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First-Year and Common Reading Guide

Under a White Sky

The Nature of the Future

by Elizabeth Kolbert

Guide written by Rachael Zafer

Crown

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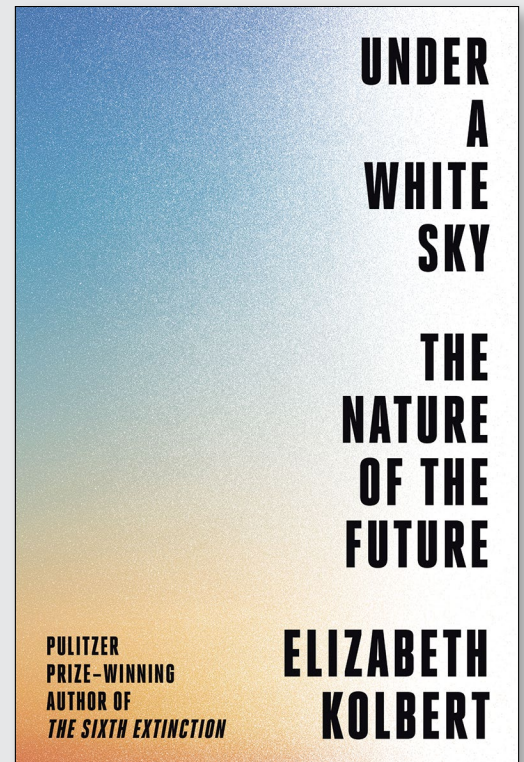
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ABOUT THE BOOK

That man should have dominion “over all the earth, and over every creeping thing that creepeth upon the earth” is a prophecy that has hardened into fact. So pervasive are human impacts on the planet that it’s said we live in a new geological epoch: the Anthropocene.

In *Under a White Sky*, Elizabeth Kolbert takes a hard look at the new world we are creating. Along the way, she meets biologists who are trying to preserve the world’s rarest fish, which lives in a single tiny pool in the middle of the Mojave; engineers who are turning carbon emissions to stone in Iceland; Australian researchers who are trying to develop a “super coral” that can survive on a hotter globe; and physicists who are contemplating shooting tiny diamonds into the stratosphere to cool the earth.

One way to look at human civilization, says Kolbert, is as a 10,000-year exercise in defying nature. In *The Sixth Extinction*, she explored the ways in which our capacity for destruction has reshaped the natural world. Now she examines how the very sorts of interventions that have imperiled our planet are increasingly seen as the only hope for its salvation. By turns inspiring, terrifying, and darkly comic, *Under a White Sky* is an utterly original examination of the challenges we face.



ABOUT THE AUTHOR

Elizabeth Kolbert is the author of *Field Notes from a Catastrophe: Man, Nature, and Climate Change* and *The Sixth Extinction*, for which she won the Pulitzer Prize. For her work at *The New Yorker*, where she's a staff writer, she has received two National Magazine Awards and the Blake-Dodd Prize from the American Academy of Arts and Letters. She lives in Williamstown, Massachusetts, with her husband and children.

DISCUSSION QUESTIONS

1. What is the Anthropocene and when did it begin? What are some of the environmental, biological, and technological markers of the Anthropocene?
2. Why was the flow of the Chicago River reversed? What were some of the ecological and financial consequences of changing the natural flow of this large body of water?
3. Why were Asian carp brought to the United States? Why are they a problem? What new challenges have been introduced while managing the population of Asian carp?
4. How have levees been used to control the movement of the Mississippi River? How has this impacted New Orleans and other coastal regions in Louisiana? What challenges will this region likely face?
5. What is significant about the pupfish that live in Devil's Hole? What makes the pupfish a conservation-reliant species? What efforts are being made to protect the pupfish?
6. How are coral reefs impacted by global warming? Who was Ruth Gates and why was she attempting to breed "super coral"? What are some of the other solutions being introduced to protect coral from the consequences of climate change?
7. What is CRISPR and how can it be used to modify DNA? What are some of the possible positive applications of this form of genetic engineering? What are some of the known consequences of this intervention?
8. Why were cane toads introduced to sugar cane crops? What were the consequences of bringing the cane toads into a new environment? What are some of the interventions being explored to manage the cane toad population?
9. Why are technologies being developed to pull carbon dioxide out of the sky? Why do companies like Climeworks inject carbon dioxide underground? What happens if these efforts are unsuccessful? What are some of the obstacles to scaling these efforts?
10. Why does Elizabeth Kolbert assert that cutting emissions is essential? Why is cutting emissions an insufficient intervention to address climate change? How have emissions become a moral issue? How could changing the emissions paradigm lead to new solutions?
11. How have recent international climate agreements addressed disparities in global emissions? What geopolitical issues arise when asking countries to eliminate carbon emissions?

DISCUSSION QUESTIONS

(CONTINUED)

12. How did the eruption of Mount Tambora affect environments around the world? What happens when there is an increase of sulfur dioxide in the stratosphere? How is sulfur dioxide in the stratosphere connected to solar engineering? What are the potential benefits and unintended consequences that could result from geoengineering?
13. Why was Camp Century established by the U.S. Army Corps in Greenland? Why was it closed after less than a decade of operations?
14. How are the ice core samples from Greenland an “archive of the sky”? What are Dansgaard–Oeschger events? What do these events reveal about climate stability over time?
15. What would happen if all emissions were eliminated and all excess carbon was successfully removed from the atmosphere? What other environmental solutions do you think should be explored? Who is responsible for initiating and funding these options? How should we prepare for unintended consequences?
16. Does Elizabeth Kolbert present an optimistic picture of the future of the planet? Why or why not? What possibilities for innovation exist? How can you stay optimistic in the face of global climate crisis?

CLASSROOM ACTIVITIES**1. Model United Nations: How Should We Manage Global Emissions?**

Conduct a model UN General Assembly in which each nation is trying to solve its own national problems while also cooperating to solve global problems related to climate change. Break students into groups of no more than six and have each group draw cards with the number 1, 2, or 3. Groups that select a 1 card will assume the role of a developing nation, such as Bangladesh or the Philippines. Groups that draw a 2 card will represent a communist nation, such as Cuba or Vietnam. Groups that draw a 3 card assume the role of a developed nation, such as the United States. Groups choose the specific nation they wish to represent or are assigned a member state by the instructor.

Students will then develop a profile of their assigned nation. The profile should include information about the nation’s geographic location, weather patterns, form of government, economic system, regional or local conflicts, greenhouse gas emissions, and energy usage. Information about carbon dioxide and greenhouse gas emissions can be found at tinyurl.com/OurWorldEmissions. Ask students also to investigate the following questions: What interventions have their nation already implemented that have affected the ecosystem or climate? What have been the consequences of these interventions, both intended and unintended?

Each group should draft a set of resolutions and present their overall findings alongside the resolutions during a model UN session. More information about Model UN can be found at www.amun.org.

CLASSROOM ACTIVITIES

(CONTINUED)

2. Conservation Debate: Save the Pupfish vs. Leave the Pupfish Alone

Break students into two groups. Group one will defend the perspective that the Devil’s Hole pupfish should be protected by any means necessary. Group two will argue that nobody should have a hand in the management of Devil’s Hole and the pupfish should be left alone. Have each group read the article “3 men face felony charges in killing of endangered pupfish in Death Valley” in the *Los Angeles Times*: [tinyurl.com/EndangeredPupfish](https://www.tinyurl.com/EndangeredPupfish). Students should then debate the following questions:

- What consequences should the trespassing men face? Should they be charged with the death of the pupfish?
- Should Devil’s Hole increase its security? Why or why not?
- What should the Center for Biological Diversity’s role be in relationship to the Devil’s Hole pupfish?

3. Converging Crises: Extreme Weather, COVID-19, and Climate Change

Create a timeline of extreme weather events that have occurred over the past 12–18 months, including wildfires, hurricanes, flooding, and heat waves. How has your region been impacted by global weather events? What new solutions have been deployed to manage these crises? What technologies are being explored to address the increase in frequency of these events? How has the COVID-19 pandemic impacted the management of these events? Consider the following articles:

- “Mapped: How climate change affects extreme weather around the world” in *CarbonBrief*: [tinyurl.com/CarbonBriefMap](https://www.tinyurl.com/CarbonBriefMap)
- “A Running List of Record-Breaking Natural Disasters in 2020” in *Scientific American*: [tinyurl.com/NaturalDisasters2020](https://www.tinyurl.com/NaturalDisasters2020)
- “Extreme Weather and COVID-19: Protecting Our Responders” on the Natural Resources Defense Council blog: [tinyurl.com/NRDCBlog](https://www.tinyurl.com/NRDCBlog)

4. A Spectrum of Environmental Beliefs

Divide sections of the room into three areas and write the following statements on a whiteboard or piece of paper in each area: “Technology will solve the problem,” “We should solve the problem for humanity,” and “We should solve the problem for the environment.”

Read the following statements and ask students to move to the spot on the spectrum representing their beliefs:

- There is not enough food available in many places in the world, but there is too much in others. What is your attitude towards solving the problem?
- Many cities are becoming so polluted that asthma and other respiratory diseases are becoming a widespread problem. What is your attitude towards solving the problem?

CLASSROOM ACTIVITIES

(CONTINUED)

- Many animal species are becoming endangered because human development is destroying the environments they need to survive. What is your attitude towards solving the problem?
- Populations throughout the world are losing more and more of their land due to rising sea levels. People continually must move to higher ground to avoid flooding. What is your attitude towards solving the problem?
- Severe hurricanes are battering the U.S. coastline, hitting a larger and larger area. What is your attitude towards solving the problem?

Invite students standing in different areas on the spectrum to share why they chose their position. Ask students to write a reflection paper on whether they identify as anthropocentric, technocentric, or ecocentric and how this influences their views about solutions to address the impact of climate change.

RESEARCH OPPORTUNITIES**1. Letter to the Editor**

Choose an environmental issue impacting your local community. Research possible interventions and select one that you feel passionate about. Write a letter to the editor of your local newspaper that makes the case for change in your community. For tips on how to write a successful letter to the editor, visit tinyurl.com/Letter2TheEditor.

2. Alternates to Fossil Fuels

Research different energy sources including power from wind, hydropower, solar, nuclear, and fossil fuels. What are the advantages and disadvantages of each form of energy? How is each form of energy being used or explored in your local community?

3. The Green New Deal / The Red Deal

Research the Green New Deal (www.sunrisemovement.org/green-new-deal) and the Red Deal (therednation.org). What do these plans have in common? How do they differ? Prepare a presentation advocating for one of these plans to your local or school government.

4. Sinking Coastal Regions

How should we manage regions that are sinking at a rapid pace? Select a coastal region that has been impacted by recent extreme weather patterns and research the solutions proposed by community members, engineers, and environmental scientists. How should your selected region be protected? Begin by reading the following articles about coastal regions in Louisiana:

- “The case against rebuilding the sunken city of New Orleans” in *Slate*: tinyurl.com/DontRefloat
- “Locations in Plaquemines Parish disappear from latest NOAA charts” in *The Advocate*: tinyurl.com/AdvocateWashedAway

RESEARCH OPPORTUNITIES

(CONTINUED)

5. Genetic Rescue Zine

Select one of the genetic rescue projects from Revive & Restore: reviverestore.org/projects. Create a zine about the protected species and include information about how its extinction was prevented. Explain the biotechnology that helped to protect this species in language and images that are accessible to people who are unfamiliar with wildlife conservation.

6. Climate Colonialism

How does colonialism impact responses to global climate crisis? Research how issues of climate crisis and global colonialism intersect. Start here with a piece in *Pacific Standard* by Olúfẹ́mi O. Táíwò and use its content to guide independent research incorporating several other sources: tinyurl.com/ClimateColonialism. Ask students to write an essay incorporating and citing their research or to bring their findings to share and discuss with the class.

SERVICE LEARNING PROJECTS

These projects are designed to connect students' learning experiences with the larger community.

1. Protect Your Local Watershed

What watershed is connected to the place that you call home? What streams, creeks, or rivers are in your watershed? How is the watershed managed? Get involved with your local river or watershed association to clean up a local stream, river, or other body of water in your community. If your local community organization is supportive, paint stencils on drains to discourage people from dumping waste into them.

2. EarthEcho Water Challenge

Sign up to participate in the EarthEcho Water Challenge to protect your local water resources: monitorwater.org. Use a simple water testing kit to sample local bodies of water. Share your data to the international database and on social media. Use the information and resources available to protect the water resources in your community.

3. Pledge to Avoid Single-Use Plastic

For a month, track the amount of single-use plastic that you use—everything from water bottles and straws to food containers and toothbrushes. Then take the pledge to avoid single-use plastic, reuse or recycle the plastic you do use, and educate others about plastic waste. Learn more and take the pledge at www.breakfreefromplastic.org.

4. Join a Sunrise Movement Hub

Join the Sunrise Movement, a youth movement to stop climate change and create millions of jobs. Explore www.sunrisemovement.org to learn more about their campaigns to create good jobs, create more public housing, and create a Civilian Climate Corps. Find a local hub or learn more about how to start a hub in your community at www.sunrisemovement.org/hubs.

RESOURCES FOR FURTHER LEARNING & DISCUSSION

- “The U.N.’s Terrifying Climate Report” by Elizabeth Kolbert: tinyurl.com/TNYKolbert
- Elizabeth Kolbert in conversation with Eula Biss at the Chicago Humanities Festival: tinyurl.com/KolbertBiss
- Jeff Goodell interviews Elizabeth Kolbert for *Rolling Stone*: tinyurl.com/KolbertGoodell
- Xian Chiang-Waren interviews Elizabeth Kolbert for *Audubon Magazine*: tinyurl.com/AudubonInterview
- Elizabeth Kolbert in conversation with the Aspen Institute’s Greg Gershuny: tinyurl.com/KolbertGershuny
- “Climate Change is a Waste Management Problem” in *Issues in Science and Technology*: tinyurl.com/IssuesDotOrg
- Amy Brady interviews Elizabeth Kolbert for *Gizmodo*: tinyurl.com/GizmodoInterview
- “In Greenland’s Melting Ice, A Warning on Hard Climate Choices” in *Yale Environment 360*: tinyurl.com/Environment360
- “No, We Shouldn’t Just Block Out the Sun” in *Gizmodo*: tinyurl.com/GizmodoKahn
- “Since 2016, Half of All Coral in the Great Barrier Reef Has Died” in *The Atlantic*: tinyurl.com/AtlanticMeyer

ABOUT THIS GUIDE’S WRITER

Rachael Zafer is a writer, educator, and facilitator. Rachael provides creative and technical consulting to nonprofits and institutions across the country and has led hundreds of creative and educational classes and workshops in prisons and jails in Michigan, Illinois, New York, and Colorado. Rachael is the author of discussion guides for over a dozen books, including *How to Be an Antiracist* by Ibram X. Kendi, *Caste* by Isabel Wilkerson, and *Just Mercy* by Bryan Stevenson. You can view all of her discussion guides at www.rachaelzafer.com/curriculum.



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