



## Resources

### “Asking the Auks about Climate Change in the Arctic”

Lecture, May 28, 2009

#### **WEBSITES**

**AUD** = includes audio, **VID** = includes video, **ANI** = animation

#### **Our Speaker for Thursday, May 28, 2009**

Dr. Nina Karnovsky, Pomona College

[www.biology.pomona.edu/people/faculty/karnovsky.shtml](http://www.biology.pomona.edu/people/faculty/karnovsky.shtml)

Recorded lecture by Dr. Nina Karnovsky, April 20, 2007 **VID**

“Asking the Auks about Climate Change in the Arctic”

[cdl.libraries.claremont.edu/cdm4/item\\_viewer.php?CISOROOT=/cdl&CISOPTR=9](http://cdl.libraries.claremont.edu/cdm4/item_viewer.php?CISOROOT=/cdl&CISOPTR=9)

Blog about Dr. Karnovsky’s Arctic research

ARCTIC AUKS: The impact of climate conditions on Arctic marine predators

[projects.pomona.edu/arctic/](http://projects.pomona.edu/arctic/)

Blog about current student research in the Karnovsky lab

[research.pomona.edu/karnolab](http://research.pomona.edu/karnolab)

#### **Little Auks**

Little Auks as Marine Predators in a Changing Arctic

[polar.alaskapacific.edu/aharding/lampca.html](http://polar.alaskapacific.edu/aharding/lampca.html)

Hear audio of the little auk **AUD**

Royal Society for the Protection of Birds (RSPB)

[www.rspb.org.uk/wildlife/birdguide/name/1/littleauk/](http://www.rspb.org.uk/wildlife/birdguide/name/1/littleauk/)

Little Auk information from the Norwegian Polar Institute

[npweb.npolar.no/english/1213016681.33](http://npweb.npolar.no/english/1213016681.33)

#### **The Arctic**

Information on the island archipelago Svalbard

[en.wikipedia.org/wiki/Svalbard](http://en.wikipedia.org/wiki/Svalbard)

Norwegian Polar Institute

Fact Sheet: Threats to Arctic Biodiversity: Climate change impacts on sea mammals & sea birds

[npweb.npolar.no/english/subjects/biodiversitythreats](http://npweb.npolar.no/english/subjects/biodiversitythreats)

*Arctic Literally On Thin Ice, According To New Satellite Data*, ScienceDaily  
(4/6/09)

[www.sciencedaily.com/releases/2009/04/090406132602.htm](http://www.sciencedaily.com/releases/2009/04/090406132602.htm)



## Resources

### “Asking the Auks about Climate Change in the Arctic”

Lecture, May 28, 2009

Overview of research in Arctic and Antarctic - National Science Foundation  
[nsf.gov/news/overviews/arcticantarctic/index.jsp](http://nsf.gov/news/overviews/arcticantarctic/index.jsp)

#### Earthwatch Radio **AUD**

##### Stratospheric Surprise

Solar storms created a big surprise in the Earth's upper atmosphere.

[ewradio.org/program.aspx?ProgramID=3997](http://ewradio.org/program.aspx?ProgramID=3997)

##### Too Far To Swim

Polar bears in parts of the Arctic are on thin ice, and sometimes they're not on ice at all.

[ewradio.org/program.aspx?ProgramID=4345](http://ewradio.org/program.aspx?ProgramID=4345)

##### Strange Behavior by Polar Bears

Some polar bears have turned to cannibalism to eat, and that's an unusual turn of events.

[ewradio.org/program.aspx?ProgramID=4320](http://ewradio.org/program.aspx?ProgramID=4320)

##### Big Changes in the Far North

People in the Arctic are watching their world change dramatically.

[ewradio.org/program.aspx?ProgramID=4361](http://ewradio.org/program.aspx?ProgramID=4361)

#### NOAA's Arctic Webpage

[www.arctic.noaa.gov/](http://www.arctic.noaa.gov/)

#### Arctic: A Friend Acting Strangely

Smithsonian National Museum of Natural History

[forces.si.edu/arctic/](http://forces.si.edu/arctic/)

#### Arctic Climate Impact Assessment (ACIA), 2004

[amap.no/acia/](http://amap.no/acia/)

#### **Arctic vs. Antarctic**

##### Adventure Life: Antarctic and Arctic Comparison

*Adapted from:* United States National Science Foundation. The United States in Antarctica: Report of the U.S. Antarctic Program External Panel. 1997 Washington, D.C.

[www.adventure-life.com/articles/pole-comparison-180.php](http://www.adventure-life.com/articles/pole-comparison-180.php)

#### National Snow & Ice Data Center (NSIDC)

All About Sea Ice – Characteristics: Arctic vs. Antarctic

[nsidc.org/seaice/characteristics/difference.html](http://nsidc.org/seaice/characteristics/difference.html)

#### Autosub Under Ice, lectures on exploration **VID** & polar ice advance & retreat

##### **ANI**

[mm.coexploration.org/video/autosub/bbflv/](http://mm.coexploration.org/video/autosub/bbflv/)



## Resources

### **“Asking the Auks about Climate Change in the Arctic”**

Lecture, May 28, 2009

National Geographic – Weather in Arctic and Antarctic Regions

[www.nationalgeographic.com/polarexploration/explore-poles.html?fs=www3.nationalgeographic.com&fs=plasma.nationalgeographic.com](http://www.nationalgeographic.com/polarexploration/explore-poles.html?fs=www3.nationalgeographic.com&fs=plasma.nationalgeographic.com)

### **International Polar Year (IPY) 2007-2008**

International Polar Year

Profiles of scientific research conducted from March 2007 to March 2009

[www.ipy.org/](http://www.ipy.org/)

International Polar Year – United States website

[www.ipy.gov/](http://www.ipy.gov/)

International Polar Year – USGS website

[international.usgs.gov/ipy/default.shtml](http://international.usgs.gov/ipy/default.shtml)

The FIRST International Polar Year – NOAA website

See the records of the first IPY!

[www.arctic.noaa.gov/aro/ipy-1/](http://www.arctic.noaa.gov/aro/ipy-1/)

view or download data here:

[www.arctic.noaa.gov/aro/ipy-1/Data-P1.htm](http://www.arctic.noaa.gov/aro/ipy-1/Data-P1.htm)

### **For Teachers**

PolarTREC (Teachers & Reserachers Exploring & Collaborating)

Teachers participating in Arctic Research

[www.polartrec.com/](http://www.polartrec.com/)

Chico junior high school teacher who participated in little auk research

[www.polartrec.com/greenland-seabird-ecology](http://www.polartrec.com/greenland-seabird-ecology)

Teachers Experiencing Antarctica and the Arctic

[tea.armadaproject.org/tea\\_activities.html](http://tea.armadaproject.org/tea_activities.html)

### **Lesson Plans and Resources**

Lesson plans grade 3-9 from Polar Radar Ice Sheet Measurements (PRISM)

[ku-prism.org/resources/polar/arclessons.html](http://ku-prism.org/resources/polar/arclessons.html)

Little Auk Survival Challenge Lesson (elementary)

[www.polartrec.com/resources/lesson/2016](http://www.polartrec.com/resources/lesson/2016)

Carbon Dioxide: The Heat is On! Lesson (high school)

[tea.armadaproject.org/activity/tea\\_activity\\_heat\\_is\\_on.html](http://tea.armadaproject.org/activity/tea_activity_heat_is_on.html)



## Resources

### “Asking the Auks about Climate Change in the Arctic”

Lecture, May 28, 2009

National Science Foundation Arctic and Antarctic Classroom Resources

[nsf.gov/news/classroom/arcticantarctic.jsp](http://nsf.gov/news/classroom/arcticantarctic.jsp)

Online Interactive Arctic food web

[www.harcourtschool.com/activity/food/arctic\\_activity.html](http://www.harcourtschool.com/activity/food/arctic_activity.html)

Arctic Alive Lesson Plans

[www.arcus.org/ArcticAlive/classroom/content/lessons.html](http://www.arcus.org/ArcticAlive/classroom/content/lessons.html)

Lesson Plans from ARM (Atmospheric Radiation Measurement) and (ACRF) Education and Outreach Program

[education.arm.gov/teacherslounge/lessons.stm](http://education.arm.gov/teacherslounge/lessons.stm)

NOAA Ocean Explorer – Arctic Exploration

[oceanexplorer.noaa.gov/explorations/02arctic/background/education/media/arctic\\_lessonplans.html](http://oceanexplorer.noaa.gov/explorations/02arctic/background/education/media/arctic_lessonplans.html)

## **BOOKS**

NSTA (National Science Teachers Association) has just published its selections of the best science trade books published in 2006. <http://www.nsta.org/ostbs07>  
Reading levels [**P = Primary (K–2)**; **E = Elementary (3–5)**; **I = Intermediate (6–8)**; **A = Advanced (9–12)**] are provided by the reviewers. They are intended as guidelines and are not meant to limit the potential use of titles.

### ***Onward: A Photobiography of African American Polar Explorer Matthew***

***Henson.*** Delores Johnson. Illustrated with photographs. National Geographic Children's Books. 64pp. Trade ISBN 0-7922-7914-X, \$17.95; Library ISBN 0-7922-7915-8, \$27.90. (I) An adventuresome story told through archival polar and personal photographs about Matthew Henson, an African American explorer who labored alongside Robert Peary to be the first humans to reach the North Pole in 1909. National Geographic Society's Hubbard Medal ("exploration, discovery, and research") was awarded posthumously for Henson's achievements in arctic exploration. Foreword, Chronology (1866–2001), Bibliography and Resources, Index.

### ***The North Pole Was Here: Puzzles and Perils at the Top of the World.***

Andrew C. Revkin. Illustrated with photographs. Kingfisher/Houghton Mifflin Company. 128pp. Trade ISBN 978-0-7534-5993-5, \$15.95. (I) A reporter writes about his stories of personal adventure, polar exploration, and the controversy about whether Peary or Cook actually reached the North Pole first. He also discusses scientific research conducted on the ice by present-day scientists and the consequences for Earth's future of the melting sea ice. Source Notes, Further Reading, Internet Resources, Picture Credits, Index, Metric Conversion Chart.

***Arctic Lights, Arctic Nights.*** Debbie S. Miller. Illustrated by Jon Van Zyle. Walker and Company. 32pp. Trade ISBN 0-8027-8856-4, \$16.95; Library ISBN 0-8027-8857-2, \$17.85. (E)



## Resources

### **“Asking the Auks about Climate Change in the Arctic”**

Lecture, May 28, 2009

Alaska is the “Land of the Midnight Sun.” This beautiful and intriguing book portrays arctic animals and weather throughout the changing seasons. Each two-page spread features a different time of year, complete with the total number of sunlight hours and average daily temperatures. Author’s Note, Glossary.

***Ice Bear: In the Steps of the Polar Bear.*** Nicola Davies. Illustrated by Gary Blythe. Candlewick Press. 32pp. Trade ISBN 0-7636-2759-3, \$16.99. (P, I) This richly illustrated book follows the life of the polar bear in the Arctic region. It uses large narrative text with smaller informational text so the book can be enjoyed on a variety of levels. Index.

***Looking for Seabirds: Journal from an Alaskan Voyage.*** Written and illustrated by Sophie Webb. Houghton Mifflin Company. 48pp. Trade ISBN 0-618-21235-3, \$16. (I) Using the format of a scientist’s notebook, the author describes how she worked with researchers to understand the birds that inhabit the Aleutian Islands of Alaska. The author looks at how these birds survive and the importance of understanding the possible impact of human activities on the Arctic marine ecosystem. Glossary.