


# Responding to the Threat of Invasive Exotic Species



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# Exotic Species- Defined



- ▶ “Exotic species are those species that occupy or could occupy park lands directly or indirectly as the result of deliberate or accidental human activities. Exotic species are also common referred to as nonnative, alien, or invasive species. Because an exotic species did not evolve in concert with the species native to the place, the exotic species is not a natural component of the natural ecosystem at that place.” (Section 4.4.1.3- National Park Service Management Policies (2006)).





# Why are we worried about Invasive Exotic Species?

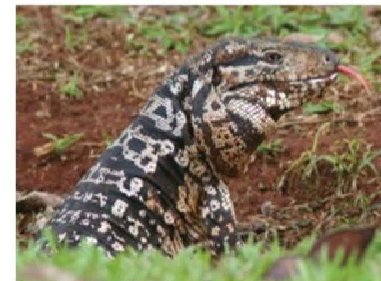
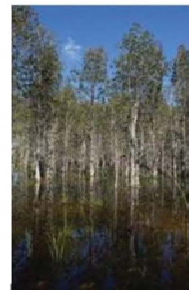
- ▶ They pose economic and human health/ risks:
  - ▶ Crop/livestock damage or destruction (Citrus greening, fruit fly, ticks)
  - ▶ Interfere with water management, navigation and recreation (water hyacinth, Lion fish)
  - ▶ Pose disease and injury threat to domestic and captive animals (Burmese python).
  - ▶ Injury threat and vectors for disease that threaten humans (Giant African snail, Nile monitors)
- ▶ They wreak havoc in natural systems:
  - ▶ Crowd out or overcome native vegetation
  - ▶ They disrupt fire regimes and diminish habitat suitability
  - ▶ They introduce diseases that natives have not adapted to
  - ▶ They compete with native wildlife





# The Challenge

- \* 50 Plants (Category I Invasive)
- \* 34 Invertebrates
- \* 12 Mammals
- \* 4 Amphibians
- \* 38 Reptiles
- \* 11 Birds
- \* 20 Fishes




Pictured above\*\*Feral Hog (Pig) *Sus scrofa*, the Purple Swamphen (*Porphyrio porphyrio*), Cuban Treefrog *Osteopilus septentrionalis*, Catfish *Pterygoplichthys disjunctivus*, Sailfin , the Redbay Ambrosia Beetle, *Xyleborus glabratus* , Nile Monitor - *Varanus niloticus*




## We have been responding to the problem for years:

- Heavy emphasis on plants in the 1990s and 2000s (For example: Melaleuca, Brazilian Pepper, Lygodium, Australian Pine), with some important success
- Governments are spending millions every year to control invasives that are already established.
- We are not spending very much to prevent the “next big invasion”
- We do not have as a good a handle on invasive animals as we do on invasive plants




## But the Problem is Only Getting Worse...

- Florida is the most vulnerable mainland state in the USA for invasive pest introduction and establishment.
- **On average Florida receives one new pest every month.**
- 85% of the plant material entering the US comes through the Port of Miami
- Agricultural trade & pest interceptions at ports of entry have been doubling every 5-6 years.
- With increased trade liberalization and as east – west trade has increased many invasives now come from Asia.

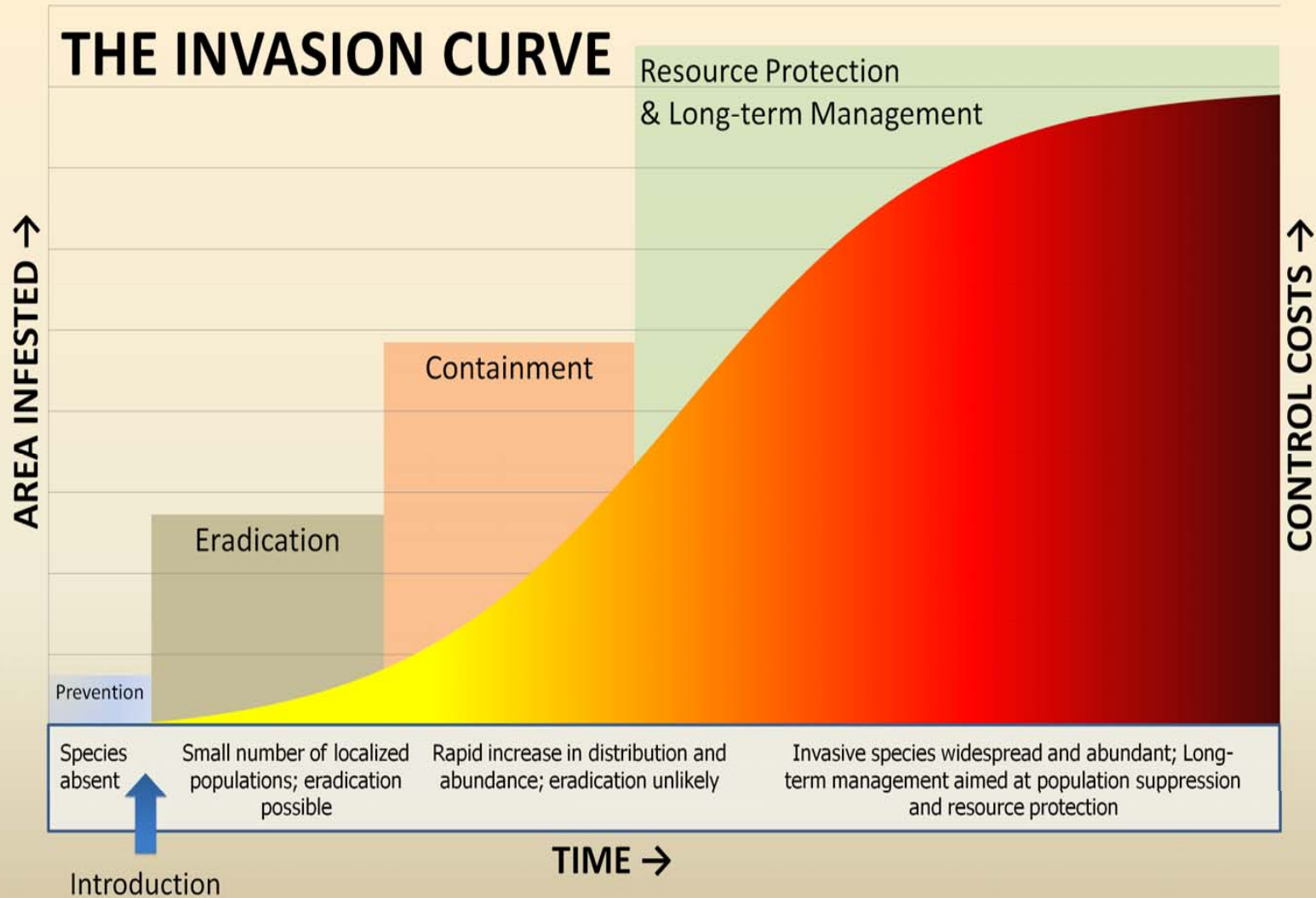


In 2012 we began to develop a more strategic approach

- ▶ The SFERTF Strategic Action Framework
  - ▶ Organized around the “Invasion Curve”
  - ▶ Accompanied by an interagency Crosscut Budget
  - ▶ Includes a preliminary action assessment
  - ▶ Establishes Early Detection and Rapid Response as a strategic priority
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# THE INVASION CURVE



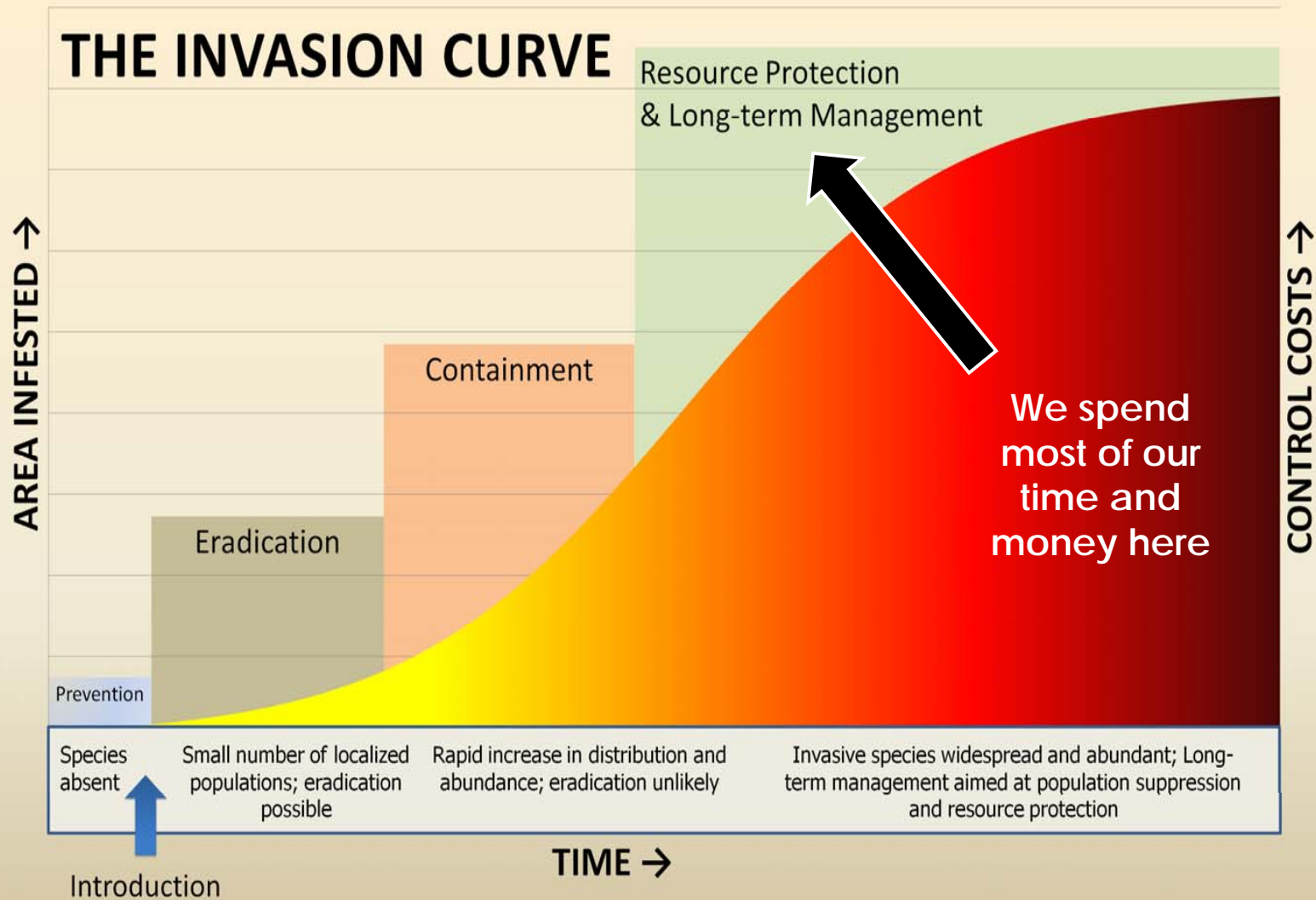


# Understanding

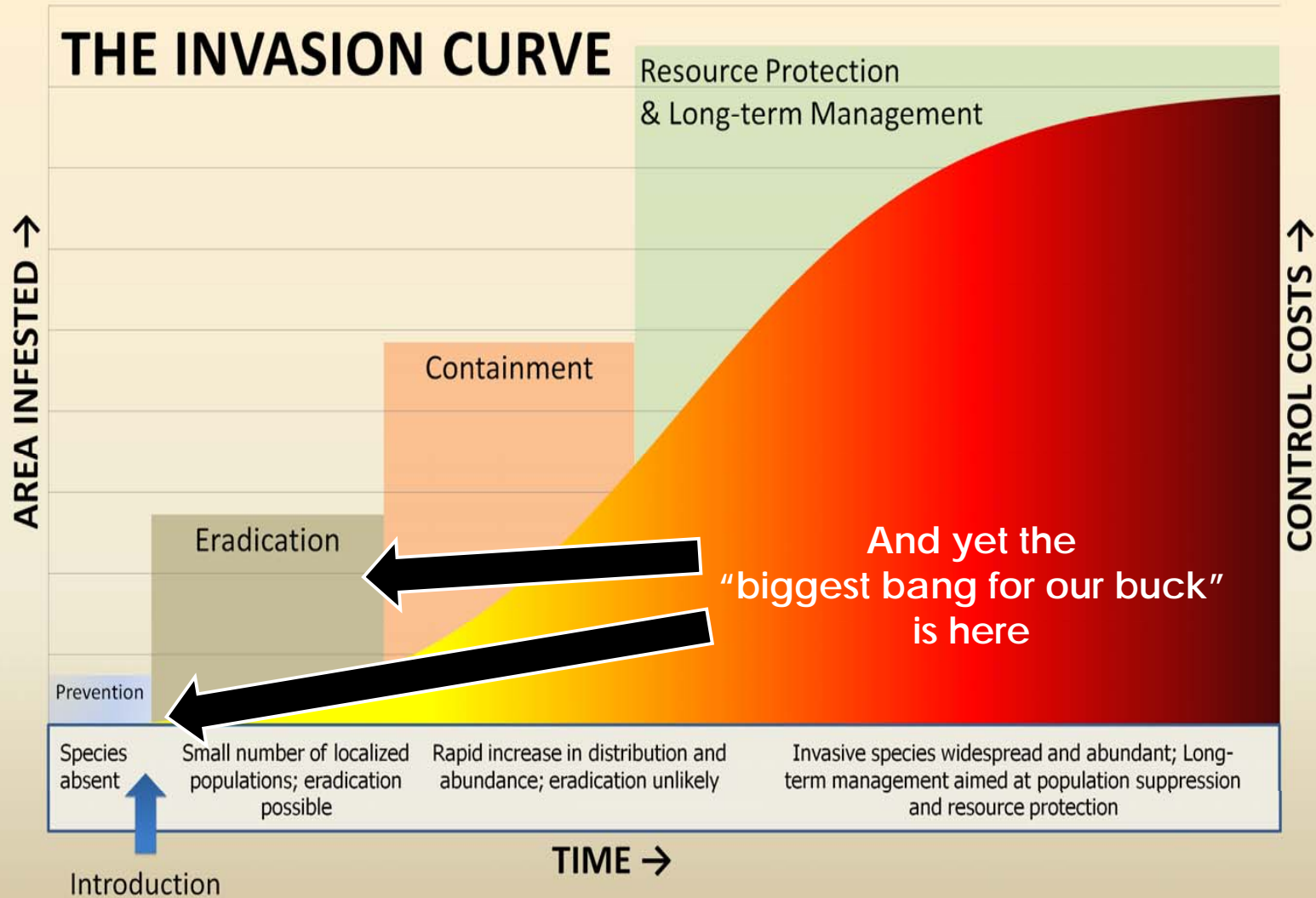
## "The Invasion Curve"

- ▶ The Curve tells us that the longer we take to eradicate an invasive exotic species:
    - ▶ The cost gets bigger
    - ▶ The damage gets bigger
    - ▶ The chances of eradication get smaller
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# THE INVASION CURVE

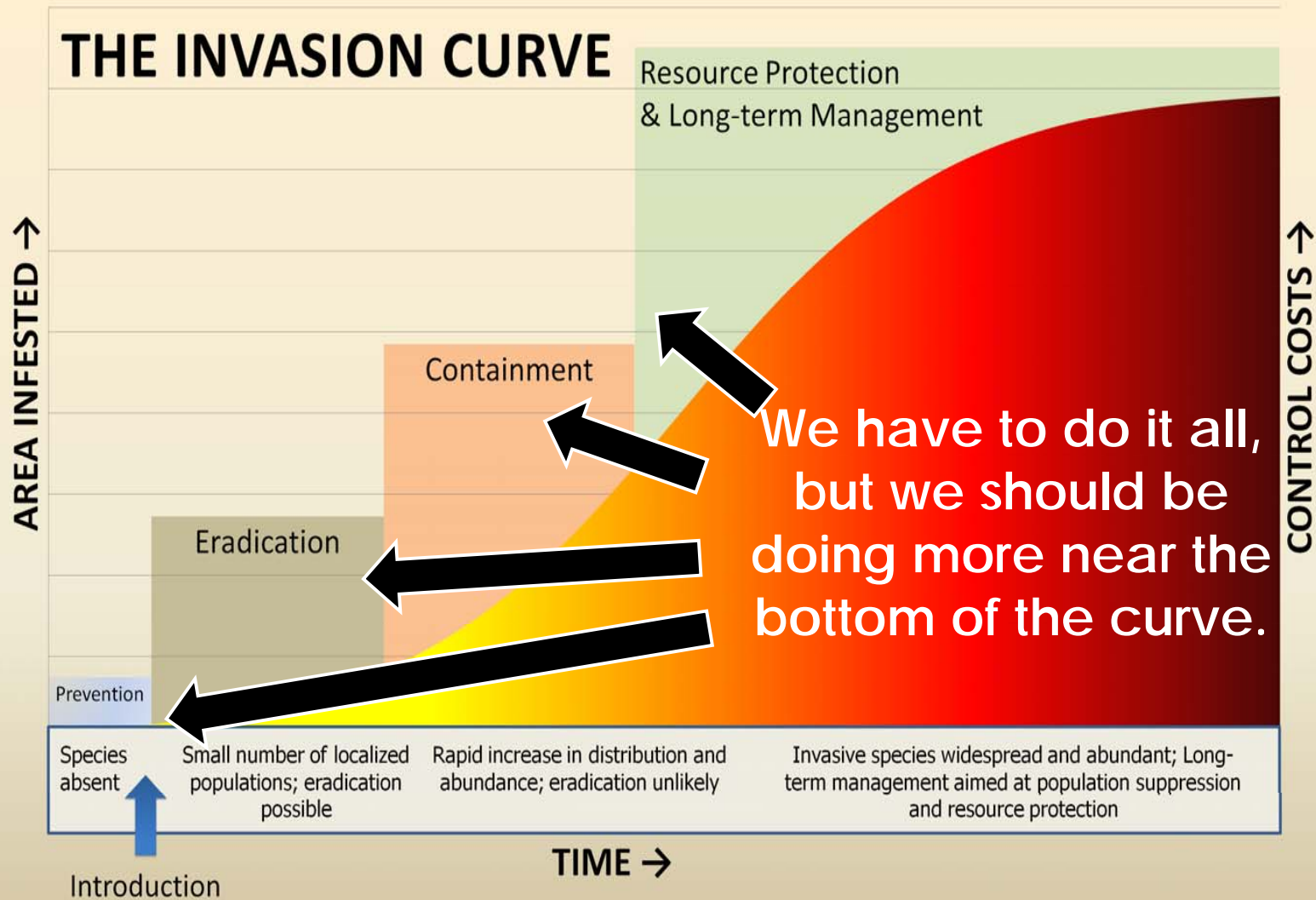


# THE INVASION CURVE





# THE INVASION CURVE



## South Florida Invasive Exotic Species Strategic Action Framework

4 Goals were identified

Other Coordination Tools from the TF

- ✓ Preliminary Action Assessment
- ✓ Invasive Exotic Species Cross Cut Budget
- ✓ Integrated into the Overall South Florida Task Force Strategy and Biennial Report

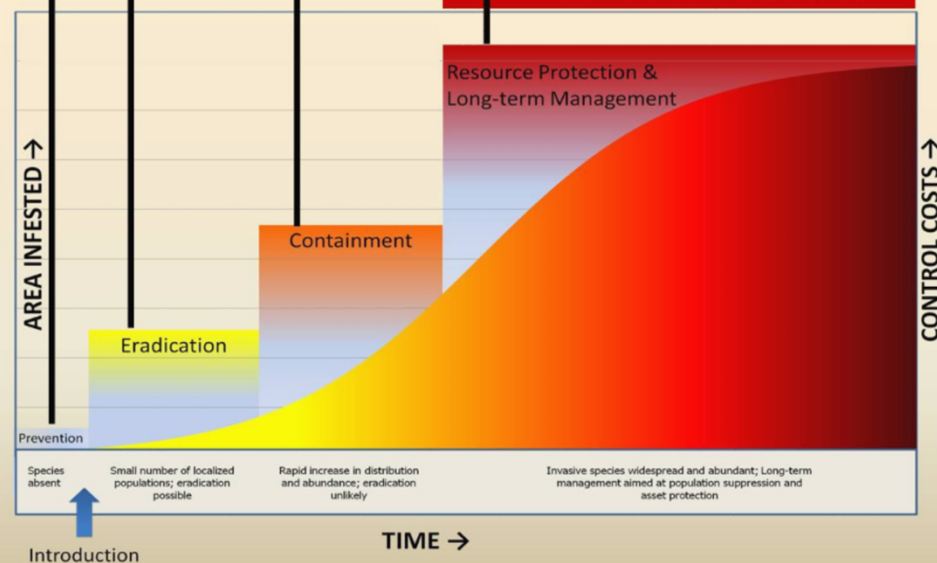
### THE INVASION CURVE AND STRATEGIC GOALS

**Goal 1:** Prevent the introduction of invasive exotic species.

**Goal 2:** Eradicate invasive exotic species by implementing Early Detection and Rapid Response (EDRR).

**Goal 3:** Contain the spread of invasive exotic species.

**Goal 4:** Reduce the populations of widely established invasive exotic species and maintain at lowest feasible levels.



# EDRR is the Priority

- ▶ Preliminary Action Assessment -the majority of the priority actions are EDRR related. Issues with getting onto Private property

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- ▶ Need a dedicated resources and for a structured EDRR Monitoring
- ▶ Science and Technology tools for detection (traps, surveys etc)
- ▶ Rapid assessment and response programs/processes/ cooperatives/tools that allow for nimble attempts at eradication
- ▶ Go/No go response tool (under development) to rapidly assess a new species.
- ▶ Fully funded response plan and pre-established strike teams including a Incident Command-like Structure.

Pictured above: *Argentine black and white tegu*





# Agencies involved in IES in South Florida

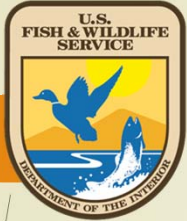
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- ▶ Interior (FWS, USGS, NPS, BIA)
  - ▶ US Army Corps of Engineers
  - ▶ Department of Justice
  - ▶ Department of Transportation
  - ▶ Department of Commerce (NOAA)
  - ▶ Environmental Protection Agency
  - ▶ Department of Agriculture
  - ▶ Florida Department of Environmental Protection
  - ▶ South Florida Water Management District
  - ▶ Seminole Tribe of Florida
  - ▶ Miccosukee Tribe of Indians of Florida
  - ▶ Local governments
  - ▶ Florida Fish and Wildlife Conservation Commission
  - ▶ US Customs and Boarder Patrol
  - ▶ CDC





# National Park Service Authorities, Laws and Policies

- ▶ National Park Service Organic Act-Mandates parks to “conserve the scenery and the natural and historic objects and wild life therein... [to] leave them unimpaired for the enjoyment of future generations.”
- ▶ Executive Order 13112- Prevent the introduction of invasive species; provide for their control; and minimize the economic, ecological and human health impacts that invasive species cause.
- ▶ Regulations: Title 16- Gives NPS broad legal authority to manage public and recreational use within parks, including the promulgation of regulations that may be more restrictive than generally allowed in other NPS units.
- ▶ National Environmental Policy Act
- ▶ Endangered Species Act
- ▶ National Historic Preservation Act



# U.S. Fish and Wildlife Service

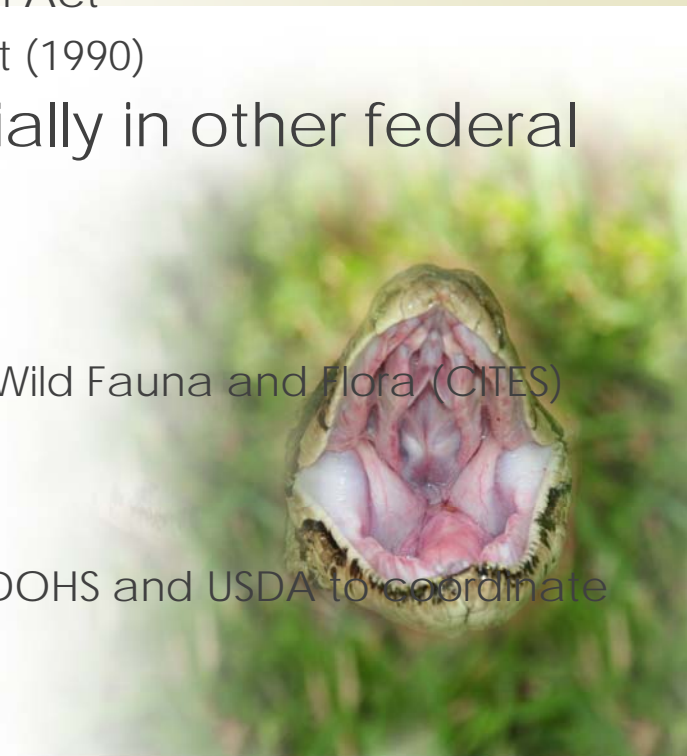
- ▶ Lacey Act (1900 Amended 1981)- Prohibits the importation or intentional release of animals listed by FWS as injurious species.
- ▶ FWS also regulates importation and movement of restricted wildlife and wildlife products under the Marine Mammal Protection Act
- ▶ Non-Indigenous Aquatic Nuisance Prevention and Control Act (1990)

FWS also regulates invasive species tangentially in other federal wildlife laws and regulations such as:

- ▶ The National Environmental Policy Act (NEPA) (1969)
- ▶ Endangered Species Act (1973)
- ▶ Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (1975)
- ▶ Executive Order 13112, Invasive Species (1999)

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\* FWS law enforcement has inspectors port of Miami meets with DOHS and USDA to coordinate monthly (Biological Technical Assistant Group-BTAG)





# Animal and Plant Inspection Service

- ▶ Animal Health Protection Act of 2002 (7U.S.C. §§8301 et seq.)-to control pest and disease of livestock (includes banning and quarantine authorities.) i.e. heart water disease carried by ticks effect cows.
- ▶ The United States Department of Agriculture and Consumer Services administers the Federal Noxious Weed Act (USDA, 7CR-360). Plants listed under this rule are prohibited from importation and interstate transport without a permit.





# Centers for Disease Control & Prevention/Food and Drug Administration

- ▶ Agencies within the Department of Health and Human Services (HHS), the CDC and FDA share responsibility for shielding the United States from diseases, including zoonoses.
- ▶ Under section 361 of the Public Health Service Act (PHSA), the secretary of HHS is authorized to issue and enforce regulations necessary to prevent the introduction, transmission, and spread of communicable diseases into the United States or among states.
- ▶ CDC and FDA enforce the PHSA both directly and through cooperation with partners. CBP and FWS to help enforce its animal import





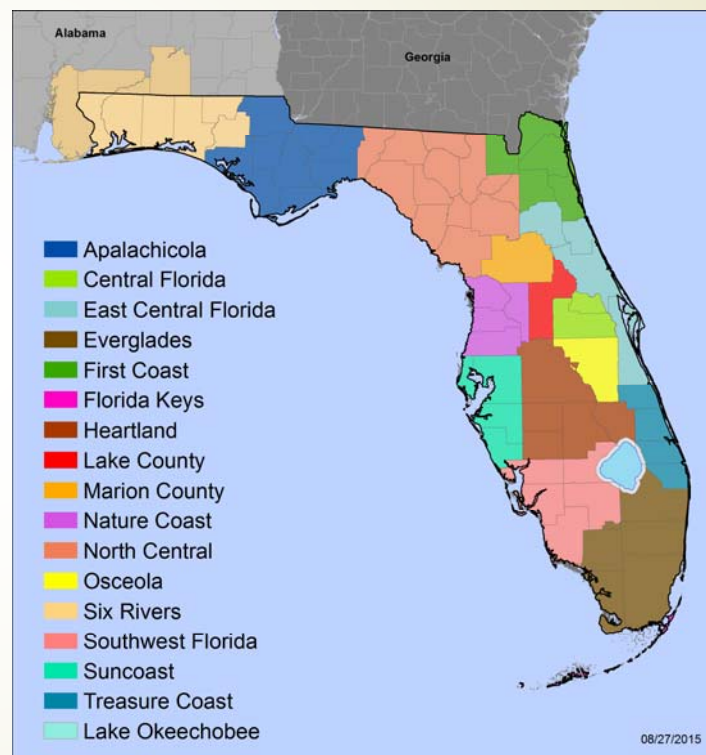
# CBP: Department of Homeland Security

- ▶ The Bureau of Customs and Border Protection (CBP) has primary responsibility for the inspection of imported cargo under myriad laws.
- ▶ CBP is the primary inspector of goods shipped into the United States and inspects cargo to ensure that it does not contain contraband and complies with labeling, tariff, and other requirements.
- ▶ The vast majority of CBP's authorities are not relevant to invasive wildlife prevention. Its general requirements, however, are a potent enforcement tool against smuggled wildlife shipments. In particular, title 18 of the United States Code requires accurate labeling of all imports and criminalizes violations of this requirement.<sup>131</sup>
- ▶ CBP does have some direct authority over wildlife importation as a result of the HSA, in which Congress transferred APHIS' import inspection authorities (and the inspectors themselves) to CBP. Although APHIS inspectors were primarily responsible for inspection of plant shipments, they also enforced the AHPA, ADCA, and other animal-related statutes. As a result, CBP has direct responsibility for inspecting shipments for violations of these laws, as directed by USDA regulations



# Invasive Species Responsibilities of FWC

- ▶ Invasive Plant Management Program
  - ▶ Established under Chapter 369 Part I, Florida Statutes
- ▶ Nonnative Fish and Wildlife Program
  - ▶ Florida Constitutional Authority (Article IV, Section 9)
  - ▶ Rule 68-5



*Cooperative Invasive Species Management Areas*



# Florida Department of Agriculture Consumer Services

- ▶ **Florida Noxious Weeds List**
- ▶ The Florida Department of Agriculture and Consumer Services administers FDACS, F.A.C. Chapter 5B-57 which prohibits listed plants from cultivation, introduction, collection, and transport without a permit. This is the primary invasive plant law of concern to forest managers in Florida. In particular, the listings of Japanese climbing fern, and cogon grass have impact on movement and sale of some forest products.
- ▶ **Florida Prohibited Aquatic Plants List 5B-64.002**
- ▶ [Aquatic Plant Importation, Transportation, Non-nursery Cultivation, Possession and Collection](#)



[sfwmd.gov](http://sfwmd.gov)

# South Florida Water Management District

- ▶ Everglades Forever Act
  - ▶ Invasive Species Monitoring Program
  - ▶ Invasive Species Control Programs (e.g., melaleuca)
- ▶ Comprehensive Everglades Restoration Plan
  - ▶ CERP Biological Control Implementation Program




# U.S. Postal Service

- ▶ Congress controls the function of USPS and has used its authority to criminalize the mailing of any item defined as “nonmailable matter.”
- ▶ In addition to classifying items such as flammable material, the criminal statute defining nonmailable materials includes all poisonous “animals, insects, and reptiles.” The Alien Species Prevention and Enforcement Act of 1992<sup>140</sup> (ASPEA) supplemented this definition by specifically providing that all Lacey Act “injurious species” constitute “nonmailable matter.”<sup>141</sup> As a result, whenever FWS lists a species under the Lacey Act, it simultaneously becomes illegal to mail the species, and USPS obtains the right to confiscate any shipments.<sup>142</sup> USPS itself enforces both the general nonmailable matter statute and the ASPEA





## U.S. President's Executive Order on Invasive Species (Executive Order No. 13112)

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- ▶ Recognized the threats posed by invasive species and authorized a national invasive species council that would, among other duties, prepare a national management plan for invasive species. This plan was finalized and released in 2001. Implementation of this plan is ongoing through the National Invasive Species Council, which is chaired by the Secretaries of Agriculture, Commerce, and the Interior.

**THANK YOU**

