NOAA OCEANIC AND ATMOSPHERIC RESEARCH

The Committee's recommendation provides $430,033,000 for Oceanic and Atmospheric Research [OAR]. OAR programs provide the environmental research and technology needed to improve NOAA weather services, air quality warnings, forecasts, climate predictions, and marine services. To accomplish these goals, OAR supports a network of scientists in its Federal research laboratories, universities, and joint institutes and partnership programs.

Committee recommendations are displayed in the following table:

OCEANIC AND ATMOSPHERIC RESEARCH OPERATIONS, RESEARCH AND FACILITIES

[In thousands of dollars]

| | Committee recommendation |
|---|---|
| Climate Research: | |
| Laboratories and Cooperative Institutes | 60,000 |
| Regional Climate Data and Information | 40,000 |
| Climate Competitive Research | 60,000 |
| Total, Climate Research | 160,000 |
| Weather and Air Chemistry Research Programs: | |
| Laboratories and Cooperative Institutes | 64,547 |
| U.S. Weather Research Program | 7,236 |
| Tornado Severe Storm Research/Phased Array Radar | 13,111 |
| Total, Weather and Air Chemistry Research | 84,894 |
| Ocean, Coastal and Great Lakes Research: | |
| Laboratories and Cooperative Institutes | 26,669 |
| National Sea Grant College Program | 62,800 |
| Marine Aquaculture Research | 5,000 |
| Sustained Ocean Observations and Monitoring | 41,347 |
| Integrated Ocean Acidification | 11,000 |
| Ocean Exploration | 26,220 |
| Total, Ocean, Coastal and Great Lakes Research | 173,036 |
| High Performance Computing Initiatives | 12,103 |
| GRAND TOTAL OAR | 430,033 |

*Laboratories and Cooperative Institutes.*—The Committee provides an increase to Ocean, Coastal and Great Lakes Research Laboratories and Cooperative Institutes and expects the administration to fully fund these cooperative institutes at appropriate levels in future years, including well-established institutes focused on: watershed impacts on marine ecosystems; remote sensing; and long-term monitoring of oil spill impacts on marine ecosystem health. The Committee also encourages NOAA to consider how additional cooperative institutes could strengthen NOAA's ability to improve coastal sustainability and resilience, and better prepare coastal communities to make smart land-use decisions.

*Climate Research.*—The Committee provides the requested level for supporting and expanding the National Integrated Drought Information System, including the Regional Drought Early Warning Information System, and for increased funding for the Arctic Research Program to improve regional-scale information. The Com-

mittee also encourages NOAA to sustain and expand an observation and analysis system with existing enterprises to provide 20 additional towers to support this effort and to leverage existing capital expenditures and relevant data to support the accurate measurement of greenhouse gases.

*Multi-Function Phased Array Radar.*—The bill includes $13,111,000 for continued development of the multi-function phased array radar [MPAR], the same as the budget request. The Committee recognizes the benefits current MPAR research has provided to both NOAA and the Federal Aviation Administration [FAA], while recognizing the continued uncertainty about cost sharing between the FAA and NOAA for both technical risk reduction and non-recurring engineering costs. The Committee directs NOAA to serve as the technical agent for the execution and completion of the MPAR program. The Committee requires a joint spending plan from NOAA and the FAA within 45 days of enactment of this act that incorporates investments from both the FAA and NOAA with a consolidated approach to completing the program's technical risk reduction and making more transparent choices on the program's initial investment decision milestone.

A promising MPAR design, which effectively combines dual polarization with phased arrays, is the Cylindrical Polarimetric Phased Array Radar [CPPAR]. Within funds provided, the Committee encourages NOAA to expand research in CPPAR, including developing a full-scale prototype to examine how CPPAR capabilities could add value to weather forecasting and future severe storm research.

*Vortex-Southeast [Vortex-SE].*—The southeastern United States commonly experiences devastating tornadoes under variables and conditions that differ considerably from the Midwest where conditions for tornado research have historically been focused. Within funds provided for Weather and Air Chemistry Research Programs, OAR shall collaborate with the National Science Foundation's Vortex-SE to better understand how environmental factors that are characteristic of the southeast United States affect the formation, intensity, and storm path of tornadoes for this region. NOAA shall report to the Committee within 90 days of enactment of this act on OAR's role and contributions to the Vortex-SE program.

*National Sea Grant Program.*—The Committee opposes the administration's requested decrease to the National Sea Grant Program base and the proposed elimination of education and fellowship activities within the program. Within funds provided, NOAA is encouraged to leverage resources and pursue partnerships with Sea Grant universities and other Federal agencies to carry out aquatic animal health monitoring and research. This effort contributes to Sea Grant and NOAA's broader mission of providing services to enhance coastal community resilience. Further, NOAA is encouraged to continue its partnership with academic programs that provide legal expertise related to the missions of the program and NOAA.

*Marine Aquaculture Research.*—The Committee encourages NOAA, in partnership with universities, to support marine aquaculture research and development efforts that have led to beneficial outcomes such as development and commercialization of new tech-

nologies to meet U.S. demand for warm water marine seafood, including finfish, shrimp, and oysters.

*Ocean Exploration.*—The bill provides $26,220,000 for the Ocean Exploration Program. NOAA is encouraged to continue fundamental ocean exploration in which open source data are collected for the oceanographic community in real-time through telepresence technology. Within funds provided, NOAA is encouraged to award competitive grants to institutions that have partnered with OAR in the past, including those with ocean going assets, to support new exploration missions, expeditions, and deep sea research. Another primary focus should be the continued exploration of the United States Exclusive Economic Zones. As in the past, the program shall use ships operated by non-governmental organizations and academic institutions provided that any data acquired are open-sourced. In addition, the Committee rejects the budget request to eliminate Ocean Exploration's education program.