NOAA in the Antarctic

James H. Butler, Director

Global Monitoring Division

Earth System Research Laboratory

National Oceanic and Atmospheric Administration

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Overview

- Long Antarctic research history (South Pole at IGY – 1957).
- Continuous staff on continent since 1974… not one day gap!
- Regulatory role for marine conservation and management.
- Congressional mandate to monitor the Antarctic stratospheric ozone layer.

- NOAA line offices with Antarctic projects:
  - National Environmental Satellite, Data, and Information Service (NESDIS)
  - National Marine Fisheries Service (NMFS)
  - National Weather Service (NWS)
  - Oceanic and Atmospheric Research (OAR)
- Looking forward… needs identified by NOAA.

Antarctic Marine Living Resources (AMLR) Convention Act of 1984 –

- Establishes DOC's responsibility for conducting "directed research" to support U.S. Antarctic policy, particularly with respect to the conservation and management of living marine resources in the Southern Ocean.

Current Activities –

- Monitor Antarctic marine ecosystems and populations with annual scientific cruises and field camp research.
- Interpret changes and predict impacts of fishing and climate change to fish and bird populations.

NESDIS & NWS

Current Activities –

- Support for coastal stations (U.S. and international), also provide data for predictive weather models worldwide.
- Process meteorological data from U.S. stations.
- Collaborate with the National Ice Center – International Programme for Antarctic Buoys.

Future Endeavors –

- Continue satellite support for multiple coastal research stations.
- Co-lead implementation of WMO Global Cryosphere Watch (GCW) initiative, including surface and satellite observations in Antarctica (approved by WMO Congress in May, 2011).

Earth System Research Laboratory – Global Monitoring Division

Providing the best possible information on atmospheric constituents that drive climate change, stratospheric ozone depletion, and baseline air quality.

Operate at all three stations:

1. South Pole - Atmospheric Baseline Observatory (2 year-round staff)
   >150 atmospheric constituents measured – "Cleanest Air on Earth"
2. McMurdo - surface & stratospheric ozone
3. Palmer - flask sampling for GHG and ozone depleting substances

\+ Antarctic UV network (all three stations)

Serves as the "caretaker" of the South Pole Clean Air Sector (CAS) in accordance with NSF's Antarctic Specially Managed Area (ASMA) for current & future clean air/snow research.

Supports NSF-funded science projects through long-term baseline atmospheric measurement suite.

Moving forward

Identified needs –

- Continued inter-agency support & use of NSF research infra-structure (land/facilities) and vessels (sea). *Working Group 1 (8.1 Research, Support: Facilities and Equipment)*
- One or two weather satellites in a highly-elliptical orbit (HEO) over the Antarctic. NSF has some interest for communications purposes. (The Canadians are developing such a system for the Arctic now, called the Polar Communications and Weather (PCW) satellite mission.) A similar system over the Antarctic is desirable.

  Working Group 2 (8.8 Communications and Information)

- Continued support of NOAA shipping requirements and personnel deployments to the Antarctic stations and vessels.

  Working Group 1 (8.1 Research, Support: Facilities and Equipment)?