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108TH CONGRESS *1st Session*	SENATE	REPORT 108–171

OCEAN AND COASTAL OBSERVATION SYSTEMS ACT

R E P O R T

OF THE

COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ON

S. 1400

OCTOBER 23, 2003.—Ordered to be printed

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SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ONE HUNDRED EIGHTH CONGRESS

FIRST SESSION

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OCEAN AND COASTAL OBSERVATION SYSTEMS ACT

OCTOBER 23, 2003.—Ordered to be printed

Mr. MCCAIN, from the Committee on Commerce, Science, and Transportation, submitted the following

R E P O R T

[To accompany S. 1400]

The Committee on Commerce, Science, and Transportation, to which was referred the bill (S. 1400) to develop a system that provides for ocean and coastal observations, to implement a research and development program to enhance security at United States ports, to implement a data and information system required by all components of an integrated ocean observing system and related research, and for other purposes, having considered the same, reports favorably thereon with an amendment in the nature of a substitute and recommends that the bill (as amended) do pass.

PURPOSE OF THE BILL

The purpose of S. 1400, the Oceans and Coastal Observation Systems Act, is to establish a national, integrated ocean and coastal observing system that will collect, compile, and make available data on ocean conditions in the United States Exclusive Economic Zone, including the Great Lakes.

BACKGROUND AND NEEDS

Advances in ocean and coastal science, management, and use are currently limited by a lack of real-time, comprehensive, and accessible data on key environmental variables such as temperature, currents, wind speed, wave height, salinity, and dissolved oxygen. The National Oceanic and Atmospheric Administration (NOAA) has emphasized that programs throughout NOAA do not have the basic environmental data needed to create effective models used in the management process. Additionally, NOAA and other agencies need long term oceanographic databases to effectively monitor cy-

clical changes in the environment, such as El Nino events and global climate change. To meet these data needs, the National Ocean Research Leadership Council (NORLC), consisting of the leadership of the NOAA, the Navy, the National Aeronautics and Space Administration (NASA), and the National Science Foundation (NSF), has called for the full implementation of an integrated and sustained ocean observing system by 2010.

A number of statutory mandates explicitly or implicitly require routine ocean observations. For example, the Marine Protection, Research, and Sanctuaries Act, title V, requires the Environmental Protection Agency (EPA) and the NOAA to administer a national coastal water quality monitoring program. Further, the Coastal Zone Management Act of 1972 created the National Estuarine Research Reserves System that includes a requirement to monitor the status and trends in coastal ecosystem health. Data on marine ecosystems also are required for effective enforcement of the Endangered Species Act of 1973 and the Marine Mammal Protection Act of 1972.

Regional ocean observation systems such as the Gulf of Maine Ocean Observing System (GoMOOS), the Gulf of Alaska Ecosystem Monitoring and Research Program, and dozens of other current and planned systems around the United States coastline have attempted to fill these information needs on a regional basis. GoMOOS, for example, is a prototype system of integrated ocean observing devices (buoys, radar, satellites, etc.) that are linked to provide for real-time ocean data collection via the internet so that ocean prediction models and systems can be developed, similar to how weather predictions are made. Other regional systems are being developed to meet local or project-based research needs, collecting different types of data in different ways and using various approaches for organizing, managing, and communicating these data.

As a result of these regional efforts developed in an ad hoc, fragmented manner, the uniformity, consistency, and compatibility of data among systems are limited. NOAA and other users of ocean and coastal data are unable to link these systems, thereby losing a valuable opportunity to develop a comprehensive picture of coastal, ocean, and Great Lakes conditions around the nation, as required by their many mandates. Regional systems also are limited by uneven and unpredictable funding constraints, which further limit their ability to meet their own basic needs.

To overcome these challenges, regional and national ocean observation partners have worked together through Ocean.US to promote a comprehensive, integrated, and nation-wide ocean and coastal observation system. Ocean.US is an interagency ocean observation office (with 12 Federal agencies represented) created by the National Oceanographic Partnership Program to coordinate the development of an operational, integrated, and sustained ocean observing system. The Ocean and Coastal Observation System to be established by S. 1400 would build upon the activities and implement the recommendations of Ocean.US.

The Ocean and Coastal Observation Systems Act would further advance and better coordinate the ocean data collection systems around the country and formalize their long-term relationship with the Federal government. The goal of this bill is to establish an

ocean observing program that would produce continuous and comprehensive ocean observations in the United States Exclusive Economic Zone, including the Great Lakes. With continued funding and administration support, managers of the ocean and coastal observation system would: (1) provide a continuous stream of near real-time data for oceanographic parameters of national priority; (2) develop standards and protocols for data transfer and archiving; and (3) improve linkages between regional observing systems to facilitate coverage around the continental United States.

An integrated and institutionalized ocean and coastal observing system would provide NOAA with critical nation-wide environmental data (including currents; nutrient flows; coastal flooding or erosion; presence of pathogens and contaminants; larval transport patterns; and other physical, chemical, and biological information) that can be utilized to improve fisheries modeling and management, coastal planning, harmful algal blooms and hypoxia management and mitigation, prediction of climate change, and other marine ecosystem activities. All of these functions support and supplement other legislative mandates established in the Coastal Zone Management Act, the Harmful Algal Bloom and Hypoxia Research and Control Act, and other legislation related to fisheries and atmospheric science.

In addition, this national system would provide the Coast Guard with real-time information on sea-state conditions that they could use to determine when and how to conduct their many missions, and it would be especially applicable in determining how to carry out search-and-rescue activities. Observing systems would also provide the Navy with detailed observations to support core Navy missions, including development of improved sensor technologies and predictive and tactical models for littoral environments.

Applications of this program would extend to multiple sectors of the general public, as user-friendly products based on these ocean and coastal data are intended to be easily and freely accessible to anyone seeking the data. For example, fisheries scientists and managers could use the information to predict ocean conditions linked to productivity and incorporate this information into their management system. Fishermen, sailors, and others who traverse the ocean could better predict sea conditions to know when and where to go out safely, and shippers could transport goods more efficiently. Ocean scientists and regulators could better understand, predict, and rapidly respond to the distribution and impacts of marine pollution. Educators and students could learn more about how and why oceans function as they do.

Once established, this ocean and coastal observation system would help improve weather forecasting, promote understanding of global change processes, enhance safety and efficiency of marine operations, facilitate research, improve management of marine and coastal ecosystems, strengthen homeland security, reduce public health risks, sustain living marine resources, evaluate effectiveness of ocean and coastal policies, and provide information to raise public awareness of oceans.

LEGISLATIVE HISTORY

S. 1400 was introduced on July 14, 2003, by Senators Snowe, Kerry, McCain, Hollings, Inouye, and Breaux. Additional co-spon-

sors include Senators Collins, Lott, and Boxer. It was referred to the Senate Committee on Commerce, Science, and Transportation. On July 17, 2003, the bill was considered by the Committee in an open executive session. The Committee, without objection, ordered S. 1400 be reported with an amendment in the nature of a substitute.

ESTIMATED COSTS

In accordance with paragraph 11(a) of rule XXVI of the Standing Rules of the Senate and section 403 of the Congressional Budget Act of 1974, the Committee provides the following cost estimate, prepared by the Congressional Budget Office:

U.S. CONGRESS,
CONGRESSIONAL BUDGET OFFICE,
Washington, DC, September 4, 2003.

Hon. JOHN MCCAIN,
Chairman, Committee on Commerce, Science, and Transportation, U.S. Senate, Washington, DC.

DEAR MR. CHAIRMAN: The Congressional Budget Office has prepared the enclosed cost estimate for S. 1400, the Ocean and Coastal Observation Systems Act.

If you wish further details on this estimate, we will be pleased to provide them. The CBO staff contact is Deborah Reis.

Sincerely,

DOUGLAS HOLTZ-EAKIN,
Director.

Enclosure.

S. 1400—Ocean and Coastal Observation Systems Act

Summary: S. 1400 would authorize appropriations for fiscal years 2004 through 2008 for an integrated system of ocean monitoring, data analysis, and research. The system would be developed and operated by the National Oceanic and Atmospheric Administration (NOAA), the Navy, the National Science Foundation, the National Aeronautics and Space Administration, the U.S. Coast Guard, and other federal agencies.

Assuming appropriation of the authorized amounts, CBO estimates that implementing S. 1400 would cost the federal government $65 million in 2004 and $885 million over the 2004–2008 period. (About $300 million would be spent in 2009.) We estimate that enacting the bill would not affect direct spending or revenues.

The bill contains no intergovernmental or private-sector mandates as defined in the Unfunded Mandates Reform Act (UMRA) and would impose no costs on state, local, or tribal governments.

Estimated cost to the Federal Government: The estimated budgetary impact of S. 1400 is shown in the following table. The costs of this legislation fall within budget functions 050 (national defense), 250 (general science, space, and technology), 300 (natural resources and environment), and 400 (transportation).

	By fiscal year, in millions of dollars—				
	2004	2005	2006	2007	2008
CHANGES IN SPENDING SUBJECT TO APPROPRIATION					
Authorization level	216	226	237	248	257
Estimated outlays	65	120	210	230	260

Basis of estimate: For this estimate, CBO assumes that the amounts authorized by the legislation will be appropriated for each fiscal year and the outlays will follow historical spending patterns for similar activities. S. 1400 would specify funding levels for five specified federal agencies that would be involved with this project, totaling $201 million for 2004, $211 million for 2005, $222 million for 2006, $233 million for 2007, and $242 million for 2008. In addition, the bill would authorize the appropriation of $15 million annually over the same period for other federal agencies that operate or support coastal or ocean monitoring systems. Finally, S. 1400 would direct NOAA to use at least 51 percent of the funding it would receive under the bill for grants for regional coastal observing systems.

Intergovernmental and private-sector impact: S. 1400 contains no intergovernmental or private-sector mandates as defined in UMRA and would impose no costs on state, local, or tribal governments.

Estimate prepared by: Federal Costs: Deborah Reis. Impact on State, Local, and Tribal Governments: Marjorie Miller. Impact on the Private Sector: Paige Piper/Bach.

Estimate approved by: Peter H. Fontaine, Deputy Assistant Director for Budget Analysis.

REGULATORY IMPACT STATEMENT

In accordance with paragraph 11(b) of rule XXVI of the Standing Rules of the Senate, the Committee provides the following evaluation of the regulatory impact of the legislation, as reported:

NUMBER OF PERSONS COVERED

The bill would require the development of a national, integrated ocean and coastal observation system that will collect, compile, and make available data on ocean conditions. It would not authorize any new regulations and, therefore, would not subject any individuals or businesses to new regulations.

ECONOMIC IMPACT

Section 5 of the reported bill would authorize $216,000,000 for fiscal year (FY) 2004, $226,150,000 for FY 2005, $232,950,000 for FY 2006, $248,000,000 for FY 2007, and $257,000,000 for FY 2008 for departments and agencies represented on the NORLC for the development and implementation of the national ocean and coastal observation system. These funding levels are not expected to have an inflationary impact on the nation's economy.

PRIVACY

The reported bill would not have any adverse impact on the personal privacy of individuals.

PAPERWORK

S. 1400 would not impose any new paperwork requirements on private citizens, businesses, or other entities that do not choose to participate in a regional ocean and coastal observation association; representatives of entities choosing to participate in these associations may be subject to some changes in the paperwork requirements of the program.

SECTION-BY-SECTION ANALYSIS

Section 1. Short Title

Section 1 states the title of the bill would be the "Ocean and Coastal Observation Systems Act."

Section 2. Findings and Purposes

Section 2 includes several findings related to ocean observations and the following purposes: to develop and maintain an integrated system that provides for sustained ocean and coastal observations; to implement a research and development program to enhance security at United States ports; and to implement a data and information system required by all components of an integrated ocean observing system.

Section 3. Integrated Ocean and Coastal Observing System

Subsections (a) and (b) of section 3 would provide the president with the authority to establish and maintain a marine data monitoring and management system through the NORLC. The NORLC would serve as the lead entity providing Federal oversight. It would plan for the design, operation, and improvement of the system, establish an interagency planning office, coordinate and administer a research and development program, establish a joint operations center that will be maintained by NOAA, and provide representation on United States delegations to international meetings.

Subsection (c) states that the interagency planning office would promote collaboration among agencies and regional coastal observing systems, prepare design and implementation plans for the integrated ocean observing system, provide information for agency budgets, identify common data measurement requirements, establish standards and protocols for quality control and data managemen, work with regional coastal entities and others to assess user needs, develop products, and incorporate new technologies, and coordinate program planning.

Subsection (d) states that the joint operations center would manage technologies and provide support for planning activities, implement standards and protocols for data access and management, incorporate recent science and technological advancements into operational deployment, integrate existing programs into an operational observing system, coordinate the data communication and management system, provide products and services to users, certify systems that meet national standards and ensure a review and recertification process for those systems, and establish standards to ensure consistency among system components.

Subsection (e) states that the integrated ocean observing system would include a global ocean system to document global trends, a national observation network to compile and link regional and glob-

al data, and regional coastal observing systems to collect information in a uniform manner. The integrated system would link an observing subsystem of chemical, physical, geological, and biological observations; an ocean data management and assimilation subsystem; and a data analysis and applications subsystem to translate data into products and services. Additionally, the integrated system would integrate the capabilities of the Coastal Services Center and the National Coastal Data Development Center of NOAA as well as and other appropriate centers.

Subsection (e) also states that a research and development program would be conducted under the National Oceanographic Partnership Program. It would include coastal, relocatable, and cabled sea floor observatories, research products on the relationship between oceans and human activities, applied research to develop new observation technologies, large scale computing resources for ocean modeling, and programs to improve public education and awareness.

Subsection (f) provides that the joint operations center would work with regional representatives to form regional observation associations. The association participants may include research institutions, institutions of higher learning, for-profit or non-profit corporations, and State, local, and regional agencies. The participants in the regional associations would need to prepare a business plan and gain regional acceptance to deliver an integrated system, incorporate existing observations into the system, respond to the regional user needs, maintain 24-hour-a-day operations, provide timely data and information services, create appropriate products, provide free and open data access, and adhere to national standards and protocols.

Subsection (g) states that the joint operations center also would initiate pilot projects, though the National Ocean Partnership Program, to develop protocols for coordinated system implementation, design and implement regional coastal ocean observing systems, establish mechanisms for data exchange between regions and agencies, specify products and services in collaboration with user groups, and develop and test new technologies to improve the three subsections. These pilot projects would include projects to capitalize the data infrastructure and projects to fund the collection of the common set of observations approved by the planning office.

Section 4. Interagency Financing

Section 4 would authorize the departments and agencies represented on the NORLC to participate in interagency financing, which would allow them to share, transfer, receive, and spend funds appropriated to other members of the NORLC to carry out projects or activities under this Act or under the National Oceanographic Partnership Program.

Section 5. Authorization of Appropriations

Section 5 would authorize appropriations for departments and agencies represented on the NORLC for the development and implementation of the national ocean and coastal observing system as follows:

The National Oceanic and Atmospheric Administration would be authorized $83,000,000 for FY 2004, $87,250,000 for

FY 2005, $91,500,000 for FY 2006, $96,000,000 for FY 2007, and $100,000,000 for FY 2008. Of these new funds authorized for NOAA, at least 51 percent would be for grants to develop and implement regional coastal observing systems, and $3,000,000 in FY 2004 may be allocated to demonstrate the capabilities of shore-based high-frequency surface wave radar.

The National Science Foundation would be authorized $25,000,000 for FY 2004, $26,250,000 for FY 2005, $27,500,000 for FY 2006, $29,000,000 for FY 2007, and $30,500,000 for FY 2008.

The National Aeronautics and Space Administration would be authorized $30,000,000 for FY 2004, $31,500,000 for FY 2005, $33,000,000 for FY 2006, and $34,750,000 for each of FYs 2007 and 2008.

The United States Coast Guard would be authorized $8,000,000 for FY 2004, $8,400,000 for FY 2005, $9,700,000 for FY 2006, $9,500,000 for FY 2007, and $9,750,000 for FY 2008.

The Office of Naval Research would be authorized $25,000,000 for FY 2004, $26,250,000 for FY 2005, $27,500,000 for FY 2006, $29,000,000 for FY 2007, and $30,500,000 for FY 2008.

The Office of the Oceanographer of the Navy would be authorized $30,000,000 for FY 2004, $31,500,000 for FY 2005, $33,000,000 for FY 2006, $34,750,000 for FY 2007, and $36,500,000 for FY 2008.

Other Federal agencies engaged in ocean and coastal-related activities would be authorized a total of $15,000,000, to be distributed among them as appropriate, in each of FYs 2004 through 2008.

CHANGES IN EXISTING LAW

In compliance with paragraph 12 of rule XXVI of the Standing Rules of the Senate, the Committee states that the bill as reported would make no change to existing law.

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