from local research universities and institutions;

(6) increase the availability to appropriate public and private entities of—

(A) analytical facilities and technologies;

(B) operational forecasts; and

(C) reference and research materials;

(7) use cost effective methods in carrying out this Act; and

(8) develop contingency plans for the long-term monitoring of hypoxia.

(g) Cooperative efforts

The Under Secretary shall work cooperatively and avoid duplication of effort with other offices, centers, and programs within the National Oceanic and Atmospheric Administration, other agencies on the Task Force, and States, tribes, and nongovernmental organizations concerned with marine and freshwater issues to coordinate harmful algal bloom and hypoxia (and related) activities and research.

(h) Freshwater

With respect to the freshwater aspects of the Program, the Administrator, through the Task Force, shall carry out the duties otherwise assigned to the Under Secretary under this section, except the activities described in subsection (f).

(1) Participation

The Administrator's participation under this section shall include—

(A) research on the ecology and impacts of freshwater harmful algal blooms; and

(B) forecasting and monitoring of and event response to freshwater harmful algal blooms in lakes, rivers, estuaries (including their tributaries), and reservoirs.

(2) Nonduplication

The Administrator shall ensure that activities carried out under this chapter focus on new approaches to addressing freshwater harmful algal blooms and are not duplicative of existing research and development programs authorized by this chapter or any other law.

(i) Integrated Coastal and Ocean Observation System

The collection of monitoring and observation data under this chapter shall comply with all data standards and protocols developed pursuant to the Integrated Coastal and Ocean Observation System Act of 2009 (33 U.S.C. 3601 et seq.). Such data shall be made available through the system established under that Act.

(Pub. L. 105–383, title VI, § 603A, as added Pub. L. 113–124, § 4, June 30, 2014, 128 Stat. 1379; amended Pub. L. 115–423, § 9(e), Jan. 7, 2019, 132 Stat. 5462.)

Editorial Notes

REFERENCES IN TEXT

The Integrated Coastal and Ocean Observation System Act of 2009, referred to in subsec. (i), is subtitle C (§ 12301 et seq.) of title XII of Pub. L. 111–11, Mar. 30, 2009, 123 Stat. 1427, which is classified generally to chapter 49 (§ 3601 et seq.) of this title. For complete classification of this Act to the Code, see Short Title note set out under section 3601 of this title and Tables.

AMENDMENTS

2019—Subsec. (e)(1). Pub. L. 115–423, § 9(e)(1)(A), inserted ", including to local and regional stakeholders through the establishment and maintenance of a publicly accessible Internet website that provides information as to Program activities completed under this section" after "Program".

Subsec. (e)(3)(D). Pub. L. 115–423, § 9(e)(1)(B), added subpar. (D).

Subsec. (e)(4). Pub. L. 115–423, § 9(e)(1)(C), substituted ", and work cooperatively to provide technical assistance to," for "and work cooperatively with".

Subsec. (e)(7). Pub. L. 115–423, § 9(e)(1)(D), inserted "and extension" after "existing education" and "intervention," after "awareness of the causes, impacts,".

Subsec. (f)(3). Pub. L. 115–423, § 9(e)(2)(A), inserted ", which shall include unmanned systems," after "infrastructure".

Subsec. (f)(7), (8). Pub. L. 115–423, § 9(e)(2)(B)–(D), added pars. (7) and (8).

§ 4003. Comprehensive research plan and action strategy

(a) In general

Not later than 1 year after June 30, 2014, the Under Secretary, through the Task Force, shall develop and submit to Congress a comprehensive research plan and action strategy to address marine and freshwater harmful algal blooms and hypoxia. The Action Strategy shall identify—

(1) the specific activities to be carried out by the Program and the timeline for carrying out those activities;

(2) the roles and responsibilities of each Federal agency in the Task Force in carrying out the activities under paragraph (1); and

(3) the appropriate regions and subregions requiring specific research and activities to address harmful algal blooms and hypoxia.

(b) Regional focus

The regional and subregional parts of the Action Strategy shall identify—

(1) regional priorities for ecological, economic, and social research on issues related to the impacts of harmful algal blooms and hypoxia;

(2) research, development, and demonstration activities needed to develop and advance technologies and techniques for minimizing the occurrence of harmful algal blooms and hypoxia and improving capabilities to detect, predict, monitor, control, mitigate, respond to, and remediate harmful algal blooms and hypoxia;

(3) ways to reduce the duration and intensity of harmful algal blooms and hypoxia, including deployment of response technologies in a timely manner;

(4) research and methods to address human health dimensions of harmful algal blooms and hypoxia;

(5) mechanisms, including the potential costs and benefits of those mechanisms, to protect ecosystems that may be or have been affected by harmful algal bloom and hypoxia events;

(6) mechanisms by which data, information, and products may be transferred between the Program and the State, tribal, and local governments and research entities;

(7) communication and information dissemination methods that State, tribal, and local

governments may undertake to educate and inform the public concerning harmful algal blooms and hypoxia; and

(8) roles that Federal agencies may have to assist in the implementation of the Action Strategy, including efforts to support local and regional scientific assessments under section 4001(e) of this title.

(c) Utilizing available studies and information

In developing the Action Strategy, the Under Secretary shall utilize existing research, assessments, reports, and program activities, including—

(1) those carried out under existing law; and

(2) other relevant peer-reviewed and published sources.

(d) Development of the Action Strategy

In developing the Action Strategy, the Under Secretary shall, as appropriate—

(1) coordinate with—

(A) State coastal management and planning officials;

(B) tribal resource management officials; and

(C) water management and watershed officials from both coastal States and noncoastal States with water sources that drain into water bodies affected by harmful algal blooms and hypoxia; and

(2) consult with—

(A) public health officials;

(B) emergency management officials;

(C) science and technology development institutions;

(D) economists;

(E) industries and businesses affected by marine and freshwater harmful algal blooms and hypoxia;

(F) scientists with expertise concerning harmful algal blooms or hypoxia from academic or research institutions; and

(G) other stakeholders.

(e) Federal Register

The Under Secretary shall publish the Action Strategy in the Federal Register.

(f) Periodic revision

The Under Secretary, in coordination and consultation with the individuals and entities under subsection (d), shall periodically review and revise the Action Strategy prepared under this section, as necessary.

(Pub. L. 105–383, title VI, §603B, as added Pub. L. 113–124, §5, June 30, 2014, 128 Stat. 1382.)

§ 4004. Northern Gulf of Mexico hypoxia

(a) Initial progress reports

Beginning not later than 12 months after June 30, 2014, and biennially thereafter, the Administrator, through the Mississippi River/Gulf of Mexico Watershed Nutrient Task Force, shall submit a progress report to the appropriate congressional committees and the President that describes the progress made by activities directed by the Mississippi River/Gulf of Mexico Watershed Nutrient Task Force and carried out or funded by the Environmental Protection Agency and other State and Federal partners toward attainment of the goals of the Gulf Hypoxia Action Plan 2008.

(b) Contents

Each report required under this section shall—

(1) assess the progress made toward nutrient load reductions, the response of the hypoxic zone and water quality throughout the Mississippi/Atchafalaya River Basin, and the economic and social effects;

(2) evaluate lessons learned; and

(3) recommend appropriate actions to continue to implement or, if necessary, revise the strategy set forth in the Gulf Hypoxia Action Plan 2008.

(Pub. L. 105–383, title VI, §604, Nov. 13, 1998, 112 Stat. 3449; Pub. L. 113–124, §7, June 30, 2014, 128 Stat. 1384.)

Editorial Notes

CODIFICATION

Section was formerly set out in a note under section 1451 of Title 16, Conservation.

AMENDMENTS

2014—Pub. L. 113–124 amended section generally. Prior to amendment, section required the Task Force to submit an integrated assessment of hypoxia in the northern Gulf of Mexico and develop a plan for reducing, mitigating, and controlling such hypoxia.

§ 4005. Great Lakes hypoxia and harmful algal blooms

(a) Integrated assessment

Not later than 18 months after June 30, 2014, the Task Force, in accordance with the authority under section 4001 of this title, shall complete and submit to the Congress and the President an integrated assessment that examines the causes, consequences, and approaches to reduce hypoxia and harmful algal blooms in the Great Lakes, including the status of and gaps within current research, monitoring, management, prevention, response, and control activities by—

(1) Federal agencies;

(2) State agencies;

(3) regional research consortia;

(4) academia;

(5) private industry; and

(6) nongovernmental organizations.

(b) Plan

(1) In general

Not later than 2 years after June 30, 2014, the Task Force shall develop and submit to the Congress a plan, based on the integrated assessment under subsection (a), for reducing, mitigating, and controlling hypoxia and harmful algal blooms in the Great Lakes.

(2) Contents

The plan shall—

(A) address the monitoring needs identified in the integrated assessment under subsection (a);

(B) develop a timeline and budgetary requirements for deployment of future assets;

(C) identify requirements for the development and verification of Great Lakes hy-