Invasive Exotic Species Focus: Early Detection Rapid Response

South Florida Ecosystem Restoration Task Force

November 19, 2015

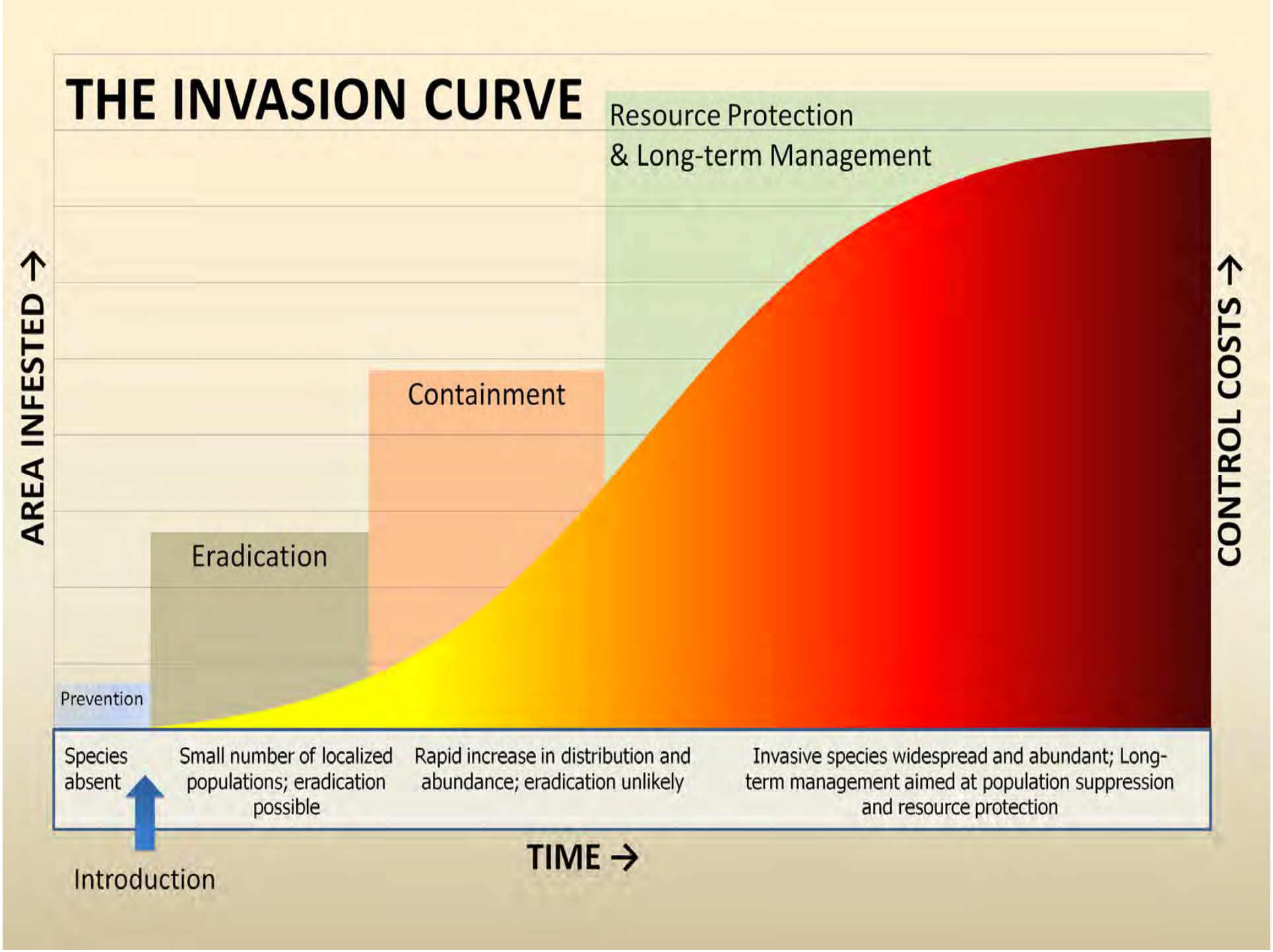
Shannon A. Estenoz

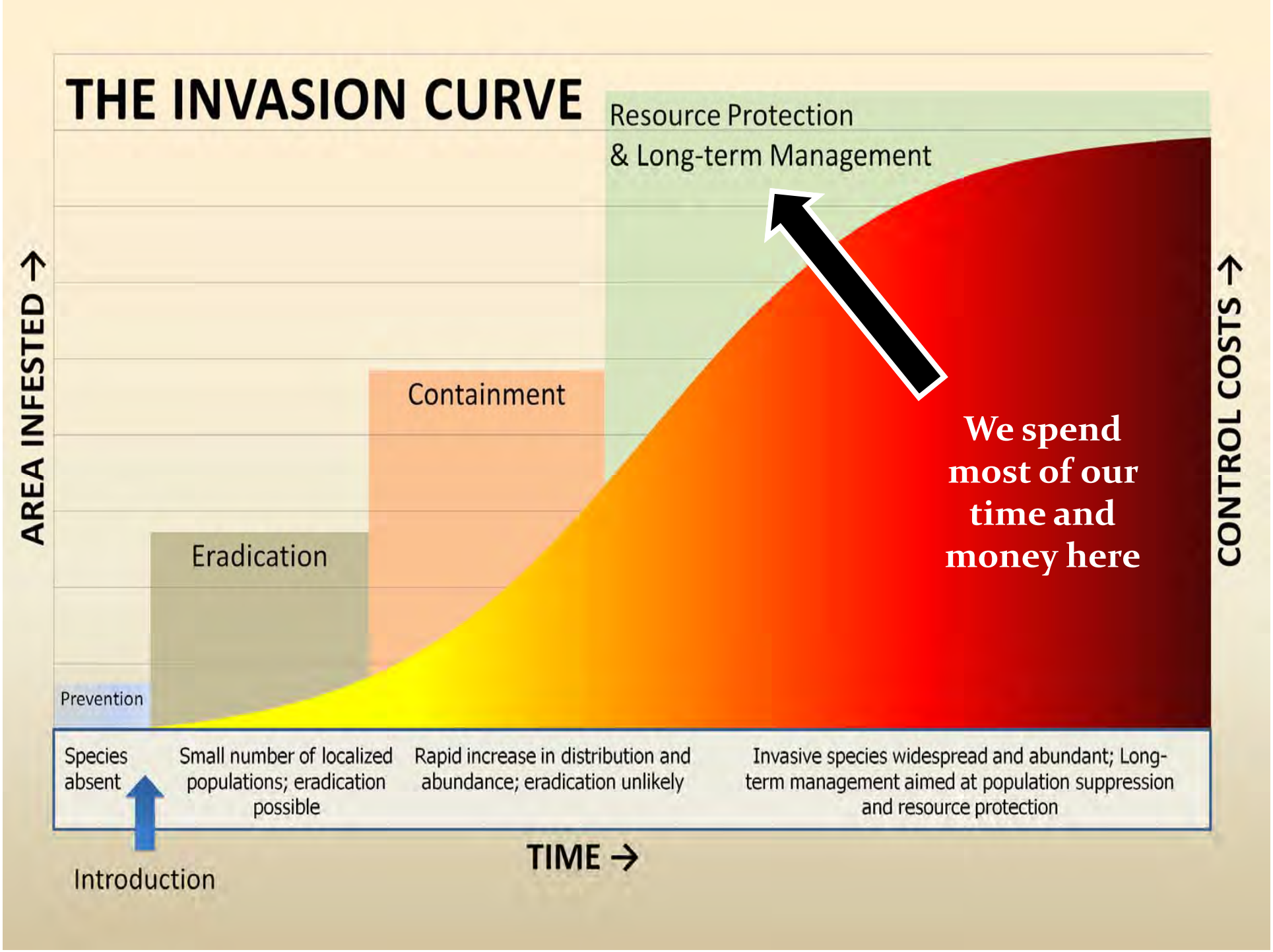
South Florida Ecosystem Invasive Exotic (IES) Species Strategic Action Framework

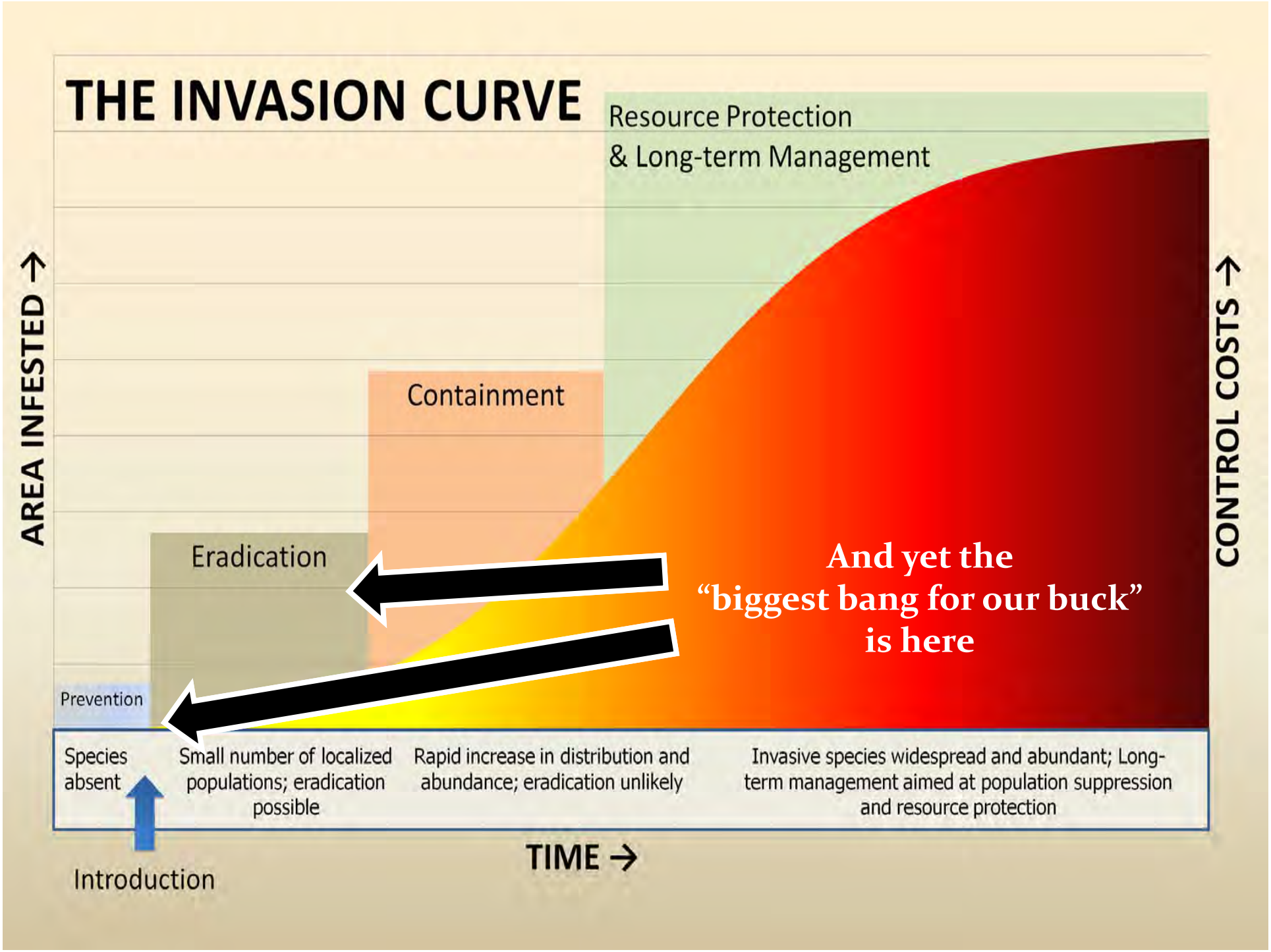
- 16 months of interagency/partner workshops
- Products:
  - Framework document
  - Prioritized list of strategies
  - Preliminary Action Assessment
  - South Florida Ecosystem IES Crosscut Budget

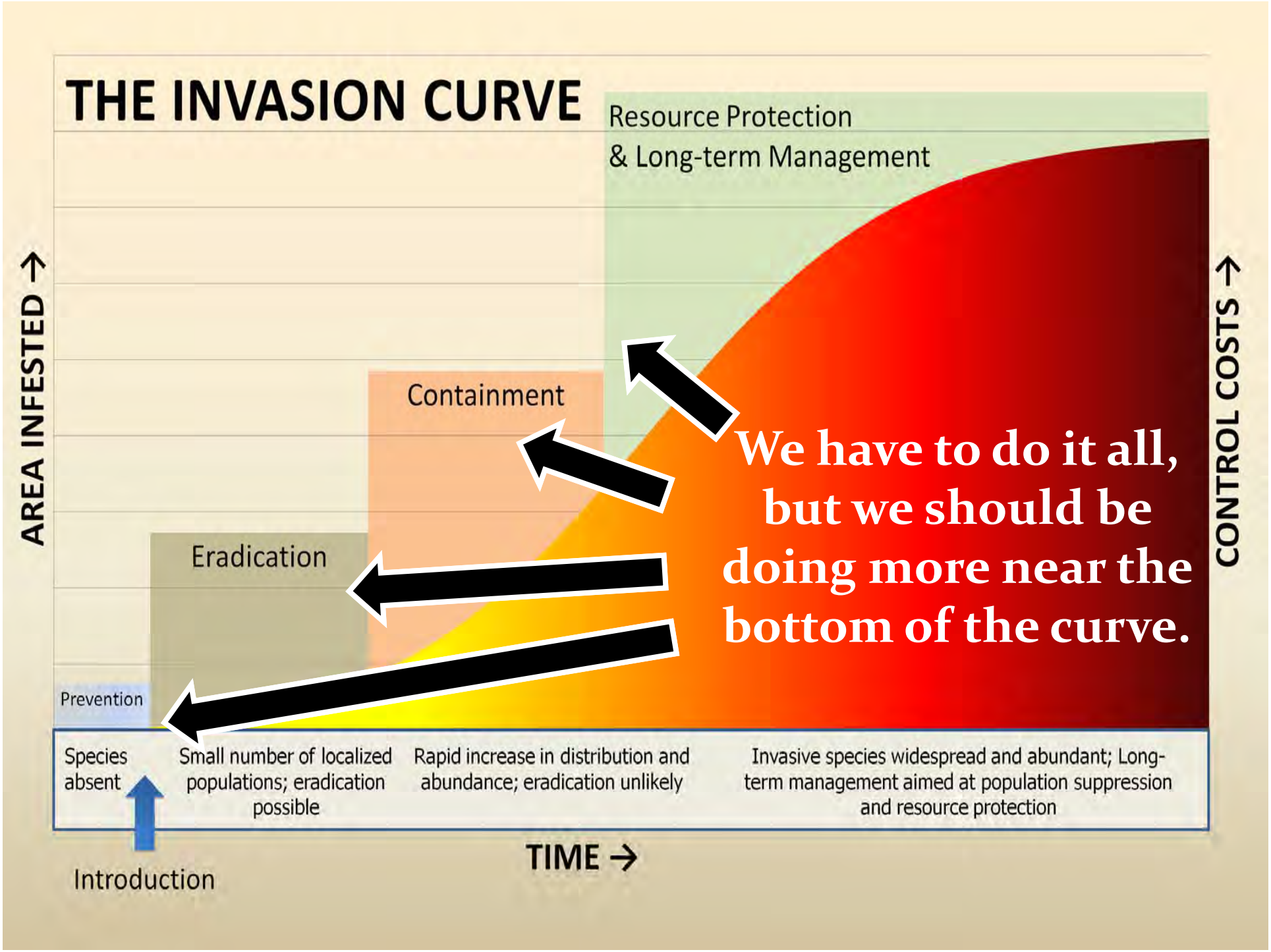
“The Invasion Curve”

- The Curve tells us that the longer we take to respond to an invasion:
  - The costs get bigger
  - The damage gets bigger
  - The chances of eradication get smaller


THE INVASION CURVE
Resource Protection
& Long-term Management
Containment
Eradication
Prevention
AREA INFESTED →
CONTROL COSTS →
Species absent
Small number of localized populations; eradication possible
Rapid increase in distribution and abundance; eradication unlikely
Invasive species widespread and abundant; Long-term management aimed at population suppression and resource protection
Introduction
TIME →


THE INVASION CURVE
Resource Protection
& Long-term Management
Containment
Eradication
Prevention
We spend most of our time and money here
AREA INFESTED →
CONTROL COSTS →
Species absent
Small number of localized populations; eradication possible
Rapid increase in distribution and abundance; eradication unlikely
Invasive species widespread and abundant; Long-term management aimed at population suppression and resource protection
Introduction
TIME →


THE INVASION CURVE
Resource Protection
& Long-term Management
Containment
Eradication
Prevention
AREA INFESTED →
CONTROL COSTS →
And yet the
"biggest bang for our buck"
is here
Species absent
Small number of localized populations; eradication possible
Rapid increase in distribution and abundance; eradication unlikely
Invasive species widespread and abundant; Long-term management aimed at population suppression and resource protection
Introduction
TIME →


THE INVASION CURVE
Resource Protection
& Long-term Management
Containment
Eradication
Prevention
We have to do it all, but we should be doing more near the bottom of the curve.
AREA INFESTED →
CONTROL COSTS →
Species absent
Small number of localized populations; eradication possible
Rapid increase in distribution and abundance; eradication unlikely
Invasive species widespread and abundant; Long-term management aimed at population suppression and resource protection
Introduction
TIME →

Gaps…

- Adequate and predictable resources
- We have an incomplete toolbox
- We are not taking full advantage of outreach opportunities
- We are not maximizing coordination at the management and political levels
- We lack an effective EDRR system

EDRR: We can do better

- 2008: An instructive year for understanding our challenges with EDRR
- What are the building blocks of an effective EDRR system?
- Which of these blocks can we put into place now and which require higher level engagement?

2008: An Instructive Year

Lumnitzera racemosa : EDRR Success Story

- Non Native Mangrove Species
- Single source invasion & small special extent (Fairchild Tropical Garden)
- Experts in the area knew how to treat and remove threat

Lumnitzera racemosa

Timeline

- •2008 Single Source Infestation Discovered
- •2009 Two ECISMA Workdays
- •2010 Herbicide Trials/Contractor Treatment
- •2011 Workday
- •2012 Contractor Treatment/Workdays
- •2013 Workdays/Miami-Dade work crews
- •2014 Workdays/Miami-Dade work crews
- •2015 Workday/Miami-Dade work crews

Approximately $100,000 plus 64-100 FTE hours for Workday

Data provided by ECISMA.

2008: An Instructive Year: *SACRED IBIS:* EDRR Success Story

- Native African wetland regions.
- Invasive species in Europe
- Escaped captivity following Hurricane Andrew in 1992.
- Single source of escape and limited numbers.
- ECISMA developed a sacred ibis EDRR plan.
- Everglades Foundation (25K) to ECISMA (2007 and 2008), and 25 K from USDA (had authority) for field operations/research and In-kind FTE hours from partner agencies such as Zoo Miami
- Removed 65 Sacred Ibis (USDA-WS, and Zoo Miami)

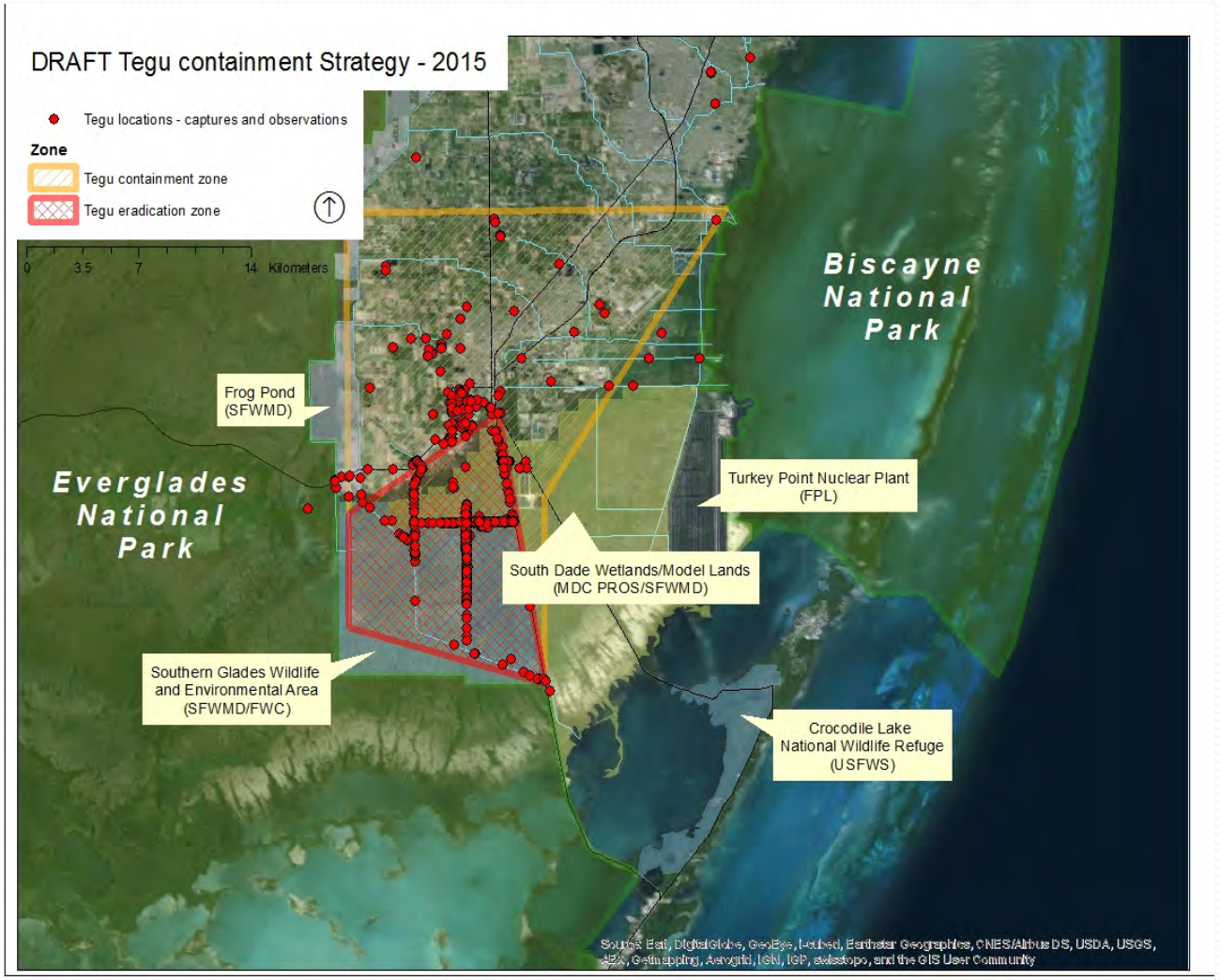
2008: An Instructive Year *Argentine Black and White Tegu:* Failed EDRR

- A large lizard that grows up to 5 feet long, common in the U.S. pet trade.
- Eats a variety of foods including vegetation, fruit, carrion, insects, and small vertebrates, and is also an egg predator.
- Threat to many native species in the Everglades, including threatened and endangered crocodilian, turtle, and bird species.
- The tegu appears to have few predators, and adult females may produce two or more dozen eggs per year

2008: An Instructive Year *Argentine Black and White Tegu:* Failed EDRR

- From the beginning, the response required to achieve eradication overwhelmed our EDRR capacity.
- 2008-2010 Evidence of a full scale invasion was mounting. (2009 - 3 tegus were trapped).
- 2010 Research began (FAU, ECISMA, USGS, WG, SCG)
- 2011 FWC brought dedicated funding and staff for trapping/outreach
- 2011 – 2013 Trapping and outreach efforts increase, Strategic Action Framework development.
- 2014 – USGS and NPS establish a “curtain wall” trapping effort to keep them out of Everglades National Park. (appx 500 were trapped)
- 2015 – Management objectives for the Miami Dade population were developed (635 trapped).

2008: An Instructive Year
Management Objectives for Miami Dade Population of A.B.W. Tegus



What are the Building Blocks of an Effective EDRR System?

- There are examples in other parts of the country and Canada. (Lake Champlain, Hawaii, British Columbia)
- Some basic building blocks include:
  - Effective monitoring and detection;
  - A screening tool to quickly assess whether EDRR is appropriate;
  - A lead agency to coordinate the EDRR system;
  - Adequate resources for coordination, response and monitoring;
  - Streamlined implementation processes;
  - A broad coalition of participants in the system;

Which of these can we start building now?

- Improving monitoring and detection;
- A screening tool to quickly assess whether EDRR is appropriate;
- Start working on streamlined implementation processes;
- Expand the broad coalition of participants in the system;

Which of these need higher level engagement?

- A lead agency to coordinate the EDRR system;
- Adequate resources for coordination, response and monitoring
- Start working on streamlined implementation processes;
- Expand the broad coalition of participants in the system;