

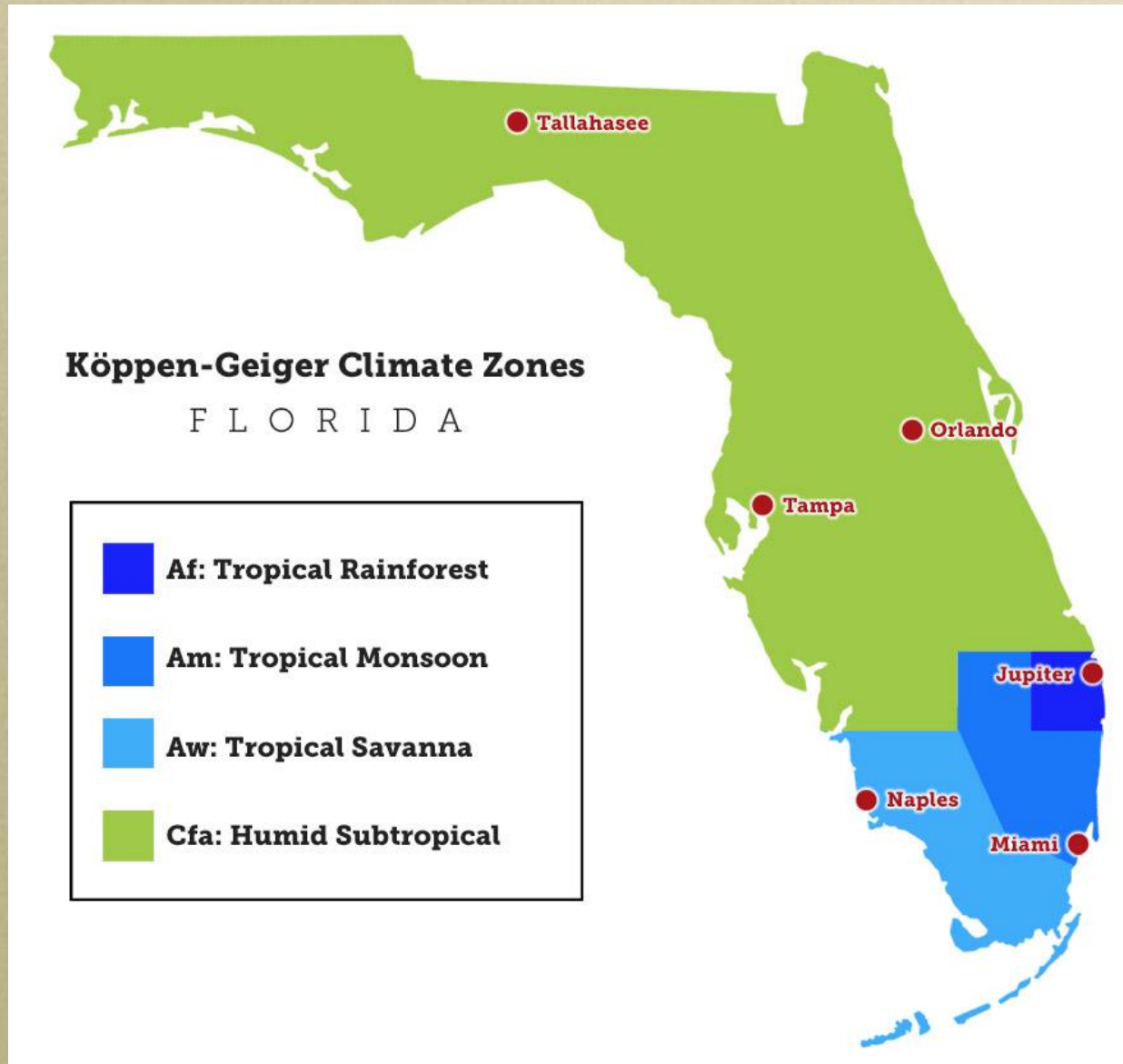
Exotic Freshwater Fishes of Florida

Nick Trippel

ICAIS 2017



Climate



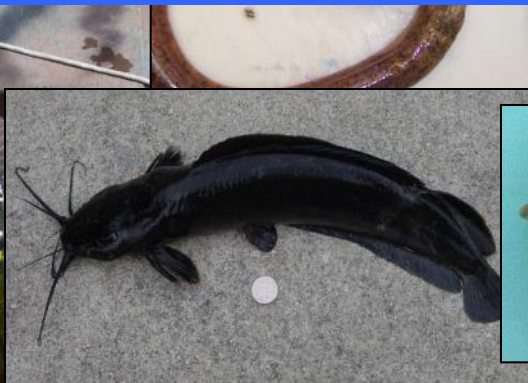
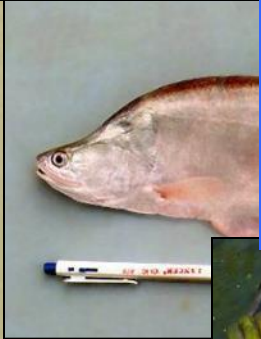


Panhandle Issues

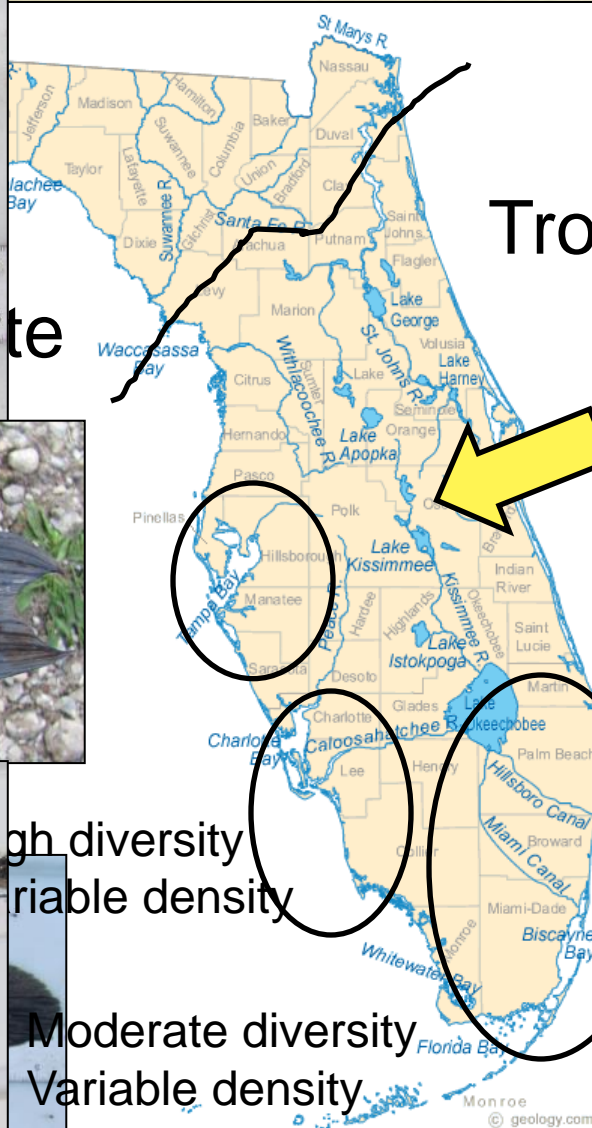


Exotic Fishes

**39 Reproducing Species
in Peninsular Florida**



Diversity and Density



Tropical

Low diversity
Variable density

High diversity
Variable density

Moderate diversity
Variable density

High diversity
High density

South Florida habitats-- Canals

- 1000s of km of “plumbing” in S FL
- Drains water east and west
 - Some flows south
- Artificial, deep-water habitats
- High density of natives and non-natives



Entry Pathways

>20 million residents



How Do We Handle This?

Risk Assessments

Trying to Get Ahead of the Curve: Risk Analysis of Barramundi *Lates calcarifer* for Florida Aquaculture

Jeffrey E. Hill¹ and Scott Hardin²

¹SFRC Fisheries & Aquatic Sciences, IFAS,
University of Florida

²Florida Fish and Wildlife Conservation Commission
2008



Fish Invasiveness Screening Kit (FISK)

- Rapid risk screen
- Freshwater fish
- Species proven invasive are likely invasive in similar regions
- Semi-quantitative
- 49 questions
- Scores (-15 to 57)
- Higher score => higher risk category



Management

Florida's Exotic Fish Program

PREVENTION ASSESSMENT MANAGEMENT



Rules and Regulations

68-5.001 – Unlawful to release nonnative fish (reptiles, amphibians, birds, etc.) into state waters...

Development of Conditional and Prohibited species lists

Prohibited Species



Conditional Species



Enforcement



- Inspections at airports
- Cyber investigations for illegal internet sales



Outreach and Education



MyRightFish.com

A Marine Aquarium Resource for the Beginner

*Buy the Right Fish
& Give it the Best Home*

Marine Aquariums are a
great choice for learning
and appreciating
aquatic life



Buyers Guide

Featured Fish

Tech Tips



Fun Facts →

Don't Let it Loose



Exotic Pet Amnesty Day

Saturday, May 14th, 2016

10:00 a.m. – 2:00 p.m.

Osceola Heritage Park- Extension Services Building

1921 Kissimmee Valley Lane, Kissimmee

Open to the public!



- Surrender exotic pets that can no longer be kept
- No penalties for unlicensed or illegal exotic pets
- See live exotic animals up close
- Talk to experts about being a responsible pet owner
- Surrendered pets will be adopted out the same day
- Adopters must pre-register at MyFWC.com/Nonnatives

For more information visit: MyFWC.com/Nonnatives

Or call 1-888-lve-Got1 (1-888-483-4681)

Sponsored by NFWF/Wells Fargo, Heartland & Osceola CISMAs, Osceola Extension



Osceola County
Cooperative Invasive Species Management Area



Florida Fish and Wildlife
Conservation Commission
MyFWC.com

Heartland CISMA
Cooperative Invasive Species Management Area



Early Detection and Rapid Response

Elimination of selected localized populations



Piranha renovation 2009



ASSESSMENT

- 1. Document the distribution and abundance of exotic fishes in Florida.**
- 2. Define their life history strategies, environmental limiting factors, population dynamics, and associations with native fishes.**
- 3. Develop management plans that incorporate these species.**

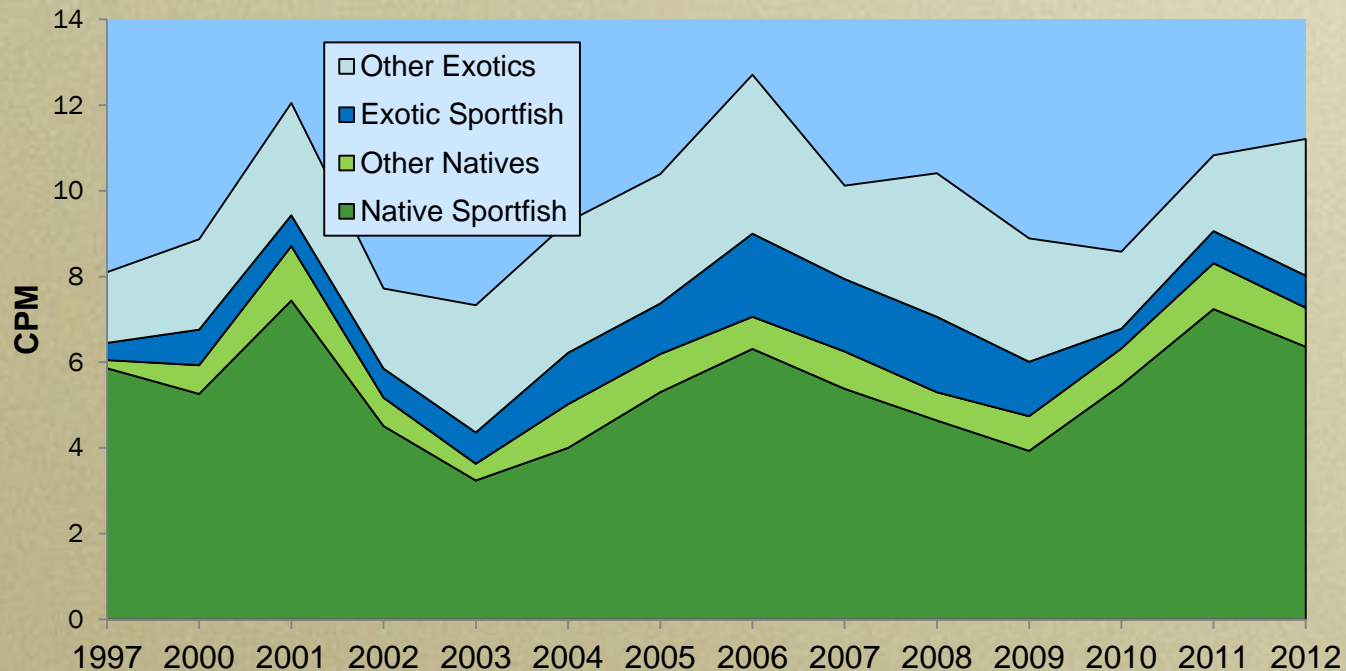


STANDARDIZED ELECTROFISHING



Core canals are Tamiami and Cutler Ridge (Miami-Dade),
Snake Creek and Cypress Creek (Broward), Boynton and
West Palm Beach (Palm Beach)

Composite daytime electrofishing catch rates of all sizes of native and exotic fishes collected
from six "core" study canals, 1997, 2000-12.



No significant negative correlations between any exotic and native fishes



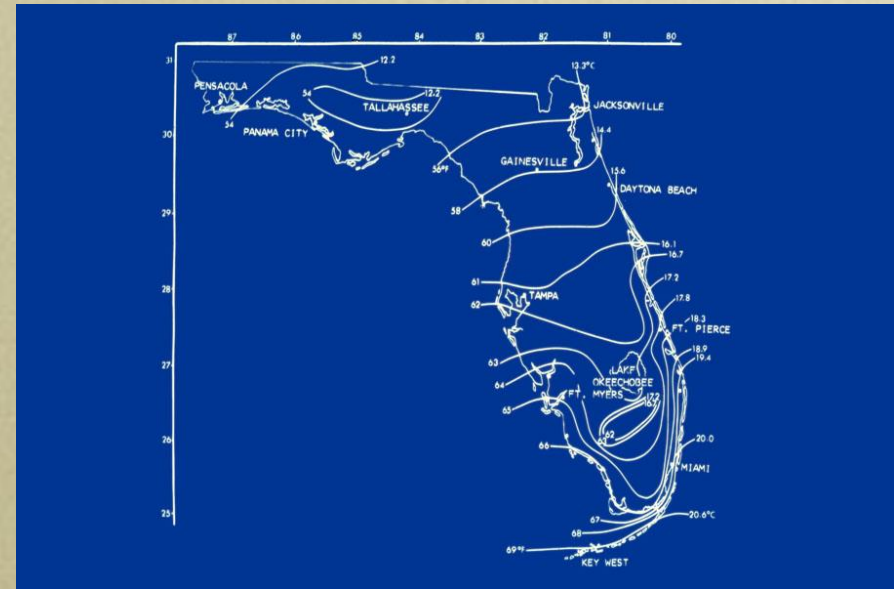
Bullseye Snakehead Laboratory

Identified Temperatures

Stopped Feeding = 14-16°C

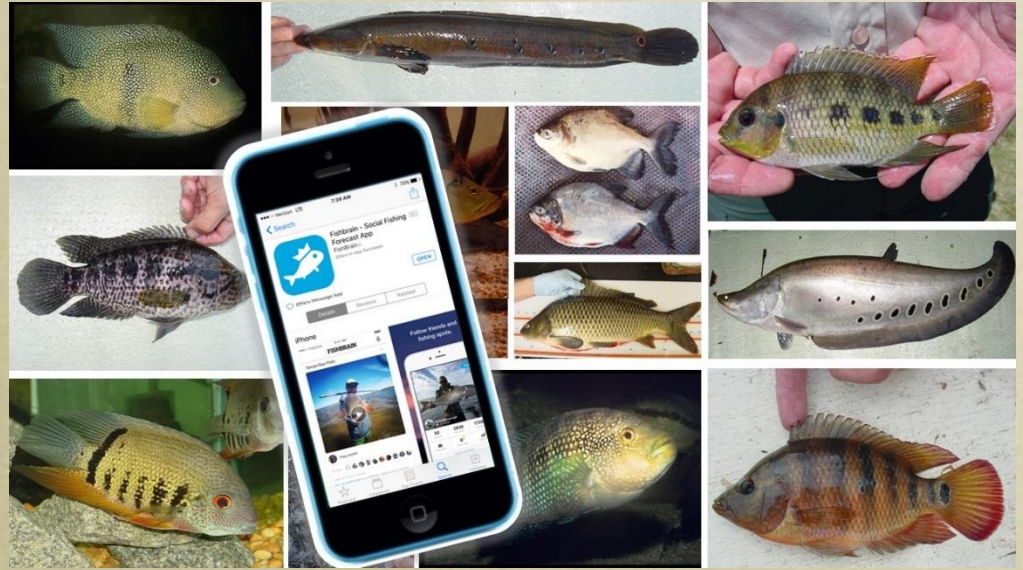
Death = 10-12°C

(n = 6; R = 193-372 mm TL)



FishBrain

- Largest free app for anglers
- FWC and USFWS partners
- >250,000 users in Florida
- Determine distribution of established species
- Management of new species



MANAGEMENT

FWC's long term objective for studying established exotic fishes is to develop new management strategies that incorporate these species with the goal of identifying wise-use practices for these undesirable but available resources

Commercial Fisheries

Recreational Fisheries

Consumptive use







Total Asset Value of Urban Canal Sport Fisheries in 2009

<u>Asset Value/Mile</u>	<u>County(s)</u>	<u>Miles of Canals</u>	<u>Total Asset Value/yr</u>
\$65,898 (All sportfish)	Miami-Dade, Broward	404	\$26,622,800
\$27,677 (Butterfly peacock only)	Miami-Dade, Broward	404	\$11,181,500





Angling Attributes- Wise-use or cause for concern?



SNAKEHEAD ROUNDUP

Catch, Keep, and Kill tournaments
Sponsored by local bait manufacturing company



After all this, What have we learned?

- Lots to learn
- New and expanding species
- Localized negative effects
- Most analyses suggest relatively little effect of exotic fishes in Florida
- Catastrophe has not occurred
- Much additional research is needed



Impacts

- Large variety of exotics
- Diversity and density vary
- Much debate over impacts

“Some reports implied that effects of non-native species were devastating while others claimed that there were no effects. We found little empirical evidence for either stance.”

- Schofield and Loftus. 2015.
Reviews in Fish Biology and Fisheries
25:117-145.



Moving Forward

Assessing data gaps and listing future research needs



Thanks

- Kelly Gestring – FWC
- Jeff Hill – UF
- Quenton Tuckett – UF
- Pam Fuller – USGS
- Matt Neilson - USGS



Any Questions

