

- (B) establish an interagency research and monitoring program on ocean acidification;
- (2) establishment of an ocean acidification program within the National Oceanic and Atmospheric Administration;
- (3) assessment and consideration of regional and national ecosystem and socioeconomic impacts of increased ocean acidification; and
- (4) research adaptation strategies and techniques for effectively conserving marine ecosystems as they cope with increased ocean acidification.

(Pub. L. 111–11, title XII, §12402, Mar. 30, 2009, 123 Stat. 1436.)

SHORT TITLE

Pub. L. 111–11, title XII, §12401, Mar. 30, 2009, 123 Stat. 1436, provided that: “This subtitle [subtitle D (§§12401–12409) of title XII of Pub. L. 111–11, enacting this chapter] may be cited as the ‘Federal Ocean Acidification Research And Monitoring Act of 2009’ or the ‘FOARAM Act.’”

§ 3702. Definitions

In this chapter:

(1) Ocean acidification

The term “ocean acidification” means the decrease in pH of the Earth’s oceans and changes in ocean chemistry caused by chemical inputs from the atmosphere, including carbon dioxide.

(2) Secretary

The term “Secretary” means the Secretary of Commerce, acting through the Administrator of the National Oceanic and Atmospheric Administration.

(3) Subcommittee

The term “Subcommittee” means the Joint Subcommittee on Ocean Science and Technology of the National Science and Technology Council.

(Pub. L. 111–11, title XII, §12403, Mar. 30, 2009, 123 Stat. 1437.)

§ 3703. Interagency Subcommittee

(a) Designation

(1) In general

The Joint Subcommittee on Ocean Science and Technology of the National Science and Technology Council shall coordinate Federal activities on ocean acidification and establish an interagency working group.

(2) Membership

The interagency working group on ocean acidification shall be comprised of senior representatives from the National Oceanic and Atmospheric Administration, the National Science Foundation, the National Aeronautics and Space Administration, the United States Geological Survey, the United States Fish and Wildlife Service, and such other Federal agencies as appropriate.

(3) Chairman

The interagency working group shall be chaired by the representative from the National Oceanic and Atmospheric Administration.

(b) Duties

The Subcommittee shall—

- (1) develop the strategic research and monitoring plan to guide Federal research on ocean acidification required under section 3704 of this title and oversee the implementation of the plan;
- (2) oversee the development of—
 - (A) an assessment of the potential impacts of ocean acidification on marine organisms and marine ecosystems; and
 - (B) adaptation and mitigation strategies to conserve marine organisms and ecosystems exposed to ocean acidification;
- (3) facilitate communication and outreach opportunities with nongovernmental organizations and members of the stakeholder community with interests in marine resources;
- (4) coordinate the United States Federal research and monitoring program with research and monitoring programs and scientists from other nations; and
- (5) establish or designate an Ocean Acidification Information Exchange to make information on ocean acidification developed through or utilized by the interagency ocean acidification program accessible through electronic means, including information which would be useful to policymakers, researchers, and other stakeholders in mitigating or adapting to the impacts of ocean acidification.

(c) Reports to Congress

(1) Initial report

Not later than 1 year after March 30, 2009, the Subcommittee shall transmit a report to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science and Technology and the Committee on Natural Resources of the House of Representatives that—

- (A) includes a summary of federally funded ocean acidification research and monitoring activities, including the budget for each of these activities; and
- (B) describes the progress in developing the plan required under section 3704 of this title.

(2) Biennial report

Not later than 2 years after the delivery of the initial report under paragraph (1) and every 2 years thereafter, the Subcommittee shall transmit a report to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science and Technology and the Committee on Natural Resources of the House of Representatives that includes—

- (A) a summary of federally funded ocean acidification research and monitoring activities, including the budget for each of these activities; and
- (B) an analysis of the progress made toward achieving the goals and priorities for the interagency research plan developed by the Subcommittee under section 3704 of this title.

(3) Strategic research plan

Not later than 2 years after March 30, 2009, the Subcommittee shall transmit the strategic

research plan developed under section 3704 of this title to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science and Technology and the Committee on Natural Resources of the House of Representatives. A revised plan shall be submitted at least once every 5 years thereafter.

(Pub. L. 111–11, title XII, § 12404, Mar. 30, 2009, 123 Stat. 1437.)

CHANGE OF NAME

Committee on Science and Technology of House of Representatives changed to Committee on Science, Space, and Technology of House of Representatives by House Resolution No. 5, One Hundred Twelfth Congress, Jan. 5, 2011.

§ 3704. Strategic research plan

(a) In general

Not later than 2 years after March 30, 2009, the Subcommittee shall develop a strategic plan for Federal research and monitoring on ocean acidification that will provide for an assessment of the impacts of ocean acidification on marine organisms and marine ecosystems and the development of adaptation and mitigation strategies to conserve marine organisms and marine ecosystems. In developing the plan, the Subcommittee shall consider and use information, reports, and studies of ocean acidification that have identified research and monitoring needed to better understand ocean acidification and its potential impacts, and recommendations made by the National Academy of Sciences in the review of the plan required under subsection (d).

(b) Contents of the plan

The plan shall—

- (1) provide for interdisciplinary research among the ocean sciences, and coordinated research and activities to improve the understanding of ocean chemistry that will affect marine ecosystems;
- (2) establish, for the 10-year period beginning in the year the plan is submitted, the goals and priorities for Federal research and monitoring which will—
 - (A) advance understanding of ocean acidification and its physical, chemical, and biological impacts on marine organisms and marine ecosystems;
 - (B) improve the ability to assess the socioeconomic impacts of ocean acidification; and
 - (C) provide information for the development of adaptation and mitigation strategies to conserve marine organisms and marine ecosystems;
- (3) describe specific activities, including—
 - (A) efforts to determine user needs;
 - (B) research activities;
 - (C) monitoring activities;
 - (D) technology and methods development;
 - (E) data collection;
 - (F) database development;
 - (G) modeling activities;
 - (H) assessment of ocean acidification impacts; and
 - (I) participation in international research efforts;

(4) identify relevant programs and activities of the Federal agencies that contribute to the interagency program directly and indirectly and set forth the role of each Federal agency in implementing the plan;

(5) consider and utilize, as appropriate, reports and studies conducted by Federal agencies, the National Research Council, or other entities;

(6) make recommendations for the coordination of the ocean acidification research and monitoring activities of the United States with such activities of other nations and international organizations;

(7) outline budget requirements for Federal ocean acidification research and monitoring and assessment activities to be conducted by each agency under the plan;

(8) identify the monitoring systems and sampling programs currently employed in collecting data relevant to ocean acidification and prioritize additional monitoring systems that may be needed to ensure adequate data collection and monitoring of ocean acidification and its impacts; and

(9) describe specific activities designed to facilitate outreach and data and information exchange with stakeholder communities.

(c) Program elements

The plan shall include at a minimum the following program elements:

(1) Monitoring of ocean chemistry and biological impacts associated with ocean acidification at selected coastal and open-ocean monitoring stations, including satellite-based monitoring to characterize—

- (A) marine ecosystems;
- (B) changes in marine productivity; and
- (C) changes in surface ocean chemistry.

(2) Research to understand the species specific physiological responses of marine organisms to ocean acidification, impacts on marine food webs of ocean acidification, and to develop environmental and ecological indices that track marine ecosystem responses to ocean acidification.

(3) Modeling to predict changes in the ocean carbon cycle as a function of carbon dioxide and atmosphere-induced changes in temperature, ocean circulation, biogeochemistry, ecosystem and terrestrial input, and modeling to determine impacts on marine ecosystems and individual marine organisms.

(4) Technology development and standardization of carbonate chemistry measurements on moorings and autonomous floats.

(5) Assessment of socioeconomic impacts of ocean acidification and development of adaptation and mitigation strategies to conserve marine organisms and marine ecosystems.

(d) National Academy of Sciences evaluation

The Secretary shall enter into an agreement with the National Academy of Sciences to review the plan.

(e) Public participation

In developing the plan, the Subcommittee shall consult with representatives of academic, State, industry and environmental groups. Not later than 90 days before the plan, or any revi-