

INTRODUCTION

River-floodplain ecosystems are important habitats for a diversity of fishes¹.

Many gar populations depend on floodplains for spawning, feeding, and nursery habitat^{2,3,4}

To conserve habitat connectivity, The Nature Conservancy is restoring Loch Leven, a 2,428-hectare floodplain adjacent to the Mississippi River.

The purpose of this study was to establish a baseline fish community for Loch Leven, prior to restoration, and monitor floodplain use by gars.

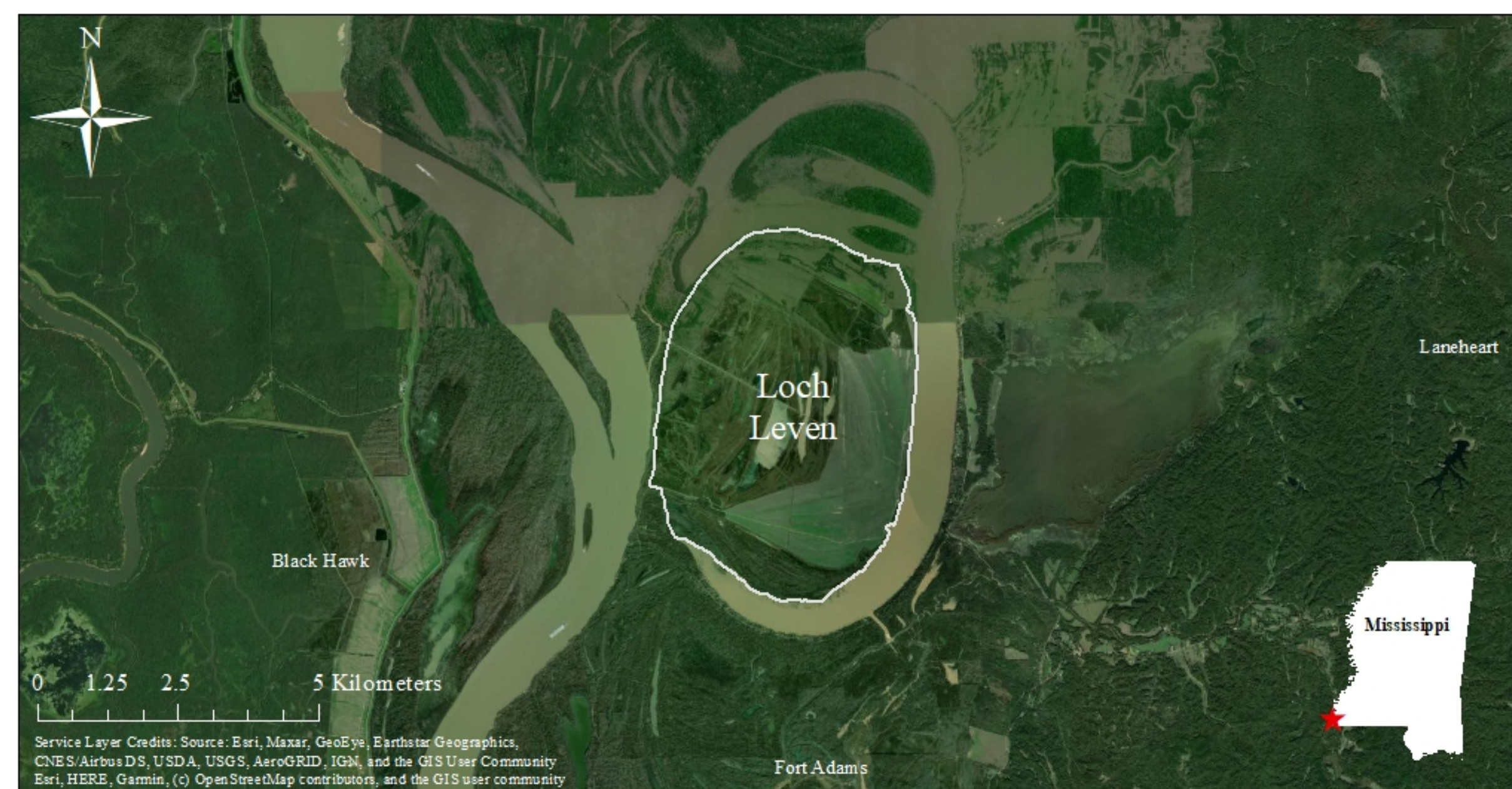


Figure 1. Loch Leven is located in Wilkinson County, Mississippi.

METHODS

Monofilament gillnets were used to sample the Loch Leven fish community during high-water and reservoir sampling events.

A combination of gillnets and cast nets were used during low-water periods. All fish were identified to species and counted.



Figure 2. Scott Lemmons uses a cast net to collect fish during low-water sampling.

RESULTS

From June 11 to November 17, 2020, a total of 1,044 fishes representing 24 species and 9 families were collected.

Shortnose Gar (*Lepisosteus platostomus*) (n = 103), Longnose Gar (*L. osseus*) (n = 60) and Spotted Gar (*L. oculatus*) (n = 54) were among the six most abundant species.

Gizzard Shad (n = 591) accounted for 57% of the fishes collected overall.



Figure 3. From top left to bottom right, in order of abundance: Gizzard Shad (57%), Shortnose Gar (10%), Black Crappie (6%), Longnose Gar (6%), Bluegill (5%), Spotted Gar (5%), Skipjack Herring (3%), Redear Sunfish (2%), Largemouth Bass (2%), and Channel Catfish (1%).

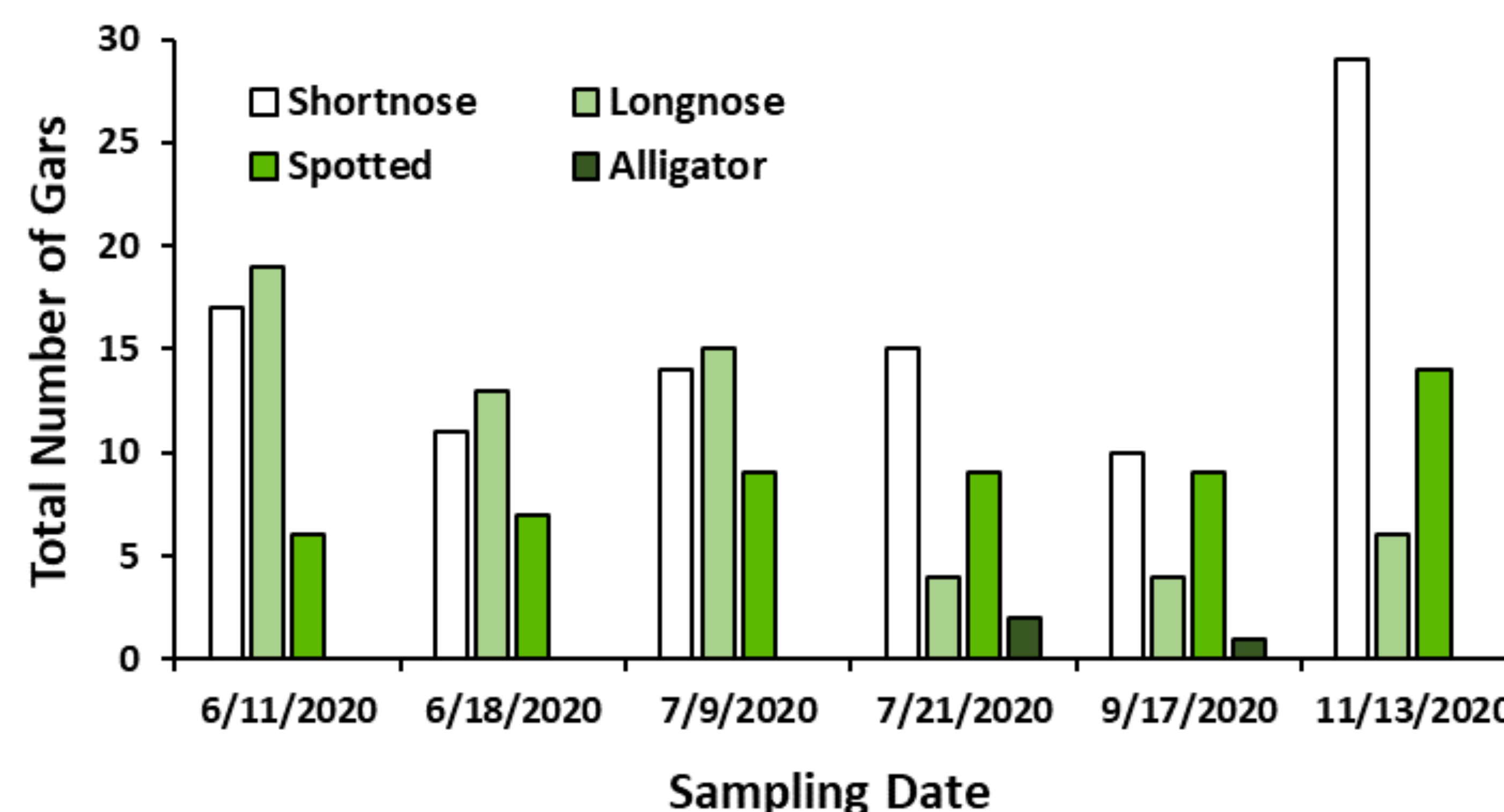


Figure 4. Number and species of gars collected at Loch Leven, including young of year (n = 13), for a total of 214 gars. Gars were collected using gillnets and cast nets across multiple sites.

DISCUSSION

Number and diversity of fishes suggest that fish are actively moving onto the floodplain from the Mississippi River during periods of inundation.

Longnose Gars exhibited the most obvious trend, declining in numbers on the floodplain as water receded and favoring locations near the main-channel.

Young of the year Spotted, Longnose, and Alligator Gar (*Atractosteus spatula*) collected from the interior of the site indicate that these species are spawning on the floodplain.



Figure 5. Young of the year Spotted Gar (top), Longnose Gar (center), and Alligator Gar (bottom)

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