Estimating Boat Electrofishing Catch Rates for Native and Non-Native Freshwater Fish Species in South Florida

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Introduction

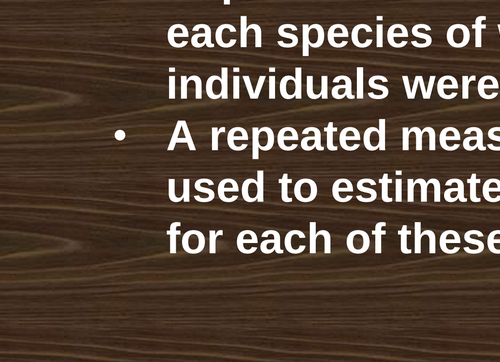
Boat Electrofishing is the most common technique used to collect and sample freshwater fish in Florida. Little work has been done to estimate boat electrofishing catchability rates in Florida. Validated estimates of electrofishing catchability can provide more accurate population estimates, including local fish densities and size structure.

Objectives

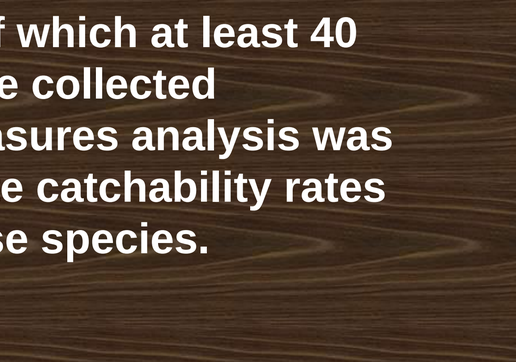
Estimate electrofishing catchability rates for native and non-native freshwater fish species in a range of Florida habitats

Methods

- **Sample areas included plugged canal segments in Picayune Strand and in the L-31 Canal.**



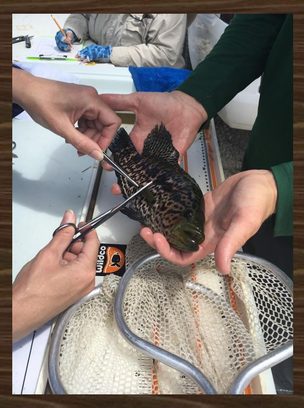
Picayune Strand



L-31 Canal

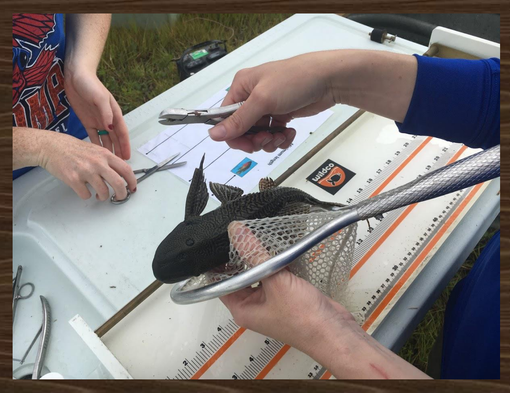
- **The entirety of each canal segment was sampled once per day for three consecutive days**
- **Fish of all species were collected, and fin clipped. Unique fin clips were used on each day of sampling**
- **Population estimates were made for each species of which at least 40 individuals were collected**
- **A repeated measures analysis was used to estimate catchability rates for each of these species.**

Electrofishing canal segment



Fin Clipping

Fish Workup Station on side of canal



Fin Clipping

Results

Species collected at L-31 and Picayune Strand in high enough abundance to be included in analyses, mean estimated percentage of each species collected with boat electrofisher at each site and the standard deviation (S.D.) and 95% confidence intervals (CI) for these estimates.

	Site	Species	Mean	S.D.	95 % CI
Proportion caught	L 31-W	*Cichlasoma managuense*	9.7%	6.5%	2.1% – 25.9%
		Cichlasoma urophthalmus	4.3%	2.8%	0.9% – 10.5%
		Clarias batrachus	9.4%	2.8%	5.4% – 15.9%
		Hoplosternum littorale	6.8%	5.9%	0.5% – 24.4%
		Lepomis macrochirus	12.4%	4.4%	4.9% – 20.6%
		Micropterus salmoides	34.8%	6.8%	23.1% – 46.8%
		Monopterus albus	11.8%	7.1%	2.9% – 29.3%
		Oreochromis sp.	6.2%	5.5%	0.4% – 21.1%
		Pterygoplichthys sp.	6.7%	6.2%	0.9% – 24.8%
	Picayune	*Astronotus ocellatus*	4.3%	4.7%	0.2% – 16.9%
		Cichlasoma urophthalmus	1.0%	0.7%	0.3% – 3.0%
		Clarias batrachus	1.7%	0.4%	1.0% – 2.6%
		Lepomis macrochirus	8.6%	3.6%	3.2% – 16.3%
		Micropterus salmoides	20.3%	9.5%	5.6% – 39.0%
		Oreochromis sp.	0.6%	0.3%	0.2% – 1.2%
		Pterygoplichthys sp.	1.2%	0.7%	0.2% – 2.7%

Moving Forward

The plan is to repeat this in other waterbodies with various habitat and water quality types. This has been delayed due to Covid-19 but will hopefully continue next year.

Charles Cichra is inviting you to a scheduled Zoom meeting.

Topic: Electrofishing Catch Rates Freshwater Fish

Time: Apr 20, 2021 02:30 PM Eastern Time (US and Canada)

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