

# Managing Injurious Wildlife After USARK vs Zinke 2017:

Initial Risk Evaluation for Invasiveness to Florida of  
Fishes on the Injurious Wildlife List

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GSARP Meeting

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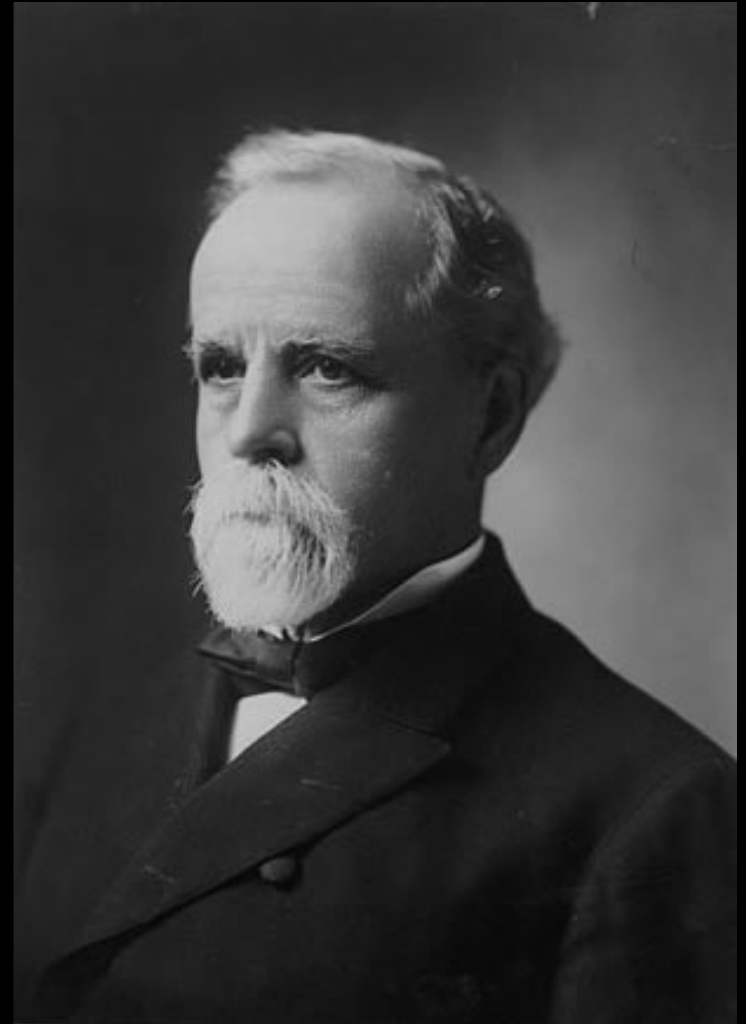
# Federal Republic

- States have primary authority over fish and wildlife management
- Federal authority
  - Federal lands/waters
  - Endangered species
  - Migratory birds
  - (some) Invasive species
  - Interstate commerce



# Lacey Act

- Rep. John F. Lacey (R-IA)
- President McKinley
- 1900 (amendments)
- Protect wildlife and fish (trafficking provisions)
  - Title 16
- Injurious wildlife
  - Title 18



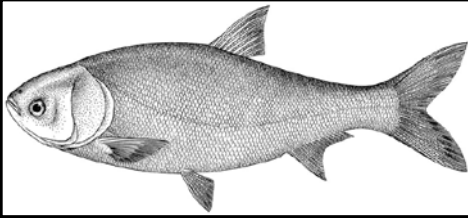
# Injurious Wildlife

- Wild mammals
- Wild birds
- Reptiles and amphibians
- Fish
- Mollusks and crustaceans

“injurious to human beings, to the interests of agriculture, horticulture, forestry, or to wildlife or the wildlife resources of the United States”







480 Species of fish

# Lacey Act prohibits...

“importation into the United States, any territory of the United States, the District of Columbia, the Commonwealth of Puerto Rico, or any possession of the United States, **or any shipment between the continental United States**, the District of Columbia, Hawaii, the Commonwealth of Puerto Rico, or any possession of the United States”

## The “shipment clause”

# USARK vs Jewel 2015

- USFWS listed 4 large constrictors (2015)
- USARK sued
  - Cannot prohibit interstate movement
  - Tropical snakes not a threat to the entire U.S.
- District Court injunction
- USFWS appealed (DOJ)





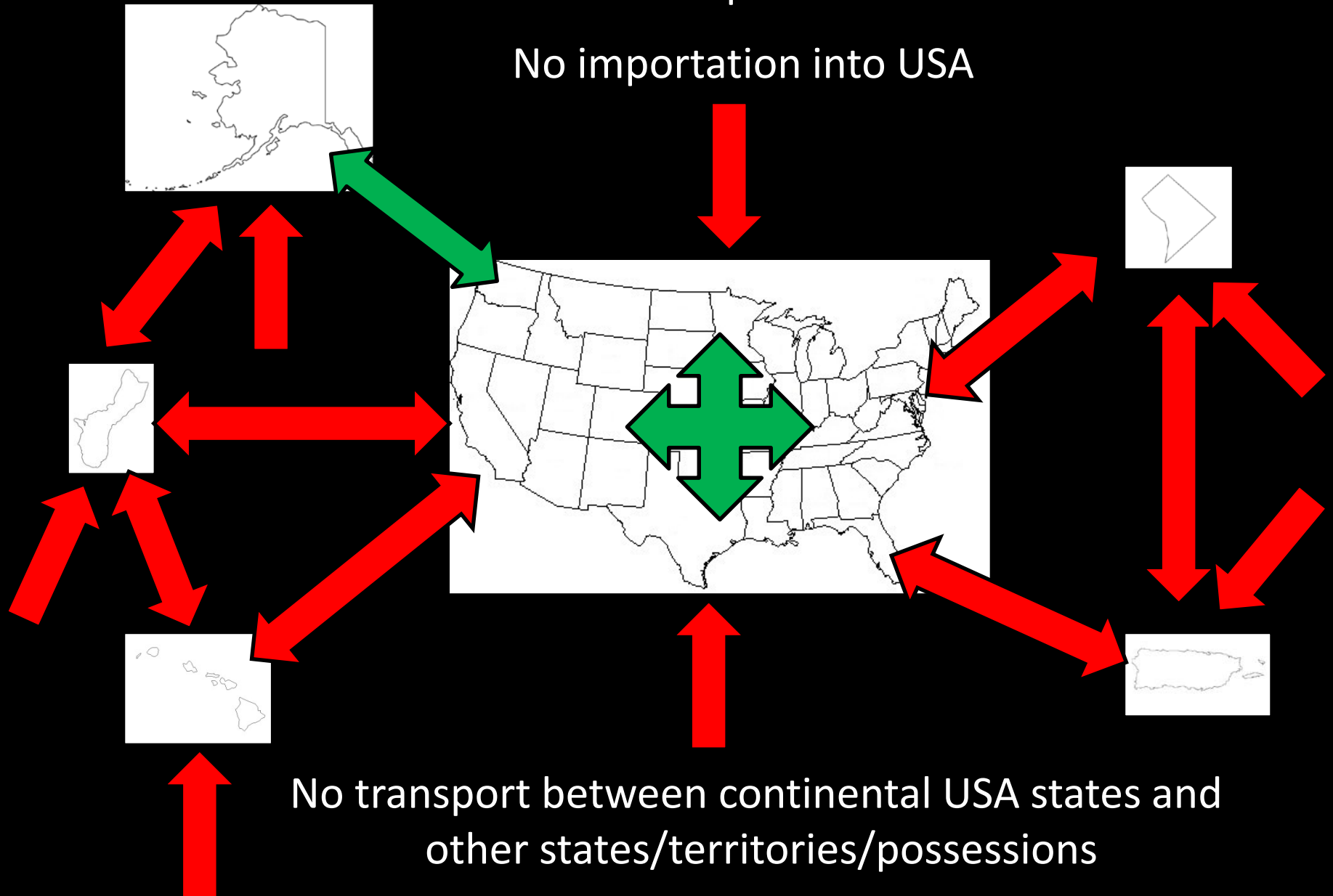
# USARK v. Zinke 2017

- U.S. Court of Appeals for the DC Circuit
- Upheld injunction
- “[W]e affirm the district court’s judgment and hold as a matter of law that the government lacks authority under the shipment clause to prohibit shipments of injurious species between the continental States.”
- Shipment clause unambiguous
- Interpretation consistent with legislative history
  - USFWS interpretation only since 1960s



# Interstate transport in continental USA

No importation into USA



# Exceptions???

- State-listed prohibited species
- State violation
- Title 16 Wildlife trafficking
- Federal violation
- Does not have to involve injurious species



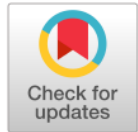
# Recommendations to States

1. Adopt risk assessment tools to aid decision making/risk management
2. Assess risks of current injurious species if not already prohibited
3. Assess risks of future injurious species rather than automatically harmonize
4. Foster current and new partnerships, especially for cross-boundary issues

# Read all about it...

Hill et al. 2018. *Fisheries* 43(5): 225-230

COLUMN  
PERSPECTIVE



## Court Ruling Creates Opportunity to Improve Management of Nonnative Fish and Wildlife in the United States

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### INTRODUCTION

The injurious wildlife provisions under the Lacey Act (U.S. Code, volume 18, section 42(a)(1)) are used by the U.S. Fish and Wildlife Service (USFWS) to regulate importation and

Texas and Florida, the only states where the court agreed that there was sufficient evidence of potential harm. The court further sided with the plaintiffs' interpretation that the USFWS lacked the authority to prohibit interstate transport within the

# Florida Lists Overlap Federal

- Prohibited

- Walking Catfishes, family Clariidae (except *C. batrachus*)
- Snakeheads, family Channidae



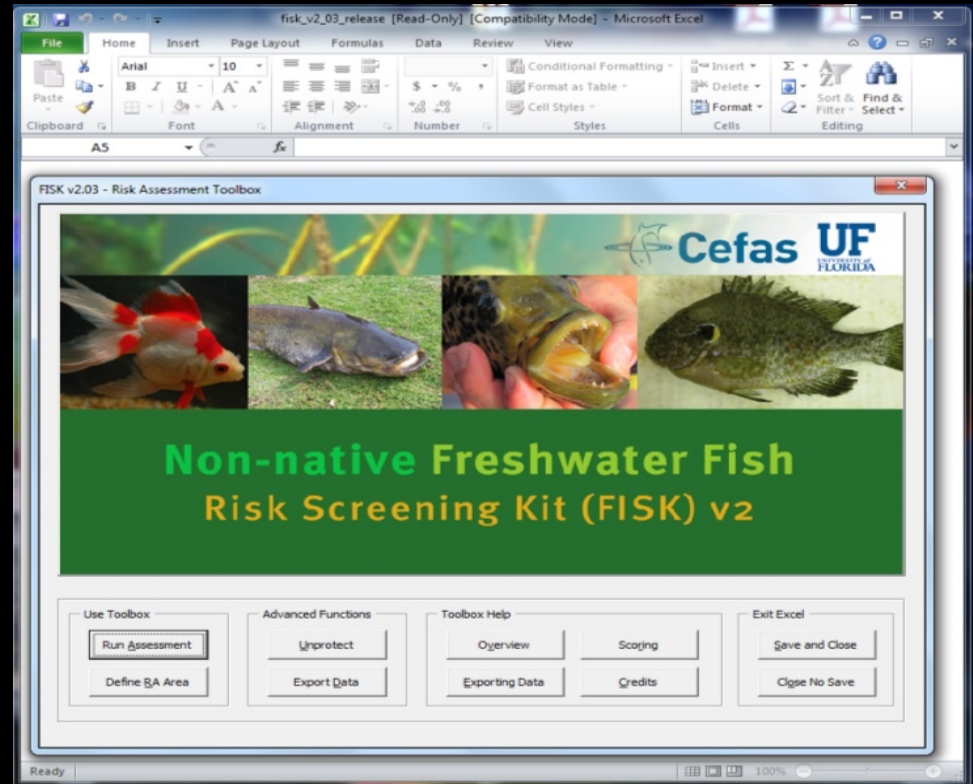
- Conditional

- Carp, Bighead
- Carp, Black
- Carp, Silver
- Walking Catfish (*C. batrachus*)
- Nile Perch



# Fish Invasiveness Screening Kit v2

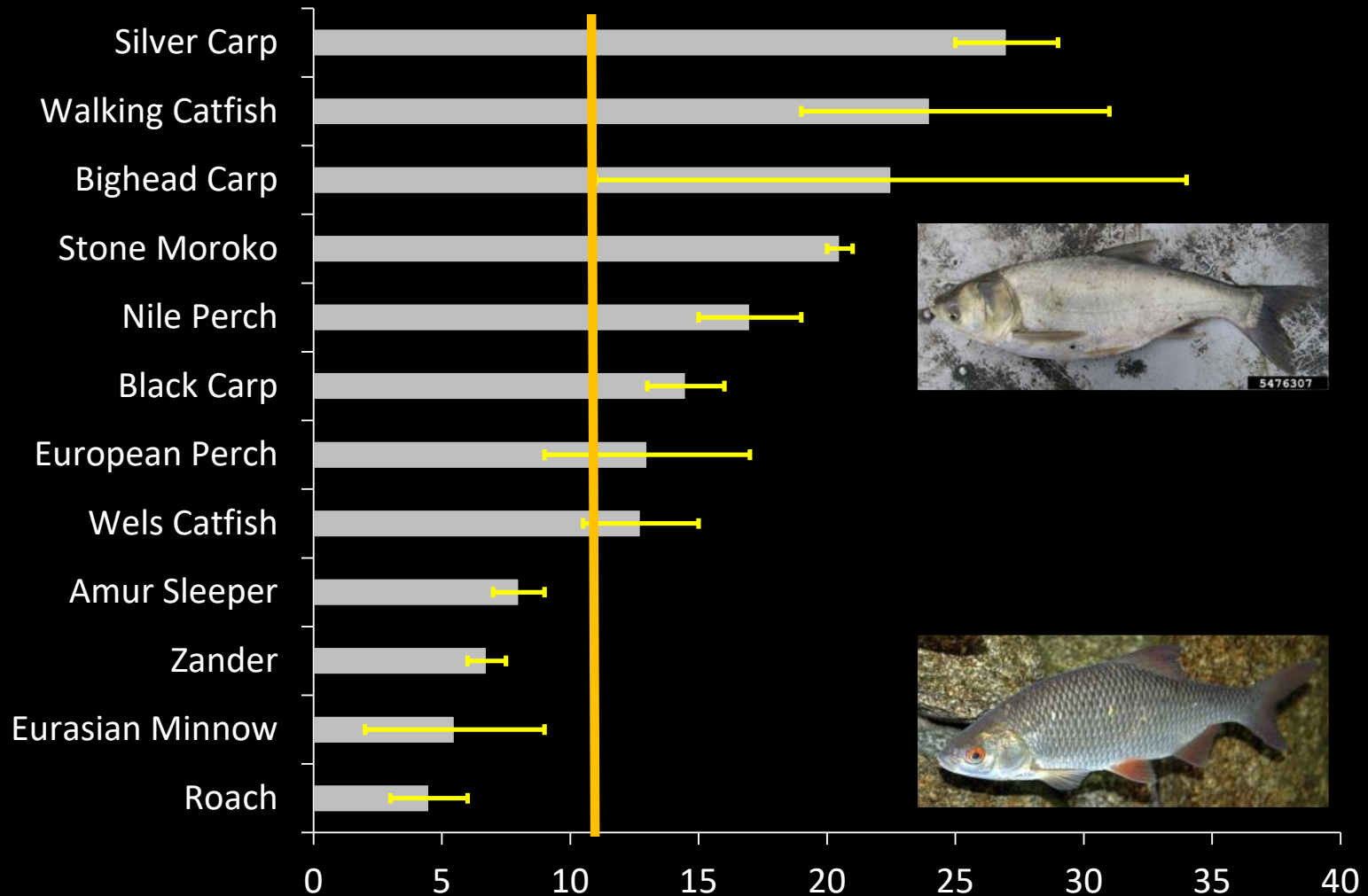
- **FIK: 49 questions in total**  
(each with guidance notes)
  - **Biogeography/History**
    - Domestication/cultivation (3)
    - Climate and distribution (5)
    - Invasive elsewhere (5)
  - **Biology and ecology**
    - Undesirable traits (12)
    - Feeding guild (4)
    - Reproduction (7)
    - Dispersal (8)
    - Persistence (5)



<http://www.cefas.defra.gov.uk/our-science/ecosystems-and-biodiversity/non-native-species/decision-support-tools.aspx>

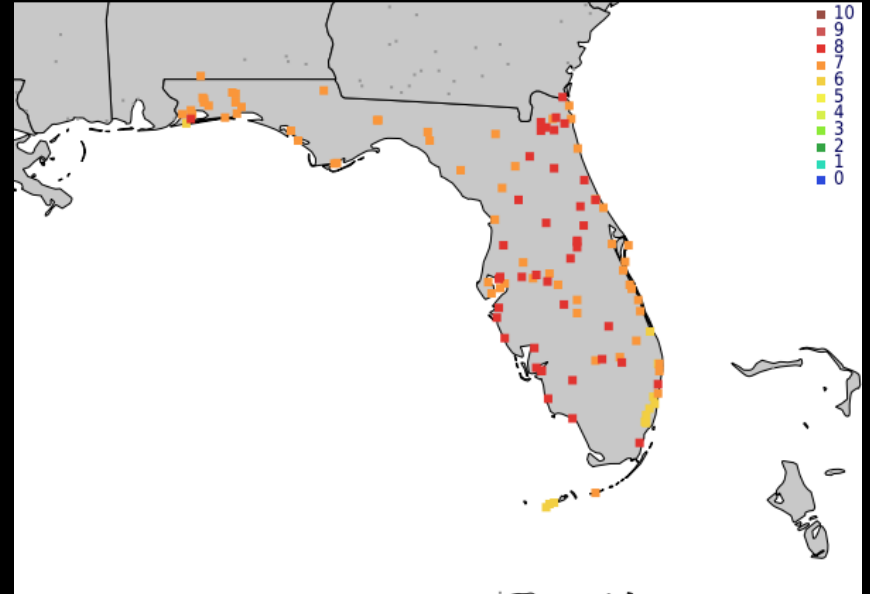
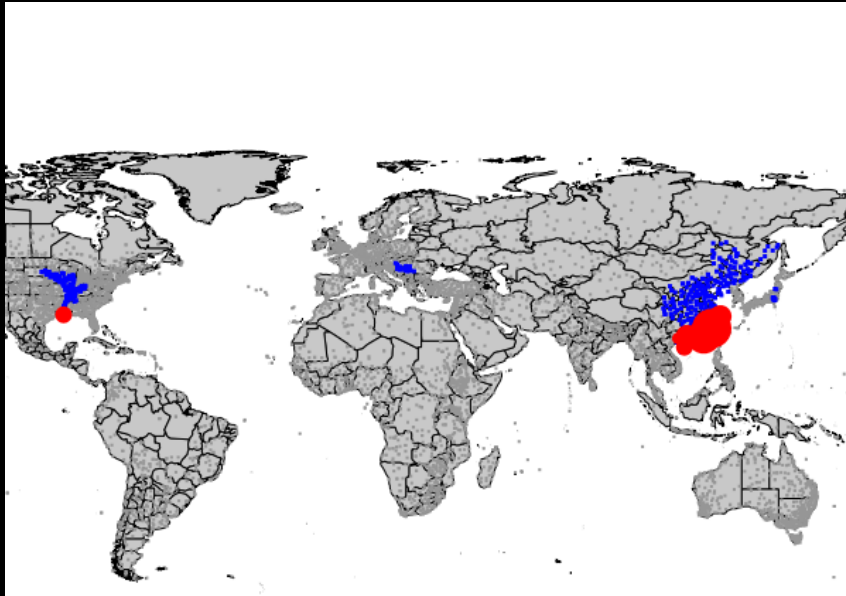
Lawson et al. 2013. *Risk Analysis*  
33:1414-1431

# Mean FISK Scores



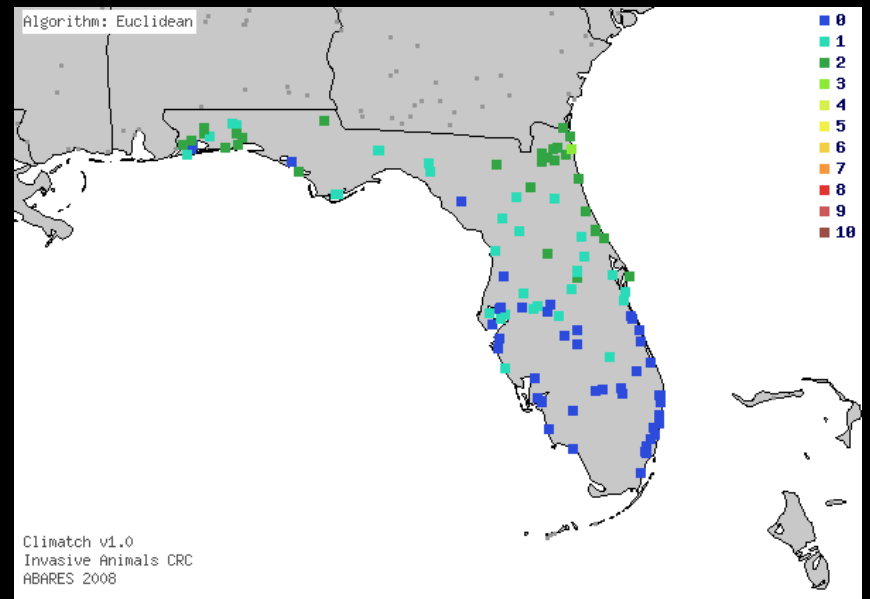
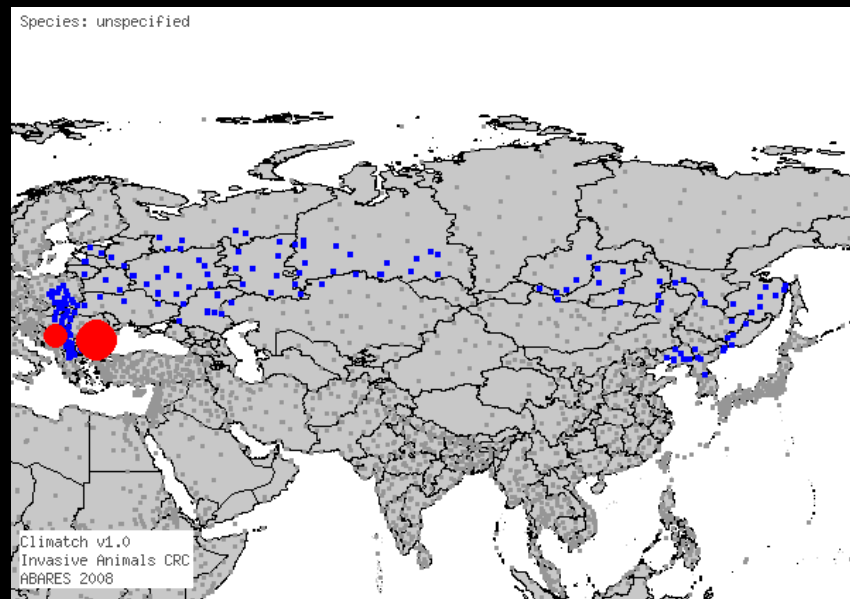
# CLIMATCH (Climate 6 score = 1)

species	0	1	2	3	4	5	6	7	8	9	CLIMATE 6 10 Score
<i>H. molitrix</i>	0	0	0	0	0	0	12	59	42	0	0



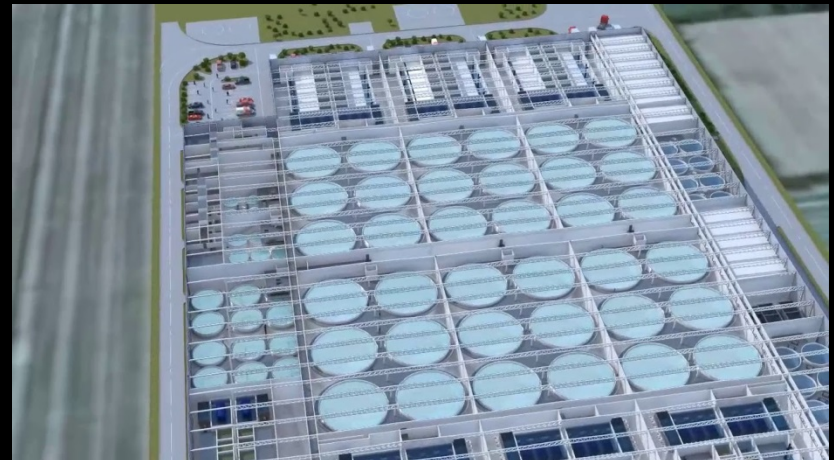
# CLIMATCH (Climate 6 score = 0)

species	0	1	2	3	4	5	6	7	8	9	CLIMATE 6 10 Score	
P.glenii	45	32	30	1	0	0	0	0	0	0	0	0



# Remaining Species

- Bighead Carp *H. nobilis*
  - Previous FL FISK
- Largescale Carp. *H. harmandi*
  - Very little information
- Atlantic Salmon *Salmo salar*
  - In Florida???





# Other “To-Do” Items

- Certainty
- Variability
- Evaluate scores
  - How did they get there?
  - What is important?
  - Factors
    - Increasing scores
    - Decreasing scores
- Recommendations
  - Research
  - Risk Management



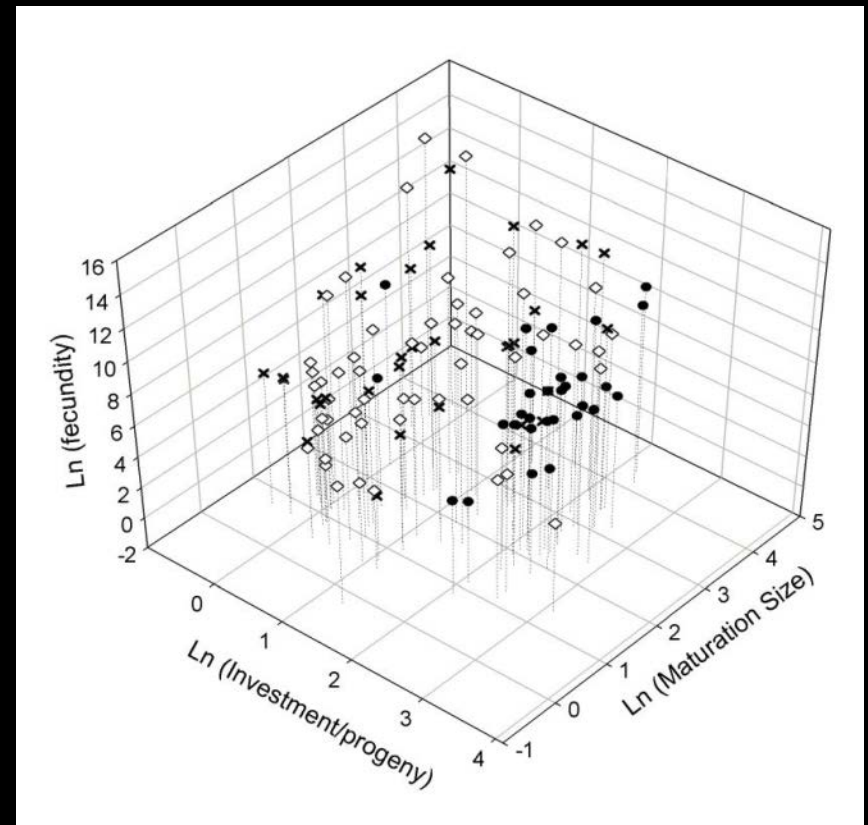
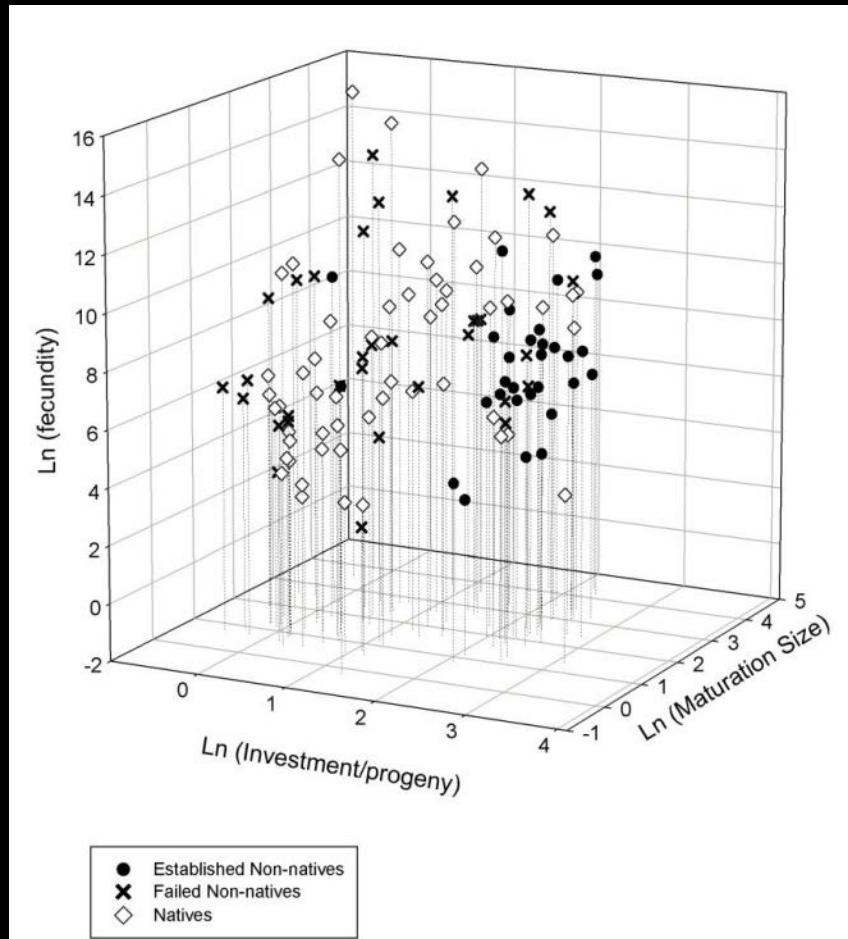
# Florida Efforts-Species Profiling

- K. Lawson (UF Dissertation)
- Life history traits and triangular model
- Success (31), failure (32), native (60)
- Parental care (97%)
- Equilibrium strategy
  - Maturation size
  - Mean fecundity
  - Investment per progeny



- Success
  - Larger body size
  - Larger egg size
  - Higher parental care
  - No fluvial dependency
  - Greater salinity tolerance

# Life History Strategies



Winemiller and Rose 1992 triangular life history model

# Fishes and Amphibians Assessed (FL or USA)

- Sturgeon
- Peacock Bass
- Marine ornamental pathway
- Grass carp
- [Silver dollar]
- Barramundi perch
- Blue tilapia
- Barcoo grunter
- GloFish (3 species)
- Arapaima
- 95 species historically introduced in FL
- 34 important freshwater ornamental fishes
- [Nile tilapia]
- 11 large ornamental catfishes
- 14 Lionfishes – AS-ISK
- 5 aquatic species – AS-ISK
- 11 Pomacentrids – AS-ISK
- Alligator gar
- 16 injurious wildlife species





# Questions?

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