



Selected Resources on NONINDIGENOUS INVASIVE SPECIES (NIS)

Compiled for Teacher convenience in March 2006.
Availability, prices and Web sites are subject to change.
Contact and inquire before ordering. This is not an all-inclusive list.

Curricula and Classroom Activities

Attack Pack is a self-contained teaching aid for high school students to teach elementary school students about aquatic nuisance species, their life cycles, effects and how they spread. It includes books, a videotape, Power Point presentation, brochures, watch cards, maps and hands-on activities. Contact Phil Moy, Wisconsin Sea Grant, 706 Viebahn St., Manitowoc, WI 54220, 920-683-4697.

Center for Invasive Plant Management provides three resources in one place: information to teach concept of invasive species, information on related science fair projects and links to many K-12 teaching resources from various federal, regional and state agencies.
Go to http://www.weedcenter.org/education/edu_overview.html#edres

Community Stewardship Projects on Exotic Aquatic Species describes 15 student-developed projects in various areas of the country to reduce or control invasion by exotic species. Each description identifies the objectives, activities and outcomes of the projects, providing ideas for adaptation in any area. Contains small bibliography of resources. Contact Robin Goettel, Illinois-Indiana Sea Grant, 217-333-9448.

EEK! Environmental Education for Kids, is an online magazine provided by the Wisconsin Department of Natural Resources with many articles on invasive species. An active search engine on the splash page will provide many resources for teachers and children to use.
Go to <http://www.dnr.state.wi.us/org/caer/ce/ee/index.htm>

ESCAPE (Exotic Species Compendium of Activities to Protect the Ecosystem) This group of 36 hands-on, multidisciplinary activities is filled with new options for teaching about exotic species. ESCAPE's peer-reviewed lessons incorporate English, social studies, art and music with science-based research and data collection and meets National Science Standards. Includes special laminated game set. Contact Valerie Eichman, Illinois-Indiana Sea Grant, 217-333-6444 or eichman@uiuc.edu. Cost \$65.

Exotic Aquatic Exotics on the Move is a compendium of lesson plans to create interdisciplinary links between the social and natural sciences. The goal of the project is to teach students about the ecological impacts of non-native species

and show them that environmentally responsible decisions can help prevent the spread or transport of such organisms. The collection includes teacher resources, interdisciplinary lesson plans and activities for elementary, middle and high school students. All were developed by teachers to meet specific educational standards. Project is a result of a National Sea Grant College Program teacher workshop project. Contact the Washington Sea Grant Program, <http://www.wsg.washington.edu,sgpubs!@washington.edu>, or 206-543-6600 to order on CD-Rom at \$6 plus S&H or in hard copy at \$12 plus S&H.

A Kid's Journey to Understanding Weeds is a 10-minute videotape about invasive plants and their impact on people's lives. Third-graders show real life problems from invasive plants on natural resource areas. A set of activities for the third-grade classroom, designed for the Gulf Region, can be used in conjunction with the video. Produced by A Kids Journey to Understanding Weeds Project. Contact WWPC/PR (for the video), P.O. Box 728, Douglas, WY 82633-0728, 307-358-2775. Cost \$12. Contact Intermountain Ag Foundation (for the set of classroom activities), P.O. Box 1901, Cheyenne, WY 82003.

The Montana Weed Project Teachers Handbook is an interdisciplinary curriculum developed by REAP (Resource Education Awareness Project) for fifth-through 12th-grade students. It focuses on the effects of invasive species on ecosystems. Contact Montana Weed Project, Missoula County Conservation District, 3550 Mullan Rd., Suite 106, Missoula, MT 59808-5125, 406-829-3395.



Lionfish

Photo courtesy NOAA

Nab the Aquatic Invader, an online educational game for students to learn about invasive species, was developed by the Illinois-Indiana Sea Grant Program. This interactive teaching tool is periodically changing.
Go to <http://www.sgnis.org/kids>

Project TELLUS Exotic Species Video Module is part of a series of interactive video lessons for middle school students on global change issues related to the Gulf of Mexico region. Each module uses an interactive video that melds global change issues with fundamental ecology concepts. The series covers biodiversity, exotic species, climate change, water quality, and overpopulation. Contact Dianne Lindstedt, Louisiana Sea Grant, 225-578-1558, or dlindst@lsu.edu, or go to <http://www.lamer.lsu.edu/topics/exotics/index.htm>

Purple Loosestrife Project describes a statewide biological control program integrating formal and informal educational activities for upper elementary and secondary school students. Contact Mike Klepinger, Michigan Sea Grant, klep@msu.edu. Cost for Cooperator's Handbook \$30; Secondary School Activity Set MSG 99-6191 \$5.
Go to <http://www.miseagrant.umich.edu/pp>

Return of the Natives is a four-part curriculum to approach control of exotic species by promoting the cultivation and conservation of native species. Developed and used in conjunction with the California Science Content Standards. This collection of lesson plans, maps and activities, identified by grade level, can be downloaded directly.
Go to <http://watershed.csumb.edu/ron/roncor/cor/main.htm>

Hands-on Tools

Zebra Mussel Mania Traveling Trunk is an award-winning education kit and curriculum incorporating experiments, games, stories, community action projects and other hands-on activities for grades 3-8. The curriculum includes 10 activities to teach students a range of problems associated with zebra mussels and other aquatic exotic species.
Contact Dianne Lindstedt, Louisiana Sea Grant, 225-578-1558 or dlindst@lsu.edu to borrow in Louisiana; Robin Goettel, Illinois-Indiana Sea Grant, 217-333-4780, to purchase.

Wetland and Invasive Plants of the Southeast, a coloring book collection of line drawings including many native wetland plants as well as non-native invasive plants. They can be colored with crayons or colored pencils and then used as a reference or learning tool. Contact University of Florida Center for Aquatic and Invasive Plants, 800-226-1764. Cost \$4.95.

Background Resources

Alien Ocean is a 30-minute video introducing the issue of exotic marine species with a focus on their spread by ballast water of large ships. Part of a series of videos and fact sheets titled Exotics in the Chesapeake. Contact Maryland Sea Grant for information and to order online at <http://www.mdsg.umd.edu/Education/pubs.html>. Cost \$24.95.

Invasive Non-native Plants is a fully laminated, 62"X23" photomural of 10 invasive species found in Florida and 27 species found in various places around the United States. All plants are depicted in full color photos, some more than one square foot in size. To view, visit <http://aquat1.ifas.ufl.edu/mural.html>. Contact APRIS, Center for Aquatic and Invasive Plants, 7922 NW 71st St., Gainesville, FL 32653. Cost \$20.

Invasive Plants Changing the Face of America is a comprehensive, non-technical overview of invasive plants in the United States. This weed fact

book provides information about specific plants, impacts on the economy, ecosystems and biodiversity. It lists facts by states and territories and contains federal and state contacts for more information. *Contact the Superintendent of Documents, United States Government Bookstore, P.O. Box 371954, Pittsburgh, PA 15250-7954, 202-512-1800 (request item 024-001-03607-0). Order online at www.nps.gov/hfc/salespub/orderform.htm. Cost \$15.*

Mussel Menace! Zebra Mussels and You is an instructor's training package designed to help groups understand background information on zebra mussels. The unit includes a comprehensive guide, a slide program and a 16-minute video. *Contact Doug Jensen, Minnesota Sea Grant, 218-726-6191. Cost \$60.*

Sea Grant Nonindigenous Species CD ROM contains a comprehensive, searchable collection of research, publications and educational materials produced by the National Sea Grant College Program. This peer-reviewed collection contains scientific information on zebra mussels, Eurasian ruffe, round gobies, sea lamprey and spiny waterflea, and includes training materials, distribution maps, color photographs, video clips, newsletters and product ordering information. *Contact Doug Jensen, Minnesota Sea Grant, 218-726-6191. Cost \$14.*

Stop Exotics: Clean Your Boat is an 11-minute video to help watercraft users take responsibility for protecting their environments from invasive species. Featuring John Ratzenberger, this humorous production informs recreational boaters about the exotics they are most likely to accidentally spread like hydrilla and watermilfoil, as well as others like zebra mussels. *Contact Minnesota Sea Grant, 218-726-8106. Cost \$10 each or \$8 each with an order of 10 or more copies. Go to <http://www.seagrant.umn.edu/exotics/stop.html>*

Zebra Mussels: Lessons Learned in the Great Lakes is a set of four videos with basic information on zebra mussels for those who have not yet experienced this invasive species. The videos focus on mussel biology, spread and impact, control and outreach tools. *Contact Robin Goettel, Illinois-Indiana Sea Grant, 217-333-4780. Cost \$20.*



Rusty Crayfish

Photo by Chris Lukhaup,
<http://www.crayfishworld.com>

Useful Web Sites

Center for Aquatic and Invasive Plants

<http://aquat1.lifas.ufl.edu/welcome.html>

Center for Invasive Plant Management for K-12 education, maintained by Montana State University
<http://www.wedcenter.org/education/k12.html>

Florida's Invasive Plant site

<http://www.dep.state.fl.us/lands/invaspec>

Great Lakes maintained site of Sea Grant resources relating to aquatic nonindigenous species
<http://www.great-lakes.net/envt/flora-fauna/invasive/>

Hawaii Sea Grant's invasive species site

http://www2.ctahr.hawaii.edu/adap2/hottopics/invasive_species.htm

Invasive species for California classrooms

<http://pi.cdfa.ca.gov/wma/k-12Educationinvasive%20Sp%20in%20CA's%20classrooms.htm>

J. Paul Getty Trust site focusing on art and ecology

<http://www.getty.edu/artsednet/images/Ecology/index.html>

Louisiana Sea Grant La Marine Education Resources

(LaMer) <http://www.lamer.lsu.edu>

Louisiana Sea Grant information on invasive species

<http://www.laseagrant.org/adviserv/nis.htm>

National Aquatic Nuisance Species Clearinghouse is a library of documents on research, public policy and outreach started by New York Sea Grant. <http://www.aquaticinvaders.org>

National Aquatic Nuisance Species Task Force site to identify and control invading species. Task force led by NOAA and USFWS.

<http://www.anstaskforce.gov>.

National Biological Information Structure Invasive Species Node is a national Web site with peer-reviewed information on many invasive species. Links to the most reliable databases.

<http://www.invasivespecies.nbi.gov>

National Invasive Species Council site reporting on executive branch efforts to identify management of nonindigenous species. Council is led by representatives of the cabinet and executive branch.

<http://www.invasivespecies.gov>.

National Sea Grant College Program directory of Web pages relating to aquatic nonindigenous species

<http://www.sgnis.org/wow>

The Bridge, Ocean Sciences Education Teacher Resources

<http://www.vims.edu/bridge/exotic.html>

U.S. Geological Survey at the Florida Caribbean Science Center biogeographic information on aquatic nonindigenous species

<http://nas.er.usgs.gov>

Bookshelf References

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Devine, Robert. 1998. **Alien Invasion: America's Battle With Non-Native Animals and Plants**. Washington, D.C.: National Geographic Society. 280 p.

Grimshaw, John. 1998. **The Gardener's Atlas: The Origins, Discovery, and Cultivation of the World's Most Popular Garden Plants**. New York: Firefly Books. 224 p.

Hoyer, Mark V., Daniel E. Canfield, Jr., Christine A. Horsburgh and Karen Brown. 1996. **Florida Freshwater Plants: A Handbook of Common Aquatic Plants in Florida Lakes**. Gainesville, FL: University of Florida, Institute of Food and Agricultural Sciences. 264 p.

Langeland, K. A. and K. Craddock Burks, eds., **Identification and Biology of Non-Native Plants in Florida's Natural Area**. Gainesville, FL: University of Florida. 165 p.

Ramey, Victor. 1998. **Aquatic Plant Identification Deck**. Gainesville FL: University of Florida, Center for Aquatic and Invasive Plants, Institute of Food and Agricultural Sciences.

Ramey, Victor. 1999. **Grasses, Sedges and Rushes of Wetlands Identification Deck**. Gainesville, FL: University of Florida, Center for Aquatic and Invasive Plants, Institute of Food and Agricultural Sciences.

Tobe, John, Kathy C. Burks, Richard W. Cantrell, Mark A. Garland, Maynard E. Sweeley, David W. Hall, Pete Wallace, Guy Anglin, Gil Nelson, James R. Cooper, David Bickner, Katherine Gilbert, Neil Aymond, Ken Greenwood and Nina Raymond. 1998. **Florida Wetland Plants: An Identification Manual**. Tallahassee, FL: Florida Department of Environmental Protection. 598 p.



Tunicate colony

Photo courtesy NOAA