Why we need a National Center for Biological Invasions

By

Don C. Schmitz, Florida Dept. of Environmental Protection

Invasive Species

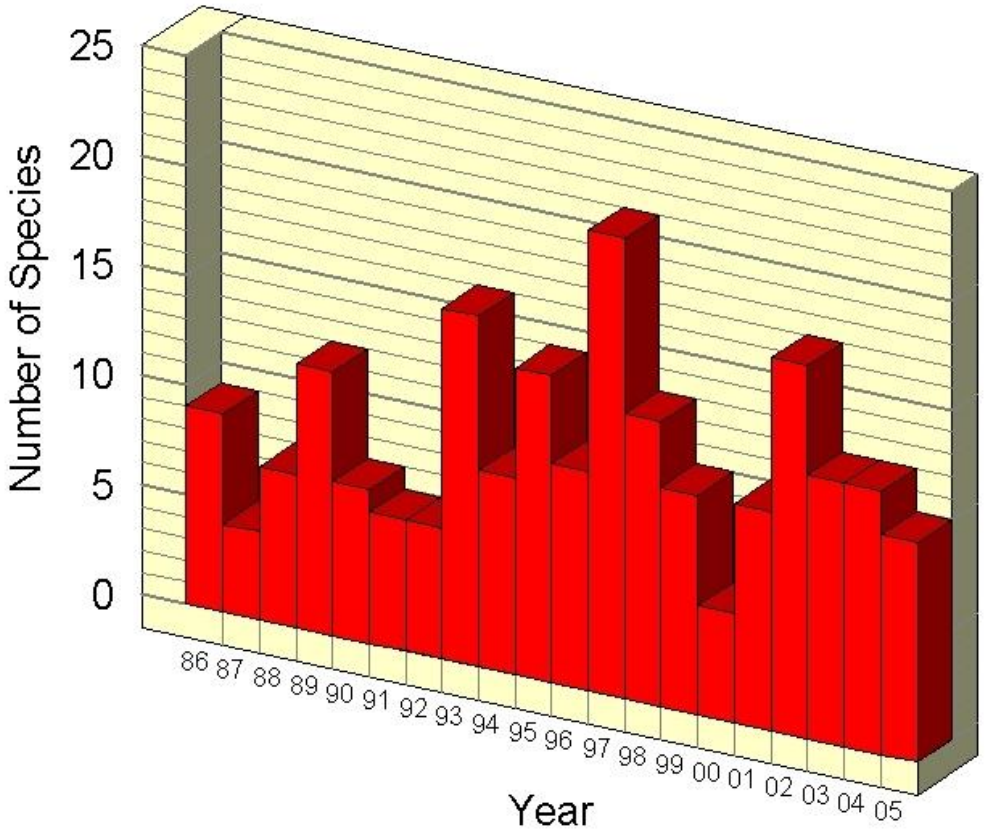
My talk will:

- **Describe the fragmented & piecemeal response by government agencies to biological invasions in the U.S.**
- **Describe some useful national models that help coordinate multi-jurisdictional responses**
- **Describe how a national center could enhance existing federal, tribal, state, and local programs**

Invasive Species

The Exotic Invasion of Florida

Immigration by Year 1986-2005



Source: Florida Dept. of Agriculture and Consumer Services

Invasive Species – We can expect more

Increased World Trade, NAFTA, GATT, CAFTA

Invasive Species

Our nation is at great risk for new invasions because of present national policies that regulate the importation of non-native species arriving at our ports:

- **By not requiring that all imported non-native species be pre-screened for their potential invasiveness**
- **By making it difficult and time consuming to add new invasive species to existing federal prohibited lists because of industry pressure and a lack of a sense of urgency about the economic and environmental harm these invaders cause**
- **Because no one agency is responsible for compiling detailed economical and statistical information about invasive species across the nation. A problem poorly defined is rarely solved.**

Invasive Species

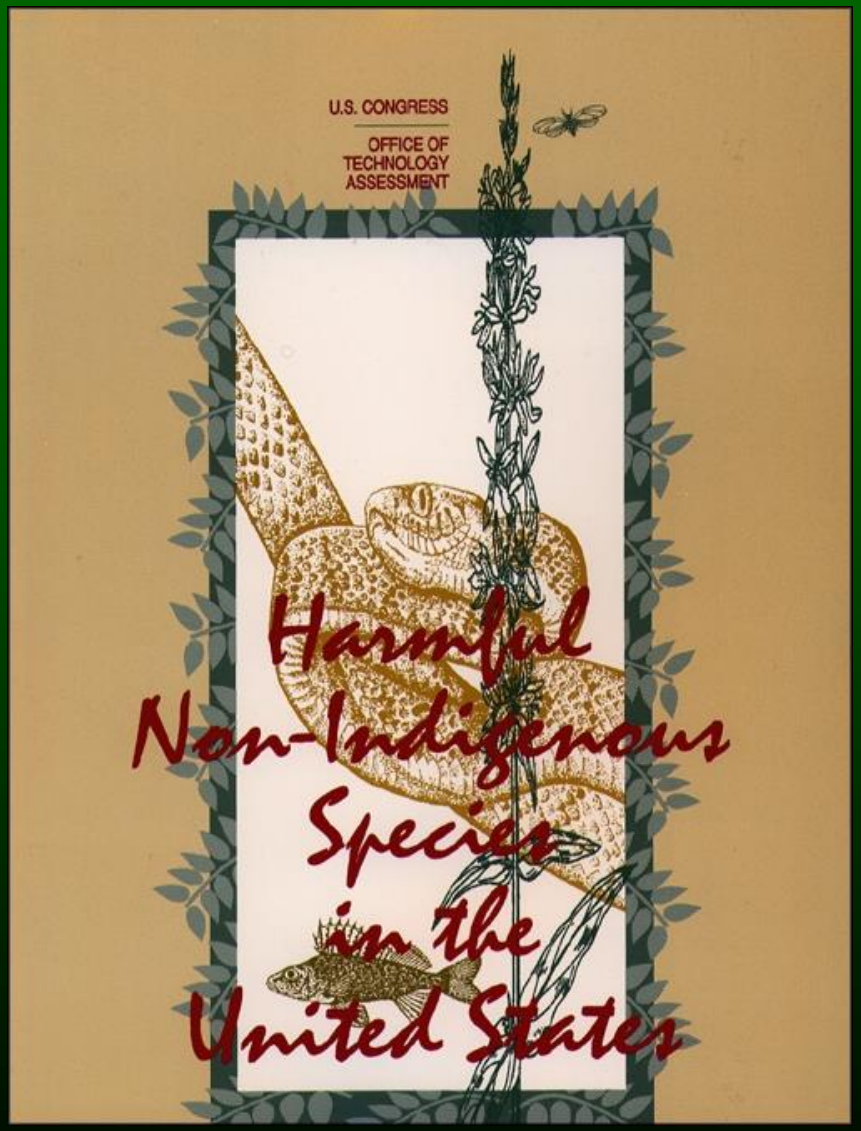
National Invasive Species mile posts:

- Lacey Act – 1900
- Federal Noxious Weed Act -1974
- Presidential Executive Order - 1977
- Zebra mussel introduction - mid-1980s
- ANS Task Force -1990
- Congressional OTA Report – 1993
- Presidential Executive Order – 1999
- National Invasive Species Council – 1999
- National Invasive Species Management Plan – 2001
- Snakeheads in Maryland - 2002
- Python bursts after eating an alligator in the Everglades – 2006

Invasive Species

Present architecture of government's response to biological invasions in the U.S.

Invasive Species



"The current federal effort is largely a patchwork of laws, regulations, policies, and programs."

OTA Report, Harmful Non-Indigenous Species in the United States, 1993

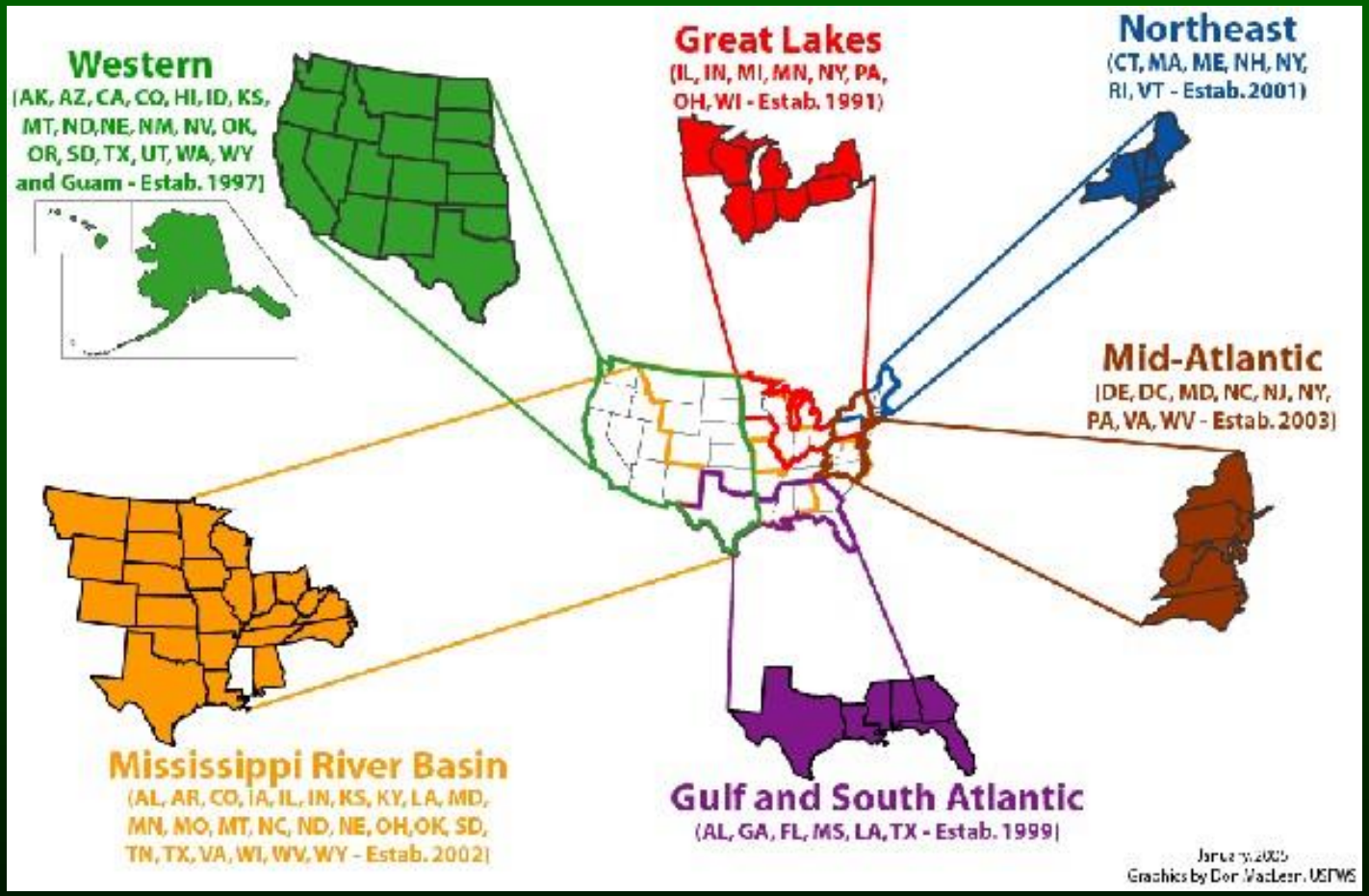
Invasive Species-
Specific Federal Initiatives

- National Invasive Species Council (NISC)
- Aquatic Nuisance Species (ANS) Task Force
- Federal Interagency Committee for the Management of Noxious and Exotic Weeds (FICMNEW)
- Midwest Natural Resources Group (MNRG)
- National Plant Diagnostic Network (NPDN)
- 100th Meridian Initiative
- Plant Conservation Alliance - Alien Plant Working Group, Weeds Gone Wild
- TAME Melaleuca

Source: NISC

Invasive Species

ANS Task Force 6 Regional Panels



Invasive Species

Federal agencies/institutions with entities that have authority, and/or have divisions or programs pertaining to non-native & invasive species ~ 176

Federal Agencies:

- **U.S. Department of Agriculture (82)**
- **U.S. Department of the Interior (53)**
- **U.S. Department of Commerce (10)**
- **U.S. Department of Defense (5)**
- **U.S. Department of Health and Human Services (2)**
- **U.S. Department of Homeland Security (4)**
- **U.S. Department of State (1)**
- **U.S. Department of Transportation (2)**
- **U.S. Environmental Protection Agency (10)**
- **NASA (3)**
- **NSF (2)**
- **Smithsonian Institution (2)**

Source: NISC

Invasive Species

Why so many federal programs?

Most invasive species prevention, eradication, research, & management programs are constituency-group driven (examples: zebra mussels, emerald ash borer, Witch weed, gypsy moths, Asian carp, brown tree snake, etc.)

Have a constituency? You'll get a program.

Invasive Species

~20 Proposed Congressional Bills that deal with invasive species (2007)

Current & proposed federal legislation often addresses one species or taxonomic group, one pathway, or one stage of a invasion

Invasive Species

State agencies with authorities and organizations with an interest pertaining to invasive species

50 States	**~ 476**
California	**40**
Florida	**19**
Hawaii	**19**

Source: NISC

Invasive Species

INVASIVE SPECIES OF CONCERN IN MARYLAND

INVASIVE SPECIES WORKING GROUP

Hawaii Invasive Species Council

New York State Department of Environmental Conservation

Invasive Species Task Force

- State Invasive Species Councils, Task Forces or Working Groups
- ~ 40 State ANS and/or Invasive Species Management Plans

Invasive Species

Online databases that contain information about invasive species:

- **143 U.S. information systems on invasive species (identification, digital images, maps, references, management & control info)**
- **4 U.S.-based general flora databases that contain information on invasive plants**
- **When including global information systems, there are approximately a total of 252**

Source: National Biological Information Infrastructure USGS (2006)

Invasive Species

Information on invasive species is badly fragmented:

- **Scattered about in hundreds of technical newsletters and publications**
- **Plant invasions - ~189 journals**

Source: Life out of bounds – Bioinvasion in a Borderless World, 1998. C. Bright

Invasive Species

One may characterize government's overall effort to preventing, managing and researching biological invasions in the U.S. as:

"A multi-jurisdictional response"

or

Invasive Species

"What is everybody's business is nobody's business."

"It's time for some serious finger-pointing"

Invasive Species

1st Step

Presidential EO 13112 issued in 1999:

National Invasive Species Council

Co-chairs: the Secretaries of the Agriculture, Commerce, Interior

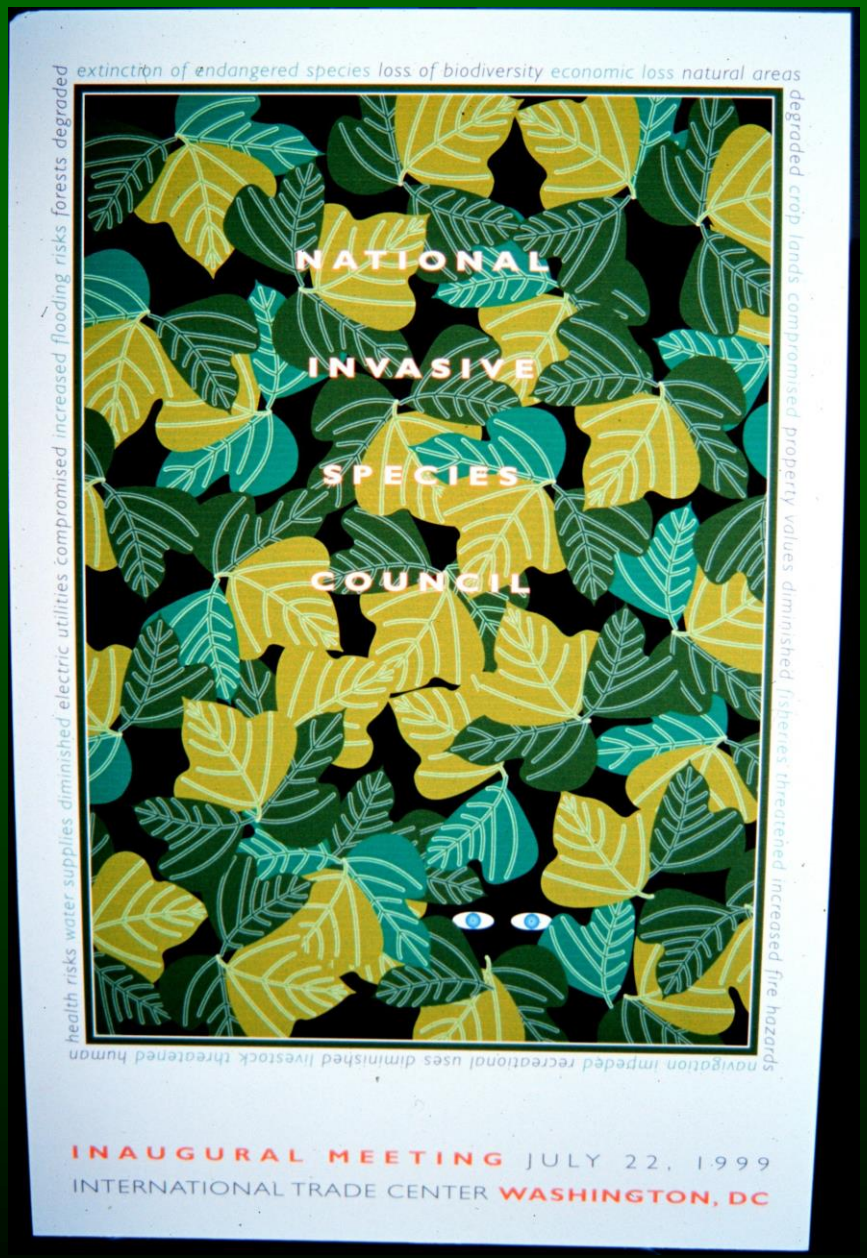
Secretaries of State, Defense, Homeland Security, Treasury, Transportation, Health and Human Services, Administrators of the Environmental Protection Agency, U.S. Agency for International Development, U.S Trade Representative, and National Aeronautics and Space Administration.

National Invasive Species Management Plan

Invasive Species

NISC lacks the:

- **Infrastructure**
- **Resources**
- **Staff (~10)**
- **And is mostly ignored**



Invasive Species

Federal and state agencies generally have:

- **Failed to lower number of new invaders (we need to strive for better filtration methods, technology)**
- **Not aggressively implemented current federal laws - (Lacey Act & Plant Protection Act) and lack good state laws**
- **Except for crop pests, failed to detect & respond rapidly (NPS EPMT an exception)**
- **Failed to survey & monitor (w / agricultural invaders being the exception in most states)**

Invasive Species

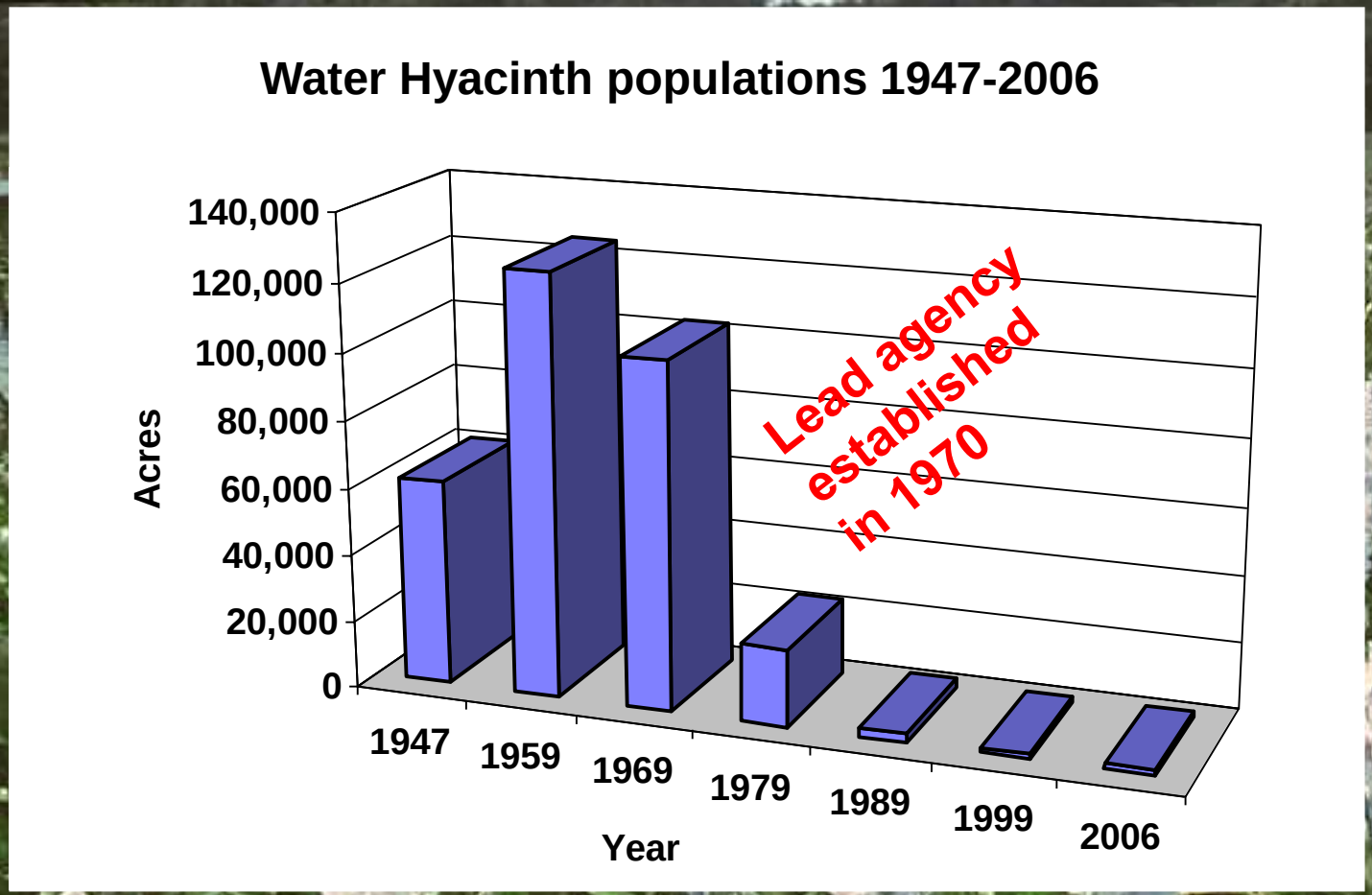
Federal and state agencies generally have:

- **Failed to track economics or expenditures (especially at the state level in public conservation lands/waterways)**
- **Not promoted action at the state & local levels for public conservation lands/waterways**
- **A lack of adequate federal funding especially for non-agricultural invaders**

Invasive Species

Ideally, one federal agency should take the lead role in preventing and managing biological invasions in the U.S. - We need central leadership and a national focal point!

The benefits of a “lead agency”



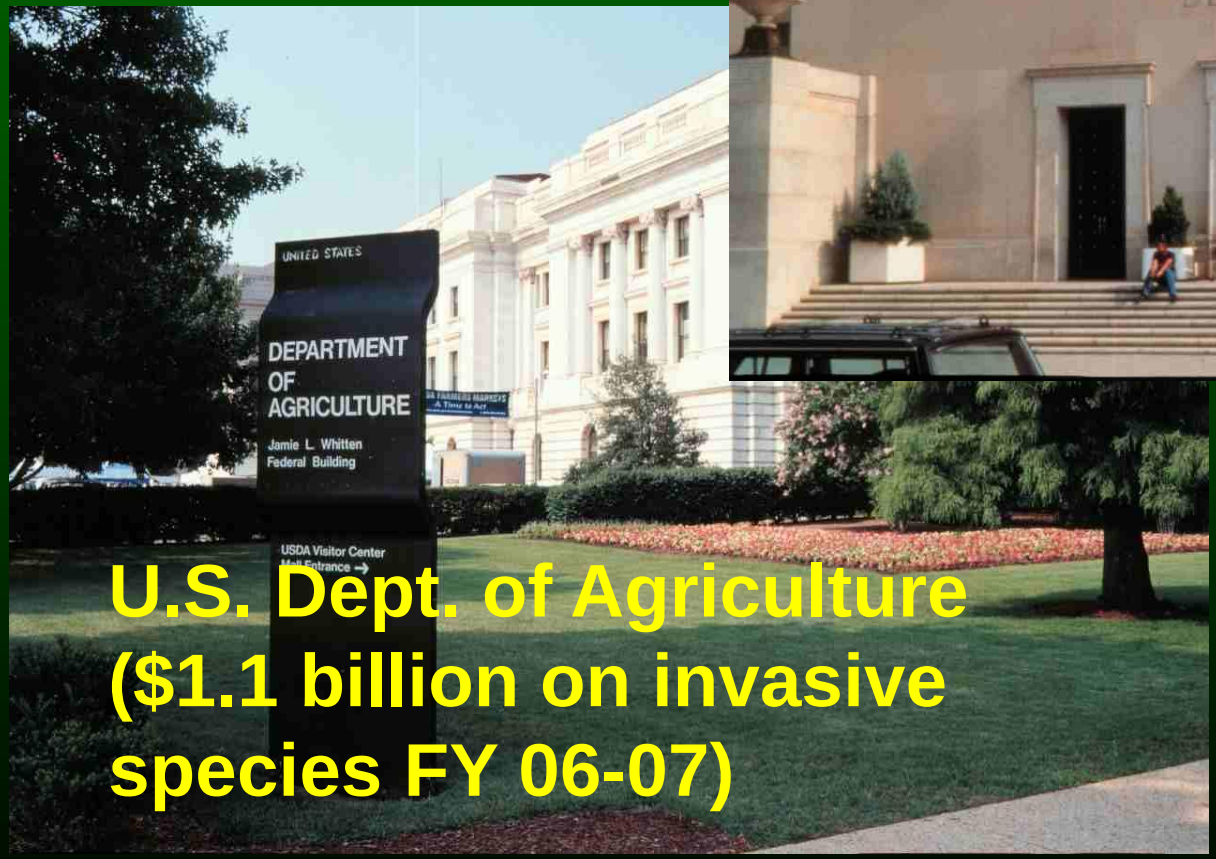
A lead agency approach in Florida for invasive plants since 1971 has proven effective for these reasons:

- Established a statewide management and resource protection plan
- Ensured statewide priority distribution of available funds and management efforts
- Reduced administration - one agency distributes funds to areas of greatest need in aquatic and upland areas
- Coordinates management operations with water and land managers
- Avoided duplication as well as neglect
- Responsible for rapid response to new invasions
- Ensured consistency in policy, goals, administration, and effective control methods.

Invasive Species

Ideal candidates?

U.S. Dept. of the Interior ($74 million on invasive species FY 06-07)



U.S. Dept. of Agriculture ($1.1 billion on invasive species FY 06-07)

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The U.S. Dept. of the Interior and the USDA serve different constituency groups and neither would take kindly to having the other take control of their current programs

Invasive Species

Regional Centers and Institutes (2008)

Northeast Midwest Institute – Biological Pollution

Center for Invasive Plant Management – Montana

NOAA National Center for Research on Aquatic Invasive Species

National Marine Invasions Center – SERC

Center for Aquatic and Invasive Plants - Florida

Institute for Biological Invasions – Tennessee

National Institute of Invasive Species Science – Colorado

Invasive Species

The Honorable Albert Gore, Jr.
The Vice-President of the United States
Office of the Vice-President of the United States
Old Executive Office Building
Washington, D.C. 20501

April 25, 1997

Dear Vice-President Gore:

We write as a group of scientists, agricultural officials, and environmental experts to request your assistance in, and support for, the formation of a commission whose purpose would be to recommend new strategies to prevent and to manage invasions by harmful exotic species.

" A commission could consider many potential ways of responding to this problem. One can imagine, for example, a center analogous to the Centers for Disease Control and Prevention…."

USEFUL NATIONAL MODEL

Department of Health and Human Services
Centers for Disease Control and Prevention

Dr. Julie Gerberding,
Director, CDC

- Prevents new diseases (invaders)
- Monitors existing outbreaks
- Implements prevention strategies
- Coordinates prevention, research & management efforts
- Deals with foreign governments, federal agencies, 50 state agencies, & thousands of local governments & private concerns

USEFUL NATIONAL MODEL

- Multi-agency coordinating Group – an umbrella org.
- No agency's agenda dominates the mission
- Successful strategy
- Cost-effective

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National Park Service - Exotic Plant Management Teams (EPMT)

- Modeled after the wildland fire fighting approach
- Provide highly trained, mobile strike forces of plant management specialists who assist in controling invasive plants

Invasive Species

- **Wildfire suppression costs and wildfire economic impacts in the United States are less than $10 billion per year**

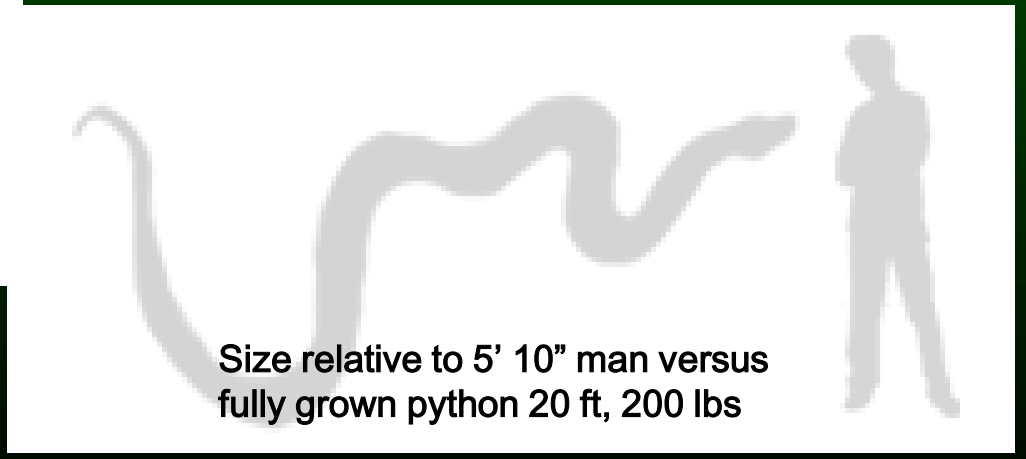
- **The cost to the U.S. economy to monitor, prevent, contain, eradicate, research, and control invasive species is estimated to be between $100-200 billion per year**

- **Conclusion - Fire scares folks, invasive species don't, however…….**

Invasive Species

Pythons – scary enough?

Python range



Size relative to 5’ 10” man versus fully grown python 20 ft, 200 lbs

Invasive Species

Position Paper of the Ecological Society of America -

Biological Invasions: Recommendations for U.S. Policy and Management (2006)

Called for the establishment of a National Center

2nd Step

A National Center for Biological Invasions

National Center

National Center for Biological Invasions:

- **No one agency's agenda dominates**
- **When asked, the National Center provides a service to federal, tribal, state, & local governments to help improve prevention, eradication, research, & management activities**
- **Staff eats, breathes, & sleeps enhancement between federal, tribal, state, and local government programs**

National Center

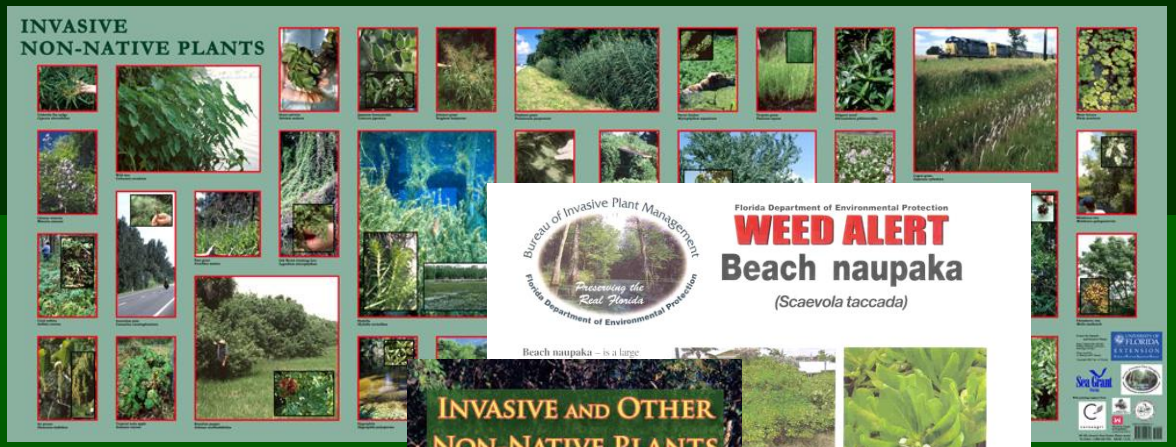
Enhances existing federal & state programs by:

- Helping to coordinate surveillance activities (between states & feds)
- Tracking invasive species range expansions owing to global climate change
- Helping to coordinate early detection & rapid response efforts
- Maintaining a taxonomic expertise database for the purpose of assisting state agencies in the ID of non-native species
- Developing national standards & guidelines

National Center

Enhances existing federal & state programs by:

- Coordinating U.S. policy with other countries with regard to trade
- Tracking invasive species expenditures ✓
- Producing economic impact studies along with risk analyses ✓
- Being a national repository of accurate invasive species information



National Center - One stop educational shopping for the states, news media, and public

National Public Awareness Campaign

National Center

How could a center help local and regional efforts?

- **Avoid duplication of efforts by tracking management and research efforts**
- **Help increase funding for control and prevention (economics, risk analysis)**
- **Better coordination for current prevention activities**
- **Help target those species that lack an affected constituency**
- **Provide useful management models**
- **Work with importers & plant & pet industries**

National Center

How could a center help local and regional efforts?

- **Provide an Emergency Contingency funding source, or grants (~$40 million/yr) to federal and state agency eradication 1st year efforts on public conservation lands & waterways.**

Gambian pouch rat in Florida– a year-long time lag between discovery and eradication efforts because of a lack of funds

Invasive Species

Dead Australian melaleuca trees in Florida's Everglades – nice picture

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Bureau of Invasive Plant Management
Preserving the Real Florida
Florida Department of Environmental Protection

DEPARTMENT OF ENVIRONMENTAL PROTECTION
FLORIDA