

## Advanced Placement Environmental Science

your name: \_\_\_\_\_

Summer Learning 2017

Ms. Loughlin

\_\_\_ **Assignment #1:** Watch the documentary "Before The Flood" <https://archive.org/details/youtube-90CkXVF-Q8M>

\_\_\_ **Assignment #2:** Read Silent Spring by Rachel Carson & complete the assignment for the text (you can read this online- see link with the assignment.

\_\_\_ **Assignment #3:** Environmental Law Review Notecards

\_\_\_ **Assignment #4** Read the entire book Ishmael by Daniel Quinn. See Ms. Loughlin to signout a copy before leaving school in June

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### Assignment #1: "Before the Flood" Movie Questions

Climate change is the most fundamental threat facing our planet. We must work together as a global, collective voice to demand major action now, as our very survival depends on it. (*Your responses should each be about a paragraph in length.*)

1. In Before the Flood, we saw countless ways that our consumption is ruining the environment. What outcomes were most shocking to you? What solutions provided you with the most optimism for the future?
2. Every two and four years, we have a chance to elect representatives with our best interests in mind, whether that is locally or in Washington, D.C. What can we do to better elevate the importance of the environment among our candidates?
3. The debate about climate change has been labeled as a misinformation campaign. What arguments have you heard on either side of the debate that have been most impactful in creating your views? Have any of these ideas been changed because of this film?
4. The film was filled with powerful imagery, eye-popping statistics, and a myriad of ideas of how to live a greener lifestyle. What was most powerful and inspiring to you? What will you tell your peers about this film?
5. From the streets of Miami to the islands dotted across the Pacific, people are being affected by Climate Change everyday. Sea Level is and will continue to affect Portland.

Go to <http://www.nrcm.org/projects/climate/global-warming-air-pollution/sea-level-rise-maine/sea-level-rise-maps/> Look at the Map of Portland. We invite you to view the maps to the impacts that a **one-meter (shown in red)** and a **six-meter sea-level rise (shown in yellow)** would have on Portland.

What did you discover that concerns you about the current and future impacts of sea level rise on Portland?

6. **"Think globally, act locally"** urges people to consider the health of the entire planet and to take action in their own communities and cities. Long before governments began enforcing environmental laws, individuals were coming together to protect habitats and the organisms that live within them. What are some examples of actions that groups of Portland citizens or the Portland City Council have done with consideration to the health of the entire planet. (*You may have to do some research on this one.*)

## **Assignment #2: Silent Spring** by Rachel Carson

### **online link to the text:**

[http://library.uniteddiversity.coop/More\\_Books\\_and\\_Reports/Silent\\_Spring-Rachel\\_Carson-1962.pdf](http://library.uniteddiversity.coop/More_Books_and_Reports/Silent_Spring-Rachel_Carson-1962.pdf)

### **Background Information:**

Silent Spring is not a novel; it is a work of non-fiction written by Rachel Carson. The author was trained as a marine biologist and had already written other science-based best sellers by the time Silent Spring was published in 1962, e.g., *The Sea Around Us* and *The Edge of the Sea*.

There is no requirement that you agree with the author -- only that you read sections of the book and try to understand what the author is attempting to communicate. Note that when Silent Spring was published in 1962, it was a very controversial book. It did not set well with the manufacturers and distributors of the products that she criticized.

### **We are reading only Chapters 1-2 and 15-17.**

**Part A. Type a brief** one paragraph **summary** followed by **your reaction to the chapters** in the book and your **brief identification of its major strengths/themes**.

### **Part B. Top Six Passages**

Select the **one passage from each chapter** that you consider the most influential passage in that it illustrates an interesting argument. For each passage:

1. Write the sentence (or sentences), complete with page number.
2. Discuss the use of this sentence or sentences in the context of the text. Why did you select this passage? How does a thorough understanding of this passage play an important role in understanding the author's purpose? (this should be about one paragraph in length.)

### Assignment #3: Environmental Law Review Notecards

Write the following laws (bolded names and dates- front) and their descriptions (back) on notecards (there are 38). I will be checking to see that you have these notecards completed on the first day of class. **MUST BE HANDWRITTEN. Hand writing helps the process of committing facts to memory.**

1. **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (1980):** The "Superfund Act," designed to ID and clean up abandoned hazardous waste dumpsites. Provides broad federal authority to clean up releases or threatened releases of hazardous substances that may endanger public health or the environment.
2. **Clean Air Act (1970):** Regulates and sets standards for 6 criteria pollutants- ozone (O<sub>3</sub>), particulate matter, carbon monoxide (CO), nitrogen oxides (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), and lead (Pb).
3. **Clean Water Act (1972):** Primary federal law in the US that establishes standards for water meeting needs for human recreation by setting maximum permissible amounts of water pollutants that can be discharged into waterway.
4. **Kyoto Protocol (1992):** International agreement with binding targets for industrialized countries to reduce greenhouse gas emissions. Requires actual emissions to be monitored & recorded in log & places more significant burden on developed nations.
5. **Convention of International Trade in Endangered Species (CITES) (1973):** Agreement amount 175 nations that regulates species that may become extinct/endangered because of international trade, List species that cannot be commercially traded as live specimens or wildlife products.
6. **Emergency Planning & Community Right-To-Know Act (1986):** Federal legislation that requires information to be shared about chemical facilities and uses of chemicals. Goal is to provide the public and local governments with information concerning potential chemical hazards present in their communities.
7. **Endangered Species Act (1973):** IDs threatened and endangered animals in US and puts their protection ahead of economic considerations.
8. **Energy Policy Act (2005):** Addresses energy production in the United States, including: (1) energy efficiency; (2) renewable energy; (3) oil and gas; (4) coal; (5) Tribal energy; (6) nuclear matters and security; (7) vehicles and motor fuels, including ethanol; (8) hydrogen; (9) electricity; (10) energy tax incentives; (11) hydropower and geothermal energy; and (12) climate change technology. Provides federal support for renewable energy technology and introduced radiation protection standards for Yucca Mountain. Establishes commercial building codes for energy use & efficiency standards for heating and air-conditioning equipment and lamps.
9. **Wilderness Act (1964):** created the National Wilderness Preservation System and recognized wilderness as "an area where the earth and its community of life are untrammled by man, where man himself is a visitor who does not remain"
10. **Oil Pollution Act (1990):** To prevent further oil spills form occurring in the US, company required to make a plan to prevent spills that may occur (must also have containment and cleanup plan in case of emergency).
11. **Resource Conservation and Recovery Act (1976):** Primary law in the United States governing disposal of solid waste. Controls hazardous waste with a "cradle to the grave" system.
12. **National Environmental Policy Act (1969):** Environmental Assessments (EAs) and Environmental Impact Statements (EISs), which are assessments of the likelihood of impacts from alternative courses of action, must be done before any project affecting federal lands can be started.
13. **Surface Mining Control and Reclamation Act (1977):** Requires coal strip mines to reclaim the land, regulates the environmental effects of coal mining in US.
14. **Ocean Dumping Ban Act (1988):** bans Ocean dumping of sewage sludge and industrial waste.
14. **Safe Drinking Water Act (1974):** Allows EPA to set maximum contaminant levels for pollutants in drinking water that may have adverse effects on human health.
15. **Food Quality Protection Act (1996):** Set pesticide limits in food & all active/inactive ingredients must be screened for estrogenic/endocrine effects. Some of the major requirements include stricter safety standards, especially for infants and children, and a complete reassessment of all existing pesticide tolerances.
16. **Federal Insecticide, Fungicide, and Rodenticide Act (1996):** Provides federal control of pesticide distribution, sale, and use. Regulates the effectiveness of pesticides. EPA was given authority to not only to study the consequences of pesticide usage but also to require users (farmers, utility companies, and others) to register when purchasing pesticides.
17. **Marine Mammal Protection Act (1972):** Prohibits taking, capturing or harassing marine mammals in US waters

and by US citizens, and the importing marine mammals and marine mammal products into US.

19. **Nuclear Waste Policy Act (1982):** US government must develop a high level nuclear waste site by 2015.
20. **Migratory Bird Hunting Stamp Act (1934):** Requires purchase stamp by waterfowl hunters. Revenue generated is used to acquire important wetlands.
21. **Occupational Safety and Health Act (1990):** Primary federal law which governs occupational health and safety in the private sector and federal government in the United States. Its main goal is to ensure that employers provide employees with an environment free from recognized hazards, such as exposure to toxic chemicals, excessive noise levels, mechanical dangers, heat or cold stress, or unsanitary conditions.
22. **Toxic Substances Control Act (1976):** Allows EPA screen existing & new chemicals for toxicity. Gives EPA ability to track industrial chemicals currently produced/imported into the US. Screens chemicals and can require reporting/testing of those that may pose hazard.
23. **Wild and Scenic Rivers Act (1968):** Protects rivers with due to aesthetic, recreational, wildlife, historical, or cultural reasons. The Act is notable for safeguarding the special character of these rivers, while also recognizing the potential for their appropriate use and development. It encourages river management that crosses political boundaries and promotes public participation in developing goals for river protection.
24. **Montreal Protocol (1989):** International agreement to reduce production and consumption of ozone-depleting substance by phasing out ozone-depleting substances like CFC's
25. **Consumer Product Safety Act (1972):** Includes provisions addressing, among other things, lead, phthalates, toy safety, durable infant or toddler products, third-party testing and certification, tracking labels, imports, ATVs, civil and criminal penalties.
26. **Fish and Wildlife Conservation Act (1980):** Authorizes financial and technical assistance to the States for the development, revision, and implementation of conservation plans and programs for nongame fish and wildlife.
27. **Federal Food, Drug, and Cosmetic Act (1938):** A set of laws passed by Congress in 1938 giving authority to the U.S. Food and Drug Administration (FDA) to oversee the safety of food, drugs, and cosmetics.
28. **Solid Waste Disposal Act (1965):** The first federal law that required environmentally sound methods for disposal of household, municipal, commercial, and industrial waste.
29. **National Energy Act (1978):** Designed to resolve a disjointed national energy policy and empower the United States with greater control of its national energy destiny. It established energy efficiency programs, tax incentives, tax disincentives, energy conservation programs, alternative fuel programs, and regulatory and market-based initiatives.
30. **Soil and Water Conservation Act (1977):** Law that requires USDA to periodically prepare a national plan for soil and water conservation on private lands based on an inventory and appraisal of existing resource conditions and trends.
31. **Law of the Sea Convention (1982):** Lays down a comprehensive regime of law and order in the world's oceans and seas establishing rules governing all uses of the oceans and their resources.
32. **Hardrock Mining and Reclamation Act (2009):** A federal law that authorizes and governs prospecting and mining for economic minerals, such as gold, platinum, and silver, on federal public lands. Also would have ended new patents for mining claims, placed 8% royalty on new mining operations.
33. **National Park Service Organic Act (1916):** A law that established the National Park Service (NPS), an agency of the United States Department of the Interior.
34. **National Wildlife Refuge System Act (1966):** The provided guidelines and directives for administration and management of all areas in National Wildlife Refuge system including "wildlife refuges, areas for the protection and conservation of fish and wildlife that are threatened with extinction, wildlife ranges, game ranges, wildlife management areas, and waterfowl production areas.
35. **Marine Plastic Pollution Research and Control Act (1987):** Amended Act to Prevent Pollution from Ships, This Act implements MARPOL 73/78 Annex V in the U.S. it applies to ship-generated garbage, and it aims to reduce the amount of garbage—both plastics and other persistent wastes—that ships dump into the oceans. It also prohibits all ships from dumping plastics into the sea.
36. **Oil Spill Prevention and Liability Act (2004):** Amends Oil Pollution Act of 1990 to double liability limits associates with oil spills for double haul tank vessels, phases out liability limits for single-hull vessels.
37. **Pollution Prevention Act (1990):** Focused industry, government, and public attention to reducing the amount of pollution through cost-effective changes in production.
38. **Federal Water Pollution Control Act (1948):** Allowed the Public Health Service, to prepare programs for eliminating or reducing the pollution of interstate waters and tributaries and improving the sanitary conditions of surface and underground waters.

**Assignment #4: Read the entire book Ishmael by Daniel Quinn.**

(see Ms. Louglin to sign-out a copy before you leave school for the summer)

**Why read Ishmael?**

The ideas in Ishmael define all the major issues you'll be learning about in this class all year. Ishmael is a book that has changed countless peoples' lives and forced them to rethink the way they live

Ishmael is an unusual book. It's a philosophical book. It talks about big ideas and asks big questions: How should we, as humans, interact with nature? The human race has the power to change the world, so what should we do with this power? Did we make some fundamental mistake as *an entire civilization* that will doom us to environmental disaster, or are we simply fulfilling our destiny? What, exactly, does it mean to act like a member of the human species?

These are tough questions. Ishmael has very clear answers to them. These answers are extremely controversial. Some of you will agree with everything in this book; some of you will agree with *nothing* in this book. Both options are great. The purpose of reading Ishmael is *not* to persuade you that the points of view in it are correct. As you'll see through this class, Ph.D.'s, senators, and presidents disagree about these issues. What we care about is that this book makes you think, and that it makes you think deeply.

**Questions on Ishmael**

**All of these questions should be answered in the form of one paragraph,** *unless indicated otherwise.*

*None of these questions are easy, so if you can answer them quickly and simply, you're not thinking deeply enough.)*

*You are welcome to talk over these questions with friends and classmates. In fact, I'd love it if you discussed this book with your friends, and it will probably help your answers. However, your writing and answers must be your own, and cannot be copied or shared. If this confuses you, send me an email.*

*Most of this book is written as a conversation between a person and a gorilla. Yeah, I know it's weird. The plot of this book (for example, the fact that Ishmael is a gorilla) is not important. Don't focus on that. Focus instead on what Ishmael teaches the narrator. **The ideas matter more than the plot.***

**Chapter 1:** Who is Ishmael? What does he say he will teach the narrator? Why did the narrator seek Ishmael out? Do you have the same desire to study these questions as the narrator?

**Chapter 2:** What are Takers and Leavers (p. 38-39)? *Answer in a sentence or two.*

According to Ishmael, what made the Nazis follow Hitler? Explain the analogy Ishmael makes between the Nazis following Hitler and the way most of us humans interact with nature. Do you agree with Ishmael's analogy? Why or why not?

**Chapter 3:** On pages 54-56, Ishmael gives a jellyfish's account of how the world began. What's his point in giving this story? Do you agree with the jellyfish's account of creation? Why or why not?

According to Ishmael, what is the premise of man's creation myth? (See page 61.) *Answer in a sentence or two.*

**Chapter 4:** According to Ishmael, what is man's creation myth (see page 72)? What happens when man

believe this creation myth? Do you agree with this creation myth? Why or why not?

**Chapter 5:** On page 83, the narrator says, "Man was born to turn the world into a paradise, but tragically he was born flawed." Do you agree with this? Why or why not? Cite some examples.

**Chapter 6:** On pages 106-108, Ishmael makes an analogy between trying to fly in a failed flying machine and a human civilization. Explain the analogy. What is the point Ishmael is trying to make? Do you agree with Ishmael? Why or why not?

**Chapter 7:** Re-read the passage on page 118 starting with "It is the peace-keeping law..." until the end of the section on page 119. According to Ishmael, what makes us different than other animals? Do you agree with the way he tells the history of living things?

**Chapter 8:** In this chapter, the narrator and Ishmael work out the Rules of Competition. What are these rules? Do animals follow these rules? Do Takers follow these rules? Explain, and provide some examples.

**Chapter 9:** This is one of the more complicated and controversial chapters of the book. Let's focus on sections 4-6, on pages 156-165. Describe the debate that the gods were having about which animal to kill or save. How did the gods solve that problem? What were the gods afraid of about Adam? Why?

**Chapter 10:** On page 202, Ishmael makes a distinction between Takers and Leavers. What is the difference he points out here? Do you agree with his perspective? Why or why not?

**Chapter 11:** On pages 222 through 227, there is one of the most interesting and important passages in the book. Ishmael and the narrator act out a dialogue in which a Taker is trying to convince a Leaver that he is wrong. Summarize the main arguments in this debate. Who was more convincing? Why?

**Chapter 12:** On pages 242-243, Ishmael and the narrator describe what man's role should be in the world. What is that role? Do you agree with them? Why or why not?