



## Programming Ideas

### [Coral Reef Interactive](#)

Use this interactive from the National Museum of Natural History to facilitate a discussion on how different types of people can take action to conserve coral reefs and surrounding habitats.

### [A Green City: Past, Present, and Future](#)

Use this lesson plan from the Cooper-Hewitt, National Design Museum to host a discussion and design lab on the effects of transportation on the environment and how cities can be made greener.

### [Energy Efficient Chemical House](#)

Adapt this lesson plan from the Cooper-Hewitt, National Design Museum to host a creative workshop in which participants design an energy efficient chemical house.

### [Using What's Local: Native Materials, Local Sources](#)

Adapt this lesson plan from the Cooper-Hewitt, National Design Museum to host a workshop or discussion on the reuse of recycled materials and use of local materials in the construction of buildings.

### [America's Most Wanted Eco Graphics](#)

This video from Cooper-Hewitt, National Design Museum has a group of young designers design an eco-poster in real time; use as inspiration for your own eco-poster design event.

### [Urban Waterways Online Conference](#)

Join and participate in a Smithsonian online conference on April 9 featuring experts from the Anacostia Community Museum to talk about urban waterways and environmental stewardship.

## Additional Resources

*Facebook/Twitter chats/posts*

### [Design Other 90](#)

Website from Cooper-Hewitt, National Design Museum that features design-based solutions to environmental and energy issues from regions around the world.

### [Take Action Against Climate Change](#)





## Smithsonian Institution

Website from Smithsonian Environmental Research Center on tangible steps to fight climate change; stop invasive species; reduce pollution.

### [Change Is In the Air](#)

Exhibition website from National Museum of Natural History on greenhouse gases and how a rise in greenhouse gases impacts the Earth's atmosphere.

### [Grow Your Own Victory Garden](#)

Instructions from National Museum of American History and Smithsonian Gardens on how to grow your own victory garden

### [5 Simple Things You Can Do For the Ocean](#)

Website with tips from the National Museum of Natural History on what actions you can take to be a steward of the ocean.

## Videos

### [Ecosystems on Edge](#)

Series of videos from Smithsonian Environmental Research Center on climate change and its impact on ecosystems, including forests, rivers, underwater species, and more.

### [Climate Change Online Conference](#)

Online conference video from the Smithsonian Center for Learning and Digital Access & the National Zoo on the impact of climate change on wildlife and the measures that can be taken to reduce human impact and carbon footprint

### [Inventing Our Way Out of Climate Change](#)

Online conference video from Smithsonian Center for Learning and Digital Access and National Museum of American History on climate change and how inventions can be a way for young people to take action.

### [Prehistoric Climate Change and Why It Matters Today Video](#)

Interactive video from National Museum of Natural History on the history of climate change and how it continues to impact us today.

### [Ocean Trash: Marine Debris From Shore To Sea](#)

Blog post and video from National Museum of Natural History on ocean pollution and how to reduce human impact.





[Up on the Roof: Farming the Urban Rooftop](#)

Video from Cooper-Hewitt, National Design Museum featuring the Brooklyn Grange farm, which serves as an inspiring model of green roof possibilities.

[Why Design Now: Z-20 Concentrated Solar Power System](#)

Video from Cooper-Hewitt, National Design Museum on solar technology processes and efficiencies.

*Image Guide*

Use these images (available at [americanspaces.state.gov](http://americanspaces.state.gov)) from Smithsonian Collections and associated discussion questions to facilitate dialogue online.

**Image 1**

Citation: Smithsonian Institution Archives. Image 89-21916-8.

Aluminum Can Recycling Program, 1990.

Smithsonian's pilot aluminum-can recycling program started early in February 1990. Forty-four containers like the one pictured were placed at the National Museum of American History (NMAH), National Museum of Natural History (NMNH), National Air and Space Museum, and the Museum Support Center. Getting into the spirit, from left, Captain Ted Holmes, D.C. Fire Department; John Roberts, Office of Plant Services Audio-visual Branch, who suggested the idea; NMAH Building Manager Richard Day; NMNH Assistant to the Deputy Director Jerry Conlon; Bill Ivy, NMNH Exhibits Department production chief; and Ombudsman Chandra Heilman, who steered the idea to its conclusion.

*Discussion questions:*

- *What details do you notice in this photo?*
- *If you could create a title/caption for this photo, what would it be?*
- *What small changes can you make to your workplace/school to fight climate change?*

**Image 2**

Citation: Smithsonian National Postal Museum.

Anti-Pollution stamp series, 1970.

*Discussion questions:*

- *What details do you notice in these stamps?*





## Smithsonian Institution

- *Do you think using stamps can be an effective way to raise awareness on the issue of climate change? Why or why not?*
- *If you could change the images to reflect the most pressing environmental issues in your region, what would they depict?*

### Image 3-7

Citation: Smithsonian Gardens, 2013.

In 2013, Smithsonian Gardens and the National Museum of African Art collaborated on the creation of a community mural that used natural materials to highlight the possibility of individual action to protect the environment. This activity/event can be replicated on a local level with local artists and environmental groups.

### Image 8

Citation: “Woodsy Owl” Anti-Pollution Poster, National Museum of American History, Smithsonian Institution.

The U.S.D.A. Forest Service introduced Woodsy Owl in 1971 as an anti-litter and anti-pollution symbol to promote wise use of the environment. The campaign, which continues today, is primarily aimed at school-age children and uses slogans such as “Give a Hoot! Don’t Pollute” and “Lend a Hand-Care for the Land.”

*Discussion questions:*

- *What details do you notice in this image?*
- *This poster was aimed at children. How would you change its design to best reach children in your community?*
- *What small changes can you make to your workplace/school to fight climate change?*

### Image 9

Citation: Precinct Clean Up, Scurlock Studio Records, Archives Center, National Museum of American History, Smithsonian Institution.

Precinct Clean Up Campaign with Dr. Nelson, 1963, Washington, DC.

*Discussion questions:*

- *What details do you notice in this image?*
- *If you could create a title/caption for this photo, what would it be?*
- *What actions can you take to take care of the environment in your own neighborhood?*





**Image 10**

Citation: Earth Day at Wave Hall, Kenneth Heibert, Cooper-Hewitt, National Design Museum

On a white background, an image of an autodump within green and black circles. The image itself is in the shape of "23". In black ink, lower left: earth / day / at / wave / hill; lower right: april 23

*Discussion questions:*

- *What details do you notice in this image?*
- *How would you change the poster to reflect the most important environmental issues in your region?*
- *What are some ways you can raise awareness on environmental issues?*

**Image 11**

Citation: Earth Day '95, Paul Rand, Cooper-Hewitt, National Design Museum

Six rows of hearts fill entire page. First three rows above and last row have four green hearts each. Fourth row (from top) has three green hearts and brown text: Earth / Day... / '95"; fifth row has three green hearts with the fourth heart in red.

*Discussion questions:*

- *What details do you notice in this image?*
- *How would you change the poster to reflect the most important environmental issues in your region?*

*What are some ways you can raise awareness on environmental issues?*

**Speaker Options**

To discuss possibilities for in-person lectures or videoconferences with Smithsonian experts, please contact Liz Tunick, Project Director, Office of International Relations: [tunickl@si.edu](mailto:tunickl@si.edu) or 202-633-1203.



**Tuck Hines, Director of Smithsonian Environmental Research Center**





Anson “Tuck” Hines is director of the Smithsonian Environmental Research Center in Edgewater, Md. SERC is a global leader for research focused on connections among ecosystems in the coastal zone. Hines oversees a diverse staff of 17 senior scientists and an interdisciplinary team of more than 180 researchers, technicians and students who conduct long-term descriptive and experimental research on global change, landscape ecology, ecosystems in coastal regions, and population and community ecology.



**Bert Drake, *Plant Physiologist, Senior Scientist, Smithsonian Environmental Research Center***

Bert G. Drake is a plant physiologist at the Smithsonian Environmental Research Center in Edgewater, Maryland. He leads two major ecosystem projects on the impacts of rising atmospheric CO2 and climate change on the capacity of land ecosystems to assimilate carbon dioxide. The Chesapeake Bay wetland study is the longest-running experiment of its type ever undertaken, expanded in 1996 to include similar studies at the wildlife refuge at the Kennedy Space Center, Florida, and resulting in more than 100 publications. Dr. Drake was designated the Smithsonian 2005 Distinguished Science Lecturer for his long record of research and public outreach.



**Steve Monfort, Director of Smithsonian Conservation Biology Institute**

Steven L. Monfort was appointed in 2010 to the position of director of the newly created [Smithsonian Conservation Biology Institute](#) (SCBI), established to serve as an umbrella for the Smithsonian's global effort to conserve species and train future generations of conservationists. Headquartered in Front Royal, Virginia, the facility was previously known as the National Zoo’s Conservation and Research Center. SCBI serves as the focal point for the Smithsonian’s efforts to use science-based approaches to conserve species and train future generations of conservationists around the world.



**Francisco Dallmeier, *Director, Center for Conservation Education and Sustainability, Smithsonian Conservation Biology Institute***





Francisco Dallmeier is director of the Center for Conservation Education and Sustainability (CCES) of the National Zoo. CCES is engaged in world-class academic programs; in providing business and industry with science-based solutions for minimizing their impact on biodiversity; and in developing strategic conservation partnerships for sustainable development. CCES academic programs have trained over 1,500 professionals worldwide and produced a variety of publications about the importance of biodiversity conservation in Latin America and Africa. Recently, Dallmeier collaborated with Environment Canada leading the *International Symposium on Climate Change and Biodiversity in the Americas*.



**Ross Irwin, Geologist, Center for Earth and Planetary Studies, National Air and Space Museum**

Irwin's research focuses on relationships between the environment, geologic processes, and landforms. These projects include analyses of data returned by robotic spacecraft, studies of Mars-analog features on Earth, and planetary geologic mapping. His studies of Mars address the evolution of the cratered highland landscape, including the intercrater geomorphic surface, networks of river valleys, paleolake basins, and layered deposits. A goal of this work is to constrain the hydrology of streams that flowed across Mars more than three billion years ago. The dimensions of ancient river channels on Mars constrain the flow of rivers, showing that Martian watersheds generated a centimeter per day of runoff at times. Studies of former lake basins, some of which overflowed, suggest that it did not necessarily rain often. The wettest periods appear to have been fairly dry by Earth's standards, perhaps like Utah or Nevada in the United States. Estimating the total erosion at various locations across the highlands provides further insight into the long-term climate and water budget. Modeling the evolution of the landscape helps to constrain the long-term geologic processes.



**Andrew Johnston, Geographer, Center for Earth and Planetary Studies, National Air and Space Museum**

Johnston performs research to investigate land cover changes, forest canopy dynamics, and patterns of human settlement. These projects utilize remote sensing techniques to observe environmental and geophysical processes. Johnston also participates in research projects aimed at better understanding the geology and geophysics of Earth and other terrestrial planets, performing field work using high precision





survey gear. He has applied remote sensing, geospatial analysis, and field survey techniques for planetary and terrestrial research projects.



**Timothy McCoy, Department Chair, Mineral Sciences, National Museum of Natural History**

Research is focused on using meteorites as a tool to understand the origin and evolution of their parent bodies, namely asteroids and Mars. His major focus has been understanding the detailed melting and differentiation of asteroids in the early history of the Solar System to ultimately unravel the origin of differentiated worlds like Earth. He both examines the mineralogy, chemistry and texture of meteorites (petrology) and reproduce these textures and compositions during high-temperature crystallization experiments. His work is highly collaborative with colleagues using age dating, oxygen isotopic analyses, noble gases and a wide range of other techniques to gain a comprehensive overview of the problem.



**Brian Huber, Department Chair, Paleobiology, National Museum of Natural History**

Research involves the study of [foraminifera](#), especially planktonic foraminifera, and what they can tell us about how Earth’s environment has changed during the past 120 million years. Because of their small size, relatively short geologic age ranges, and wide distribution in a variety of marine sediments worldwide, study of foraminiferal assemblages provides valuable insight to the age of the sediments in which they are found (biostratigraphy), the type of environment in which they were deposited (paleoecology), and the temperature of the ocean water in which they grew (paleoclimatology and paleoceanography).



**Scott Wing, Curator of Fossil Plants, Department of Paleobiology, National Museum of Natural History**





Scott Wing has worked as a research scientist, curator, and educator in the National Museum of Natural History’s Department of Paleobiology since 1984. He studies fossil plants and past climate change, emphasizing periods of globally warm climate 50-70 million years ago. For the last 10 years his research has focused on a geologically short period of extreme warmth called the Paleocene-Eocene Thermal Maximum, or PETM. Like the warming being caused by humans, the PETM was the result of a large release of carbon dioxide into the atmosphere, and had strong effects on ecosystems and the chemistry of the atmosphere and oceans.



**Bill Fitzhugh, Director, Arctic Studies Center, National Museum of Natural History**

William W. Fitzhugh directs the Arctic Studies Center in the Smithsonian’s Department of Anthropology and has spent more than thirty years studying arctic peoples and cultures. His primary field is arctic and subarctic archaeology and paleoecology. Broader aspects of his research feature the evolution of northern maritime adaptations, impacts of climate and environmental change, and culture contacts. Recent research has been on circumpolar cultural connections and the origins of Eskimo culture and art. Dr. Fitzhugh’s films and exhibitions include *Crossroads of Continents: Native Cultures of Siberia and Alaska*; *Ainu: Spirit of a Northern People*; and *Vikings: the North Atlantic Saga*.



**Valerie Paul, Director, Smithsonian Marine Station**

The overall mission of the Smithsonian Marine Station at Fort Pierce is support and conduct of scholarly research in the marine sciences, including collection, documentation and preservation of south Florida's marine biodiversity and ecosystems, as well as education, training, and public service. Specific research emphases are: to analyze the systematics and biogeography of major groups of marine organisms in the Floridian coastal zone, focusing on issues of biodiversity; to determine the evolutionary patterns, ecological significance and physiological mechanisms of life histories of marine organisms and; to investigate the complex interactions of marine organisms and the community structure of the diverse and productive habitats of south Florida.





**Nancy Knowlton, Sant Chair for Marine Science, National Museum of Natural**

**History**

Nancy Knowlton is the Sant Chair for Marine Science at the Smithsonian’s National Museum of Natural History and a scientific leader of the Census of Marine Life. She wrote the book, [Citizens of the Sea](#), to celebrate the ten years of the Census. She founded the Center for Marine Biodiversity and Conservation at the Scripps Institution of Oceanography of the University of California, San Diego. Knowlton has devoted her life to studying, celebrating, and striving to protect the multitude of life-forms that call the sea home.



**Chris Meyer, Research Zoologist, National Museum of Natural History**

Chris Meyer's research interests include Marine speciation, diversification, biogeography and phylogeography, as well as the history, assembly and maintenance of tropical reef communities and DNA Barcoding. That's in addition to Phylogeny and Systematics of Cypraeidae, Conus, and other diverse, reef-associated gastropod groups. He is currently the director of The Moorea Biocode Project which aims to create the first comprehensive inventory of all non-microbial life in a complex tropical ecosystem. The Moorea Biocode Project is sending researchers climbing up jagged peaks, trekking through lush forests and diving down to coral reefs to sample the French Polynesian island's animal and plant life. A library of genetic markers and physical identifiers for every species of plant, animal and fungi on the island is being constructed. This database will be publicly available as a resource for ecologists and evolutionary biologists around the world.



**Lee Weigt, Director, Laboratories of Analytical Biology, National Museum of Natural**

**History**

**Lee Weigt** is the Director of the Laboratories of Analytical Biology (LAB) at the Smithsonian Institution’s National Museum of Natural History. The LAB is the hub of the molecular biotechnology infrastructure at





NMNH and as some of its components, houses the SI's DNA Barcoding Initiative, the Instrumentation Core, and remote management and assistance to other satellite molecular facilities and projects at the Smithsonian.



**Doug Herman, *Senior Geographer, National Museum of the American Indian***

Douglas Herman is senior geographer for the Smithsonian National Museum of the American Indian and adjunct associate professor at Towson University, Maryland. An early architect of NMAI's Indigenous geography project, he went on to create Pacific Worlds, a web-based indigenous-geography education project for Hawai'i and the American Pacific. Both projects focus on indigenous cultural knowledge and environmental understandings. He has published several articles and given numerous scholarly presentations regarding the representation of Indigenous cultures and the importance of Indigenous knowledge.

