

State Agency: Louisiana Department of Wildlife and Fisheries

Grant Title: Status Survey for Frecklebelly Madtom in the Pearl River Drainage of Louisiana

Grant Number: TBD

Grant Period: May 1, 2018- April 30, 2019

Grant Costs: Federal Share: \$11,082.50
State Share: \$5,967.50
Total Cost: \$17,050

Grant Funding: State Wildlife Grants

Grant Coordinator:

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Need:

The Frecklebelly Madtom, *Noturus munitus* (Suttkus and Taylor 1965) is identified as a Species of Greatest Conservation Need (SGCN) in the 2015 Louisiana Wildlife Action Plan (WAP; Holcomb et al. 2015), and is found in the Pearl and Mobile River drainages and is currently petitioned for federal listing (Center for Biological Diversity, 2010) with a listing decision deadline of 2020. Populations of Frecklebelly Madtom are considered in decline throughout both the Mobile River (Bennet et al. 2008) and the Pearl River (Piller et al. 2004). The last targeted survey in the Pearl River drainage throughout Mississippi and Louisiana was completed in 1999, where the species was found at only 8 of 53 historical localities (Piller et al 2004). Since 1999, Frecklebelly Madtom has only been sampled at 2 historical localities in Mississippi (Figure 1) during non-targeted surveys. The 18-year gap in targeted surveys for the species emphasizes the need for an updated range-wide assessment of distribution and abundance; as such data are needed to inform a listing decision under the federal Endangered Species Act.

Objective:

- 1) Survey up to 27 historical localities of the Frecklebelly Madtom in the Pearl River drainage in Louisiana, and sites adjacent to these areas, to assess presence/absence and relative abundance by December 31, 2018.

Expected Benefits:

The data generated will provide a thorough and much needed update on the current distribution and abundance of this species to USFWS allowing them to make a more informed decision regarding federal

listing of *Noturus munitus*. It also will inform both state and federal managers responsible for planning and implementing long-term conservation and recovery for the species.

Approach:

Two types of gear are suitable for sampling fish assemblages in wadeable tributaries. A backpack electrofishing unit or either a 10 ft. X 6 ft. X 3/16” mesh seine or a 20 ft. X 6 ft. X 3/16” mesh seine. Backpack electrofishing is the most effective sampling gear in wadeable streams and will be our main mode of sampling. The mesh seine will only be utilized when conditions are not suitable for backpack electrofishing gear.

1. Gear and Methods

a. DC pulsed backpack electrofishing unit:

- i. Sampling Period
 - 1. Low flow periods – Refer to reference gauge
 - 2. Summer months June -September
- ii. Duration – A sample reach will consist of a single electrofishing pass at 40 times the mean stream width (MSW) with a minimum of 150 meters and maximum length of 300 meters (Rabeni et al., 2009).
- iii. Personnel – A three person crew is required, one individual operates the backpack electrofishing unit and two individuals work the dip nets and collection bucket.
- iv. Methods – The sample will start at the downriver end of the reach. The crew will proceed in an upstream direction in a zigzag pattern to ensure all microhabitats are covered. The electrofishing operator should apply intermittent power to the probe to lessen the herding of fish in front of the probe. All stunned fish are placed in buckets for identification.

b. 10 ft. X 6 ft. X 3/16” mesh seine or a 20 ft. X 6 ft. X 3/16” mesh seine

- i. Sampling Period
 - 1. Low flow periods – Refer to reference gauge
 - 2. Summer months June -September
- ii. Duration – 30 seine hauls at 15 seconds per haul, after dark when possible.
- iii. Personnel – A three person crew is required
- iv. Methods
 - 1. Run sets over sand /gravel substrate
 - 2. Kick sets at bank edge and woody debris

2. Sample Sites

A total of 27 sites will be sampled in 2018 for fish assemblage in the Pearl River basin (Table 1 and 2, Figure 1).

Table 1. Sample sites on the Pearl River

Site Name	Creek	Latitude	Longitude	Stream Order
P01	Scarboroughs creek	30.937873	-89.779214	2

P02	Pushepatapa creek	30.9669	-89.95696	3
P03	Pushepatapa creek	30.945859	-89.911022	3
P04	Pushepatapa creek	30.901289	-89.85974	3
P05	Peters creek	30.813046	-89.854032	3
P06	Peters creek	30.813093	-89.841214	3
P07	Sals branch	30.683588	-89.888486	1
P08	Talisheek creek	30.536893	-89.892567	1
P09	Bogalusa creek	30.832924	-90.019469	3
P10	Bogalusa creek	30.79091	-89.99274	3
P11	Bogalusa creek	30.768767	-89.961132	3
P12	Bogalusa creek	30.769777	-89.891522	4

Table 2. Sample sites on the Bogue Chitto River

Site Name	Creek	Latitude	Longitude	Stream Order
BC01	1	30.978163	-90.206041	2
BC02	2	30.958074	-90.205577	2
BC03	silver creek	30.901709	-90.224826	4
BC04	3	30.825869	-90.174815	1
BC05	Bonner creek	30.784832	-90.167935	2
BC06	4	30.750609	-90.136344	1
BC07	Berrys creek	30.672856	-89.99415	3
BC08	Johnson branch	30.713834	-90.063285	2
BC09	Thigpen creek	30.728591	-90.077224	2
BC10	Thigpen creek	30.740361	-90.083021	2
BC11	Lawrence creek	30.80745	-90.142758	3
BC12	Lawrence creek	30.820924	-90.125547	3
BC13	Lawrence creek	30.849034	-90.115377	3
BC14	Mile branch	30.855049	-90.168236	2
BC15	Hays creek	30.887804	-90.191124	3

A minimum of a 150-meter sample will occur at each site. Sampling time, reach distance, and coordinates will be recorded for each site. All collected fish from each site will be vouchered in 10% formalin and curated into the Ichthyological Collection at the Huey P Long Fish Hatchery facility in Lacombe, Louisiana. Additionally, all captured *Noturus munitus* will be measured and fin/spine clipped. Tissues and spines will be deposited in the tissue collection at the Huey P Long Fish Hatchery facility for future research.

Literature Cited:

Bennett, Micah G., Bernard R. Kuhajda, and J. Heath Howell. "Status of the imperiled Frecklebelly Madtom, *Noturus munitus* (Siluriformes: Ictaluridae): A review of data from field surveys, museum records, and the literature." *Southeastern Naturalist* 7.3 (2008): 459-474.

Holcomb, Samuel R., Amity A. Bass, Christopher S. Reid, Michael A. Seymour, Nicole F. Lorenz, Beau B. Gregory, Sairah M. Javed, and Kyle F. Balkum. 2015. Louisiana Wildlife Action Plan. Louisiana Department of Wildlife and Fisheries. Baton Rouge, Louisiana

Jelks, H. L. et al. 2008. Conservation status of imperiled North American freshwater and diadromous fishes. *Fisheries* 33:372-407.

Piller, K.R., H.L. Bart, Jr. & J.A. Tipton. 2004. Decline of the Frecklebelly Madtom in the Pearl River based on contemporary and historical surveys. *Trans. Am. Fish. Soc.* 133: 1004–1013.

Suttkus, R.D. & W.R. Taylor. 1965. *Noturus munitus*, a new species of madtom, family Ictaluridae, from southern United States. *Proc. Biol. Soc. Wash.* 78: 169–178.

Useful Life: N/A

Geographic Location:

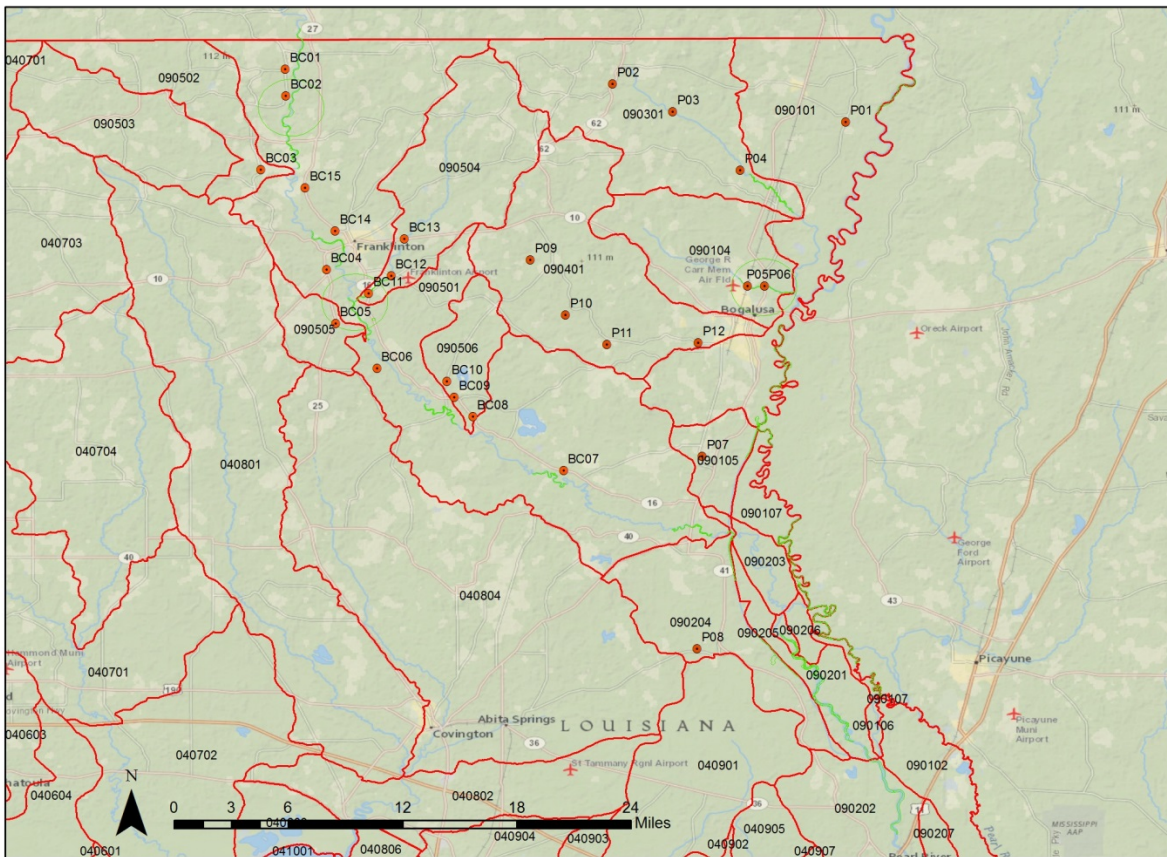


Figure 1. Fish assemblage sites in the Pearl River Basin

Principal Investigator(s):

Gary S. Vitrano - LDWF - Inland Fisheries Biologist Manager - District VIII

Matthew Duplessis - Inland Fisheries Biologist Supervisor - District VIII

Jonathan Winslow - LDWF - Inland Fisheries Biologist III - District VIII

Program Income: N/A

Budget Narrative:

Personnel Expenses

Salaries \$16,000

Supplies

Truck Fuel \$750

Miscellaneous \$300

Subtotal \$17,050

Salaries are for sampling events, which will require 3 personnel. Matching funds will be from state conservation dollars.

Relationship with other Grants: N/A

Timeline:

Date

January – February 2018 Preliminary site assessment utilizing maps and site investigation

May 2018 - August 2018 Sampling

December 30, 2019 Submission of technical report

Key Personnel Qualifications and Experience

Gary S. Vitrano

Louisiana Department of Wildlife and Fisheries – Inland Fisheries Biologist Manager

Tulane University – Bachelor of Science - Major: Environmental Biology – Research: Inter and Intra Seasonal Variations in Clutch Size and Egg Mass of *Etheostoma caeruleum*

Matthew Duplessis

Louisiana Department of Wildlife and Fisheries - Inland Fisheries Biologist Supervisor

Louisiana State University - Bachelor of Science
Major: Natural Resource Ecology and Management
Concentration: Wildlife Ecology

Jonathan Winslow; Louisiana Department of Wildlife and Fisheries - Inland Fisheries Biologist III

Louisiana State University - Bachelor of Science
Major: Natural Resource Ecology and Management
Concentration: Fisheries and Aquaculture