

Georges Bank, and southern New England. Research should focus on stock resilience in the face of environmental changes, including life history parameters, distribution and abundance, and species interactions, with the purpose of informing future management actions.

Aquaculture Research.—The Committee provides \$12,000,000 for marine aquaculture research. NOAA is directed to support marine aquaculture research and development in partnership with universities. Similar research efforts have led to beneficial outcomes such as the development and commercialization of new technologies to meet the domestic demand for seafood, including finfish, shrimp, and oysters. As the administration strives to reduce our Nation's significant trade deficit in aquaculture-raised seafood, NOAA shall report to the Committee within 90 days of enactment of this act on the important contributions Aquaculture Research grants have made to domestic seafood production.

Ocean Exploration.—The Committee directs NOAA to use a portion of the funding provided for Ocean Exploration to make competitive external awards to academic institutions that have partnered with OAR's Ocean Exploration program in the past. This includes those institutions with ocean-going assets, such as Autonomous Underwater Vehicles [AUV], to support new exploration missions, expeditions, and deep-sea research in the Gulf of Mexico.

NOAA is also encouraged to work with the Department of Defense and other relevant agencies to continue fundamental ocean exploration in which open source data are collected for the oceanographic community and private industries in real-time through telepresence technology. Furthermore, the Committee encourages NOAA to leverage partnerships with universities to increase capacity for deepwater AUVs as a means to sustain utility of AUV assets. The Committee also encourages NOAA to work with the Department of Defense, especially the Naval Meteorology and Oceanography Command and the Naval Undersea Warfare Center, to leverage assets and facilities to support deepwater AUV program development.

National Oceanographic Partnership Program.—The Committee provides \$8,000,000 to advance ocean science research through the National Oceanographic Partnership Program [NOPP] (10 U.S.C. 7901–7903), provided that none of the funding provided may be used to support more than 50 percent of any particular project cost. Of the funding provided for NOPP, up to \$3,000,000 may be used to continue projects supported by fiscal year 2018 funds under the Ocean Joint Technology Transfer Initiative [O-JTTI], and such funds provided in fiscal year 2019 may be used to support up to 100 percent of these project costs.

NOAA NATIONAL WEATHER SERVICE

The Committee's recommendation provides \$1,019,219,000 for the National Weather Service [NWS]. NWS programs provide timely and accurate meteorologic, hydrologic, and oceanographic warnings and forecasts to ensure the safety of the population, mitigate property losses, and improve the economic productivity of the Nation. NWS is also responsible for issuing operational climate fore-

casts for the United States. The Committee has made saving lives and livelihoods through accurate weather forecasting a priority.

The Committee’s recommendations are displayed in the following table:

NATIONAL WEATHER SERVICE OPERATIONS, RESEARCH, AND FACILITIES
 [In thousands of dollars]

| | Committee recommendation |
|--|--------------------------|
| Observations | 224,363 |
| Central Processing | 97,890 |
| Analyze, Forecast, and Support | 503,938 |
| Dissemination | 50,028 |
| Science and Technology Integration | 143,000 |
| GRAND TOTAL NWS | 1,019,219 |

Information Technology Officers [ITOs].—The Committee does not approve the NWS proposal to consolidate ITOs in fiscal year 2019. NWS was invited to submit a proposal for a single pilot Regional Enterprise Application Development and Integration [READI] team comprised of volunteer ITOs. However, the Committee has not yet received such a proposal. Should NWS decide to submit a proposal for a single pilot READI team project, its subsequent successes and challenges will assist the Committee in evaluating the larger consolidation proposal if resubmitted in future fiscal years.

NWS Staffing.—The Committee is very concerned with the continued number of NWS employee vacancies. Given the importance of the NWS mission to protect the lives and property of our Nation’s citizens, extended vacancies are unacceptable—particularly when the Committee has provided more than adequate resources and direction to fill vacancies expeditiously for the past several fiscal years. Because NWS has failed to respond satisfactorily to the Committee’s concerns regarding these vacancies, NOAA is directed to present a separate accounting of all NWS filled and open positions, including the length of time the positions have been unfilled, in its fiscal year 2019 spend plan. The spend plan shall also include the specific funding proposed for all NWS employees and associated expenses that are separate from other program costs.

The Committee also recognizes that some vacant NWS positions may be redundant and invites the Department to submit a justification for eliminating redundant unfunded vacancies in its fiscal year 2020 budget request, to include a full list of positions proposed for elimination, including reasoning for each elimination. Until such time as a plan to eliminate those vacancies is approved, NWS is directed to continue efforts to fill all vacancies as expeditiously as possible. Furthermore, the Committee adopts direction provided in the Explanatory Statement accompanying Public Law 115–141 regarding quarterly briefings on NWS staffing.

Report on NWS Staffing in Alaska.—The Committee remains concerned about potential NWS staffing reductions in Alaska. As a part of the Explanatory Statement accompanying Public Law 115–141, the Committee directed the NWS to provide a report about how the NWS plans to maintain or improve forecasting and com-

munication around the State, especially in the most remote areas. The Committee looks forward to receiving and reviewing this report, and reminds NWS that any staffing changes must comply with the reprogramming procedures set forth in section 505 of this act.

National Mesonet Program.—The Committee provides \$19,000,000 for the continuation and expansion of the National Mesonet Program. Funds should be made available through a competitive weather data procurement that sustains coverage of areas currently included within the national mesonet, as well as an expansion of coverage in high risk areas. NOAA is also encouraged to add new observations such as total lightning data, regional aircraft observations, and vertical column measurements in tornado-prone areas. Additionally, within funds provided, NOAA is encouraged to incorporate state mesonet data into the national mesonet network. NOAA should require that awardees provide mesonet data in formats that can be integrated by NWS for use in forecasts and severe weather alerts. Of the funds provided, up to \$500,000 may be used for Meteorological Assimilation Data Ingest System activities, and up to \$500,000 may be used for costs associated with the National Mesonet Program Office. The Committee views the National Mesonet program as an important component of any effort to effectively develop a “Weather-Ready Nation” and expects that future NOAA budget requests will continue to reflect it as a priority.

National Centers for Environmental Prediction [NCEP].—The Committee does not adopt the NWS proposal to consolidate centers under NCEP in fiscal year 2019.

Facilities Maintenance.—Within funding for Analyze, Forecast and Support, the Committee provides \$8,000,000 for the NWS’s highest priority facilities repair and deferred maintenance requirements at Weather Forecast Offices [WFOs].

Advanced Hydrologic Prediction Services Expansion [AHPS].—The Committee rejects NWS’s proposal to slow the expansion of AHPS, which will enable greater information on the magnitude and likelihood of floods and droughts across certain areas of the nation. No less than the fiscal year 2018 amount is provided for AHPS activities.

National Data Buoy Center [NDBC].—The Committee provides sufficient funding to maintain, at a minimum, NDBC operations at 80 percent data availability. The Committee directs NOAA to provide adequate funding to support maintenance and service of the Tropical Atmosphere/Ocean Array [TAO] and Deep Ocean Assessment and Reporting of Tsunamis [DART] array across the equatorial Pacific. The Committee further directs NOAA to include a schedule to restore existing data buoy operability and its strategy to minimize outages in the future as part of the agency’s spending plan.

Tsunami Warning Program.—The Committee rejects NWS’s proposed cut to the Tsunami Warning Program. Funding is provided at no less than the fiscal year 2018 amounts, including for the National Tsunami Hazard Mitigation program grants, to ensure that high-quality tsunami watches, warnings, and advisories are issued to safeguard lives and property.

Advanced Weather Interactive Processing System [AWIPS].—Within increased funding for Central Processing, the Committee provides NWS's full request for AWIPS Cyclical Refreshment.

Integrated Water Prediction [IWP] and the National Water Model.—The Committee does not approve the requested decrease to the IWP program, which is funded across multiple NWS budget lines. Instead, the Committee provides no less than the fiscal year 2018 amount for IWP. Similarly, the Committee rejects slowing the development of the National Water Model and provides no less than the fiscal year 2018 level for its continued and expedited development.

National Water Center.—The Committee provides no less than the fiscal year 2018 enacted level for operations and staffing of the National Water Center [NWC] to develop and operate IWP. NWS shall leverage this funding with resources provided to NOS for IWP and resources provided to OAR for remote sensing of snowpack and soil moisture measurements.

The Committee is pleased with research-to-operations efforts at the NWC between NWS and the University Corporation for Atmospheric Research. This relationship highlights how separate entities and agencies can work together to transfer research into operational solutions that benefit the Nation. The NWC serves as the first ever clearinghouse for research and operational forecasting of all water-related issues facing our Nation, including: severe floods, storm surge, droughts, and water quality, among others. Given the importance of NWC to better protect lives and property of our Nation's citizens, NOAA is directed to expedite staffing and operations at NWC to achieve full operating capability as soon as possible. Furthermore, to improve the effectiveness and efficiency of the NWS Office of Water Prediction, and to foster development of the NWC as a center of excellence for water resources prediction and related decision support services, funding is provided within Analyze, Forecast, and Support to increase staffing levels at the NWC Water Prediction Operations Division above the planned fiscal year 2018 staffing levels. The NWS is directed to post and fill future vacancies within the Office of Water Prediction expeditiously, and NWS is encouraged to consolidate personnel, as deemed necessary to create staffing efficiencies, to the NWC. The Committee directs NOAA to provide a report no less than 45 days after enactment of this act with an updated staffing plan that includes an update on commitments from partner agencies and a timeline for achieving baseline operating capability in the first quarter of fiscal year 2019.

Hydrology and Water Resource Programs.—The Committee provides no less than \$6,000,000 for NWS, in coordination with existing academic research consortiums, such as the University Corporation for Atmospheric Research, to collaborate with external academic partners to improve fine and large-scale measurements of snow depth and soil moisture data that can be used to expand and improve the National Water Model and contribute directly to the mission of NOAA's National Water Center.

Consumer Option for an Alternative System To Allocate Losses [COASTAL] Act Implementation.—Within funding provided for Science and Technology Integration, the Committee provides not less than \$5,000,000 for the continued development and implemen-

tation of the COASTAL Act, which was included in the Moving Ahead for Progress in the 21st Century Act (Public Law 112–141). The Committee supports NOAA’s work to assist homeowners impacted by destructive winds and storm surges associated with hurricanes and super-storms. The Committee directs NOAA to continue to leverage existing Federal assets, expertise, and partnerships in carrying out COASTAL Act activities. Furthermore, NOAA is directed to provide the Committee with updates every 6 months on progress made and challenges related to implementation, as well as any proposed solutions.

Storm Surge Modeling Technology.—The Committee recognizes the need to deploy more precise, accurate, and real-time modeling technology that is tailored to specific regions. These activities would improve and complement NOAA’s Sea, Lake, and Overland Surge from Hurricanes [SLOSH] model. The Committee directs NOAA to expand existing collaborations with research universities that will produce better predictive capabilities than NOAA’s current SLOSH model provides. The Committee directs NOAA, in collaboration with academic research institutions and other Federal agencies, to integrate improved technologies into standard modeling operations for storm surge and inland flooding.

Inland Flooding.—The Committee is aware that flood evacuations are typically planned for storm surge flooding and not the subsequent inland flooding that occurs with major weather events. The Committee encourages NWS, in coordination with State and Federal partners, to advance its inland flooding model based on the assessment of flood potential using sensor and elevation data to determine areas of impact, as well as safe evacuation paths and shelter locations. NWS and its partners should focus on obtaining information that can be applied to a model for inland evacuation planning, and be used by communities interested in a tested inland flood evacuation network plan. The model should eventually be integrated with the National Water Model to provide comprehensive, real-time evacuation information.

Science and Technology Integration.—The Committee provides no less than the fiscal year 2018 level for Mid-Range Weather Outlooks, including seasonal to subseasonal forecasting, and Investments in Numerical Weather Prediction Modeling, which provides critical support to the Hurricane Forecast Improvement Project, among other important forecasting activities. Furthermore, the Committee urges NOAA to expedite the project plan described by the Hurricane Forecast Improvement Act (Public Law 115–25). The Committee encourages NWS to reduce errors in tracking and intensity forecasts of hurricanes by identifying technology and methods available to significantly improve hurricane forecasting.

NWS Radar and Satellite Spectrum Studies.—As NOAA continues its study to evaluate sharing the 1675–1680 MHz GOES band, the Committee directs the agency to consult with private industry about the potential application of spectrum sharing technology for shared commercial use. Furthermore, NOAA is encouraged to study opportunities for early entry and flexible access to the 1300–1350 MHz spectrum band through use of private sector spectrum sharing technologies that protect Federal incumbents while making spectrum available for commercial use. The Com-

mittee believes such a study may provide additional options for the Spectrum Efficient National Surveillance Radar [SENSR] program to both enable commercial use of the 1300–1350 MHz spectrum band and reduce technology risk in the multistakeholder SENSR program.

NOAA NATIONAL ENVIRONMENTAL SATELLITE, DATA AND INFORMATION SERVICE

The Committee’s recommendation provides \$242,666,000 for National Environmental Satellite, Data and Information Service [NESDIS] operations. NESDIS programs operate environmental polar-orbiting and geostationary satellites and collect and archive global environmental data and information for distribution to users in commerce, industry, agriculture, science, and engineering, the general public, and Federal, State, and local agencies.

The Committee’s recommendations are displayed in the following table:

NATIONAL ENVIRONMENTAL SATELLITE, DATA AND INFORMATION SERVICE OPERATIONS, RESEARCH, AND FACILITIES
[In thousands of dollars]

| | Committee recommendation |
|---|--------------------------|
| Environmental Satellite Observing Systems: | |
| Office of Satellite and Product Operations | 146,924 |
| Product Development, Readiness & Application | 31,000 |
| Commercial Remote Sensing Licensing & Enforcement | 1,800 |
| Office of Space Commerce | 1,800 |
| Group on Earth Observations [GEO] | 500 |
| Total, Environmental Satellite Observing Systems | 182,024 |
| National Centers for Environmental Information | 60,642 |
| GRAND TOTAL NESDIS | 242,666 |

National Centers for Environmental Information [NCEI].—The Committee recommends \$60,642,000 for NCEI, which consolidated several programs previously funded separately. While the Committee supports the current budget structure for NESDIS, it is essential to ensure that key programs continue to receive adequate funding. Specifically, the Committee provides not less than the fiscal year 2018 enacted levels of \$6,000,000 for Regional Climate Services, \$3,650,000 for Regional Climate Centers, and \$5,500,000 for Coastal Data Development. NOAA shall consider the Coastal Data Development program as the central repository to manage data collections and information services of the various Gulf of Mexico Restoration activities funded in response to the 2010 Deep-water Horizon oil spill for scientific stewardship. Furthermore, within NCEI, the Committee encourages NOAA to fully support critical international partnerships, including the Global Climate Observing System.

Big Earth Data Initiative.—The Committee rejects the proposed elimination of the Big Earth Data Initiative and provides no less than the fiscal year 2018 amount for the program.