



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 10  
1200 Sixth Avenue  
Seattle, WA 98101

Informational Memo

Subject: Regional Invasive Species Update #12: Dec. 2005 - March 2006

From: Joan Cabreza  
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To: R10 ETPA Management Team

ecc: Internal EPA mail group, & interested outside parties

*These updates originated to update EPA regional management on EPA R10 invasive species program activity, but readership has expanded well outside EPA, so material has expanded to provide more universal value. I will include activities of interest from any reader who submits them. Credit for any errors is entirely mine.*

**EPA Activity Updates**

EPA Economic Impacts Workshop Proceedings. Final proceedings of the EPA "Economic Impacts of Aquatic Invasive Species Workshop" held July 20-21, 2005 in Washington DC are now available on EPA's National Center for Environmental Economics Website. The proceedings contain the agenda, participant list, summaries of the breakout group discussions and plenary sessions, and the two keynote speeches. *Visit <http://yosemite.epa.gov/ee/epa/erm.nsf/vwRepNumLookup/EE-0493?OpenDocument>*

Following the workshop, we have had monthly conference calls to discuss interagency follow-up. EPA HQ hopes to have about \$200k to develop 1-3 regional pilot projects aimed at obtaining regional impact estimates. The group is currently looking at a possible green crab impact study in Washington as one of the pilots (*For additional information, contact Marilyn Katz at 202/566-1246*)

Total Maximum Daily Load (TMDL) lawsuit. (See my previous Updates for background on the significance of including invasive species in TMDLs.) The comment period on the CA TMDL list closed Jan 31, 2006. Region 9 supports the new proposed CA list, which now includes some biologically-impaired streams, and there is a sense that the listings will go final. The state received a very large amount of new data (on other issues) in public comments, and expects to take 3-4 months before making a decision. Region 9 expects to see a submittal sometime this summer.

Ballast Water Lawsuit Update. (See my previous Updates for background on significance of the lawsuit.) No change from last quarter. EPA is still waiting for the judge to issue a final order specifying what EPA is to do in light of her earlier ruling (e.g., send the rule back to EPA for further action, or require EPA to issue NPDES permits and/or final rulemaking by a schedule set by the court, etc). Typically such a decision takes around 60 days, and following such a final order, the government would then have 90 days to decide whether to appeal. We should hear soon.

Regional Invasion Pathways Project Update. After completing studies on *Spartina*, the Cincinnati Lab continues to develop genetic profiles for copepod and metazoan invasive species across the West Coast. Moss Landing Marine Lab was hired to sample multiple habitats at 15 locations in WA, OR, and CA to obtain organisms for the project. Field work is scheduled to commence this April, and will involve collections of approximately 10 invasive species from various geographic populations occurring in CA, WA, and OR. (For more information, contact Mike Blum at 513/569-7043)

EPA Authorities Document. EPA recently released “Overview of EPA Authorities for Natural Resource Managers Developing Aquatic Invasive Species Rapid Response and Management Plans” (EPA Document #842-B-05-002). *The document is available online at [www.epa.gov/owow/invasive\\_species/invasives\\_management](http://www.epa.gov/owow/invasive_species/invasives_management) or hard copies can be ordered from the EPA Water Resource Center at (202) 566-1729.*

Region 10 Outreach. I provided training on invasive species and native plants to 100 WSU Master Gardener trainees in March. This is the first year the Master Gardener program has included sessions on either of these topics, and this was a chance to make a big impact. I also continue to contribute articles in the EPA Watertalk Newsletter, where a regular section is now established for invasive species issues and updates.

Field Projects. Several EPA invasive species field projects are planned this spring. Over 20 staff will be involved in invasive removals at restoration sites on the Duwamish Waterway on Earth Day, and 10 Americorps students who have been temporarily assigned to EPA will be involved in a variety of projects at other locations around Washington.

### **Activity In Pacific Northwest States**

Columbia River Zebra Mussel Plan. A final draft of the Columbia River Basin Rapid Response Plan is now available. It outlines response activities, summarizes eradication and control actions, and contains a rapid response notification list. The plan also incorporates actions identified at the large group meeting in Portland last September. (To obtain a copy, contact Paul Heimowitz at 503/736-4722, or Stephen Phillips at 503/650-5400.)

WA Aquatic Plant And Algae Management General Permit. The Washington Department of Ecology is issuing a final general permit to cover the application of aquatic herbicides, algaecides, and nutrient inactivation products to state waters. The

permit rescinds and replaces the Nuisance Plant and Algae Control NPDES General Permit (WAG-994000), and provides coverage for any in-lake treatment of state listed noxious weeds or quarantine-list weeds. Ecology has extended the public comment period for the proposed rule amendments to Chapter 173-224 (Wastewater Discharge Permit Fees). Written comments must be received no later than 5:00 p.m, April 7, 2006. *(For more information contact Kelly McLain, at 360/407-6938, or see <http://www1.leg.wa.gov/documents/wsr/2006/05/06-05-105.htm>)*

WA Invasive Species Council. On March 20, the Governor signed legislation establishing a WA Invasive Species Council. This is the result of a joint effort of local, tribal, state, and federal governments, the private sector, and NGOs. The Council members are intended to be high level state agency people, but several federal agencies, including EPA, are listed in the legislation as potential ex-officio (non-voting) members. The Council's purpose is to provide policy direction, planning, and coordination for the state's prevention and control efforts.

WA Invasive Species Workgroup. The Workgroup is planning a large meeting later this spring to bring the various interests to the table and provide input to the newly formed Invasive Species Council. The group is chaired by the Executive Policy Advisor, and consists of several state agencies and EPA. The main focus of the group has been Council establishment, so I assume our job may be done once the Council is up and running.

WA Aquatic Nuisance Species (ANS) Committee. The state ANS committee will hold its semiannual meeting in Olympia, on April 17. We will discuss the Committee's role in light of the new Council establishment, and next steps in developing the Aquatic Invaders Awareness Campaign. There will also be informational presentations and updates on ballast water treatment approvals, *Spartina*, the Aquatic Plant Permit, the Puget Sound tunicate response, and knotweed biocontrol. *(For more information, contact Joan Cabreza at 206/553-7369)*

WA Noxious Weed Control Board Report. The WA Noxious Weed Control Board has published its biannual report covering activities of the state and county weed boards and weed districts, from January 2003 through June, 2005. The 111-page report includes updates by the WA Departments of Agriculture, Ecology, Transportation, Natural Resources, Fish and Wildlife, and the Parks and Recreation Commission. Nine "Highlights & Success Stories" are detailed and the appendices contain the text of all of the WA major noxious weed control laws. A PDF of the report is posted at [www.nwcb.wa.gov](http://www.nwcb.wa.gov) *(For more information, contact Steve McGonigal at 360/902-2053)*

Pacific Northwest Invasive Species Book. Although publication has been delayed, we hope this multiple-author, UW-published book will be available in late spring. The book describes 100 of the least-wanted terrestrial and aquatic invasive species in the Pacific Northwest. Each species has a picture, a range distribution map, and a description of the organism, its impacts, habitats and control measures. *(For more information, contact Sarah Reichard at 206/616-5020)*

ANS Guide To The Columbia Basin. The Columbia River Basin ANS publication is still on track for sometime in 2006. The 40-50 page booklet is intended to promote understanding of ANS in the basin, and make readers more receptive to information on how to avoid future introductions, avoid spreading existing species, and how to report new sightings. *(For more information, contact Paul Heimowitz at 503/872-2763)*

Science Class Outreach. Oregon Sea Grant will soon release brochures targeted at school science classes on proper disposal of live organisms. The brochures were developed after it was discovered that an ecology curriculum being marketed to schools apparently includes live non-native crayfish and aquatic noxious weeds. *(For more information, contact Sam Chan at 503/722-6728)*

Boat Inspection Video. Pacific State a Marine Fisheries Commission has contracted Bill Zook to develop a video for watercraft inspection training classes, as part of the 100th meridian zebra mussel prevention efforts. Development is underway, and the video will be distributed to the 400 + boating agencies in a 5 state region (CA, NV, WA, OR, ID). Video development was funded primarily with an EPA grant. *(For more information, contact Stephen Phillips at 503/650-5400)*

OR WeedMapper Website. The WeedMapper website is now up and running. It contains a wealth of information on Oregon state-listed weeds and their distribution, and encourages others to input information on weed locations collected during survey or management activities. *Check out the site at <http://www.weedmapper.org>.*

ID Aquatic Nuisance Species (ANS) Plan. ID has submitted a workplan proposal to the Pacific States Marine Fisheries Commission, to fund development of an Aquatic Nuisance Species Plan. If funded, the plan is expected to be completed by the end of the calendar year. This is a joint effort of IDOA and IDFG. *(For more information, contact Fred Partridge at 208/287-2773.)*

ID Invasive Species Coordinator Position. An ID state Invasive Species Coordinator position, to be located in the Department of Agriculture, has been approved and will be effective July 1, 2006. *(For more information, contact Phil Bandy at 208/332-8552.)*

ID Aquatic Noxious Weed Control. Legislation to fund a noxious weed control program for Eurasian water milfoil is now being considered in the legislature, and chances for its passage are considered good. Passage would provide \$2-4 million for milfoil control, and allow the program to be up and running by July. *(For more information, contact Phil Bandy at 208/332-8552.)*

AK Invasive Species Council: The AK Invasive Species Council development is moving forward, funded by an EPA Geographic Initiative grant to the University of Alaska. A committee composed of five state and federal agencies has developed a draft agreement related to a state invasive species council. They have also been working with legislative aides, and there is a great deal of discussion about state legislation. A facilitated meeting of the interested players, including the Governor's Office, is planned soon in Anchorage,

and a council model will be presented to participants. (For more information, contact Michelle Hebert at 907/474-2423)

State of Seattle's Urban Forests. Ever wonder how Seattle's urban forests are faring in the war against invasive plants? Take a look at this data from the Seattle Urban Nature project, and then join the next invasive removal project!

<u>% Cover Invasive Species</u>	<u>Infested Acres</u>	<u>% of Total Forested Acres</u>
Trace invasive cover (0-10%)	286	11%
Low cover (11-30%)	676	25%
Medium cover (31-50%)	462	17%
Mod. High cover (51-80%)	492	18%
High cover (81-100%)	246	9%
Very High cover (>100%)	548	20%
<b>Totals</b>	<b>2710</b>	<b>100%</b>

(Source: *The Understory, Seattle Urban Nature project, December 2005. To receive their newsletter, contact Jeff Bash at [jeff@seattleurbannature.org](mailto:jeff@seattleurbannature.org)*)

### **Ballast Water**

Ballast Water Treatment Systems Workshop. The U.S. Coast Guard held a workshop on approval of shipboard installation of experimental ballast water treatment systems, in Washington, DC on March 21, 2006. (To view the Federal Register notice, go to <http://a257.g.akamaitech.net/7/257/2422/01jan20061800/edocket.access.gpo.gov/2006/E6-2826.htm>)

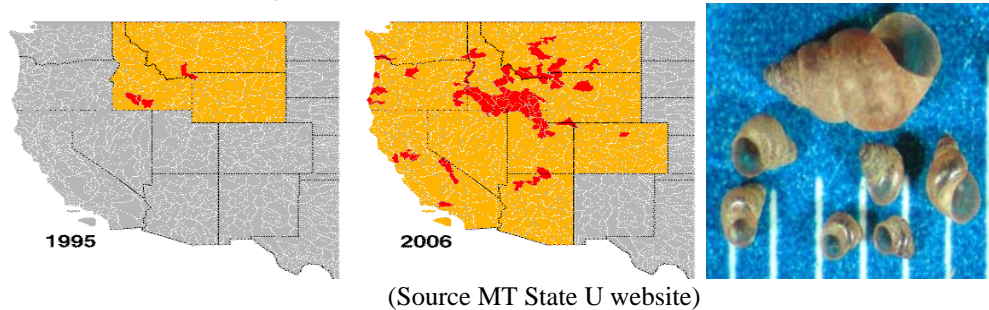
WA Ballast Water Treatment. It is important to begin developing and approving ballast water treatment methods, because WA state law requires all ships to treat or exchange their ballast water after July 1, 2007. On December 9, the WA Environmental Soundness Workgroup reviewed data on the BalPur<sup>tm</sup> treatment process and recommended WDFW consider approving a trial shipboard installation. The treatment system uses electricity to generate chlorine and related oxidants from the chlorine in seawater, uses it to destroy the ballast water organisms, and then uses sodium sulfite to reduce the oxidants and neutralize the toxicity. The method appears to be practical, kills most species, and is inexpensive, so it has many positive aspects. UW has conducted research on this system and the WA Department of Ecology has reviewed toxicology tests on the system's discharge. This technology has also been chosen by the USCG as the first technology to be tested at their Key West facility, partially because it is simple and has few moving parts. (For more information, contact Randy Marshall at 360/407-6445 or Scott Smith at 360/902-2724)

CA Ballast Water Standards. California State Lands Commission has released its "Report on Performance Standards for Ballast Water Discharges in California Waters". The report was reportedly acted on at the Commission's February meeting. (Get the report at [http://www.slc.ca.gov/Division\\_Pages/MFD/MFD\\_Programs/Ballast\\_Water/Documents/FnlPerformanceStdRpt.pdf](http://www.slc.ca.gov/Division_Pages/MFD/MFD_Programs/Ballast_Water/Documents/FnlPerformanceStdRpt.pdf))

## Species-Specific Issues

A Second New Zealand Mudsnail (NZMS) Morph. Prior to September 2005, all Western USA NZMS were thought to be identical, and represent a single introduction from New Zealand or Australia. Those from the Great Lakes are a different line, probably introduced from Europe. A second form of the mudsnail is now known from a short section of the Snake River in Idaho. This second morph probably represents a second introduction, and has been in the area for at least several years. Preliminary genetic work by Mark Dybdahl verifies that it is a separate genotype, but he did not find a match to any other known invasive genotype from around the world. The morphs look like 2 species. They overlap in range, but show no intermediates. Within its range, the second morph dominates the typical morph. (*Excerpted from the MT State university website. Read more at <http://www.esg.montana.edu/aim/mollusca/nzms/morphs.html>*)

Mudsnails in general are spreading, and as seen from the maps below, and are now found in R10 states of WA, OR and ID:



(Source MT State U website)

ID Mudsnail Meeting. On May 4-5, there will be a meeting in Hagerman, ID regarding New Zealand mudsnail (NZMS) control strategies for hatcheries. One meeting goal is to share information on excellent progress that has been made in methods to reduce the impact and spread of NZMS from fish hatcheries. The other primary goal is to examine further research needs and collaboration opportunities. This timing is also relevant for the pending submittal of the national New Zealand Mudsnail Management Plan to the national Aquatic Nuisance Species Task Force, and the subsequent additional research funds that may follow. (*If interested, contact Paul Heimowitz at 503/736-4722*)

WA Nutria Trapping. The Nature Conservancy announced a \$10,000 challenge grant to resume nutria trapping in Skagit County, WA. This highly invasive rodent has been found in several water bodies, and if left unchecked, could devastate the region's marshlands, undermine dikes, and damage crops. The Western Washington Agriculture Association has agreed to mobilize the farming community and other stakeholders and manage a new trapping contract, once sufficient funds are raised. The Conservancy hopes the challenge grant will raise \$30,000—enough money to enable a trapping program to continue until stakeholders can present lawmakers in Olympia with a comprehensive nutria control and eradication strategy for Skagit County and seek an appropriation to fund it.

Puget Sound Cub Tunicate. The solitary club tunicate *Styela clava*, (discussed in detail in my last two updates), has caused huge problems for shellfish growers on the east coast. It has now been found covering boats and docks at three WA Marinas. On November, 5 divers removed 1100-1200 pounds of tunicates, an estimated 1% of the infestation. Because warm weather stimulates spawning, and the tunicates infest hundreds of boats, once boating season starts tunicates could be spread throughout the sound, so timing is critical. With \$75k in emergency funds, and an additional \$175k from the Governor's supplemental budget, WDFW is planning eradication efforts and should have a plan next week. The Tunicate Workgroup has met and held one advisory committee meeting. A second meeting will be held April 17, in Olympia. *(For more information, contact Kevin Anderson at 360/725-5452.)*



Knotweed Biocontrol Workgroup. Japanese and giant knotweeds are a serious problem not only in the Pacific Northwest and East Coast, but also in Europe, where a biological control program is being developed, and some research, foreign exploration and initial screening of agents has already been completed. The Forest Service is currently supporting research to bring these biocontrol agents to the U.S. A workgroup has been formed to discuss the best approach to moving the program forward, and we held our first meeting on March 20, in Vancouver. About 10 people attended, including a biocontrol expert from Cornell University, in NY. *(For more information, contact Fritz Gravstad at 360/642-3920)*

National Mitten Crab Management Plan Implementation Update. The USFWS ANS Program is now working with various partners to (1) define the range and abundance of mitten crabs in San Francisco Creek and to develop relationships among type of substrate burrowed, burrow morphology and rate and seasonality of burrow formation, bank stability, and erosion; (2) implement early detection volunteer monitoring and educational outreach for mitten crabs in the Columbia River, Coos Bay, OR, and Puget Sound; (3) further life history modeling of mitten crabs in San Francisco Estuary; (4) evaluate variables contributing to annual variability in survival and recruitment dynamics of larvae in south San Francisco Bay tributaries, and developing protocols and a practical guide for early detection and monitoring; (5) evaluate recruitment dynamics of mitten crab larvae; (6) evaluate eradication methods for California; and (7) continue to monitor for juvenile mitten crabs in tributaries of the Sacramento-San Joaquin Rivers Delta.

Systematic monitoring began in 2004 and is anticipated to continue through 2006. (*For more information, contact Jeffrey Herod at 209/946-6400 X 321.*)

### **Other Activity**

Hazard Analysis and Critical Control Point (HACCP) Website. Planning support for HACCP plans in the form of a planning manual, supporting documents, forms and a database of completed HACCP plans are available in several formats at the HACCP website. The website requests users share their best management practices and return any completed HACCP plans for the database. (*Visit the website at [www.haccp-nrm.org](http://www.haccp-nrm.org) .*)

National Legislation. Numerous bills related to invasive species, including the National Invasive Species Act reauthorization, have been introduced in Congress. But not much has happened on these during the last quarter, and most legislation still appears to be pending.

Roadside Weeds Video. The video "Dangerous Travelers-controlling Invasive Plants Along America's Roadways" is complete and soon to be distributed on DVD. It's good. (*To request a copy, call 909/599-1267 x 235.*)

Wildflower Seed Mix Study. Wildflower seed packets are often advertised as an easy way to establish native groundcovers. But UW researchers growing 19 packets of wildflower mixes found that each contained from three to 13 invasive species and eight had seeds for plants considered noxious weeds in at least one US state or Canadian province. A third of the packets listed no contents, and a little more than another third had inaccurate lists. Only five of the 19 correctly itemized everything.

Lax Oversight of Gene-Altered Crop tests. An audit by USDA's Office of Inspector General (IG), involving visits to 91 field test sites, found USDA APHIS has failed to adequately regulate field trials of genetically engineered (GE) crops. The report noted biotechnology regulators missed violations of their own rules, did not inspect planting sites when they should have, and did not assure that the genetically engineered crops were destroyed when the field trial was done. APHIS responded that it was already taking steps to adopt 23 of the 28 IG recommendations, but the IG's office indicated further improvements would be required. Field trials testing GE crops rose to 67,000 acres for such tests in 2004, up from only 8,700 acres in 1994. Once crops have proved themselves in field trials, USDA can de-regulate them, and seeds and harvested crops can be sold essentially like any other seeds and crops. (*Obtain the audit report at <http://www.usda.gov/oig/webdocs/50601-08-TE.pdf> )*

Updated Websites. The Western Regional Panel and ANS Task Force websites have been updated; check them out at <http://www.fws.gov/answest/> and <http://www.anstaskforce.gov/default.php>. The National Invasive Species Information Center (NISIC) at the National Agricultural Library has also launched a redesigned Web

site, at <http://www.invasivespeciesinfo.gov/>. These websites all feature links to images, fact sheets, management plans, and an extensive list of agencies and organizations with interest in preventing, controlling, or eradicating invasive species.

National Invasive Weed Awareness Week was held February 26 - March 3. The two legislative goals for this year's invasive weed awareness week included funding the 2004 Noxious Weed Control and Eradication Act, and passing the National Aquatic Invasive Species Act. See [http://www.nawma.org/niwaw/niwaw\\_index.htm](http://www.nawma.org/niwaw/niwaw_index.htm) for Weed Awareness Week activities.

New Zealand Invasives: For the first time, New Zealand's native plants are officially in a minority, out-numbered by wild exotic species, 2350 to 2400, according to records from the country's herbariums. This is similar to Hawaii's condition; in 2003, Hawaii had 1003 native flowering plants and 1139 species of non-native plants naturalized in the wild. (*Paraphrased from Bishop Museum Occasional Papers (76:5)*)

Ecological Society of America Statement On Invasive Species. The paper "Biological Invasions: Recommendations for U.S. Policy and Management," was released March 3, 2006. It recommends that the federal government take the following actions: (1) use new information and practices to better manage commercial and other pathways; (2) adopt new, more quantitative procedures for risk analysis and apply them to every species proposed for importation in the country; (3) use new, more cost-effective diagnostic techniques to increase active surveillance and sharing of information about invasive species, so that responses to new invasions can be more rapid and effective; (4) create new legal authority and provide emergency funding to support rapid responses to emerging invasions; (5) provide funding and incentives for cost-effective programs to slow the spread of existing invasive species; and (6) establish a National Center for Invasive Species Management (under the existing National Invasive Species Council) to coordinate and lead improvements in federal, state, and international policies on invasive species. (*Download a copy of the ESA paper at : <http://www.esa.org/pao/esaPositions/>*)

Infested Mulch Rumor: Incorrect information is being circulated on the Internet asserting that mulch from Louisiana containing Formosan termites is being shipped all over the country. This is another urban myth. The Louisiana Department of Agriculture and Forestry's **has** placed quarantines on the woody debris from the hurricane-battered areas, and a website has been set up to provide information on specific measures that the government is taking to deal with the quarantined debris. (*To view this informational website, go to [http://nationalplantboard.org/la\\_mulch.html](http://nationalplantboard.org/la_mulch.html)* )

Invasive Species Forecasting System. NASA and USGS are developing a National Invasive Species Forecasting System for the early detection, remediation, management, and control of invasive species on Department of Interior and adjacent lands. The forecasting system will provide a framework for using USGS's early detection and monitoring protocols, and predictive models, to process data and create on-demand, regional-scale assessments of invasive species patterns and vulnerable habitats. When fully implemented, the forecasting system will provide a mechanism for generating

electronic and paper maps of hot spots for potential exotic species invasions. (Source: ISFS. Visit their home page: <http://bp.gsfc.nasa.gov/index.html> )

### **Upcoming Conferences**

14<sup>th</sup> International Aquatic Invasive Species Conference. USGS and a number of other agencies, are hosting the conference in Key Biscayne, Florida, May 14–19, 2006. There are a number of sessions relevant to our region, including sessions on zebra mussels, shellfish, and ballast water, and the Key West ballast water test facility is an associated field trip. (See more conference information at [www.icaais.com](http://www.icaais.com))

Seattle Invasive Plant Conference. The USFS and UW Botanical Garden will host an invasive plant conference, “Meeting the Challenge; Invasive Plants in Pacific Northwest Ecosystems”, on September 19 and 20. It will be held at the UW Center for Urban Horticulture, and includes a number of distinguished speakers. *Meeting details and a call for submitted papers and posters are available at <http://depts.washington.edu/urbhort/>*

Aquatic Animal Health Symposium. The 5th International Symposium on Aquatic Animal Health will be held Sept 2-6 in San Francisco, CA. People wanting to contribute to a session “Invasive Species and Their Impacts on Fish Health” should submit abstracts before May 1, 2006. (For more information, contact Linda Beck at 406/994-9947.)

Asian Carp Symposium: “Invasive Asian Carps in North America: A Forum to Understand the Biology and Manage the Problem” will be held August 22-23, 2006 in Peoria, IL. (For more information Visit <http://www.asiancarp.org> )

### **Grants Available**

NOAA Aquatic Invasive Species Grants The NOAA Aquatic Invasive Species Program and National Sea Grant College Program are soliciting applications for aquatic invasive species research and outreach projects for: (1) human health-related outreach activities related to the invasive species lionfish (*Pterois volitans*) in the southeast United States, (2) research related to control of invasive green crab (*Carcinus maenas*), and (3) research and outreach related to the control of several species of tunicates invading the northern east and west coasts of North America and related fishing grounds. Grants are expected to vary between \$5,000-\$100,000 per project, depending on the activity proposed. Proposals must be received no later than 5pm EST, April 13, 2006, and should be submitted through Grants.gov, at:

<http://a257.g.akamaitech.net/7/257/2422/01jan20061800/edocket.access.gpo.gov/2006/pdf/E6-4378.pdf>

EPA/USDA/NASA Grants. EPA, USDA, and NASA are seeking research applications on the ecological impacts from interactions of climate change, land use change and invasive species. Research is collectively sought to understand: (1) how climate change and land use change influence the establishment, abundance and distribution of invasive species, (2) how climate change affects ecological thresholds that determine the local and

regional abundance and distribution of invasive species, 3) how invasive species alter ecological processes to increase their success and how this alteration is influenced by climate change, (4) how changes in species dynamics feedback to influence climate and land use change; or (5) how climate change alters the chemical, biological and mechanical management of species.

EPA is particularly interested in species in freshwater wetlands, watersheds, lakes, rivers, estuaries and near coastal systems. USDA is particularly interested in managed terrestrial systems such as forest lands, grasslands, rangelands and cropping systems. NASA is interested in both linked aquatic and terrestrial ecosystems and managed terrestrial ecosystems. EPA, USDA and NASA will commit up to approximately \$4.2M, up to \$2 M, and \$1.5M respectively. Grants are expected to be awarded in the range of \$150,000 – 200,000 per year for up to three years. Educational institutions, non-profits, and tribal, state and local governments, are eligible to apply. (*Contact Bernice L. Smith: 202-343-9766; or email [smith.bernicel@epa.gov](mailto:smith.bernicel@epa.gov) for more info.*)

PREISM Grant. The publication “Program of Research on the Economics of Invasive Species Management (PREISM), Fiscal 2006, Competitive Award Program: Description and Application Process” describes PREISM's priority research areas and application requirements for 2006. The deadline for submitting proposals is April 28, 2006. Priority Research Areas identified for fiscal year 2006 are (1) Institutions and Incentives for Efficient Invasive Species Prevention and Management (2) Practical Decision Analysis for Invasive Species Management and (3) International Dimensions of Invasive Species Management. This year, applicants can submit proposals to PREISM electronically through the [Grants.gov](http://Grants.gov) website or as paper applications.