

# Climate Change: Science and Traditional Knowledge

## Interactive kiosks about climate studies

The U.S. Department of Energy's **Atmospheric Radiation Measurement (ARM) Program** supports education and outreach efforts for communities and schools surrounding its climate research facilities in the Tropical Western Pacific, North Slope of Alaska and Southern Great Plains. The mission of the ARM Education and Outreach Program is to promote basic science education and community awareness of climate change. **The *Climate Change: Science and Traditional Knowledge* kiosks are interactive learning tools featuring interviews with ARM scientists discussing basic concepts of atmospheric science. Interviews with elders and community leaders from ARM's host communities focus on the impacts of climate change on land, sea and all aspects of village life.**

- **North Slope of Alaska:**

Coastal erosion; changes in seasonal patterns; changes in whale migration patterns; melting sea and land ice; and the melting tundra.



Students use the ARM kiosk at the Inupiat Heritage Center

- **Darwin, Australia:**

Changes in the duration and timing of the wet and dry seasons; potential impacts on fisheries; and adaptability of flora and fauna to a changing climate.



Visitors try out the newly installed ARM kiosk at the Museum & Art Gallery of the Northern Territory

- **Manus Island, Papua New Guinea**

- **Nauru Island, Republic of Nauru:**  
Rising sea level; coastal erosion; changes in the wet and dry seasons; drought; and an ever-growing need for environmental education and awareness for island children.



Trade Wind Communications films for the TWP kiosk in Manus, Papua New Guinea



Community leaders from Manus Island are pictured above discussing climate change impacts on Pacific islands. Adults and children from surrounding villages gather to listen.

### Community Response

- **Frequent requests by teachers for kiosks on CD and DVD for classroom use.**
- March 2005 – Bradbury Science Museum in Los Alamos, NM collaborates with ARM to display kiosks as part of the museum's permanent environmental science exhibit.
- April 2005 – British Broadcasting Corporation highlights ARM kiosk and climate research in a documentary about climate change on the North Slope of Alaska.
- May 2005 – WGBH Boston and ARM collaborate on a proposal to fund the development of an earth and space science wing of the Teacher's Domain digital library, which will build upon scientific and indigenous perspectives in ARM kiosks.
- March 2006 – Australian Bureau of Meteorology requests a copy of the ARM kiosk for display at BoM headquarters in Melbourne, Australia.

### Other Resources

- **Climate Education Update:** Informative newsletter for teachers with a lesson plan insert.
- **Lesson Plans:** Easy-to-use classroom activities for teaching about weather and climate.
- **Teacher workshops:** Teachers from host communities learn how to teach ARM lesson plans and lead classroom experiments.
- **ARM Education Center:** Web site for teachers and students loaded with lesson plans, information about climate research, crossword puzzles, quizzes, coloring pages and the Ask a Scientist tool. (Accessible from the ARM web site: [www.arm.gov](http://www.arm.gov))



*"I'm concerned...I would like the future generation to be looking at things more closely and really thinking it through. What they do to their island now, even though they think it isn't going to do much...it might, and [Nauru] is just one small island...where are they going to go after that?"*

- Limay Uera  
Nauru Island



*"There have been, in our oral traditions, indications of adaptation based on what is happening in the climate. I am sure that, as before, adaptations will be made to accommodate changes due to warming because we are always evolving."*

- Jana Harchareck, Educator  
Barrow, Alaska



*"The kiosk will promote interest in atmospheric science among Northern Territory students and teachers. The Papua New Guineans in our community will appreciate the content from Manus Island."*

- Kate Smith, Education Manager  
Darwin, Australia