Traveling Trunk of Invasive Species

A. Murray, University of Florida/ IFAS

A. Benson, U.S. Geological Survey

R. D. Wallace, University of Georgia, Bugwood.org

Herb Kumpf and Heidi Vestrem

2012 version 1.0


Lionfish
Pterois species
Salvinia
Salvinia minnolesta
TRAVELING TRUNK
OF INVASIVE SPECIES
Herb Kumpf and Heidi Vestrem
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2012 version 1.0
Talking Points for Presentation
Traveling Trunk of Invasive Species
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Green Mussel
(Perna viridis)
Orange Cup Coral
(Tubastraea coccinea)
Zebra Mussel
(Dreissena polymorpha)

Traveling Trunk of Invasive Species

Produced by

Herb Kumpf, PhD and Heidi Vestrem, MS

For

Gulf and South Atlantic Regional Panel on Aquatic Invasive Species

2012 version 1.0

Content

Introduction: Using the "Trunk"

Definitions: What are invasive species?

Pathways/Sources: How do they get here?

Impacts: What is their effect? Ecological and Economic

Invasive Plants: Species Profiles

Invasive Animals: Species Profiles

What can we do?

Useful Web Sites for more information

Acknowledgements

Introduction

- It is because of our concern about the alarming numbers and impact of invasive species that we have compiled information and produced this "Traveling Trunk" for the Gulf and South Atlantic Regional Panel on Invasive Species.

- The "Trunk" is intended to serve as outreach and an educational resource from the Panel.

- The "Trunk" consists of three sections:

  1. This manual of informative talking points.
  2. A PowerPoint presentation on compact disc (CD) of manual content.
  3. Samples of embedded and laminated invasive species specimens for "hands-on" use.

Introduction

- We suggest you review the check list of contents, preview the talking points, test the CD for projection, and familiarize yourself with the included examples.
- The material is appropriate for interested lay people, secondary school students and gifted programs.
- Suggestions and ideas will be very much appreciated. Your comments may be emailed to the Regional Panel at www.gsarp.org or by contacting the authors at hkumpf3474@aol.com or ecoedgraphics@yahoo.com

Invasive Species

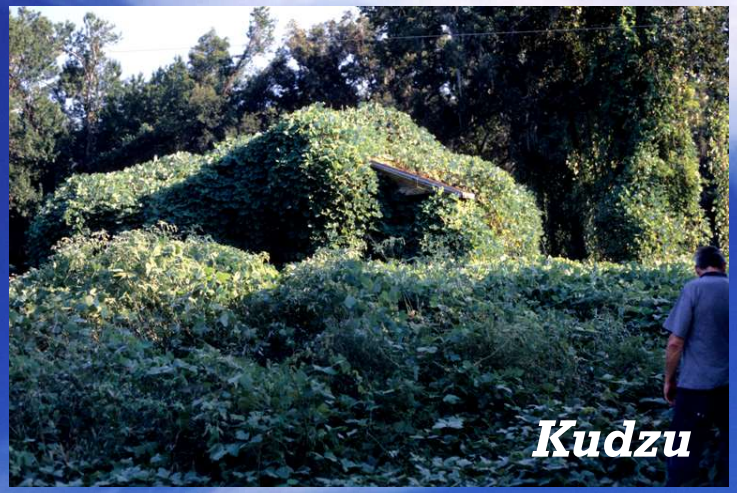
Pathways/Sources of Invasives:

- Intentional:
  - Stocking
  - Food Importation
  - Aquaria / Pet Stores
  - Personal Releases
  - Property Development
- Non-Intentional:
  - Natural
  - Shipping
  - Boat Movement
  - Ballast Water
  - Aquaculture

Invasive Species Impacts:

- Ecological:
  - Habitat Degradation
  - Food Chain Alteration
  - Compete With Native Species
- Economic:
  - Increased Management Costs
  - Economic Losses
  - Reduced Natural Productivity

Invasive Plants



A. Murray, University of Florida/IFAS

J.H. Miller, USDA Forest Service, Bugwood.org

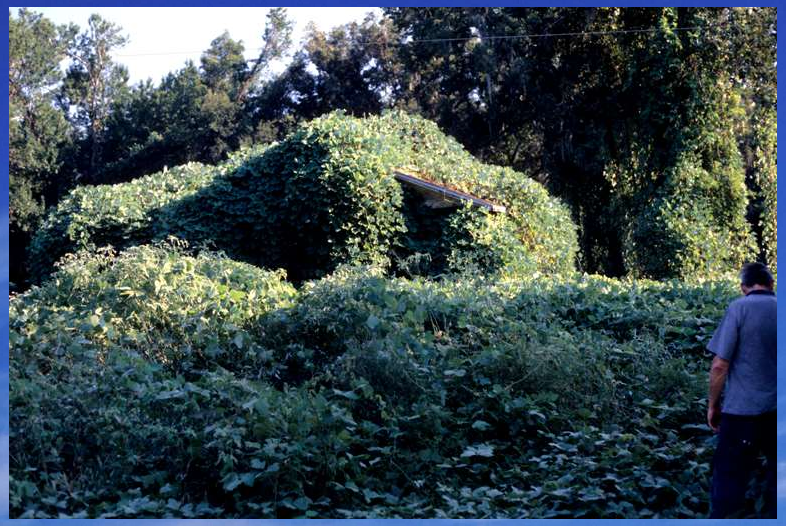
W. Robles, Mississippi State Univ., Bugwood.org

V. Ramey, Univ. of Florida / IFAS

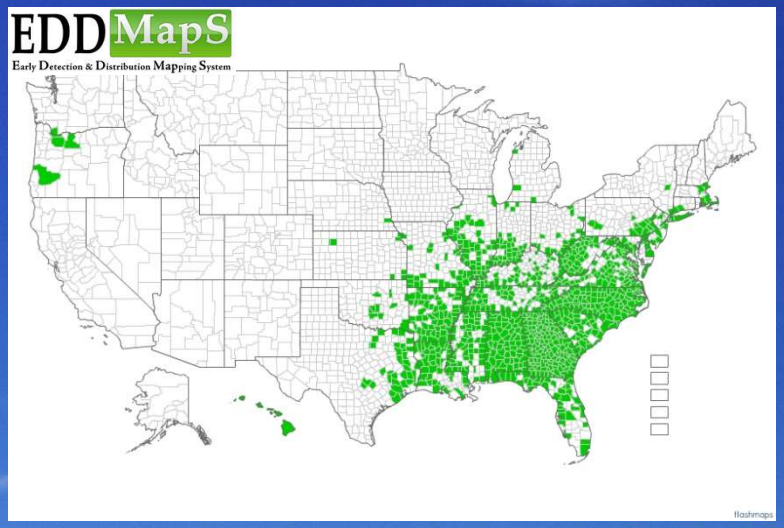
A. Murray, Univ. of Florida / IFAS

Kudzu

(*Pueraria montana*)



A. Murray, University of Florida/IFAS



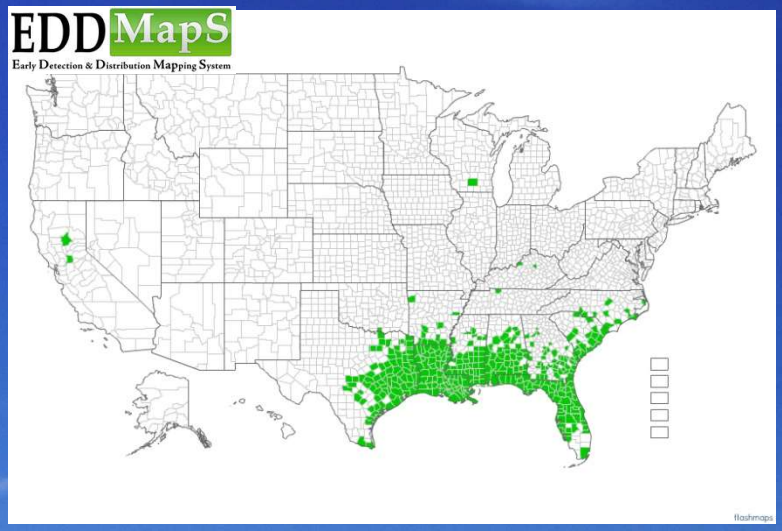
F. & K. Starr, Starr Environ., Bugwood.org

- Native Range
- Route of Introduction
- Purpose/ Use
- Brief Life History
- Impacts
  - Ecological
  - Economic

Chinese Tallowtree

(*Triadica sebifera*)

H. Vestrem



J.H. Miller, USDA Forest Service, Bugwood.org

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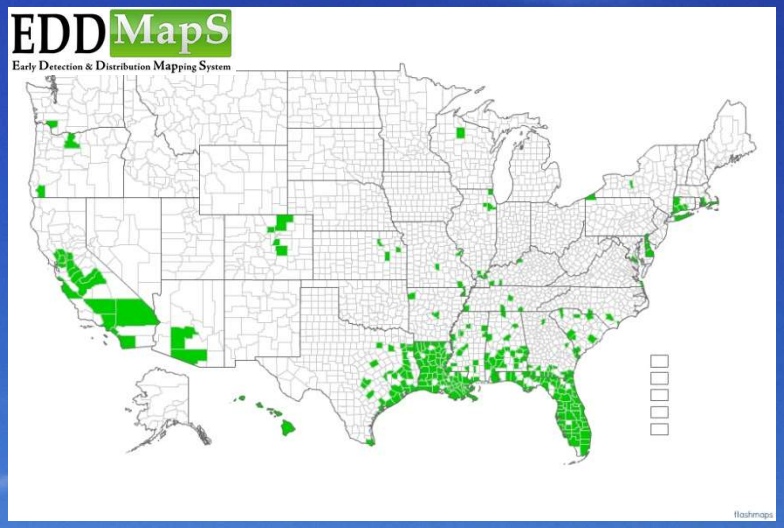
Water Hyacinth

(*Eichhornia crassipes*)

Ann Murray, University of Florida/ IFAS

W. Robles, Mississippi State Univ., Bugwood.org



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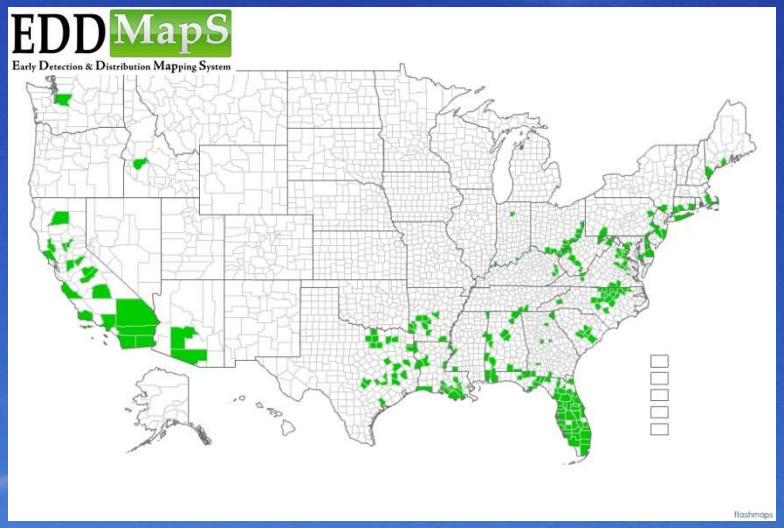
Hydrilla

(*Hydrilla species*)

V. Ramey, University of Florida / IFAS



V. Ramey, University of Florida / IFAS

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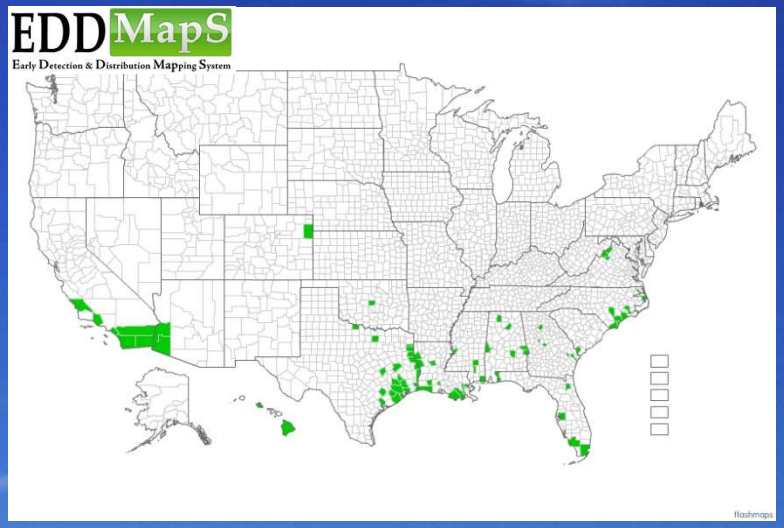
Salvinia

(*Salvinia molesta*)

T.D. Center, USDA Ag Research Service, Bugwood.org



Ann Murray, University of Florida / IFAS

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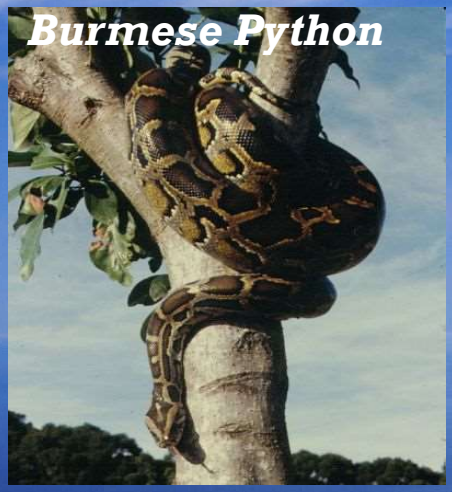
Invasive Animals

F. And J. Burek, U.S. Geological Survey

A. Benson, U.S. Geological Survey

Watershed Council of Northern Michigan



U. S. Geological Survey

R. D. Wallace, University of Georgia, Bugwood.org

U. S. Geological Survey

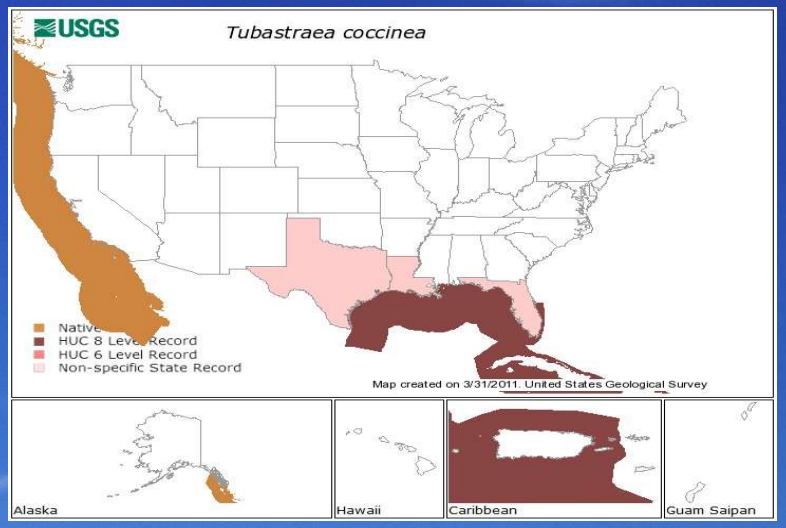
Invasive Invertebrates

- Orange Cup Coral
- Green Mussel
- Zebra Mussel

Orange Cup Coral
(*Tubastraea coccinea*)

F. And J. Burek, U.S. Geological Survey

U.S. Geological Survey



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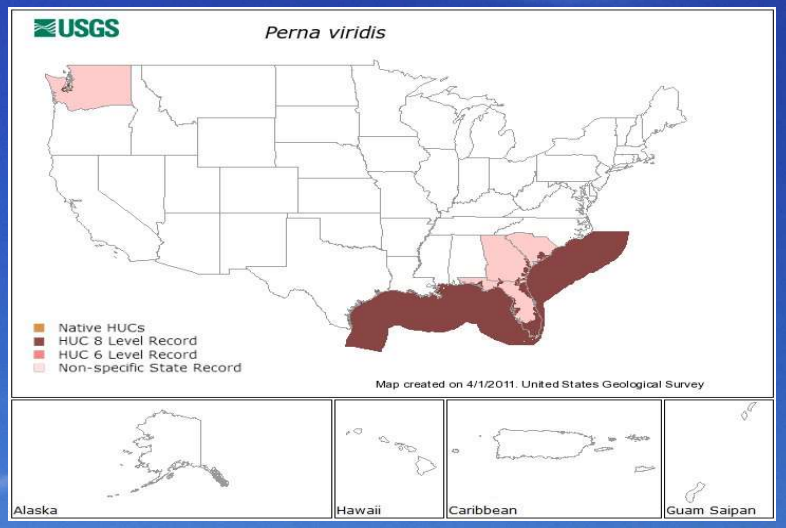
Green Mussel

(*Perna viridis*)

A. Benson, U.S. Geological Survey

A. Benson, U.S. Geological Survey



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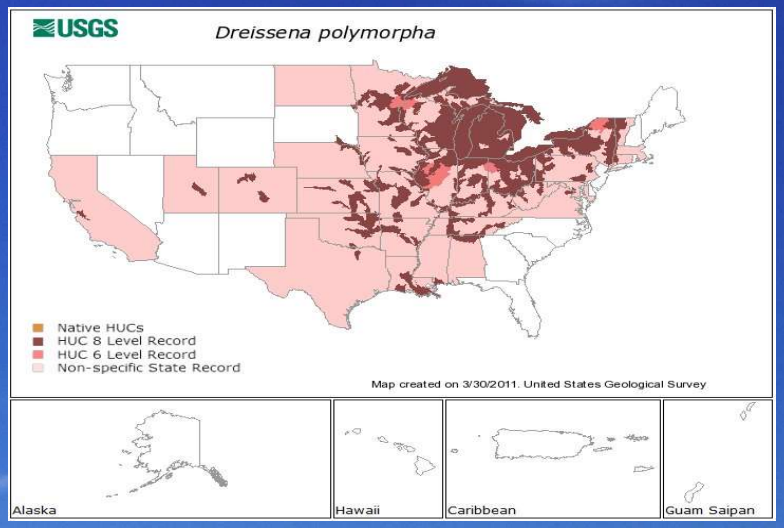
Zebra Mussel
(*Dreissena polymorpha*)

A. Benson, U.S. Geological Survey

Watershed Council of Northern Michigan



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Invasive Vertebrates

- Pacific Lionfish
- Burmese Python
- Nutria

Pacific Lionfish

(*Pterois volitans/miles*)

R. D. Wallace, University of Georgia, Bugwood.org

NOAA Archives

- Native Range
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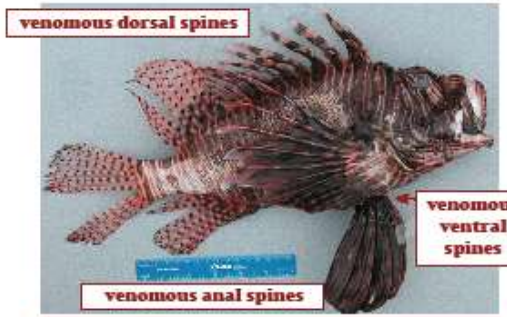
Have You Seen Me?



The venomous Indo-Pacific 'Lionfish'is regularly observed in habitats within the southeast region (Florida to North Carolina) and the Bahamas. These fish are not native to Atlantic waters and may have a negative impact on native fish populations. All of their spines are venomous and can cause extreme pain! If stung, immerse wound in hot water and seek medical attention as soon as possible.

Identification:

- Lionfish have distinctive red, maroon, and white vertical stripes;
- Fleshy tentacles above eyes and below mouth;
- Fan-like pectoral fins;
- 13 long separated dorsal spines;
- 10-11 dorsal soft rays;
- 3 anal spines;
- and 6-7 anal soft rays;
- An adult lionfish can grow as large as 18"

Geographic Location and Habitat:
Lionfish are native to Indo-Pacific waters and are now being reported primarily by Scuba divers from the Bahamas to Cape Hatteras NC in water depths from 5 to 300 ft on hard bottom, coral reef and artificial substrates. Lionfish can also be caught by hook and line. NOAA requests information about all Lionfish collected by hook and line. Location information such as lat/long, depth and type of bait and tackle are encouraged.


Lionfish underwater

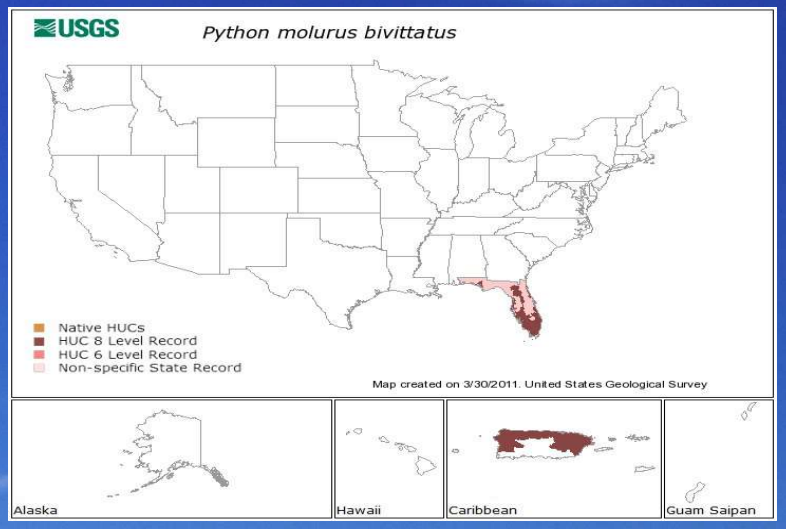
Recommendation: If you catch a lionfish be extremely careful, do not come in contact with the dorsal, anal or ventral spines. If fish must be handled, thick PVC gloves or a gaff is recommended. Please do not throw lionfish back in the water! NOAA is interested in all lionfish specimens and reports. Put lionfish on ice and report any lionfish catches to NOAA at (252) 728-8714 or email reportlionfish@noaa.gov

Report online at http://www8.nos.noaa.gov/nccos/ccfhr/lionfishreport.aspx

For more information and to print out additional flyers go to:
http://coastalscience.noaa.gov/education/lionfish.html
http://lionfish.eisf.org
or google"lionfish outreach"

Burmese Python
(*Python molurus bivittatus*)

National Park Service



U. S. Geological Survey

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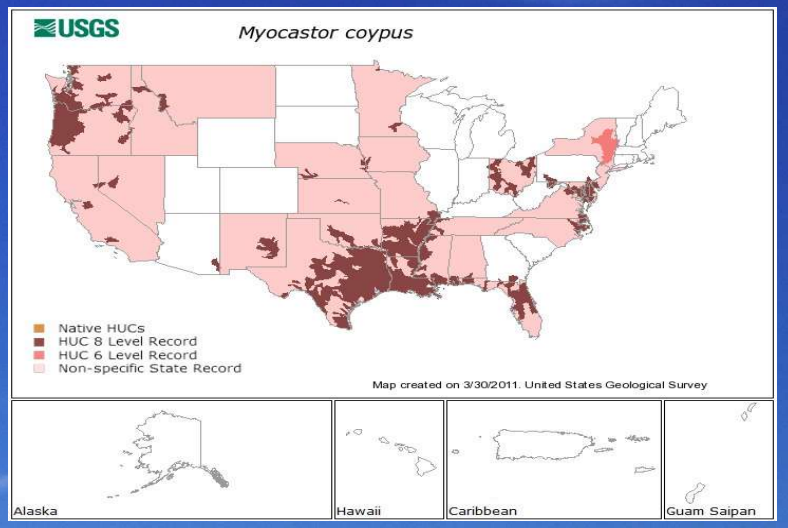
Nutria

(*Myocastor coypus*)

U. S. Geological Survey

U. S. Geological Survey



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What can WE do?

- Prevention
- Educate Ourselves
- Observe & Report

Web Sites:

Regional Panel:	www.gsarp.org
National Invasive Species Council:	www.invasivespecies.gov
US Geological Survey:	nas.er.usgs.gov
NOAA Sea Grant:	www.iiseagrant.org/NabInvader
Center for Invasive Species:	www.invasive.org
	www.bugwood.org
	www.eddmaps.org

Acknowledgements

- In designing, developing and assembling such a project of far-ranging subject matter, the involvement and the cooperation of many individuals was essential to the outcome of our efforts. The participation of members of the Gulf and South Atlantic Regional Panel on Aquatic Invasive Species (GSARP) and the organizations they represent was a key element to our success.

- We are grateful for the contributions of Pam Fuller, Tom Jackson, Pam Schofield, Amy Benson, Earl Chilton, Don Schmitz, Don Knott, Rebecca Hillebrandt, James Morris, Lisa Gonzalez, Chris Furqueron, Lad Akins, Tonya Shearer, Amy Richards, and Karan Rawlins.

- We thank June Rimmer of Carolina Biological Supply for her artful embedding of the invertebrate specimens. A special thanks to the University of Florida's Center for Aquatic and Invasive Plants and the University of Georgia's Center for Invasive Species and Ecosystem Health's Bugwood site for the use of images which are gratefully acknowledged, recognized and noted where they appear.

Acknowledgements

- In addition, numerous individuals and organizations provided specimens for the "hands-on" portion of the "Trunk". We recognize and appreciate the following for supplying these critical materials:

  Tom Jackson, National Marine Fisheries Service; Amy Benson and Pam Schofield, U.S. Geological Survey; Rebecca Hillebrandt and Edmond Mouton, Louisiana Department of Wildlife and Fisheries; Gordon Burghardt, University of Tennessee; Eric Rickart, Utah Museum of Natural History; Doni Sprague, U.S. Fish and Wildlife Service; Tonya Shearer, Georgia Institute of Technology; Chris Furqueron, U.S. National Park Service, Peter Brazaitis, Yale University; Karan Rawlins, University of Georgia; Amy Richards, University of Florida and Rudy Kumpf, Sacketts Harbor, NY.

- Without the cooperation and understanding of James Ballard and the support from the Gulf States Marine Fisheries Commission (Sub-award ANS-800-2011-KUMPF-01) the "Traveling Trunk" would not have been produced.