



KILROY CASE STUDY

OVERVIEW

You are a scientist working with ORCA. Throughout your research, you have realized that the Indian River Lagoon, which is the most diverse estuary in the United States, is rapidly deteriorating. Your goal is to inform the country of the dire affects that could take place if the lagoon continues to deteriorate and completely die out.

1. Research the cause(s) of the destruction of the lagoon.
2. Research the effects that the loss of the IRL will have on human beings and society.
3. Outline a plausible chain of events that *could* take place leading all the way back to yourself, if the lagoon is completely destroyed. Explain how you are directly affected by these events.
4. Create a persuasive PSA, newscast, or poster board to communicate the importance of saving our lagoon. Include an explanation to the local community about what could happen if we do not act now.

TOPICS

Indian River Lagoon, marine conservation, public service announcements

AUDIENCE AND SETTING

Middle school students to adult learners. This video can be shared from any computer or device with access to the web. Possible settings include public outreach events and classrooms.

OBJECTIVES

- Identify the cause(s) of Indian River Lagoon degradation.
- Recognize how you can help to restore the Indian River Lagoon Propose both short term and long term solutions to help reverse the decline of the Indian River Lagoon.
- Cite evidence that the Indian River Lagoon is in dire need of help.
- Make observations about how humans pollute; the goal is to change our actions so the environment is not harmed.

GUIDING QUESTIONS

- If we continue to pollute our environment and the Indian River Lagoon, what will happen?
- Can you predict the outcome if the Indian River Lagoon is not restored?
- How would the loss of the Indian River Lagoon and the species it sustains affect you?

KEY TERMS

Estuary partly enclosed coastal body of water with a connection to the ocean; comprised of brackish water, a mix of fresh and salt water

Public Service Announcement (PSA) are messages designed to change attitudes and behaviors towards an issue.

KEY CONCEPTS

- We live on a water planet.
- Life springs from water and water sustains life.
- We need to do a better job of protecting our water-based life support systems; we can start locally with helping the Indian River Lagoon.
- The IRL is a very important estuary comprised of three lagoons, stretching 156 miles along Florida's east coast.
- The IRL was once known as the most biodiverse estuary in North America, yet it is now an estuary in distress.

FLORIDA STANDARDS

[SC.912.E.6.6](#)

Analyze past, present, and potential future consequences to the environment resulting from various energy production technologies.

[SC.912.L.14.6](#)

Explain the significance of genetic factors, environmental factors, and pathogenic agents to health from the perspectives of both individual and public health.

[SC.912.L.17.12](#)

Discuss the political, social, and environmental consequences of sustainable use of land.

[SC.912.L.17.15](#)

Discuss the effects of technology on environmental quality.

[SC.912.L.17.16](#)

Discuss the large-scale environmental impacts resulting from human activity, including waste spills, oil spills, runoff, greenhouse gases, ozone depletion, and surface and groundwater pollution.

[SC.912.L.17.17](#)

Assess the effectiveness of innovative methods of protecting the environment.

[SC.912.L.17.18](#)

Describe how human population size and resource use relate to environmental quality.

[SC.912.L.17.20](#)

Predict the impact of individuals on environmental systems and examine how human lifestyles affect sustainability.

[SS.912.G.5.1](#)

Analyze case studies of how the Earth's physical systems affect humans.

[SS.912.G.5.4](#)

Analyze case studies of how humans impact the diversity and productivity of ecosystems.

[SS.912.G.2.5](#)

Use geographic terms and tools to analyze case studies of debates over how human actions modify a selected region.

[SS.912.G.5.2](#)

Analyze case studies of how changes in the physical environment of a place can increase or diminish its capacity to support human activity.

[SS.912.G.5.6](#)

Analyze case studies to predict how a change to an environmental factor can affect an ecosystem.

[SS.912.P.15.8](#)

Identify biological and environmental influences on the expression and experience of positive emotions, such as happiness.

OCEAN LITERACY PRINCIPLES

[Ocean Literacy Principle #6](#)

- a. The ocean affects every human life. It supplies freshwater (most rain comes from the ocean) and nearly all Earth's oxygen. It moderates the Earth's climate, influences our weather, and affects human health.
- b. From the ocean we get foods, medicines, and mineral and energy resources. In addition, it provides jobs, supports our nation's economy, serves as a highway for transportation of goods and people, and plays a role in national security.
- c. The ocean is a source of inspiration, recreation, rejuvenation and discovery. It is also an important element in the heritage of many cultures.
- d. Much of the world's population lives in coastal areas.
- e. Humans affect the ocean in a variety of ways. Laws, regulations and resource management affect what is taken out and put into the ocean. Human development and activity leads to pollution (such as point source, non-point source, and noise pollution) and physical modifications (such as changes to beaches, shores and rivers). In addition, humans have removed most of the large vertebrates from the ocean.

- f. Coastal regions are susceptible to natural hazards (such as tsunamis, hurricanes, cyclones, sea level change, and storm surges).
- g. Everyone is responsible for caring for the ocean. The ocean sustains life on Earth and humans must live in ways that sustain the ocean. Individual and collective actions are needed to effectively manage ocean resources for all.

ADDITIONAL RESOURCES

Google Scholar

<http://scholar.google.com/>

Ocean Research & Conservation Association (ORCA) Website

<http://teamorca.org/cfiles/home.cfm>

ORCA's Youtube Channel

<https://www.youtube.com/channel/UCnlvSPIWma9guto7zrBYtUg>

TC Palm Indian River Lagoon Coverage

<http://www.tcpalm.com/indian-river-lagoon>

ACKNOWLEDGEMENTS

Thank you to Kimya Louis, Marine Biology Teacher at Vero Beach High School, for creating this case study for Kilroy Academy. Special thanks to Indian River Impact 100 for funding Kilroy Academy.

Made possible with funding provided by



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