

109TH CONGRESS
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H. R. 1592

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

APRIL 13, 2005

Mr. EHLERS (for himself, Mr. GILCHREST, Mr. BOEHLERT, Mr. BAIRD, Mr. HONDA, and Mr. KIRK) introduced the following bill; which was referred to the Committee on Science, and in addition to the Committees on Transportation and Infrastructure, 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 infrastruc-
4 ture, disrupt commerce, outcompete native species,
5 reduce biodiversity, and threaten human health.

6 (2) The direct and indirect costs of aquatic
7 invasive species to our Nation's economy number in
8 the billions of dollars per year. In the Great Lakes
9 region, approximately \$3,000,000,000 dollars have
10 been spent in the past 10 years to mitigate the dam-
11 age caused by one invasive species, the zebra mussel.

12 (3) Recent studies have shown that, in addition
13 to economic damage, invasive species cause enor-
14 mous environmental damage, and have cited invasive
15 species as the second leading threat to endangered
16 species.

17 (4) Over the past 200 years, the rate of de-
18 tected marine and freshwater invasions in North
19 America has increased exponentially.

20 (5) The rate of invasions continues to grow
21 each year.

22 (6) Marine and freshwater research underlies
23 every aspect of detecting, preventing, controlling,
24 and eradicating invasive species, educating citizens
25 and stakeholders, and restoring ecosystems.

1 (7) Current Federal efforts, including research
2 efforts, have focused primarily on controlling estab-
3 lished invasive species, which is both costly and often
4 unsuccessful. An emphasis on research, development,
5 and demonstration to support efforts to prevent
6 invasive species or eradicate them upon entry into
7 United States waters would likely result in a more
8 cost-effective and successful approach to combating
9 invasive species through preventing initial introduc-
10 tion.

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

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

1 **SEC. 3. DEFINITIONS.**

2 In this Act:

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

5 (A) the National Oceanic and Atmospheric
6 Administration (including the Great Lakes En-
7 vironmental Research Laboratory);

8 (B) the Smithsonian Institution (acting
9 through the Smithsonian Environmental Re-
10 search Center); and

11 (C) the United States Geological Survey.

12 (2) AQUATIC ECOSYSTEM.—The term “aquatic
13 ecosystem” means a freshwater, marine, or estuarine
14 environment (including inland waters, riparian
15 areas, and wetlands) located in the United States.

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

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

22 (5) INVASIVE SPECIES.—The term “invasive
23 species” means a species—

24 (A) that is nonnative to the ecosystem
25 under consideration; and

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

4 (6) INVASIVE SPECIES COUNCIL.—The term
5 “Invasive Species Council” means the council estab-
6 lished by section 3 of Executive Order No. 13112
7 (42 U.S.C. 4321 note).

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

11 (8) SPECIES.—The term “species” means any
12 fundamental category of taxonomic classification or
13 any viable biological material ranking below a genus
14 or subgenus.

15 (9) TASK FORCE.—The term “Task Force”
16 means the Aquatic Nuisance Species Task Force es-
17 tablished by section 1201(a) of the Nonindigenous
18 Aquatic Nuisance Prevention and Control Act of
19 1990 (16 U.S.C. 4721(a)).

20 (10) TYPE APPROVAL.—The term “type ap-
21 proval” means an approval procedure under which a
22 type of system is certified as meeting a standard es-
23 tablished pursuant to Federal law for a particular
24 application.

1 **SEC. 4. COORDINATION AND IMPLEMENTATION.**

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

4 (1) appropriate State agencies;

5 (2) the Fish and Wildlife Service, the Environ-
6 mental Protection Agency, and other appropriate
7 Federal agencies; and

8 (3) the Task Force and Invasive Species Coun-
9 cil.

10 (b) IMPLEMENTATION.—The administering agencies
11 shall enter into a memorandum of understanding regard-
12 ing the implementation of this Act, which shall include the
13 coordination required by subsection (a).

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

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

21 **SEC. 5. ECOLOGICAL AND PATHWAY RESEARCH.**

22 (a) IN GENERAL.—The administering agencies shall
23 develop and conduct a marine and fresh-water research
24 program which shall include ecological and pathway sur-
25 veys and experimentation to detect nonnative aquatic spe-
26 cies in aquatic ecosystems and to assess rates and patterns

1 of introductions of nonnative aquatic species in aquatic
2 ecosystems. The goal of this marine and freshwater re-
3 search program shall be to support efforts to prevent the
4 introduction of, detect, and eradicate invasive species
5 through informing early detection and rapid response ef-
6 forts, informing relevant policy decisions, and assessing
7 the effectiveness of implemented policies to prevent the in-
8 troduction and spread of aquatic invasive species. Surveys
9 and experiments under this subsection shall be commenced
10 not later than 18 months after the date of the enactment
11 of this Act.

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

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

4 (A) document baseline ecological information of
5 the aquatic ecosystem including, to the extent prac-
6 ticable, a comprehensive inventory of native species,
7 nonnative species, and species of unknown origin
8 present in the ecosystem, as well as the chemical
9 and physical characteristics of the water and under-
10 lying substrate;

11 (B) for nonnative species, gather information to
12 assist in identifying their life history, environmental
13 requirements and tolerances, the historic range of
14 their native ecosystems, and their history of spread-
15 ing from their native ecosystems;

16 (C) track the establishment of nonnative species
17 including information about the estimated abun-
18 dance of nonnative organisms in order to allow an
19 analysis of the probable date of introduction of the
20 species; and

21 (D) identify the likely pathway of entry of non-
22 native species.

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

1 (A) identify what nonnative aquatic species are
2 being introduced or may be introduced through the
3 pathways under consideration;

4 (B) determine the quantities of organisms being
5 introduced through the pathways under consider-
6 ation; and

7 (C) determine the practices that contributed to
8 or could contribute to the introduction of nonnative
9 aquatic species through the pathway under consider-
10 ation.

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

19 (e) COMPETITIVE GRANT PROGRAM.—The National
20 Oceanic and Atmospheric Administration and the United
21 States Geological Survey shall jointly administer a pro-
22 gram to award competitive, peer-reviewed grants to aca-
23 demic institutions, State agencies, and other appropriate
24 groups, in order to assist in carrying out subsection (a),
25 and shall include to the maximum extent practicable di-

1 verse institutions, including Historically Black Colleges
2 and Universities and those serving large proportions of
3 Hispanics, Native Americans, Asian-Pacific Americans, or
4 other underrepresented populations.

5 (f) SHIP PATHWAY SURVEYS.—Section
6 1102(b)(2)(B)(ii) of the Nonindigenous Aquatic Nuisance
7 Prevention and Control Act of 1990 (16 U.S.C.
8 4712(b)(2)(B)(ii)) is amended to read as follows:

9 “(ii) examine other potential modes
10 for the introduction of nonnative aquatic
11 species by ship, including hull fouling.”.

12 (g) WORKSHOP.—In order to support the develop-
13 ment of the protocols and design for the surveys under
14 subsections (b) and (c), and to determine how to obtain
15 consistent, comparable data across a range of ecosystems,
16 the administering agencies shall convene at least one
17 workshop with appropriate researchers and representa-
18 tives involved in the management of aquatic invasive spe-
19 cies from Federal and State agencies and academic insti-
20 tutions to gather recommendations. The administering
21 agencies shall make the results of the workshop widely
22 available to the public. The workshop shall be held within
23 180 days after the date of the enactment of this Act.

24 (h) EXPERIMENTATION.—The administering agen-
25 cies shall conduct research to identify the relationship be-

1 tween the introduction and establishment of nonnative
2 aquatic species, including those legally introduced, and the
3 circumstances necessary for those species to become
4 invasive.

5 (i) NATIONAL PATHWAY AND ECOLOGICAL SURVEYS
6 DATABASE.—

7 (1) IN GENERAL.—The United States Geologi-
8 cal Survey shall develop, maintain, and update, in
9 consultation and cooperation with the Smithsonian
10 Institution (acting through the Smithsonian Envi-
11 ronmental Research Center), the National Oceanic
12 and Atmospheric Administration, and the Task
13 Force, a central, national database of information
14 concerning information collected under this section.

15 (2) REQUIREMENTS.—The database shall—

- 16 (A) be widely available to the public;
17 (B) be updated not less than once a quar-
18 ter;
19 (C) be coordinated with existing databases,
20 both domestic and foreign, collecting similar in-
21 formation; and
22 (D) be, to the maximum extent practicable,
23 formatted such that the data is useful for both
24 researchers and Federal and State employees
25 managing relevant invasive species programs.

1 **SEC. 6. ANALYSIS.**

2 (a) INVASION ANALYSIS.—

3 (1) IN GENERAL.—Not later than 3 years after
4 the date of the enactment of this Act, and every year
5 thereafter, the administering agencies shall analyze
6 data collected under section 5 and other relevant re-
7 search on the rates and patterns of invasions by
8 aquatic invasive species in waters of the United
9 States. The purpose of this analysis shall be to use
10 the data collected under section 5 and other relevant
11 research to support efforts to prevent the introduc-
12 tion of, detect, and eradicate invasive species
13 through informing early detection and rapid re-
14 sponse efforts, informing relevant policy decisions,
15 and assessing the effectiveness of implemented poli-
16 cies to prevent the introduction and spread of
17 invasive species.

18 (2) CONTENTS.—The analysis required under
19 paragraph (1) shall include with respect to aquatic
20 invasive species—

21 (A) an analysis of pathways, including—

22 (i) identifying, and characterizing as
23 high, medium, or low risk, pathways re-
24 gionally and nationally;

25 (ii) identifying new and expanding
26 pathways;

1 (iii) identifying handling practices
2 that contribute to the introduction of spe-
3 cies in pathways; and

4 (iv) assessing the risk that species le-
5 gally introduced into the United States
6 pose for introduction into aquatic eco-
7 systems;

8 (B) patterns and rates of invasion and sus-
9 ceptibility to invasion of various bodies of
10 water;

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

14 (D) rates of spread and numbers and types
15 of pathways of spread of new populations of the
16 aquatic invasive species and an estimation of
17 the potential spread and distribution of newly
18 introduced invasive species based on their envi-
19 ronmental requirements and historical distribu-
20 tion;

21 (E) documentation of factors that influ-
22 ence an ecosystem's vulnerability to a nonnative
23 aquatic species becoming invasive;

1 (F) a description of the potential for, and
2 impacts of, pathway management programs on
3 invasion rates;

4 (G) recommendations for improvements in
5 the effectiveness of pathway management;

6 (H) to the extent practical, a determina-
7 tion of the level of reduction in live organisms
8 of various taxonomic groups required to reduce
9 the risk of establishment to receiving aquatic
10 ecosystems to an acceptable level; and

11 (I) an evaluation of the effectiveness of
12 management actions (including any standard)
13 at preventing nonnative species introductions
14 and establishment.

15 (b) RESEARCH TO ASSESS THE POTENTIAL OF THE
16 ESTABLISHMENT OF INTRODUCED SPECIES.—Within 2
17 years after the date of the enactment of this Act, the ad-
18 ministering agencies shall develop a profile, based on the
19 general characteristics of invasive species and vulnerable
20 ecosystems, in order to predict, to the extent practical,
21 whether a species planned for importation is likely to in-
22 vade a particular aquatic ecosystem if introduced. In de-
23 veloping the profile, the above agencies shall analyze the
24 research conducted under section 5, and other research
25 as necessary, to determine general species and ecosystem

1 characteristics (taking into account the opportunity for in-
2 troduction into any ecosystem) and circumstances that can
3 lead to establishment. Based on the profile, the Task
4 Force shall make recommendations to the Invasive Species
5 Council as to what planned importations of nonnative
6 aquatic organisms should be restricted. This profile shall
7 be peer-reviewed.

8 (c) AUTHORIZATION OF APPROPRIATIONS.—There
9 are authorized to be appropriated for carrying out this sec-
10 tion and section 5 of this Act, and section 1102(b)(2) of
11 the Nonindigenous Aquatic Nuisance Prevention and Con-
12 trol Act of 1990 (16 U.S.C. 4712(b)(2)) for each of the
13 fiscal years 2006 through 2010—

14 (1) \$4,000,000 for the Smithsonian Environ-
15 mental Research Center;

16 (2) \$11,000,000 for the United States Geologi-
17 cal Survey (including activities through the Coopera-
18 tive Fish and Wildlife Research Program), of which
19 \$6,500,000 shall be for the grant program under
20 section 5(e), and of which \$500,000 shall be for de-
21 veloping, maintaining, and updating the database
22 under section 5(i); and

23 (3) \$10,500,000 for the National Oceanic and
24 Atmospheric Administration, of which \$6,500,000
25 shall be for the grant program under section 5(e).

1 **SEC. 7. DISSEMINATION.**

2 (a) IN GENERAL.—The Invasive Species Council, in
3 coordination with the Task Force and the administering
4 agencies, shall be responsible for disseminating the infor-
5 mation collected under this Act to the public, including
6 Federal, State, and local entities, relevant policymakers,
7 and private researchers with responsibility over or interest
8 in aquatic invasive species.

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

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

23 (d) PATHWAY PRACTICES.—The Invasive Species
24 Council, in coordination with the Task Force and the ad-
25 ministering agencies, shall disseminate information to,
26 and develop an ongoing educational program for, pathway

1 users (including vendors and customers) on how their
2 practices could be modified to prevent the intentional or
3 unintentional introduction of nonnative aquatic species
4 into aquatic ecosystems.

5 (e) AUTHORIZATION OF APPROPRIATIONS.—There
6 are authorized to be appropriated to the Secretary of the
7 Interior for each of the fiscal years 2006 through 2010
8 \$500,000 for the Invasive Species Council for carrying out
9 this section.

10 **SEC. 8. TECHNOLOGY DEVELOPMENT, DEMONSTRATION,**
11 **AND VERIFICATION.**

12 (a) ENVIRONMENTALLY SOUND TECHNOLOGY DE-
13 VELOPMENT, DEMONSTRATION, AND VERIFICATION.—

14 (1) GRANT PROGRAM.—Not later than 1 year
15 after the date of the enactment of this Act, the En-
16 vironmental Protection Agency, acting through the
17 Office of Research and Development, in consultation
18 with the Army Corps of Engineers, the admin-
19 istering agencies, and the Task Force, shall develop
20 and begin administering a grant program to fund re-
21 search, development, demonstration, and verification
22 of environmentally sound cost-effective technologies
23 and methods to control and eradicate aquatic
24 invasive species.

1 (2) PURPOSES.—Proposals funded under this
2 subsection shall—

3 (A) seek to support Federal, State, or local
4 officials’ ongoing efforts to control and eradi-
5 cate aquatic invasive species in an environ-
6 mentally sound manner;

7 (B) increase the number of environ-
8 mentally sound technologies or methods Fed-
9 eral, State, or local officials may use to control
10 or eradicate aquatic invasive species;

11 (C) provide for demonstration or dissemi-
12 nation of the technology or method to potential
13 end-users; and

14 (D) verify that any technology or method
15 meets any appropriate criteria developed for ef-
16 fectiveness and environmental soundness by the
17 Environmental Protection Agency.

18 (3) PREFERENCE.—The Administrator of the
19 Environmental Protection Agency shall give pref-
20 erence to proposals that will likely meet any appro-
21 priate criteria developed for environmental sound-
22 ness by the Environmental Protection Agency.

23 (4) MERIT REVIEW.—Grants shall be awarded
24 under this subsection through a competitive, peer-re-
25 viewed process.

1 (5) REPORT.—Not later than 3 years after the
2 date of the enactment of this Act, the Administrator
3 of the Environmental Protection Agency shall pre-
4 pare and submit a report to Congress on the pro-
5 gram conducted under this subsection. The report
6 shall include findings and recommendations of the
7 Administrator with regard to technologies and meth-
8 ods.

9 (b) SHIP PATHWAY TECHNOLOGY DEMONSTRA-
10 TION.—

11 (1) REAUTHORIZATION OF PROGRAM.—Section
12 1301(e) of the Nonindigenous Aquatic Nuisance
13 Prevention and Control Act of 1990 (16 U.S.C.
14 4741(e)) is amended by striking “\$2,500,000” and
15 inserting “\$7,500,000 for each of the fiscal years
16 2006 through 2010”.

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

21 (A) by redesignating paragraphs (4) and
22 (5) as paragraphs (5) and (6), respectively; and

23 (B) by inserting after paragraph (3) the
24 following new paragraph:

1 “(4) ADDITIONAL PURPOSES.—The Secretary
2 of the Interior and the Secretary of Commerce may
3 also demonstrate and verify technologies under this
4 subsection to monitor and control pathways of orga-
5 nism transport on ships other than through ballast
6 water.”.

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

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

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

1 (c) AUTHORIZATION OF APPROPRIATIONS.—There
2 are authorized to be appropriated for each of the fiscal
3 years 2006 through 2010 \$2,500,000 for the Environ-
4 mental Protection Agency to carry out subsection (a).

5 **SEC. 9. RESEARCH TO SUPPORT THE SETTING AND IMPLE-**
6 **MENTATION OF SHIP PATHWAY STANDARDS.**

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

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

20 (2) developing testing protocols for determining
21 the effectiveness of vector monitoring and control
22 technologies and practices;

23 (3) researching and demonstrating methods for
24 mitigating the spread of invasive species by coastal
25 voyages, including exploring the effectiveness of al-

1 ternative exchange zones in the near coastal areas
2 and other methods proposed to reduce transfers of
3 organisms;

4 (4) verifying the practical effectiveness of any
5 type approval process to ensure that the process pro-
6 duces repeatable and accurate assessments of treat-
7 ment effectiveness; and

8 (5) evaluating the effectiveness and residual
9 risk and environmental impacts associated with any
10 standard set with respect to the ship pathway
11 through experimental research.

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

22 (1) reviewing the effectiveness of the standard
23 in reducing the establishment of invasive species in
24 aquatic ecosystems, taking into consideration the
25 data collected under section 5; and

1 (2) developing recommendations to the Coast
2 Guard for the revision of such standard and type ap-
3 proval process to ensure effectiveness in reducing in-
4 troductions and accurate shipboard monitoring of
5 treatment performance that is simple and stream-
6 lined, which shall be made widely available to the
7 public.

8 (c) AUTHORIZATION OF APPROPRIATIONS.—There
9 are authorized to be appropriated for each of the fiscal
10 years 2006 through 2010 \$1,500,000 for the Coast Guard
11 and \$1,500,000 for the Environmental Protection Agency
12 to carry out subsection (a).

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

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

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

20 (1) encourage scientists to pursue careers in
21 systematics and taxonomy to ensure a continuing
22 knowledge base in these disciplines;

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

1 (3) develop this expertise throughout the United
2 States with an emphasis on regional diversity; and
3 (4) draw on existing expertise in systematics
4 and taxonomy at institutions of higher education
5 and museums to train the next generation of system-
6 atists and taxonomists.

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

16 (d) AUTHORIZATION OF APPROPRIATIONS.—There
17 are authorized to be appropriated to the National Science
18 Foundation for carrying out this section \$2,500,000 for
19 each of the fiscal years 2006 through 2010.

20 **SEC. 11. STATE PROGRAMS.**

21 (a) PLAN.—The administering agencies, in coopera-
22 tion with the appropriate State agencies, shall develop a
23 plan to—

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

4 (2) facilitate the exchange of information
5 among States and Federal agencies on methods
6 States or Federal agencies have found to be effective
7 at controlling or eradicating aquatic invasive species
8 and the costs of those methods; and

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

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

○