CURRENT DISTRIBTION OF BLUEHEAD SHINER AND ASSOCATED HABITAT

Chad W. Hargrave

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We sampled fishes and measured environmental/habitat parameters at 32 localities in the Big Cypress drainage from October 2015 through August 2016 to document the current distribution of Bluehead Shiner (*Pteronotropis hubbsi*) in Texas. Twelve of these localities were historical localities (i.e., had previously been documented as supporting *P. hubbsi*) and 20 of these localities were new (i.e., had no previous records of supporting *P. hubbsi*).

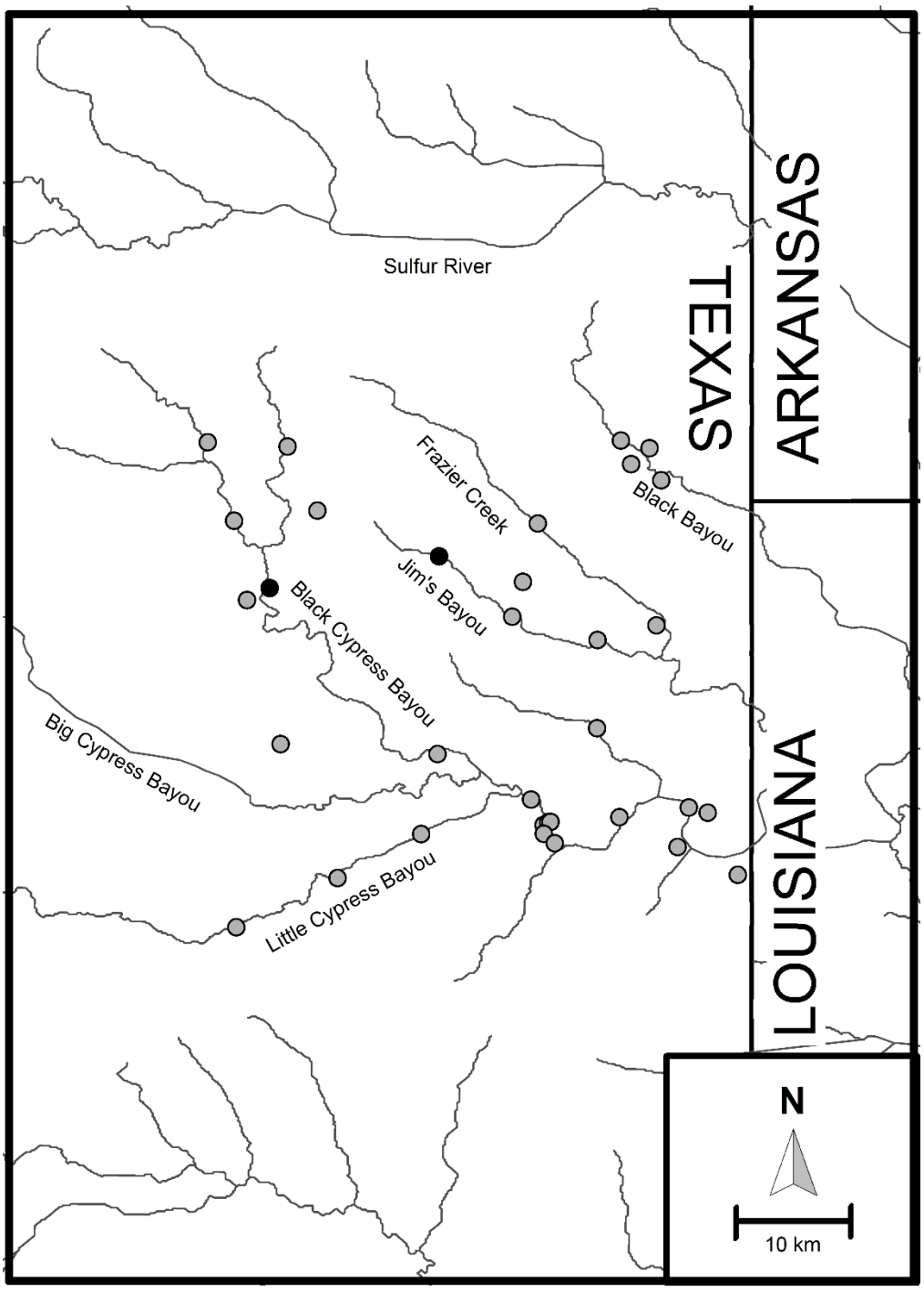
We sampled fishes using seines of varying length. We used a 10' (1/8" mesh) in small habitats with much structure (cypress knees and root wads), a 15' (1/8" mesh) in larger stream localities and lake localities with less structures, and a 30' (1/8" mesh) seine in lake and stream localities with little structure. All fishes (expect large individuals) were preserved in 10% formalin and returned to the laboratory. In the laboratory all individuals were sorted, identified to species and counted. These fishes in permanent archival storage in the Sam Houston State University Natural History Museum.

We collected a total of ~12,400 individual fish representing 65 different fish species from these localities. Bluehead shiner was collected in 2 localities in low density – Iron Ore Lake (1 specimen) and Black Cypress Bayou (4 specimens) near Pruitt Lake. Iron Ore Lake was a historical locality and Black Cypress Bayou was a new locality.

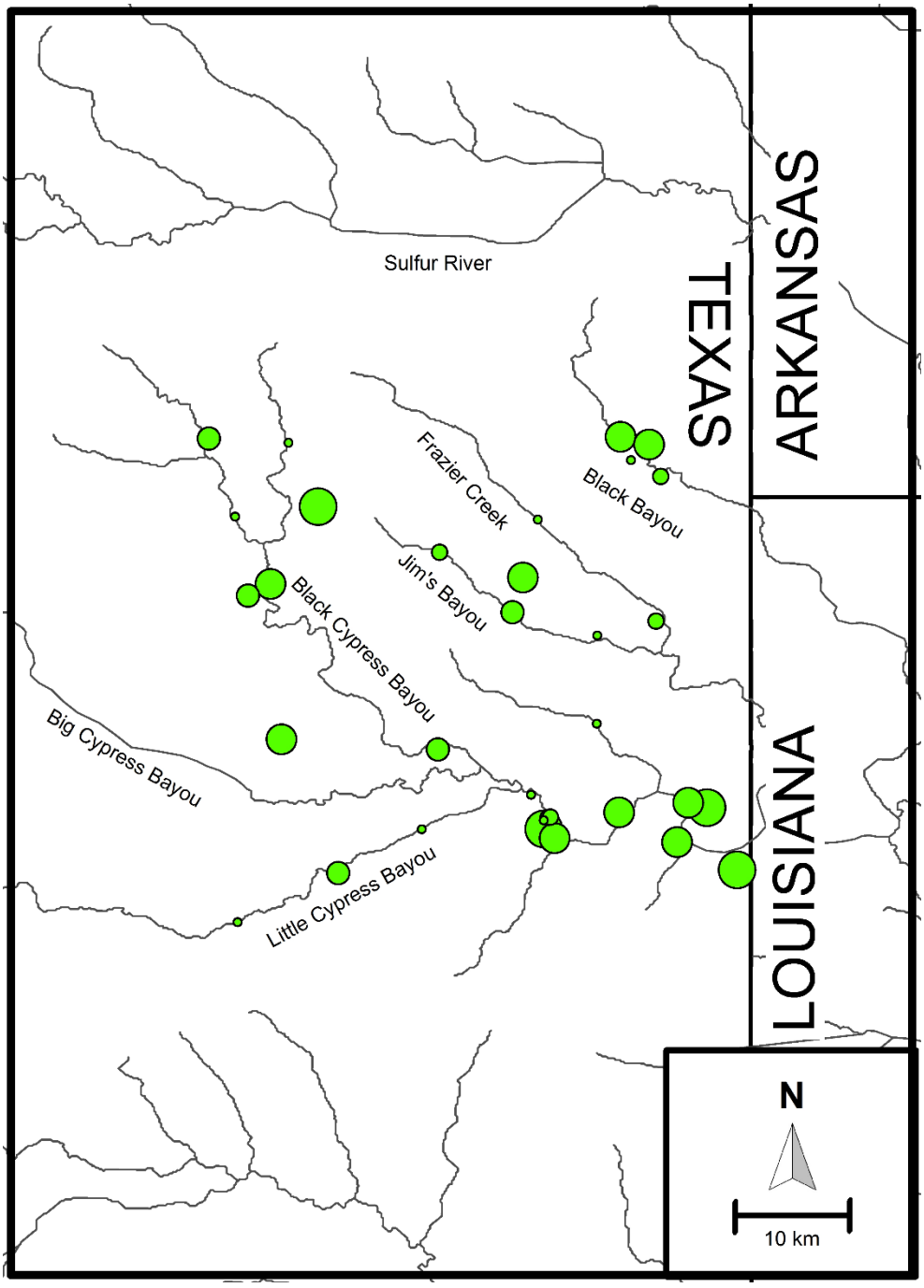
We measured major habitat parameters at each locality by delineating substrate composition, vegetative cover and habitat complexity within the sample reach. We estimated % composition for each major substrate category (clay, silt, sand, gravel, cobble and boulder/rip-rap, detritus). We estimate areal % coverage of emergent, submerged and floating vegetation. Finally, we categorized habitat complexity in terms of woody debris and cypress knees using a categorical ranking (0-5).

Based on habitat-layer overlay with the current distribution of Bluehead Shiner, we determined that sample localities supporting Bluehead Shiner had moderate to high coverage of vegetation, low habitat complexity in terms of woody debris, and substrates dominated by detritus, silt and clay.

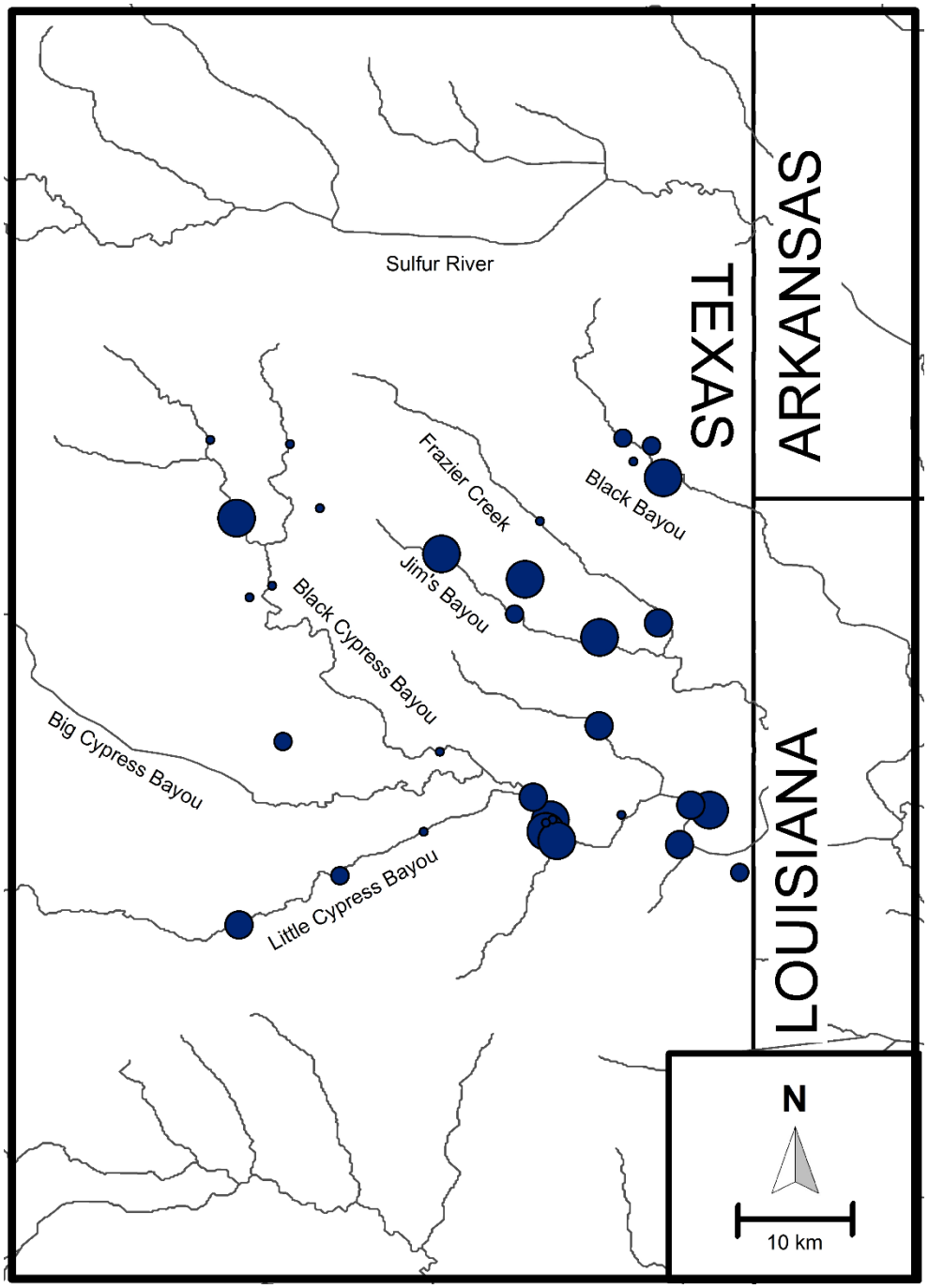
GIS results for all data discussed above are presented below.



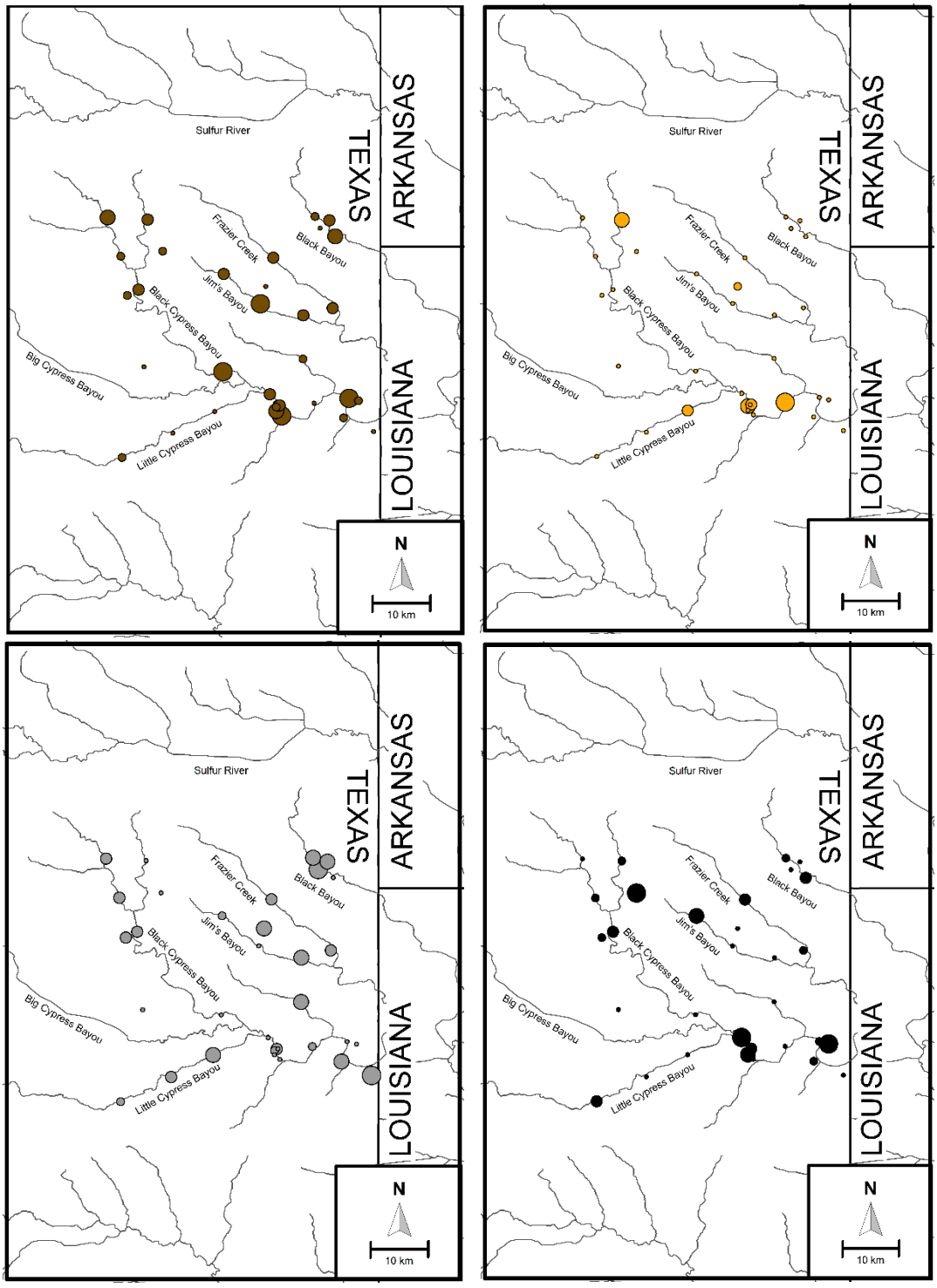
Current distribution of Bluehead Shiner (*Pteronotropis hubbsi*; black points) from seine sampling in 32 localities (grey points) from October 2015 through August 2016. All fish data collected from repeated sampling within a single locality were combined into a single total.



Percent vegetative cover at each sample locality. Size of point indicates percent cover from smallest to largest (0-20, 20-40, 40-60, 60-80, & 80-100, respectively).



Habitat complexity at each sample locality. Size of point indicates habitat complexity score that ranges from least complex to highly complex (0-5, respectively).



Percent Silt (panel A - Brown), sand (B - Yellow), clay (C - Grey), and detritus (D – Black). Size of point indicates relative percent abundance from smallest to largest (0-20, 20-40, 40-60, 60-80, & 80-100, respectively).