

# **Arizona State Aquatic Invasive Species Management Plan**

DRAFT

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## EXECUTIVE SUMMARY

Aquatic Invasive Species (AIS) are a growing problem in Arizona. This document is an important step in the coordinated response to the problem and serves as an efficient means of communicating the scope of activities necessary to effectively address the issue. Several projects across the state have focused on isolated AIS plant and animal problems. The purpose of the Arizona State Aquatic Invasive Species Management Plan is to provide guidance on management actions to address the prevention, control and impacts of unwanted nonindigenous aquatic nuisance species that have invaded or may invade Arizona.

State, federal and international AIS authorities and programs are briefly discussed to provide an understanding of our current ability to regulate and manage AIS. The development of a state management plan, as called for in Section 1204 of the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (P.L. 101-646) (NANPCA) provides an opportunity for federal cost-share support for implementation of the plan (Appendix A). Approval of this management plan by the national Aquatic Nuisance Species (ANS) Task Force is also required for Arizona to be eligible for federal cost-share support. Freshwater nonindigenous species that are known to have been found in Arizona are listed. Very little is known about the impact of many AIS and some have high commercial, recreational and aesthetic values. The plan identifies a small number of priority AIS that are considered to be highly detrimental, and worthy of immediate or continued management action. The management actions outlined in this plan concentrate on these priority species.

The objective of this plan is to fully implement a coordinated strategy designed to prevent new unintended introductions of AIS into the Colorado River and inland waters of the state, to limit the spread of established populations of AIS into un-infested waters of the state, and to abate harmful ecological, economic, social, and public health impacts resulting from infestation of AIS.

Section 1204 requires that this management plan "identifies those areas or activities within the state, other than those related to public facilities, for which technical and financial assistance is needed to eliminate or reduce the environmental, public health and safety risks associated with aquatic nuisance species." This plan focuses on the identification of feasible, cost-effective management practices and measures to be taken on by state and local programs to prevent and control AIS infestations in a manner that is environmentally sound. The three main goals identified in the plan are structured to be achieved through the implementation of strategic actions and tasks designed to solve specific problems. The plan will be periodically revised and adjusted based upon the practical experience gained from implementation, scientific research, and new tools, as they become available.

The implementation table summarizes the plan's funding from all sources. Implementing the programs outlined in this plan will require a coordinated tribal, Federal, State and private effort, and the dedication of significantly greater funding than is currently available.

## **INTRODUCTION**

The introduction of nonindigenous aquatic invasive species (AIS) into the lower Colorado River and the inland waters of Arizona threatens the ecological integrity of the state's water resources, as well as economic, public health and social conditions within our state. Because they have few natural controls in their new habitat, AIS spread rapidly, destroying native plant and animal habitat, damaging recreational opportunities, lowering property values, clogging waterways, impacting irrigation and power generation, and decrease overall biodiversity. The coordinated efforts contained within this plan are designed to protect the citizens of Arizona from the multitude of losses associated with AIS animals and plants. This plan focuses on eliminating the threat of accidental AIS introductions. The intentional introduction of nonindigenous species for aquaculture, commercial, or recreational purposes is addressed to insure that these beneficial introductions do not result in accidental AIS introductions, and to improve information sharing among those agencies responsible for regulating intentional introductions.

The introduction of nonindigenous species is not a new phenomenon in Arizona. Numerous species are causing or threaten to cause significant problems throughout the state, from the Colorado River on the north and the west to the San Francisco Drainage on the east, and in many of the reservoirs created in between. Aquatic invasive species continue to cause problems and damage across the state of Arizona. The reasons for this are obvious. With its many reservoirs and warm weather, Arizona is a popular vacationing spot for boaters from the East. This opens an easy method of transfer, especially for species such as the quagga mussel, which has now become established in the state. For decades, sport fishing has brought numerous nonindigenous fish species into the state, from the eastern states and abroad. While restrictions now prohibit intentional introductions of many species, unintentional and illegal introductions will remain a concern. The growing aquaculture industry in the state as well as aquarium trade and backyard water gardening has brought many tropical aquatic species from around the world which easily become established in the warm climate that Arizona has yearlong. The alteration of Arizona watersheds with the building of reservoirs has altered the riparian habitat in many areas of the state, often in ways that favor AIS over those native and often endemic to the state.

The potential for significant additional introductions continues for Arizona. New AIS seem to be poised to enter Arizona without the establishment of proper prevention methods. Having eradicated the presence of purple loosestrife that occurred in the 1980s, Arizona is the lone state out of the continental US without an established population. Giant salvinia has invaded portions of the lower Colorado. Quagga mussels have become established in various

state waters. Each of these species has costly environmental, ecological, agricultural and industrial impacts. As these AIS become fully established in the reservoirs that feed the extensive canal system in Arizona, the impact on water users and electrical utilities across the state will be widespread. These canals provide a rapid means of transport to waters across the state, and the cost would be immense to eradicate invaders such as mussel and plants that may plug water intakes and pumping stations. Arizona is in a unique position to focus efforts on prevention and control of several species that have caused millions of dollars of damages in other states.

Numerous AIS have been introduced and dispersed in the Colorado River and the inland waters of Arizona by various pathways. The environmental and socioeconomic costs resulting from AIS infestation will only continue to rise with further successful AIS introductions. Although an awareness of the problems caused by AIS is emerging, the solutions to these problems are not readily apparent. This comprehensive state management plan for AIS provides guidance on management actions to prevent, control and limit the impacts of AIS that have invaded or may invade the Colorado River basin and inland waters.

Arizona's AIS Management Plan will be reviewed and revised periodically as a portion of the larger Arizona Invasive Species Management Plan. The specific tasks employed to accomplish our goals and objectives must remain flexible to assure efficiency and effectiveness. This version of the Arizona AIS Plan is a good first step towards identifying and integrating existing AIS programs, and implementing new programs, but future editions will be necessary to fully accomplish our goals.

## **GOALS**

The goals of the Arizona State AIS Management Plan are to eliminate or minimize the harmful ecological, economic, and social impacts of AIS through preventing new introductions, reducing further spread of existing populations, and managing/controlling population growth of AIS in Arizona.

These goals will be achieved through implementation of a plan that;

- emphasizes prevention strategies;
- requires risk assessment and review for all aquatic non-indigenous species prior to their importation, transport, or use in Arizona;
- promotes early detection;
- includes development of contingency plans;
- permits appropriate and timely response to new and existing populations;

- protects and restores native plant and animal communities;
- provides for access to accurate the latest distribution and management information;
- incorporates outreach, education, and research elements;
- recommends funding levels adequate for effective implementation;
- encourages interagency collaboration;
- facilitates inter-jurisdictional coordination with state, federal and tribal agencies; and
- seeks cooperative solutions with the private sector and user groups.

It is not possible to address all potential invaders, their impacts, and the constraints and contingencies that may develop. Consequently, this plan is intended to be adaptable to changing circumstances. As a result, continual review of the plan is imperative to use the latest information and procedures to limit the spread of AIS both into and within Arizona.

## **PROCESS AND PARTICIPATION**

Addressing the problem of AIS in Arizona will entail a large-scale and long-term effort, requiring funding and coordination from multiple agencies, organizations, and individuals (stakeholders). As the agency coordinating this strategic planning effort, the Arizona Game and Fish Department (AGFD) prepared a preliminary draft plan and requested broad-based stakeholder participation from representatives of State and Federal agencies, Tribes, municipalities, water management districts, NGOs, and the private sector to serve on the Arizona Aquatic Invasive Species Advisory Council (AISAC). The AISAC revised the preliminary draft plan and will be soliciting public comment on the draft plan during a 30-day review period. Management and financial responsibilities identified under the Arizona are to be refined by all stakeholders as funding becomes available. The Arizona AIS Plan is a viable first step towards identifying and integrating existing AIS activities, including the development and implementation of new programs. Funding and future plan revisions will be necessary to achieve our goal.

## **EXISTING AUTHORITIES AND PROGRAMS**

This section provides a brief discussion of nonnative species authorities and programs in Arizona, as well as regional activities, federal law, and international agreements. The policies regarding nonnative species are controlled and enforced by a network of regulatory agencies and organizations. Primary coordinating agencies are noted below.

### **FEDERAL**

No single federal agency has clear authority over all aspects of AIS management, but many agencies have programs and responsibilities that address aspects of the problem, such as importation, interstate transport, exclusion, control, and eradication. Federal activities on AIS management are coordinated through the National Aquatic Nuisance Species Task Force (NANSTF). In February 1999, President Clinton signed Executive Order (EO) 13112, which requires all federal agencies to collaborate in developing a national invasive species management plan that will include terrestrial and aquatic species. A brief description of the President's Executive Order, the Nonindigenous Aquatic Nuisance Prevention and Control Act (NANPCA), and the National Invasive Species Act (NISA) is provided below. Additional information on NISA Section 1204 is provided in Appendix B. See Appendix C for details of EO 13112. Various federal laws relevant to AIS issues in New Mexico are described in Appendix D.

#### **Executive Order 13112 on Invasive Species**

President Clinton signed EO 13112 on Invasive Species (64 Fed. Reg. 6183, Feb. 8, 1999), on February 3, 1999. The EO seeks to prevent the introduction of invasive species, provide for their control, and minimize their impacts through better coordination of federal agency efforts under a National Invasive Species Management Plan to be developed by an interagency Invasive Species Council. The Order directs all federal agencies to address invasive species concerns, as well as refrain from actions likely to increase invasive species problems. The National Invasive Species Management Plan was finalized on January 18, 2001. It can be found on the Council website at [www.invasivespecies.gov](http://www.invasivespecies.gov).

#### **Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (NANPCA; Title I of P. No.101-646, 16 U.S.C. 4701 et seq.)**

This Act established a federal program to prevent the introduction of, and to control the spread of, introduced ANS and the brown tree snake. The U.S. Fish and Wildlife Service (USFWS), the U.S. Coast Guard (USCG), the Environmental Protection Agency (EPA), the Army Corps of Engineers (CoE), and the National Oceanic and Atmospheric Administration (NOAA) share responsibilities for implementing this effort. They act cooperatively as members of the national Aquatic Nuisance Species Task Force (ANSTF). The purposes of NANPCA are:

- to prevent unintentional introduction and dispersal of nonindigenous species into waters of the United States through ballast water management and other requirements;
- to coordinate federally conducted, funded or authorized research, prevention control, information dissemination and other activities regarding the zebra mussel and other ANS;
- to develop and carry out environmentally sound control methods to prevent, monitor and control unintentional introductions of nonindigenous species from pathways other than ballast water exchange;
- to understand and minimize economic and ecological impacts of nonindigenous ANS that become established, including zebra/quagga mussels; and
- to establish a program of research and technology development and assistance to States in the management and removal of zebra/quagga mussels.

Under NANPCA, state governors are authorized to submit comprehensive management plans to the Task Force for approval that identify areas or activities for which technical and financial assistance is needed. Grants are authorized to states for implementing approved management plans, with a maximum federal share of 75% of the cost of each comprehensive management plan. The state (or private) contribution is 25% of total program costs.

#### **National Invasive Species Act (NISA; P. L. No.104-332)**

In 1996, Congress reauthorized and amended NANPCA, creating NISA. The amended act addressed the need to expand efforts beyond ballast water and zebra mussels, and to address additional avenues of introduction and the variety of nonnative species associated with those pathways. As well, NISA established provisions to create additional regional panels around the country to interact with the ANS Task Force and provide regional and local recommendations, planning, and an infrastructure for action.

#### **U.S. Fish and Wildlife Service programs (Primary Coordinating Agency)**

The USFWS provides federal funding for implementation of state and regional ANS (AIS) management plans which have been approved by the ANS Task Force. One of the major USFWS efforts on AIS is the 100th Meridian Initiative. The goals of this Initiative are to 1) prevent the spread of zebra mussels and other AIS in the 100th meridian jurisdictions of the West and 2) monitor and control zebra mussels and other AIS if detected in these areas. These goals will be attained through the implementation of the following six components: 1) information and education, 2) voluntary boat inspections and boater surveys, 3) involvement of those who haul boats for commercial purposes, 4) monitoring, 5) rapid response, and 6) evaluation.

This Initiative represents the first large-scale concerted effort, working with resource agencies (federal, state, provincial), tribal entities, potentially affected industries and other

interested parties, to begin addressing the pathway to prevent the spread of zebra/quagga mussels. The success of this Initiative depends on the commitment of these groups to combat the spread of this destructive invader.

## **REGIONAL**

### **Western Regional Panel (WRP) (Primary Coordinating Agency)**

The WRP on ANS was formed under a provision in NISA. The initial, organizational meeting of the WRP was held in 1997. The WRP was formed to help limit the introduction, spread, and impacts of ANS into western North America. This panel includes representatives from federal, state and local agencies, including private, environmental, and commercial interests. The purposes of the WRP, as described in NISA, are to:

- identify Western Region priorities for responding to ANS;
- make recommendations to the federal ANS Task Force regarding an education, monitoring (including inspection), prevention, and control program to prevent the spread of the zebra/quagga mussels west of the 100th Meridian;
- coordinate, where possible, other ANS program activities in the West not conducted pursuant to NISA;
- develop an emergency response strategy for federal, state, and local entities for stemming new invasions of ANS in the region;
- provide advice to public and private individuals and entities concerning methods of preventing and controlling ANS infestations; and
- submit an annual report to the federal ANS Task Force describing activities within the western region related to ANS prevention, research and control.

### **Western Governors Association (WGA)**

The WGA was established in 1984 to address key policy and governance issues common to the 18 Western states, two territories and one commonwealth. In June of 1998, the association passed Resolution 98-018, Undesirable Aquatic and Terrestrial Species, for the purpose of developing and coordinating strategies and management actions to control and prevent the spread and introduction of undesirable species; to support the use of Integrated Pest Management concepts; to encourage broad-based partnerships; and to urge adequate support for the U.S. Department of Agriculture - Animal and Plant Health Inspection Service (APHIS). Resolution 98-018 was followed by Resolution 02-21, Undesirable Aquatic, Riparian, and Invasive Species, and most recently by Resolution 04-12, Undesirable Aquatic, Riparian, and Invasive Species.

The WGA has formed a working group of state and federal agencies, industry, non-governmental organizations and academia to develop Western strategies to limit the spread of these species. The entire Resolution 04-12 is in Appendix E.

### **U.S. Army Corps of Engineers, Los Angeles Division, Arizona-Nevada Field Office (CoE)**

The CoE is currently involved in more than 36 projects throughout the state. In other states, the CoE coordinates activities between federal, state, and local agencies and organizations working on AIS related projects.

### **TRIBAL**

There are 19 federally recognized Tribes in Arizona that comprise 28% of the land in Arizona, with 6.6% of the state's population being Native American. Tribal lands with reservoirs, lakes, rivers and streams represent watersheds that commonly cross state and tribal boundaries. A coherent strategy for AIS depends on addressing all waters of the region. However, federal reserved lands are subject to federal, not state law. Tribes are also empowered to develop Tribal laws under the Clean Water Act and other authorities. With the myriad of authorities and regulations that apply to waters of this region, it is of critical importance that there exists a well-coordinated strategy for AIS problems that commonly transcend jurisdictional boundaries.

### **STATE**

In Arizona, state and local agencies can play a major role controlling the spread of nonnative species. States have authority to decide which species can be imported and/or released. However, the U.S. Constitution vests the power to regulate international and interstate commerce to Congress. Federal law may preempt state law, but states retain almost unlimited power to define which species are imported and/or released. Although many state agencies have some authority to regulate AIS, no centralized authority or management structure exists to coordinate AIS activities in New Mexico. This section describes the existing laws, regulations, and policies related to AIS that various state agencies have for managing AIS (also see Appendix F).

### **Arizona Invasive Species Advisory Council (AISAC) (Primary Coordinating Agency)**

The Arizona Invasive Species Advisory Council (AISAC) was created, by Executive Order 2005-09, on April 1, 2005. AISAC was established under the joint leadership of the Arizona Game and Fish Department and Arizona Department of Agriculture to develop a consensus vision for a coordinated, multi-stakeholder approach to invasive species management in Arizona. This Governor appointed advisory council (not to exceed 27 members) was tasked to

develop recommendations on how to coordinate between private, local, tribe, state, and federal entities on invasive species management efforts and issues for the State of Arizona. AISAC submitted recommendations to the Governor entitled: Arizona's Invasive Species – Unwanted Plants and Animals to the Governor on June 30, 2006. AISAC was reconvened by Executive Order 2007-07 on January 24, 2007, and the 21-member Council tasked with developing a statewide invasive species strategic plan by June 30, 2008.

#### **Arizona Game and Fish Department (AGFD) (Primary Coordinating Agency)**

Currently the state restrictions concerning the regulation of AIS are based on A.R.S. 17-255 (AIS Interdiction Act of 2009). This state statute provides for powers and authorities concerning aquatic invasive species lists, affected waters, decontamination protocols, and violation/enforcement capacities. R12-4-313 and R12-4-316 both deal with the transport of baitfish, while R12-4-401 lists a number of restricted species, in regard to their movement and sale. This restricted list deals with many non-indigenous species, while R12-4-406 specifically lists the zebra mussel and quagga mussel as restricted.

#### **Arizona Department of Agriculture (ADA) (Primary Coordinating Agency)**

The ADA is mandated in the protection of state, private, and public lands from a number of terrestrial and aquatic noxious weeds. A.A.C. R3-4-244 lists regulated and restricted noxious weeds that are present in the state and are being monitored or controlled. A.A.C. R3-4-245 lists prohibited noxious weeds that may not be transported into the state. Both of these laws include several threatening AIS. A.R.S. 3-201.01 gives the jurisdiction to control noxious weeds to the Arizona Department of Agriculture. This includes the right to quarantine areas, to call on land-owners to control noxious weeds and to update the noxious weeds list as necessary. A.R.S. 205.01 allows the ADA to establish or approve programs to treat, spray, control, suppress or eradicate noxious weeds.

Environmental Services Division performs feed, fertilizer, pesticide and seed label inspections, sampling, registration and licensing to ensure compliance with state and federal laws and ensures consumers are protected. This Division is also charged with ensuring seed quality and seed free of noxious weeds; enforces pesticide use regulations to ensure products are applied according to label directions; established buffer zones are adhered to, and environmental and human concerns are protected; assures competency of pesticide applicators, pest control advisors and pesticide safety trainers through training, testing and certification; protects agricultural workers and pesticide handlers on agricultural establishments by enforcing state and federal agricultural safety regulations; conducts criminal investigations of native plant and livestock law violations through the Office of Special Investigations; and provides specialized enforcement and response support to divisions within the department.

Plant Services Division safeguards agriculture, food and the environment from the risks associated with the entry, establishment and spread of plant pests, diseases and noxious weeds,

thereby promoting agricultural sustainability, market access and competitiveness; enforces state and federal quarantine regulations to ensure agricultural, environmental and public concerns are protected; conducts inspections throughout the state to enforce regulations on the importation, export and movement of plant materials; and conducts early detection surveys for the presence of exotic plant pests and diseases of concern to Arizona agriculture and its public in order to offer the best chance at successful eradication.

### **The University of Arizona (UA) (Primary Coordinating Agency)**

The UA has a long-standing interest in AIS in the state and has worked with and offered advice to AGFD in the construction of this and previous versions of the AIS. The UA is a “water university” with several Departments offering expert guidance to resource management agencies in the state. Departments include the School of Natural Resources and the Environment (with Academic Programs in Wildlife and Fisheries Management and Watershed Management); Hydrology and Water Resources; the Water Resources Research Center; and Soil, Water, and Environmental Sciences. Because the problem of AIS is multi-faceted, understanding of and managing for them will require a multi-disciplinary approach, the UA has experts in many disciplines capable of addressing the issues with AIS. Additionally, the UA can serve as a scientific clearing house of information regarding life history and environmental conditions needed for the growth and spread of AIS. This information is vital in understanding how to manage for and prevent the introduction and spread of AIS.

### **Arizona Department of Environmental Quality/Water Quality Division (ADEQ)**

The core responsibilities of ADEQs Water Quality Division include -ensuring that Arizona's public water systems deliver safe drinking water;

- identifying water pollution problems and establishing standards to address them;
- investigating complaints and violations of Arizona's water quality laws, rules and permits;
- issuing permits to protect Arizona waters from point sources of pollution;
- managing the quality of water resources through partnerships within the natural boundaries of the state's watersheds;

-monitoring and assessing the quality of surface and groundwater throughout the state; and regulating the discharge and treatment of wastewater. Although ADEQ has no mandate to control AIS, the spread of AIS within the state has the potential to disrupt several of core responsibilities within the Water Quality Division.

## **AQUATIC INVASIVE SPECIES PROBLEMS AND CONCERNS IN ARIZONA**

A growing number of invasive aquatic plant and animal species have adversely impacted the productivity and biodiversity of Arizona's native species and altered a variety of aquatic ecosystems. Most introductions are the result of human activities, such as alterations to the waterways. Alterations such as damming and water diversion may favor AIS over native species. There are many ways organisms may be transported. Major pathways through which nonnative species are introduced into inland and state border waterways include aquaculture, aquarium trade, biological control, transport via recreational boating and fishing, research activities, and movement of nonnative species through channels and canals. Some introduction pathways, such as the aquaculture industry, are currently regulated to minimize the risk of new AIS introductions, while others have developed few or no precautions.

### **THREATENED IMPACT OF AQUATIC INVASIVE SPECIES IN ARIZONA**

Potential threats from AIS may be evidenced by the degree of negative impact these species have upon the environment, industry and the economy. AIS are associated with the following:

- losses of native biodiversity;
- deterioration of human health;
- threats to ESA listed species;
- altered ecosystem function and structure;
- reduced aquatic habitat for native biota;
- increased costs of canal maintenance and fouled water intakes;
- hampered power generation capabilities;
- impeded water transfer and interference with efficiency of water delivery systems;
- inferior water quality;
- decreased recreational opportunities;
- increased safety concerns for swimmers;
- decreased property values; and

threatened aquaculture production.

The following section on freshwater animals and plants provides information on non-indigenous species and discusses species of concern. These draft lists are intended to provide a basis for discussion and further work identifying the presence, distribution, status, and threat of AIS. These will be updated, maintained, categorized and standardized as new information is received and assimilated.

### **Freshwater Animals**

A draft list of restricted freshwater nonindigenous animals in Arizona is included in Appendix G. The list is incomplete as the introductions of nonindigenous animals are continuous and the impacts of each may not be fully understood. Currently, more funding and research are needed regarding the management and control of AIS animals.

The quagga mussel has been found in Arizona waters and is considered to be a priority AIS due to the severe impact in the Colorado River Basin.

There are no native species of crayfish in Arizona. Currently, Arizona has two non-native crayfish species that were originally introduced as a means of aquatic vegetation control, fishing bait, and aquaculture. Crayfish have had an immense adverse effect on the ecosystem they were introduced into, decreasing overall biodiversity of fish, amphibians, and macroinvertebrates. Crayfish have spread rapidly through the state and the introduction of additional crayfish species is of great concern. Both the rusty and northern crayfish are proposed for listing through AGFD AIS Directors Orders.

Bullfrogs were initially introduced as a food source in Arizona. Bullfrogs compete with and often times prey on many aquatic animal species and have detrimental effects on native fish and amphibian populations. Bullfrogs often have detrimental effects on protected native species such as the Chiricahua leopard frog and Mexican garter snake.

Other species of concern include New Zealand mudsnail, northern snakehead, Asian carp (i.e. silver, bighead, and black carp), gizzard shad, redshiners, and mosquitofish.

More detailed information on these priority species is included in Appendix G.

### **Freshwater Plants**

Some invasive, non-indigenous freshwater weeds pose a serious threat to Arizona state waters while the impacts of others are still undetermined. The freshwater nonindigenous plant species found in Arizona are listed in Appendix H, along with information on pathways of introduction and more detailed information on priority plant species and their impacts.

Hydrilla (*Hydrilla verticillata*), Brazilian elodea (*Egeria densa*), and Parrotfeather (*Myriophyllum aquaticum*) are freshwater submersed species of concern in Arizona.

Purple loosestrife (*Lythrum salicaria*) is a priority emergent species that has spread throughout the continental US, but has not yet become established in Arizona. Through education of the public we have the opportunity to exclude this ecosystem-altering invader from our state.

Giant salvinia (*Salvinia molesta*) is a priority floating plant that is currently found in the Lower Colorado River. This aquatic fern has had major impacts to slow moving waters in the southeast U.S. and around the world. Giant salvinia is proposed for listing through AzGFD AIS Directors Orders.

## **Algae**

Although algae are taxonomically different from submersed and emergent aquatic vegetation, ecologically they are similar enough to include in a section on nonindigenous plants. As a group, algae are relatively cosmopolitan and sometimes noxious, and potentially toxic, blooms of cyanobacteria (more closely related to true bacteria than algae but included in this section) can occur in almost any water body given proper conditions for this to happen (usually associated with eutrophication). Large blooms of algae can and have caused numerous fish kills due to hypoxia/anoxia. Such events often occur on a seasonal basis.

It is beyond the scope of this plan to address problems concerning eutrophication and toxicity of most species. In some cases, eutrophication is a natural condition of the water body in question while in some cases it is caused by human activity. Cultural eutrophication, and its effects, is currently handled by agencies such as the Arizona Department of Environmental Quality who will assign limits on algae growth and water quality either on a regional or case-by-case basis. Since algae identification is not easily done in the field and since few in the state have the capability to accurately identify species, limited data exists on the spread or current distribution of noxious or potentially toxic species.

One algal species appears to be a relatively recent introduction and has caused numerous and large fish kills; *Prymnesium parvum*. This species produces a potent ichthyotoxin (prymnesin) and was first observed in Apache Lake in the Spring of 2004 following a fish kill. It then appeared to spread to downstream reservoirs causing fish kills of increasing magnitude. Since this time, numerous fish kills have been reported in urban lakes in the Phoenix Metropolitan area both connected and unconnected to the Salt River watershed. The exact environmental requirements for *P. parvum* growth and toxicity are not completely understood. Current research is attempting to make these determinations. Due to its devastating effects on gilled aquatic organisms, both native and introduced, we include *P. parvum* in the priority species list.

The invasive benthic diatom, *Didymosphenia geminata*, is proposed for listing through AGFD AIS Directors Orders.

## AIS PRIORITIZATION

Prioritization of which AIS pose the greatest threat to waters of the state is difficult and somewhat subjective. Obviously an AIS that threatens sportfishing will be most important to those who enjoy sportfishing; an AIS that threatens decreased flow in a canal will be most important to those agencies involved with water conveyance; an AIS that threatens to alter structure and function of natural waters of the state will be most important to those agencies charged with maintenance or preservation of these areas. The only commonality all AIS share is that they are all presently, or have the potential to, impair a waterway of the state for either anthropocentric use or intrinsic value; most have the capability for both.

We currently do not have enough knowledge about any particular AIS to predict with any great degree of accuracy the exact environmental conditions needed for their spread or proliferation. Obviously, humans often play a major role in the spread of AIS; some introductions are intentional and some are not. In lieu of human-caused spread of AIS, the primary reason for AIS invasion is a change in environmental conditions that now allows them to competitively exclude or somehow displace native aquatic organisms. The introduction of AIS is not a new phenomenon and “natural” introductions of these organisms have occurred over millennia, however, the vast majority of those introductions are not, and have not been, successful due to competition for resources by established native populations. For the most part, we have no records of introductions that have been unsuccessful or have come and gone unnoticed; humans only notice the successful introductions.

Aquatic ecosystems change over time. Some changes are natural while others are either directly or indirectly human-caused. Natural temporal variability, coupled with human-caused changes to native aquatic ecosystems, complicates predicting which AIS species is going to pose the greatest risk in any given region in the near or short term. Therefore, the prioritization list that follows should be frequently re-evaluated and this AIS plan should be considered an active document subject to change in the future.

Although difficult, prioritization is essential in determining where efforts should be focused to try and manage AIS. We have established three prioritization categories with a rationale for each given below. It is important to mention that any listing of AIS, or their prioritization, is non-exhaustive and needs to be frequently updated as conditions warrant.

**Priority 1:** AIS whose introduction and spread has already caused significant impairment of a water body (or water bodies) within the state for either anthropocentric use or intrinsic value OR whose introduction, spread and potential for impairment appears imminent or great.

- Bighead carp (*Hypophthalmichthys nobilis*)
- Didymo aka. rock snot (*Didymosphenia geminata*)
- Giant salvinia (*Salvinia molesta*)
- Hydrilla (*Hydrilla verticillata*)

- New Zealand mud snail (*Potamopyrgus antipodarum*)
- Redclaw crayfish (*Cherax quadricarinatus*)
- Rusty crayfish (*Orconectes rusticus*)
- Silver carp (*Hypophthalmichthys molitrix*)
- Quagga mussel (*Dreissena rostriformis bugensis*)
- Zebra mussel (*Dreissena polymorpha*)

**Priority 2:** AIS whose introduction and spread have impaired a water body (or water bodies) within the state for either anthropocentric use or intrinsic value. These AIS, however, do not currently have as great a potential for wide-spread harm to aquatic systems as Priority 1 OR they have become firmly entrenched in water body/water bodies within the state but wide-spread remediation aimed at their removal or eradication is feasible only in localized, high-priority areas.

- Bullfrog (*Rana catesbeiana*)
- Chytrid fungus (*Batrachochytrium dendrobatidis*)
- Eurasian watermilfoil (*Myriophyllum spicatum*)
- Golden algae (*Prymnesium parvum*)
- Northern snakehead (*Channa argus*)
- Purple loosestrife (*Lythrum salicaria*)
- Whirling disease (*Myxobolus cerebralis*)

**Priority 3:** AIS whose introduction and spread within the state seems minimal compared to Priority 1 or Priority 2 AIS, however, the potential for introduction and spread exists OR these AIS have already caused large-scale impairment to aquatic systems but have become so firmly entrenched or wide-spread throughout the state that managing for, or remediation/control of, them currently seems infeasible or is otherwise very logistically difficult. Specifically, we recommend the following prioritization:

- Asiatic clams (*Corbicula* spp.)
- Giant reed (*Arundo donax*)
- Golden apple snail (*Pomacea canaliculata*)
- Nutria (*Myocastor coypus*)
- Round goby (*Neogobius melanostomus*)
- Viral hemorrhagic septicemia (order *Mononegavirales*, family *Rhabdoviridae*, genus *Novirhabdovirus*)

## AIS MANAGEMENT STRATEGY

The goal of the Arizona AIS Plan (AZAIS) is to preclude or minimize the potentially harmful ecological, economic, human health, and social impacts resulting from the presence of

AIS in Arizona through prevention and management of introduction, population growth, and dispersal into, within, and from Arizona.

To achieve this goal the following actions are proposed:

- secure an executive order from the Governor recommending full participation of involved state agencies in the re-initiation of the Arizona Invasive Species Advisory Council (AISAC);
- secure appropriated funding capabilities through the state legislature to support an AIS program, including the expansion of law enforcement capacity and authority;
- maintain a state-level Aquatic Invasive Species Program Coordinator (Coord) position;
- maintain a database (currently iMapInvasives) for cataloging AIS in the state;
- maintain and further develop a system to rank AIS based on threat level;
- develop a monitoring system for documenting the presence and distribution of AIS in the state;
- prevent the movement of AIS into and within Arizona
- minimize the impact of established AIS on native biota, ecosystems, and the public;
- devise a rapid-response system for detecting, investigating, and eradicating newly reported AIS or populations;
- organize educational and outreach efforts to increase public awareness of AIS interdiction;
- establish a system to coordinate AIS management efforts between state, federal, tribal, regional, and local agencies, and private organizations; and
- outline research goals and mechanisms to fund management efforts.

The parties supporting this strategy understand that it is a non-binding statement of consensus. This plan is intended as a general understanding and agreement on how to approach AIS management in Arizona. This strategic plan is an attempt to coordinate individual efforts into a more comprehensive AIS management program, where the sum of collective efforts ends up greater than sum of the parts. A cooperative, concerted effort will result in a win-win situation for the economy, environment and the citizens of Arizona

It is not possible to address all potential invaders, their impacts, and the constraints and contingencies that may develop. Consequently, the AzAIS is intended to be adaptable to changing circumstances. Although all strategies and actions identified in this plan are important, AISAC support and future funding for the state aquatic invasive species program are critical for the effective management of AIS in Arizona. Activities and priorities of the AzAIS plan will be under continual review. An annual report will be produced by the AISAC, which will include recommendations for updating and modifying management activities and priorities. Ultimately, the Coordinator will oversee all initiatives of the AzAIS.

When used under the *Recommended Strategies and Actions* to achieve plan *Objectives*, the term “State” refers to the ADA, AGFD, AISAC, and UA. Other state agencies are listed parenthetically where their expertise is considered useful to achieve specific plan *Objectives*

(e.g., State [ADEQ, ADOT]). The term “Fed” refers to the Bureau of Reclamation (BOR), Bureau of Land Management (BLM), US Army Corps of Engineers (ACOE), Department of Agriculture (DOA), USDA- Animal and Plant Health Inspection Service (USDA-APHIS), Environmental Protection Agency (EPA), US Forest Service (USFS), US Fish and Wildlife Service (USFWS), US Geological Survey (USGS), and US National Park Service (NPS). A non-governmental organization (NGO) is a non-profit, legally constituted organization created by private persons or organizations with no participation or representation of any government. The term “municipalities” (MUN) includes entities of governance by counties and cities. The term “Private” may include, but is not necessarily limited to: citizens, business, lake associations, outdoor recreation groups, watershed groups, marinas, etc.

## **OBJECTIVE 1: Coordinate and Implement a Comprehensive AIS Management Plan**

**Problem Addressed:** Threats posed by AIS have not been recognized by agencies or adequately addressed in Arizona. Although adverse impacts from AIS in Arizona may have been somewhat limited to date, proactive measures are needed to prevent new introductions and further damage from occurring. There is no clear state authority or agency charged with limiting and managing AIS. When the issue is undertaken, most management activities are focused on isolated problems and do not approach AIS in a comprehensive, interagency manner. The lack of coordination, oversight, and funding has allowed many invasive species to become established in Arizona and permits new introductions.

Establishment of AzAIS with appropriate implementation, authority and resources will permit effective prevention and management of AIS. Most importantly, native species and their habitats, in addition to the state’s ecologic and economic resources, can be protected from the negative impacts of AIS.

### **Current Agency Activities**

#### Arizona Game and Fish Department

Since the late 1990’s, the AGFD has represented the State of Arizona on the Western Regional Panel (WRP) of the Aquatic Nuisance Species Task Force (ANSTF) and the 100<sup>th</sup> Meridian Initiative. AGFD AIS activities to date have included, but not limited to: attending annual WRP meetings; elected member of the WRP Executive Board; member of the ANS Task Force’s ad hoc Grass Carp Team; annual correspondence with the WRP and ANSTF regarding agency and state-level AIS actions; Co-Chair and lead facilitator of AISAC; development and distribution of AIS outreach materials and signage (e.g., “Stop Aquatic Hitchhikers”, “Don’t Move a Mussel”) to NPS, USFS-Tonto, and Arizona State and County Parks land managers (boat ramps, public

fishing access points). AGFD acted as the lead agency in providing expertise in the development and implementation of Arizona's AIS Interdiction Act of 2009 - HB2157 (now A.R.S. 17-255) and in the writing, development and finalization of this Arizona State Aquatic Invasive Species Management Plan.

### United States Fish and Wildlife Service

In 2001, the FWS Southwest (Region 2) ANS Coordinator initiated contact with State agencies to increase the awareness of existing and potential AIS issues in Arizona. Since then the Coordinator has served an influential role directing and supporting current efforts towards development of the AzAIS, implementation of prevention and early detection programs, and dissemination of public information and outreach materials.

### **Gaps in State Management Programs and Authorities**

- Many of these authorities are unclear in their scope or means of application.
- Although AGFD has some broad authorities, there is no single agency in Arizona State Government designated with an overall mandate to develop and implement AIS management .
- Activities are insufficiently coordinated in the state and within the region.
- Lack of funding results in staffing shortages and unaccomplished projects.
- ADEQ, ADOT ADHS, and ADWR are not involved in AIS monitoring.

### **Recommended Strategies and Actions**

The suggested lead stakeholder(s) for each action is indicated in parentheses. Designation of responsible parties will need to be determined jointly among cooperating entities and may be subject to change. Each action will require cooperation, collaborations and participation of state and federal agencies, the Tribes, municipalities, private industry, and public interest groups.

Strategy 1A: Coordinate all AIS management programs and activities within Arizona.

1A1. Coordinate and facilitate the Arizona Invasive Species Advisory Council (AISAC). (Gov, State, Tribes, Fed, NGO, Private, MUN, WMD)

1A2. Maintain an Aquatic Invasive Species Coordinator (Coord) position.

1A3. Identify and coordinate with key personnel in state, federal and tribal governments, and private, MUN and WMD entities for AIS responsibilities. (Gov, Coord, AISAC, State, Tribes, Fed, NGO, Private, MUN, WMD)

1A4. Develop a list of all established aquatic invasive species present in Arizona and develop management strategies for dealing with them as listed by priority class. (Coord, AISAC)

1A5. Consult with the ANSTF Executive Secretary and the National Invasive Species Council to develop a set of uniform definitions and terms to describe AIS. (Coord, AISAC)

1A6. Develop AIS assessment guidelines as needed for federal state, tribal and local government or other governing bodies. (Coord, AISAC)

1A7. Conduct an annual forum focused on AIS in Arizona to update current status and potential management alternatives. (Coord, AISAC, Fed)

Strategy 1B: Participate in and support regional, federal, and international efforts to control AIS.

1B1. Participate in the ANS Task Force's WRP. (Coord, AISAC)

1B2. Support the 100th Meridian Initiative. (Gov, Coord, AISAC)

1B3. Coordinate with neighboring US and Mexican states on AIS issues, and develop shared-basin AIS initiatives. (Gov, Coord, AISAC,)

Strategy 1C: Increase existing funding and resources for AIS management and establish new funding and resources.

1C1. Pursue stable funding sources for AIS management in Arizona by seeking federal grants, state funding, and other available sources. (Coord, AISAC, State, Tribes)

1C2. Develop partnerships with private groups and business entities with a vested interest in AIS abatement to fund prevention and eradication efforts. (Coord, AISAC, State, Tribes, Fed, NGO)

Strategy 1D: Review and evaluate State efforts addressing AIS.

1D1. Conduct a periodic assessment of AIS species presence and abundance in Arizona. (Coord, AISAC, State, Tribes, Fed, MUN, WMD)

1D2. Evaluate and update the AzAIS Plan as needed, with annual progress reports and a five-year program report. (Coord, AISAC)

## **OBJECTIVE 2: Prevent the Introduction of AIS into Arizona**

Problem Addressed: There are many different pathways by which new species can arrive in Arizona. Species that provide sport fishing opportunities, erosion control, food, and aesthetic enjoyment have been intentionally brought to Arizona and released into the wild or escaped from private ponds or holding facilities. Humans may unintentionally introduce AIS through various recreational, economic development, and management activities. AIS in neighboring states and Mexico may disperse into Arizona by natural means, such as transport on animals or by range expansion.

Understanding how these pathways function as conduits for AIS into Arizona is critical for intercepting species and preventing introductions. Although, factors such as proximity to source populations of AIS and similarities in habitat requirements make it possible to assess some of the species which pose a threat of invading Arizona, little is known regarding most of the potential AIS and their pathways into the state. Yet, the most effective method to control AIS and their impacts is to prevent their introduction.

Implementation of a program that reviews and regulates which species are intentionally allowed into Arizona, and monitors the pathways by which species can be unintentionally transported into Arizona, is necessary to slow the rate at which new species become introduced or established. Under this program, provisions would exist for monitoring the pathways by which species can be intentionally transported into Arizona.

### **Current Agency Activities**

#### Arizona Department of Agriculture

Through the annual nursery inspections, ADA maintains a program to inspect nurseries for plant pests. The ADA has the authority to declare a weed as noxious, in turn making sale, planting or distribution into or within the state illegal.

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#### Arizona Game and Fish Department

AGFD regulates the importation/exportation of all non-domesticated fish and wildlife into the state.

### **Gaps in State Prevention Programs and Authorities**

- Lack of an AIS coordinator with appropriate authority to design and implement a prevention program and lack of funding.
- Limited authority, funding, and staff to enforce laws relating to AIS.

- No coordinated inspection program among law enforcement authorities for trailered boats crossing state borders via major interstate traffic routes or watercraft in transit on intrastate transportation routes.
- Limited boat inspection or decontamination training for law enforcement.
- Limited inspection of watercrafts prior to launch into state waters during water-based activities (e.g., fishing tournaments, boating events, etc.).
- Limited collaboration between state authorities and the pet/aquarium industry to create public awareness of the problems of AIS and to prevent accidental and purposeful introductions.
- Limited enforcement ability over mail order or internet sales of organisms.

### **Recommended Strategies and Actions**

The lead agency for each action is indicated in parenthesis. Each task will require coordination, collaboration, and participation of other state and federal agencies, tribal authorities, private industry, and public interest groups.

Strategy 2A: Research and address potential AIS and their pathways of introduction.

2A1. Review existing AIS programs from other states and jurisdictions to evaluate their success in preventing adverse impacts from AIS. (Coord, AISAC)

2A2. Describe invasion pathways and identify high-risk waterbodies. (Coord, AISAC, University)

2A3. Create a list of prohibited AIS for distribution to agencies, enforcement authorities, MUN, and WMD. (Coord, AISAC, State, Tribes, Fed)

2A6. Develop and implement an inspection program for trailered boats and water-based equipment entering and traveling in Arizona. (Coord, AISAC, AGFD)

2A7. Establish a boat washing program to reduce AIS spread and investigate installing washing stations at public and tribal boat ramps. (Coord, AISAC, AGFD, NPS, USFWS)

2A8. Work with importers to identify and monitor the potential for importation practices that could introduce AIS into uncontrolled environments. (Coord, AISAC, , ADA, AGFD, APHIS, Private)

2A9. Develop and implement a Hazard Analysis and Critical Control Point (HACCP) planning strategy for hatchery, field, and survey crews to minimize the risk of unintentional hitchhiking AIS introductions. (Coord, AISAC, , AGFD, ADA, Fed, Tribes,)

2A10. Inform Governor, Legislature, and staff (administrators, managers, technical personnel) of agencies (state, federal, tribes, municipal), NGO, and private entities about AIS issues and pathways of introduction. (Coord, AISAC, State, Tribes, Fed)

Strategy 2B: Increase enforcement and awareness of existing laws controlling the transport, propagation, sale, collection, possession, importation, purchase, cultivation, distribution, and introduction of AIS.

2B1. Identify existing authorities for regulations and permitting processes to prevent the introduction and spread of AIS, including gaps in current rules, regulations, and policies. (Coord, AISAC, State, Tribes, Fed)

2B2. Based on gaps identified in 2B1, fund expansion of State regulatory authorities to increase prevention, control, and eradication of AIS in Arizona, as required by future needs assessment. (Gov, Leg)

2B3. Seek additional enforcement authority as needed to provide comprehensive permitting processes to prevent and control AIS introduction and spread. (Coord, AISAC, AGFD, ADA, Tribes)

2B4. Increase the priority for enforcing AIS laws. (All LE authorities: State, Tribes, Fed)

2B5. Train enforcement personnel on AIS identification, state regulations, and watercraft inspection and decontamination methods. (Coord, State, Tribes, Fed)

2B6. Distribute information on AIS laws to businesses that import or sell aquatic organisms. (Coord, State, Tribes, Fed)

2B7. Increase awareness of existing penalties for the intentional introduction of any aquatic invasive species to Arizona's waters. (Coord, AISAC, State, Tribes, Fed)

2B8. Assess efficacy of existing AIS regulations and penalties and revise when necessary. (Coord, AISAC, State, Tribes)

Strategy 2C: Promote legislation and regulations that establish or increase the state's authority to control the introduction of new species.

2C1. Establish the authority to stop, inspect, detain, and require cleaning of any vehicle, vessel or water-based equipment containing or infested with AIS that is traveling in Arizona. (Gov, Leg, State, Tribes)

2C2. Increase the ability of the State to regulate the importation of aquatic organisms. (Gov, Leg, State, Tribes)

2C5. Develop or amend existing cooperative agreements with adjacent states, including Mexican states, sharing common waters to address AIS. (Gov, Leg, Coord, adjacent states [CA, NM, UT, NV, Sonora]).

2C6. Develop legislation and rules to prevent the introduction of AIS into private ponds, including increased authority to inspect ponds, remove AIS species and provide penalties for illegal introductions of AIS into private ponds. (Gov, Leg, State, Private)

### **OBJECTIVE 3: Detect, Monitor, and Eradicate Pioneering AIS**

Problem Addressed: When an invasive species arrives there is often a window of opportunity to eradicate small pioneering populations before they become established or expand beyond an isolated location. However, AIS are often not detected until nuisance populations are formed, or in some instances response times are delayed, allowing populations to increase rapidly. Usually, it is too late or too expensive to eradicate a species once it has reached a nuisance level, and when management is conducted after a population is well-established, costly long-term monitoring activities will be required to control the population and reduce economic and environmental impacts.

By initiating a monitoring program and rapid response plan, the State will be able to detect and manage pioneering infestations at a point when the species can be eradicated in the most cost-effective manner. An effective monitoring program requires a cooperative network among stakeholders, supportive laws, and permanent funding.

#### **Current Agency Activities**

##### Arizona Department of Agriculture

The ADA monitors the importation of plant material and other agriculture commodities that could potentially contain or be contaminated with a noxious weed, including but not limited to pond supply outlets and retail nurseries. The ADA also responds to reports of possible noxious infestations and evaluates potential impacts of their introduction

##### Arizona Game and Fish Department

The AGFD regulates the take, transport, movement of wildlife and fish within and across the state boundary and actively manages some naturalized AIS and pioneering populations that may

affect native wildlife. Staff of the AIS Program (located within the Habitat Branch of the Wildlife Management Division) have been tasked with monitoring, documenting and tracking potential and listed invasive species (refer to Priority 1, 2 and 3 AIS), and actively manage their control (containment, eradication) and movement. AGFD also is the lead agency responsible for watercraft registration and enforcement in Arizona, thus the connection between watercraft movement and AIS infestation.

#### Arizona Department of Environmental Quality

ADEQ conducts surveys to monitor water quality for factors that contribute to impairment and undesirable aquatic life. These surveys include biological monitoring that could potentially address AIS concerns. See Standards for Interstate and Intrastate Surface Waters.

#### United States Fish and Wildlife Service

The U.S. Fish & Wildlife Service monitors aquatic habitat in Arizona through an Arizona Fish and Wildlife Conservation Office (AZFWCO), located in Pinetop, Arizona. Various field stations assist AZFCO in monitoring and habitat restoration activities. A national reporting hotline (877-STOP-ANS) is maintained through a partnership with the U.S. Fish & Wildlife Service, U.S. Geological Survey, and The University of Texas at Arlington. This hotline provides a live person to collect pertinent information from the public 24 hours a day, seven days a week, including holidays. The U.S. Fish & Wildlife Service is also a founding member of the Lower Colorado River Aquatic Nuisance Species Task Force, and is actively involved in controlling and eradicating Giant salvinia in the lower Colorado River. Gaps in State Monitoring and Eradication Programs and Authorities

- Current AIS monitoring efforts are inadequate. Authority to quarantine is not practical in Arizona and not comprehensively available for all potential AIS.
- Funding to quickly deal with new AIS is lacking, thus response time to an invasion will be slow due this lack of funding and any contingency plans.
- Surface water quality standards lack biological criteria for impairment due to AIS.

#### **Recommended Strategies and Actions**

Strategy 3A: Implement a surveillance and early detection program.

3A1. Identify high-risk water bodies. (Coord, AISAC, State, Tribes, Fed, NGO, Universities)

3A2. Develop and fund a monitoring and surveillance program for high-risk AIS. (Coord, AISAC, State, Tribes, Fed)

3A3. Conduct annual monitoring and surveillance of high-risk water bodies and associated water delivery infrastructure(s). (State, Tribes, Fed, MUN, WMD)

3A4. Encourage and train citizen-based monitoring networks to work in cooperation with state and federal agencies and tribal entities. (Coord, ASIAC, State, Tribes, Fed, NGO, Private)

Strategy 3B: Develop an early response mechanism to deal with detected and potential AIS.

3B1. Develop a Rapid Response Plan for AIS species. (Coord, AISAC)

3B2. Identify funding sources to implement Rapid Response Plan actions. (Coord, AISAC)

3B3. Implement Rapid Response Plan for AIS species. (Coord, State, Tribes, Fed, Private)

3B4. Develop targeted HAACCP plans to address the spread of AIS. (Coord, AISAC, State, Tribes, Fed)

Strategy 3C: Eradicate pioneering populations of AIS.

3C1. Develop an eradication program for AIS in early stages of invasion. (Coord, AISAC)

3C2. Implement an eradication program for AIS in early stages of invasion. (Coord, AISAC, State, Tribes, Fed)

#### **OBJECTIVE 4: Where Feasible, Control or Eradicate Established AIS that Have Significant Impacts**

Problem Addressed: Once established, AIS often create very noticeable impacts, yet they are often impossible to eradicate or control. Management activities are most economically effective when they are directed at limiting the impacts of a population or stopping that population from spreading to new water in Arizona and the West.

In situations where AIS have previously invaded, management activities must focus on situations where there is a clear and significant impact on local economies, native species, and where the control or eradication of specific populations is economically and technically feasible.

#### **Current Activities**

Arizona Department of Agriculture.

ADA monitors for agricultural and invasive pests and plants. The Department has the authority to quarantine, treat, eradicate, destroy or have removed from the state an aquatic noxious weed or other AIS that is regulated by the Department.

## Arizona Game and Fish Department.

The AGFD regulates the movement of wildlife and fish species within and across the state boundary and actively manages some naturalized and pioneering AIS populations that may affect native aquatic wildlife and important fisheries. With proper public input and knowledge, nonnative fish removal is used as a technique to protect native fish populations, endangered fishes, and important sport fisheries.

### **Gaps in State Control and Eradication Programs and Authorities**

- The State does not have a clear program or Agency directed at controlling or eradicating AIS.

### **Recommended Strategies and Actions**

Strategy 4A: Limit the dispersal of established AIS into new waters or into new areas of a water body or drainage.

4A1. Establish watercraft decontamination protocols to reduce AIS spread and investigate installing wash stations at public boat ramps (See 2A6). (Coord, State, Fed, Tribes)

4A2. Limit the spread of existing AIS by reducing the access to existing populations through the use of warning signs, buoys, and possible temporary closures in and around affected, infested areas. (Coord, State, Tribes, Fed, Private)

4A3. Include AIS information on signs and kiosks at affected waters. (Coord, State, Tribes, Fed)

Strategy 4B: Control known nuisance populations where economically and technically feasible.

4B1. Implement management programs to control Priority Class 2 and 3 species. (State [ADA, AGFD, Tribes, Fed])

### **OBJECTIVE 5: Increase and Disseminate Knowledge of AIS in Arizona through Data Compilation and Research**

Problem Addressed: Little is known about the extent and magnitude of the AIS problem in Arizona. In fact many more nonindigenous species probably occur in Arizona than are recognized. First, it is essential to determine the extent of the AIS problem within the state. Information on the number, taxonomy, and distribution of AIS in Arizona is spread currently

across several data sources, often with inconsistencies, thus making it difficult to assess the situation. This information needs to be compiled and organized under one database that is readily and easily accessible to agency personnel and the public. A centralized “hotline” system for reporting the presence of AIS needs to be developed, which is coordinated with a rapid response system. Research should be implemented on the biology of AIS and their impacts on native species and habitats. Additionally, new methods of control and eradication for established AIS need to be pursued in coordination with other state and federal agencies, and research institutions.

## **Current Agency Activities**

### Arizona Department of Agriculture

The Department administers the State noxious weed list found in A.A.C. R3-4-244 and R3-4-245. Any infestation of a federally regulated aquatic noxious weed is reported to USDA-APHIS.

### Arizona Game and Fish Department

AGFD currently administers the Aquatic Invasive Species Program in Arizona, per HB2157 and A.R.S. 17-255. This includes development, administration, and implementation of: AIS Directors Order 1 (AIS listing; AIS Directors Order 2 (AIS affected waters listing); AIS Director’s Order 3 (Mandatory conditions for watercraft/equipment movement from listed affected waters), and; Statute violations and law enforcement capacities. AGFD also administers the invasive species database (terrestrial and aquatic; iMapInvasives Arizona), chosen by AISAC, and the main website for invasive species information exchange in Arizona (the Arizona Center for Invasive Species), also initiated by AISAC. However, AGFD has very limited capability and funding for continuing these endeavors, including future data compilation and research activities.

### Federal Agencies

Numerous federal agencies (e.g., USFWS, USGS, USDA) and other agencies compile lists of AIS, invasive species, and weeds.

## **Gaps in State Programs and Authorities**

- Incomplete knowledge of the number and distribution of AIS.
- Poor understanding of the basic biology and impacts of AIS.
- Management options are limited.
- Limited funding is available to conduct research and management activities.

## **Recommended Strategies and Actions**

Strategy 5A: Facilitate the collection and dispersal of information, research, and data on AIS in Arizona.

5A1. Maintain and coordinate the central database and repository of information (currently the Arizona Center for Invasive Species website) on AIS in Arizona. (Coord, AISAC, University, Fed)

5A2. Build and maintain a database (currently iMapInvasives Arizona) on AIS in Arizona which is coordinated with other relevant websites and agencies. (Coord, University, Fed)

5A3. Utilize existing field personnel to document the distribution and abundance of AIS. (State, Tribes, Fed, University)

5A4. Develop and maintain a list of taxonomic experts for AIS identification which is coordinated with national and regional lists of experts. (Coord, AISAC, University)

Strategy 5B: Research AIS for their impact on native biota utilizing regional efforts & literature searches.

5B1. Develop a better understanding of life histories and impacts of introduced aquatic plants and animals. (Coord, State, Tribes, Fed, University)

5B2. Continue to monitor native aquatic biota, including species most likely to be impacted by AIS. (State, Tribes, Fed, University)

5B3. Evaluate the potential for aquarium pets, live food fish, hatchery stock, and shellfish to serve as vectors of disease and parasites to humans and native aquatic wildlife. (Coord, State, Tribes, Fed, University)

Strategy 5C: Research alternative management techniques for their effect on AIS and native species.

5C1. Investigate the relationship between human-induced disturbance of aquatic and riparian systems and AIS invasion, establishment, and impacts. (Coord, State, Tribes, Fed, University)

5C2. Investigate and develop new and innovative methods of managing AIS. (Coord, State, Tribes, Fed, University)

5C3. Evaluate herbicide and pesticide effects. (Coord, State, Tribes, Fed, University)

## **OBJECTIVE 6: Inform the Public, Policy Makers, Natural Resource Workers, Private Industry, and User Groups about the Risks and Impacts of AIS**

Problem Addressed: The lack of awareness concerning AIS impacts is one of the largest management obstacles. Few people understand the threat alien species pose and the role humans play in the transport and introduction of all invasive species. Uninformed people, through the dumping of an aquarium or a bait bucket, launching of a contaminated boat, or stocking of a private pond, have introduced and spread many AIS in North America. The improper importation and holding of organisms has allowed species to escape, or caused the receipt of unwanted organisms mixed in with intentionally imported ones. Many policymakers, natural resource administrators, and private interest groups have facilitated the intentional introductions of species for certain economic or recreational purposes without understanding the effects these species would have on native species. Introductions, either intentional or unintentional, can be eliminated or curtailed by educating people of their potential to transfer nonindigenous species to Arizona. It is not only important to prevent the spread of AIS species within the state, but also prevent the spread throughout shared drainages with adjacent states. The potential spread of AIS within and among these basins can adversely affect native biota, ecosystems, and regional economies. It is critical to inform people about the risks and impacts of AIS.

### **Current Agency Activities**

#### Arizona Game and Fish Department

AGFD has taken the lead is developing and distributing “Stop Aquatic Hitchhikers” and “Don’t Move a Mussel” signage (boat ramp) and other outreach materials at public access points on state and federal lands throughout the State. AGFD has also held various public meetings, forums and webcasts throughout the State over the past three years to further inform the public in AIS abatement and containment. AGFD has hired and trained various interns over the past two summers to directly talk with boaters on public ramps concerning quagga mussel interdiction, outreach and watercraft decontamination. In 2009, AGFD was successful in providing expertise in the eventual passing of HB2157 (A.R.S. 17-255), the AIS Interdiction Act.

### **Gaps in State Education Programs and Authorities**

- AIS education and outreach has not garnered the attention of legislators, policymakers, and government administrators.
- Due to lack of funding and manpower considerations, insufficient AIS information is disseminated to the public.
- Few natural resource workers have the training to identify AIS and/or decontaminate watercraft and equipment effectively.
- Little information is available to agency and private personnel about AIS.

## Recommended Strategies and Actions

Strategy 6A: Inform the public about AIS, and how their actions can help prevent the spread and reduce the impacts of AIS.

6A1. Incorporate AIS information into boat operator and hunter/aquatic education classes. (AGFD)

6A2. Create an educational curriculum on AIS for schools. (Coord, AISAC, State, Tribes)

6A3. Produce press releases and public service announcements (PSAs) on specific AIS. (Coord, AISAC, State [AzGFD Tribes, Fed])

6A4. Distribute information on AIS at various state museums, conferences, shows, tournaments, public gatherings, and sporting goods vendors. (Coord, State, Tribes, Fed, Private)

6A5. Include information on AIS in state hunting, fishing, and boating regulations. (AGFD)

6A6. Develop a “Arizona-friendly” plant labeling system in conjunction with the nursery industry. (Coord, ADA)

6A7. Inform policymakers on the extent, impact, and potential for harm of AIS. (Coord, AISAC, State, Tribes, Fed)

6A8. Expand statewide participation and partnerships by networking with national public education campaigns (Stop Aquatic Hitchhikers, Protect Your Waters, Clean Angling Coalition, Habitattitude™) to increase awareness of AIS issues, to disseminate educational material, and to foster responsible management of unwanted pets. (Coord, AISAC, State, NGO, Private)

6A9. Develop working relationships with sporting groups and conservation organizations to foster outreach and educational activities relating to AIS, including providing information, training, and incentives for AIS-related activities which help prevent the spread of AIS. (Coord, AISAC, State, Tribes, Fed, NGO, Private)

Strategy 6B: Train natural resources personnel in AIS identification.

6B1. Conduct identification seminars for field personnel of state, federal, tribal, and municipal governments. (Coord, State, Tribes, Fed, University)

Strategy 6C: Inform private industry on AIS identification, their effects, and the laws regulating them.

6C1. Form and maintain local AIS Teams (e.g., Lk Mead Quagga Team, Central Arizona Quagga Team) that include representatives and stakeholders from public and private entities (Coord, State, Fed, NGO, Private)

6C2. Create and distribute pamphlets for the nursery industry, pet stores, bait dealers and other relevant businesses identifying AIS, the laws regulating them, and their affects on natural systems. (Coord, State, Fed)

6C3. Provide information on AIS to fishing tournament organizers. (Coord, AGFD, Fed)

6C4. Identify and provide AIS information to all other persons or businesses operating on waters in and bordering Arizona. (Coord, State, Tribes, Fed, Private)

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## IMPLEMENTATION TABLE

The following table identifies tasks and responsibilities of stakeholders. Funding required to carry out the proposed actions will be determined in conjunction with assessments from cooperating State and Federal agencies. Funds for implementing the AzAIS Plan will be administered by the Coord as a member of the AISAC.

Objectives/Actions		Implementing Organization	Funding (in thousands) and Personnel Requests											
#	Description		FY 11						FY 12					
			State and Other Funds		Federal Funds		Totals		State and Other Funds		Federal Funds		Totals	
			Agency	\$	Agency	\$	\$	FTE	Agency	\$	Agency	\$	\$	FTE
<b>Objective 1: Coordinate and implement a comprehensive management plan.</b>														
<b>Strategy 1A: Coordinate all AIS management programs and activities within Arizona</b>														
1A 1	Organize AISAC	Gov, State, Tribes, Fed, NGO, Private, MUN, WMD	State	-	USFWS	-	-	-	State	-	USFWS	-	-	-
1A 2	Create & fund Coord	Gov, Leg, AISAC, State, Fed	State	-	USFWS	-	-	-	State	-	USFWS	-	-	-
1A 3	Identify & coordinate with federal, tribal & private support staff	Gov, Coord, AISAC, State, Tribes, Fed, NGO, Private,	State	0		0	0	0						
1A 4	AIS list	Coord, AISAC	See 1A2, State	-		0	0	0						
1A 5	AIS terms & definitions	Coord, AISAC	See 1A2, State	-		0	0	0						
1A 6	AIS training course	Coord, AISAC, Fed	See 1A2, State	-	USFWS	-	-	-						
1A 7	AIS assessment guidelines	Coord, AISAC	See 1A2, State	-										

Objectives/Actions		Implementing Organization	Funding (in thousands) and Personnel Requests												
#	Description		FY 11						FY 12						
			State and Other Funds		Federal Funds		Totals		State and Other Funds		Federal Funds		Totals		
			Agency	\$	Agency	\$	\$	FTE	Agency	\$	Agency	\$	\$	FTE	
1A 8	Annual forum	Coord, AISAC, Fed	State	-	USFWS					State	-	USFWS	-	-	-
<b>Strategy 1B: Participate in and support regional, federal, and international efforts to control AIS.</b>															
1B 1	Western Regional Panel	Coord, AISAC	See 1A2, State	-	USFWS	-	-	-	-	See 1A2, State	-	USFWS	-	-	-
1B 2	100th Meridian Initiative	Gov, Coord, AISAC	See 1A2, State	-	USFWS	-	-	-	-	See 1A2, State	-	USFWS	-	-	-
1B 3	Interstate & Mexican coordination	Gov, Coord, AISAC, NMBA, ISC, OSE	See 1A2, State	-						See 1A2, State	-				
<b>Strategy 1C: Increase existing funding resources for AIS management and establish new funding and resources.</b>															
1C 1	Pursue stable funding	Coord, AISAC, State, Tribes								State	-				
1C 2	Develop private partnerships	Coord, AISAC, State, Tribes, Fed, NGO	See 1A1 & 1A2	-						See 1A1 & 1A2	-				
<b>Strategy 1D: Review and evaluate State efforts addressing AIS.</b>															
1D 1	Assess AIS status	Coord, AISAC, State, Tribes, Fed, MUN,	State	-	USFWS	-	-	-	-	State	-	USFWS	-	-	-
1D 2	Update NMPlan	Coord, AISAC	See 1A1 & 1A2	-						See 1A1 & 1A2	-				
<b>Object 1: Totals</b>															
<b>Objective 2: Prevent the introduction of AIS into Arizona.</b>															

Objectives/Actions		Implementing Organization	Funding (in thousands) and Personnel Requests											
#	Description		FY 11						FY 12					
			State and Other Funds		Federal Funds		Totals		State and Other Funds		Federal Funds		Totals	
			Agency	\$	Agency	\$	\$	FTE	Agency	\$	Agency	\$	\$	FTE
<b>Strategy 2A: Research and address potential AIS and their pathways of introduction.</b>														
2A 1	Review existing AIS programs	Coord, AISC	State	-	USFWS									
2A 2	Invasion pathways & high-risk waterbodies	Coord, AISAC, University	State	-	USFWS	-	-	-	State	-	USFWS	-	-	-
2A 3	AIS ranking system	Coord, AISAC, University							State	-	USFWS	-	-	-
2A 4	Research imported plants	ADA, APHIS, University	State	-	APHIS	-	-	-	State	-	APHIS	-	-	-
2A 5	Prohibited AIS list	Coord, AISAC, State, Tribes, Fed	State	-					State	-				
2A 6	Boat inspection program	Coord, AISAC, State, Tribes, Fed	State	-					State	-				
2A 7	Boat wash stations	AGFD, AISAC, BOR, COE, Tribes, USFWS, NPS, Private (marinas)	State	-	Federal Agencies	-	-	-	State	-	Federal Agencies	-	-	-
2A 8	Work with importers	Coord, AISAC, AGFD, ADA, APHIS, Private	State	-					State	-				
2A 9	Field personnel plan	Coord, AISAC, State, Tribes, Fed, WMD	State	-					State	-				
2A 10	Inform agency & organization staff	Coord, AISAC, State, Tribes, Fed	State	-	Federal Agencies				State	-	Federal Agencies			

Objectives/Actions		Implementing Organization	Funding (in thousands) and Personnel Requests											
#	Description		FY 11						FY 12					
			State and Other Funds		Federal Funds		Totals		State and Other Funds		Federal Funds		Totals	
			Agency	\$	Agency	\$	\$	FTE	Agency	\$	Agency	\$	\$	FTE
<b>Strategy 2B: Increase enforcement and awareness of existing laws controlling the transport, propagation, sale, collection, possession, importation, purchase, cultivation, distribution, and introduction of AIS.</b>														
2B 1	Identify regulations & permitting authorities	Coord, AISAC, State, Tribes	State	-	USFWS	-	-	-	State	-	USFWS	-	-	-
2B 2	Expand state permitting program	Gov, Leg	State	-	USFWS	-	-	-	State	-	USFWS	-	-	-
2B 3	Seek additional permitting authority	Coord, AISAC, State Tribes	State	-	USFWS	-	-	-	State	-	USFWS	-	-	-
2B 4	AIS law enforcement	All LE authorities: State, Tribes, Fed	State	-	USFWS	-	-	-	State	-	USFWS	-	-	-
2B 5	Train enforcement personnel	Coord, State, Tribes, Fed	State	-	USFWS	-	-	-	State	-	USFWS	-	-	-
2B 6	Distribute information to importers	Coord, State, Tribes, Fed	State	-	USFWS	-	-	-	State	-	USFWS	-	-	-
2B 7	Publicize penalties	Coord, AISAC, State, Tribes, Fed	State	-					State	-				
2B 8	Examine regulations & penalties	Coord, AISAC, State, Tribes												
<b>Strategy 2C: Promote legislation and regulatory rules that establish or increase the state's authority to control the introduction of new species.</b>														

Objectives/Actions		Implementing Organization	Funding (in thousands) and Personnel Requests													
#	Description		FY 11						FY 12							
			State and Other Funds		Federal Funds		Totals		State and Other Funds		Federal Funds		Totals			
			Agency	\$	Agency	\$	\$	FTE	Agency	\$	Agency	\$	\$	FTE		
2C 1	Authority to detain	Gov, Leg, State, Tribes														
2C 2	Increase import regulation	Gov, Leg, State, Tribes														
2C 3	Authority to quarantine	Gov, Leg, State, Tribes														
2C 4	Disease & pest free imports	AGFD, ADA,, Tribes														
2C 5	Interstate & Mexican cooperative agreements	Gov, Leg, Coord, CA, NV, UT, CO, NM, Sonora														
2C 6	Legislation to prevent AIS introduction to private ponds	Gov, Leg, State, Private														
<b>Object 2: Totals</b>																
<b>Objective 3: Detect and eradicate pioneering aquatic invasive species.</b>																
<b>Strategy 3A: Implement a surveillance and early detection program.</b>																
3A 1	Identify high-risk waterbodies	Coord, AISAC, State, Tribes, Fed, NGO, Universities	State	-	USFWS	-	-	-	State	-	USFWS	-	-	-		
3A 2	Develop monitoring/surveillance program	Coord, AISAC, State, Tribes, Fed														

Objectives/Actions		Implementing Organization	Funding (in thousands) and Personnel Requests												
#	Description		FY 11						FY 12						
			State and Other Funds		Federal Funds		Totals		State and Other Funds		Federal Funds		Totals		
			Agency	\$	Agency	\$	\$	FTE	Agency	\$	Agency	\$	\$	FTE	
3A 3	Conduct monitoring/surveillance of high-risk waterbodies & water delivery systems	State, Tribes, Fed, MUN, MWD													
3A 4	Encourage citizen-based monitoring	Coord, AISAC, State, Tribes, Fed, NGO, Private	State	-	USFWS	-	-	-	State	-	USFWS	-	-	-	
3A 5	Develop criteria for impairment of surface water quality standards due to undesirable aquatic life (AIS)	State	State	-	USFWS	-	-	-	State	-	USFWS	-	-	-	
<b>Strategy 3B: Develop an early response mechanism to deal with detected and potential AIS.</b>															
3B 1	Develop Rapid Response Plan	Coord, AISAC	State	-	USFWS	-	-	-	State	-	USFWS	-	-	-	
3B 2	Identify funding for Rapid Response Plan	Coord, AISAC	See 1A1 & 1A2	-					See 1A1 & 1A2	-					
3B 3	Implement Rapid Response Plan	Coord, AISAC, State, Tribes, Fed, , Private	State	-	USFWS	-	-	-	State	-	USFWS	-	-	-	
3B 4	Develop HAACCP plans	Coord, AISAC, State, Tribes, Fed	State	-	USFWS	-	-	-	State	-	USFWS	-	-	-	
<b>Strategy 3C: Eradicate pioneering populations of AIS.</b>															

Objectives/Actions		Implementing Organization	Funding (in thousands) and Personnel Requests												
#	Description		FY 11						FY 12						
			State and Other Funds		Federal Funds		Totals		State and Other Funds		Federal Funds		Totals		
			Agency	\$	Agency	\$	\$	FTE	Agency	\$	Agency	\$	\$	FTE	
3C 1	Develop eradication program for pioneering AIS	Coord, AISAC	State	-	USFWS	-	-	-	-	State	-	USFWS	-	-	-
3C 2	Implement eradication program for pioneering AIS	Coord, AISAC, State, Tribes, Fed, MUN,	State	-	USFWS	-	-	-	-	State	-	USFWS	-	-	-
<b>Object 3: Totals</b>															
<b>Objective 4: Where feasible, control or eradicate established AIS that have a significant impact.</b>															
<b>Strategy 4A: Limit the dispersal of established AIS into new waterbodies or into new areas of a waterbody or drainage.</b>															
4A 1	Boat wash stations	Coord, AISAC, AGFD, Fed, Tribes	State	-	Federal Agencies	-	-	-	-	State	-	Federal Agencies	-	-	-
4A 2	Limit access to AIS populations	Coord, State, Tribes, Fed, Private	State	-	Federal Agencies	-	-	-	-	State	-	Federal Agencies	-	-	-
4A 3	AIS information & signage	Coord, State, Tribes, Fed, MUN, WMD	State	-	Federal Agencies	-	-	-	-	State	-	Federal Agencies	-	-	-
<b>Strategy 4B: Limit the dispersal of established AIS to new waterbodies or to new areas of a waterbody.</b>															
4B 1	Control Priority Class 2 & 3 AIS	State, Tribes, Fed, MUN, WMD	State	-	USFWS	-	-	-	-	State	-	USFWS	-	-	-
<b>Object 4: Totals</b>															
<b>Objective 5: Increase knowledge of AIS in New Mexico through compiling data and conducting research.</b>															

Objectives/Actions		Implementing Organization	Funding (in thousands) and Personnel Requests											
#	Description		FY 11						FY 12					
			State and Other Funds		Federal Funds		Totals		State and Other Funds		Federal Funds		Totals	
			Agency	\$	Agency	\$	\$	FTE	Agency	\$	Agency	\$	\$	FTE
<b>Strategy 5A: Facilitate the collection and dispersal of information, research, and data on AIS in New Mexico.</b>														
5A 1	Create AIS database & reference material repository	Coord, AISAC, University, Fed	State	-	USGS	-	-	-	State	-	USGS	-	-	-
5A 2	Maintain AIS database & website	Coord, University, Fed	State	-	USGS	-	-	-	State	-	USGS	-	-	-
5A 3	Document AIS distribution & abundance	State, Tribes, Fed, Private, University	State See 1A3	-	Federal Agencies	-	-	-	State See 1A3	-	Federal Agencies	-	-	-
5A 4	Maintain list of AIS taxonomic experts	Coord, AISAC	-	-	-	-	-	-	-	-	-	-	-	-
<b>Strategy 5B: Research AIS for their impact on native biota utilizing regional efforts &amp; literature searches.</b>														
5B 1	AIS life history & impact	Coord, State, Fed, Tribes, University	State	-	USFWS	-	-	-	State	-	USFWS	-	-	-
5B 2	Continue monitoring native aquatic biota	State, Tribes, Fed, University	State	-	USFWS	-	-	-	State	-	USFWS	-	-	-
5B 3	Evaluate AIS as vectors (disease, parasites)	Coord, State, Tribes, Fed, University	State	-	USFWS	-	-	-	State	-	USFWS	-	-	-
<b>Strategy 5C: Research management alternatives for their effect on AIS and native species.</b>														

Objectives/Actions		Implementing Organization	Funding (in thousands) and Personnel Requests												
#	Description		FY 11						FY 12						
			State and Other Funds		Federal Funds		Totals		State and Other Funds		Federal Funds		Totals		
			Agency	\$	Agency	\$	\$	FTE	Agency	\$	Agency	\$	\$	FTE	
5C 1	Investigate AIS & anthropogenic relationships	Coord, State, Tribes, Fed, University	State	-	USFWS	-	-	-	-	State	-	USFWS	-	-	-
5C 2	New AIS management methods	Coord, State, Tribes, Fed, University	State	-	USFWS	-	-	-	-	State	-	USFWS	-	-	-
5C 3	Herbicide & pesticide effects	Coord, State, Tribes, Fed, University	State	-	USFWS	-	-	-	-	State	-	USFWS	-	-	-
<b>Object 5: Totals</b>															
<b>Objective 6: Inform the public, policy makers, natural resource workers, private industry, and user groups about the risks and impacts of AIS.</b>															
<b>Strategy 6A: Inform the public about AIS, and how their actions can help prevent the spread and reduce the impacts of AIS.</b>															
6A 1	Include AIS information in hunter/boater classes	AGFD	State	-	USFWS	-	-	-	-	State	-	USFWS	-	-	-
6A 2	Education curriculum	Coord, AISAC, State, Tribes	State	-	USFWS	-	-	-	-	State	-	USFWS	-	-	-
6A 3	AIS Traveling Trunk	Coord, AISAC, State	State	-	USFWS	-	-	-	-	State	-	USFWS	-	-	-
6A 4	Press releases & PSAs	Coord, AISAC, State, Tribes, Fed	State	-	USFWS	-	-	-	-	State	-	USFWS	-	-	-
6A 5	Produce articles, videos, billboards, TIS, web media, AIS ID cards	Coord, AISAC, State, Tribes, Fed	State	-	USFWS	-	-	-	-	State	-	USFWS	-	-	-

Objectives/Actions		Implementing Organization	Funding (in thousands) and Personnel Requests												
#	Description		FY 11						FY 12						
			State and Other Funds		Federal Funds		Totals		State and Other Funds		Federal Funds		Totals		
			Agency	\$	Agency	\$	\$	FTE	Agency	\$	Agency	\$	\$	FTE	
6A 6	Distribute AIS information	Coord, State Tribes, Fed, Private	State	-	USFWS	-	-	-	-	State	-	USFWS	-	-	-
6A 7	Include AIS information in hunting, fishing & boating regulations	AGFD	State	-	USFWS	-	-	-	-	State	-	USFWS	-	-	-
6A 8	Develop "NM Friendly" plant labeling system	ADA	State	-	USFWS	-	-	-	-	State	-	USFWS	-	-	-
6A 9	In form decision makers about AIS	Coord, AISAC, State, Tribes, Fed, NGO													
6A 10	Network with aquatic education programs	Coord, AISAC, State, NGO, Private	State	-	USFWS	-	-	-	-	State	-	USFWS	-	-	-
6A 11	Foster outreach with sporting & conservation organizations	Coord, AISAC, State, Tribes, Fed, NGO, Private													
<b>Strategy 6B: Train natural resources personnel in AIS identification.</b>															
6B 1	AIS Identification seminars	Coord, State, Tribes, Fed, University	State	-	USFWS	-	-	-	-	State	-	USFWS	-	-	-
<b>Strategy 6C: Inform private industry in AIS identification, their effects, and the laws regulating them.</b>															
6C 1	Nursery, pet store and bait dealer pamphlets	Coord, State Fed	State	-	USFWS	-	-	-	-	State	-	USFWS	-	-	-

Objectives/Actions		Implementing Organization	Funding (in thousands) and Personnel Requests												
#	Description		FY 11						FY 12						
			State and Other Funds		Federal Funds		Totals		State and Other Funds		Federal Funds		Totals		
			Agency	\$	Agency	\$	\$	FTE	Agency	\$	Agency	\$	\$	FTE	
6C 2	Provide information at fishing tournaments	Coord, AGFD, Fed	State	-	USFWS	-	-	-	-	State	-	USFWS	-	-	-
6C 3	Distribute AIS information to others	Coord, State, Tribes, Fed, Private	State	-	USFWS	-	-	-	-	State	-	USFWS	-	-	-
<b>Object 6: Totals</b>															
<b>AzAISTotals</b>			FY 09						FY 10						
			State and Other Funds		Federal Funds		Totals		State and Other Funds		Federal Funds		Totals		
			Agency	\$	Agency	\$	\$	FTE	Agency	\$	Agency	\$	\$	FTE	
				-		-	-	-		-		-	-	-	

**APPENDIX A: Nonindigenous Aquatic Nuisance Prevention and Control Act  
of 1990 (P.L. 101-646)**

NONINDIGENOUS AQUATIC NUISANCE PREVENTION  
AND CONTROL ACT OF 1990

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December 29, 2000

NONINDIGENOUS AQUATIC NUISANCE PREVENTION  
AND CONTROL ACT OF 1990

[As Amended Through P.L. 106-580, Dec. 29, 2000]

AN ACT To prevent and control infestations of the coastal inland waters of the United States by the zebra mussel and other nonindigenous aquatic nuisance species, to reauthorize the National Sea Grant College Program, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

TITLE I—AQUATIC NUISANCE  
PREVENTION AND CONTROL

Subtitle A—General Provisions

SECTION 1001. SHORT TITLE.

This title may be cited as the ``Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990''.  
(16 U.S.C. 4701 nt)

SEC. 1002. FINDINGS AND PURPOSES.

(a) FINDINGS.—The Congress finds that—  
(1) the discharge of untreated water in the ballast tanks of vessels and through other means results in unintentional introductions of nonindigenous species to fresh, brackish, and saltwater environments;  
(2) when environmental conditions are favorable, nonindigenous species become established, may compete with or prey upon native species of plants, fish, and wildlife, may carry

diseases or parasites that affect native species, and may disrupt the aquatic environment and economy of affected near-shore areas;

(3) the zebra mussel was unintentionally introduced into the Great Lakes and has infested-

(A) waters south of the Great Lakes, into a good portion of the Mississippi River drainage;

(B) waters west of the Great Lakes, into the Arkansas River in Oklahoma; and

(C) waters east of the Great Lakes, into the Hudson River and Lake Champlain;

(4) the potential economic disruption to communities affected by the zebra mussel due to its colonization of water pipes, boat hulls and other hard surfaces has been estimated 267

Sec. 1002 NONINDIGENOUS AQUATIC NUISANCE PREVENTION & CONTROL 268

at \$5,000,000,000 by the year 2000, and the potential disruption to the diversity and abundance of native fish and other species by the zebra mussel and ruffe, round goby, and other nonindigenous species could be severe;

(5) the zebra mussel was discovered on Lake Champlain during 1993 and the opportunity exists to act quickly to establish zebra mussel controls before Lake Champlain is further infested and management costs escalate;

(6) in 1992, the zebra mussel was discovered at the northernmost reaches of the Chesapeake Bay watershed;

(7) the zebra mussel poses an imminent risk of invasion in the main waters of the Chesapeake Bay;

(8) since the Chesapeake Bay is the largest recipient of foreign ballast water on the East Coast, there is a risk of further invasions of other nonindigenous species;

(9) the zebra mussel is only one example of thousands of nonindigenous species that have become established in waters of the United States and may be causing economic and ecological degradation with respect to the natural resources of waters of the United States;

(10) since their introduction in the early 1980's in ballast water discharges, ruffe-

(A) have caused severe declines in populations of other species of fish in Duluth Harbor (in Minnesota and Wisconsin);

(B) have spread to Lake Huron; and

(C) are likely to spread quickly to most other waters in North America if action is not taken promptly to control their spread;

(11) examples of nonindigenous species that, as of the date of enactment of the National Invasive Species Act of 1996, infest coastal waters of the United States and that have the potential for causing adverse economic and ecological effects include-

(A) the mitten crab (*Eriocheir sinensis*) that has become

established on the Pacific Coast;

(B) the green crab (*Carcinus maenas*) that has become established in the coastal waters of the Atlantic Ocean;

(C) the brown mussel (*Perna perna*) that has become established along the Gulf of Mexico; and

(D) certain shellfish pathogens;

(12) many aquatic nuisance vegetation species, such as Eurasian watermilfoil, hydrilla, water hyacinth, and water chestnut, have been introduced to waters of the United States from other parts of the world causing or having a potential to cause adverse environmental, ecological, and economic effects;

(13) if preventive management measures are not taken nationwide to prevent and control unintentionally introduced nonindigenous aquatic species in a timely manner, further introductions

and infestations of species that are as destructive

as, or more destructive than, the zebra mussel or the ruffe infestations

may occur;

(14) once introduced into waters of the United States, aquatic nuisance species are unintentionally transported and  
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introduced into inland lakes and rivers by recreational boaters, commercial barge traffic, and a variety of other pathways; and

(15) resolving the problems associated with aquatic nuisance species will require the participation and cooperation of the Federal Government and State governments, and investment in the development of prevention technologies.

(b) PURPOSES.—The purposes of this Act are—

(1) to prevent unintentional introduction and dispersal of nonindigenous species into waters of the United States through ballast water management and other requirements;

(2) to coordinate federally conducted, funded or authorized research, prevention control, information dissemination and other activities regarding the zebra mussel and other aquatic nuisance species;

(3) to develop and carry out environmentally sound control methods to prevent, monitor and control unintentional introductions of nonindigenous species from pathways other than ballast water exchange;

(4) to understand and minimize economic and ecological impacts of nonindigenous aquatic nuisance species that become established, including the zebra mussel; and

(5) to establish a program of research and technology development and assistance to States in the management and removal of zebra mussels.

(16 U.S.C. 4701)

#### SEC. 1003. DEFINITIONS.

As used in this Act, the term—

- (1) ``aquatic nuisance species`` means a nonindigenous species that threatens the diversity or abundance of native species or the ecological stability of infested waters, or commercial, agricultural, aquacultural or recreational activities dependent on such waters;
- (2) ``Assistant Secretary`` means the Assistant Secretary of the Army (Civil Works);
- (3) ``ballast water`` means any water and associated sediments used to manipulate the trim and stability of a vessel;
- (4) ``Director`` means the Director of the United States Fish and Wildlife Service;
- (5) ``exclusive economic zone`` means the Exclusive Economic Zone of the United States established by Proclamation Number 5030, dated March 10, 1983, and the equivalent zone of Canada;
- (6) ``environmentally sound`` methods, efforts, actions or programs means methods, efforts, actions or programs to prevent introductions or control infestations of aquatic nuisance species that minimize adverse impacts to the structure and function of an ecosystem and adverse effects on non-target organisms and ecosystems and emphasize integrated pest management techniques and nonchemical measures;
- (7) ``Great Lakes`` means Lake Ontario, Lake Erie, Lake Huron (including Lake St. Clair), Lake Michigan, Lake Superior, and the connecting channels (Saint Mary's River, Saint Clair River, Detroit River, Niagara River, and Saint Lawrence River to the Canadian Border), and includes all other bodies of water within the drainage basin of such lakes and connecting channels.
- (8) ``Great Lakes region`` means the 8 States that border on the Great Lakes;
- (9) ``Indian tribe`` means any Indian tribe, band, nation, or other organized group or community, including any Alaska Native village or regional corporation (as defined in or established pursuant to the Alaska Native Claims Settlement Act (43 U.S.C. 1601 et seq.)) that is recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians;
- (10) ``interstate organization`` means an entity-
- (A) established by-
- (i) an interstate compact that is approved by Congress;
- (ii) a Federal statute; or
- (iii) a treaty or other international agreement with respect to which the United States is a party; and
- (B)(i) that represents 2 or more-
- (I) States or political subdivisions thereof; or
- (II) Indian tribes; or
- (ii) that represents-
- (I) 1 or more States or political subdivisions thereof; and

- (II) 1 or more Indian tribes; or
  - (iii) that represents the Federal Government and 1 or more foreign governments; and
  - (C) has jurisdiction over, serves as forum for coordinating, or otherwise has a role or responsibility for the management of, any land or other natural resource;
  - (11) ``nonindigenous species'' means any species or other viable biological material that enters an ecosystem beyond its historic range, including any such organism transferred from one country into another;
  - (12) ``Secretary'' means the Secretary of the department in which the Coast Guard is operating;
  - (13) ``Task Force'' means the Aquatic Nuisance Species Task Force established under section 1201 of this Act;
  - (14) ``territorial sea'' means the belt of the sea measured from the baseline of the United States determined in accordance with international law, as set forth in Presidential Proclamation Number 5928, dated December 27, 1988;
  - (15) ``Under Secretary'' means the Under Secretary of Commerce for Oceans and Atmosphere;
  - (16) ``waters of the United States'' means the navigable waters and the territorial sea of the United States; and
  - (17) ``unintentional introduction'' means an introduction of nonindigenous species that occurs as the result of activities other than the purposeful or intentional introduction of the species involved, such as the transport of nonindigenous species in ballast or in water used to transport fish, mollusks or crustaceans for aquaculture or other purposes.
- (16 U.S.C. 4702)

Subtitle B—Prevention of Unintentional  
Introductions of Nonindigenous Aquatic Species

SEC. 1101. AQUATIC NUISANCE SPECIES IN WATERS OF THE UNITED STATES.

- (a) GREAT LAKES GUIDELINES.—
  - (1) IN GENERAL.—Not later than 6 months after the date of enactment of this Act, the Secretary shall issue voluntary guidelines to prevent the introduction and spread of aquatic nuisance species into the Great Lakes through the exchange of ballast water of vessels prior to entering those waters.
  - (2) CONTENT OF GUIDELINES.—The guidelines issued under this subsection shall—
    - (A) ensure to the maximum extent practicable that ballast water containing aquatic nuisance species is not discharged into the Great Lakes;
    - (B) protect the safety of—
      - (i) each vessel; and
      - (ii) the crew and passengers of each vessel;
    - (C) take into consideration different vessel operating conditions; and
    - (D) be based on the best scientific information available.

(b) REGULATIONS.—

(1) IN GENERAL.—Not later than 2 years after the date of enactment of this Act, the Secretary, in consultation with the Task Force, shall issue regulations to prevent the introduction and spread of aquatic nuisance species into the Great Lakes through the ballast water of vessels.

(2) CONTENT OF REGULATIONS.—The regulations issued under this subsection shall—

(A) apply to all vessels equipped with ballast water tanks that enter a United States port on the Great Lakes after operating on the waters beyond the exclusive economic zone;

(B) require a vessel to—

(i) carry out exchange of ballast water on the waters beyond the exclusive economic zone prior to entry into any port within the Great Lakes;

(ii) carry out an exchange of ballast water in other waters where the exchange does not pose a threat of infestation or spread of aquatic nuisance species in the Great Lakes and other waters of the United States, as recommended by the Task Force under section 1102(a)(1); or

(iii) use environmentally sound alternative ballast water management methods if the Secretary determines that such alternative methods are as effective as ballast water exchange in preventing and controlling infestations of aquatic nuisance species;

(C) not affect or supersede any requirements or prohibitions pertaining to the discharge of ballast water into waters of the United States under the Federal Water Pollution Control Act (33 U.S.C. 1251 et seq.);

(D) provide for sampling procedures to monitor compliance with the requirements of the regulations;

(E) prohibit the operation of a vessel in the Great Lakes if the master of the vessel has not certified to the Secretary or the Secretary's designee by not later than the departure of that vessel from the first lock in the St. Lawrence Seaway that the vessel has complied with the requirements of the regulations;

(F) protect the safety of—

(i) each vessel; and

(ii) the crew and passengers of each vessel;

(G) take into consideration different operating conditions; and

(H) be based on the best scientific information available.

(3) ADDITIONAL REGULATIONS.—In addition to promulgating regulations under paragraph (1), the Secretary, in consultation with the Task Force, shall, not later than November 4, 1994, issue regulations to prevent the introduction and spread of aquatic nuisance species into the Great Lakes through ballast water carried on vessels that enter a United States port on the Hudson River north of the George

Washington Bridge.

(4) EDUCATION AND TECHNICAL ASSISTANCE PROGRAMS.—

The Secretary may carry out education and technical assistance programs and other measures to promote compliance with the regulations issued under this subsection.

(c) VOLUNTARY NATIONAL GUIDELINES.—

(1) IN GENERAL.—Not later than 1 year after the date of enactment of the National Invasive Species Act of 1996, and after providing notice and an opportunity for public comment, the Secretary shall issue voluntary guidelines to prevent the introduction and spread of nonindigenous species in waters of the United States by ballast water operations and other operations of vessels equipped with ballast water tanks.

(2) CONTENT OF GUIDELINES.—The voluntary guidelines issued under this subsection shall—

(A) ensure to the maximum extent practicable that aquatic nuisance species are not discharged into waters of the United States from vessels;

(B) apply to all vessels equipped with ballast water tanks that operate in waters of the United States;

(C) protect the safety of—

(i) each vessel; and

(ii) the crew and passengers of each vessel;

(D) direct a vessel that is carrying ballast water into waters of the United States after operating beyond the exclusive economic zone to—

(i) carry out the exchange of ballast water of the vessel in waters beyond the exclusive economic zone;

(ii) exchange the ballast water of the vessel in other waters where the exchange does not pose a threat of infestation or spread of nonindigenous species in waters of the United States, as recommended by the Task Force under section 1102(a)(1); or

(iii) use environmentally sound alternative ballast water management methods, including modification of the vessel ballast water tanks and intake systems, if the Secretary determines that such alternative methods are at least as effective as ballast water exchange in preventing and controlling infestations of aquatic nuisance species;

(E) direct vessels to carry out management practices that the Secretary determines to be necessary to reduce the probability of unintentional nonindigenous species transfer resulting from—

(i) ship operations other than ballast water discharge; and

(ii) ballasting practices of vessels that enter waters of the United States with no ballast water on board;

(F) provide for the keeping of records that shall be submitted to the Secretary, as prescribed by the guidelines, and that shall be maintained on board each vessel and made available for inspection, upon request of the Secretary and in a manner consistent with subsection (i), in

order to enable the Secretary to determine compliance with the guidelines, including—

(i) with respect to each ballast water exchange referred to in clause (ii), reporting on the precise location and thoroughness of the exchange; and

(ii) any other information that the Secretary considers necessary to assess the rate of effective compliance with the guidelines;

(G) provide for sampling procedures to monitor compliance with the guidelines;

(H) take into consideration—

(i) vessel types;

(ii) variations in the characteristics of point of origin and receiving water bodies;

(iii) variations in the ecological conditions of waters and coastal areas of the United States; and

(iv) different operating conditions;

(I) be based on the best scientific information available;

(J) not affect or supersede any requirements or prohibitions pertaining to the discharge of ballast water into waters of the United States under the Federal Water Pollution Control Act (33 U.S.C. 1251 et seq.); and

(K) provide an exemption from ballast water exchange requirements to passenger vessels with operating ballast water systems that are equipped with treatment systems designed to kill aquatic organisms in ballast water, unless the Secretary determines that such treatment systems are less effective than ballast water exchange at reducing the risk of transfers of invasive species in the ballast water of passenger vessels; and

(L) not apply to crude oil tankers engaged in the coast-wise trade.

(3) EDUCATION AND TECHNICAL ASSISTANCE PROGRAMS.—

Not later than 1 year after the date of enactment of the National Invasive Species Act of 1996, the Secretary shall carry out education and technical assistance programs and other measures to encourage compliance with the guidelines issued under this subsection.

(d) REPORT TO CONGRESS.—Not sooner than 24 months after the date of issuance of guidelines pursuant to subsection (c) and not later than 30 months after such date, and after consultation with interested and affected persons, the Secretary shall prepare and submit to Congress a report containing the information required pursuant to paragraphs (1) and (2) of subsection (e).

(e) PERIODIC REVIEW AND REVISION.—

(1) IN GENERAL.—Not later than 3 years after the date of issuance of guidelines pursuant to subsection (c), and not less frequently than every 3 years thereafter, the Secretary shall, in accordance with criteria developed by the Task Force under paragraph (3)—

(A) assess the compliance by vessels with the voluntary guidelines issued under subsection (c) and the

regulations promulgated under this Act;  
(B) establish the rate of compliance that is based on the assessment under subparagraph (A);  
(C) assess the effectiveness of the voluntary guidelines and regulations referred to in subparagraph (A) in reducing the introduction and spread of aquatic nuisance species by vessels; and  
(D) as necessary, on the basis of the best scientific information available—

(i) revise the guidelines and regulations referred to in subparagraph (A);

(ii) promulgate additional regulations pursuant to subsection (f)(1); or

(iii) carry out each of clauses (i) and (ii).

(2) SPECIAL REVIEW AND REVISION.—Not later than 90 days after the Task Force makes a request to the Secretary for a special review and revision for coastal and inland waterways designated by the Task Force, the Secretary shall—

(A) conduct a special review of guidelines and regulations applicable to those waterways in accordance with the review procedures under paragraph (1); and

(B) as necessary, in the same manner as provided under paragraph (1)(D)—

(i) revise those guidelines;

(ii) promulgate additional regulations pursuant to subsection (f)(1); or

(iii) carry out each of clauses (i) and (ii).

(3) CRITERIA FOR EFFECTIVENESS.—Not later than 18 months after the date of enactment of the National Invasive Species Act of 1996, the Task Force shall submit to the Secretary criteria for determining the adequacy and effectiveness of the voluntary guidelines issued under subsection (c).

(f) AUTHORITY OF SECRETARY.—

(1) GENERAL REGULATIONS.—If, on the basis of a periodic review conducted under subsection (e)(1) or a special review conducted under subsection (e)(2), the Secretary determines that—

(A) the rate of effective compliance (as determined by the Secretary) with the guidelines issued pursuant to subsection (c) is inadequate; or

(B) the reporting by vessels pursuant to those guidelines is not adequate for the Secretary to assess the compliance with those guidelines and provide a rate of compliance of vessels, including the assessment of the rate of compliance of vessels under subsection (e)(2), the Secretary shall promptly promulgate regulations that meet the requirements of paragraph (2).

(2) REQUIREMENTS FOR REGULATIONS.—The regulations promulgated by the Secretary under paragraph (1)—

(A) shall—

(i) not be promulgated sooner than 180 days following the issuance of the report to Congress

submitted pursuant to subsection (d);

(ii) make mandatory the requirements included in the voluntary guidelines issued under subsection (c);

and

(iii) provide for the enforcement of the regulations;

and

(B) may be regional in scope.

(3) INTERNATIONAL REGULATIONS.—The Secretary shall revise regulations promulgated under this subsection to the extent required to make such regulations consistent with the treatment of a particular matter in any international agreement, agreed to by the United States, governing management of the transfer of nonindigenous aquatic species by vessel.

(g) SANCTIONS.—

(1) CIVIL PENALTIES.—Any person who violates a regulation promulgated under subsection (b) or (f) shall be liable for a civil penalty in an amount not to exceed \$25,000. Each day of a continuing violation constitutes a separate violation. A vessel operated in violation of the regulations is liable in rem for any civil penalty assessed under this subsection for that violation.

(2) CRIMINAL PENALTIES.—Any person who knowingly violates the regulations promulgated under subsection (b) or (f) is guilty of a class C felony.

(3) REVOCATION OF CLEARANCE.—Upon request of the Secretary, the Secretary of the Treasury shall withhold or revoke the clearance of a vessel required by section 4197 of the Revised Statutes (46 U.S.C. App. 91), if the owner or operator of that vessel is in violation of the regulations issued under subsection (b) or (f).

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(4) EXCEPTION TO SANCTIONS.—This subsection does not apply to a failure to exchange ballast water if—

(A) the master of a vessel, acting in good faith, decides that the exchange of ballast water will threaten the safety or stability of the vessel, its crew, or its passengers; and

(B) the recordkeeping and reporting requirements of the Act are complied with.

(h) COORDINATION WITH OTHER AGENCIES.—In carrying out the programs under this section, the Secretary is encouraged to use, to the maximum extent practicable, the expertise, facilities, members, or personnel of established agencies and organizations that have routine contact with vessels, including the Animal and Plant Health Inspection Service of the Department of Agriculture, the National Cargo Bureau, port administrations, and ship pilots' associations.

(i) CONSULTATION WITH CANADA, MEXICO, AND OTHER FOREIGN GOVERNMENTS.—In developing the guidelines issued and regulations promulgated under this section, the Secretary is encouraged to consult with the Government of Canada, the Government of Mexico, and any other government of a foreign country that the Secretary, in consultation with the Task Force, determines to be

necessary to develop and implement an effective international program

for preventing the unintentional introduction and spread of nonindigenous species.

(j) INTERNATIONAL COOPERATION.—The Secretary, in cooperation with the International Maritime Organization of the United Nations and the Commission on Environmental Cooperation established pursuant to the North American Free Trade Agreement, is encouraged to enter into negotiations with the governments of foreign

countries to develop and implement an effective international program for preventing the unintentional introduction and spread of nonindigenous species.

(k) SAFETY EXEMPTION.—

(1) MASTER DISCRETION.—The master of a vessel is not required to conduct a ballast water exchange if the master decides that the exchange would threaten the safety or stability of the vessel, its crew, or its passengers because of adverse weather, vessel architectural design, equipment failure, or any other extraordinary conditions.

(2) OTHER REQUIREMENTS.—(A) IN GENERAL.—Except as provided in subparagraph (B), a vessel that does not exchange ballast water on the high seas under paragraph (1) shall not be restricted from discharging ballast water in any harbor.

(B) GREAT LAKES.—Subparagraph (A) shall not apply in a case in which a vessel is subject to the regulations issued by the Secretary under subsection (b).

(3) CRUDE OIL TANKER BALLAST FACILITY STUDY.—(A) Within 60 days of the date of enactment of this Act, the Secretary of the department in which the Coast Guard is operating, in consultation with the Under Secretary of Commerce for Oceans and Atmosphere, affected shoreside ballast water facility operators, affected crude oil tanker operators, and

interested parties, shall initiate a study of the effectiveness of existing shoreside ballast water facilities used by crude oil tankers in the coastwise trade off Alaska in preventing the introduction of nonindigenous aquatic species into the waters off Alaska, as well as the cost and feasibility of modifying such

facilities to improve such effectiveness.

(B) The study required under subparagraph (A) shall be submitted to the Congress by no later than October 1, 1997.

(1) NON-DISCRIMINATION.—The Secretary shall ensure that vessels registered outside of the United States do not receive more favorable treatment than vessels registered in the United States when the Secretary performs studies, reviews compliance, determines effectiveness, establishes requirements, or performs any other responsibilities under this Act.

(16 U.S.C. 4711)

SEC. 1102. NATIONAL BALLAST WATER MANAGEMENT INFORMATION.

(a) STUDIES ON INTRODUCTION OF AQUATIC NUISANCE SPECIES BY VESSELS.—

(1) BALLAST EXCHANGE STUDY.—The Task Force, in cooperation with the Secretary, shall conduct a study—

(A) to assess the environmental effects of ballast water exchange on the diversity and abundance of native species in receiving estuarine, marine, and fresh waters of the United States; and

(B) to identify areas within the waters of the United States and the exclusive economic zone, if any, where the exchange of ballast water does not pose a threat of infestation or spread of aquatic nuisance species in the Great Lakes and other waters of the United States.

(2) BIOLOGICAL STUDY.—The Task Force, in cooperation with the Secretary, shall conduct a study to determine whether aquatic nuisance species threaten the ecological characteristics and economic uses of Lake Champlain and other waters of the United States other than the Great Lakes.

(3) SHIPPING STUDY.—The Secretary shall conduct a study to determine the need for controls on vessels entering waters of the United States, other than the Great Lakes, to minimize the risk of unintentional introduction and dispersal of aquatic nuisance species in those waters. The study shall include an examination of—

(A) the degree to which shipping may be a major pathway of transmission of aquatic nuisance species in those waters;

(B) possible alternatives for controlling introduction of those species through shipping; and

(C) the feasibility of implementing regional versus national control measures.

(b) ECOLOGICAL AND BALLAST WATER DISCHARGE SURVEYS.—

(1) ECOLOGICAL SURVEYS.—

(A) IN GENERAL.—The Task Force, in cooperation with the Secretary, shall conduct ecological surveys of the Chesapeake Bay, San Francisco Bay, and Honolulu Harbor and, as necessary, of other estuaries of national significance and other waters that the Task Force determines—

(i) to be highly susceptible to invasion by aquatic nuisance species resulting from ballast water operations and other operations of vessels; and

(ii) to require further study.

(B) REQUIREMENTS FOR SURVEYS.—In conducting the surveys under this paragraph, the Task Force shall, with respect to each such survey—

(i) examine the attributes and patterns of invasions of aquatic nuisance species; and

(ii) provide an estimate of the effectiveness of ballast water management and other vessel management guidelines issued and regulations promulgated under this subtitle in abating invasions of aquatic nuisance species in the waters that are the subject of the survey.

(2) BALLAST WATER DISCHARGE SURVEYS.—

(A) IN GENERAL.—The Secretary, in cooperation with the Task Force, shall conduct surveys of ballast water discharge rates and practices in the waters referred to in paragraph (1)(A) on the basis of the criteria under clauses (i) and (ii) of such paragraph.

(B) REQUIREMENTS FOR SURVEYS.—In conducting the surveys under this paragraph, the Secretary shall—

(i) examine the rate of, and trends in, ballast water discharge in the waters that are the subject of the survey; and

(ii) assess the effectiveness of voluntary guidelines issued, and regulations promulgated, under this subtitle in altering ballast water discharge practices to reduce the probability of accidental introductions of aquatic nuisance species.

(3) COLUMBIA RIVER.—The Secretary, in cooperation with the Task Force and academic institutions in each of the States affected, shall conduct an ecological and ballast water discharge survey of the Columbia River system consistent with the requirements of paragraphs (1) and (2).

(c) REPORTS.—

(1) BALLAST EXCHANGE.—Not later than 18 months after the date of enactment of this Act and prior to the effective date of the regulations issued under section 1101(b), the Task Force shall submit a report to the Congress that presents the results of the study required under subsection (a)(1) and makes recommendations with respect to such regulations.

(2) BIOLOGICAL AND SHIPPING STUDIES.—Not later than 18 months after the date of enactment of this Act, the Secretary and the Task Force shall each submit to the Congress a report on the results of their respective studies under paragraphs (2) and (3) of subsection (a).

(d) NEGOTIATIONS.—The Secretary, working through the International Maritime Organization, is encouraged to enter into negotiations with the governments of foreign countries concerning the planning and implementation of measures aimed at the prevention and control of unintentional introductions of aquatic nuisance species in coastal waters.

(e) REGIONAL RESEARCH GRANTS.—Out of amounts appropriated to carry out this subsection for a fiscal year, the Under Secretary may—

(1) make available not to exceed \$750,000 to fund research on aquatic nuisance species prevention and control in the Chesapeake Bay through grants, to be competitively awarded and subject to peer review, to universities and research institutions;

(2) make available not to exceed \$500,000 to fund research on aquatic nuisance species prevention and control in the Gulf of Mexico through grants, to be competitively awarded and subject to peer review, to universities and research institutions;

(3) make available not to exceed \$500,000 to fund research

on aquatic nuisance species prevention and control for the Pacific Coast through grants, to be competitively awarded and subject to peer review, to universities and research institutions;

(4) make available not to exceed \$500,000 to fund research on aquatic nuisance species prevention and control for the Atlantic Coast through grants, to be competitively awarded and subject to peer review, to universities and research institutions; and

(5) make available not to exceed \$750,000 to fund research on aquatic nuisance species prevention and control in the San Francisco Bay-Delta Estuary through grants, to be competitively awarded and subject to peer review, to universities and research institutions.

(f) NATIONAL BALLAST INFORMATION CLEARINGHOUSE.—

(1) IN GENERAL.—The Secretary shall develop and maintain, in consultation and cooperation with the Task Force and the Smithsonian Institution (acting through the Smithsonian Environmental Research Center), a clearinghouse of national data concerning—

(A) ballasting practices;

(B) compliance with the guidelines issued pursuant to section 1101(c); and

(C) any other information obtained by the Task Force under subsection (b).

(2) REPORT.—In consultation and cooperation with the Task Force and the Smithsonian Institution (acting through the Smithsonian Environmental Research Center), the Secretary shall prepare and submit to the Task Force and the Congress, on a biennial basis, a report that synthesizes and analyzes the data referred to in paragraph (1) relating to—

(A) ballast water delivery and management; and

(B) invasions of aquatic nuisance species resulting from ballast water.

(16 U.S.C. 4712)

#### SEC. 1103. ARMED SERVICES BALLAST WATER PROGRAMS.

(a) DEPARTMENT OF DEFENSE VESSELS.—Subject to operational conditions, the Secretary of Defense, in consultation with the Secretary, the Task Force, and the International Maritime Organi-

zation, shall implement a ballast water management program for seagoing vessels of the Department of Defense to minimize the risk of introduction of nonindigenous species from releases of ballast water.

(b) COAST GUARD VESSELS.—Subject to operational conditions, the Secretary, in consultation with the Task Force and the International Maritime Organization, shall implement a ballast water management program for seagoing vessels of the Coast Guard to minimize the risk of introduction of nonindigenous species from releases

of ballast water.  
(16 U.S.C. 4713)

SEC. 1104. BALLAST WATER MANAGEMENT DEMONSTRATION PROGRAM.

(a) TECHNOLOGIES AND PRACTICES DEFINED.—For purposes of this section, the term “technologies and practices” means those technologies and practices that—

- (1) may be retrofitted—
  - (A) on existing vessels or incorporated in new vessel designs; and
  - (B) on existing land-based ballast water treatment facilities;
- (2) may be designed into new water treatment facilities;
- (3) are operationally practical;
- (4) are safe for a vessel and crew;
- (5) are environmentally sound;
- (6) are cost-effective;
- (7) a vessel operator is capable of monitoring; and
- (8) are effective against a broad range of aquatic nuisance species.

(b) DEMONSTRATION PROGRAM.—

(1) IN GENERAL.—During the 18-month period beginning on the date that funds are made available by appropriations pursuant to section 1301(e), the Secretary of the Interior and the Secretary of Commerce, with the concurrence of and in cooperation

with the Secretary, shall conduct a ballast water management demonstration program to demonstrate technologies and practices to prevent aquatic nonindigenous species from being introduced into and spread through ballast water in the Great Lakes and other waters of the United States.

(2) LOCATION.—The installation and construction of the technologies and practices used in the demonstration program conducted under this subsection shall be performed in the United States.

(3) VESSEL SELECTION.—In demonstrating technologies and practices on vessels under this subsection, the Secretary of the Interior and the Secretary of Commerce, shall—

- (A) use only vessels that—
  - (i) are approved by the Secretary;
  - (ii) have ballast water systems conducive to testing aboard-vessel or land-based technologies and practices applicable to a significant number of merchant vessels; and

- (iii) are—
    - (I) publicly or privately owned; and
    - (II) in active use for trade or other cargo shipment purposes during the demonstration;
  - (B) select vessels for participation in the program by giving priority consideration—
    - (i) first, to vessels documented under chapter 121 of title 46, United States Code;

(ii) second, to vessels that are a majority owned by citizens of the United States, as determined by the Secretary; and

(iii) third, to any other vessels that regularly call on ports in the United States; and

(C) seek to use a variety of vessel types, including vessels that—

(i) call on ports in the United States and on the Great Lakes; and

(ii) are operated along major coasts of the United States and inland waterways, including the San Francisco Bay and Chesapeake Bay.

(4) SELECTION OF TECHNOLOGIES AND PRACTICES.—In selecting technologies and practices for demonstration under this subsection, the Secretary of the Interior and the Secretary of Commerce shall give priority consideration to technologies and practices identified as promising by the National Research Council Marine Board of the National Academy of Sciences in its report on ships' ballast water operations issued in July 1996.

(5) REPORT.—Not later than 3 years after the date of enactment of the National Invasive Species Act of 1996, the Secretary of the Interior and the Secretary of Commerce shall prepare and submit a report to the Congress on the demonstration program conducted pursuant to this section. The report shall include findings and recommendations of the Secretary of the Interior and the Secretary of Commerce concerning technologies and practices.

(c) AUTHORITIES; CONSULTATION AND COOPERATION WITH INTERNATIONAL MARITIME ORGANIZATION AND TASK FORCE.—

(1) AUTHORITIES.—In conducting the demonstration program under subsection (b), the Secretary of the Interior may—

(A) enter into cooperative agreements with appropriate officials of other agencies of the Federal Government, agencies of States and political subdivisions thereof, and private entities;

(B) accept funds, facilities, equipment, or personnel from other Federal agencies; and

(C) accept donations of property and services.

(2) CONSULTATION AND COOPERATION.—The Secretary of the Interior shall consult and cooperate with the International Maritime Organization and the Task Force in carrying out this section.

(16 U.S.C. 4714)

Subtitle C—Prevention and Control of  
Aquatic Nuisance Species Dispersal

SEC. 1201. ESTABLISHMENT OF TASK FORCE.

(a) TASK FORCE.—There is hereby established an "Aquatic Nuisance Species Task Force".

(b) MEMBERSHIP.—Membership of the Task Force shall consist

of—

- (1) the Director;
- (2) the Under Secretary;
- (3) the Administrator of the Environmental Protection Agency;
- (4) the Commandant of the United States Coast Guard;
- (5) the Assistant Secretary;
- (6) the Secretary of Agriculture; and
- (7) the head of any other Federal agency that the chairpersons designated under subsection (d) deem appropriate.

(c) EX OFFICIO MEMBERS.—The chairpersons designated under subsection (d) shall invite representatives of the Great Lakes

Commission,

the Lake Champlain Basin Program, the Chesapeake Bay Program, the San Francisco Bay-Delta Estuary Program, and State agencies and other governmental entities to participate as ex

officio

members of the Task Force.

(d) CHAIRPERSONS.—The Director and the Under Secretary shall serve as co-chairpersons of the Task Force and shall be

jointly

responsible, and are authorized to undertake such activities as may be necessary, for carrying out this subtitle in consultation and

cooperation

with the other members of the Task Force.

(e) MEMORANDUM OF UNDERSTANDING.—Within six months of the date of enactment of this Act, the Director and the Under

Secretary

shall develop a memorandum of understanding that describes the role of each in jointly carrying out this subtitle.

(f) COORDINATION.—Each Task Force member shall coordinate any action to carry out this subtitle with any such action by other members of the Task Force, and regional, State and local entities.

(16 U.S.C. 4721)

#### SEC. 1202. AQUATIC NUISANCE SPECIES PROGRAM.

(a) IN GENERAL.—The Task Force shall develop and implement a program for waters of the United States to prevent introduction and dispersal of aquatic nuisance species; to monitor, control and study such species; and to disseminate related information.

(b) CONTENT.—The program developed under subsection (a) shall—

- (1) identify the goals, priorities, and approaches for aquatic nuisance species prevention, monitoring, control, education and research to be conducted or funded by the Federal Government;
- (2) describe the specific prevention, monitoring, control, education and research activities to be conducted by each Task Force member;
- (3) coordinate aquatic nuisance species programs and activities of Task Force members and affected State agencies;

(4) describe the role of each Task Force member in implementing the elements of the program as set forth in this subtitle;

(5) include recommendations for funding to implement elements of the program; and  
(6) develop a demonstration program of prevention, monitoring, control, education and research for the zebra mussel, to be implemented in the Great Lakes and any other waters infested, or likely to become infested in the near future, by the zebra mussel.

(c) PREVENTION.—

(1) IN GENERAL.—The Task Force shall establish and implement measures, within the program developed under subsection (a), to minimize the risk of introduction of aquatic nuisance species to waters of the United States, including—

(A) identification of pathways by which aquatic organisms are introduced to waters of the United States;

(B) assessment of the risk that an aquatic organism carried by an identified pathway may become an aquatic nuisance species; and

(C) evaluation of whether measures to prevent introductions of aquatic nuisance species are effective and environmentally sound.

(2) IMPLEMENTATION.—Whenever the Task Force determines that there is a substantial risk of unintentional introduction of an aquatic nuisance species by an identified pathway and that the adverse consequences of such an introduction are likely to be substantial, the Task Force shall, acting through the appropriate Federal agency, and after an opportunity for public comment, carry out cooperative, environmentally sound efforts with regional, State and local entities to minimize the risk of such an introduction.

(d) MONITORING.—The Task Force shall establish and implement monitoring measures, within the program developed under subsection (a), to—

(1) detect unintentional introductions of aquatic nuisance species;

(2) determine the dispersal of aquatic nuisance species after introduction; and

(3) provide for the early detection and prevention of infestations of aquatic nuisance species in unaffected drainage basins.

(e) CONTROL.—

(1) IN GENERAL.—The Task Force may develop cooperative efforts, within the program established under subsection (a), to control established aquatic nuisance species to minimize the risk of harm to the environment and the public health and welfare. For purposes of this Act, control efforts include eradication of infestations, reductions of populations, development of means of adapting human activities and public facilities to accommodate

infestations, and prevention of the spread of aquatic nuisance species from infested areas. Such control efforts shall be developed in consultation with affected Federal agencies, States, Indian Tribes, local governments, interjurisdictional organizations, and other appropriate entities. Control actions

tional organizations, and other appropriate entities. Control actions

authorized by this section shall be based on the best available scientific information and shall be conducted in an environmentally sound manner.

(2) DECISIONS.—The Task Force or any other affected agency or entity may recommend that the Task Force initiate a control effort. In determining whether a control program is warranted, the Task Force shall evaluate the need for control (including the projected consequences of no control and less than full control); the technical and biological feasibility and cost-effectiveness of alternative control strategies and actions; whether the benefits of control, including costs avoided, exceed the costs of the program; the risk of harm to non-target organisms and ecosystems, public health and welfare; and such other considerations the Task Force determines appropriate. The Task Force shall also determine the nature and extent of control of target aquatic nuisance species that is feasible and desirable.

(3) PROGRAMS.—If the Task Force determines in accordance with paragraph (2) that control of an aquatic nuisance species is warranted, the Task Force shall develop a proposed control program to achieve the target level of control. A notice summarizing the proposed action and soliciting comments shall be published in the Federal Register, in major newspapers in the region affected, and in principal trade publications of the industries affected. Within 180 days of proposing a control program, and after consultation with affected governmental and other appropriate entities and taking into consideration other comments received, the Task Force shall complete development of the proposed control program.

(f) RESEARCH.—

(1) PRIORITIES.—The Task Force shall, within the program developed under subsection (a), conduct research concerning—

(A) the environmental and economic risks and impacts associated with the introduction of aquatic nuisance species into the waters of the United States;

(B) the principal pathways by which aquatic nuisance species are introduced and dispersed;

(C) possible methods for the prevention, monitoring and control of aquatic nuisance species; and

(D) the assessment of the effectiveness of prevention, monitoring and control methods.

(2) PROTOCOL.—Within 90 days of the date of enactment of this Act, the Task Force shall establish and follow a protocol to ensure that research activities carried out under this subtitle do not result in the introduction of aquatic nuisance species to waters of the United States.

(3) GRANTS FOR RESEARCH.—The Task Force shall allocate funds authorized under this Act for competitive research grants to study all aspects of aquatic nuisance species, which shall be administered through the National Sea Grant College Program and the Cooperative Fishery and Wildlife Research Units. Grants shall be conditioned to ensure that any recipient

of funds follows the protocol established under paragraph (2) of this subsection.

(g) TECHNICAL ASSISTANCE.—The Task Force shall, within the program developed under subsection (a), provide technical assistance to State and local governments and persons to minimize the environmental, public health, and safety risks associated with aquatic nuisance species, including an early warning system for advance

notice of possible infestations and appropriate responses.

(h) EDUCATION.—The Task Force shall, with the program developed under subsection (a), establish and implement educational programs through Sea Grant Marine Advisory Services and any other available resources that it determines to be appropriate to inform

the general public, State governments, governments of political subdivisions of States, and industrial and recreational users of aquatic resources in connection with matters concerning the identification

of aquatic nuisance species, and control methods for such species, including the prevention of the further distribution of such species.

(i) ZEBRA MUSSEL DEMONSTRATION PROGRAM.—

(1) ZEBRA MUSSEL.—

(A) IN GENERAL.—The Task Force shall, within the program developed under subsection (a), undertake a program of prevention, monitoring, control, education and research for the zebra mussel to be implemented in the Great Lakes and any other waters of the United States infested or likely to become infested by the zebra mussel, including—

(i) research and development concerning the species life history, environmental tolerances and impacts on fisheries and other ecosystem components, and the efficacy of control mechanisms and means of avoiding or minimizing impacts;

(ii) tracking the dispersal of the species and establishment of an early warning system to alert likely areas of future infestations;

(iii) development of control plans in coordination with regional, State and local entities; and

(iv) provision of technical assistance to regional, State and local entities to carry out this section.

(B) PUBLIC FACILITY RESEARCH AND DEVELOP-

MENT.—The Assistant Secretary, in consultation with the Task Force, shall develop a program of research, technology development, and demonstration for the environmentally sound control of zebra mussels in and around public facilities. The Assistant Secretary shall collect and make available, through publications and other appropriate means, information pertaining to such control methods.

(C) VOLUNTARY GUIDELINES.—Not later than 1 year after the date of enactment of this subparagraph, the Task

Force shall develop and submit to the Secretary voluntary guidelines for controlling the spread of the zebra mussel and, if appropriate, other aquatic nuisance species through recreational activities, including boating and fishing. Not

later than 4 months after the date of such submission, and after providing notice and an opportunity for public comment, the Secretary shall issue voluntary guidelines that are based on the guidelines developed by the Task Force under this subparagraph.

(2) DISPERSAL CONTAINMENT ANALYSIS.—

(A) RESEARCH.—The Administrator of the Environmental Protection Agency, in cooperation with the National Science Foundation and the Task Force, shall provide research grants on a competitive basis for projects that—

- (i) identify environmentally sound methods for controlling the dispersal of aquatic nuisance species, such as the zebra mussel; and
- (ii) adhere to research protocols developed pursuant to subsection (f)(2).

(B) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Environmental Protection Agency to carry out this paragraph, \$500,000.

(3) DISPERSAL BARRIER DEMONSTRATION.—

(A) IN GENERAL.—The Assistant Secretary, in consultation with the Task Force, shall investigate and identify environmentally sound methods for preventing and reducing the dispersal of aquatic nuisance species between the Great Lakes-Saint Lawrence drainage and the Mississippi River drainage through the Chicago River Ship and Sanitary Canal, including any of those methods that could be incorporated into the operation or construction of the lock system of the Chicago River Ship and Sanitary Canal.

(B) REPORT.—Not later than 18 months after the date of enactment of this paragraph, the Assistant Secretary shall issue a report to the Congress that includes recommendations concerning—

- (i) which of the methods that are identified under the study conducted under this paragraph are most promising with respect to preventing and reducing the dispersal of aquatic nuisance species; and
- (ii) ways to incorporate those methods into ongoing operations of the United States Army Corps of Engineers that are conducted at the Chicago River Ship and Sanitary Canal.

(C) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Department of the Army, to carry out this paragraph, \$750,000.

(4) CONTRIBUTIONS.—To the extent allowable by law, in carrying out the studies under paragraphs (2) and (3), the Administrator

of the Environmental Protection Agency and the Secretary of the Army may enter into an agreement with an interested party under which that party provides in kind or monetary contributions for the study.

(5) TECHNICAL ASSISTANCE.—The Great Lakes Environmental Research Laboratory of the National Oceanic and Atmospheric Administration shall provide technical assistance to

appropriate entities to assist in the research conducted pursuant to this subsection.

(j) IMPLEMENTATION.—

(1) REGULATIONS.—The Director, the Secretary, and the Under Secretary may issue such rules and regulations as may be necessary to implement this section.

(2) PARTICIPATION OF OTHERS.—The Task Force shall provide opportunities for affected Federal agencies which are not part of the Task Force, State and local government agencies, and regional and other entities with the necessary expertise to participate in control programs. If these other agencies or entities have sufficient authority or jurisdiction and expertise and where this will be more efficient or effective, responsibility for implementing all or a portion of a control program may be delegated to such agencies or entities.

(k) REPORTS.—

(1) Not later than 12 months after the date of enactment of this Act, the Task Force shall submit a report describing the program developed under subsection (a), including the research protocol required under subsection (f)(2), to the Congress.

(2) On an annual basis after the submission of the report under paragraph (1), the Task Force shall submit a report to the Congress detailing progress in carrying out this section.

(16 U.S.C. 4722)

#### SEC. 1203. REGIONAL COORDINATION.

(a) GREAT LAKES PANEL.—

(1) IN GENERAL.—Not later than 30 days following the date of enactment of this Act, the Task Force shall request that the Great Lakes Commission (established under Article IV of the Great Lakes Compact to which the Congress granted consent in the Act of July 24, 1968, P.L. 90-419) convene a panel of Great Lakes region representatives from Federal, State and local agencies and from private environmental and commercial interests to—

(A) identify priorities for the Great Lakes region with respect to aquatic nuisance species;

(B) make recommendations to the Task Force regarding programs to carry out section 1202(i) of this Act;

(C) assist the Task Force in coordinating Federal aquatic nuisance species program activities in the Great Lakes region;

(D) coordinate, where possible, aquatic nuisance species program activities in the Great Lakes region that are

not conducted pursuant to this Act;

(E) provide advice to public and private individuals and entities concerning methods of controlling aquatic nuisance species; and

(F) submit annually a report to the Task Force describing activities within the Great Lakes region related to aquatic nuisance species prevention, research, control.

(2) CONSULTATION.—The Task Force shall request that the Great Lakes Fishery Commission provide information to the panel convened under this subsection on technical and policy matters related to the international fishery resources of the Great Lakes.

(3) CANADIAN PARTICIPATION.—The panel convened under this subsection is encourage to invite representatives from the Federal, provincial or territorial governments of Canada to participate as observers.

(b) WESTERN REGIONAL PANEL.—Not later than 30 days after the date of enactment of the National Invasive Species Act of 1996, the Task Force shall request a Western regional panel, comprised of Western region representatives from Federal, State, and local agencies and from private environmental and commercial interests, to—

(1) identify priorities for the Western region with respect to aquatic nuisance species;

(2) make recommendations to the Task Force regarding an education, monitoring (including inspection), prevention, and control program to prevent the spread of the zebra mussel west of the 100th Meridian pursuant to section 1202(i) of this Act;

(3) coordinate, where possible, other aquatic nuisance species program activities in the Western region that are not conducted pursuant to this Act;

(4) develop an emergency response strategy for Federal, State, and local entities for stemming new invasions of aquatic nuisance species in the region;

(5) provide advice to public and private individuals and entities concerning methods of preventing and controlling aquatic nuisance species infestations; and

(6) submit annually a report to the Task Force describing activities within the Western region related to aquatic nuisance species prevention, research, and control.

(c) ADDITIONAL REGIONAL PANELS.—The Task Force shall—

(1) encourage the development and use of regional panels and other similar entities in regions in addition to the Great Lakes and Western regions (including providing financial assistance for the development and use of such entities) to carry out, with respect to those regions, activities that are similar to the activities described in subsections (a) and (b); and

(2) cooperate with regional panels and similar entities that carry out the activities described in paragraph (1).

(16 U.S.C. 4723)

SEC. 1204. STATE AQUATIC NUISANCE SPECIES MANAGEMENT PLANS.

(a) STATE OR INTERSTATE INVASIVE SPECIES MANAGEMENT PLANS.—

(1) IN GENERAL.—After providing notice and opportunity for public comment, the Governor of each State may prepare and submit, or the Governors of the States and the governments of the Indian tribes involved in an interstate organization, may jointly prepare and submit—

(A) a comprehensive management plan to the Task Force for approval which identifies those areas or activities within the State or within the interstate region involved, other than those related to public facilities, for which technical, enforcement, or financial assistance (or any combination thereof) is needed to eliminate or reduce the environmental, public health, and safety risks associated with aquatic nuisance species, particularly the zebra mussel; and

(B) a public facility management plan to the Assistant Secretary for approval which is limited solely to identifying those public facilities within the State or within the interstate region involved for which technical and financial assistance is needed to reduce infestations of zebra mussels.

(2) CONTENT.—Each plan shall, to the extent possible, identify the management practices and measures that will be undertaken to reduce infestations of aquatic nuisance species. Each plan shall—

(A) identify and describe State and local programs for environmentally sound prevention and control of the target aquatic nuisance species;

(B) identify Federal activities that may be needed for environmentally sound prevention and control of aquatic nuisance species and a description of the manner in which those activities should be coordinated with State and local government activities;

(C) identify any authority that the State (or any State or Indian tribe involved in the interstate organization) does not have at the time of the development of the plan that may be necessary for the State (or any State or Indian tribe involved in the interstate organization) to protect public health, property, and the environment from harm by aquatic nuisance species; and

(D) a schedule of implementing the plan, including a schedule of annual objectives, and enabling legislation.

(3) CONSULTATION.—

(A) In developing and implementing a management plan, the State or interstate organization should, to the maximum extent practicable, involve local governments and regional entities, Indian tribes, and public and private organizations that have expertise in the control of aquatic nuisance species.

(B) Upon the request of a State or the appropriate official of an interstate organization, the Task Force or the Assistant Secretary, as appropriate under paragraph (1), may provide technical assistance in developing and implementing

a management plan.

(4) PLAN APPROVAL.—Within 90 days after the submission of a management plan, the Task Force or the Assistant Secretary in consultation with the Task Force, as appropriate under paragraph (1), shall review the proposed plan and approve it if it meets the requirements of this subsection or return the plan to the Governor or the interstate organization with recommended modifications.

(b) GRANT PROGRAM.—

(1) STATE GRANTS.—The Director may, at the recommendation of the Task Force, make grants to States with manage-

ment plans approved under subsection (a) for the implementation of those plans.

(2) APPLICATION.—An application for a grant under this subsection shall include an identification and description of the best management practices and measures which the State proposes to utilize in implementing an approved management plan with any Federal assistance to be provided under the grant.

(3) FEDERAL SHARE.—

(A) The Federal share of the cost of each comprehensive management plan implemented with Federal assistance under this section in any fiscal year shall not exceed 75 percent of the cost incurred by the State in implementing such management program and the non-Federal share of such costs shall be provided from non-Federal sources.

(B) The Federal share of the cost of each public facility management plan implemented with Federal assistance under this section in any fiscal year shall not exceed 50 percent of the cost incurred by the State in implementing such management program and the non-Federal share of such costs shall be provided from non-Federal sources.

(4) ADMINISTRATIVE COSTS.—For the purposes of this section, administrative costs for activities and programs carried out with a grant in any fiscal year shall not exceed 5 percent of the amount of the grant in that year.

(5) IN-KIND CONTRIBUTIONS.—In addition to cash outlays and payments, in-kind contributions of property or personnel services by non-Federal interests for activities under this section may be used for the non-Federal share of the cost of those activities.

(c) ENFORCEMENT ASSISTANCE.—Upon request of a State or Indian tribe, the Director or the Under Secretary, to the extent allowable by law and in a manner consistent with section 141 of title 14, United States Code, may provide assistance to a State or Indian tribe in enforcing an approved State or interstate invasive species management plan.

(16 U.S.C. 4724)

SEC. 1205. RELATIONSHIP TO OTHER LAWS.

All actions taken by Federal agencies in implementing the provisions of section 1202 shall be consistent with all applicable Federal, State, and local environmental laws. Nothing in this title shall affect the authority of any State or political subdivision thereof

to adopt or enforce control measures for aquatic nuisance species, or diminish or affect the jurisdiction of any State over species of fish and wildlife. Compliance with the control and eradication measures of any State or political subdivision thereof regarding aquatic nuisance species shall not relieve any person of the obligation

to comply with the provisions of this subtitle.

(16 U.S.C. 4725)

#### SEC. 1206. INTERNATIONAL COOPERATION.

(a) ADVICE.—The Task Force shall provide timely advice to the Secretary of State concerning aquatic nuisance species that infest waters shared with other countries.

(b) NEGOTIATIONS.—The Secretary of State, in consultation with the Task Force, is encouraged to initiate negotiations with the governments of foreign countries concerning the planning and implementation

of prevention, monitoring, research, education, and control programs related to aquatic nuisance species infesting shared water resources.

(16 U.S.C. 4726)

#### SEC. 1207. INTENTIONAL INTRODUCTIONS POLICY REVIEW.

Within one year of the date of enactment of this Act, the Task Force shall, in consultation with State fish and wildlife agencies, other regional, State and local entities, potentially affected industries

and other interested parties, identify and evaluate approaches for reducing the risk of adverse consequences associated with intentional

introduction of aquatic organisms and submit a report of their findings, conclusions and recommendations to the Congress.

(16 U.S.C. 4727)

#### SEC. 1208. INJURIOUS SPECIES.

Section 42(a) of title 18, United States Code is amended by in

serting ``of the zebra mussel of the species *Dreissena polymorpha*;

after ``*Pteropus*;

#### SEC. 1209. BROWN TREE SNAKE CONTROL PROGRAM.

The Task Force shall, within the program developed under subsection (a), undertake a comprehensive, environmentally sound program in coordination with regional, territorial, State and local entities to control the brown tree snake (*Boiga irregularis*) in Guam and other areas where the species is established outside of its historic range.

(16 U.S.C. 4728)

Subtitle D—Authorizations of  
Appropriation

SEC. 1301. AUTHORIZATIONS.

(a) PREVENTION OF UNINTENTIONAL INTRODUCTIONS.—There are authorized to be appropriated to develop and implement the provisions of subtitle B—

(1) \$500,000 until the end of fiscal year 1992 to the Secretary to carry out sections 1101 and 1102(a)(3);

(2) \$2,000,000 until the end of fiscal year 1992 to the Director and Under Secretary to carry out the studies under sections 1102(a)(1) and 1102(a)(2);

(3) to the Secretary to carry out section 1101—

(A) \$2,000,000 for each of fiscal years 1997 and 1998; and

(B) \$3,000,000 for each of fiscal years 1999 through 2002;

(4) for each of fiscal years 1997 through 2002, to carry out paragraphs (1) and (2) of section 1102(b)—

(A) \$1,000,000 to the Department of the Interior, to be used by the Director; and

(B) \$1,000,000 to the Secretary; and

(5) for each of fiscal years 1997 through 2002—

(A) \$3,000,000, which shall be made available from funds otherwise authorized to be appropriated if such funds are so authorized, to the Under Secretary to carry out section 1102(e); and

(B) \$500,000 to the Secretary to carry out section 1102(f).

(b) TASK FORCE AND AQUATIC NUISANCE SPECIES PROGRAM.—

There are authorized to be appropriated for each of fiscal years 1997 through 2002 to develop and implement the provisions of

subtitle

C—

(1) \$6,000,000 to the Department of the Interior, to be used by the Director to carry out sections 1202 and 1209;

(2) \$1,000,000 to the Department of Commerce, to be used by the Under Secretary to carry out section 1202;

(3) \$1,625,000, which shall be made available from funds otherwise authorized to be appropriated if such funds are so authorized, to fund aquatic nuisance species prevention and

control research under section 1202(i) at the Great Lakes  
Environmental

Research Laboratory of the National Oceanic and  
Atmospheric Administration, of which \$500,000 shall be made  
available for grants, to be competitively awarded and subject  
to peer review, for research relating to Lake Champlain;

(4) \$5,000,000 for competitive grants for university research  
on aquatic nuisance species under section 1202(f)(3) as  
follows:

(A) \$2,800,000, which shall be made available from  
funds otherwise authorized to be appropriated if such  
funds are so authorized, to fund grants under section 205  
of the National Sea Grant College Program Act (33 U.S.C.  
1124);

(B) \$1,200,000 to fund grants to colleges for the benefit  
of agriculture and the mechanic arts referred to in the  
first section of the Act of August 30, 1890 (26 Stat. 417,  
chapter 841; 7 U.S.C. 322); and

(C) \$1,000,000 to fund grants through the Cooperative  
Fisheries and Wildlife Research Unit Program of the  
United States Fish and Wildlife Service;

(5) \$3,000,000 to the Department of the Army, to be used  
by the Assistant Secretary to carry out section 1202(i)(1)(B);  
and

(6) \$300,000 to the Department of the Interior, to be used  
by the Director to fund regional panels and similar entities  
under section 1203, of which \$100,000 shall be used to fund  
activities  
of the Great Lakes Commission.

(c) GRANTS FOR STATE MANAGEMENT PROGRAMS.—There are  
authorized to be appropriated for each of fiscal years 1997 through  
2002 \$4,000,000 to the Department of the Interior, to be used by  
the Director for making grants under section 1204, of which

\$1,500,000 shall be used by the Director, in consultation with the  
Assistant Secretary, for management of aquatic nuisance vegetation  
species.

(d) INTENTIONAL INTRODUCTIONS POLICY REVIEW.—There are  
authorized to be appropriated for fiscal year 1991, \$500,000 to the  
Director and the Under Secretary to conduct the intentional  
introduction  
policy review under section 1207.

(e) BALLAST WATER MANAGEMENT DEMONSTRATION  
PROGRAM.—There are authorized to be appropriated \$2,500,000 to  
carry out section 1104.

(f) RESEARCH.—There are authorized to be appropriated to the  
Director \$1,000,000 to carry out research on the prevention,  
monitoring,  
and control of aquatic nuisance species in Narragansett  
Bay, Rhode Island. The funds shall be made available for use by  
the Department of Environmental Management of the State of  
Rhode Island.

(16 U.S.C. 4741)

Subtitle E-Cooperative Environmental  
Analyses

SEC. 1401. ENVIRONMENTAL IMPACT ANALYSES.

The Secretary of State, in consultation with the Council on  
Environmental  
Quality, is encouraged to enter into negotiations with  
the governments of Canada and Mexico to provide for reciprocal  
cooperative  
environmental impact analysis of major Federal actions  
which have significant transboundary effects on the quality of the  
human environment in the United States, Canada, and Mexico.

(16 U.S.C. 4751)

TITLE II-GREAT LAKES FISH AND  
WILDLIFE RESTORATION 1

SECTION 2001. SHORT TITLE.

This title may be cited as the ``Great Lakes Fish and Wildlife  
Restoration Act of 1990``.

(16 U.S.C. 941 nt)

SEC. 2002. FINDINGS.

The Congress finds and declares the following:

(1) As the human population of the Great Lakes Basin has  
expanded to over 35,000,000 people, great demands have been  
placed on the lakes for use for boating and other recreation,  
navigation, municipal and industrial water supply, waste disposal,  
power production, and other purposes. These growing  
and often conflicting demands exert pressure on the fish and  
wildlife resources of the Great Lakes Basin, including in the  
form of contaminants, invasion by nonindigenous species, and  
Public Law 101-537 and Public Law 101-646 enacted identical sections.

that degradation and destruction, legal and illegal fishery resource  
harvest levels, and sea lamprey predation.

(2) The fishery resources of the Great Lakes support recreational  
fisheries enjoyed by more than 5,000,000 people annually  
and commercial fisheries providing approximately 9,000  
jobs. Together, these fisheries generate economic activity worth  
more than \$4,400,000,000 annually to the United States.

(3) The availability of a suitable forage base is essential to  
lake trout, walleye, yellow perch, and other recreational and  
commercially valuable fishery resources of the Great Lakes  
Basin. Protecting and restoring productive fish habitat, including

by protecting water quality, is essential to the successful recovery of Great Lakes Basin fishery resources.

(4) The Great Lakes Basin contains important breeding and migration habitat for all types of migratory birds. Many migratory bird species dependent on deteriorating Great Lakes Basin habitat have suffered serious population declines in recent years.

(5) Over 80 percent of the original wetlands in the Great Lakes Basin have been destroyed and such losses continue at a rate of 20,000 acres annually.

(6) Contaminant burdens in the fish and wildlife resources of the Great Lakes Basin are substantial and the impacts of those contaminants on the life functions of important fish and wildlife resources are poorly understood. Concern over the effects of those contaminants on human health have resulted in numerous public health advisories recommending restricted or no consumption of Great Lakes fish.

(7) The lower Great Lakes are uniquely different from the upper Great Lakes biologically, physically, and in the degree of human use and shoreline development, and special fishery resource assessments and management activities are necessary to respond effectively to these special circumstances.

(16 U.S.C. 941)

#### SEC. 2003. PURPOSE.

The purposes of this Act are—

(1) to carry out a comprehensive study of the status, and the assessment, management, and restoration needs, of the fishery resources of the Great Lakes Basin;

(2) to develop proposals to implement recommendations resulting from that study; and

(3) to provide assistance to the Great Lakes Fisheries Commission, States, Indian Tribes, and other interested entities to encourage cooperative conservation, restoration and management of the fish and wildlife resources and their habitat of the Great Lakes Basin.

(16 U.S.C. 941a)

#### SEC. 2004. DEFINITIONS.

In this Act—

(1) the term ``Administrator'' means the Administrator of the Environmental Protection Agency;

(2) the term ``Director'' means the Director of the United States Fish and Wildlife Service;

(3) the term ``fish stock'' means—

(A) a taxonomically distinct species or subspecies of fish; or

(B) any other aggregation of fish that are geographically,

ecologically, behaviorally, or otherwise limited from breeding with individuals from other groups of fish and are capable of management as a unit;

(4) the term "Great Lakes Basin" means the air, land, water, and living organisms within the drainage basin of the Saint Lawrence River at or upstream from the point at which the river becomes the international boundary between Canada and the United States;

(5) the term "Indian Tribe" means any Indian tribe, band, village, nation, or other organized group or community that is recognized by the Bureau of Indian Affairs as eligible for the special programs and services provided by the United States to Indians because of their status as Indians;

(6) the term "lower Great Lakes" means the region in which is located that portion of the Great Lakes Basin which is downstream from the confluence of the Saint Clair River and Lake Huron near Port Huron, Michigan;

(7) the term "upper Great Lakes" means that portion of the Great Lakes Basin which is upstream from the confluence of the Saint Clair River and Lake Huron near Port Huron, Michigan.

(8) the term "nonindigenous species" means a species of plant or animal that did not occur in the Great Lake Basin before European colonization of North America;

(9) the term "Secretary" means the Secretary of the Army; and

(10) the term "State Director" means the head of the agency, department, board, commission, or other governmental entity of each of the States of New York, Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, and the Commonwealth of Pennsylvania which is responsible for the management and conservation of the fish and wildlife resources of that State. (16 U.S.C. 941b)

#### SEC. 2005. GREAT LAKES FISHERY RESOURCES RESTORATION STUDY.

(a) IN GENERAL.—The Director shall conduct a comprehensive study of the status of, and the assessment, management, and restoration

needs of, the fishery resources of the Great Lakes Basin and shall provide the opportunity for the Secretary, the Administrator,

State Directors, Indian Tribes, the Great Lakes Fishery Commission, appropriate Canadian Government entities, and other appropriate entities to participate in the study. The Director shall complete the study by October 1, 1994.

(b) MEMORANDUM OF UNDERSTANDING.—To provide opportunities for the full participation of all affected entities in the planning and conduct of the study, the Director shall invite the entities identified

in subsection (a) to enter into a memorandum of understanding regarding the scope and focus of the study and the responsibilities of each participant for conducting the study.

(c) CONTENT OF STUDY.—A study under this section shall include, but not be limited to—

(1) identifying and describing the component drainages of the Great Lakes Basin (including the drainage for each of the Great Lakes), analyzing how the characteristics and current or expected land and water uses of those drainages have affected, and can be expected to affect in the future, the fishery resources and fish habitats of the Great Lakes Basin;

(2) analyzing historical fishery resource data for the Great Lakes Basin to identify the causes of past and continuing declines of the fishery resources and the impediments to restoring those resources;

(3) evaluating the adequacy, effectiveness, and consistency of current Great Lakes interagency fisheries management plans and Federal and State water quality programs, with respect to their effects on Great Lakes fishery resources;

(4) analyzing the impacts of, and management control alternatives for, recently introduced nonindigenous species, including the zebra mussel, the ruffe, and the spiny water flea in accordance with the Aquatic Nuisance Prevention and Control Act of 1990;

(5) developing recommendations regarding—

(A) an action plan to analyze the effects of contaminant levels on fishery resources;

(B) an action plan for the cooperative restoration and enhancement of depleted, nationally significant fish stocks, including lake trout, yellow perch, lake sturgeon, walleye, forage fish, and Atlantic salmon;

(C) planning and technical assistance that should be provided to the Great Lakes Fisheries Commission, States, and Indian Tribes to assist their fishery resource restoration efforts;

(D) mitigation measures to restore and enhance fishery resources adversely affected by past Federal (including federally assisted or approved) water resource development projects and other activities;

(E) increasing the involvement of the International Joint Commission, the Great Lakes Commission, the Great Lakes Fishery Commission, and other interjurisdictional entities regarding fishery resources protection, restoration, and enhancement;

(F) research projects and data gathering initiatives regarding population trends of fish stocks, including population abundance and structure, interspecific competition, survival rates, and behavioral patterns;

(G) important fishery resource habitat and other areas that should be protected, restored, or enhanced for the benefit of Great Lakes fishery resources;

(H) how private conservation organizations, recreational and commercial fishing interests, the aquaculture industry, and the general public could contribute to the implementation of the fishery resource restoration and enhancement recommendations developed pursuant to this

Act; and

(I) appropriate contributions that should be made by States and other non-Federal entities to the cost of activities undertaken to implement the recommendations, including a description of—

- (i) the activities that shall be cost-shared;
  - (ii) the entities or individuals which shall share the costs of those activities;
  - (iii) the proportion of appropriate project and activity costs that shall be borne by non-Federal interests;
- and
- (iv) how the entities or individuals who share costs should finance their contribution.

(d) PROPOSALS FOR IMPLEMENTING RECOMMENDATIONS.—The Director shall develop proposals for implementing the recommendations

of the study developed under subsection (c)(5). The proposals shall be consistent with the goals of the Great Lakes Water Quality Agreement, as revised in 1987, the 1954 Great lakes Fisheries Convention,

State and tribal fishery management jurisdiction, and the 1980 Joint Strategic Plan for the management of Great Lakes fishery resources.

(16 U.S.C. 941c)

#### SEC. 2006. GOALS OF UNITED STATES FISH AND WILDLIFE SERVICE PROGRAMS RELATED TO GREAT LAKES FISH AND WILDLIFE RESOURCES.

In administering programs of the United States Fish and Wild

life Service related to the Great Lakes Basin, the Director shall

seek to achieve the following goals:

- (1) Restoring and maintaining self-sustaining fishery resource populations.
  - (2) Minimizing the impacts of contaminants on fishery and wildlife resources.
  - (3) Protecting, maintaining, and, where degraded and destroyed, restoring fish and wildlife habitat, including the enhancement and creation of wetlands that result in a net gain in the amount of those habitats.
  - (4) Stopping illegal activities adversely impacting fishery and wildlife resources.
  - (5) Restoring threatened and endangered species to viable, self-sustaining levels.
  - (6) Protecting, managing, and conserving migratory birds.
- (16 U.S.C. 941d)

#### SEC. 2007. ESTABLISHMENT OF OFFICES.

(a) GREAT LAKES COORDINATION OFFICE.—The Director shall

establish a centrally located facility for the coordination of all United States Fish and Wildlife Service activities in the Great Lakes Basin, to be known as the "Great Lakes Coordination Office". The functional responsibilities of the Great Lakes Coordination Office shall include intra- and interagency coordination, information distribution, and public awareness outreach. The Great Lakes Coordination Office shall include all administrative and technical support necessary to carry out its responsibilities.

(b) LOWER GREAT LAKES FISHERY RESOURCES OFFICE.—The Director shall establish an office with necessary administrative and technical support services to carry out all United States Fish and Wildlife Service operational activities related to fishery resource protection, restoration, maintenance, and enhancement in the Lower Great Lakes. The office shall be known as the "Lower Great Lakes Fishery Resources Office", and shall be centrally located in the lower Great Lakes so as to facilitate fishery resource restoration and enhancement activities relating to the lower Great Lakes.

(c) UPPER GREAT LAKES FISHERY RESOURCES OFFICES.—The Director shall establish one or more offices with necessary administrative and technical support services to carry out United States Fish and Wildlife Service operational activities related to fishery resource protection, restoration, maintenance, and enhancement in the upper Great Lakes. Each of the offices shall be known as an "Upper Great Lakes Fishery Resources Office", and shall be appropriately located so as to facilitate fishery resource activities in the upper Great Lakes.

(16 U.S.C. 941e)

#### SEC. 2008. ANNUAL REPORTS.

Not later than 1 year after the date of the enactment of this Act and annually thereafter, the Director shall submit a report to the Committee on Merchant Marine and fisheries of the House of Representatives and the Committee on Environment and Public Works of the Senate. Each such report shall describe—

(1) the progress and findings of the studies conducted under section 2005, including recommendations of implementing activities, where appropriate, that would contribute to the restoration or improvement of one or more fish stocks of the Great Lakes Basin; and

(2) activities undertaken to accomplish the goals stated in section 2006.

(16 U.S.C. 941f)

#### SEC. 2009. AUTHORIZATION OF APPROPRIATIONS.

(a) There are authorized to be appropriated to the Director—

(1) for conducting a study under section 2005 not more than \$4,000,000 for each of fiscal years 1991 through 1994;  
(2) to establish and operate the Great Lakes Coordination Office under section 2008(a) and Upper Great Lakes Fishery Resources Offices under section 2008(c), not more than \$4,000,000 for each of fiscal years 1991 through 1995; and  
(3) to establish and operate the Lower Great Lakes Fishery Resources Offices under section 2008(b), not more than \$2,000,000 for each of fiscal years 1991 through 1995.

(b) There are authorized to be appropriated to the Secretary to carry out this Act, not more than \$1,500,000 for each of fiscal years

1991 through 1995.

(16 U.S.C. 941g)

### TITLE III—WETLANDS

#### SEC. 301. SHORT TITLE.

This title may be cited as the ``Coastal Wetlands Planning, Protection and Restoration Act''.

(16 U.S.C. 3951 nt)

#### SEC. 302. DEFINITIONS.

As used in this title, the term—

- (1) ``Secretary'' means the Secretary of the Army;
- (2) ``Administrator'' means the Administrator of the Environmental Protection Agency;
- (3) ``development activities'' means any activity, including the discharge of dredged or fill material, which results directly in a more than de minimus change in the hydrologic regime, bottom contour, or the type, distribution or diversity of hydrophytic vegetation, or which impairs the flow, reach, or circulation of surface water within wetlands or other waters;
- (4) ``State'' means the State of Louisiana;
- (5) ``coastal State'' means a State of the United States in, or bordering on, the Atlantic, Pacific, or Arctic Ocean, the Gulf of Mexico, Long Island Sound, or one or more of the Great Lakes; for the purposes of this title, the term also includes Puerto Rico, the Virgin Islands, Guam, the Commonwealth of the Northern Mariana Islands, and the Trust Territories of the Pacific Islands, and American Samoa;
- (6) ``coastal wetlands restoration project'' means any technically feasible activity to create, restore, protect, or enhance coastal wetlands through sediment and freshwater diversion, water management, or other measures that the Task Force finds will significantly contribute to the long-term restoration or protection of the physical, chemical and biological integrity of coastal wetlands in the State of Louisiana, and includes any such activity authorized under this title or under any other

provision of law, including, but not limited to, new projects, completion or expansion of existing or on-going projects, individual phases, portions, or components of projects and operation, maintenance and rehabilitation of completed projects; the primary purpose of a "coastal wetlands restoration project" shall not be to provide navigation, irrigation or flood control benefits;

(7) "coastal wetlands conservation project" means-

(A) the obtaining of a real property interest in coastal lands or waters, if the obtaining of such interest is subject to terms and conditions that will ensure that the real property will be administered for the long-term conservation of such lands and waters and the hydrology, water quality and fish and wildlife dependent thereon; and

(B) the restoration, management, or enhancement of coastal wetlands ecosystems if such restoration, management, or enhancement is conducted on coastal lands and waters that are administered for the long-term conservation of such lands and waters and the hydrology, water quality and fish and wildlife dependent thereon;

(8) "Governor" means the Governor of Louisiana;

(9) "Task Force" means the Louisiana Coastal Wetlands Conservation and Restoration Task Force which shall consist of the Secretary, who shall serve as chairman, the Administrator, the Governor, the Secretary of the Interior, the Secretary of Agriculture and the Secretary of Commerce; and

(10) "Director" means the Director of the United States Fish and Wildlife Service.

(16 U.S.C. 3951)

### SEC. 303. PRIORITY LOUISIANA COASTAL WETLANDS RESTORATION PROJECTS.

(a) PRIORITY PROJECT LIST.-

(1) PREPARATION OF LIST.-Within forty-five days after the date of enactment of this title, the Secretary shall convene the Task Force to initiate a process to identify and prepare a list of coastal wetlands restoration projects in Louisiana to provide for the long-term conservation of such wetlands and dependent fish and wildlife populations in order of priority, based on the cost-effectiveness of such projects in creating, restoring, protecting,

or enhancing coastal wetlands, taking into account the quality of such coastal wetlands, with due allowance for small-scale projects necessary to demonstrate the use of new techniques or materials for coastal wetlands restoration.

(2) TASK FORCE PROCEDURES.-The Secretary shall convene meetings of the Task Force as appropriate to ensure that the list is produced and transmitted annually to the Congress as required by this subsection. If necessary to ensure transmittal of the list on a timely basis, the Task Force shall produce the list by a majority vote of those Task Force members who are present and voting; except that no coastal wetlands restoration

project shall be placed on the list without the concurrence of the lead Task Force member that the project is cost effective and sound from an engineering perspective. Those projects which potentially impact navigation or flood control on the lower Mississippi River System shall be constructed consistent with section 304 of this Act.

(3) TRANSMITTAL OF LIST.—No later than one year after the date of enactment of this title, the Secretary shall transmit to the Congress the list of priority coastal wetlands restoration projects required by paragraph (1) of this subsection. Thereafter, the list shall be updated annually by the Task Force members and transmitted by the Secretary to the Congress as part of the President's annual budget submission. Annual transmittals of the list to the Congress shall include a status report on each project and a statement from the Secretary of the Treasury indicating the amounts available for expenditure to carry out this title.

(4) LIST OF CONTENTS.—

(A) AREA IDENTIFICATION; PROJECT DESCRIPTION.—The list of priority coastal wetlands restoration projects shall include, but not be limited to—

(i) identification, by map or other means, of the coastal area to be covered by the coastal wetlands restoration project; and

(ii) a detailed description of each proposed coastal wetlands restoration project including a justification for including such project on the list, the proposed activities to be carried out pursuant to each coastal wetlands restoration project, the benefits to be realized by

such project, the identification of the lead Task Force member to undertake each proposed coastal wetlands restoration project and the responsibilities of each other participating Task Force member, an estimated timetable for the completion of each coastal wetlands restoration project, and the estimated cost of each project.

(B) PRE-PLAN.—Prior to the date on which the plan required by subsection (b) of this section becomes effective, such list shall include only those coastal wetlands restoration projects that can be substantially completed during a five-year period commencing on the date the project is placed on the list.

(C) Subsequent to the date on which the plan required by subsection (b) of this section becomes effective, such list shall include only those coastal wetlands restoration projects that have been identified in such plan.

(5) FUNDING.—The Secretary shall, with the funds made available in accordance with section 306 of this title, allocate funds among the members of the Task Force based on the need for such funds and such other factors as the Task Force deems appropriate to carry out the purposes of this subsection.

(b) FEDERAL AND STATE PROJECT PLANNING.—

(1) PLAN PREPARATION.—The Task Force shall prepare a plan to identify coastal wetlands restoration projects, in order of priority, based on the cost-effectiveness of such projects in creating, restoring, protecting, or enhancing the long-term conservation

of coastal wetlands, taking into account the quality of such coastal wetlands, with due allowance for small-scale projects necessary to demonstrate the use of new techniques or materials for coastal wetlands restoration. Such restoration plan shall be completed within three years from the date of enactment

of this title.

(2) PURPOSE OF THE PLAN.—The purpose of the restoration plan is to develop a comprehensive approach to restore and prevent the loss of, coastal wetlands in Louisiana. Such plan shall coordinate and integrate coastal wetlands restoration projects in a manner that will ensure the long-term conservation of the coastal wetlands of Louisiana.

(3) INTEGRATION OF EXISTING PLANS.—In developing the restoration plan, the Task Force shall seek to integrate the ''Louisiana Comprehensive Coastal Wetlands Feasibility Study'' conducted by the Secretary of the Army and the ''Coastal Wetlands Conservation and Restoration Plan'' prepared by the State of Louisiana's Wetlands Conservation and Restoration Task Force.

(4) ELEMENTS OF THE PLAN.—The restoration plan developed pursuant to this subsection shall include—

(A) identification of the entire area in the State that contains coastal wetlands;

(B) identification, by map or other means, of coastal areas in Louisiana in need of coastal wetlands restoration projects;

(C) identification of high priority coastal wetlands restoration projects in Louisiana needed to address the areas identified in subparagraph (B) and that would provide for the long-term conservation of restored wetlands and dependent fish and wildlife populations;

(D) a listing of such coastal wetlands restoration projects, in order of priority, to be submitted annually, incorporating

any project identified previously in lists produced and submitted under subsection (a) of this section;

(E) a detailed description of each proposed coastal wetlands restoration project, including a justification for including such project on the list;

(F) the proposed activities to be carried out pursuant to each coastal wetlands restoration project;

(G) the benefits to be realized by each such project;

(H) an estimated timetable for completion of each coastal wetlands restoration project;

(I) an estimate of the cost of each coastal wetlands restoration project;

(J) identification of a lead Task Force member to undertake

each proposed coastal wetlands restoration project listed in the plan;

(K) consultation with the public and provision for public review during development of the plan; and

(L) evaluation of the effectiveness of each coastal wetlands restoration project in achieving long-term solutions to arresting coastal wetlands loss in Louisiana.

(5) PLAN MODIFICATION.—The Task Force may modify the restoration plan from time to time as necessary to carry out the purposes of this section.

(6) PLAN SUBMISSION.—Upon completion of the restoration plan, the Secretary shall submit the plan to the Congress. The restoration plan shall become effective ninety days after the date of its submission to the Congress.

(7) PLAN EVALUATION.—Not less than three years after the completion and submission of the restoration plan required by this subsection and at least every three years thereafter, the Task Force shall provide a report to the Congress containing a scientific evaluation of the effectiveness of the coastal wetlands restoration projects carried out under the plan in creating, restoring, protecting and enhancing coastal wetlands in Louisiana.

(c) COASTAL WETLANDS RESTORATION PROJECT BENEFITS.—

Where such a determination is required under applicable law, the net ecological, aesthetic, and cultural benefits, together with the economic benefits, shall be deemed to exceed the costs of any coastal

wetlands restoration project within the State which the Task Force finds to contribute significantly to wetlands restoration.

(d) CONSISTENCY.—(1) In implementing, maintaining, modifying, or rehabilitating navigation, flood control or irrigation projects, other than emergency actions, under other authorities, the Secretary, in consultation with the Director and the Administrator, shall ensure that such actions are consistent with the purposes of the restoration plan submitted pursuant to this section.

(2) At the request of the Governor of the State of Louisiana, the Secretary of Commerce shall approve the plan as an amendment to the State's coastal zone management program approved under section 306 of the Coastal Zone Management Act of 1972 (16 U.S.C. 1455).

(e) FUNDING OF WETLANDS RESTORATION PROJECTS.—The Secretary shall, with the funds made available in accordance with this title, allocate such funds among the members of the Task Force to carry out coastal wetlands restoration projects in accordance with the priorities set forth in the list transmitted in accordance with this section. The Secretary shall not fund a coastal wetlands restoration

project unless that project is subject to such terms and conditions as necessary to ensure that wetlands restored, enhanced or managed through that project will be administered for the long-term conservation of such lands and waters and dependent fish and wildlife populations.

(f) COST-SHARING.—

(1) FEDERAL SHARE.—Amounts made available in accordance with section 306 of this title to carry out coastal wetlands restoration projects under this title shall provide 75 percent of the cost of such projects.

(2) FEDERAL SHARE UPON CONSERVATION PLAN APPROVAL.—

Notwithstanding the previous paragraph, if the State develops a Coastal Wetlands Conservation Plan pursuant to this title, and such conservation plan is approved pursuant to section 304 of this title, amounts made available in accordance with section 306 of this title for any coastal wetlands restoration project under this section shall be 85 percent of the cost of the project. In the event that the Secretary, the Director, and the Administrator jointly determine that the State is not taking reasonable steps to implement and administer a conservation plan developed and approved pursuant to this title, amounts made available in accordance with section 306 of this title for any coastal wetlands restoration project shall revert to 75 percent of the cost of the project: Provided, however, that such reversion to the lower cost share level shall not occur until the Governor has been provided notice of, and opportunity for hearing on, any such determination by the Secretary, the Director, and Administrator, and the State has been given ninety days from such notice or hearing to take corrective action.

(3) FORM OF STATE SHARE.—The share of the cost required of the State shall be from a non-Federal source. Such State share shall consist of a cash contribution of not less than 5 percent

of the cost of the project. The balance of such State share may take the form of lands, easements, or right-of-way, or any other form of in-kind contribution determined to be appropriate by the lead Task Force member.

(4) Paragraphs (1), (2), and (3) of this subsection shall not affect the existing cost-sharing agreements for the following projects: Caernarvon Freshwater Diversion, Davis Pond Freshwater Diversion, and Bonnet Carre Freshwater Diversion.

(16 U.S.C. 3952)

#### SEC. 304. LOUISIANA COASTAL WETLANDS CONSERVATION PLANNING.

(a) DEVELOPMENT OF CONSERVATION PLAN.—

(1) AGREEMENT.—The Secretary, the Director, and the Administrator are directed to enter into an agreement with the Governor, as set forth in paragraph (2) of this subsection, upon notification of the Governor's willingness to enter into such agreement.

(2) TERMS OF AGREEMENT.—

(A) Upon receiving notification pursuant to paragraph (1) of this subsection, the Secretary, the Director, and the Administrator shall promptly enter into an agreement (hereafter in this section referred to as the "agreement")

with the State under the terms set forth in subparagraph (B) of this paragraph.

(B) The agreement shall—

- (i) set forth a process by which the State agrees to develop, in accordance with this section, a coastal wetlands conservation plan (hereafter in this section referred to as the "conservation plan");
- (ii) designate a single agency of the State to develop the conservation plan;
- (iii) assure an opportunity for participation in the development of the conservation plan, during the planning period, by the public and by Federal and State agencies;
- (iv) obligate the State, not later than three years after the date of signing the agreement, unless extended by the parties thereto, to submit the conservation plan to the Secretary, the Director, and the Administrator for their approval; and
- (v) upon approval of the conservation plan, obligate the State to implement the conservation plan.

(3) GRANTS AND ASSISTANCE.—Upon the date of signing the agreement—

(A) the Administrator shall, in consultation with the Director, with the funds made available in accordance with section 306 of this title, make grants during the development of the conservation plan to assist the designated State agency in developing such plan. Such grants shall not exceed 75 percent of the cost of developing the plan; and

(B) the Secretary, the Director, and the Administrator shall provide technical assistance to the State to assist it in the development of the plan.

(b) CONSERVATION PLAN GOAL.—If a conservation plan is developed pursuant to this section, it shall have a goal of achieving no net loss of wetlands in the coastal areas of Louisiana as a result of development activities initiated subsequent to approval of the plan, exclusive of any wetlands gains achieved through implementation

of the preceding section of this title.

(c) ELEMENTS OF CONSERVATION PLAN.—The conservation plan authorized by this section shall include—

(1) identification of the entire coastal area in the State that contains coastal wetlands;

(2) designation of a single State agency with the responsibility for implementing and enforcing the plan;

(3) identification of measures that the State shall take in addition to existing Federal authority to achieve a goal of no net loss of wetlands as a result of development activities, exclusive

of any wetlands gains achieved through implementation of the preceding section of this title;

(4) a system that the State shall implement to account for gains and losses of coastal wetlands within coastal areas for purposes of evaluating the degree to which the goal of no net loss of wetlands as a result of development activities in such wetlands or other waters has been attained;

(5) satisfactory assurances that the State will have adequate

personnel, funding, and authority to implement the plan;

(6) a program to be carried out by the State for the purpose of educating the public concerning the necessity to conserve wetlands;

(7) a program to encourage the use of technology by persons engaged in development activities that will result in negligible impact on wetlands; and

(8) a program for the review, evaluation, and identification of regulatory and nonregulatory options that will be adopted by the State to encourage and assist private owners of wetlands to continue to maintain those lands as wetlands.

(d) APPROVAL OF CONSERVATION PLAN.—

(1) IN GENERAL.—If the Governor submits a conservation plan to the Secretary, the Director, and the Administrator for their approval, the Secretary, the Director, and the Administrator shall, within one hundred and eighty days following receipt of such plan, approve or disapprove it.

(2) APPROVAL CRITERIA.—The Secretary, the Director, and the Administrator shall approve a conservation plan submitted by the Governor, if they determine that—

(A) the State has adequate authority to fully implement all provisions of such a plan;

(B) such a plan is adequate to attain the goal of no net loss of coastal wetlands as a result of development activities and complies with the other requirements of this section; and

(C) the plan was developed in accordance with terms of the agreement set forth in subsection (a) of this section.

(e) MODIFICATION OF CONSERVATION PLAN.—

(1) NONCOMPLIANCE.—If the Secretary, the Director, and the Administrator determine that a conservation plan submitted by the Governor does not comply with the requirements of subsection (d) of this section, they shall submit to the Governor a statement explaining why the plan is not in compliance and how the plan should be changed to be in compliance.

(2) RECONSIDERATION.—If the Governor submits a modified conservation plan to the Secretary, the Director, and the Administrator

for their reconsideration, the Secretary, the Director, and Administrator shall have ninety days to determine

whether the modifications are sufficient to bring the plan into compliance with requirements of subsection (d) of this section.

(3) APPROVAL OF MODIFIED PLAN.—If the Secretary, the Director, and the Administrator fail to approve or disapprove the conservation plan, as modified, within the ninety-day period following the date on which it was submitted to them by the Governor, such plan, as modified, shall be deemed to be approved effective upon the expiration of such ninety-day period.

(f) AMENDMENTS TO CONSERVATION PLAN.—If the Governor amends the conservation plan approved under this section, any such amended plan shall be considered a new plan and shall be subject to the requirements of this section; except that minor

changes to such plan shall not be subject to the requirements of this section.

(g) IMPLEMENTATION OF CONSERVATION PLAN.—A conservation plan approved under this section shall be implemented as provided therein.

(h) FEDERAL OVERSIGHT.—

(1) INITIAL REPORT TO CONGRESS.—Within one hundred and eighty days after entering into the agreement required under subsection (a) of this section, the Secretary, the Director, and the Administrator shall report to the Congress as to the status of a conservation plan approved under this section and the progress of the State in carrying out such a plan, including and accounting, as required under subsection (c) of this section, of the gains and losses of coastal wetlands as a result of development activities.

(2) REPORT TO CONGRESS.—Twenty-four months after the initial one hundred and eighty day period set forth in paragraph (1), and at the end of each twenty-four-month period thereafter, the Secretary, the Director, and the Administrator shall, report to the Congress on the status of the conservation plan and provide an evaluation of the effectiveness of the plan in meeting the goal of this section.

(16 U.S.C. 3953)

#### SEC. 305 NATIONAL COASTAL WETLANDS CONSERVATION GRANTS.

(a) MATCHING GRANTS.—The Director shall, with the funds made available in accordance with the next following section of this title, make matching grants to any coastal State to carry out coastal wetlands conservation projects from funds made available for that purpose.

(b) PRIORITY.—Subject to the cost-sharing requirements of this section, the Director may grant or otherwise provide any matching moneys to any coastal State which submits a proposal substantial in character and design to carry out a coastal wetlands conservation project. In awarding such matching grants, the Director shall give priority to coastal wetlands conservation projects that are—

(1) consistent with the National Wetlands Priority Conservation Plan developed under section 301 of the Emergency

Wetlands Resources Act (16 U.S.C. 3921); and

(2) in coastal States that have established dedicated funding for programs to acquire coastal wetlands, natural areas and open spaces. In addition, priority consideration shall be

given to coastal wetlands conservation projects in maritime forests on coastal barrier islands.

(c) CONDITIONS.—The Director may only grant or otherwise provide matching moneys to a coastal State for purposes of carrying out a coastal wetlands conservation project if the grant or provision is subject to terms and conditions that will ensure that any real property interest acquired in whole or in part, or enhanced,

managed, or restored with such moneys will be administered for the long-term conservation of such lands and waters and the fish and wildlife dependent thereon.

(d) COST-SHARING.—

(1) FEDERAL SHARE.—Grants to coastal States of matching moneys by the Director for any fiscal year to carry out coastal wetlands conservation projects shall be used for the payment of not to exceed 50 percent of the total costs of such projects: except that such matching moneys may be used for payment of not to exceed 75 percent of the costs of such projects if a coastal State has established and is using one of the following for the purpose of acquiring coastal wetlands, other natural areas or open spaces:

(A) a trust fund from which the principal is not spent; or  
(B) a fund derived from a dedicated recurring source of monies including, but not limited to, real estate transfer fees or taxes, cigarette taxes, tax check-offs, or motor vehicle license plate fees.

(2) FORM OF STATE SHARE.—The matching moneys required of a coastal State to carry out a coastal wetlands conservation project shall be derived from a non-Federal source.

(3) IN-KIND CONTRIBUTIONS.—In addition to cash outlays and payments, in-kind contributions of property or personnel services by non-Federal interests for activities under this section may be used for the non-Federal share of the cost of those activities.

(e) PARTIAL PAYMENTS.—

(1) The Director may from time to time make matching payments to carry out coastal wetlands conservation projects as such projects progress, but such payments, including previous payments, if any, shall not be more than the Federal pro rata share of any such project in conformity with subsection (d) of this section.

(2) The Director may enter into agreements to make matching payments on an initial portion of a coastal wetlands conservation project and to agree to make payments on the remaining Federal share of the costs of such project from subsequent moneys if and when they become available. The liability of the United States under such an agreement is contingent upon the continued availability of funds for the purpose of this section.

(f) WETLANDS ASSESSMENT.—The Director shall, with the funds made available in accordance with the next following section of this title, direct the U.S. Fish and Wildlife Service's National Wetland Inventory to update and digitize wetlands maps in the State of Texas and to conduct an assessment of the status, condition, and trends of wetlands in that State.

December 29, 2000

(16 U.S.C. 3954)

SEC. 306. DISTRIBUTION OF APPROPRIATIONS.

(a) PRIORITY PROJECT AND CONSERVATION PLANNING EXPENDI-

TURES.—Of the total amount appropriated during a given fiscal year to carry out this title, 70 percent, not to exceed \$70,000,000, shall be available, and shall remain available until expended, for the purposes of making expenditures—

(1) not to exceed the aggregate amount of \$5,000,000 annually to assist the Task Force in the preparation of the list required under this title and the plan required under this title, including preparation of—

(A) preliminary assessments;  
(B) general or site-specific inventories;  
(C) reconnaissance, engineering or other studies;  
(D) preliminary design work; and  
(E) such other studies as may be necessary to identify and evaluate the feasibility of coastal wetland restoration projects;

(2) to carry out coastal wetlands restoration projects in accordance with the priorities set forth on the list prepared under this title;

(3) to carry out wetlands restoration projects in accordance with the priorities set forth in the restoration plan prepared under this title;

(4) to make grants not to exceed \$2,500,000 annually or \$10,000,000 in total, to assist the agency designated by the State in development of the Coastal Wetlands Conservation Plan pursuant to this title.

(b) COASTAL WETLANDS CONSERVATION GRANTS.—Of the total amount appropriated during a given fiscal year to carry out this title, 15 percent, not to exceed \$15,000,000 shall be available, and shall remain available to the Director, for purposes of making grants—

(1) to any coastal State, except States eligible to receive funding under section 306(a), to carry out coastal wetlands conservation

projects in accordance with section 305 of this title;  
and

(2) in the amount of \$2,500,000 in total for an assessment of the status, condition, and trends of wetlands in the State of Texas.

(c) NORTH AMERICAN WETLANDS CONSERVATION.—Of the total amount appropriated during a given fiscal year to carry out this title, 15 percent, not to exceed \$15,000,000, shall be available to, and shall remain available until expended by, the Secretary of the Interior for allocation to carry out wetlands conservation projects in coastal wetlands ecosystems in any coastal State under section 8 of the North American Wetlands Conservation Act (Public Law 101-233, 103 Stat. 1968, December 13, 1989).

(16 U.S.C. 3955)

#### SEC. 307. GENERAL PROVISIONS.

(a) ADDITIONAL AUTHORITY FOR THE CORPS OF ENGINEERS.—

The Secretary is authorized to carry out projects for the protection, restoration, or enhancement of aquatic and associated ecosystems,

including projects for the protection, restoration, or creation of wetlands and coastal ecosystems. In carrying out such projects, the Secretary shall give such projects equal consideration with projects relating to irrigation, navigation, or flood control.

(b) STUDY.—The Secretary is hereby authorized and directed to study the feasibility of modifying the operation of existing navigation and flood control projects to allow for an increase in the share of the Mississippi River flows and sediment sent down the Atchafalaya River for purposes of land building and wetlands nourishment.

(16 U.S.C. 3956)

#### SEC. 308. CONFORMING AMENDMENT.

16 U.S.C. 777c is amended by adding the following after the first sentence: ``The Secretary shall distribute 18 per centum of each annual appropriation made in accordance with the provisions of section 777b of this title as provided in the Coastal Wetlands Planning, Protection and Restoration Act: Provided, That, notwithstanding the provisions of section 777b, such sums shall remain available to carry out such Act through fiscal year 1999.'`.

#### TITLE IV—GREAT LAKES OIL POLLUTION RESEARCH AND DEVELOPMENT

##### SEC. 4001. SHORT TITLE.

This title may be cited as the ``Great Lakes Oil Pollution Research and Development Act``.

##### SEC. 4002. GREAT LAKES OIL POLLUTION RESEARCH AND DEVELOPMENT.

Section 7001 of the Oil Pollution Act of 1990 (Public Law 101-380) is amended as follows:

- (1) GREAT LAKES DEMONSTRATION PROJECT.—In subsection (c)(6), strike ``3`` and insert ``4``, strike ``and`` after ``California``, and insert ``and (D) ports on the Great Lakes,`` after ``Louisiana,``.
- (2) FUNDING.—In subsection (f) strike ``21,250,000`` and insert ``22,000,000`` and in subsection (f)(2) strike ``2,250,000`` and insert ``3,000,000``.

**APPENDIX B: SECTION 1204 OF THE NATIONAL INVASIVE SPECIES ACT OF 1996**

**SEC. 1204. STATE AQUATIC NUISANCE SPECIES MANAGEMENT PLANS.**

(a) STATE OR INTERSTATE INVASIVE SPECIES MANAGEMENT PLANS.

(1) IN GENERAL. -- After providing notice and opportunity for public comment, the Governor of each State may prepare and submit, or the Governors of the States and the governments of Indian Tribes involved in an interstate organization, may jointly prepare and submit –

(A) a comprehensive management plan to the Task Force for approval which identifies those areas or activities within the State or within the interstate region involved, other than those related to public facilities, for which technical, enforcement, or financial assistance (or any combination thereof) is needed to eliminate or reduce the environmental, public health, and safety risk associated with aquatic nuisance species, particularly the zebra mussel; and

(B) a public facility management plan to the Assistant Secretary for approval which is limited solely to identifying those public facilities within the State or within the interstate region involved for which technical and financial assistance is needed to reduce infestations of zebra mussels.

(2) CONTENT. -- Each plan shall, to the extent possible, identify the management practices and measures that will be undertaken to reduce infestations of aquatic nuisance species. Each plan shall –

(A) identify and describe State and local programs for environmentally sound prevention and control of the target aquatic nuisance species;

(B) identify Federal activities that may be needed for environmentally sound prevention and control of aquatic nuisance species and a description of the manner in which those activities should be coordinated with State and local government activities;

(C) identify any authority that the State (or any State or Indian Tribe involved in the interstate organization) does not have at the time of the development of the plan that may be necessary for the State (or any

State or Indian Tribe involved in the interstate organization) to protect public health, property, and the environment from harm by aquatic nuisance species; and

(D) a schedule of implementing the plan, including a schedule of annual objectives, and enabling legislation.

(3) CONSULTATION –

(A) In developing and implementing a management plan, the State or interstate organization should, to the maximum extent practicable, involve local governments and regional entities, Indian Tribes, and public and private organizations that have expertise in the control of aquatic nuisance species.

(B) Upon the request of a State or the appropriate official of an interstate organization, the Task Force or the Assistant Secretary, as appropriate under paragraph (1), may provide technical assistance in developing and implementing a management plan.

(4) PLAN APPROVAL. -- Within 90 days after the submission of a management plan, the Task Force or the Assistant Secretary in consultation with the Task Force, as appropriate under paragraph (1), shall review the proposed plan and approve it if it meets the requirements of this subsection or return the plan to the Governor or the interstate organization with recommended modifications.

(b) GRANT PROGRAM. –

(1) STATE GRANTS. – The Director may, at the recommendation of the Task Force, make grants to States with management plans approved under subsection (a) for the implementation of those plans.

(2) APPLICATION. – An application for a grant under this subsection shall include an identification and description of the best management practices and measures which the state proposes to utilize in implementing an approved management plan with any Federal assistance to be provided under the grant.

(3) FEDERAL SHARE. –

(A) The Federal share of the cost of each comprehensive management plan implemented with Federal assistance under this section in any fiscal year shall not exceed 75 percent of the cost incurred by the State in implementing such management program and the non-Federal share of such costs shall be provided from non-Federal sources.

(B) The Federal share of the cost of each public facility management plan implemented with Federal assistance under this section in any fiscal year shall not exceed 50 percent of the cost incurred by the State in implementing such management program and the non-Federal share of such costs shall be provided from non-Federal sources.

(4) ADMINISTRATIVE COSTS. – For the purposes of this section, administrative costs for activities and programs carried out with a grant in any fiscal year shall not exceed 5 percent of the amount of the grant in that year.

(5) IN-KIND CONTRIBUTIONS.—In addition to cash outlays and payments, in-kind contributions of property or personnel services by non-Federal interests for activities under this section may be used for the non-Federal share of the cost of those activities.

(c) ENFORCEMENT ASSISTANCE.—Upon request of a State or Indian Tribe, the Director or Under Secretary, to the extent allowable by law and in a manner consistent with section 141 of title 14, United States Code, may provide assistance to a State or Indian Tribe in enforcing an approved State or interstate invasive species management plan.

## APPENDIX C: Executive Order 13112

Executive Order 13112 of February 3, 1999

### Invasive Species

By the authority vested in me as President by the Constitution and the laws of the United States of America, including the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 et seq.), Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990, as amended (16 U.S.C. 4701 et seq.), Lacey Act, as amended (18 U.S.C. 42), Federal Plant Pest Act (7 U.S.C. 150aa et seq.), Federal Noxious Weed Act of 1974, as amended (7 U.S.C. 2801 et seq.), Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.), and other pertinent statutes, to prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health impacts that invasive species cause, it is ordered as follows:

#### Section 1. Definitions.

- (a) "Alien species" means, with respect to a particular ecosystem, any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem.
- (b) "Control" means, as appropriate, eradicating, suppressing, reducing, or managing invasive species populations, preventing spread of invasive species from areas where they are present, and taking steps such as restoration of native species and habitats to reduce the effects of invasive species and to prevent further invasions.
- (c) "Ecosystem" means the complex of a community of organisms and its environment.
- (d) "Federal agency" means an executive department or agency, but does not include independent establishments as defined by 5 U.S.C. 104. (e) "Introduction" means the intentional or unintentional escape, release, dissemination, or placement of a species into an ecosystem as a result of human activity.
- (f) "Invasive species" means an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health.
- (g) "Native species" means, with respect to a particular ecosystem, a species that, other than as a result of an introduction, historically occurred or currently occurs in that ecosystem.
- (h) "Species" means a group of organisms all of which have a high degree of physical and genetic similarity, generally interbreed only among themselves, and show persistent differences from members of allied groups of organisms.
- (i) "Stakeholders" means, but is not limited to, State, tribal, and local government agencies, academic institutions, the scientific community, nongovernmental entities including environmental, agricultural, and conservation organizations, trade groups, commercial interests, and private landowners.
- (j) "United States" means the 50 States, the District of Columbia, Puerto Rico, Guam, and all possessions, territories, and the territorial sea of the United States.

Sec. 2. Federal Agency Duties. (a) Each Federal agency whose actions may affect the status of invasive species shall, to the extent practicable and permitted by law.

- 1) identify such actions;
  - 2) subject to the availability of appropriations, and within Administration budgetary limits, use relevant programs and authorities to: (i) prevent the introduction of invasive species; (ii) detect and respond rapidly to and control populations of such species in a cost-effective and environmentally sound manner; (iii) monitor invasive species populations accurately and reliably; (iv) provide for restoration of native species and habitat conditions in ecosystems that have been invaded; (v) conduct research on invasive species and develop technologies to prevent introduction and provide for environmentally sound control of invasive species; and (vi) promote public education on invasive species and the means to address them; and
  - 3) not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless, pursuant to guidelines that it has prescribed, the agency has determined and made public its determination that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk of harm will be taken in conjunction with the actions.
- (b) federal agencies shall pursue the duties set forth in this section in consultation with the Invasive Species Council, consistent with the Invasive Species Management Plan and in cooperation with stakeholders, as appropriate, and, as approved by the Department of State, when Federal agencies are working with international organizations and foreign nations.

Sec. 3. Invasive Species Council. (a) An Invasive Species Council (Council) is hereby established whose members shall include the Secretary of State, the Secretary of the Treasury, the Secretary of Defense, the Secretary of the Interior, the Secretary of Agriculture, the Secretary of Commerce, the Secretary of Transportation, and the Administrator of the Environmental Protection Agency. The Council shall be Co-Chaired by the Secretary of the Interior, the Secretary of Agriculture, and the Secretary of Commerce. The Council may invite additional Federal agency representatives to be members, including representatives from subcabinet bureaus or offices with significant responsibilities concerning invasive species, and may prescribe special procedures for their participation. The Secretary of the Interior shall, with concurrence of the Co-Chairs, appoint an Executive Director of the Council and shall provide the staff and administrative support for the Council.

- (b) The Secretary of the Interior shall establish an advisory committee under the Federal Advisory Committee Act, 5 U.S.C. App., to provide information and advice for consideration by the Council, and shall, after consultation with other members of the Council, appoint members of the advisory committee representing stakeholders. Among other things, the advisory committee shall recommend plans and actions at local, tribal, State, regional, and ecosystem-based levels to achieve the goals and objectives of the Management Plan in section 5 of this order. The advisory committee shall act in cooperation with stakeholders and existing organizations addressing invasive species. The Department of the Interior shall provide the administrative and financial support for the advisory committee.

Sec. 4. Duties of the Invasive Species Council. The Invasive Species Council shall provide national leadership regarding invasive species, and shall:

- (a) oversee the implementation of this order and see that the Federal agency activities concerning invasive species are coordinated, complementary, cost-efficient, and effective, relying to the extent feasible and appropriate on existing organizations addressing invasive species, such as the Aquatic Nuisance Species Task Force, the Federal Interagency Committee for the Management of Noxious and Exotic Weeds, and the Committee on Environment and Natural Resources;
- (b) encourage planning and action at local, tribal, State, regional, and ecosystem-based levels to achieve the goals and objectives of the Management Plan in section 5 of this order, in cooperation with stakeholders and existing organizations addressing invasive species;
- (c) develop recommendations for international cooperation in addressing invasive species; develop, in consultation with the Council on Environmental Quality, guidance to Federal agencies pursuant to the National Environmental Policy Act on prevention and control of invasive species, including the procurement, use, and maintenance of native species as they affect invasive species;
- (d) facilitate development of a coordinated network among Federal agencies to document, evaluate, and monitor impacts from invasive species on the economy, the environment, and human health;
- (e) facilitate establishment of a coordinated, up-to-date information-sharing system that utilizes, to the greatest extent practicable, the Internet; this system shall facilitate access to and exchange of information concerning invasive species, including, but not limited to, information on distribution and abundance of invasive species; life histories of such species and invasive characteristics; economic, environmental, and human health impacts; management techniques, and laws and programs for management, research, and public education; and
- (f) prepare and issue a national Invasive Species Management Plan set forth in section 5 of this order.

Sec. 5. Invasive Species Management Plan. (a) Within 18 months after issuance of this order, the Council shall prepare and issue the first edition of a National Invasive Species Management Plan (Management Plan), which shall detail and recommend performance-oriented goals and objectives and specific measures of success for Federal agency efforts concerning invasive species. The Management Plan shall recommend specific objectives and measures for carrying out each of the Federal agency duties established in section 2

- (a) of this order and shall set forth steps to be taken by the Council to carry out the duties assigned to it under section 4 of this order. The Management Plan shall be developed through a public process and in consultation with Federal agencies and stakeholders.
- (b) The first edition of the Management Plan shall include a review of existing and prospective approaches and authorities for preventing the introduction and spread of invasive species, including those for identifying pathways by which invasive species are introduced and for minimizing the risk of introductions via those pathways, and shall identify research needs and recommend measures to minimize the risk that introductions will occur. Such recommended measures shall provide for a science-based process to evaluate risks associated with introduction and spread of invasive species and a coordinated and systematic risk-based process to identify, monitor, and interdict pathways that may be involved in the introduction

of invasive species. If recommended measures are not authorized by current law, the Council shall develop and recommend to the President through its Co-Chairs legislative proposals for necessary changes in authority.

- (c) The Council shall update the Management Plan biennially and shall concurrently evaluate and report on success in achieving the goals and objectives set forth in the Management Plan. The Management Plan shall identify the personnel, other resources, and additional levels of coordination needed to achieve the Management Plan's identified goals and objectives, and the Council shall provide each edition of the Management Plan and each report on it to the Office of Management and Budget. Within 18 months after measures have been recommended by the Council in any edition of the Management Plan, each Federal agency whose action is required to implement such measures shall either take the action recommended or shall provide the Council with an explanation of why the action is not feasible. The Council shall assess the effectiveness of this order no less than once each 5 years after the order is issued and shall report to the Office of Management and Budget on whether the order should be revised.

Sec. 6. Judicial Review and Administration. (a) This order is intended only to improve the internal management of the executive branch and is not intended to create any right, benefit, or trust responsibility, substantive or procedural, enforceable at law or equity by a party against the United States, its agencies, its officers, or any other person.

(b) Executive Order 11987 of May 24, 1977, is hereby revoked.

(c) The requirements of this order do not affect the obligations of Federal agencies under 16 U.S.C. 4713 with respect to ballast water programs.

(d) The requirements of section 2(a)(3) of this order shall not apply to any action of the Department of State or Department of Defense if the Secretary of State or the Secretary of Defense finds that exemption from such requirements is necessary for foreign policy or national security reasons.

WILLIAM J. CLINTON

THE WHITE HOUSE,  
February 3, 1999

## APPENDIX D: Federal laws relevant to AIS issues in Arizona

Dept. or Agency	Authority	Provisions	Organisms Addressed	Pathways or Means of Transport	Website
APHIS	Plant Protection Act (2000)	Consolidates & modernizes several major statutes (Plant Quarantine Act, Federal Plant Pest Act, Federal Noxious Weed Act, Organic Act of 1944, & others), replacing them with one flexible statutory framework providing the ability to prohibit or restrict imports, exports, & interstate movement; assess higher civil penalties; issue subpoenas; conduct inspections without a warrant; cooperate with industry & others in “quality assurance” programs; recover costs related to disposal of abandoned shipments; & take emergency action. By expanding the definition of “noxious weed” the Act enables APHIS to address a broader range of weed problems.	Plants & plant material; plant pests; noxious weeds; & biological control agents.	Unintentional & intentional introduction.	
All federal agencies	EO 13112 (Feb. 1999)	<p>Defines invasive species (“any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem”).</p> <p>Directs all federal agencies to:</p> <ul style="list-style-type: none"> <li>-address invasive species concerns;</li> <li>-refrain from actions likely to increase invasive species problems.</li> </ul> <p>Creates interagency Invasive Species Council.</p> <p>Calls for National Invasive Species Management Plan to better coordinate federal agency efforts.</p>	All	Unintentional and intentional introductions: escape, release.	<a href="http://www.invasivespecies.gov">www.invasivespecies.gov</a>
USFWS USCG EPA	NISA (1996)	Reauthorized & amended NANPCA to mandate regulations to prevent introduction & spread of ANS into Great Lakes through ballast water. Authorized funding for research on ANS prevention & control.	ANS & brown tree snake.	Unintentional introductions: ballast water	<a href="http://www.nemw.org/nisa.htm">http://www.nemw.org/nisa.htm</a>

Dept. or Agency	Authority	Provisions	Organisms Addressed	Pathways or Means of Transport	Website
CoE NOAA		<p>Required a ballast water management program to demonstrate technologies &amp; practices to prevent alien species from being introduced.</p> <p>Modified composition of ANS Task Force.</p> <p>Required Task Force to develop &amp; implement comprehensive program to control the brown tree snake in Guam</p>			
DOA DOI	Agreement on the Application of Sanitary & Phytosanitary Measures (SPS Agreement) (1995)	A supplementary agreement to the World Trade Organization Agreement. Provides a uniform interpretation of the measures governing safety & plant & animal health regulations. Applicable to all sanitary & phytosanitary measures directly or indirectly affecting international trade. Sanitary & phytosanitary measures are defined as any measure applied: a) to protect animal or plant life or health within (a Members' Territory) from entry, establishment or spread of pests, diseases, disease carrying organisms; b) to prevent or limit other damage within the (Members Territory) from the entry, establishment or spread of pests (annex A).	Pests, diseases, disease-carrying organisms, or disease-causing organisms.	Importation	<a href="http://www.wto.org/goods/psagr.htm">http://www.wto.org/goods/psagr.htm</a>
USFWS	Wild Bird Conservation Act (1992)	Regulates importation of foreign wild birds.	Birds & nonnative parasites & diseases transported by foreign birds	Importation	<a href="http://international.fws.gov/global/law102.html">http://international.fws.gov/global/law102.html</a>
USFWS USCG EPA CoE NOAA	NANPCA (1990)	Established ANS Task Force to: identify areas where ballast water does not pose an environmental threat; assess whether aquatic nuisance species threaten the ecological characteristics & economic uses of US waters (other than the Great Lakes); determine the need for controls on vessels entering US waters (other than Great Lakes); identify & evaluate approaches for reducing risk of adverse consequences associated with	ANS	Unintentional introductions: ballast water.	<a href="http://www.anstaskforce.gov/toc.htm">http://www.anstaskforce.gov/toc.htm</a>

Dept. or Agency	Authority	Provisions	Organisms Addressed	Pathways or Means of Transport	Website
		<p>intentional introduction of aquatic species.</p> <p>Directs Coast Guard to issue regulations to prevent the Introduction &amp; spread of aquatic nuisance species into the Great Lakes through ballast water.</p> <p>Directs CoE to develop a program of research &amp; technology to control zebra mussels in &amp; around public facilities &amp; make information available about control methods.</p>			
DOI	Convention on International Trade in Endangered Species (CITES) (1975)	Represents alternate model for regulating invasive species not already covered by the other agreements. Convention intended to prevent harm in exporting country; however, can be applied when species is endangered in exporting country & considered an invasive in importing country.	Species of flora & fauna which are threatened or endangered in exporting countries (Appendices I, II & III-see web site).	Intentional introductions through trade: export, re-export, import & introduction from the sea.	<a href="http://international.fws.gov/global/citextxt.html">http://international.fws.gov/global/citextxt.html</a> 1 (For appendices, see: <a href="http://international.fws.gov/global/cites.html">http://international.fws.gov/global/cites.html</a> )
DOD	Convention on the prohibition of the development, production and stockpiling of bacteriological (biological) and toxin weapons and on their destruction (Biological Weapons)	<p>Article I prohibits parties from developing, producing, stockpiling, acquiring or retaining microbial or other biological agents which are not justified by exclusively peaceful purpose.</p> <p>Article II requires parties to destroy or divert to peaceful purpose all such agents within 9 months of entry into force of the Convention.</p>	“Microbial or other biological agents... whatever their origin or method of production, of types & in quantities that have no justification for prophylactic, protective or other peaceful purposes.”	“Weapons, equipment or means of delivery designed to use such agents or toxins for hostile purposes.”	<a href="http://sun00781.dn.net/nuke/control/bwc/text/bwc.htm">http://sun00781.dn.net/nuke/control/bwc/text/bwc.htm</a>

Dept. or Agency	Authority	Provisions	Organisms Addressed	Pathways or Means of Transport	Website
	Convention) (1975)		Allows for “international exchange of bacteriological agents & toxins & equipment for the processing, use or production of bacteriological agents & toxins for peaceful purposes.”		
Federal land management agencies	Federal Noxious Weed Act of 1974	Although the Plant Protection Act superseded & repealed most of the Federal Noxious Weed Act, it left intact Section 15 (management of undesirable plants on Federal lands). Requires Federal land management agencies to develop & establish a management program for control of undesirable plants on federal lands under the agencies’ jurisdiction. Requires those agencies to coordinate management where similar programs are being implemented on state & private lands in the same area.	Noxious weeds;  undesirable plant species.	Control on Federal lands.	<a href="http://refuges.fws.gov/FIC/MNEWF/iles/FederalNoxiousWeedAct.html">http://refuges.fws.gov/FIC/MNEWF/iles/FederalNoxiousWeedAct.html</a>
USFWS NMFS	Endangered Species Act (1973)	Protects endangered species. When nonnative invasive species threaten endangered species, this act could be used as basis for their eradication.	Alien species posing a danger to endangered species.	Not specified.	<a href="http://endangered.fws.gov/esa.html">http://endangered.fws.gov/esa.html</a>
All	National Environmental Policy Act (1970)	Requires federal government agencies to consider the environmental effects of their actions through preparation of environmental impact statements (or environmental assessments to determine whether a full EIS is required). Effects of nonnative species, if harmful to the environment, must be included in the EIS.	Nonnative species posing harm to the environment.	Intentional introductions related to major federal actions.	<a href="http://es.epa.gov/oe/ca/ofa/nea.html">http://es.epa.gov/oe/ca/ofa/nea.html</a>

Dept. or Agency	Authority	Provisions	Organisms Addressed	Pathways or Means of Transport	Website
APHIS	International Plant Protection Convention (1952)	Applies primarily to quarantine pests in international trade. Creates an international regime to prevent spread & introduction of plant & plant product pests premised on exchange of phytosanitary certificates between importing & exporting countries' national plant protection offices. Parties have national plant protection organizations established according to the Convention with authority in relation to quarantine control, risk analysis & other measures required to prevent the establishment & spread of all invasive alien species that, directly or indirectly, are pests of plants. Parties agree to cooperate on information exchange & on the development of International Standards for Phytosanitary Measures.	Pests of plants or plant products: "any form of plant or animal life, or any pathogenic agent, injurious or potentially injurious to plants or plant products"  Quarantine pests involved with international trade: "pest of potential national economic importance to the country endangered thereby & not yet present there, or present but not widely distributed & being actively controlled"	"Storage places, conveyances, containers and any other object or material capable of harboring or spreading plant pests, especially where international transportation is involved."  Packing material or matter of any kind accompanying plant products;  storage places; or transportation facilities.	<a href="http://www.fao.org/legal/treaties/004t-e.htm">http://www.fao.org/legal/treaties/004t-e.htm</a>
EPA	Federal Insecticide, Fungicide, and Rodenticide Act (1947)	Gives EPA authority to regulate importation & distribution of substances, including organisms, which are intended to function as pesticides.	Biological control agents (In terms of biological control agents, EPA currently regulates only eukaryotic & prokaryotic microorganisms under FIFRA. Other	Intentional introduction .	<a href="http://www.epa.gov/pesticides/fifra.htm">http://www.epa.gov/pesticides/fifra.htm</a>

Dept. or Agency	Authority	Provisions	Organisms Addressed	Pathways or Means of Transport	Website
			biocontrol agents are exempt because they are “adequately regulated” by another agency, i.e., APHIS.).		
APHIS AMS	Federal Seed Act (1939)	Requires accurate labeling & purity standards for seeds in commerce.  Prohibits importation & movement of adulterated or misbranded seeds	Seeds	Intentional introduction through trade.	
APHIS	Act of March 2, 1931, often referred to as the Animal Damage Control Act	Gives APHIS authority to control wildlife damage on federal, state, or private land.  Protects: field crops, vegetables, fruits, nuts, horticultural crops, commercial forests; freshwater aquaculture ponds & marine species cultivation areas; livestock on public & private range & in feedlots; public & private buildings & facilities; civilian & military aircraft; public health .	Damaging species (nutria, blackbirds, European starlings, monk parakeets).	Unintentional introductions.	
DOI	Lacey Act (1900; amended in 1998)	Prohibits import of a list of designated species & other vertebrates, mollusks, & crustacea that are “injurious to human beings, to the interests of agriculture, horticulture, forestry, or to wildlife or the wildlife resources of the United States.”  Declares importation or transportation of any live wildlife as injurious & prohibited, except as provided for under the Act, <b>but</b> allows import of almost all species for scientific, medical, education, exhibition, or propagation purposes.	Species injurious to human beings or resources.	Intentional introduction & trade .	

## APPENDIX E: Western Governors Association Resolution 04-12

### WGA Policy Resolution 04-12

#### *Undesirable Aquatic, Riparian, and Invasive Species*

June 22, 2004

Santa Fe, New Mexico

SPONSOR: Governors Locke and Rounds

#### A. **BACKGROUND**

1. Invasive or undesirable aquatic, riparian and terrestrial species influence the productivity, value, and management of a broad range of land and water resources in the West. These undesirable species have significant negative economic, social and ecological impacts which include, but are not limited to:
  - a. reduction of the yield and quality of desirable crop forage plants;
  - b. poisoning of livestock;
  - c. reduction of native biodiversity resulting in a growing number of threatened, endangered and extinct species;
  - d. adverse affects upon human health through allergies, poisoning, and harboring vectors;
  - e. degradation of natural aquatic systems including obstruction of water flow in irrigation and drainage systems;

- f. reduction of the value of streams, lakes, reservoirs, oceans, and estuaries for fish and wildlife habitat, and public water supply;
- g. high cost of control;
- h. increase in facilities maintenance costs such as power plants, water treatment plants, etc.;
- i. detracting from the aesthetics and recreational value of wildlands, parklands, and other areas; and
- j. decreased real estate property value and increased costs of property development;
- k. competition with or transmission of diseases to wild Pacific salmon or other important marine and aquatic species.

2. Undesirable species are those listed on a state or federal recognized list of noxious, nuisance or deleterious species.

3. Aquatic invasive species such as the zebra mussel, giant salvinia, and Eurasian watermilfoil are spreading into more western water-bodies each year. The most common source for these species is via recreational watercraft movement and from supplies sold by aquatic plant and animal suppliers. No western state has implemented a program that is capable of adequately preventing or reducing the spread of these aquatic invasive species. The economic and environmental damage from aquatic invasive species will continue to rise in western states without a well-organized and adequately funded effort to implement prevention programs in each state. It is estimated that the cost for control and cleaning for zebra mussels

alone where they have already infested waters in the US is \$3 billion.

Similarly, Giant salvinia is choking off waterways including those of the Colorado River.

**B. GOVERNORS' POLICY STATEMENT**

1. The Western Governors recognize that the spread of invasive, undesirable species results from the combination of human behavior, susceptibility of invaded environments, and the biology of the invading species, and that these characteristics are not dictated by geopolitical boundaries, but rather by ecosystem-level components which often span state borders. The Western Governors support coordinated, multistate management and eradication actions preventing the spread, intentional and unintentional introductions, and control of undesirable aquatic and terrestrial species on land and in the water. The principal objectives will be to maintain properly functioning natural systems, agriculture productivity, enhancing resource and environmental protection, and the protection of human health. Control programs will be those that are economically practicable in relationship to the long-term impacts an introduced nuisance species will cause.
2. In pursuit of these objectives, programs for the control and/or eradication of unauthorized, undesirable aquatic and terrestrial species need to incorporate education, prevention, and early detection and rapid response techniques and be based upon Integrated Pest Management (IPM)

concepts and practices. IPM involves the use of all suitable techniques, including biological, chemical, physical (mechanical and manual), cultural measures (environmental manipulation), and public awareness programs.

3. The western governors strongly encourage all natural resource land management agencies, local governments, universities and the private sector to collaborate and form partnerships to prevent new unauthorized introductions; for the enhancement, development and implementation of IPM programs; and to work together to find creative new approaches for protecting and restoring natural, agriculture, and recreational resources, including the use of challenge grants.
4. The Western Governors urge full funding support for federal programs that manage invasive species on federal lands and provide assistance to states in the management of invasive species, including the national invasive species act and programs at the U.S. Department of Agriculture Animal, Plant, and Health Inspection Service (APHIS) which provides valuable services in the detection and elimination of undesirable species of insects and plant diseases. Their services are essential for states relying on trade and export services to maintain strong trade and export functions.
5. The Western Governors recognize the importance of, and need for, a coordinated western regional approach to aquatic invasive species.

C. **GOVERNORS' MANAGEMENT DIRECTIVE**

1. This resolution is to be posted on the Western Governors' Association website and it should be referenced and used as appropriate by Governors and staff.
2. The Western Governors Association shall obtain necessary resources and work with appropriate partners to facilitate the development and coordination of western strategies to limit the spread of undesirable aquatic and terrestrial species. The executive director is authorized to obtain federal staff support under the Intergovernmental Personnel Act if necessary in connection with this directive.
3. Of particular importance will be:
  - a. Development and harmonization of uniform, and scientifically based species lists;
  - b. Establishing consistent and effective policies and procedures to prevent transport, sale and dispersal of undesirable species, particularly those under eradication in specific states;
  - c. Development of uniform public educational and awareness media that create effective communication to the public throughout the western states; and
  - d. Facilitation of development of appropriate K-12 school science curricula which recognizes that the introduction, spread and impacts of undesirable species present a serious environmental threat from "biological pollution" and that engendering environmental stewardship is best accomplished with early education.
4. WGA shall convene an Aquatic Invasive Species Working Group to develop, fund, and implement a comprehensive program to prevent the spread of aquatic invasive species in the water resources of the western states. The Working Group shall partner with the Western Regional Panel on Aquatic Invasive Species, the Western States Water Council, and the Western Association of Fish and Wildlife Agencies.

## APPENDIX F: Arizona laws, regulations, and policies related to AIS

House Bill 2157, Ch 77, Director's Order 1, 2, & 3: Quagga/Zebra Mussels

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State of Arizona  
House of Representatives  
Forty-ninth Legislature  
First Regular Session  
2009  
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CHAPTER 77

### HOUSE BILL 2157

-----  
AN ACT

AMENDING SECTION 5-323, ARIZONA REVISED STATUTES; AMENDING TITLE 17, CHAPTER 2, ARIZONA REVISED STATUTES, BY ADDING ARTICLE 3.1; RELATING TO GAME AND FISH.

(TEXT OF BILL BEGINS ON NEXT PAGE)

Be it enacted by the Legislature of the State of Arizona:

Section 1. Section 5-323, Arizona Revised Statutes, is amended to read:

5-323. Disposition of fees

Each month monies received from the registration fees received under this chapter for the numbering of watercraft shall be deposited, pursuant to sections 35-146 and 35-147, in a fund designated as the watercraft registration fee clearing account. Each month, on notification by the department, the state treasurer shall distribute the monies in the clearing account as follows:

1. All revenues collected from the registration fees collected pursuant to section 5-321, subsection A, paragraphs 1 and 2 shall be allocated as follows:

(a) Sixty-five per cent shall be deposited in a special fund to be known as the watercraft licensing fund. The watercraft licensing fund is to be used by the department for administering and enforcing

this chapter, ~~and~~ providing an information and education program relating to boating and boating safety AND ADMINISTERING ANY AQUATIC INVASIVE SPECIES PROGRAM ESTABLISHED UNDER THIS TITLE OR TITLE 17. These monies are subject to legislative appropriation.

(b) Thirty-five per cent of such revenues shall be further allocated as follows:

(i) Fifteen per cent to the state lake improvement fund to be used as prescribed by section 5-382.

(ii) Eighty-five per cent to the law enforcement and boating safety fund to be used as prescribed by section 5-383.

2. All revenues collected from any additional registration fees collected pursuant to section 5-321, subsection C shall be paid to an account designated by a multi-county water conservation district established under title 48, chapter 22 to be used solely for the lower Colorado river multispecies conservation program and for no other purpose.

Sec. 2. Title 17, chapter 2, Arizona Revised Statutes, is amended by adding article 3.1, to read:

#### ARTICLE 3.1. AQUATIC INVASIVE SPECIES

##### 17-255. Definition of aquatic invasive species

IN THIS ARTICLE, UNLESS THE CONTEXT OTHERWISE REQUIRES, "AQUATIC INVASIVE SPECIES":

1. MEANS ANY AQUATIC SPECIES THAT IS NOT NATIVE TO THE ECOSYSTEM UNDER CONSIDERATION AND WHOSE INTRODUCTION OR PRESENCE IN THIS STATE MAY CAUSE ECONOMIC OR ENVIRONMENTAL HARM OR HARM TO HUMAN HEALTH.

2. DOES NOT INCLUDE:

(a) ANY NONINDIGENOUS SPECIES LAWFULLY OR HISTORICALLY INTRODUCED INTO THIS STATE FOR SPORT FISHING RECREATION.

(b) ANY SPECIES INTRODUCED INTO THIS STATE BY THE DEPARTMENT, BY OTHER GOVERNMENTAL ENTITIES OR BY ANY PERSON PURSUANT TO THIS TITLE.

##### 17-255.01. Aquatic invasive species program; powers

A. THE DIRECTOR MAY ESTABLISH AND MAINTAIN AN AQUATIC INVASIVE SPECIES PROGRAM.

B. THE DIRECTOR MAY ISSUE ORDERS:

1. ESTABLISHING A LIST OF AQUATIC INVASIVE SPECIES FOR THIS STATE.

2. ESTABLISHING A LIST OF WATERS OR LOCATIONS WHERE AQUATIC INVASIVE SPECIES ARE PRESENT AND TAKE STEPS THAT ARE NECESSARY TO ERADICATE, ABATE OR PREVENT THE SPREAD OF AQUATIC INVASIVE SPECIES WITHIN OR FROM THOSE BODIES OF WATER.

3. ESTABLISHING MANDATORY CONDITIONS AS PROVIDED IN SUBSECTION C OF THIS SECTION ON THE MOVEMENT OF WATERCRAFT, VEHICLES, CONVEYANCES OR OTHER EQUIPMENT FROM WATERS OR LOCATIONS WHERE AQUATIC INVASIVE SPECIES ARE PRESENT TO OTHER WATERS.

C. IF THE PRESENCE OF AN AQUATIC INVASIVE SPECIES IS SUSPECTED OR DOCUMENTED IN THIS STATE, THE DIRECTOR OR AN AUTHORIZED EMPLOYEE OR AGENT OF THE DEPARTMENT MAY TAKE ONE OR MORE OF THE FOLLOWING ACTIONS TO ABATE OR ELIMINATE THE SPECIES:

1. AUTHORIZE AND ESTABLISH LAWFUL INSPECTIONS OF WATERCRAFT, VEHICLES, CONVEYANCES AND OTHER EQUIPMENT TO LOCATE THE AQUATIC INVASIVE SPECIES.
2. ORDER ANY PERSON WITH AN AQUATIC INVASIVE SPECIES IN OR ON THE PERSON'S WATERCRAFT, VEHICLE, CONVEYANCE OR OTHER EQUIPMENT TO DECONTAMINATE THE WATERCRAFT, VEHICLE, CONVEYANCE OR EQUIPMENT IN A MANNER PRESCRIBED BY RULE. NOTWITHSTANDING PARAGRAPH 3 OF THIS SUBSECTION, MANDATORY ON-SITE DECONTAMINATION SHALL NOT BE REQUIRED AT A LOCATION WHERE AN ON-SITE CLEANING STATION CHARGES A FEE.
3. REQUIRE ANY PERSON WITH A WATERCRAFT, VEHICLE, CONVEYANCE OR OTHER EQUIPMENT IN WATERS OR LOCATIONS WHERE AN AQUATIC INVASIVE SPECIES IS PRESENT TO DECONTAMINATE THE PROPERTY BEFORE MOVING IT TO ANY OTHER WATERS IN THIS STATE OR ANY OTHER LOCATION IN THIS STATE WHERE AQUATIC INVASIVE SPECIES COULD THRIVE.

D. AN ORDER ISSUED UNDER SUBSECTION B OR C OF THIS SECTION IS EXEMPT FROM TITLE 41, CHAPTER 6, ARTICLE 3, EXCEPT THAT THE DIRECTOR SHALL PROMPTLY FILE A COPY OF THE ORDER WITH THE SECRETARY OF STATE FOR PUBLICATION IN THE ARIZONA ADMINISTRATIVE REGISTER PURSUANT TO SECTION 41-1013.

17-255.02. Prohibitions

EXCEPT AS AUTHORIZED BY THE COMMISSION, A PERSON SHALL NOT:

1. POSSESS, IMPORT, SHIP OR TRANSPORT INTO OR WITHIN THIS STATE, OR CAUSE TO BE IMPORTED, SHIPPED OR TRANSPORTED INTO OR WITHIN THIS STATE, AN AQUATIC INVASIVE SPECIES.
2. NOTWITHSTANDING SECTION 17-255.04, SUBSECTION A, PARAGRAPH 4, RELEASE, PLACE OR PLANT, OR CAUSE TO BE RELEASED, PLACED OR PLANTED, AN AQUATIC INVASIVE SPECIES INTO WATERS IN THIS STATE OR INTO ANY WATER TREATMENT FACILITY, WATER SUPPLY OR WATER TRANSPORTATION FACILITY, DEVICE OR MECHANISM IN THIS STATE.
3. NOTWITHSTANDING SECTION 17-255.04, SUBSECTION A, PARAGRAPH 4, PLACE IN ANY WATERS OF THIS STATE ANY EQUIPMENT, WATERCRAFT, VESSEL, VEHICLE OR CONVEYANCE THAT HAS BEEN IN ANY WATER OR LOCATION WHERE AQUATIC INVASIVE SPECIES ARE PRESENT WITHIN THE PRECEDING THIRTY DAYS WITHOUT FIRST DECONTAMINATING THE EQUIPMENT, WATERCRAFT, VESSEL, VEHICLE OR CONVEYANCE.
4. SELL, PURCHASE, BARTER OR EXCHANGE IN THIS STATE AN AQUATIC INVASIVE SPECIES.

17-255.03. Violations; civil penalties; classification; cost recovery

A. EXCEPT AS OTHERWISE PROVIDED BY THIS SECTION, A PERSON WHO VIOLATES THIS ARTICLE IS SUBJECT TO A CIVIL PENALTY OF NOT MORE THAN FIVE HUNDRED DOLLARS.

B. A PERSON WHO KNOWINGLY VIOLATES SECTION 17-255.02, PARAGRAPH 2 OR 4 IS GUILTY OF A CLASS 2 MISDEMEANOR. IN ADDITION, THE COMMISSION, OR ANY OFFICER CHARGED WITH

ENFORCING THIS ARTICLE IF DIRECTED BY THE COMMISSION, MAY BRING A CIVIL ACTION IN THE NAME OF THIS STATE TO RECOVER DAMAGES AND COSTS AGAINST A PERSON WHO VIOLATES SECTION 17-255.02, PARAGRAPH 2 OR 4. DAMAGES AND COSTS RECOVERED PURSUANT TO THIS SUBSECTION SHALL BE DEPOSITED IN THE GAME AND FISH FUND.

C. THE COURT SHALL ORDER A PERSON FOUND IN VIOLATION OF SECTION 17-255.01, SUBSECTION C, PARAGRAPH 2 TO PAY TO THIS STATE ALL COSTS NOT EXCEEDING FIFTY DOLLARS INCURRED BY THIS STATE TO DECONTAMINATE ANY WATERCRAFT, VEHICLE, CONVEYANCE OR OTHER EQUIPMENT ON WHICH AQUATIC INVASIVE SPECIES WERE PRESENT. MONIES PAID PURSUANT TO THIS SUBSECTION SHALL BE DEPOSITED IN THE GAME AND FISH FUND.

D. THIS SECTION APPLIES REGARDLESS OF WHETHER THE DIRECTOR ESTABLISHES AN AQUATIC INVASIVE SPECIES PROGRAM PURSUANT TO SECTION 17-255.01.

17-255.04. Applicability; no private right of action

A. THIS ARTICLE DOES NOT APPLY TO THE OWNER OR OPERATOR OF:

1. ANY SYSTEM OF CANALS, LATERALS OR PIPES, ANY RELATED OR ANCILLARY FACILITIES, FIXED EQUIPMENT AND STRUCTURES RELATED TO THE DELIVERY OF WATER AND ANY DISCHARGES FROM THE SYSTEM.

2. ANY WATER TREATMENT OR DISTRIBUTION FACILITY SYSTEM, ANY RELATED OR ANCILLARY FACILITIES, FIXED EQUIPMENT AND STRUCTURES AND ANY DISCHARGES FROM THE SYSTEM.

3. ANY DRAINAGE, WASTEWATER COLLECTION, TREATMENT OR DISPOSAL FACILITY SYSTEM, ANY RELATED OR ANCILLARY FACILITIES, FIXED EQUIPMENT AND STRUCTURES AND ANY DISCHARGES FROM THE SYSTEM.

4. A PUBLIC OR PRIVATE AQUARIUM AND EDUCATION OR RESEARCH INSTITUTION HOLDING A PERMIT PURSUANT TO SECTION 17-238 OR 17-306.

5. ANY STOCK PONDS OR LIVESTOCK WATER FACILITIES OR DISTRIBUTION FACILITIES, INCLUDING FIXED EQUIPMENT AND STRUCTURES RELATED TO THE DELIVERY OF WATER AND ANY DISCHARGES FROM THE SYSTEM.

B. THE DIRECTOR MAY CONSULT WITH THE ENTITIES LISTED IN SUBSECTION A OF THIS SECTION TO ASSIST IN THE IMPLEMENTATION OF THIS ARTICLE.

C. THIS ARTICLE DOES NOT CREATE ANY EXPRESS OR IMPLIED PRIVATE RIGHT OF ACTION AND MAY BE ONLY ENFORCED BY THIS STATE.

APPROVED BY THE GOVERNOR JULY 10, 2009.

FILED IN THE OFFICE OF THE SECRETARY OF STATE JULY 10, 2009.

NOTICE OF PUBLIC INFORMATION  
ARIZONA GAME AND FISH DEPARTMENT

SECRETARY OF STATE  
FILED

2010 FEB 26 PM 4:49

DIRECTOR'S ORDER 1 – AQUATIC INVASIVE SPECIES  
INITIAL LISTING OF AQUATIC INVASIVE SPECIES FOR ARIZONA  
EFFECTIVE MARCH 1, 2010

Effective March 1, 2010 the Arizona Game and Fish Department, under the authority of A.R.S. 17-255.01(B), establishes this initial list of aquatic invasive species for the State of Arizona:

Aquatic Invasive Species	Notes
<b>quagga mussel</b> ( <i>Dreissena bugensis</i> )	Detected in Arizona in January of 2007.
<b>zebra mussel</b> ( <i>Dreissena polymorpha</i> )	Not yet detected in Arizona, but poses an immediate threat. Zebra mussels are nearly indistinguishable in appearance from the quagga mussel.

The name and address of agency personnel with whom persons may communicate regarding this Order:

Name: Tom McMahon, Invasive Species Coordinator  
Address: Arizona Game and Fish Department, WMHB  
5000 W. Carefree Highway, Phoenix, AZ 85086-5000  
Telephone: (623) 236-7271  
Fax: (623) 236-7366  
Email: [tmcmahon@azgfd.gov](mailto:tmcmahon@azgfd.gov)

NOTICE OF PUBLIC INFORMATION  
ARIZONA GAME AND FISH DEPARTMENT

SECRETARY OF STATE  
FILED

2010 FEB 26 PM 4: 49

**DIRECTOR'S ORDER 2 – AQUATIC INVASIVE SPECIES  
DESIGNATION OF WATERS OR LOCATIONS WHERE LISTED  
AQUATIC INVASIVE SPECIES ARE PRESENT OR SUSPECTED  
EFFECTIVE MARCH 1, 2010**

Effective March 1, 2010 the Arizona Game and Fish Department, under the authority of A.R.S. § 17-255.01(B), establishes this initial list of waters or locations where listed aquatic invasive species are suspected or known to be present. The listing of Aquatic Invasive Species in Arizona is established under the Arizona Game and Department - Director's Order 1.

<b>Waterbodies in Arizona where quagga mussels (<i>Dreissena bugensis</i>) are documented and present:</b>
<ul style="list-style-type: none"><li>- Lake Pleasant</li><li>- Lower Colorado River from Pierce Ferry Rapid (RM277 on Lake Mead) through the Southerly International Boundary with Mexico including:<ul style="list-style-type: none"><li>Lake Mead</li><li>Lake Mohave</li><li>Lake Havasu</li><li>Imperial Reservoir</li><li>Mittry Lake</li><li>Martinez Lake</li><li>Topock Marsh</li></ul></li></ul>
<b>Water delivery systems in Arizona where quagga mussels (<i>Dreissena bugensis</i>) are documented and present:</b>
<ul style="list-style-type: none"><li>- Central Arizona Project (CAP) Aqueduct (from Lake Havasu –Mark Wilmer Pumping Plant to CAP canal mile 200 in Apache Junction)</li></ul>
<b>Water delivery systems in Arizona where quagga mussels (<i>Dreissena bugensis</i>) are suspected:</b>
<ul style="list-style-type: none"><li>- Salt River Project Canal System (commencing at the CAP Interconnect below Granite Reef Dam)</li><li>- Central Arizona Project (CAP) Aqueduct (from CAP canal mile 200 in Apache Junction to terminus at canal mile 337 south of Tucson)</li></ul>

NOTICE OF PUBLIC INFORMATION  
ARIZONA GAME AND FISH DEPARTMENT

SECRETARY OF STATE  
FILED  
2010 FEB 26 PM 4:50

**DIRECTOR'S ORDER 3 – AQUATIC INVASIVE SPECIES  
MANDATORY CONDITIONS ON THE MOVEMENT OF WATERCRAFT, VEHICLES,  
CONVEYANCES, OR OTHER EQUIPMENT FROM LISTED WATERS  
WHERE AQUATIC INVASIVE SPECIES ARE PRESENT  
EFFECTIVE MARCH 1, 2010**

Effective March 1, 2010 the Arizona Game and Fish Department, under the authority of A.R.S. § 17-255.01(B), establishes mandatory conditions for movement of watercraft, vehicles, conveyances, or other equipment necessary to abate, eradicate, or prevent the spread of quagga mussels or zebra mussels within or from those waters or locations listed in Arizona Game and Fish Department - Director's Order 2.

Mandatory Conditions and Protocols for Movement from Listed Waters/Locations	
<b>Day Use</b>	<p>The following protocols shall be taken for watercraft, boats, vehicles, conveyances, or other equipment that have been in or on waters for <u>5 days or less</u>:</p> <p><u>Before leaving the vicinity of the waterbody:</u></p> <p>Remove any clinging material such as plants, animals and mud from anchor, boat, motor, and trailer.</p> <p>Remove the plug (when so equipped) and drain the water from the bilge, live-well and any other compartments that may hold water.</p> <p>Drain water from engine, engine compartments, and engine cooling systems.</p> <p>Allow watercraft, vehicles, conveyances, or other equipment to dry completely.</p> <p>If using watercraft again in less than five days at another waterbody, replace bilge drain plug and disinfect the bilge by pouring not less than one gallon of vinegar into the bilge.</p>
<b>Long Term Use</b>	<p>The following protocols shall be taken for any watercraft, boats, vehicles, conveyances, or other equipment that have been in or on waters for <u>more than 5 days</u>:</p> <p><u>Before leaving the vicinity of the waterbody (unless otherwise authorized by the State):</u></p> <p>Remove any clinging material such as plants, animals and mud from anchor, boat, motor, equipment and trailer.</p> <p>Remove the plug (when so equipped) and drain the water from the bilge, live-well, and any other compartments that may hold water.</p> <p>Drain water from engine, engine compartments, and engine cooling systems.</p> <p>Remove all attached mussels from boat surfaces, motors, impellers, outdrives, rudders, anchor(s) and through hull fittings.</p>

## APPENDIX G: Freshwater nonindigenous animals in Arizona

Listed species are restricted by ARTICLE 4. LIVE WILDLIFE, R12-4-406.

Restricted Live Wildlife

### Freshwater Animal Species of Concern

Common name	Species name
<b>Reptiles</b>	
caimans	
crocodiles	all species of order Crocodylia
alligators	
snapping turtles	all species of the family Chelydridae
sea snakes	all species of the family Hydrophiidae
<b>Amphibians</b>	
clawed frogs	all species of the genus <i>Xenopus</i>
giant or marine toads	<i>Bufo horribilis</i> , <i>Bufo marinus</i> , <i>Bufo paracnemis</i>
bullfrogs	all species of genus <i>Rana</i>
<b>Fish</b>	
Arctic grayling	<i>Thymallus arcticus</i>
bass	all the species of the family Serranidae
bighead carp	<i>Aristichthys nobilis</i>
black carp	<i>Mylopharyngodon piceus</i>
bony tongue	<i>Arapaima gigas</i>
bowfin	<i>Amia calva</i>
catfish	all species of the family Ictaluridae
Crucian carp	<i>Carassius carassius</i>
Electric catfish	<i>Malapterurus electricus</i>
electric eel	<i>Electrophorus electricus</i>
European whitefish	<i>Leuciscus idus</i> , <i>Idus idus</i>
freshwater drum	<i>Aplodinotus grunniens</i>
freshwater stingray	all species of the family Potamotrygonidae
gars	all species of the family Lepisosteidae
goldeye, moomeye	all species of the family Hiodontidae
herring	all species of the family Clupeidae
Indian carp	all of the species <i>Catla catla</i> , <i>Cirrhina mrigala</i> , and <i>Labeo rohita</i>
lampreys	all species of the family Petromyzontidae
Nile perch	all species of the genus <i>Lates</i>
Pike, pickerel	all species of the family Esocidae
pike topminnow	<i>Belonesox belizamus</i>

piranha	all species of the genera <i>Serrasalmus</i> , <i>Serrasalmo</i> , <i>Phygocestrus</i> , <i>Teddyella</i> , <i>Fooseveltiella</i> , and <i>Pygopristis</i>
Rudd shad	<i>Scardinius erythrophthalmus</i> all species of the family Clupeidae except threadfin shad, species <i>Dorosoma</i> <i>petenense</i>
sharks	all species, marine and freshwater of orders Hexanchiformes, Heterodontiformes, Squaliformes, Pristiophoriformes, Squatiformes, Orectolobiformes, Lamniformes, and Carcharhiniformes
silver carp	<i>Hypophthalmichthys molitrix</i>
snakehead	all species of the family Ophicephalidae
South American parasitic catfish	all species of the family Trichomycteridae and Cetopsidae
sunfish	all species of the family Centrarchidae
temperate basses	Moronidae
tetras	all species of the genus <i>Astyanax</i>
tiger fish	<i>Hoplias malabaricus</i>
trout	all species of the family Salmonidae
white amur, grass carp	<i>Ctenopharyngodon idella</i>
walking catfish	all species of the family Clariidae
walleye	all species of the family Percidae
Invertebrates	
Asiatic mitten crab	<i>Eriocheir sinensis</i>
Crayfish	all species of family Astracidae, Cambaridae, Parastacidae
Asian clam	<i>Corbicula fluminea</i>
New Zealand mudsnail	<i>Potamopyrgus antipodarum</i>
Quagga mussel	<i>Dreissena bugensis</i>
Rosy wolfsnail	<i>Euglandina rosea</i>
zebra mussel	<i>Dreissena polymorpha</i>

## APPENDIX H: Freshwater nonindigenous plant species found in Arizona

### List of Non-indigenous Freshwater Plants

Common Name	Scientific Name
<b>Plants that are currently causing problems in Arizona</b>	
Brazilian elodea	<i>Egeria densa</i>
curly leaf pondweed	<i>Potamogeton crispus</i>
giant salvinia	<i>Salvinia molesta</i>
hydrilla	<i>Hydrilla verticillata</i>
parrot-feather	<i>Myriophyllum aquaticum</i>
water-cress	<i>Nasturtium officinale</i>
<b>Plants with Apparent Limited Distribution and Weedy Potential</b>	
Eurasian water-milfoil	<i>Myriophyllum spicatum</i>
<b>Species of Concern Being Sold in Arizona, But Not Established in the Wild</b>	
water-hyacinth	<i>Eichhornia crassipes</i>
<b>Introduced Plant Species, But Not Causing Problems</b>	
dotted duckweed	<i>Landoltia (Spirodela) punctata</i>
yellow floating-heart	<i>Nymphoides peltata</i>
<b>Species Of Concern in Other States, Not Yet Introduced to Arizona</b>	
Anchored water hyacinth	<i>Eichhornia azurea</i> (SW)
Water-chestnut	<i>Trapa natans</i> L.