

Reducing the risks of Schools, Science Learning Materials and Biological Science Supply Houses as Potential Pathways for Spreading Aquatic Invasive Species

Note:

- This pathway was proposed by the Western Regional Panel as priority action issue in December 2007.
- A research based outreach and education grant proposal to study and address the issue was submitted in 2008 through the NOAA, National Sea Grant College Program National Strategic Initiative grant competition(NSG-NSI) on AIS. The project was of 2 proposals funded through the initiative from 9/2008 – 8/2010.
- We are completing the research phase and wish to report preliminary findings and seek the ANSTF counsel on the development and testing of possible solutions (final phase).

The distribution and use of live organisms by biological supply houses, science curricula, and schools is an important, but not well-understood pathway for the introduction and spread of aquatic invasive species (AIS). We are learning that it is not uncommon for schools to release organisms into the wild or for teachers to allow students to take organisms home as pets (that are later released) after the completion of science projects. This suggests that classroom release of live organisms can contribute to the spread of invasive species, and presents opportunities for learning and intervention. In this “AIS in classrooms” pathway, organisms are distributed to teachers through biological supply houses (“BSHs”), often in association with widely used science curriculum packages. Many of the live organisms presented in the curricula and available through the BSH are documented AIS. In addition, there is little guidance from BSH websites, curricula, or teaching associations. A coordinated effort to integrate AIS prevention tools into this “AIS in classrooms” pathway could play a large role in increasing awareness and prevention of invasive species. Agencies (e.g. federal, state, local and NGOs) and the regional ANS panels are developing preliminary guidelines and are interested in messages and products that will address this pathway. However, these guidelines should be enhanced to include pathway stakeholders’ input to ensure results. Furthermore, the full extent of the problem and specific components of the pathway have never been thoroughly evaluated. We propose a research and outreach project to formally define the extent of the problem and construct a framework for developing appropriate tools and products targeted specifically for pathway stakeholders. This project addresses each component of this pathway complex (schools, curricula developers, BSHs). The intended outcome is to reduce the role of “AIS in classrooms” pathway as a vector for AIS

Request from (Name & affiliation) :

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Briefing time requested:

Approximately 30 minutes. 20-22 minutes presentation of background, objectives, preliminary findings, next steps, followed by a 10 minute discussion on possible solutions and approaches with the ANSTF based on the findings.

Is the briefing item decisional or informational?

Informational, that allows the ANSTF to suggest/guide the development of solutions to the school, curricula, science supplier pathway based on the research findings and their own experiences.

Is the briefing item time sensitive? If so, when does ANSTF action need to be taken?

Yes, guidance/suggestions on development of possible solutions to the pathway by late Winter (Feb. 2010).

If decisional, what are the specific decision points for the ANSTF to consider?

Does the subject matter relate to an objective(s) identified in the 2007-2012 ANS Strategic Plan? If so, explain.

Although this project "*Reducing the risks of Schools, Science Learning Materials and Biological Science Supply Houses as Potential Pathways for Spreading Aquatic Invasive Species*" has relevance to all 5 goals of the ANS Strategic Plan, outcomes from this project more immediately address goals 1 and 4.

Goal 1: Develop strategies to identify and reduce the risk of harmful aquatic species being introduced into waters of the United States

Goal 4: Increase public understanding of the importance of reducing the introduction, spread, and impact of ANS and recommend appropriate domestic and international actions.

The research based information and solutions will likely be first adopted by the Prevention and Communication & Education Committees of the ANS Task Force.

What is the ANSTF role(s) regarding the subject & decision points?

Opportunity to learn the latest research findings regarding a relatively new AIS pathway that involves schools, science curricula and biological science suppliers.

Seek ANSTF members' suggestion/guidance on the development of solutions to the school, curricula, science supplier pathway based on the research findings and their own experiences.

Has this topic been considered by an ANSTF subcommittee &/or ANSTF in the past?

Yes, in the 2007 Western Regional Panel – Science Education Pathway Workgroup Final Report and Recommendations

If so, when?

December 21, 2007

If so, what was the recommendation(s) &/or action(s) taken?

At their 2006 annual meeting, the Western Regional Panel of the Aquatic Nuisance Species Task Force held a session to address the potential introduction of harmful nonnative aquatic organisms acquired from biological supply companies and used by educators (often in association with regional/national science curricula packages). The WRP desired to develop recommendations for managing this pathway at the regional and national level, and established a workgroup led by Paul Heimowitz, USFWS for that purpose.

The workgroup agreed to use a conceptual model developed by Chan et al. al. (see attachment) to examine the four primary components of this pathway. Based on subsequent discussion, the workgroup developed the following recommendations focused on each of those components. These recommendations have both regional and national applicability, and therefore we suggest that the WRP also formally forward them to the ANS Task Force.

Biological supply companies

- Collaborate with biological supply companies to develop outreach materials and product precautions regarding prevention of ANS introductions that can be provided to customers. Explore the potential to expand the existing "Habitattitude" campaign to engage biological supply companies as full partners. Seek initial funding under the National Sea Grant "Aquatic Invasive Species Research and Outreach" program to facilitate this collaboration.

- Provide biological supply companies with access to current, consolidated information regarding species that are prohibited from sale and possession in specific states and the United States overall.
- Provide model language to biological supply companies for a requirement that their suppliers implement and document prevention measures that avoid ANS contamination of live organism shipments, such as through development and use of approved Hazard Analysis and Critical Control Point (HACCP) plans.

Science curricula developers/providers

- Collaborate with science curricula providers to develop associated outreach materials that these organizations can provide to their clients and customers regarding prevention of ANS introductions. Explore the potential to expand the existing “Habitattitude” campaign to engage science curricula providers as partners. Seek initial funding under the National Sea Grant “Aquatic Invasive Species Research and Outreach” program to facilitate this collaboration.

Science curricula developers/providers (continued)

- Develop regional lists of native species, and references to associated regulatory guidelines on their acquisition/use, for use by science curricula providers as potential alternatives to nonnative aquatic species recommended for education activities in curricula.

Organism suppliers

- Provide training and support for development and implementation of HACCP plans for organisms that will be collected/cultured for sale to biological supply companies.
- Develop model regulations for states to adopt regarding certification of programs to culture and/or collect nonnative aquatic species for the purpose of sale to biological supply companies.

Schools and Educators

- Use ANSTF document “Reducing the risk of introducing or spreading nonindigenous plants, animals, and microorganisms through science and engineering fair projects” to develop similar protocols for schools and educators.
- In partnership with the National Association of Science Teachers and similar organizations, develop and distribute a national outreach brochure modeled after the Oregon Sea Grant publication “You Can Stop the Spread of Aquatic Invasive Species” and the Partners in Amphibian and Reptile Conservation publication “Don’t Turn It Loose!” As part of this outreach effort, provide references to existing invasive species curricula that will help and encourage educators to integrate invasive species ecology and management concepts into the lesson plans associated with their use of the subject live organisms. Seek initial funding under the National Sea Grant “Aquatic Invasive Species Research and Outreach” program to initiate this action.

- Develop a set of nationally-sanctioned standardized protocols for humane euthanasia of aquatic organisms (based on general taxonomic categories), in partnership with key national stakeholders (e.g., National Science Teachers Association; National Audubon Society; Humane Society of the United States).
- Maintain a list of valid repositories within a state or region where educators can bring unwanted aquatic animals as an alternative to euthanasia.