

IV. Conclusion: Vision for Earth

The vision of NOAA Administrator Vice Admiral Lautenbacher stated in the introduction is part of his broader vision for global observations. He indicated his support for an integrated global observing system in separate speeches delivered to the Intergovernmental Ocean Commission and the World Meteorological Organization in June 2002; a key excerpt from those speeches follows:

I strongly believe that NOAA is the right agency to take a leadership role within the United States, but we know full well that we cannot do this alone. The global observation effort for climate is far too enormous for one organization, or even one country, to undertake alone. We must work together. Perhaps the greatest challenge is to develop one integrated observation plan for the atmosphere, ocean, and land which everyone can support. The Global Climate Observing System and Global Ocean Observing System, working with the Integrated Global Observing Strategy Partners and others, have developed international consensus on overall needs. There is, however, much work still to be done. This challenge lies in our ability to provide one coherent plan which integrates space and *in-situ* observations across those three elements.

Toward this end, NOAA is taking a prominent role, partnering with NASA and other U.S. agencies to bring this global perspective into achievable reality. The initial effort began with an Earth Observations Summit on July 31, 2003. The need for this was widely recognized and provides the benefit of a sound plan for end-to-end stewardship of environmental data. This is a challenge and NOAA is on target to step up to this opportunity.

V. Appendices

Appendix A. Acronym List

ASOS	Automated Surface Observing System
ATWIS	Advanced Transportation Weather Information System
AVHRR	Advanced Very High Resolution Radiometer
CCRI	Climate Change Research Initiative
CCSP	Climate Change Science Program
CDMP	Climate Database Modernization Program
CD-ROM	Compact Disc Read-Only Memory
CEOS	Committee on Earth Observation Satellites
CLASS	Comprehensive Large-Array Data Stewardship System
C-MAN	Coastal-Marine Automated Network
COARE	Coupled Ocean Atmosphere Response Experiment
COOP	NWS Cooperative Observer Program
CoRIS	Coral Reef Information System
CORMS	Continuous Operational Real-Time Monitoring System
CORS	Continuously Operating Reference Stations
CRAFT	Collaborative Radar Acquisition Field Test
CZMA	Coastal Zone Management Act
CZMP	Coastal Zone Management Plan
DMSP	Defense Meteorological Satellite Program
DoD	U.S. Department of Defense
ENC	Electronic Navigational Charts
EOS	Earth Observing System
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
GB	Gigabyte (1,000,000,000 bytes)
GCOS	Global Climate Observing System
GEWEX	Global Water and Energy Cycle Experiment
GIS	Geographic Information System
GODAR	Global Ocean Data Archaeology and Rescue
GOES	Geostationary Operational Environmental Satellite
GPS	Global Positioning System
HABSOS	Harmful Algal Blooms Observing System
IOC	Intergovernmental Oceanographic Commission
IPCC	Intergovernmental Panel on Climate Change
IT	Information Technology
METOP	European Meteorological Operational Satellite
MODIS	Moderate Resolution Imaging Spectrometer
MON	Marine Observation Network
MSFCMA	Magnuson-Stevens Fishery Conservation and Management Act
NASA	National Aeronautics and Space Administration
NCDC	National Climatic Data Center
NCDDC	National Coastal Data Development Center

NERRS	National Estuarine Research Reserve System
NESDIS	National Environmental Satellite, Data, and Information Service
NEXRAD	Next Generation Weather Radar
NGDC	National Geophysical Data Center
NGI	Next Generation Internet
NMFS	National Marine Fisheries Service
NMSP	National Marine Sanctuaries Program
NNDC	NOAA National Data Centers
NOAA	National Oceanic and Atmospheric Administration
NODC	National Oceanographic Data Center
NOMADS	NOAA Operational Model Archive and Distribution System
NOS	National Ocean Service
NOSA	NOAA Observing System Architecture
NPN	NOAA Profiler Network
NPOESS	National Polar-orbiting Operational Environmental Satellite System
NPP	NPOESS Preparatory Program
NRC	National Research Council
NSDI	National Spatial Data Infrastructure
NSRS	National Spatial Reference System
NSSL	National Severe Storms Laboratory
NWLON	National Water-Level Observation Network
NWS	National Weather Service
OGC	Open GIS Consortium
OMB	Office of Management and Budget
ORDA	Open Radar Data Acquisition
PB	Petabyte (1,000,000,000,000,000 bytes)
POES	Polar-Orbiting Operational Environmental Satellite
PORTS®	Physical Oceanographic Real-Time System
RWIS	Road Weather Information Systems
SAA	Satellite Active Archive
SDS	Scientific Data Stewardship
TB	Terabyte (1,000,000,000,000 bytes)
TOGA	Tropical Ocean Global Atmosphere (Program)
USCRN	U.S. Climate Reference Network
WFO	Weather Forecast Office
WGISS	Working Group on Information Systems and Services
WOD01	World Ocean Database 2001

Appendix B. References

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Appendix C. Congressional Request Language for Data Management Report

U.S. Code Title 15, Section 1537 (1) and Section 1537 (2)

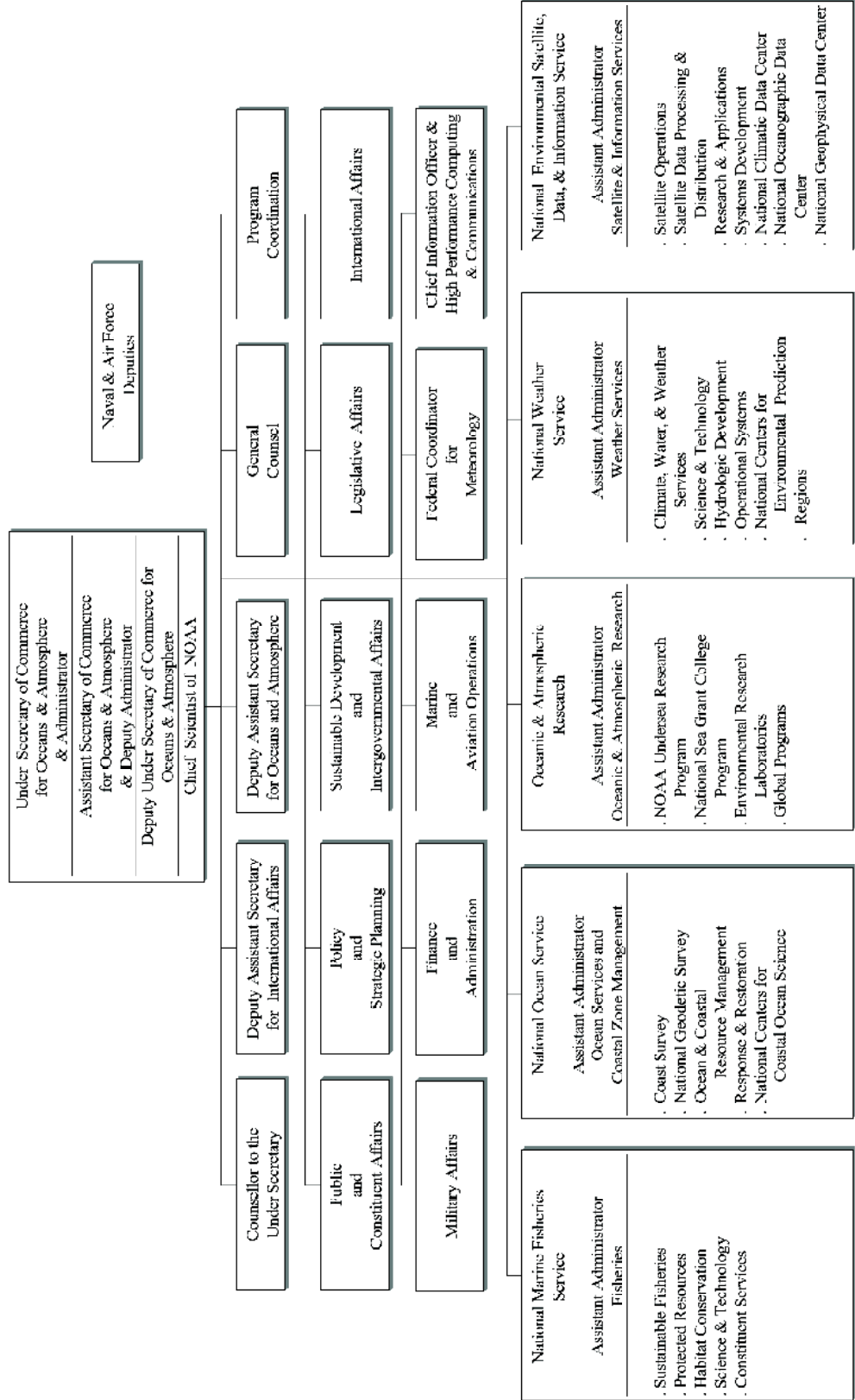
Needs Assessment for Data Management, Archival, and Distribution

1. Not later than 12 months after the date of enactment of this Act and at least biennially thereafter, the Secretary of Commerce shall complete an assessment of the adequacy of the environmental data and information systems of the National Oceanic and Atmospheric Administration. In conducting such an assessment, the Secretary shall take into consideration the need to:
 - A. provide adequate capacity to manage, archive, and disseminate environmental data and information collected and processed, or expected to be collected and processed, by the National Oceanic and Atmospheric Administration and other appropriate departments and agencies;
 - B. establish, develop and maintain information bases, including necessary management systems, which will promote consistent, efficient, and compatible transfer and use of data;
 - C. develop effective interfaces among the environmental data and information systems of the National Oceanic and Atmospheric Administration and other appropriate departments and agencies;
 - D. develop and use nationally accepted formats and standards for data collected by various national and international sources; and,
 - E. integrate and interpret data from different sources to produce information that can be used by decision makers in developing policies that effectively respond to national and global environmental concerns.
2. Not later than 12 months after the date of enactment of this Act and biennially thereafter, the Secretary of Commerce shall develop and submit to the Committee on Commerce, Science, and Transportation of the Senate, and the Committee on Science, Space, and Technology of the House of Representatives a comprehensive plan, based on the assessment under paragraph (1) to modernize and improve the environmental data and information systems of the National Oceanic and Atmospheric Administration. The report shall:
 - A. set forth modernization and improvement objectives for the 10 year period beginning with the year in which the plan is submitted, including facility requirements and critical new technological components that would be necessary to meet the objectives set forth;
 - B. propose specific agency programs and activities for implementing the plan;
 - C. identify the data and information management, archival, and distribution responsibilities of the National Oceanic and Atmospheric Administration with respect to other Federal departments and agencies and international organizations, including the role of the National Oceanic and Atmospheric Administration with respect to large data systems like

- D. the Earth Observing System Data and Information System; and, provide an implementation schedule and estimate funding levels necessary to achieve modernization and improvement objectives.

Appendix D. NOAA Organizational Chart

U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION



Appendix E. Major Data Sets and Observations

E.1 Major Data Sets and Observations Managed by the NNDCs

ASOS	Automated Surface Observing System. Meteorological data and observations from approximately 900 NWS and FAA weather observing sites employing the ASOS.
CARDS	Comprehensive Aerological Reference Data Set. A data set of global upper-air data from radiosonde observations.
COADS	Comprehensive Ocean Atmosphere Data Set. A data set of global marine surface meteorological observations from the global oceans taken by observers aboard U.S. and foreign vessels.
COOP	Cooperative Observer Program Network. Data set containing the daily maximum and minimum temperatures and precipitation from approximately 8,000 sites of the U.S. volunteer observing network operated by the NWS.
DMSP	Defense Meteorological Satellite Program. Environmental data collected by DMSP satellites to monitor meteorological, oceanographic, and space weather conditions in support of operational requirements of the DoD, as well as other sectors of the Federal government.
EOS	Earth Observing System. Environmental data from the NASA Earth Observing Satellite system.
GHCN	Global Historical Climatology Network. A data set of daily temperature, pressure, and precipitation data from a network of global stations with long-series data for the purpose of monitoring global change.
GOES	Geostationary Operational Environmental Satellite. Environmental data and derived imager/sounder products from GOES satellites that orbit in the geosynchronous plane of about 22,300 miles (35,800 kilometers).
NEXRAD	Next Generation Weather Radar. Data from the Next Generation Weather Radar system, which comprises approximately 180 Weather Surveillance Radar-1988 Doppler (WSR-88D) sites throughout the United States and selected overseas locations. This system is a joint effort of the U.S. Department of Commerce, DoD, and Department of Transportation. The controlling agencies are the NWS, the Air Weather Service, and FAA.
NPOESS	National Polar-Orbiting Operational Environmental Satellite System. Environmental data collected by the single, national program that will result from the merging of the military and civilian operational meteorological satellite systems. The NPOESS is designed to employ three or more satellites to integrate remote sensing, surface data collection, and search and rescue payloads. This system will eventually replace both the POES and

NPP	DMSPP systems. NPOESS Preparatory Program. Environmental data collected by NASA satellites that will be prototyping the instrumentation expected to be aboard the converged NOAA/DoD NPOESS satellites.
POES	Polar-orbiting Operational Environmental Satellites. Level 1b environmental data and derived products from NOAA's polar-orbiting satellites that orbit the Earth. Polar-orbiters generally orbit at 517 miles (833 kilometers) or 540 miles (870 kilometers).
USHCN	U.S. Historical Climatology Network. Contains a subset of COOP data from a network of sites with long-series observations—some beginning in the 19th Century—and data that have been validated and corrected for biases to monitor climate change.

E.2 Representative Environmental Stewardship Data Sets and Observations Managed by NOAA Centers of Data

CALCOFI	California Cooperative Oceanic Fisheries Investigations. Long-term California Current pelagic ecology time-series data from more than 30 research-vessel cruises by a consortium of marine research institutions since 1951. Includes approximately 50,000 plankton samples and 20,000 hydro casts.
CORS	The National Continuously Operating Reference Station Network. The CORS Network collects and distributes GPS observational data sets to support 3-dimensional positioning. These data are made available around-the-clock on the Internet.
EFH	Essential Fisheries Habitat Consultation Tracking System. A database of NMFS consultations and recommendations regarding EFH permit requests, as required by Congressional mandate.
ELMR	Estuarine Living Marine Resources Data Base on the distribution, relative abundance, and life history characteristics of 153 fish and invertebrate species in 122 estuaries. Relative abundance is ranked by month for each life stage, each species, in each salinity zone of each estuary.
MORATORIUM	
PERMITS	Vessel Moratorium Permits. Permits for Gulf of Alaska and the Bering Sea and Aleutian Islands under a program to place a moratorium on new entries into the fisheries for 3 years.
MRFSS	Marine Recreational Fisheries Statistics System. Recreational fishing catch-effort data used to estimate the impact of marine-recreational fishing on the Nation's marine resources.
NOSHDB	NOS Hydrographic DataBase (HDB). The HDB contains the entire NOS digital hydrographic archive, covering approximately 5,000 surveys. It is available to the public on CD-ROM.

NPAC	North Pacific Commercial Fisheries Data. Confidential commercial catch-effort data collected at sea by observers aboard vessels fishing on the Northwest and Alaska fishing grounds.
NWLON	National Water-Level Observation Network. This network is presently composed of 175 water-level stations, including 36 stations in the Great Lakes. More than 80 of the stations have been in continuous operation for more than 50 years, including nine stations in operation for more than 100 years.
NS&T	National Status and Trends data base contains 4,000 records of chemical concentrations of 80 chemicals in mussels, oysters, finfish, and sediments collected annually since 1985 at 300 fixed sites in the coastal and estuarine U.S.
PORTS®	Physical Oceanographic Real-Time Systems®. A network of real-time reporting water-level and current stations in major U.S. harbors. Each of the six PORTS® has from one to four current meters in operation at any one time. Long-term ancillary data sets being collected include water temperature and density, wind speed and direction, barometric pressure, and air temperature.
PPS	Processed Products Database. Information from fishery product processors and distributors on products, plants, and employment.
SVDBS	Research Surveys DataBase System. A time series of fish and invertebrate ecology abundance and distribution data collected by historical research vessel trawl surveys in the Northeast region.
WPLLOD	Western Pacific Long-line Observer Data. Commercial catch and sea turtle, seabird, and marine mammal interaction data collected by observers at sea in the western Pacific.