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Climate and Human Health

1. Have you ever experienced a heat wave? How did you stay cool and protected from the heat? What steps can be taken?

2. Write each word beside its meaning.

disease	bacteria	drought	flood
rescue	lung	pollution	radiation

- a) A long period without rain in which plants dry out and die.
- b) To help people who are in danger.
- c) A group of living things whose bodies have only one cell.
- d) Waste made by humans that gets into the environment.
- e) The part of the body that takes in oxygen from the air.
- f) The transfer of heat energy through space.
- g) When a usually dry area gets covered with water.
- h) A condition in which parts of the body are not working well.



Climate and Human Health

Climate change can have many dangerous effects on the health of people around the world. Warmer weather, flooding, drought, increased storms, and rising sea level all carry their own threats to human health.

Many diseases are caused by bacteria, fungi and viruses. Many of these are also carried from place to place by other living things, like mosquitoes. Living things have a certain range of temperature that helps their survival. Temperatures are rising around the world. This allows organisms that cause or carry diseases to move into areas that were once too cold for them to live. For example, diseases like malaria that are found only in warm areas could spread to more people as the world becomes warmer.



Name the three things that cause disease.

Wetter conditions can also cause diseases to spread. There is a lot of standing water after a flood or storm. This water commonly contains bacteria that can cause intestinal diseases. After a severe storm, people can be trapped in and around flood waters for many days. Rescue workers also are in contact with flood waters for long periods of time. The bacteria in the water can enter people's bodies and cause diseases. Lack of clean drinking water after severe storms can make diseases more difficult to manage. In extreme cases, many more people can die from intestinal diseases after a severe storm than during the storm itself.



Climate and Human Health

1. Match the term on the left to its definition on the right. You may use a dictionary to help you.

1 malaria	A condition in which the body temperature rises dangerously high.	A
2 intestine	Harmful disease passed to humans by mosquitoes.	B
3 solar	A gas that can cause lung damage.	C
4 heat stroke	Part of the digestive system.	D
5 ozone	A substance that harms people or wildlife.	E
6 pollutant	From the Sun.	F

2. In the table below, name and describe four major risks to human health due to climate change.

Health Risk	Description

Climate and Human Health

3. Answer each question with a complete sentence.

- a) Explain why warming temperatures may lead to greater spread of disease.

- b) Explain how the increase in global temperatures can lead to an increase in harmful air pollution.

Research

4. Where are the smoggiest areas in the world?

Working as a class, divide a world map into regions. You may want to use continents as your regions. Break into smaller groups. Assign each group to research a region. Use the library or Internet resources. Find out about areas in your region that have problems with smog. Mark these areas on the map using push pins or sticky notes. Prepare a short statement about the problems that each area faces.

Take turns reading your statements until all of the areas on the map have been covered. Have a class discussion. What are some ways in which people or technology can change in order to put less ozone into the atmosphere?



Observe a melting ice sheet.

You will need the following materials for this activity:

- A freezer
- A shallow pan
- Water
- Towels
- A large sheet of thick plastic (you may also use a tarp, an oil cloth, or a laminated tablecloth).

1. First, create a small ice sheet. Fill a shallow pan with water. Place it in the freezer overnight.
2. When your ice sheet is frozen, take it out of the freezer. Place the pan of ice on a counter for several minutes. Overturn the pan to release the ice sheet.
3. Prepare a surface to observe your ice sheet as it melts. Cover a desk or table with towels. Bunch up the towels in one area to model a sloped landscape with a hill. Cover the towels with a sheet of thick plastic. Place the ice sheet on top of this sheet.
4. Observe your ice sheet as it melts. Make periodic observations during the time it takes for the ice to melt completely. Answer the following questions:
 - What part of the ice sheet began to melt first?
 - Where did the water from the melting ice go?
 - Did the ice sheet begin to move at any point in the melting?
 - During what time period did the melting seem to go fastest?

Word Search

Find all of the words in the Word Search. Words are written horizontally, vertically, diagonally, and some are even written backwards.

- | | | | |
|----------|-----------|-------------|-------------|
| bacteria | economy | grassland | sea level |
| cape cod | ecosystem | hurricanes | storms |
| cities | feedback | ice | temperature |
| climate | flood | long island | tundra |
| deposit | forest | malaria | virus |
| desert | fungi | melt | weather |
| disease | gas | mosquito | |
| drought | glaciers | permafrost | |



Comprehension Quiz

Part C

Answer the questions in complete sentences.

1. Describe the difference between **weather** and **climate**. 2

2. Describe **two** tools scientists use to study melting ice sheets. 4

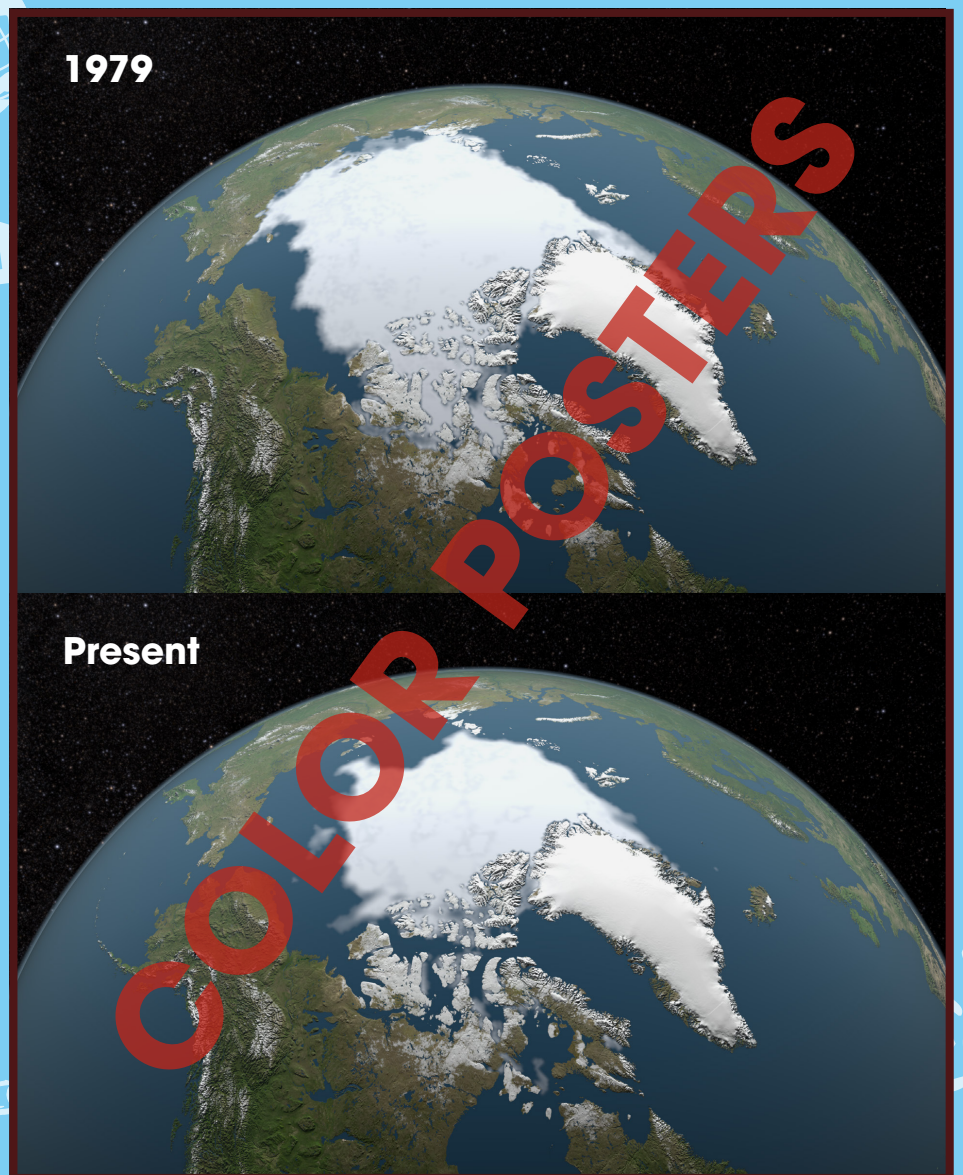
3. Explain why small changes in sea level can have a big effect on people. 2

4. Explain how climate change could cause the spread of diseases. 3

5. Describe how the economies of countries could be affected by climate change. 3

SUBTOTAL: /14

Arctic Ice Cap Reduction



*Image courtesy of NASA

NAME: _____

After You Read 

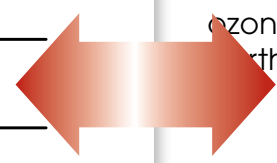


Climate and Human Health

3. Answer each question with a complete sentence.

a) Explain why warming temperatures may lead to greater spread of disease.

b) Explain how the increase in global temperatures can lead to an increase in harmful air pollution.



3.

a) Warmer temperatures allow disease-causing organisms to survive in more areas of the world.

b) Higher air temperatures can cause a higher concentration of ozone gas near Earth's surface.

Across:

- 1. fossils
- 3. permafrost
- 6. glacier
- 7. forest
- 9. desert
- 13. satellites
- 14. migrate

Down:

- 2. infrastructure
- 4. economy
- 5. levee
- 8. sea level
- 10. ecosystem
- 11. climate
- 12. tundra



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EASY MARKING ANSWER KEY



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Climate and Human Health



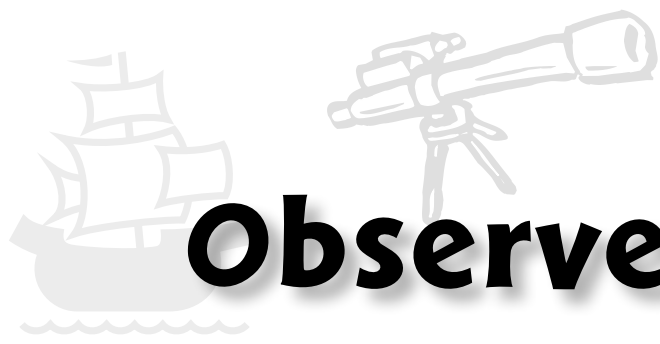
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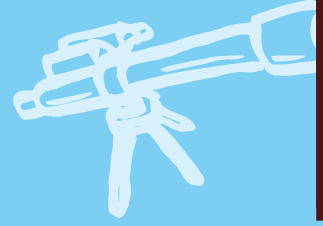
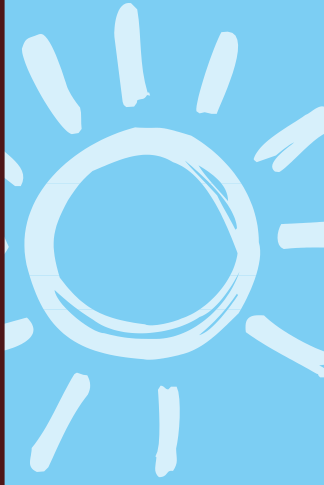
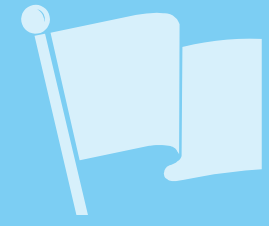
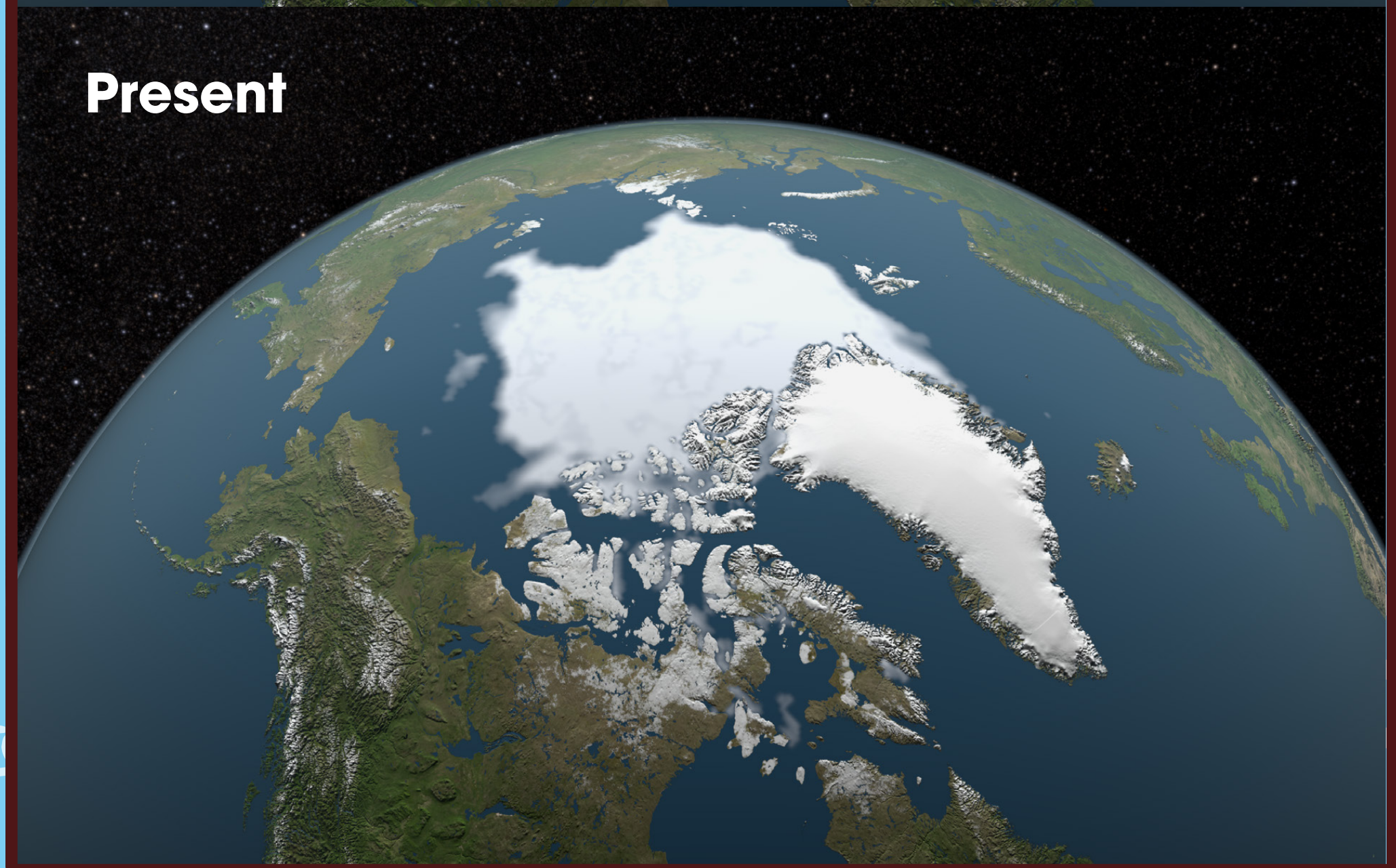
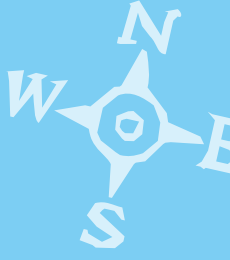
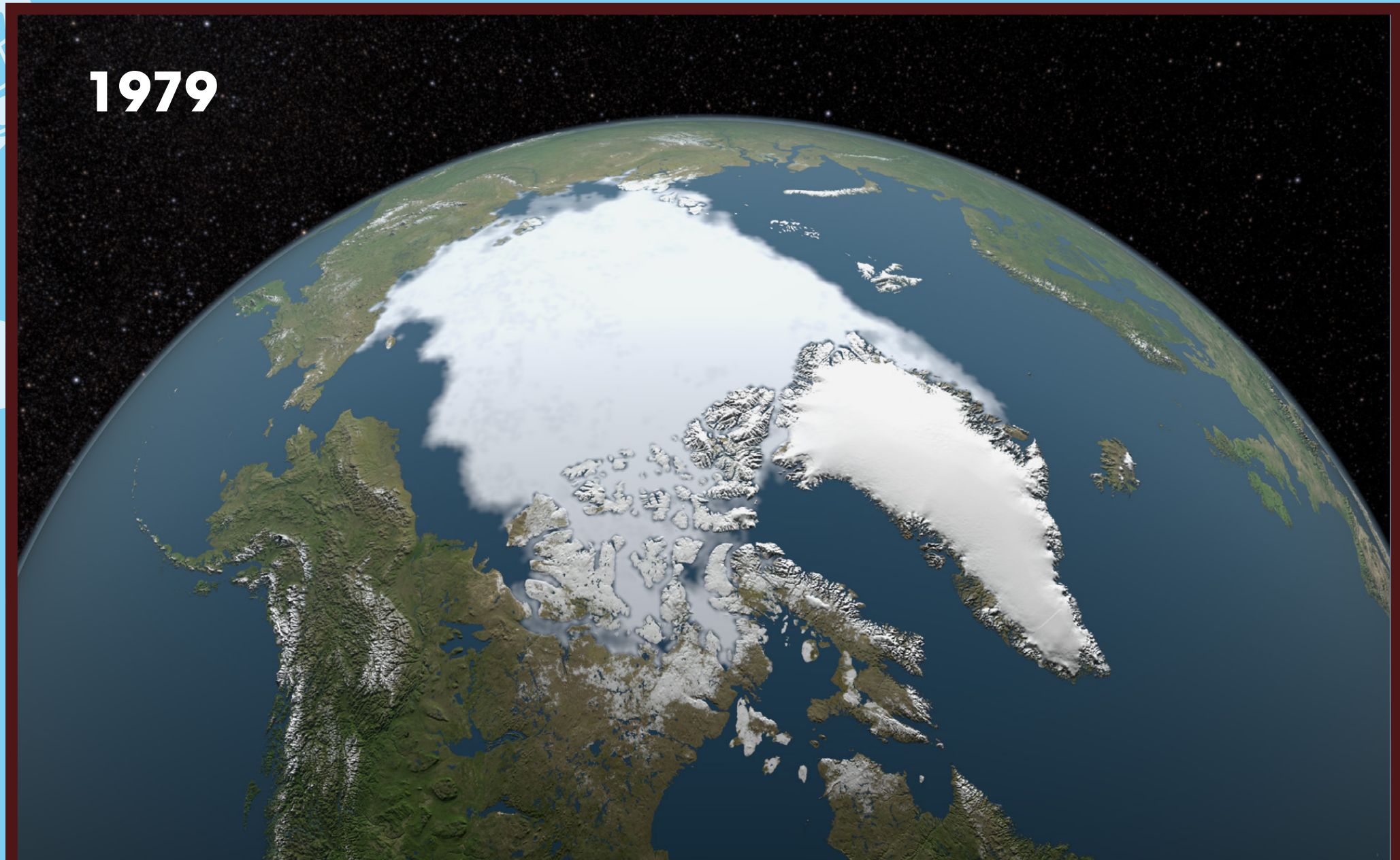
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Arctic Ice Cap Reduction



"image courtesy of NASA"