

110TH CONGRESS
1ST SESSION

H. R. 260

To establish marine and freshwater research, development, and demonstration programs to support efforts to prevent, control, and eradicate invasive species, as well as to educate citizens and stakeholders and restore ecosystems.

IN THE HOUSE OF REPRESENTATIVES

JANUARY 5, 2007

Mr. EHLERS introduced the following bill; which was referred to the Committee on Science and Technology, and in addition to the Committees on Transportation and Infrastructure, Natural Resources, and House Administration, for a period to be subsequently determined by the Speaker, in each case for consideration of such provisions as fall within the jurisdiction of the committee concerned

A BILL

To establish marine and freshwater research, development, and demonstration programs to support efforts to prevent, control, and eradicate invasive species, as well as to educate citizens and stakeholders and restore ecosystems.

1 *Be it enacted by the Senate and House of Representa-
2 tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the “Aquatic Invasive Spe-
5 cies Research Act”.

1 **SEC. 2. FINDINGS.**

2 The Congress makes the following findings:

3 (1) Aquatic invasive species damage infrastructure, disrupt commerce, outcompete native species, 4 reduce biodiversity, and threaten human health.

5 (2) The direct and indirect costs of aquatic 6 invasive species to our Nation's economy number in 7 the billions of dollars per year.

8 (3) Recent studies have shown that, in addition 9 to economic damage, invasive species cause enormous 10 environmental damage, and have cited invasive 11 species as the second leading threat to endangered 12 species.

13 (4) Over the past 200 years, the rate of detected 14 marine and freshwater invasions in North 15 America has increased exponentially.

16 (5) The rate of invasions continues to grow 17 each year.

18 (6) Marine and freshwater research underlies 19 every aspect of detecting, preventing, controlling, 20 and eradicating invasive species, educating citizens 21 and stakeholders, and restoring ecosystems.

22 (7) Current Federal efforts, including research 23 efforts, have focused primarily on controlling established 24 invasive species, which is both costly and often 25 unsuccessful. An emphasis on research, development,

1 and demonstration to support efforts to prevent
2 invasive species or eradicate them upon entry into
3 United States waters would likely result in a more
4 cost-effective and successful approach to combating
5 invasive species through preventing initial introduc-
6 tion.

7 (8) Research, development, and demonstration
8 to support prevention and eradication includes moni-
9 toring of both pathways and ecosystems to track the
10 introduction and establishment of nonnative species,
11 and development and testing of technologies to pre-
12 vent introduction through known pathways.

13 (9) Therefore, Congress finds that it is in the
14 United States interest to conduct a comprehensive
15 and thorough research, development, and demonstra-
16 tion program on aquatic invasive species in order to
17 better understand how aquatic invasive species are
18 introduced and become established and to support
19 efforts to prevent the introduction and establishment
20 of, and to eradicate, these species.

21 **SEC. 3. DEFINITIONS.**

22 In this Act:

23 (1) ADMINISTERING AGENCIES.—The term “ad-
24 ministering agencies” means—

1 (A) the National Oceanic and Atmospheric
2 Administration (including the Great Lakes En-
3 vironmental Research Laboratory);

4 (B) the Smithsonian Institution (acting
5 through the Smithsonian Environmental Re-
6 search Center); and

7 (C) the United States Geological Survey.

(3) BALLAST WATER.—The term “ballast water” means any water (with its suspended matter) used to maintain the trim and stability of a vessel.

15 (4) INVASION.—The term “invasion” means the
16 introduction and establishment of an invasive species
17 into an ecosystem beyond its historic range.

20 (A) that is nonnative to the ecosystem
21 under consideration; and

(B) whose introduction causes or may cause harm to the economy, the environment, or human health.

5 (7) PATHWAY.—The term “pathway” means 1
6 or more routes by which an invasive species is trans-
7 ferred from one ecosystem to another.

22 SEC. 4. COORDINATION AND IMPLEMENTATION.

23 (a) COORDINATION.—In carrying out this Act, the
24 administering agencies shall coordinate with—

25 (1) appropriate State agencies;

4 (3) the Task Force and Invasive Species Coun-
5 cil.

6 (b) IMPLEMENTATION.—The administering agencies
7 shall enter into a memorandum of understanding regard-
8 ing the implementation of this Act, which shall include the
9 coordination required by subsection (a).

10 (c) COOPERATION.—In carrying out this Act, the ad-
11 ministering agencies shall contract, as appropriate, or oth-
12 erwise cooperate with academic researchers.

13 (d) STRUCTURE.—To the extent practicable, the ad-
14 ministering agencies shall carry out this Act working with-
15 in the organizational structure of the Task Force and
16 Invasive Species Council.

17 SEC. 5. ECOLOGICAL AND PATHWAY RESEARCH.

18 (a) IN GENERAL.—The administering agencies shall
19 develop and conduct a marine and fresh-water research
20 program which shall include ecological and pathway sur-
21 veys and experimentation to detect nonnative aquatic spe-
22 cies in aquatic ecosystems and to assess rates and patterns
23 of introductions of nonnative aquatic species in aquatic
24 ecosystems. The goal of this marine and freshwater re-
25 search program shall be to support efforts to prevent the

1 introduction of, detect, and eradicate invasive species
2 through informing early detection and rapid response ef-
3 forts, informing relevant policy decisions, and assessing
4 the effectiveness of implemented policies to prevent the in-
5 troduction and spread of aquatic invasive species. Surveys
6 and experiments under this subsection shall be commenced
7 not later than 18 months after the date of the enactment
8 of this Act.

9 (b) PROTOCOL DEVELOPMENT.—The administering
10 agencies shall establish standardized protocols for con-
11 ducting ecological and pathway surveys of nonnative
12 aquatic species under subsection (a) that are integrated
13 and produce comparable data. Protocols shall, as prac-
14 ticable, be integrated with existing protocols and data col-
15 lection methods. In developing the protocols under this
16 subsection, the administering agencies shall draw on the
17 recommendations gathered at the workshop under sub-
18 section (g). The protocols shall be peer reviewed, and re-
19 vised as necessary. Protocols shall be completed within 1
20 year after the date of the enactment of this Act.

21 (c) ECOLOGICAL AND PATHWAY SURVEY REQUIRE-
22 MENTS.—(1) Each ecological survey conducted under sub-
23 section (a) shall, at a minimum—

24 (A) document baseline ecological information of
25 the aquatic ecosystem including, to the extent prac-

1 ticable, a comprehensive inventory of native species,
2 nonnative species, and species of unknown origin
3 present in the ecosystem, as well as the chemical
4 and physical characteristics of the water and under-
5 lying substrate;

6 (B) for nonnative species, gather information to
7 assist in identifying their life history, environmental
8 requirements and tolerances, the historic range of
9 their native ecosystems, and their history of spread-
10 ing from their native ecosystems;

11 (C) track the establishment of nonnative species
12 including information about the estimated abun-
13 dance of nonnative organisms in order to allow an
14 analysis of the probable date of introduction of the
15 species; and

16 (D) identify the likely pathway of entry of non-
17 native species.

18 (2) Each pathway survey conducted under this sec-
19 tion shall, at a minimum—

20 (A) identify what nonnative aquatic species are
21 being introduced or may be introduced through the
22 pathways under consideration;

23 (B) determine the quantities of organisms being
24 introduced through the pathways under consider-
25 ation; and

1 (C) determine the practices that contributed to
2 or could contribute to the introduction of nonnative
3 aquatic species through the pathway under consider-
4 ation.

5 (d) NUMBER AND LOCATION OF SURVEY SITES.—
6 The administering agencies shall designate the number
7 and location of survey sites necessary to carry out marine
8 and freshwater research required under this section. In
9 establishing sites under this subsection or subsection (e),
10 emphasis shall be on the geographic diversity of sites, as
11 well as the diversity of the human uses and biological char-
12 acteristics of sites.

13 (e) COMPETITIVE GRANT PROGRAM.—The National
14 Oceanic and Atmospheric Administration and the United
15 States Geological Survey shall jointly administer a pro-
16 gram to award competitive, peer-reviewed grants to aca-
17 demic institutions, State agencies, and other appropriate
18 groups, in order to assist in carrying out subsection (a),
19 and shall include to the maximum extent practicable di-
20 verse institutions, including Historically Black Colleges
21 and Universities and those serving large proportions of
22 Hispanics, Native Americans, Asian-Pacific Americans, or
23 other underrepresented populations.

24 (f) SHIP PATHWAY SURVEYS.—Section
25 1102(b)(2)(B)(ii) of the Nonindigenous Aquatic Nuisance

1 Prevention and Control Act of 1990 (16 U.S.C.

2 4712(b)(2)(B)(ii)) is amended to read as follows:

3 “(ii) examine other potential modes
4 for the introduction of nonnative aquatic
5 species by ship, including hull fouling.”.

6 (g) WORKSHOP.—In order to support the develop-
7 ment of the protocols and design for the surveys under
8 subsections (b) and (c), and to determine how to obtain
9 consistent, comparable data across a range of ecosystems,
10 the administering agencies shall convene at least one
11 workshop with appropriate researchers and representa-
12 tives involved in the management of aquatic invasive spe-
13 cies from Federal and State agencies and academic insti-
14 tutions to gather recommendations. The administering
15 agencies shall make the results of the workshop widely
16 available to the public. The workshop shall be held within
17 180 days after the date of the enactment of this Act.

18 (h) EXPERIMENTATION.—The administering agen-
19 cies shall conduct research to identify the relationship be-
20 tween the introduction and establishment of nonnative
21 aquatic species, including those legally introduced, and the
22 circumstances necessary for those species to become
23 invasive.

24 (i) NATIONAL PATHWAY AND ECOLOGICAL SURVEYS

25 DATABASE.—

9 (2) REQUIREMENTS.—The database shall—

10 (A) be widely available to the public;
11 (B) be updated not less than once a quar-
12 ter;

13 (C) be coordinated with existing databases,
14 both domestic and foreign, collecting similar in-
15 formation; and

16 (D) be, to the maximum extent practicable,
17 formatted such that the data is useful for both
18 researchers and Federal and State employees
19 managing relevant invasive species programs.

20 SEC. 6. ANALYSIS.

21 (a) INVASION ANALYSIS.—

22 (1) IN GENERAL.—Not later than 3 years after
23 the date of the enactment of this Act, and every year
24 thereafter, the administering agencies shall analyze
25 data collected under section 5 and other relevant re-

1 search on the rates and patterns of invasions by
2 aquatic invasive species in waters of the United
3 States. The purpose of this analysis shall be to use
4 the data collected under section 5 and other relevant
5 research to support efforts to prevent the introduc-
6 tion of, detect, and eradicate invasive species
7 through informing early detection and rapid re-
8 sponse efforts, informing relevant policy decisions,
9 and assessing the effectiveness of implemented poli-
10 cies to prevent the introduction and spread of
11 invasive species.

12 (2) CONTENTS.—The analysis required under
13 paragraph (1) shall include with respect to aquatic
14 invasive species—

15 (A) an analysis of pathways, including—
16 (i) identifying, and characterizing as
17 high, medium, or low risk, pathways re-
18 gionally and nationally;
19 (ii) identifying new and expanding
20 pathways;
21 (iii) identifying handling practices
22 that contribute to the introduction of spe-
23 cies in pathways; and
24 (iv) assessing the risk that species le-
25 gally introduced into the United States

1 pose for introduction into aquatic eco-
2 systems;

(B) patterns and rates of invasion and susceptibility to invasion of various bodies of water;

(C) how the risk of establishment through a pathway is related to the identity and number of organisms transported;

9 (D) rates of spread and numbers and types
10 of pathways of spread of new populations of the
11 aquatic invasive species and an estimation of
12 the potential spread and distribution of newly
13 introduced invasive species based on their envi-
14 ronmental requirements and historical distribu-
15 tion;

(E) documentation of factors that influence an ecosystem's vulnerability to a nonnative aquatic species becoming invasive;

19 (F) a description of the potential for, and
20 impacts of, pathway management programs on
21 invasion rates:

22 (G) recommendations for improvements in
23 the effectiveness of pathway management;

24 (H) to the extent practical, a determina-
25 tion of the level of reduction in live organisms

1 of various taxonomic groups required to reduce
2 the risk of establishment to receiving aquatic
3 ecosystems to an acceptable level; and

4 (I) an evaluation of the effectiveness of
5 management actions (including any standard)
6 at preventing nonnative species introductions
7 and establishment.

8 (b) RESEARCH TO ASSESS THE POTENTIAL OF THE
9 ESTABLISHMENT OF INTRODUCED SPECIES.—Within 2
10 years after the date of the enactment of this Act, the ad-
11 ministering agencies shall develop a profile, based on the
12 general characteristics of invasive species and vulnerable
13 ecosystems, in order to predict, to the extent practical,
14 whether a species planned for importation is likely to in-
15 vade a particular aquatic ecosystem if introduced. In de-
16 veloping the profile, the above agencies shall analyze the
17 research conducted under section 5, and other research
18 as necessary, to determine general species and ecosystem
19 characteristics (taking into account the opportunity for in-
20 troduction into any ecosystem) and circumstances that can
21 lead to establishment. Based on the profile, the Task
22 Force shall make recommendations to the Invasive Species
23 Council as to what planned importations of nonnative
24 aquatic organisms should be restricted. This profile shall
25 be peer-reviewed.

1 (c) AUTHORIZATION OF APPROPRIATIONS.—There
2 are authorized to be appropriated for carrying out this sec-
3 tion and section 5 of this Act, and section 1102(b)(2) of
4 the Nonindigenous Aquatic Nuisance Prevention and Con-
5 trol Act of 1990 (16 U.S.C. 4712(b)(2)) for each of the
6 fiscal years 2008 through 2012—

7 (1) \$4,000,000 for the Smithsonian Environ-
8 mental Research Center;

9 (2) \$11,000,000 for the United States Geologi-
10 cal Survey (including activities through the Coopera-
11 tive Fish and Wildlife Research Program), of which
12 \$6,500,000 shall be for the grant program under
13 section 5(e), and of which \$500,000 shall be for de-
14 veloping, maintaining, and updating the database
15 under section 5(i); and

16 (3) \$10,500,000 for the National Oceanic and
17 Atmospheric Administration, of which \$6,500,000
18 shall be for the grant program under section 5(e).

19 **SEC. 7. DISSEMINATION.**

20 (a) IN GENERAL.—The Invasive Species Council, in
21 coordination with the Task Force and the administering
22 agencies, shall be responsible for disseminating the infor-
23 mation collected under this Act to the public, including
24 Federal, State, and local entities, relevant policymakers,

1 and private researchers with responsibility over or interest
2 in aquatic invasive species.

3 (b) REPORT TO CONGRESS.—Not later than 3 years
4 after the date of the enactment of this Act, the Invasive
5 Species Council shall report actions and findings under
6 section 6 to the Congress, and shall update this report
7 once every 3 years thereafter, or more often as necessary.

8 (c) RESPONSE STRATEGY.—The Invasive Species
9 Council, in coordination with the Task Force, the admin-
10 istering agencies, and other appropriate Federal and State
11 agencies, shall develop and implement a national strategy
12 for how information collected under this Act will be shared
13 with Federal, State, and local entities with responsibility
14 for determining response to the introduction of potentially
15 invasive aquatic species, to enable those entities to better
16 and more rapidly respond to such introductions.

17 (d) PATHWAY PRACTICES.—The Invasive Species
18 Council, in coordination with the Task Force and the ad-
19 ministering agencies, shall disseminate information to,
20 and develop an ongoing educational program for, pathway
21 users (including vendors and customers) on how their
22 practices could be modified to prevent the intentional or
23 unintentional introduction of nonnative aquatic species
24 into aquatic ecosystems.

1 (e) AUTHORIZATION OF APPROPRIATIONS.—There
2 are authorized to be appropriated to the Secretary of the
3 Interior for each of the fiscal years 2008 through 2012
4 \$500,000 for the Invasive Species Council for carrying out
5 this section.

6 SEC. 8. TECHNOLOGY DEVELOPMENT, DEMONSTRATION, 7 AND VERIFICATION.

8 (a) ENVIRONMENTALLY SOUND TECHNOLOGY DE-
9 VELOPMENT, DEMONSTRATION, AND VERIFICATION.—

23 (A) seek to support Federal, State, or local
24 officials' ongoing efforts to control and eradi-

1 cate aquatic invasive species in an environ-
2 mentally sound manner;

3 (B) increase the number of environ-
4 mentally sound technologies or methods Fed-
5 eral, State, or local officials may use to control
6 or eradicate aquatic invasive species;

10 (D) verify that any technology or method
11 meets any appropriate criteria developed for ef-
12 ffectiveness and environmental soundness by the
13 Environmental Protection Agency.

22 (5) REPORT.—Not later than 3 years after the
23 date of the enactment of this Act, the Administrator
24 of the Environmental Protection Agency shall pre-
25 pare and submit a report to Congress on the pro-

1 gram conducted under this subsection. The report
2 shall include findings and recommendations of the
3 Administrator with regard to technologies and meth-
4 ods.

5 (b) SHIP PATHWAY TECHNOLOGY DEMONSTRA-
6 TION.—

7 (1) REAUTHORIZATION OF PROGRAM.—Section
8 1301(e) of the Nonindigenous Aquatic Nuisance
9 Prevention and Control Act of 1990 (16 U.S.C.
10 4741(e)) is amended by striking “\$2,500,000” and
11 inserting “\$7,500,000 for each of the fiscal years
12 2008 through 2012”.

13 (2) EXPANSION OF PROGRAM.—Section 1104(b)
14 of the Nonindigenous Aquatic Nuisance Prevention
15 and Control Act of 1990 (16 U.S.C. 4714(b)) is
16 amended—

17 (A) by redesignating paragraphs (4) and
18 (5) as paragraphs (5) and (6), respectively; and
19 (B) by inserting after paragraph (3) the
20 following new paragraph:

21 “(4) ADDITIONAL PURPOSES.—The Secretary
22 of the Interior and the Secretary of Commerce may
23 also demonstrate and verify technologies under this
24 subsection to monitor and control pathways of orga-

1 nism transport on ships other than through ballast
2 water.”.

3 (3) CRITERIA AND WORKSHOP.—Section 1104
4 of the Nonindigenous Aquatic Nuisance Prevention
5 and Control Act of 1990 (16 U.S.C. 4714) is
6 amended by adding at the end the following new
7 subsections:

8 “(d) CRITERIA.—When issuing grants under this sec-
9 tion, the National Oceanic and Atmospheric Administra-
10 tion shall give preference to those technologies that will
11 likely meet the criteria laid out in any testing protocol de-
12 veloped by the Environmental Protection Agency Office of
13 Research and Development’s Environmental Technology
14 Verification Program.

15 “(e) WORKSHOP.—The National Oceanic and Atmos-
16 pheric Administration shall hold an annual workshop of
17 principal investigators funded under this section and re-
18 searchers conducting research directly related to ship
19 pathway technology development, for information ex-
20 change, and shall make the proceedings widely available
21 to the public.”.

22 (c) AUTHORIZATION OF APPROPRIATIONS.—There
23 are authorized to be appropriated for each of the fiscal
24 years 2008 through 2012 \$2,500,000 for the Environ-
25 mental Protection Agency to carry out subsection (a).

1 **SEC. 9. RESEARCH TO SUPPORT THE SETTING AND IMPLI-**2 **MENTATION OF SHIP PATHWAY STANDARDS.**

3 (a) RESEARCH PROGRAM.—The Coast Guard and the
4 Environmental Protection Agency, in coordination with
5 the National Oceanic and Atmospheric Administration,
6 the Task Force, and other appropriate Federal agencies
7 and academic researchers, shall develop a coordinated re-
8 search program to support the promulgation and imple-
9 mentation of standards to prevent the introduction and
10 spread of invasive species by ships that shall include—

11 (1) characterizing physical, chemical, and bio-
12 logical harbor conditions relevant to ballast dis-
13 charge into United States waters to inform the de-
14 sign and implementation of ship vector control tech-
15 nologies and practices;

16 (2) developing testing protocols for determining
17 the effectiveness of vector monitoring and control
18 technologies and practices;

19 (3) researching and demonstrating methods for
20 mitigating the spread of invasive species by coastal
21 voyages, including exploring the effectiveness of al-
22 ternative exchange zones in the near coastal areas
23 and other methods proposed to reduce transfers of
24 organisms;

25 (4) verifying the practical effectiveness of any
26 type approval process to ensure that the process pro-

1 duces repeatable and accurate assessments of treat-
2 ment effectiveness; and

3 (5) evaluating the effectiveness and residual
4 risk and environmental impacts associated with any
5 standard set with respect to the ship pathway
6 through experimental research.

7 (b) WORKING GROUP.—Not later than 2 years after
8 the issuance by the Coast Guard of any standard relating
9 to the introduction by ships of invasive species, the Coast
10 Guard shall convene a working group including the Envi-
11 ronmental Protection Agency, the administering agencies,
12 and other appropriate Federal and State agencies and aca-
13 demic researchers, to evaluate the effectiveness of that
14 standard and accompanying implementation protocols.
15 The duties of the working group shall, at a minimum, in-
16 clude—

17 (1) reviewing the effectiveness of the standard
18 in reducing the establishment of invasive species in
19 aquatic ecosystems, taking into consideration the
20 data collected under section 5; and

21 (2) developing recommendations to the Coast
22 Guard for the revision of such standard and type ap-
23 proval process to ensure effectiveness in reducing in-
24 troductions and accurate shipboard monitoring of
25 treatment performance that is simple and stream-

1 lined, which shall be made widely available to the
2 public.

3 (c) AUTHORIZATION OF APPROPRIATIONS.—There
4 are authorized to be appropriated for each of the fiscal
5 years 2008 through 2012 \$1,500,000 for the Coast Guard
6 and \$1,500,000 for the Environmental Protection Agency
7 to carry out subsection (a).

8 **SEC. 10. RESEARCH IN SYSTEMATICS AND TAXONOMY.**

9 (a) IN GENERAL.—The National Science Foundation
10 shall establish a program to award grants to researchers
11 at institutions of higher education and museums to carry
12 out research programs in systematics and taxonomy.

13 (b) GOALS.—The goals of the program under this
14 section are to—

15 (1) encourage scientists to pursue careers in
16 systematics and taxonomy to ensure a continuing
17 knowledge base in these disciplines;

18 (2) ensure that there will be adequate expertise
19 in systematics and taxonomy to support Federal,
20 State, and local needs to identify species;

21 (3) develop this expertise throughout the United
22 States with an emphasis on regional diversity; and

23 (4) draw on existing expertise in systematics
24 and taxonomy at institutions of higher education

1 and museums to train the next generation of system-
2 atists and taxonomists.

3 (c) CRITERIA.—Grants shall be awarded under this
4 section on a merit-reviewed competitive basis. Emphasis
5 shall be placed on funding proposals in a diverse set of
6 ecosystems and geographic locations, and, when applica-
7 ble, integrated with the United States Long Term Ecologi-
8 cal Research Network. Preference shall be given to pro-
9 posals that will include student participation, and to insti-
10 tutions and museums that actively train students to be-
11 come experts in taxonomy and systematics.

12 (d) AUTHORIZATION OF APPROPRIATIONS.—There
13 are authorized to be appropriated to the National Science
14 Foundation for carrying out this section \$2,500,000 for
15 each of the fiscal years 2008 through 2012.

16 **SEC. 11. STATE PROGRAMS.**

17 (a) PLAN.—The administering agencies, in coopera-
18 tion with the appropriate State agencies, shall develop a
19 plan to—

20 (1) conduct a survey of methods States and
21 Federal agencies are using to control or eradicate
22 aquatic invasive species;

23 (2) facilitate the exchange of information
24 among States and Federal agencies on methods
25 States or Federal agencies have found to be effective

1 at controlling or eradicating aquatic invasive species
2 and the costs of those methods; and

3 (3) evaluate the cost-effectiveness of the various
4 methods States and Federal agencies are using to
5 control or eradicate aquatic invasive species.

6 (b) REPORT.—Not later than one year after the date
7 of enactment of this Act, the administering agencies shall
8 jointly transmit to the Congress the plan described in sub-
9 section (a) and the expected costs of carrying out the plan.

○