



Northeast Aquatic Nuisance Species Panel

Resource Digest – April 1, 2004
Volume 3, Issue 3

Please send items and postings for the NEANS Panel Digest to ans@ecologyaction.ca.

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A. News

Invasive Species Get the Jump in New Jersey

On March 4, New Jersey's Governor James McGreevey convened Invasive Species Council to address the issue of invasives in the state. The Council will be headed by New Jersey's Department of Environmental Protection Commissioner Bradley Campbell and Agriculture Secretary Charles Kuperus. The Governor's action was in direct response to a report that identified invasive species as a priority environmental issue in the state. Conservationists and naturalists applauded the move, but they warn that the state will need to follow up with resources needed to deal with bioinvaders. For more information see

<http://www.courierpostonline.com/news/southjersey/m030604l.htm>, and

http://www.state.nj.us/cgi-bin/governor/njnewslines/view_article.pl?id=1786. The report

prioritizing environmental problems in New Jersey can be found at

<http://www.state.nj.us/dep/dsr/njcrp/executive-summary.pdf>.

Mending Fences: Army Mobilizes on Carp Barrier

The Army Corps of Engineers has agreed to chip in their portion of the funding to support a permanent barrier for carp in the Chicago Canal. Early last March, the State of Illinois ante-ed up \$2 million for the new barrier but the Army Corps claimed that they couldn't find more than \$1 million to chip in for the project. This prompted all 21 members of the Illinois congressional delegation to sign a letter, accompanied by a tongue lashing from Republican representative Vernon Ehlers, advising that the Corps's stance was unacceptable. The delegation to Congress was deeply concerned that if carp were allowed to enter the Great Lakes, they would destroy the fisheries valued at 4 billion dollars per year. According to the

March 6 edition of the *Milwaukee Journal Sentinel*, the Army Corps was looking for the funding (<http://www.jsonline.com/news/state/mar04/212576.asp>) and by March 8 the Corps announced it had committed to the project (http://www.greatlakesdirectory.org/il/030804_great_lakes.htm).

Bursting Bubbles for Asian Carp

As in the Chicago Canal, attempts are being made to stop the progress of Asian carp in the Mississippi River system. A company called *Fish Pro* is looking into a combination of bubbles and noise to create a fence to deter the voracious fish. For more information see <http://www.startribune.com/stories/531/4668474.html> and <http://www.protectyourwaters.org/news/display.php?id=1019>.

Hawaii Gets Glowing Grades At NISAC Meeting

Hawaii is a model for how to deal with invasive species, according to Ron Luckens, head of the National Invasive Species Advisory Committee. The Committee met in Waikiki, Hawaii, at the beginning of March. Developments in Hawaii that impressed the Committee included grass-roots awareness of invasive species problems, a state invasive species council, and \$5 million new money to battle invasive species. The state has also created a priority list for invaders, which includes West Nile virus and invasive algae. For details visit see <http://starbulletin.com/2004/03/08/news/story6.html>.

“Bioinvasions” Hits the Small Screen

Last February 17 and 18, Maine and Vermont public television stations aired the show “Bioinvasions” created by *Quest*. The program featured Paul Gregory and NEANS Panelist Amy Smagula. Transcripts can be found at <http://www.mainepbs.org/quest/episodes.shtml>. This website is also a cool educational package created by *Quest* to teach students and others about bioinvaders.

No Deal: Ontario Stops Sale Invasive Fish

Grass, bighead, silver, and black carp, 28 species of snakehead, and two species of goby are no longer allowed to be bought or sold in Ontario. Ontario’s Minister of Natural Resources, David Ramsay, along with the Ontario Federation of Hunters and Anglers, announced the ban on March 3. For more details, see <http://www.ofah.org/news.cfm?Section=OFAH%20News&Action=GetDoc&ID=174>.

No More Mr. Nice Guy

Maine’s Warden Service will be stepping up its efforts to stop the spread of aquatic invaders this summer. For the past two years, boaters who failed to inspect their boats for invaders have gotten a warning from the Wardens. However, this summer, fines of between \$500 and 5000 will be issued. For more information and to read the NEANS Panel’s co-chair, John McPhedran’s description of aquatic invader program in Maine, please see <http://www.pressherald.com/news/state/040228milfoil.shtml>. Also, check out “No Truce Declared at Maine’s 5th Annual Milfoil Summit” in the “Upcoming Conferences and Events” section below.

Herbicide Headaches

Residents who attempted to reverse the Natick Conservation Commission’s decision allowing the application of an herbicide to control Eurasian milfoil in Lake Cochituate, Massachusetts, have had their appeal denied. Opponents of the use of herbicides fear that their drinking water will be contaminated and are not convinced that herbicides will only be applied once.

They want the Department of Conservation and Recreation to consider options other than herbicides including as biological control. Other residents want the herbicide treatment to begin as soon as possible in order to maintain biodiversity and preserve the lake for recreational users. In the meantime, the milfoil population has grown to such an extent that a more powerful chemical needs to be used than the herbicide given a green light by the Commission. There are questions as to whether new hearings will be required to authorize this new chemical. The fight to stop the use of herbicides to control bioinvaders in Lake Cochituate is one of a few battles taking place across Massachusetts, in places such as Lake Boon and Dudley Pond.

http://www.boston.com/news/local/articles/2004/03/18/weed_is_divisive_not_just_invasive.

Pike Polemic

According to Ken Allen, time spent by Maine's Department of Interior Fish and Wildlife biologists monitoring anglers would be better spent trap-netting or electro-fishing non-native fish like pike and smallmouth bass. According to Allen, the wildlife biologists are spending too many hours monitoring ice fishers catching pike when they should be attempting to reduce the numbers of these fish, which threaten native species of salmon and trout. For the full story visit <http://www.centralmaine.com/sports/stories/472610.shtml>.

No Truce Declared at Maine's 5th Annual Milfoil Summit

Those attending Maine's 5th Annual Milfoil Summit heard that the state will be redoubling its efforts to combat invasive plants like milfoil in the upcoming year. Strategies outlined at the summit include enforcement of boat inspection rules, a requirement for boaters to buy into the boat sticker program, and an assessment of lakes to determine which are most susceptible to invasions. Issues that arose at the meeting included inadequate funding for projects and the public pressure to ensure Maine's lakes remain accessible to the populous. For more information (and quotes from an interview with John McPhedran), please see <http://belfast.villagesoup.com/Community/Story.cfm?StoryID=21066>.

New Hampshire Announces Money for Milfoil Research

Senator Judd Gregg announced on March 14 that the New Hampshire Department of Environmental Services is about to receive two federal grants, totaling about \$1 million, for milfoil research. Researchers are invited to submit proposals for projects that will examine the physical and chemical factors that influence the growth of milfoil, control methods (including physical, chemical, and biological control), and the economic impact of the weed and control initiatives. Proposals are due by 4:00 PM on April 15, 2004. For more information see <http://www.des.state.nh.us/wmb/exoticspecies>.

From Dead Giraffes to Zebra Mussels - The History of Healing the Hudson

In the continuing battle to clean up the Hudson River, the Lamont-Doherty Earth Observatory of Columbia University will be studying the impact of the zebra mussel and other forms of pollution. This project, which was begun in 2002, is merely one step in a long history of trying to protect the river. For more information, see <http://www.thejournalnews.com/newsroom/031404/b0314history.html>.

Bioinvaders a Bitter Pill

Amphibian populations that are already under threat may be being poisoned by invasive species, according to Bernd Blossey of Cornell University. According to Blossey, purple loosestrife contains tannins that are poisonous to American toads, phragmites may be

poisonous to salamanders, and Japanese knotweed may be deleterious to gray tree frogs. For more details see <http://www.post-gazette.com/pg/04075/285934.stm>.

Boxing in House Sparrows

The Birdhouse Network (TBN), a project that combines the efforts of volunteer bird lovers and scientists, is going to begin tracking the effect of non-native birds on native species. Bird enthusiasts that are a part of the TBN keep nesting boxes on their property to provide much-needed habitat for cavity-dwelling species such as bluebirds and swallows. Unfortunately, these nesting boxes are also used by non-native species like the house sparrow, and, in 10% of the cases when eggs are laid, sparrows are using the boxes. Researchers at the Cornell Lab of Ornithology are asking members of the TBN to record data such as egg-laying dates, numbers of eggs and nestlings, and fledging dates to determine how non-native species are influencing the populations of native birds. TBN members are also advised on tips to keep invasive birds out of their nesting boxes. For more details, see <http://www.birds.cornell.edu/birdhouse/news/Pressreleasemarch2004.html>.

Taking AIBS at Policy-makers

At a session entitled “*Invasive Species: A Search for Solution*” held during the American Institute of Biological Sciences (AIBS) meeting in Washington last March, scientists urged better interagency cooperation, legislation (including the adoption of the National Invasive Species Act), and a focus on predictive scientific research to improve the US response to invasive species. As reported in *The Scientist*, government departments such as the Department of Homeland Security could be doing more to help combat invasive species. Scientists at the session included David Lodge, Cindy Kolar, and Andrew Donson. During the session, it was suggested that monitoring for invasive species be incorporated into the National Science Foundation’s National Ecological Observatory Network (NEON), but NEON program officer Elizabeth Blood has stated that invasives are not within the project’s mandate. For more details, please see <http://www.biomedcentral.com/news/20040322/03>.

Chinook in Hot Water

Tiny computer chips implanted in Chinook salmon in Lake Huron are solving many mysteries about the fish’s behavior—and why the invasive sea lamprey seem to parasitize this species more than other fish in the lake. It seems that the fish are often found in the warmer water preferred by the lamprey. For the full story, told with an amusing anecdote of an angler hoodwinking a scientist, is found at <http://www.mlive.com/news/muchronicle/index.ssf?/base/news-4/1079176537312050.xml>.

IMO Missing the Boat?

Critics of the recently signed *International Convention for the Control and Management of Ships Ballast Water and Sediments* say that the Convention’s timeline is too slow to stem the tide of invaders carried around the world in ballast tanks of ships. The agreement will come into force nine to sixteen years from now which, according to members of the Great Lakes’ International Joint Commission, is way too late. On the plus side, signatories to the Convention have the right to move unilaterally to regulate ballast, and critics hope that the US will do so through the enactment of the National Aquatic Invasive Species Act. While some warn that maintaining the status quo could mean more disastrous invasions, the shipping community points out that standards established must be consistent and based on scientific information, information that does not exist regarding treatment standards for ballast. They also point out that the international timeline is already “challenging” for the shipping community. For more details please see

<http://www.mlive.com/news/statewide/index.ssf?/base/news-3/1077579603293980.xml> and <http://www.newsday.com/news/local/wire/ny-bc-ny--invasivespecies0325mar25,0,4799354.story?coll=ny-ap-regional-wire>.

B. Policy and Legislation

An Annex of Prevention

At the seventh Conference of the Parties to the Convention on Biological Diversity in Kuala Lumpur last February, it was agreed to append the section of the convention that deals with invasive species to include a statement to the effect that states are obligated to incorporate the precautionary approach when assessing the risk of intentional and unintentional introductions, as well as when making decisions on whether or not an invasive species represents a threat to biodiversity, and therefore should be controlled. For more information see <http://www.biodiv.org/doc/meetings/cop/cop-07/official/cop-07-l-01-en.pdf>.

A Steal of A Deal: Massachusetts' New Lake Restoration and Preservation Fund

How much would you pay to protect your favorite lake or pond from invasive weeds? Under a newly proposed law, for a mere \$5 (\$10 for non-residents), boaters using Massachusetts' waterways could chip in to a fund to pay for non-native plant prevention programs and invasive aquatic plant research. Applicants eligible to apply to receive money from the fund would include non-profit organizations, municipalities, learning institutions, and government agencies. For more information on the bill, which was proposed by State Representative Mark Howland of Freetown, see <http://www.state.ma.us/legis/bills/house/ht03563.htm>. See the next item for another invasive species bill proposed by State Representative Howland.

OK Everybody, Out of the Pond!

In Massachusetts, a new bill proposes giving agencies such as the Board of Health and the conservation commissions the authority to close off portions of lakes and ponds and to use nets to rid them of milfoil, fanwort, and other aquatic invaders. The bill stipulates that a public hearing must be held before closures can occur. For more details, see <http://www.southcoasttoday.com/daily/02-04/02-17-04/a04lo431.htm>

C. Reports, Publications, and Web-based Resources

Ruiz and Carlton Release Vectors Volume

Invasive Species, by Gregory Ruiz and James Carlton, presents a synthesis of vector science and management, and provides the latest information on vectors for invasive species, ways and challenges to dealing with invasives, evaluates the tool of risk assessment, and gives recommendations for action. The book covers multiple phyla, from fungi to vertebrates, and provides perspectives from the United States, Australia, New Zealand, and South Africa. For more information see <http://www.islandpress.org/books/detail.html?SKU=1-55963-903-2>.

US Fish and Wildlife Service Profiles Invaders in the Northeast

The US Fish and Wildlife Service has produced a summary report of invasive algae, aquatic plants, invertebrate, fish, amphibians and reptiles found in the Northeastern United States. The report includes information about identification, habitat, reproduction, distribution, impacts, and methods of introduction for each species found in the region. Information in the report is drawn from monitoring programs, museum and herbarium collections, and published accounts. The report documents the presence of 250 species of aquatic animals and 30 species of aquatic plants that have been introduced to this region since Europeans arrived. Although the report is a great summary document, the authors decry the lack of monitoring, collection, and distribution data. For more information, see

http://cars.er.usgs.gov/Nonindigenous_Species/R5draftreport.pdf.

Ob-Noxious Alliance

Usually, when the level of nutrients such as phosphorus in lakes increase, the amount of blue-green algae (also known as cyanobacteria) will also increase. However, a study performed in 61 lakes in Michigan demonstrates that the presence of zebra mussels disrupts this relationship. In lakes with low levels of phosphorus, zebra mussels seem to promote the growth of blue-green algae. This finding is of concern, since the counter-intuitive result means that even lakes with low nutrient levels may have high amounts of cyanobacteria, which can be toxic to humans and animals. In their article, published in *Limnology and Oceanography*, scientists speculate as to why zebra mussels would promote the growth of blue green algae, either by altering of predator-prey relationships in lakes or altering nutrient competition amongst algal species, but their hypotheses will need to be tested through future research.

Raikow, D.F., O. Sarnelle, A. E. Wilson and S. K. Hamilton Dominance of the noxious cyanobacterium *Microcystis aeruginosa* in low-nutrient lakes is associated with exotic zebra mussels. *Limnology and Oceanography*. 49: 482-487.

For a press release and electronic copy of this articles as well as a map of the 61 lakes used in he study please see: <http://newsroom.msu.edu/site/indexer/1911/content.htm>.

Invasives Don't Stay Inside the Lines, But You Can...

A cute coloring exercise for kids created by the Exotic Species Program of the New Hampshire Department of Environmental Services, demonstrates the difference between a lake filled with milfoil and a healthy lake. The coloring sheet is available at New Hampshire's great website on exotics—where there's also a quiz to test your invasive IQ! Click on <http://www.des.state.nh.us/wmb/exoticspecies>.

Bioinvaders - The Final Chapter for Island Birds?

Sadly, one out of eight bird species in the world are threatened with extinction, and sixty-four percent of the bird species found on islands are threatened by non-native species. These alarming findings are reported in a new book released by BirdLife International called *State of the World's Birds 2004*. For more details, <http://www.planetark.com/dailynewsstory.cfm/newsid/24186/story.htm>.

Compiling the *Catalogue of Life*

Scientists from around the world are attempting to compile a database for the world's 1.75 million known species of plants, animals, bacteria, and viruses. The project, called the *Catalogue of Life*, hopes to connect data on species' distribution, images, genetic information, alternate names, and life cycles. According to Mike Ruggiero, a scientist with the Smithsonian Institution in Washington, one of the multitudes of uses for the *Catalogue* will be to identify species at borders to prevent the introduction of invaders. For more details please see <http://www.globetechnology.com/servlet/ArticleNews/TPStory/LAC/20040228/CATALOGUE28/TPTechnology>.

Door to Diversity

In a similar initiative, the Global Biodiversity Information Facility has created a Biodiversity Data Portal that links primary information on one million taxonomic records gathered from museum collections, botanical gardens, and global databases like FishBase. The Portal will provide the most recent information on evolutionary classification, nomenclature, and species distributions, and is meant to be flexible enough to incorporate different database

information systems in the future. Right now the Portal links data from over 30 countries. To check it out, see www.gbif.net/portal.

Special Focus: Risk Assessment Research **Weed Risk Assessment Makes the Grade**

In this month's *Conservation Biology*, scientists tested a modified version of the Weed Risk Assessment (WRA) system used in Australia and New Zealand to determine if the system's predictions regarding the impact of non-native species coincided with scientists' evaluation of invasive plant species in Hawaii. Out of 172 invasive plant species, the screening system identified 95% of the major pests and 85% of the non-pest species. The test failed to classify one of the major pests correctly, and eight of the minor pests were classed as "non-pests." Researchers were pleased with the performance of the system and encourage the use of the WRA in future to predict invasive-ness of species before allowing intentional introductions. Also in this edition of *Conservation Biology* is an evaluation of eradication of feral cats on islands and a study on how nutrient availability and herbicide use influence the success of biological control efforts in Montana grasslands. See below for an article on predicting the success of mammalian invaders which also appeared in *Conservation Biology*.

Daehler, C.C., J.S. Denslow, S. Ansari, H-C. Kuoa. 2004. Risk-Assessment System for Screening Out Invasive Pest Plants from Hawaii and Other Pacific Islands. *Conservation Biology*. 18: 360-368.

Home on the Range - Predicting Invasion Success in Mammals

A study of 40 invasive mammals in Australia has shown that the native range size of these species was linked to invasion success. Number of introduction events was also linked to invasion success, as was introduction elsewhere. Interestingly, life history traits such as generation time and number of offspring were not good predictors of invasion success, except in the case of migratory tendency, which was negatively correlated with invasion success. However, the degree to which species spread once introduced was linked to life history traits. These findings will be extremely useful in formulating risk assessment models for mammalian invaders.

Forsyth, D.M., R.P. Duncan, M. Bomford, and G. Moore. 2004. Climatic Suitability, Life-History Traits, Introduction Effort, and the Establishment and Spread of Introduced Mammals in Australia. *Conservation Biology*. 18: 557 - 569.

The Ones that Got Away... Including Failed Introductions to Assess Invasiveness in Fish

Not all species introduced to an environment will become invasive. However, in order to predict invasion success, it is important to consider both failed and successful introductions. Using data that included successful and failed introductions in California, researchers were able to show that there are several factors that are important to predicting invasion success in fish. Spread of introduced fish was best predicted using measures of physiological tolerance and propagule pressure. Species impact was best predicted using a measure of prior invasion success. The results from analyses like this will help guide and inform management decisions regarding current and future species introductions.

Marchetti, M.P., P. B. Moyle, and R. Levinec. 2004. Alien fish in California watershed: characteristics of successful and failed invaders. *Ecological Applications*. 14: 587-596.

Listing Likely Lakes - 48 Lakes Vulnerable to Smallmouth Bass Invasions

Analysis of 788 trout lakes in central Ontario used connectivity to other lakes and the presence of large predatory fish to predict whether it was likely that smallmouth bass would be introduced and if this introduction would affect food web structure. Scientists used isotope

data, Geographical Information Systems, and knowledge of food web impacts to come to the conclusion that only 48 of these lakes (6%) were likely to have bass invade with negative consequences for lake trout species. Researchers urge that prevention measures focus on this subset of vulnerable lakes.

Vander Zanden, M. J., J. D. Olden, J. H. Thorne, and N. E. Mandrak. 2004. Predicting Occurrences and Impacts of Smallmouth Bass Introductions in North Temperate Lakes. *Ecological Applications*. 14: 132-148.

D. Upcoming Conferences and Events

April 6 - 8, 2004, Baltimore, Maryland

Experts' Meeting on the Implementation of a Global Invasive Species Information Network

In order to foster worldwide collaboration on invasive species, technical experts on invasive species data-sharing are invited to attend a meeting in Maryland this spring. Desired outcomes of the meeting will be creation of an electronic information network, agreement on common data sharing methods, a proposal funding toolkit, a list of online invasive species databases, and proceedings, including a summary of regional invasive species information. Pre-meeting details are being discussed this February, for those who wish to become involved. For more information see <http://gisin.infointl.com>. Even if you cannot attend the meeting, you can become a part of this invasive species information community via the National Biological Information Infrastructure portal at <http://my.nbio.gov>.

April 20 – 23, 2004, Chicago, Illinois

17th Annual National Conference Enhancing the States' Lake Management Programs: Monitoring Lakes and Reservoirs

The annual conference to improve lake management will be held at the Congress Plaza Hotel in Chicago. Topics on the agenda include monitoring, managing urban watersheds, galvanizing lake organizations, and improving outreach techniques. There will also be meetings of North American Lake Management Society chapters. Contact Bob Kirschner, Chicago Botanic Garden, bkirschn@chicagobotanic.org for more information. For more information, see <http://www.nalms.org/symposia/chicago/index.htm>.

April 26-30, 2004, Ann Arbor, Michigan

Great Lakes Panel of the Aquatic Nuisance Species Task Force (ANSTF) Meeting and Workshop on Baltic Sea-Great Lakes Cooperation

Meeting of the Great Lakes Aquatic Nuisance Species Panel (April 26-27) will be followed by a workshop on cooperation between the Great Lakes and the Baltic Sea (April 29-30). For more details see: <http://www.glc.org/ans/panel.html#meet>.

April 27, 2004, Rochester, New York

Great Lakes Restoration Workshop: Your Chance to Make a Difference in Our Lakes' Future

The aim of this meeting is to obtain input from stakeholders on priorities for lake-wide restoration efforts. Stakeholders and those interested in New York's Great Lakes are welcome to attend. Outcome from the meeting will help shape policy priorities for the Council of Great Lakes Governors' Great Lakes restoration initiative. For more information on the workshop, please visit www.seagrant.sunysb.edu/Pages/GLRestoration0404.htm or contact Chuck O'Neill, Coastal Resources Specialist, NY Sea Grant, cro4@cornell.edu or 585-395-2638.

April 30 – May 2, 2004, Hamilton, New York

New York State Federation of Lake Associations, Inc. 21st Annual Meeting and Conference

Few details are available online so far, but please contact Nancy Mueller for further details

at 800.796.3652 or fola@nysfola.org. You may also want to keep an eye on the New York State Federation of Lake Associations web-site: www.nysfola.org.

May 19-20, 2004, Singapore

The Second International Conference and Exhibition on Ballast Water Management

The Institute of Environmental Science and Engineering is hosting the second annual meeting for better ballast water technology. Topics to be covered range from ship design to policy, economics, and safety. For more information see <http://www.ntu.edu.sg/iese/ballast2004>.

May 3 – 7, 2004, Fort Lauderdale, Florida

Aquatic Weed Control, Short Course 2004

This workshop will focus on weed control efforts specific to southern states, but the program includes sessions on plant identification, pesticide use, and weed control techniques that might be useful to managers in the Northeast. For more information see <http://conference.ifas.ufl.edu/aw/>.

May 17 – 18, 2004, Newport, Rhode Island

Northeast Aquatic Nuisance Species (NEANS) Panel Meeting * Draft Agenda Now Posted**

Spring meeting of the NEANS Panel. Please keep an eye out for further developments at <http://www.northeastans.org/meetings.htm>.

June 8 - 11, 2004, Beijing, China

Beijing International Symposium on Biological Invasions - Species Exchanges between Eastern Asia and North America: Threats to Environment and Economy

The goals of the symposium are to share expertise and knowledge of invasive species, assess our capacity to predict bioinvasions, contrast the ecology of species in their invaded habitats with that of their native range, and to create a forum to discuss management, research, and policy goals. Contact for North America is Dr. Shili Miao of the South Florida Water Management District, email: smiao@sino-eco.org. For more information see <http://bisobi.sino-eco.org>.

June 20 – 24, Durban, South Africa

4th International Weed Science Congress

This year's conference will include talks on aquatic weed management, biological control, proactive management of invasive species, and many other topics. The deadline for early registration is March 21 and regular registration ends May 31. For more information see <http://www.iwsc2004.org.za>.

June 27 – 30, 2004, St. John's, Newfoundland

Coastal Zone Canada 2004 Meeting

The theme of this year's meeting is "All Within One Ocean: Co-operation in Sustainable Coastal and Ocean Management." Sub-themes include Challenges, Strategies, Tools, and Managing Shared Waters. The meeting will be held in St. John's, Newfoundland. Deadline for abstract submission was January 16, 2004. For more information see <http://www.czca-azcc.org/index2.htm>.

July 11 - 14, 2004, Tampa, Florida

44th Annual Meeting of the Aquatic Plant Management Society

This year's meeting will include discussion of aquatic plant management and research.

Deadline for abstract submission for posters and presentations is April 15, 2004. For more information see <http://www.apms.org/2004/2004.htm>.

July 18 - 23, 2004, Kailua-Kona, Hawai'i

47th Annual Symposium International Association of Vegetation: Landscape Change and Ecosystem Disturbance: Islands and Continents

The meeting will explore the diversity and uniqueness of Hawaii's biota, and will include a plenary speech by Julie Denslow on the subject of assessing impacts of invasive species on plant communities. Great field trips are also on the agenda. For more details, please see <http://conference.uhh.hawaii.edu/iavs2004.info.htm>.

August 26 - 29, 2004, Yokohama, Japan

International Conference on Assessment and Control of Biological Invasion Risks

This conference will have special sessions on, among other things, marine and freshwater invasions, legislative design and liability, and the advantages and disadvantages of various management techniques. Deadline for abstract submission is April 30, 2004. For more information see

http://bio-eco.eis.ynu.ac.jp/jpn/top/topic_sheet/symposium20040827/eng.html.

August 31 – September 2, 2004, Dijon, France

XIIth International Conference on Weed Biology

The XIIth International Conference on Weed Biology will be held Aug 31 - September 2, 2004 in Dijon, France. Proposals for paper and poster presentations are due December 15, 2003.

Information on the conference can be found at <http://www.dijon.inra.fr/malherbo/AccueilF1.htm>.

September 12 – 15, 2004, Seattle, Washington

2nd National Conference on Coastal and Estuarine Habitat Restoration

The goals of this year's conference are to expand our ability to restore habitat, build the restoration industry, and catalyze multi-sector collaboration. The schedule includes all-day workshops and field sessions. Poster and presentations will be accepted that fit the following themes: people, practice, science, strategy, policy and funding, evaluation, and a few additional selected topics. The deadline for submissions is February 2, 2004. For more information, see <http://www.estuaries.org/2ndnationalconference.php>.

September 19 – 23, 2004, Ennis, Ireland

13th International Conference on Aquatic Invasive Species * Preliminary Programme Now Online!**

The 2004 International Conference on Aquatic Invasive Species will be hosted by Institute of Technology, Sligo, in Ennis, County Clare, Ireland. The conference will cover subjects ranging from policy to invasion ecology to education. Deadline for abstract submission was December 31, 2003. The preliminary programme has been posted, and topics to be discussed range from shipping to zebra mussels to education and outreach. Looks like many of bioinvasions' brightest will be there, including the NEANS Panel's own Judith Pederson, Charles O'Neill, and Donna Turgeon along with Shippen Bright, MaryAnn McGarry, Daniel Molloy, and Michelle Harmon. For more information visit <http://www.aquatic-invasive-species-conference.org>.

September 30 – October 1, 2004, Bern, Switzerland

3rd International Conference on Biological Invasions NEOBiota - From Ecology to Control

The topics covered at the upcoming meeting of NEOBIOTA are the ecology of invasive species, impact and risk assessment, and prevention as control. NEOBIOTA is a multidisciplinary group that links researchers with policy makers and conservation groups on issues pertaining to the introduction of alien species. Its focus is mostly on invasive species issues in Central Europe. For more details on the conference see <http://www.neobiota.unibe.ch>.

November 3 - 5, 2004, Victoria, British Columbia

24th International Symposium of the North American Lake Management Society

The theme of this symposium is "Lakes - habitat for fish, habitat for people." The meeting will have sessions on introduced aquatic species, lake restoration, and managing aquatic plant problems. Deadline for abstract submission is May 31, 2004. Other dates to remember are: September 17, 2004, early bird registration ends, and October 15, 2004, the last day to register. For more information see <http://www.nalms.org/symposia/victoria/index.htm>.

November 15 - 19, 2004, Cape Town, South Africa

XIth International Conference on Harmful Algae

This year's conference will focus on the topics of taxonomy and biogeography, population dynamics, physiology and biochemistry, and monitoring and management of harmful algal blooms. Deadline for abstract submission is May 31, 2004.

For more details please see: <http://www.botany.uwc.ac.za/pssa/hab2004>.