

2010

In early Summer 2010 we used ArcGIS software to randomly select points bounded by BITH boundaries along Lake Bayou and its contiguous canals, and Ten Mile Creek. Using a minimum 500 m buffer between sites, we were able to generate 20 sites adjacent to Lake Bayou and its contiguous canals, and 12 sites adjacent to Ten Mile Creek. We made a daytrip in early June to the area to be sure that all points were accessible and to get familiar with the area. In August and September 2010 we were able to visit each of these 32 sites once for ten-minute visual encounter surveys (VES) and concurrent vocalization surveys for frogs and toads beginning just after sunset and ending no later than 2 am. The nighttime surveys are the best time to detect frogs and toads, our primary focus of these surveys. We recorded air temperature, humidity, wind speed, and salinity at each site.

Salinity was very low during these initial surveys, and thus unlikely to play a role in species detection at our sites. However, over time, with potential fluctuations in salinity due to drought or storm surges we may be able to detect changes in metrics such as occupancy and species richness using data from baseline surveys where salinities were negligible such as those that occurred in 2010. We plan on continuing these surveys in 2011 and beyond with the hopes of surveying all 32 sites at least 4 times during each year at appropriate times to detect the highest diversity of amphibian and reptiles, with particular emphasis on frogs and toads, as amphibians would be impacted significantly by increased salinities.

The total number of VES observations of amphibian and reptile species documented in the one survey performed of the 32 sites in 2010 can be found below. In most cases, excluding alligators, animals were captured, sexed, SVL obtained, and then released at point of capture.

Common Name, Species Name, # Observations

Blanchard's Cricket Frog, *Acris blanchardi*, 6
 Eastern Narrowmouth Toad, *Gastrophryne carolinensis*, 5
 Green Treefrog, *Hyla cinerea*, 42
 Gulf Coast Toad, *Incilius nebulifer*, 2
 Southern Leopard Frog, *Lithobates sphenoccephalus*, 10
 American Bullfrog, *Lithobates catesbeianus*, 5
 Bronze Frog, *Lithobates clamitans*, 26
 American Alligator, *Alligator mississippiensis*, 3
 Green Anole, *Anolis carolinensis*, 3
 Little Brown Skink, *Scincella lateralis*, 21
 Louisiana Milk Snake, *Lampropeltis triangulum*, 4
 Rough Green Snake, *Opheodrys aestivus*, 3
 Texas Ratsnake, *Pantherophis obsoletus*, 2
 Western Ribbonsnake, *Thamnophis proximus*, 1

2011

In 2011 we visited the same 32 sites generated in 2010, 20 in Lake Bayou and 12 in Ten Mile Creek, a total of four times from late March through mid-August. Again, we sampled using ten-minute visual encounter surveys (VES) and concurrent vocalization surveys for frogs and toads beginning just after sunset and ending no later than 2 am. The nighttime surveys are the best time to detect frogs and toads, our primary focus of these surveys. We recorded air temperature, humidity, wind speed, and salinity at each site.

Due to the drought experienced in east Texas and elsewhere in 2011, salinity was elevated throughout our sampling, particularly April-June where salinities were regularly measured with a YSI at over 5 ppt and up to 7 ppt. Salinities at this level during the time of year frog reproduction is highest is concerning as eggs and tadpoles are unlikely to survive at these extremes, and adults also may be negatively affected. To better understand salinity fluctuations over time we deployed four salinity loggers, two in each tributary, in August of 2011. Based on the forecast of more drought conditions in 2012, we expect to see salinity again at high levels in our study area in the upcoming season. To gain insight into the success of amphibian reproduction in the saline environment, we plan on using minnow traps of various designs to capture tadpoles to determine saltwater tolerances and effects on amphibian reproduction. We plan on continuing the usual VES surveys for in 2012 and beyond with the hopes of surveying all 32 sites at least 4 times during each year at appropriate times to detect the highest diversity of amphibian and reptiles, with particular emphasis on frogs and toads.

The total number of VES observations of amphibian and reptile species documented in the four surveys performed of the 32 sites in 2011 can be found below. In most cases, excluding alligators and venomous snakes, animals were captured, sexed, SVL obtained, and then released at point of capture.

Common Name, Species Name, # Observations

Blanchard's Cricket Frog, *Acris blanchardi*, 102
 Eastern Narrowmouth Toad, *Gastrophryne carolinensis*, 3
 Green Treefrog, *Hyla cinerea*, 284
 Gulf Coast Toad, *Incilius nebulifer*, 19
 Southern Leopard Frog, *Lithobates sphenoccephalus*, 19
 American Bullfrog, *Lithobates catesbeianus*, 14
 Bronze Frog, *Lithobates clamitans*, 44
 American Alligator, *Alligator mississippiensis*, 15
 Green Anole, *Anolis carolinensis*, 25
 Five-lined Skink, *Plestiodon fasciatus*, 2
 Little Brown Skink, *Scincella lateralis*, 37
 Copperhead, *Agkistrodon contortrix*, 1
 Cottonmouth, *Agkistrodon piscivorus*, 1
 Louisiana Milk Snake, *Lampropeltis triangulum*, 10
 Mississippi Green Watersnake, *Nerodia cyclopion*, 9
 Broad-banded Watersnake, *Nerodia fasciata*, 30
 Diamond-backed Watersnake, *Nerodia rhombifer*, 3
 Rough Green Snake, *Opheodrys aestivus*, 3
 DeKay's Brownsnake, *Storeria dekayi*, 3
 Texas Ratsnake, *Pantherophis obsoletus*, 3
 Western Ribbonsnake, *Thamnophis proximus*, 12
 Red-eared Slider, *Trachemys scripta*, 2

