



Pintail duck photo by Peter LaTourette

# Climate Change, Wildlife, and Wildlands

## Trail Talk

### Chesapeake Bay and Assateague Island



This outline offers suggestions for the elements of a talk on the potential impacts of climate change on the Chesapeake Bay and Assateague Island region. You are encouraged to develop your own personal talk based on the materials in the *Climate Change, Wildlife, and Wildlands* toolkit; this outline is merely intended to provide ideas. You also may use the ideas in this outline to help you weave the topic of climate change into your talks on other subjects.

#### Visual Aids

- Tape measure or yardstick
- Trail cards of American oyster, canvasback duck, and Baltimore oriole from the *Climate Change, Wildlife, and Wildlands* toolkit
- Flash card of North Beach on the Chesapeake Bay, printed out from the CD-ROM and laminated for durability, if desired
- Drawing of barrier island on the last page of this trail talk outline
- Global warming wheel card supplied with *Climate Change, Wildlife, and Wildlands* toolkit

#### Recommended Sites for Talk

Bay shore, island, beach, or salt marsh in the mid-Atlantic region. Ideas and approaches in this outline also may be modified for classroom discussions on climate change and coastal areas.



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### Goals

- To help visitors appreciate that global climate change is a serious issue that may affect life and the physical environment in the mid-Atlantic region.
- To help visitors realize that they can be part of the solution, rather than only part of the problem.

### Objectives

- Visitors will be able to explain the potential magnitude and significance of changes in nature.
- Visitors will be able to explain why many scientists believe that humans are contributing to changes in climate that may have significant and long-lasting impacts on plants and wildlife.
- Visitors will be able to name at least two species of wildlife and two natural features (e.g. bay islands and salt marshes) that may be affected by climate change.
- Visitors will be able to decide whether they believe their actions contribute to climate change, and whether they want to help slow it.

- Visitors will be able to list at least two actions people can choose to take if they want to reduce greenhouse gas emissions.

### Theme

Change is a natural feature of the environment, but not all changes are natural. Many scientists believe that human actions are exacerbating changes in climate that may have serious impacts on ecosystems in the mid-Atlantic region.

### Introduction

(sections in ***bold italics*** are suggested language for talk)

- Begin with an attention-grabber, such as a personal story or an anecdote that helps the audience relate personally to the landscape around them. Work in “universals”—values and concepts everyone can relate to, such as family, tradition, natural beauty, etc.
- Hold up a yardstick or tape measure marked at 8 inches, 13 inches, and 27 inches.
- Ask the audience to imagine how the scene around them might change if the sea were 8, 13, or 27 inches higher.

Refer to the Chesapeake Bay and Assateague Island case study for details.

- Ask questions such as: ***What would happen to the beach? What would happen to the salt marsh? What would happen to the islands in Chesapeake Bay or barrier islands such as Assateague? How would higher sea levels affect coastal areas when storms or hurricanes come through?***

### Transition

- ***Scientists believe that the sea along the mid-Atlantic coast will rise during the next 100 years.***
- Hold up the flash card showing how Chesapeake Bay would look with predicted sea level rise.
- ***By the year 2025, the sea along the mid-Atlantic coast may rise by 8 inches. In 50 years, it may rise by 13 inches, and by 2100 it could be 27 inches higher than today. Why might this be happening? (Correct answer: global warming.)***

### Body of Talk

- ***Change is natural in coastal areas. Waves, wind, and storms alter the coastline all the time. Even if there weren't any global warming, this place***

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would look quite different in 10 or 20 years from natural erosion.

- **Changes in climate also occur naturally. But many scientists believe that the changes underway today are different. They believe that humans are accelerating the rate of change by contributing to a global warming trend.** Explain what global warming is and how it happens, and how global warming contributes to sea level rise. (This information may be found in the Chesapeake Bay and Assateague Island case study.)

- **Here on the coast, rising sea levels can have major impacts.** Describe how sea level rise would affect bay islands, marshes, beaches. Print out the map from the last page of this outline to demonstrate how sea level rise can cause a beach to “roll” over the island as it moves inland. Put the map on the ground or on a table and put a line of sand on the part of the map labeled “beach.” Gently and slowly lift the long edge of the paper closest to the beach and show visitors how the sand moves inland over the dunes, forest, and marsh, eventually reaching the bay side of the island, as the ocean rises. A diagram showing how a barrier beach migrates inland can be found online at

<http://users.erols.com/jtitus/NJ/fig2.html>

- **Rising seas aren’t the only way global warming could affect natural areas in this region.** Describe impacts on oysters, fish, ducks, and submerged vegetation. (This information may be found in the Chesapeake Bay and Assateague Island case study.) Use trail cards of the American oyster, Baltimore oriole, and canvasback duck from the toolkit to show images of affected species and explain briefly how global warming could affect each of them.

- **Do you want to see the mid-Atlantic region change in these ways? Is there anything we can do about it?** Discuss how everyone contributes to global warming and everyone can be part of the solution. Ask the audience to suggest ways to reduce their own emissions. Be prepared with your own suggestions in case people have trouble coming up with ideas. Suggestions might include using energy more efficiently at home (e.g., buying energy-efficient ENERGY STAR<sup>®</sup> appliances, and replacing incandescent light bulbs with compact fluorescents wherever practical), taking public transportation or walking when possible, and buying products manufactured from recycled

materials—such as recycled paper or fleece clothing made from recycled plastic bottles.

- If time permits, bring out the global warming wheel card and choose a volunteer to answer questions about his/her household’s home energy use, transportation habits, and waste practices to come up with a rough estimate of the household’s greenhouse gas emissions. Then flip over the card to show how the household could reduce emissions by taking the actions shown on the wheel card.

### Conclusion

- **Change is part of life, and some climate change is natural. But it appears that by burning fossil fuels, we humans are contributing to rapid changes that may take place faster—and perhaps on a greater scale—than the natural changes we would expect to experience in this region over the next several hundred years.**
- **We have to decide whether these human-induced changes are acceptable, and how much change we are willing to tolerate before we act.**
- **We can’t look into a crystal ball and know for sure what the future will**

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bring. But the majority of scientists today believe that human-induced global warming is real and that many of the impacts we've discussed today will be caused by our actions, our choices.

- Climate change is a problem that can be alleviated by individual actions. Every one of us contributes to global warming, and every one of us can make a difference. This isn't just an issue for big companies and electric utilities and governments. If we all act to reduce our emissions, we can help reduce the impacts of climate change on beautiful places like this.

- Hold up the yardstick again. How high will the sea rise during the next 100 years? The answer may depend partly on us. Is it important to you to know that the islands in Chesapeake Bay will still be here 100 years from now? Is it important enough to warrant changes in your lifestyle in order to avoid environmental changes in the future? The responsibilities of stewardship are becoming more complicated than they used to be. At one time, simply conserving land and water may have been enough. But now we need to start thinking about the atmosphere as well. Maybe our actions, and those of our neighbors, communities, and nations, can help slow the changes to the mid-Atlantic region.

- Do we want to experiment with our atmosphere and our planet to find out if our actions indeed have a long-lasting impact on the environment?

**Global Warming —**

### What's Your Score?

In the United States, a typical household of two people generates approximately 60,000 pounds of carbon dioxide (CO<sub>2</sub>) emissions every year from household activities and personal transportation.



**EMISSIONS SOURCE**

On average, how much does your household spend on natural gas or fuel oil each month? Pick closest amount.

- \$25
- \$50
- \$100

**POUNDS OF CO<sub>2</sub> EMITTED PER YEAR**

- 2,000 lbs./year
- 12,000 lbs./year
- 25,000 lbs./year

Home Heating

**EPA** United States Environmental Protection Agency  
Office of Air Quality  
Office of Air Quality  
EPA-430-F-0207  
November 2006

## Resources

- *Climate Change, Wildlife, and Wildlands* toolkit
- EPA's global warming site: <http://www.epa.gov/globalwarming>
- EPA state fact sheets: <http://www.epa.gov/globalwarming/impacts/stateimp/>
- Mid-Atlantic Regional Assessment home page: <http://www.essc.psu.edu/mara/>

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