



Investigating American Eel (*Anguilla rostrata*) in Louisiana: A Preliminary Report on Data Collected Utilizing Standardized Sampling Bycatch

Robby Maxwell and Sean Kinney | The 148th Annual Meeting of the American Fisheries Society, Atlantic City, NJ | August 22, 2018

Overview

- American eel in Louisiana, what we know and don't know
- 2015 trapping study
- Current State Wildlife Grant
- Preliminary Results
- Future Plans



American Eel in Louisiana

What we know



American Eel in Louisiana

What we know

- Savoie and Casanova 1982
 - Areal and seasonal abundance, bait preference
- USFWS 2015
 - “Along the U.S. Gulf Coast, eel density is generally low and commercial eel fishery landings are very small”
 - In Louisiana “Eels are commonly found among (every type of waterbody)...”
 - “Eels are particularly abundant in the Pearl River and estuary.”
 - “In the Bogue Chitto River in Mississippi and Louisiana, American eels are rare or at least seldom captured.”
- Found statewide
- Can be difficult to catch
- International Market
- Some interest in LA commercial fishery
 - Current commercial fishery so small it’s confidential



American Eel in Louisiana, Sabine River

What we know

- BioWest study in 2009-10
 - Eel presence below Toledo Bend
- 2014 Toledo Bend FERC Relicensing, 50 years
 - Prescribed eel passage, 1st in GoM drainage
 - Ongoing study on ramp feasibility and effectiveness



American Eel in Louisiana

What we don't know

- Best methods to capture different life stages and habitat types
- Basic life history within state
- ...much of anything beyond general community sampling

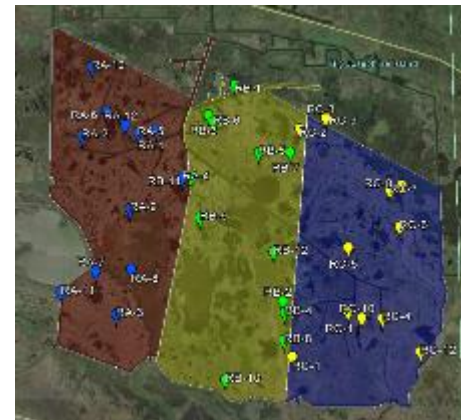
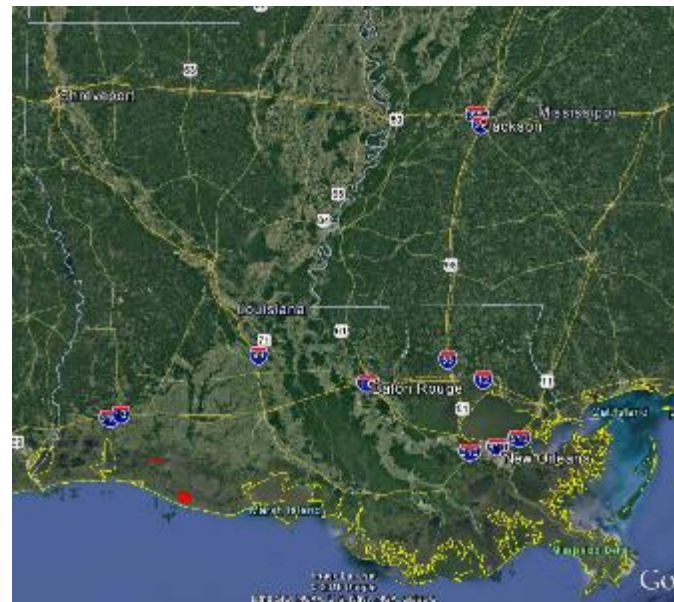


2015 SWLA Trapping



2015 SWLA Trapping

- Rockefeller SWR and L. Misere
 - 3 areas per month, 1 site per area, 4 traps per site, 2 nights per trap
- Baited with shrimp
- Bycatch consisting of eel prey



2015 SWLA Trapping

- 1 eel

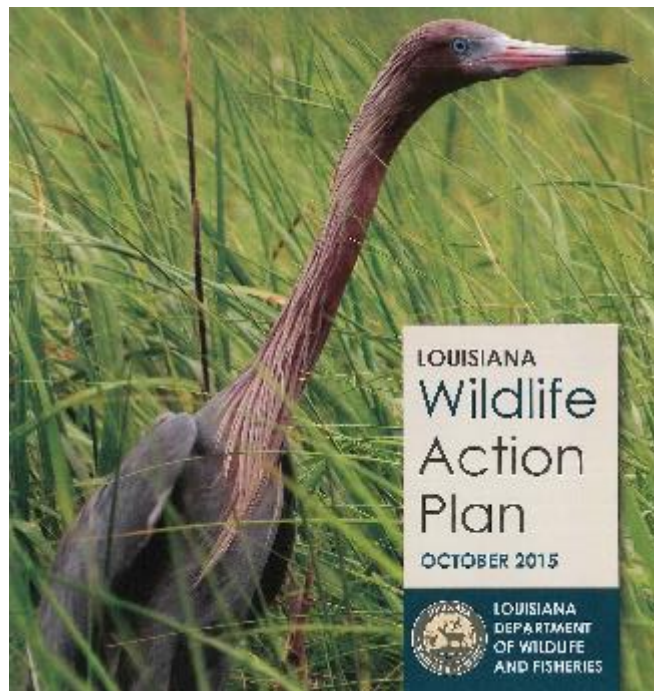


Current State Wildlife Grant



Objectives

- “Species of Greatest Conservation Need”
 - “Determine distribution and population status in LA,” SWAP
 - State Wildlife Grant
- Population metrics to inform Am. eel management at state, regional, and range-wide levels
- Habitat/population trends
- Pilot study to inform methods and scope of future projects



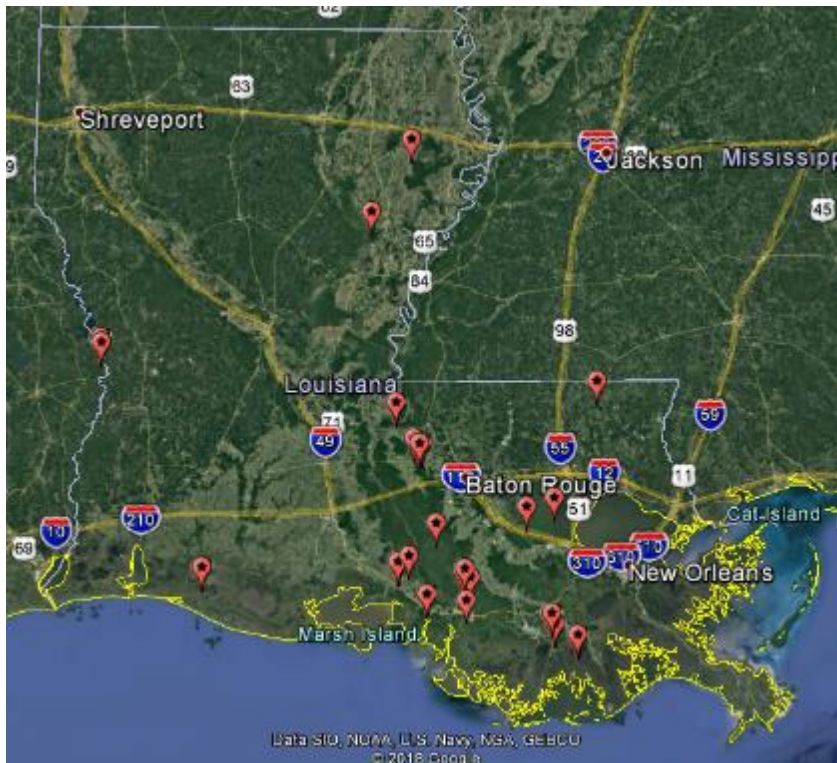
Methods

- Utilize “Florida Model” for collections
 - LDWF Districts and LA Universities providing specimens caught as bycatch in standard sampling, up to 300/year
- Collect length, weight, age (otoliths), sex, stomach contents, presence of *Anguillicoides crassus*, air bladder length and condition
- Fin clips (95% EtOH) and gonads (10% formalin) extracted and archived, otoliths aged and possibly used for stable isotope analysis
- Coordinates, habitat information, and capture method for each specimen

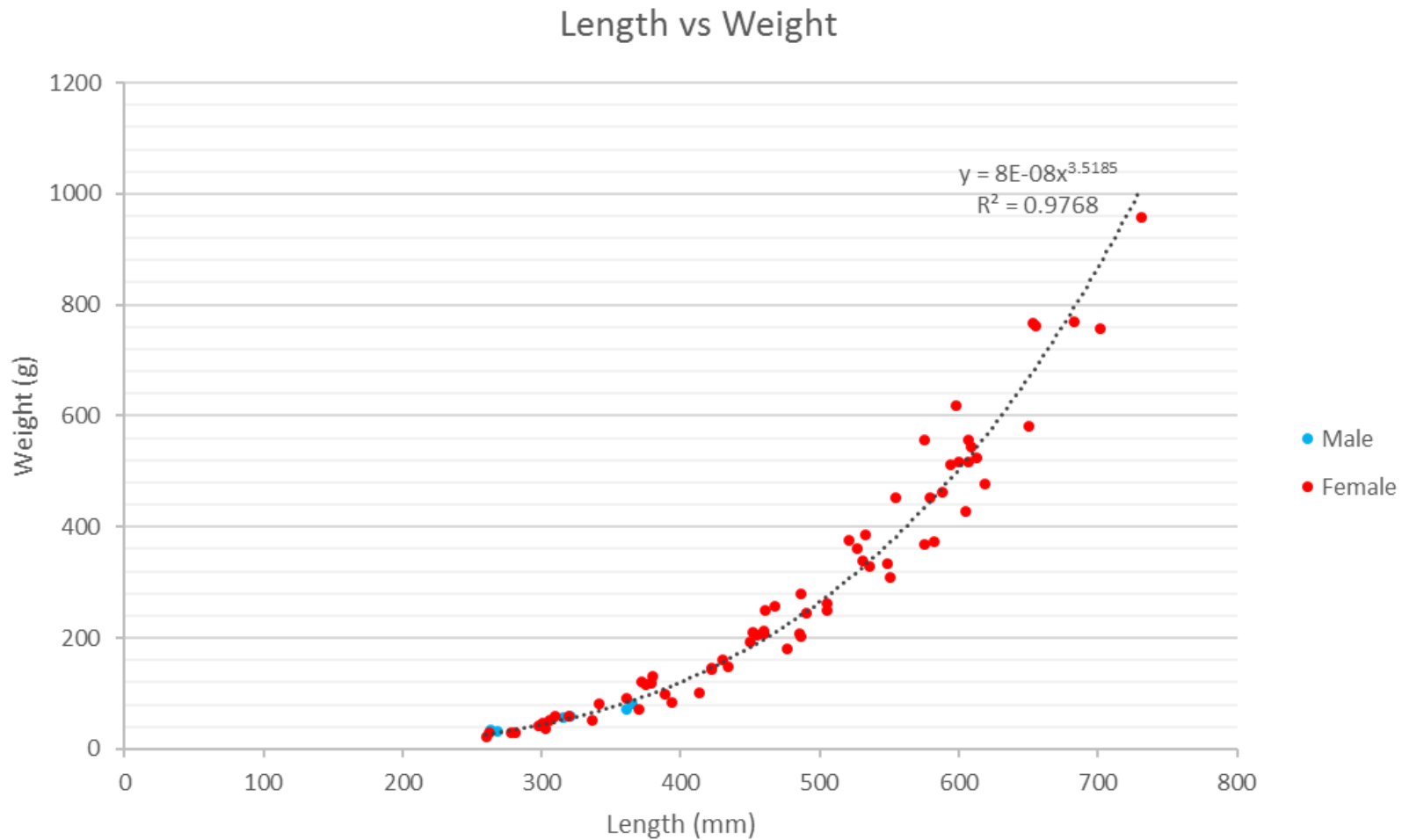


Early Results

- 82 eels processed with more in freezer and coming in
- 53 eels aged
- Gonads being sectioned and stained



Length vs Weight

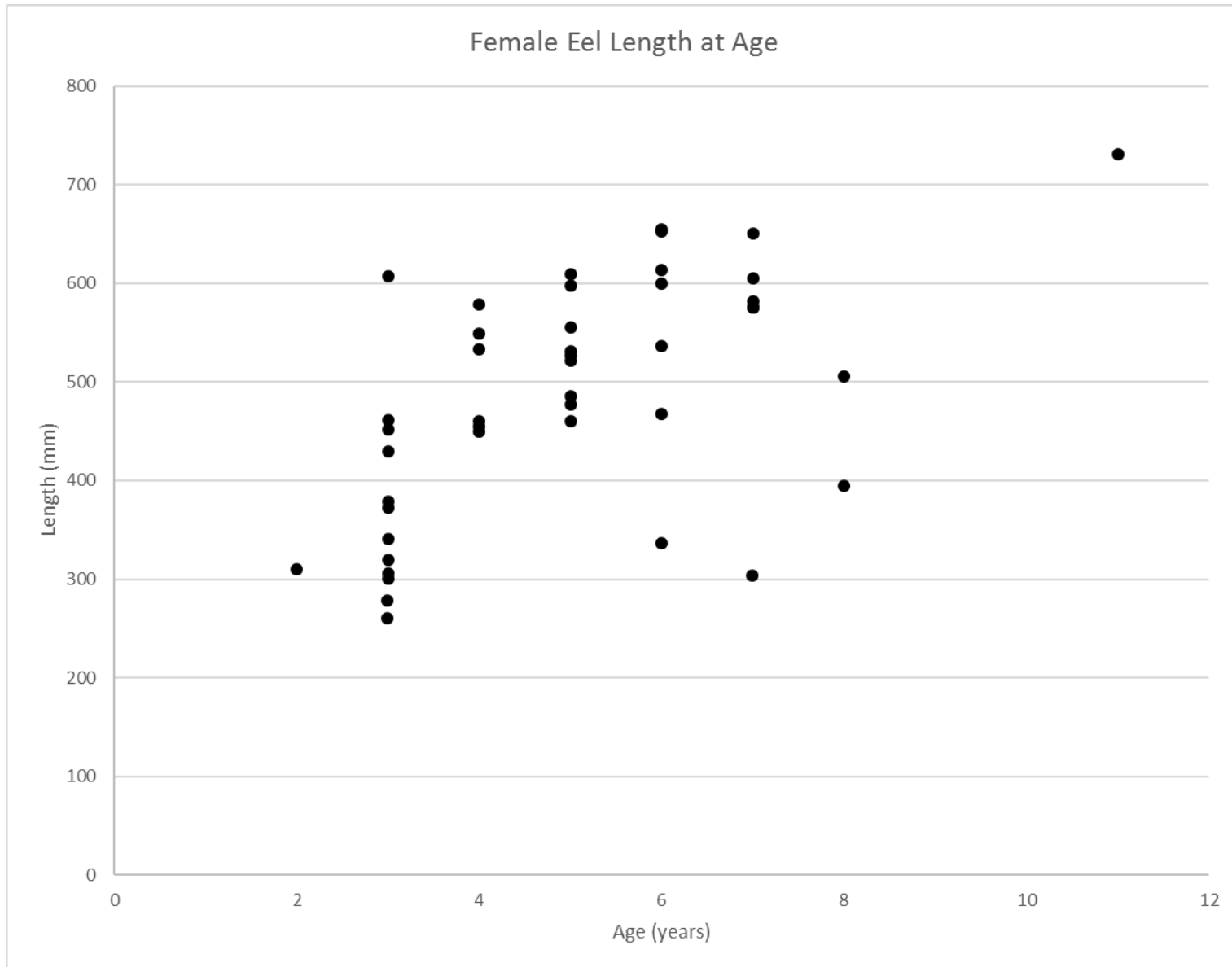


Male n = 6

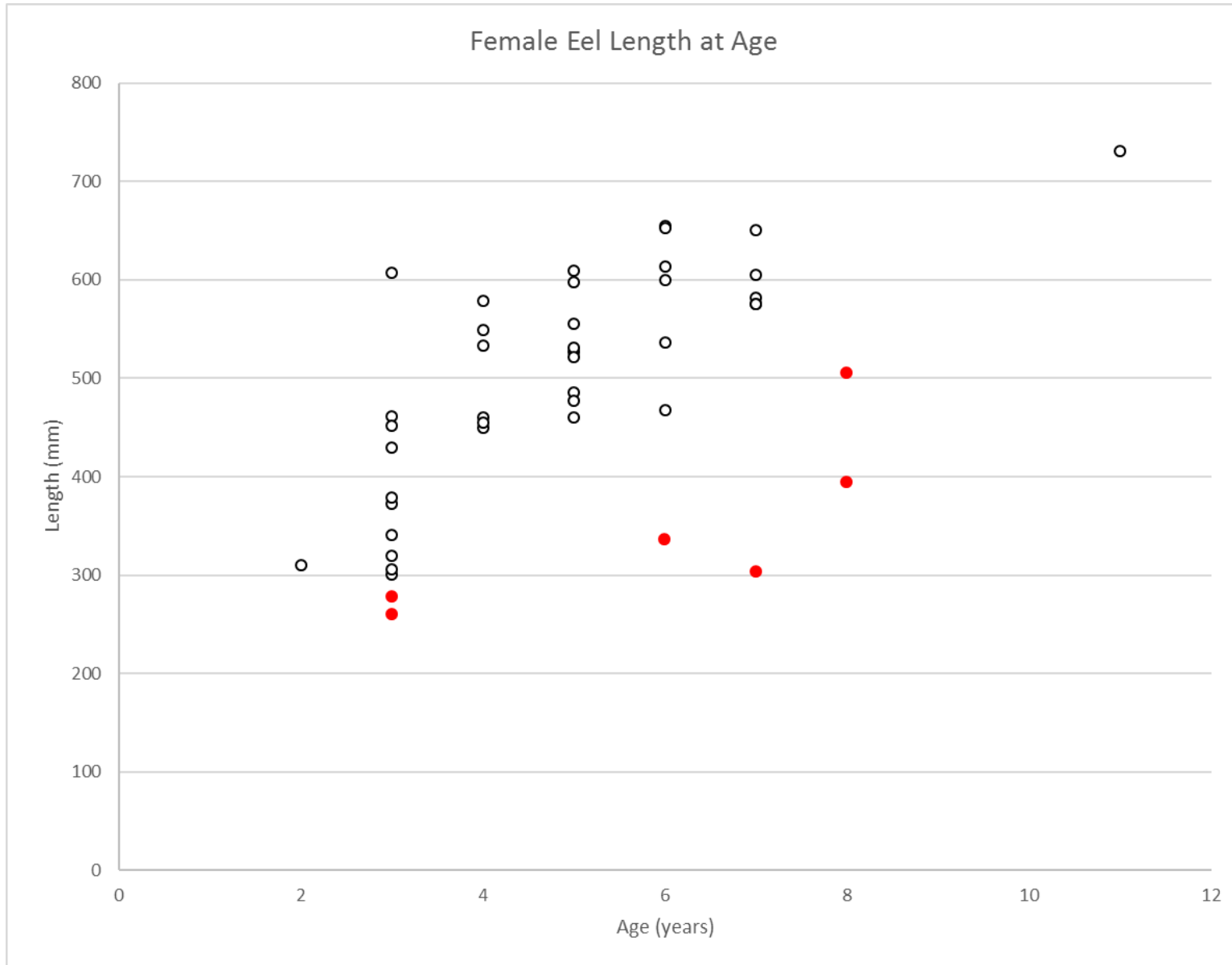
Female n = 67



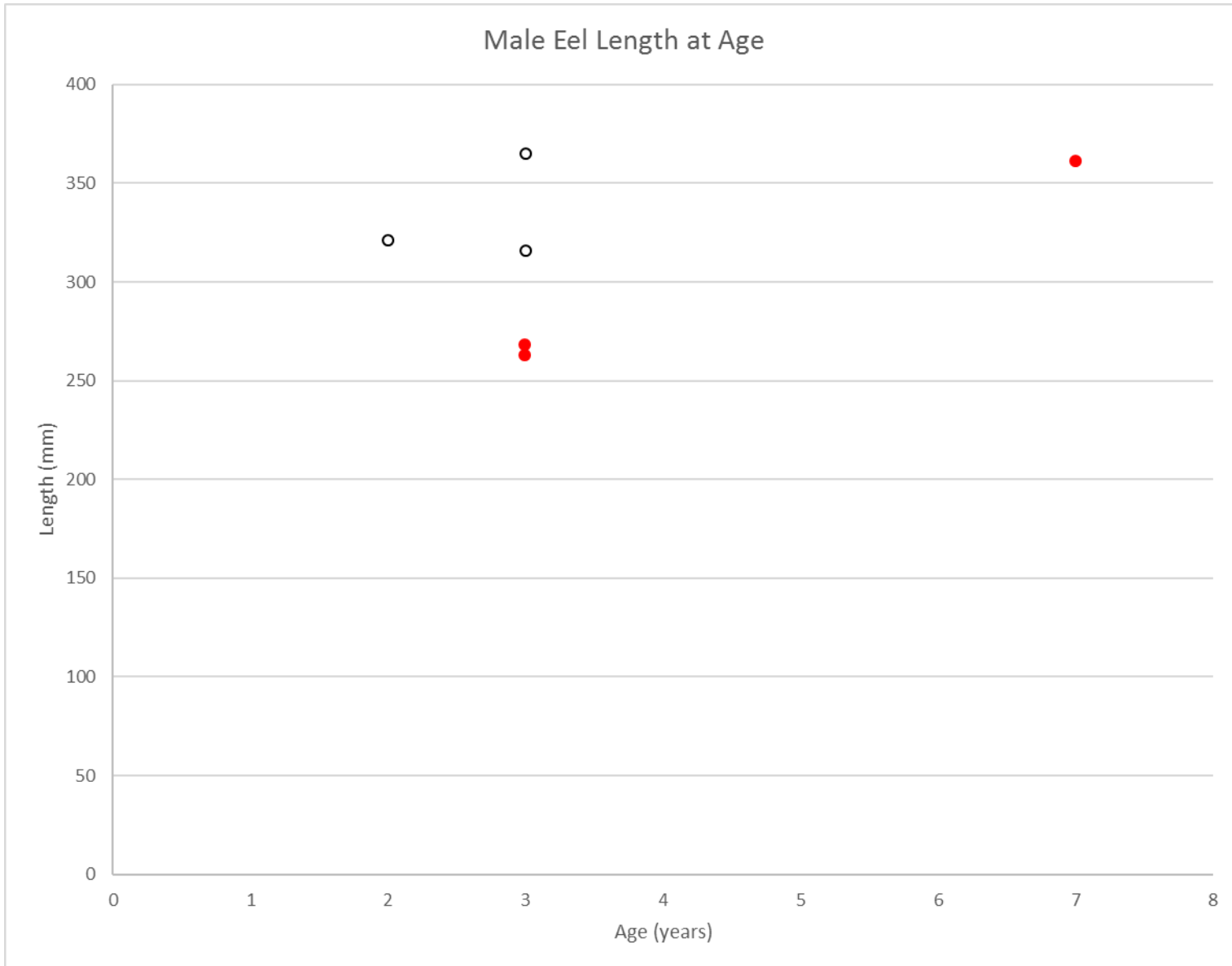
Female Growth



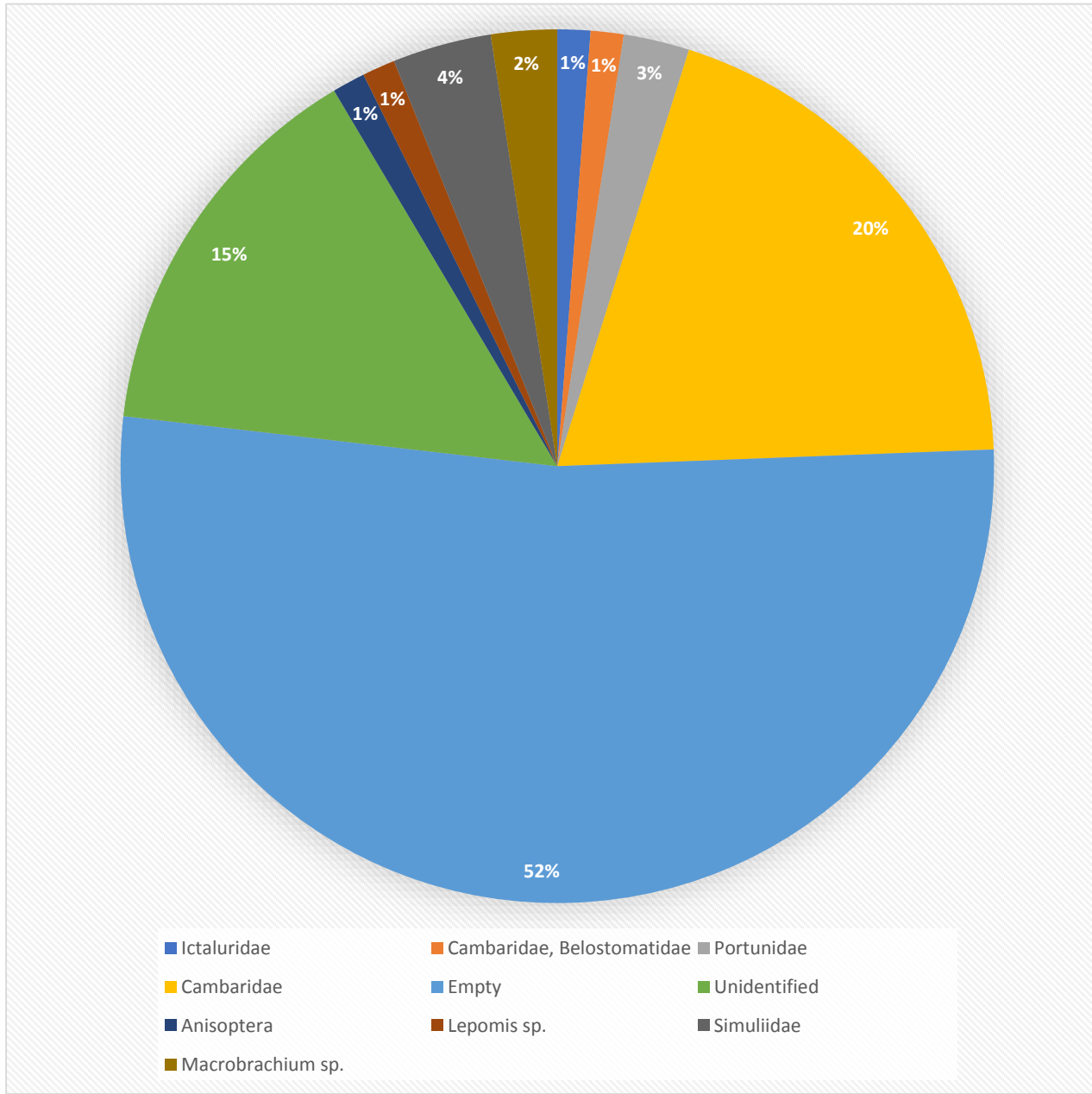
Female Growth



Male Growth



Stomach Contents

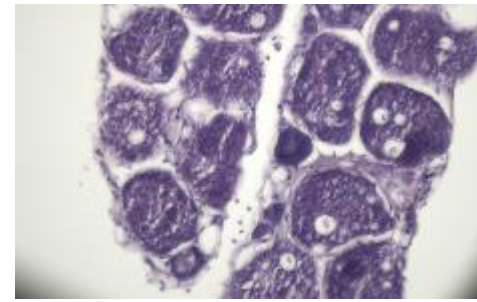


Future Plans



Future

- Ten months in to a 24 month project
- Gain momentum, get eels in less sampled areas
- Coordinate with other states for genetic and isotope work
- Gonad development, McNeese State
- Have final report in late 2019



Acknowledgements

- LDWF Inland Fisheries offices
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- Sabine River Authority



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