play in the decision-making process?

(Answer: Students may suggest that providing energy is considered a public good and that despite community opposition, many people rely on natural gas for energy and will therefore benefit from the pipeline. Students may argue that because a healthy environment has broad community benefits, it should be given high priority in considering the public good. Others may argue that the need for energy should outweigh environmental impacts. Students may advocate that alternative energy sources could displace the need for natural gas and the pipelines that transport it. As a result, there is no demonstrable need for the pipeline that would justify its harmful impacts to the community and warrant government advancing these projects in the face of mass opposition.)

2. Why are the competing rights of property owners and gas companies so complicated when issues of eminent domain are involved?

(Answer: Our state and federal constitutions give high priority to protecting and honoring property rights, an inalienable right that should be given highest protection under the law. In the context of pipelines, government and industry supporters argue that the pipelines are needed to serve the entire community. This creates a tension of constitutional right vs. public right. But the public value of pipelines breaks down when one considers the level of community harm that results from pipeline construction in terms of environmental damage, including climate change impacts, and when one considers that there are alternatives that negate the need for natural gas pipelines to support energy needs.)

FERC OR THE CONSTITUTION?

1. What changes might be proposed to make FERC more objective in its review and decisions regarding natural gas pipelines?

(Possible answers: Impose stricter conflict-of-interest rules that would prevent FERC staff or third parties from having connections to companies with projects before the commission; change funding to make it dependent on congressionally approved funds rather than so directly tied to industry funding.)

2. According to the author, how can state environmental laws and Green Amendments be used to block/impact pipeline construction, even if the FERC has approved an interstate project and the federal Natural Gas Act makes clear that applicable state laws are preempted in the context of interstate natural gas pipelines?

(Answer: The Natural Gas Act makes clear it does not preempt certain federal laws like the Clean Water Act. The Clean Water Act requires that projects comply with state water-quality standards before approval can be issued, subjecting the project to state review and authority. While determining whether state standards are met, the author argues that state officials must be guided by the provisions of a state Green Amendment.)

Using the Study Guide



Think About It

Assign the Think About It questions. Allow class time for students to discuss their answers. (Pacing: set aside about 20 minutes discussion per question, allowing the discussion to continue for additional time if students are fully engaged.)

1. The judge who decided the Minisink case ruled against the townspeople trying to block the proposed pipeline compressor station, arguing that “given our nation’s increasing demand for natural gas (and other alternative energy sources), it is an inescapable fact that such facilities must be built somewhere.” What do you think of the judge’s argument? What evidence do you have to support that conclusion? Do you think the judge should have considered other factors in rendering his decision? If so, what additional factors should he have considered?

Students might point out that the Minisink residents offered an alternative location for the compressor station, which met company needs and did not relocate the station to some other community but instead to a more rural location, which renders the judge's statement questionable in this context. They might also argue that the need for energy resources does not necessarily justify any and all decisions made by energy companies, particularly given that the need for energy can be met in multiple ways that do not infringe on the rights of people. There is an important opportunity here to encourage students to think about other pathways for energy creation such as wind and solar, and also efforts focused on increasing energy efficiency and conservation to reduce the demand for energy.

2. The author writes that the principle of eminent domain allows this power to be exercised “for the greater public good.” Based on what you have read so far, what environmental factors do you think should be considered when weighing whether an action is “for the greater public good”? What non-environmental factors should be considered?

Possible environmental factors could include air and water pollution, water supplies in terms of the quantity of water available, climate change impacts, impacts to important ecosystems like forests and wetlands, and impacts to wildlife and plant life. Possible non-environmental factors could include dangers posed by pipeline operations due to the presence of gas under pressure, the impact to property values, the effect on efforts to encourage greater investment in clean energy strategies, and the ramifications on ecotourism and other jobs.

3. The author believes that FERC has shown itself to be a biased agency. Based on the information provided, do you agree with that assessment? Why or why not? What other information might help you further develop your opinion? The author notes that FERC gets its funding from energy industry sources. Does this arrangement concern you? Does it impact the potential for, or reality of, bias at FERC?

To support the concern about bias, students may point to the high approval rate of pipelines, or the use of the tolling order loophole to prevent legal challenges to pipelines before construction is allowed to begin. Other information regarding an assessment of bias could be statements made by FERC officials regarding the value of pipelines, FERC's failure to hold pipelines firmly accountable for violations of environmental laws during construction, or FERC's failure to consider other energy options that would negate the need for more pipelines.



Research Activities

Assign the Research Activities. You might wish to designate a day of instruction for students to carry out Research Activities and Take Action! activities or to report on and discuss their results.

1. **Want to know if there's a gas pipeline in or near your community? Go to <https://www.npms.phmsa.dot.gov/GeneralPublic.aspx> and choose "Launch the Public Map Viewer." Follow the directions to choose your state and county and then view the results. Note that you can zoom in on the map and you can also view locations of pipeline accidents. Prior to this exercise, were you aware of the pipelines that exist in your community? Do you think your family, friends, or neighbors were aware? Does this awareness change how you feel about pipelines or your community?**

Class discussion of the relative safety of pipelines and the potential threat they pose to a community could be interesting given that all students will be working from the same data. Encourage students to consider climate change and the safety implications it has for communities as they consider their perspectives regarding pipelines in or near their communities. Call on students to explain carefully the criteria they are using for evaluating their own perspectives on pipelines and the potential impacts for their community. Consider having students identify issues of importance regarding pipelines and how they might evaluate whether they pose a concern for their community *before* they do the research on how many pipelines may be in or near their community. Have them apply those criteria to their feelings about pipelines before and after they do the research on pipelines located in their community or that may be proposed for future construction. Ask them to consider how the actual presence or absence of pipelines affected their perspectives regarding the safety, harms, and/or benefits of pipelines.

2. **Visit www.thesolutionsproject.org to learn about the availability of clean energy alternatives in your state. Are there clean energy options for fulfilling your state's energy needs? Does your state have a plan/proposal to increase its reliance on clean energy? If so, what are they? In addition to energy and environmental protection, what are the other benefits that clean energy can provide?**

Given the information you found and upon reflection, consider your answers to these questions:

- How do you think a clean energy path stacks up to fracked gas and pipelines environmentally and economically?
- How do you now feel about the Minisink judge's assessment that: "given our nation's increasing demand for natural gas ... it is an inescapable fact that such facilities must be built somewhere"?
- Do you agree that the power of eminent domain should be granted to pipeline companies? Even if the property owners who will become host to a pipeline do not want it? Even considering the dangers posed by living next to a pipeline (as happened in the James Baker story)?
- Has your opinion about the value of fracking and pipelines changed in any way? If so, how?

Consider having students work in groups to brainstorm ideas for this activity. Then ask a spokesperson for each group to present the group's ideas. The class might compile a list of recommendations and submit them to state officials who, as the author points out, have some control over the approval of pipeline projects through the Clean Water Act. Or, have them consider contacting their member of the US Congress or Senate to discuss what they have learned about clean energy and pipelines.



Take Action

Assign the Take Action! activities. Projects that require more time may need to be presented to the class in sessions devoted to another chapter.

- 1. Write a PSA. Are you worried about the harm created by natural gas pipelines? Write a public service announcement (PSA) about the dangers that these pipelines pose to humans and to the environment. Include a message about the positive energy alternatives available.**

Suggest students view PSAs on other environmental or social justice issues, to consider the length of the message and the strategies used to communicate ideas (e.g. examples,

personal stories, hard-hitting facts, visuals). Suggest students brainstorm the item or items that might be the focus on their PSA and then select the one that resonates most with them. Encourage the inclusion of the clean energy alternatives so the PSA is not just a negative message but gives the audience a positive alternative. Encourage students to consider including a call to action to make their PSAs more than merely informative. Evaluate students' PSAs on the factual accuracy of any claims about the potential dangers of pipelines as well as the emotional appeals used to get listeners' attention and to generate action. Encourage students to place their PSAs in school media outlets, community bulletin boards, or issue-oriented websites.

2. Set up a mock public hearing. Provide arguments for and against construction of a pipeline in your town. Allow individuals to volunteer to be on whatever side of the argument they choose. Give each witness three minutes to make their point to the agency panel at the front of the room. (Three minutes is what residents are actually given at public hearings on this subject.) After the hearing has concluded, consider: Was it easier or harder to have a three-minute time limit for making your points? How many people testified in support of the pipeline and how many against? How many people focused on the environmental impacts, safety impacts, community impacts, need for the energy, and alternative options? Which arguments did you find most persuasive as you listened to each piece of testimony?

You can allow students to self-select the perspective they would like to provide testimony on, or randomly assign perspectives as a way to encourage students to step out of their comfort zone and look at issues from a different perspective that is not naturally their own. Students should be encouraged to practice their testimony to ensure it meets the three-minute time limit. Strictly enforce the time limit of presentations, as this is the case in real life. Students who do not finish their testimonies should be forced to stop midsentence so they can experience what that feels like. After the hearing, encourage a discussion of both the substance of the testimony offered and also the experience of being held to such a short time limit. Point out to students that this time limit and strict enforcement is what people experience in reality. Perhaps expand the discussion to how this experience might encourage communities to consider civil disobedience as a way to ensure their concerns are fully expressed and heard.

3. Write Your Legislator. Do you share the author's concern about the potential for bias in FERC decision making? Do you think government officials are giving enough consideration to the availability of clean energy options to fuel your state or the United States? How do you feel about the use of eminent domain to take property rights in order to force construction of pipelines even where it is not needed nor wanted? Do you think your legislators are thinking about all of the impacts created by fracking, pipelines, or compressors? Pick one of these topic areas. Write your senator and representative (state or federal). Lay out your concerns and thoughts on the subject. Encourage them to provide greater political support for the pursuit of clean energy strategies.

Use the letter-writing exercise as a complement to the testimony exercise. Encourage students to use as much space as they need to fully explore and communicate their concerns in letter form. At the same time, encourage students to try to be as concise as possible in their writing, not providing so much information that the major points of their letter get lost in its length. Then encourage them to discuss how different it felt to be able to communicate their concerns with no page or time limit, versus the experience of having that firm three-minute limit in testimony. Ask students to develop an opinion about whether a three-minute limit on testimony feels fair and/or appropriate; what are the positives and negatives of a three-minute limit?

CHAPTER 5

WASTED

OBJECTIVE

After reading and analyzing the chapter, students will be able to:



Understand the dangers of using perfluorinated chemicals, which enjoyed prolific use by industry and the military before their dangers were well understood; understand the important role science should play in agency decision making, including responding in emergency situations; better appreciate the multiple pathways of exposure people can have to chemicals; and explain the rationale behind the precautionary principle.

SUMMARY

In Chapter 5, the author explores the dangers posed to communities and the environment from the use of a variety of toxic chemicals by industry and government agencies, discusses harms to fresh- and saltwater fisheries from pollution discharges, and details the government and corporate response to a transportation accident that, she says, exacerbated and heightened community exposure to toxic releases. The author points to ubiquitous presence of PFOS in environments and across the nation as an example of how expansive contamination can become when dangerous chemicals are used and knowingly released into the environment. She introduces the precautionary principle as a potential protection against environmental harm by requiring industries to prove the safety of a substance before putting it into use.

PROCEDURE

Instruct students to read the Study Guide Summary, Key Ideas, and Words to Know after reading Chapter 5 of *The Green Amendment*. Alternatively, you can assign these sections of the Study Guide as a primer activity for students to read before reading the chapter.

Reading and Discussion Questions

THE GREAT AMERICAN DUMPING GROUND

1. Do you agree with the author's assessment that the outcome of the investigation of PFOA contamination in New Jersey reinforces the need for a Green Amendment, as well as the weaknesses of the legislative and regulatory approach to environmental protection?

(Students who agree might point to the decision of the Christie administration to ignore findings about the presence and dangers of PFOA and adhere to the ideologically based decision to not impose new regulations despite years of work by scientific investigators. Those who disagree might argue that environmental rules are a legislative function and should be left to those bodies where competing interests can be reconciled.)

2. Review the author's account of the health benefits of the 1970 Clean Air Act and its 1990 extension. What do you think is the basis for the claims of health conditions prevented when the count cannot accurately be known? Is it beneficial to have this information, knowing that it is the result of informed assumptions and judgments?

(Possible answer: The counts would have to be based on scientific assessment and some kind of model that assumed a certain rate of impact and/or benefit based on incidence prior to passage of the two laws and taking into account population growth and potential growth of dangerous emissions absent regulation. Any numerical claims, of course, would have to be estimates. This information is beneficial because it is based on the informed assumptions of experts relying on science and data. Without this kind of assessment, there is no way to compare the benefits of a law or regulation as compared to the costs of implementing it. This kind of comparison is important in demonstrating the value of advancing environmental protection.)

3. What do the author's notes on fish advisories suggest about these warnings?

(Possible answer: They need to be issued in multiple languages to reach potentially at-risk population groups. For subsistence fishers, the warnings might also need to be supplemented with in-person outreach efforts, such as public meetings, or agency officials available at preferred fishing spots to share and explain the information. The focus on getting contaminants that are contaminating fish out of the environment needs to be greater because too many people are either not aware of or are ignoring the advisories [perhaps because they have to in order to feed their families]. The best solution is to remove the need for fish advisories altogether.)

4. Do you feel safe eating fish after reading this section of the chapter? Or, if the student does not eat fish themselves, ask them to reflect on the safety for others who do. Why or why not?

(Students' responses will likely vary; try calling on students with differing points of view to ensure that the discussion is not one-sided. Before embarking on this discussion, you might first want to ask how many students consume fish or have family members who consume fish.)

THE MAKING OF AN INDUSTRIAL "ACCIDENT"

1. Who do you think was most responsible for the aftereffects of the Paulsboro train accident? Why? What actions should be taken to prevent other situations like this?

(Students might identify Conrail, public health officials, or government leaders as those most responsible. Suggestions for addressing situations like this will vary. Encourage students to include a focus on preventing such accidents, including preventing the ongoing use of dangerous chemicals, in addition to considering how to respond when an accident/incident does occur.)

2. Conrail convinced many people to sign agreements promising not to sue in return for a small payout in the wake of the Paulsboro train accident. Are such arrangements fair in the early days after an accident or other environmental incident? Why or why not?

(Students might respond that companies like Conrail are well within their rights to try to limit liability. They could also mention that individuals are not forced to sign the agreements. Some students might mention that ordinary people do not have the technical

knowledge to evaluate the potential risks of such an event, especially soon after it occurs, which hampers their ability to judge the wisdom of signing such an agreement. It would be beneficial to urge students to consider the inequities of such offers in low-income communities, where the benefits being offered might be viewed as having more value or where there is less access to attorneys or experts to help assess the wisdom of signing such an offer. It would be good to raise a discussion of how such an offer could be made more fair by requiring companies to provide full disclosure before offering such a deal, and ensuring that objective experts such as those provided by state agencies or concerned nonprofits are available to offer additional information, perspective, and advice before such a deal is offered.)

FOAMING UP OUR WATER SUPPLIES

1. How was the U.S. Air Force's use of PFCs similar to DuPont's actions with PFOA?

(Answer: The air force continued to use PFCs despite clear warnings that they posed a health and safety risk, in the same way DuPont continued to use PFOAs despite knowing they posed a serious hazard to the environment and human health. The air force put a priority on its desire to continue to use this dangerous chemical over the health and safety of the community, just as DuPont prioritized its desire to continue to use PFOAs so it could continue to advance its profit goals.)

INNOCENT UNTIL PROVEN GUILTY?

1. What do you think of the author's advocacy of the precautionary principle? Should it be adopted? Why or why not?

(Students in favor of adopting this principle might point to the many examples in this book of corporate action that clearly harmed the environment and human health. Others might say that such an approach puts a high burden on companies' ability to innovate and offer new products since they would have to wait years to show product safety, given the long period of time needed to identify risks like cancer. Encourage students to put themselves into the shoes of impacted people: Would they feel that requiring extra time to prove safety was a burden if it were their parent, sibling, friend, or themselves who got the cancer? Encourage them to think about the people of Paulsboro or Bucks County who are suffering because of their exposure to PFCs. Encourage them to think about Terry Greenwood, Jenny Lisak and her children, and all the other kids and families discussed

throughout the book and to reflect on whether the sacrifice of these people, their health, their lives, and their property values was worth it so a company like DuPont, Solvay, or Exxon and frackers could pursue more corporate profits.)

Using the Study Guide



Think About It

Assign the Think About It questions. Allow class time for students to discuss their answers. (Pacing: set aside about 20 minutes discussion per question, allowing the discussion to continue for additional time if students are fully engaged.)

- 1. The author points to the issue of regulatory capture as a problem because it results in agency actions and decisions that misrepresent the true impact of environmental harm and it weakens the enforcement of environmental regulations. What steps do you think could be taken to avoid the problem of regulatory capture?**

Students might mention imposing stricter rules or outright bans regarding service in both business and regulatory agencies to prevent regulatory capture. Other ideas could be to increase the obligation for decision makers to explain decisions that are made, to be able to point to scientific research to support decisions, or to prevent big donations to legislative election accounts. Encourage students to consider how elected officials in state or federal office might contribute to this idea that government is being manipulated by or impacted by regulatory capture.

- 2. Why is the precautionary principle a more rigorous standard to apply to environmental protection? Is a Green Amendment the only vehicle for securing that standard? Why or why not?**

The precautionary principle is a more rigorous standard because it requires companies to prove their products' safety first rather than deploying them and only later assessing any damage they might have caused. This standard could be implemented through legislation and does not require passage of a Green Amendment, but in the presence of a Green Amendment, some may argue that the precautionary principle is essential for protecting environmental rights regardless of specific legislation.

3. Is it justifiable to approve use of a chemical to secure economic gain for a corporation if it means that it will make people sick, or worse, lose their lives? Who is more responsible, the industry who created the chemical or the government officials who allowed it to be used?

Students might be encouraged to identify one chemical that is now known to have significant health or environmental ramifications. Students can investigate and discuss the impacts of the chemical/product on humans and the environment, the claimed benefits for the corporation(s) that manufactured and/or used it, the current status of regulation (Is it banned in the United States? In Europe? Is it well regulated?), and the status of public discourse around the chemical/product. Well-known chemicals of the past, such as PCBs and DDT, could be good topics. Or, students might further investigate chemicals that are now in great debate due to their environmental and/or health implications, such as pesticides that use neonicotinoids as an active ingredient, or herbicides that rely on glyphosate and are widely used in agriculture and in the common household product, Roundup. Students might consider products/chemicals that are banned in European countries and yet still used in the United States. Would students prefer the United States government to be more cautious when it comes to potentially dangerous chemicals? If a chemical is banned in Europe, should the U.S. government follow suit and ban the product in the United States as well? Ask students to explore the question of who is more responsible for the harm that results from the damages inflicted on the environment and human health: the company that made and used the product or the government officials that condoned its use?



Research Activities

Assign the Research Activities. You might wish to designate a day of instruction for students to carry out Research Activities and Take Action! activities or to report on and discuss their results.

1. What is the current status of firefighting foam in the military? Conduct research to find out the answer. Look to see if firefighting foam was used near the watershed where you reside or go to school. If so, have any steps been taken to notify the community of concerns and/or to remediate the situation?

Students might turn to the Department of Defense website to learn about military facilities in the area, contacting those installations to learn about the use of fire retardants. The state department of environment or natural resources might have information as well. In addition to investigating the Defense Department practices, students might look into what kinds of fire retardants are used in the construction industry, in fire extinguishers, and by firefighters. Is there a difference in the fire suppressant used in these items as compared to the army's fire retardant? Does the fire suppressant in these other items have its own potential environmental or health implications? Explore whether the findings might be of interest to companies buying or leasing new buildings, to institutional or individual users of fire extinguishers, and to members of fire companies. Encourage students to pass on their findings to these parties.

2. Research how many federal superfund sites are located in your state. Are any located in your community? Are there any brownfield sites identified as being in your community? What is the status of these sites? Are any of these sites proposed for reuse? If so, for what purpose? Based on the information you secure through your research, are you confident that the sites nearest where you live are being properly cleaned up? Is any proposed reuse appropriate for the site? How does the community feel about the status of the site and its proposed future? Consider creating a map identifying all of the sites you identify and sharing your discoveries with those in your community who might be impacted or interested.

To enhance the investigation into proposed development of Superfund or brownfield sites, encourage students to check news reports or contact environmental groups to determine whether there is any community conversation about, support for, or opposition to the proposals. The local government planning or development authority might have information about the status of any sites for proposed development. In addition, students might reference the EPA's Superfund Search Site (<https://www.epa.gov/superfund/search-superfund-sites-where-you-live>) to find what sites were/are in their area.



Take Action

Assign the Take Action! activities. Projects that require more time may need to be presented to the class in sessions devoted to another chapter.

1. Create a Fish Advisory Pamphlet or Fact Sheet to Educate Your Community.

The author makes the point that fish can hold toxic chemicals in their bodies that make the flesh unsafe to eat. Find a reliable resource that lists fish advisories in your area and that identifies fish that are generally safer to eat. Compile a list that you can share with your community to help guide their decisions on what fish caught from local waterways they can eat and/or purchase at the market. You could also visit the website of food stores or restaurants you frequent or of your school's meal supplier to see what steps they take to ensure the safety of the fish and shellfish they sell. You could also identify ways to prepare fish for eating that make it safer to consume by lowering exposure, or threat of exposure, to potential toxins.

Encourage students to share their findings. You could expand the activity by having students investigate how fishing practices are impacting populations of fish and other aquatic life, such as how commercial fishing is resulting in the harmful bycatch of dolphins or sea turtles; how commercial operations require the scraping of river and bay bottoms, damaging important habitat; or how overharvesting of fish or shellfish is contributing to the decline of certain species. Consider encouraging students to further expand the project by suggesting that they advocate for the adoption of new purchasing practices for markets or restaurants that purchase fish or shellfish products from sources that are unsafe due to contamination, or from sources that are having an adverse impact on healthy fish populations or habitats.

2. Write Your State Agency. The author makes the point that the state government of New Jersey was significantly more active in pursuing clean water policies under one governor than it was under a later governor. What is the current level of activity in your state's environmental protection agency? Visit the agency's website to try to determine how vigorously it is pursuing clean water policies. Review recent news articles or environmental action websites to learn how community members and/or environmental advocates view the current situation. Write the agency's head or the state governor to urge more protective environmental actions if needed or to support the actions currently underway.

As with other advocacy projects, students of a like mind could work together to coordinate their communication to try to demonstrate strength through numbers. If it is a campaign year, students could focus on the prospective environmental policies of gubernatorial, state legislative, or county office candidates. Students can be encouraged to compare the answers of different candidates to specific questions they are asked by the press, at debates, or in other public forums. Students could be encouraged to develop a list of questions they would like to see answered and submit them to newspapers, League of Conservation organizations, other outfits that host debates, or to political candidates for public response. Encourage students to attend campaign events and to ask their questions of the candidates on all sides of the political spectrum, and then to evaluate how their responses compare: Are they alike? Are they different? Do they change depending on the kinds of people who are in the audience?

3. Stage a mock debate. Have one side argue that the economic impacts of using a dangerous chemical like PFOA that are found in everyday products are justifiable. Have one side argue that given the health and environmental harms, the business justifications raised are not acceptable. Have one representative be a member of the public who has been exposed, and consider how that personal impact affects arguments against or for the continuing use of the chemical.

Randomly assign students to an even number of teams, and then assign each team one of the two positions outlined in the project. Give the teams ample time to prepare and coordinate their arguments. Stage the debate by pairing one team from each position; give each pair of teams the same amount of time to present their positions and respond to the other side's arguments. When all the teams have finished, hold a class discussion to identify the arguments that the majority considered most convincing.

CHAPTER 6

THE PAVING OF AMERICA

OBJECTIVE

After reading and analyzing the chapter, students will be able to:



Explain environmental and economic issues resulting from overdevelopment, assess potential implications of development plans in their communities, and explore alternatives to traditional development projects/approaches.

SUMMARY

In Chapter 6, the author begins by detailing the problems caused by patchwork land ownership in the American West, including reduced, isolated plots of habitat for wild species and increased risk of devastating wildfires. Development in the east, including the construction of new retail space rather than repurposing unused existing spaces, has resulted in storm-water management problems and increased flooding. Industrial contaminants have fouled the land and water near more than 1,300 Superfund sites, and those areas are associated with increased rates of cancer.

PROCEDURE

Instruct students to read the Study Guide Summary, Key Ideas, and Words to Know after reading Chapter 6 of *The Green Amendment*. Alternatively, you can assign these sections of the Study Guide as a primer activity for students to read before reading the chapter.

Reading and Discussion Questions

THE THEFT OF NATURE'S CROWN

1. Why was the forest management system employed by the Forest Service an ecological mistake?

(By preserving patchworks of old growth and conducting controlled burns of nearby areas, forest managers allowed dry wood to accumulate in the preserved areas, making them vulnerable to devastating uncontrolled wildfires. Many species require intact forest ecosystems to support their life cycles, and the patchwork approach impacted/impacts those natural needs, whether for food, habitat, or procreation. The patchwork approach opens up pathways for invasive species that can proliferate and have significant consequences for native species, both plant and animal. The patchwork strategy also opened up areas to new, significant development, introducing development-related impacts to the environment as well as bringing people into proximity with native wildlife, which has consequences for both.)

2. The author points out that South America and Africa are suffering the greatest share of wilderness loss. What historical, population, and economic factors likely contribute to that fact?

(Students might recognize that the long history of settlement by large populations in Europe, East and South Asia, and North America probably meant that their wilderness areas suffered large-scale wilderness loss in the past, limiting the extent of damage to those areas today. In addition, countries in Europe and North America generally have developed economies, which is not the case in South America and Africa, where governments see resource exploitation as a pathway to rapid economic development.)

3. The author remarks that “it’s crazy” that developers are cutting down wilderness and clearing land for new malls when much retail space lies abandoned. How might a developer explain that choice?

(Students might posit that the empty retail space is not necessarily able to serve the communities where new retail space is being developed. Students should be asked to defend such assertions given the well-developed transportation system in place throughout many communities. Students might suggest that it is easier to design a shopping center from scratch rather than having to work within a preexisting footprint.)

THE BURIED TOXINS AT BISHOP TUBE

1. According to a former Obama EPA official, one in six Americans lives within a mile of a dangerous Superfund site. How is that connected to the fact that New Jersey and California have the most such sites?

(They are among the most densely populated states, so each site in those states would have many people in its proximity, raising the statistical average for such sites nationally.)

2. What does the comment by Lois Gibbs (“It was so weird to go back and stand next to someone who was crying and saying the exact same thing I said thirty-five years ago” 182–183), who spread awareness of toxic contamination at the Love Canal site in New York in the 1970s, suggest about the difficulty of cleaning brownfields and/or the appropriateness of government advancing development on such sites?

(Students should recognize that Gibbs’s comment, that the current residents of Love Canal were suffering from the same problems she had seen thirty-five years earlier, suggests that the cleanup of sites can be difficult and should be associated with long-term monitoring to ensure cleanup success before they are approved for new development. Students might reflect upon the appropriateness of ever allowing housing development on highly contaminated sites and whether regulators are inappropriately prioritizing reuse over public safety.)

3. Why was the Delaware Riverkeeper Network able to provide help to the residents of East Whiteland in their struggle against development of the Bishop Tube site?

(Delaware Riverkeeper Network staff had experience in organizing communities to challenge proposals being advanced by government, developers, and industrial operators, and was able to bring that experience to a community that was concerned about the site but unsure how to effectively challenge what was happening. In addition, the organization had scientific and legal resources that helped document why the site and the proposed development was so concerning and how state officials were failing to fulfill their obligations under the law. The organization informed the residents of their constitutional right to a clean environment, which they had not been aware of, how the existence of the provision should impact the actions of government officials, and how the community could more strongly advocate their position.)

REINING IN REAL ESTATE

1. What conclusion can be drawn from the discussion of the impact of development in Radnor or Eastwick, Pennsylvania?

(Possible responses: Development decisions affecting waterways need to account for downstream areas; people in well-to-do communities should feel a heightened responsibility for the impact of their decisions on impacted communities that are less well-off and/or are already suffering disproportionately from the decisions of upstream and surrounding communities.)

2. van Rossum asserts that, if developers and government planners had to take into account constitutional rights rather than just environmental laws and regulations, “the courts would be asking a whole different set of questions.” What do you think some of those questions might be?

(Possible responses: Did government officials consider scientific information and data about the impacts of the proposal? How does the development impact the nearby community’s air and water? How does the development impact the water of other communities in the same watershed? What is the long-term danger posed by any chemicals used at the site in the past, and what right do people in the community have to protection against those dangers? How thorough have cleanup efforts been? What monitoring has been done to ensure cleanup activities at a contaminated site have been fully successful and will not result in future harms post-development?)

3. When arguing in favor of development and against using development approaches that provide greater environmental protections, developers and planners point to the potential costs associated with environmentally protective strategies. Developers also argue that more development will result in property sales that will bring increased taxes for local and/or state coffers. When arguing in favor of development over a brownfields site, developers focus on the value of reusing property that has already been developed and/or removing a community eyesore that is often associated with such sites. What potential negative costs do they generally not address?

(Possible responses: In terms of development in natural areas not necessarily subject to previous contamination, students might point out the increased flooding that a new development project might cause for neighboring or downstream communities,

including the costs of emergency services, the cost to homeowners and government of both cleanup and restoration, lost work days for homeowners, and increased erosion that could undermine bridges, roadways, or housing downstream. In terms of construction on contaminated sites, students might identify the potential of construction to reveal or release contamination that was not properly addressed. This could result in additional environmental or public safety impacts that need a response, could impact property values at and around the site, could increase health care costs, or could cause lost time at work if people become ill because of contact with the contamination.)

Using the Study Guide



Think About It

Assign the Think About It questions. Allow class time for students to discuss their answers. (Pacing: set aside about 20 minutes discussion per question, allowing the discussion to continue for additional time if students are fully engaged.)

1. Knowing that floodplains are areas of land known to flood, that they help absorb floodwaters and pollution that can protect downstream communities, and are important to a wide variety of plants and animals, do you think it is wise to allow housing and commercial development there? Does your community have development in floodplain areas? Is it a lot? Is it a little? Does the local press include discussion on this issue?

Students can check on the presence of a floodplain in their area by looking in the FEMA Flood Map Service Center (<https://msc.fema.gov/portal/search>). They can use a mapping product to look for developments in that floodplain and check with their local government on planned developments in those areas. Looking at local news sources' websites or archives will reveal coverage of flooding issues. Students' response will depend on their findings.

2. According to the author, what arguments do local authorities give to promote development in forests, prairies, and/or other important natural environments

despite the cost to environmental protection? What gains do they hope to make? Do the economic benefits justify the environmental and community harms such as increased flooding, drought, wildfires, and pollution? What other kinds of harmful impacts to communities can happen as the result of development in these important natural areas? What alternative approaches can you think of to try to achieve those gains at less environmental cost?

Possible response: Local authorities say that development promotes job growth and generates tax revenue. They could gain similar benefits by at least requiring developers to preserve more open space in their developments, particularly near waterways, and in redeveloping abandoned areas. The costs of emergency response and flood damages can be totally or largely avoided if developers were to use best management practices for addressing stormwater (runoff from rainfall). The market value and marketability of homes is increased when they are in proximity to natural open space areas and/or have mature trees on or around the property—this is a benefit to the developer and generates increased tax revenues for the local community. In addition, natural areas make communities more attractive to buyers and/or businesses looking to relocate. A more desirable neighborhood for living and working also increases home values, generates greater tax revenues, and increases quality of life for those living there. The claimed downsides of increased costs by developers is often overtaken by the increased benefits for them; more important for the community is that community quality of life, aesthetics, safety (e.g. from flooding), and property values are enhanced.

3. The author points out the difficulty faced by the residents of East Whiteland, Pennsylvania, because of the high levels of pollution at the Bishop Tube brownfields site and the failure of their state agency to prioritize cleanup of the site, such as potential health impacts to the community and an increasing plume of pollution. Is it fair for the residents to expect a faster and more robust response from their government? Was it fair for the laws of the state to allow the pollution that happened in the first place? How should Pennsylvania's newly restored Green Amendment, which protects the right to clean water and healthy environments, impact what is happening there?

Possible response: The Green Amendment should impact the way government views prospective development at the site, requiring them to consider science, data, and impacts (positive and negative) to the community. The Green Amendment also helps residents provide a more persuasive argument when urging elected representative and agency officials to consider their concerns. In considering this situation, students should be encouraged to share their perspectives on whether it felt fair for the community to be impacted in this way and for the failure of the government to take fast and strong action to deal with contamination at the site. Students should be encouraged to place themselves in the shoes of the local community, including the Stauffers, whose daughter has struggled with significant health issues, when evaluating their perspectives.



Research Activities

Assign the Research Activities. You might wish to designate a day of instruction for students to carry out Research Activities and Take Action! activities or to report on and discuss their results.

1. The author explains that grizzly bears need a 500-mile roaming range to feed. Find out the ranges needed by these animals of the American West: bison, elk, bighorn sheep, prairie dog. Also find out whether they are endangered or threatened and what role habitat loss plays in that status. What animals in your state are impacted by habitat loss due to development? What is the status of their population? Is it legally endangered? What steps, if any, are being taken to protect these animals? What do you think about those measures (or lack thereof)?

The IUCN Red List of Threatened Species website has definitive information on the populations and threat status of animals around the world, though other sites may be needed to find the local range of an individual or population of animals. As students conduct their research, remind them that some of the listed animals travel in herds or groups, and group size and health affects their survival prospects, as does availability of and access to the variety of habitats that may be needed to support various aspects of their annual or life cycles.

2. Research how communities in your state are being impacted by flooding. What is the cause of the flooding damage they are experiencing? Is any effort being taken to address the cause? Besides flood damage to homes, what other impacts is the flooding causing? Include environmental, health, safety, and economic impacts in your analysis.

As they conduct research in reliable sources, students should consider the added environmental dangers posed by the density of petrochemical facilities near Houston and the consequences of release of chemicals from those facilities into floodwaters. Suggest that students look for maps that show the area before and after development to highlight the dramatic changes to the area.

3. As the author points out, strip malls and other retail areas are being abandoned across the country. Find out what creative uses abandoned retail spaces are being put to. How can they be converted into productive spaces? Can any of these approaches be tried in your community?

As students look to identify creative uses of strip malls or other abandoned retail spaces, have them analyze what factors contributed to the success, if any, of these reused spaces. They should take those factors into account when making recommendations for the reuse of abandoned space in their own community.

4. Research what brownfield and/or Superfund sites are found in your community. What substances are found at each site? What dangers are associated with those substances? Make a collection of fact sheets identifying the sites and their dangers.

Students can use the EPA Superfund site (<https://www.epa.gov/superfund/search-superfund-sites-where-you-live>) to find such sites in their area. Student fact sheets should also address the status of the site, which the EPA website indicates. Students might want to focus on National Priorities List sites that are still active.



Take Action

Assign the Take Action! activities. Projects that require more time may need to be presented to the class in sessions devoted to another chapter.

- 1. Learn Whether Green Lawns are Truly “Green,” and Spread the Word.** Many people don’t realize the impact their lawns have on stormwater runoff, flooding, and pollution. Research what impact lawns have on water pollution, flooding, erosion, and other stormwater runoff impacts. Write an article or letter to the editor and submit it to the local newspaper or your school newspaper educating people about the harmful impacts of lawns and suggesting solutions people can implement in their own backyards, on school grounds, at municipal properties, or in local parks to reduce/avoid/address these harms. Discuss the benefits of using these different approaches for the environment, quality of life, and economy.

In evaluating the problems posed by traditional lawns, students should be sure to consider the fertilizers and weed killers added to lawns, which increase the threats posed by runoff. They could contact local nurseries or environmental organizations that emphasize environmentally friendly plantings or lawn care strategies. The Delaware Riverkeeper Network’s River Friendly Gardens program is a good place to start to learn more about the impacts of traditional lawns and strategies for reducing those impacts (<http://www.delawariverkeeper.org/river-friendly-gardens>).

- 2. Plant a River-Friendly Garden.** One way to preserve the water supply is for communities, including residents, living in a watershed to take their own steps to protect the water supply. River-friendly lawn care and gardening can help. Visit the website of the Delaware Riverkeeper Network (www.delawariverkeeper.org) and find the page about river-friendly gardens. Find out what constitutes a river-friendly garden in the Delaware River Valley. Check with your state’s department of the environment or natural resources to see which principles apply to your area as well. Then plan—and plant—a river-friendly garden.

For this project, students could design the garden, preparing a schematic or drawings showing the location of plants and providing a plant list. The plant list should also indicate why the plantings are river friendly. Students might consider river-friendly methods and products for ongoing care and maintenance of the garden as well.

3. Speak Out on Local Development. Communities across the United States have development plans that set rules for the growth of communities and the types of development allowed in different areas. Find out what development plans exist in your community. Are there any developments under consideration by local authorities that impact natural areas? What do you think about that impact? How will the development impact neighboring and downstream communities? What are local residents saying about these impacts? Develop your own opinions on the proposal and communicate your opinion to decision makers considering the project. If you feel strongly about the plan, join a group that is working to support or oppose it.

Students can check with local government authorities to learn about proposed new developments. Filings, reports, and board hearings should all be matters of public record, allowing students to learn about any issues raised in relation to a development. If students are having trouble figuring out how to access information, a quick phone call to municipal offices can help identify the proper way to find, or if necessary request, information and also give experience in reaching out to local government and exercising their rights to information as a member of the community. Students might also consider interviewing people who live nearby the proposed development to solicit their views.

CHAPTER 7

CAN WE AFFORD A GREEN AMENDMENT?

OBJECTIVE

After reading and analyzing the chapter, students will be able to:



Describe the environmental and economic benefits of New York City's Watershed Protection Project, understand that environmental protection provides multiple tiers of benefit, and understand what those benefits consist of.

SUMMARY

The author opens Chapter 7 with an explanation of the successful efforts of New York City, through its Watershed Protection Project, to preserve the cleanliness of the upper Delaware River, which provides much of the city's water supply and thereby saves billions of dollars in water filtration systems. The chapter then details the various ways that the Delaware River, once it was cleaned and restored to health, provides economic benefits through ecotourism, fisheries, and providing resources needed for the development of pharmaceuticals, among others. The author next discusses whether a constitutional right for a clean environment is somehow undemocratic because it relies on court decisions, rather than the actions of elected officials, to enforce it. The author ends with an exhortation to work toward adoption of Green Amendments.

PROCEDURE

Instruct students to read the Study Guide Summary, Key Ideas, and Words to Know after reading Chapter 7 of *The Green Amendment*. Alternatively, you can assign these sections of the Study Guide as a primer activity for students to read before reading the chapter.

Reading and Discussion Questions

THE COSTS—AND BENEFITS—OF ENVIRONMENTAL CONSTITUTIONALISM

1. How much did the Watershed Protection Project save New York City over ten years of operation?

(It saved from \$8.6 billion to \$9.3 billion [\$10 billion upfront plus \$300 million to \$1 billion in ten years operating costs minus \$1.7 billion invested in the Watershed Project].)

2. In stipulating the economic benefits of the Clean Air Act, the author states, “Over these twenty years, the Clean Air Act saved 184,000 people from pollution-related death. These cumulative health benefits represented between \$5 to \$50 trillion in economic value.” What factors do you think could be used to calculate that estimated benefit?

(Possible responses: earnings by those individuals, their multiplier effect brought about by any savings those earnings generated, the gains of companies and workers whose goods and services they purchased, and the gains from taxes paid; some students might say that without specifying the sources of those benefits, the estimate loses some power to persuade.)

3. The author notes that “politicians and business leaders who complain about the costs of regulatory red tape rarely acknowledge natural capital costs like floods, illness, lost recreation, and drinking-water purification, which are externalized to their constituencies.” How does the issue of causation relate to that failure to acknowledge costs?

(Possible response: While pollution and the cleanup of pollution can be directly linked to practices that would be subject to regulation, the other costs may not be as easy to directly connect by causation. Increased flooding or illness can be caused by multiple

factors and not just loss of a particular forested area, a new housing development, or increased pollution discharges from a new industrial operation. The lack of a clear link—or the unwillingness to acknowledge the link because links are complex—makes it easier to ignore those costs. Students should be encouraged to dig a bit deeper than these kinds of typical responses from government or industry.

THE VALUE OF A RIVER

1. Are there other ways to measure the economic value of a river than the recreational benefits? If so, what are they?

(Possible responses: its use as a water supply, its use as an ingredient in making foods like pizza or beer, its value as a resource for commercial activity such as commercial fishing [i.e. as a food source for fish or shellfish], or the horseshoe crab blood collection cited in the chapter.)

2. Can some economic value be placed on cultural or historic heritage of a river? Why or why not?

(Possible responses: The heritage of a river or resource has economic value insofar as that value encourages visitation, and the economic impact of those visits can be measured and is significant.)

IS ENVIRONMENTAL CONSTITUTIONALISM UNDEMOCRATIC?

1. How do you respond to the assertion that intervention of the courts in defining the constitutional right to a healthy environment is undemocratic?

(Possible responses: It may not be democratic, but reliance on judicial review and constitutionalism reflects other principles of American government such as the rule of law and the use of the adversarial approach to judicial decisions that is presumed to lead to a just outcome. Yes, it is democratic; people had to vote to have the amendment added to the constitution, the fact that the courts get involved does not make it any less democratic than when talking about legislation. Yes, it is not democratic, but the legislative process is not necessarily democratic, either. In those states where judges are elected, it is as democratic as other arms of government in that justices can be voted into and out of office based on the actions they take and the decisions they make while in office.)

2. The author cites a study by Princeton and Northwestern University researchers that found that most laws passed between 1981 and 2002 did not reflect voter preferences on the policy questions involved. Do you agree that the influence of special interest groups accounts for that disparity, as she suggests? Why or why not?

(Possible responses: Yes, because legislators who pass the laws rely on the funds supplied by corporate donors to finance their reelection campaigns; no, because not enough evidence is provided to substantiate the claim.)

ANSWERING THE CRITICS

1. The author states, “We all deserve to drink pristine ‘champagne’ tap water and enjoy the many economic amenities that natural resources like the Delaware River provide.” What other factors do you think should be taken into account in evaluating the costs and benefits of environmental action?

(Possible responses: It is legitimate to look at the economic costs and benefits of development as a way of promoting job growth—as long as the economic benefits of protecting the environment are part of the analysis. Still, it may be that the community is willing to accept somewhat less than “champagne” quality water for a greater economic gain than that level of water quality can provide. Significant health impacts can stem from drinking water contaminated by pollutants that may or may not dramatically affect the taste of the water. The health impacts of water quality should be evaluated, known, and considered in any decision making. Adverse health consequences result in costs to impacted individuals, can result in costs to the community particularly if people lack health insurance, can prevent impacted people from being able to go to work sometimes or often, and can impact the quality of community life. Some kinds of contamination can require industry to clean up the water before they can use it in energy creation or product manufacturing.)

2. Have you become convinced by the author’s argument about the benefits of a Green Amendment to this point in the book? Why or why not?

(Students’ responses will depend on how they accept the author’s arguments but should be based on sound reasoning.)



Think About It

Assign the Think About It questions. Allow class time for students to discuss their answers. (Pacing: set aside about 20 minutes discussion per question, allowing the discussion to continue for additional time if students are fully engaged.)

1. What are the economic costs and benefits of environmental regulation, according to the author? What do you think are the most important benefits of those that she names? Do you agree that the benefits outweigh the costs? Why?

Possible responses: Economic costs include costs of compliance with regulations in expenditures on needed technology, required restoration, and labor to execute paperwork. Benefits include savings in money not spent on health care as a result of reduced presence of harmful chemicals; lower gasoline usage due to mileage standards on cars and trucks; gain in jobs to produce new equipment needed to comply with standards; lives prolonged or saved; increased property market values; enhanced quality of life that comes from the ability to enjoy nature; improved education for children; avoided costs and harms of catastrophic events like drought, floods, and wildfires; and preservation of finite resources. Students might answer that the most important benefit is the saved lives since the protection of human life is among the highest values of society.

2. The author states that “in general, the courts have a strong record of upholding democratic rights,” adding, “Though they sometimes get it wrong, eventually the courts get it right.” Look up the 1954 U.S. Supreme Court case titled *Brown v. Board of Education of Topeka*. Do you see parallels between this case and the 2013 Pennsylvania Supreme Court decision in the case of *Robinson Twp, Delaware Riverkeeper Network v. Commonwealth*? How did the two cases address previous inequities regarding civil rights and environmental rights, and what affect did they have on their respective social justice and environmental movements?

Possible responses: Students might suggest that courts fluctuate significantly in how well they protect individual rights depending on the political ideology of justices. The Supreme

Court of the 2010s has become significantly more conservative and pro-business than earlier versions of the court, for instance. Others might point to the Roberts court decision holding gay marriage as protected by the Constitution as an example of courts upholding justice and equality for all.

3. Do you think it is possible to advance economic development and protect the environment at the same time? Why or why not?

Possible responses: Yes, when reviewing energy development, the use of solar, wind, and geothermal both supply needed energy and have a much-reduced footprint on the environment, including air, water, and land resources. Additionally, clean energy technologies are demonstrated to create more jobs for each dollar invested as compared to coal or natural gas. Case studies in housing development, product manufacturing, and transportation might also be used. No, every activity has environmental impacts, and it is not fair to require industry to modify their production or development to protect natural resources; the economic well-being of existing industries like coal, oil, or natural gas is easier to support than research and investment into new, cleaner industries.



Research Activities

Assign the Research Activities. You might wish to designate a day of instruction for students to carry out Research Activities and Take Action! activities or to report on and discuss their results.

1. Find out where the water used in your community comes from. In addition to determining the source of the water supply, carry out research to see what steps the relevant water authority takes to treat the water—or to undertake programs like the New York City Watershed Protection Program to preserve the water supply and reduce the amount of treatment or filtering required.

Students should be able to identify the water authority from the local government website and carry out their research from there. Water authorities generally must report regularly on water quality. Encourage them to extend the project slightly by looking for news articles or television news stories indicating any issues with the community's water supply in the past. If they find such stories, have them pursue the outcome and report on the steps the water authority took to address any issues that arose.

2. What kind of ecotourism activities occur in your state? How much do they contribute to the state's economy? How many jobs and businesses do these activities support?

The state department of environmental resources or the state agency that oversees parks should have the needed information for this project. In addition, students can research private companies that provide outdoor activities or nonprofit groups involved in nature, the outdoors, or the environment. Encourage students to pool their findings into an online resource compendium that details the location and type of activities available for ecotourism in the state.

3. What industry takes place in your state that has serious environmental consequences? How does it impact the environment, health, local economies, and community quality of life? Are those impacts worth it? Is there a way to advance the goals of the industry and avoid the harmful consequences at the same time?

Students should prepare a brief report to present their findings. Suggest that they focus initially on major industries in their own community or county; they may find enough information on these subjects to form the basis of an analysis. They could expand their search somewhat into nearby communities—particularly those sharing the same watershed. As an alternative, you could divide the class into groups and assign each group an area of the state, either dividing it regionally or by counties.



Take Action

Assign the Take Action! activities. Projects that require more time may need to be presented to the class in sessions devoted to another chapter.

1. Write Your Legislators. Do you favor enacting a Green Amendment? If so, contact the people who represent your community in the state legislature and in the U.S. Congress. Supply arguments from this book or your own research and thinking to show the economic, health, quality of life, and other benefits of enacting such an amendment.

Encourage students to go beyond writing only once to maintain contact with the legislator they identify. They might also look for legislators in other districts who already support the adoption of a Green Amendment and communicate their support or lack of support for that effort. If time allows, consider inviting the state senator or representative for the local school district to discuss the issue with the class.

2. Take a Poll. The author cites a 2016 Pew Research Center poll that found that “nearly 75 percent of Americans . . . said that the U.S. ‘should do whatever it takes to protect the environment.’” Conduct a poll focused on environmental protection (perhaps about passage of a Green Amendment in your state, or focused on opinions about a local environmental issue) in your school or neighborhood and compare your findings with those of other polls about the environment. If the poll indicates there is not support for environmental protection, why do you think that is, and what can you do to help your community reflect differently on the subject? If the poll indicates there is support for the environment, how can you use the findings of this poll to influence decision makers in your school or community to implement changes that enhance environmental protection? Prepare a project to implement your findings and ideas.

As they think about this question, suggest that students work in groups to conduct a survey on environmental attitudes of the local population. They might even describe the purpose and language of a Green Amendment and ask respondents their view of such constitutional action. If the response is favorable, they could communicate that information to the legislator they contact in the prior activity.

3. Publicize Parkland. Find out what parks there are in and around your community. Find out what facilities each park has and what activities are allowed. Create a brochure, spreadsheet, or online resource that publicizes the parks and what they offer to visitors. Get administrators’ permission to post it at your school’s website, or permission from your town council to post on your community’s website, so that students and community members will be more aware of the recreational opportunities open to them.

Encourage students to visit local parks to take photos or video and make them part of the posting.

CHAPTER 8

FIGHTING FOR A GREEN AMENDMENT

OBJECTIVE

After reading and analyzing the chapter, students will be able to:



Analyze successful campaigns taken by individuals or community groups to identify useful strategies and assess the state of the environment in their state, as well as the need for a Green Amendment.

SUMMARY

In Chapter 8, the author begins by recounting the story of the contamination of the Hoosick Falls water supply by two companies that used PFOAs. The efforts of concerned people resulted in a significant change in New York state law regarding when tort suits could be filed against companies for environmental harm. The author gives specific information on the extent of legal protection for the environment in the different states and the kinds of issues that should be addressed in the language of a Green Amendment. She also provides guidance on how to get an environmental group started. The author concludes by reviewing some of the achievements of individuals who took on environmental action when they were compelled to do so by injury to loved ones or threats to their communities, which can serve as an inspiration to others.

PROCEDURE

Instruct students to read the Study Guide Summary, Key Ideas, and Words to Know after reading Chapter 8 of *The Green Amendment*. Alternatively, you can assign these sections of the Study Guide as a primer activity for students to read before reading the chapter.

Reading and Discussion Questions

TOWARD A PROVISION

1. Why do property values fall when environmental issues are found in a community? Do you think the loss in property value should be part of any settlement paid out by a party found responsible party for the damage? Why or why not?

(Possible responses: Property values fall because the environmental issue makes the community less attractive to live in than it was before the damage became known. Yes, reimbursement for the loss in value should be part of any settlement of a suit for environmental damage, as the homeowner did nothing to cause the loss of value.)

2. Why do you think the efforts of the Hoosick Falls families were particularly successful when children joined their voices to the cause?

(Possible response: Public officials do not wish to become known as the officials who let children get sick or suffer; being associated with allowing children to be harmed will hurt them electorally.)

3. What wording do you think a Green Amendment should have?

(Have students discuss the language of a proposed Green Amendment as a class, following the guidelines the author provides on pages 232–233. More guidance and ideas can be found at forthe generations.org in the Green Amendment Checklist.)

4. What does the author mean in discussing rights as “self-executing”?

(This is a legal term that means individuals can claim protection under the constitution without a legislative body having passed a law regarding enforcement of the right, i.e. a law that allows them to bring a legal action to enforce the right.)

GENERATING THE GROUNDSWELL

1. The author suggests creating a meme that can be used to galvanize support for an environmental group. What ideas for an effective meme can you suggest?

(Possible responses: Positive images might include a time-lapse image of a flower blooming, a baby smiling, or sun shining on the clear blue water of a lake; negative images might include tap water that is on fire, sludge flowing out of a pipe, or signs indicating poisons found on a toxic site.)

2. What questions would you want to ask the leader of an environmental group who came to talk at a local meeting held to organize a new activist group?

(Possible responses: How do you recruit members, how do you publicize events, what kinds of events draw attention, where can you get effective legal help, and how do you locate public officials who are sympathetic to the cause?)

3. Do you agree with Oxford University's Eric Beinhocker that local action is an effective approach? Why or why not?

(Possible responses: Yes, because people are more likely to be fully committed to addressing problems where they live and also because public officials are more likely to be responsive to the concerns of friends and neighbors. No, because this approach risks ignoring larger, more catastrophic concerns like climate change.)

THE POWER OF CONSTITUTIONAL ENVIRONMENTALISM

1. Do you think having a state that embraces the public trust doctrine or an environmental victory based on the public trust doctrine would displace the need for a Green Amendment? Why or why not?

(Possible response: No, because the public trust doctrine is focused more on water resources and access, and a Green Amendment addresses all environmental issues, including air, water, climate, forest loss, etc. Even if the Our Childrens Trust case wins, a case focused on climate change and other issues of pollution and environmental degradation would still need to be addressed.)

2. Review the statement by Anneke van Rossum on page 246. Use your own words to express how you feel about the problem she outlines.

(Students should develop their own personal expression. Suggest that statements that are concise are likely to be most effective. You could also suggest that they use strong statements as the motto for an environmental activist group they form.)

Using the Study Guide



Think About It

Assign the Think About It questions. Allow class time for students to discuss their answers. (Pacing: set aside about 20 minutes discussion per question, allowing the discussion to continue for additional time if students are fully engaged.)

- 1. Why is grassroots organizing important when addressing environmental issues? What is the benefit of attacking environmental problems as a group of people rather than individually?**

Possible response: Grassroots and community organizing allows people with varying levels of experience to get involved together and learn from one another. Some people will bring experience in how to do effective advocacy; others will understand the process for securing documents through right-to-know requests; others will have knowledge on how to do successful social media campaigns; others will have artistic talents that might be beneficial in creating flyers; and some might have scientific or legal knowledge that will be beneficial. Working together as a community allows many resources to be brought to the effort at little cost. Advocacy can be difficult. Often opponents will try to belittle people who stand up for environmental issues at public meetings. Having a group of people who work together will help buffer/blunt the emotional effect of those attacks and might also prevent them, as people may be unlikely to attack a pro-environment position if there are many advocating for it. Large numbers also have a greater chance of swaying politicians who might become concerned about reelection. Larger turnouts will also make advocacy efforts more attractive to media and encourage them to report on the story, bringing greater visibility to the effort.

2. Note the distinction the author makes in the discussion of environmental protection as a policy versus a right. Why is one approach stronger than the other?

Possible response: Policies offer guidance that can be deemphasized or even ignored if the executive branch or regulators do not agree with the guidance or the priorities identified. Policies are guidance for how officials or agencies should act, but they are not enforceable in a court action, as they are not actual laws. Government officials are legally required to follow the requirements of the state constitution, and therefore constitutional requirements are less likely to be ignored by government officials. If a well written and properly placed Green Amendment is in fact ignored by government, then the amendment provides the basis for a legal challenge.

3. What responsibility do you think you have to help ensure a protected, healthy environment? What steps do you think you can take toward that goal?

Students are likely to see their personal responsibility for ensuring a healthy environment in different ways. Suggestions for steps they can take toward that goal may include conserving water and other resources; using reusable water bottles and coffee cups to avoid waste caused by single-use bottles and cups; reducing their carbon footprint by walking, biking, and using public transportation as much as possible; becoming active with an environmental group; and working toward securing a Green Amendment for their state.

4. What responsibility do you think our communities and government have for protecting environmental rights for future generations? What is the basis for your opinion?

Possible response: Since humans depend on the environment for survival, each generation has a fundamental responsibility to pass a healthy environment on to following generations. This responsibility requires them to make sure that the air, water, and soil are clean and that resources are not wasted or used recklessly.



Research Activities

Assign the Research Activities. You might wish to designate a day of instruction for students to carry out Research Activities and Take Action! activities or to report on and discuss their results.

- 1. Investigate your state’s Bill of Rights. Are there any rights there that surprise you? Are there any rights included that you think do not belong there? Are there any rights you think help the case for including the rights to clean water, air, and**

The state legislature will have a copy of the state constitution, or it can be found with a simple Google search (search terms: state name, “constitution,” “bill of rights,” “declaration of rights”). These documents are typically divided into clearly labeled sections, making it possible to identify the rights protected in the state. Students might consider looking at the constitutions of neighboring states as a comparison point; the comparison might help them in their review.

- 2. Visit the forthegenerations.org website. Learn more about the current state of Green Amendment activity and environmental activism across the country. Figure out what you can do to advance the cause—and then do it!**

Encourage students to report to the class on their findings and their activities. Suggest that they recruit other students to join them in whatever activities they undertake.

- 3. Investigate the status of environmental protection in your state. Is government working to pass stronger protections or to roll back and remove existing protections? What is the reaction in your community or state to these efforts? How do you think talking about environmental rights might be received in the context of this ongoing conversation?**

News articles can provide some information on the state of the environment. Students could also gather information from the environmental groups they researched in the previous activity—representatives of those groups can comment on the matter. Encourage students to issue an environmental report card. They might break that report card down into different categories; some possibilities are air cleanliness, water cleanliness, soil health, climate issues, the legal environment, state government activity, and influence of activist groups.



Take Action

Assign the Take Action! activities. Projects that require more time may need to be presented to the class in sessions devoted to another chapter.

- 1. Make a Video.** Mikayla Baker made a video asserting her belief in the need for action to ensure that children grow up in a healthy environment. Make a video of your own. Join with classmates in posting the videos. Contact a school newspaper or a local news station to publicize them.

Students can see Mikayla's video here: <https://www.youtube.com/watch?v=UkKalorvO0A>. They might want to watch it and have a class discussion on why Mikayla's video is effective (it has strong visuals, a simple message, and is concise and to the point) for guidance before developing their own.

- 2. Write a Letter.** Have every member of the class write a 200- to 500-word letter (this is the usual length allowed by newspapers for letters to the editor) making the case for or against a Green Amendment in your state. How many letters were written in support of the passage of a Green Amendment? How many letters were written against the passage of a Green Amendment? What were the strongest arguments made, and why did they most resonate with people? Consider crafting a cover letter and submitting the letters to the local newspaper. You might also encourage them to consider writing a news article on the topic. Consider sending the letters to your state legislators to spark their interest in the subject. Ask for a meeting with the class to explore the idea further with them.

Students should be encouraged to use the information they have learned about the costs and benefits of environmental protection to support their position that a Green Amendment is or is not a good idea for the state. Given the complexities of crafting an effective Green Amendment, students supporting the idea in letters to legislators should be sure to direct the legislators to helpful resources such as www.forthegenerations.org and the checklist for creating an effective Green Amendment; or include a copy of Pennsylvania's Green Amendment (perhaps quoting it in their letter text) with their letter. Students could conduct an Internet search for sample petitions to help develop a strong message in petition form. You could assign this project to groups, asking each group to develop an initiative petition

and then have the class review them all and choose the one that they prefer. As a teacher, you should consider contacting Maya van Rossum to see about support for crafting Green Amendment language that would be most effective for your state, or to request that she come speak at your school—a combination of a smaller conversation with your class complemented by a school-wide assembly or evening program for parents will be welcomed, particularly to ensure that enthusiastic students get off on the right foot with proposed constitutional language.

3. Stage a Petition Drive. Research the process for passing a constitutional amendment in your state. Is it done by legislative action? Constitutional convention? Ballot initiative? As the author suggests, stage a petition drive to promote enactment of a Green Amendment in your state. Be sure to use your understanding of the amendment process in your state to frame how you will focus your request. To whom will you address it? What will be the request? How will you go about securing community sign-ons?

Ask students who undertake this project to report regularly on their activities. They could begin with an assessment of the status of Green Amendment activity in their state followed by a proposed action plan. Subsequent reports should be tied to that action plan.

4. Refute Climate Change Skeptics. Some climate change skeptics argue that global climate change is not happening or that human activity is not responsible for changes that are taking place. Find out the most common arguments that these skeptics use. Then research to gain the scientific facts that can be used to refute those arguments. Prepare a point-by-point rebuttal, using well-established scientific findings to support your points. Think about the impacts of climate change for future generations, and consider how adding this perspective can strengthen your position. Publish your results on a school website or another forum—and politely use your counterarguments whenever you are involved in a discussion of climate change with a skeptic.

Remind students to make their counterarguments address the substance of skeptics' claims and to avoid ad hominem attacks. Sticking to the issues is more likely to persuade others.

5. Join A Group. The author outlines the steps to forming a group focused on environmental activism. Many such groups exist in communities across the country. Do some research to find out which ones exist in your area. Visit their websites to find out what issue or issues the groups focus on and what actions they are taking. Join a group that interests you.

Consider having an environmental fair, calling on students to contact the groups they identify and to invite representatives to present profiles of their group to the class. Encourage students to develop a set of questions to ask group representatives.

