North Carolina Wildlife Resources Commission

Gordon Myers, Executive Director

1/17/2019

MEMORANDUM

TO: District-9 Files

FROM: Amanda M. Bushon, Fisheries Biologist I
A. Powell Wheeler, District Fisheries Biologist
Inland Fisheries Division

SUBJECT: Green River Black Bass Survey, 2017

There is very little public access to the stretch to the 40-km stretch of the Green River flowing from Lake Adger in Polk County to the Rutherford County line. In 2017, Dawn Jordan, a landowner, approached Polk County and the North Carolina Wildlife Resources Commission about donating property for public river access near Cox Road (SR 1005, Figure 1). We have very little sportfish data from this stretch of the Green River; therefore, in June 2017, we performed a hook-and-line survey of the Green River to assess the fishery and need for public access.

On 6 and 7 June 2017, five staff members in three canoes sampled the Green River using angling gear. Polk County owns Lake Adger dam (a.k.a., Turner Shoals Dam) but Northbrook Hydroelectric operates the dam. We coordinated with Polk County and Northbrook Hydroelectric prior to the survey to ensure that we would have enough flow to float the river. On 6 June we launched at 1000 hours from an informal parking area, downstream of the NC 9 bridge directly below Lake Adger Dam (Figure 1). Northbrook Hydroelectric released water from Turner Shoals Dam from 0900–1700 hours. Habitat in this stretch consisted of large boulders, rocky substrate and deep pools but sampling was difficult due to the high flows. We surveyed approximately 11.6 river km and exited the river at Big Level Road (Figure 1).

On 7 June we launched from private property near the NC 108 bridge at 1030 hours. The substrate in this stretch was finer than we encountered upstream the previous day. Northbrook Hydroelectric released water from 0900–1700 hours, but in this stretch, we did not encounter the flow pulse until 1300 hours. Fortunately, base flow conditions were enough to allow us to float and sample. The flow pulse increased the water velocity and turbidity and angling was considerably less successful than prior to the arrival of the pulse. We surveyed approximately 11.3 river km and exited the river at the Cox Road property (Figure 1).

We captured Largemouth Bass *Micropterus salmoides*, Smallmouth Bass *Micropterus dolomieu, and* Redbreast Sunfish *Lepomis auritus.* The 10 Largemouth Bass and 30 Smallmouth Bass that we

collected were transported to the Balsam Depot whereas the numerous Redbreast Sunfish were released. At the Balsam Depot, the Black Bass were measured, weighed, and aged using sagittal otoliths. Fish were assigned an age equal to the annuli count plus one because they were beginning to form a new annulus. Relative weight was calculated for Largemouth Bass (Henson 1991) and Smallmouth Bass (Kolander et al. 1993) to assess condition.

We could assign ages to all Largemouth Bass and 29 Smallmouth Bass. The Smallmouth Bass ranged from 172–359 mm TL with a mean TL of 258.8 mm (SD = 46.1, Table 1, Figure 2). Smallmouth Bass ages ranged from 1–6 years (Figure 3). Largemouth Bass ranged from 212–388 mm TL with a mean of 275.3 mm TL (SD = 64.7, Table 1, Figure 2). Largemouth Bass ages ranged from 2–10 years (Figure 3). Mean relative weights were approximately 90 for both species (Table 1).

Our survey demonstrates that there is a fishable population of Largemouth Bass and Smallmouth Bass in the Green River below Lake Adger and a need for public float fishing access. Future management on the Green River should seek to provide public access to this resource. Furthermore, we need to work with Polk County and Northbrook Hydroelectric to initiate a system that will allow anglers access to flow regimes and schedules.

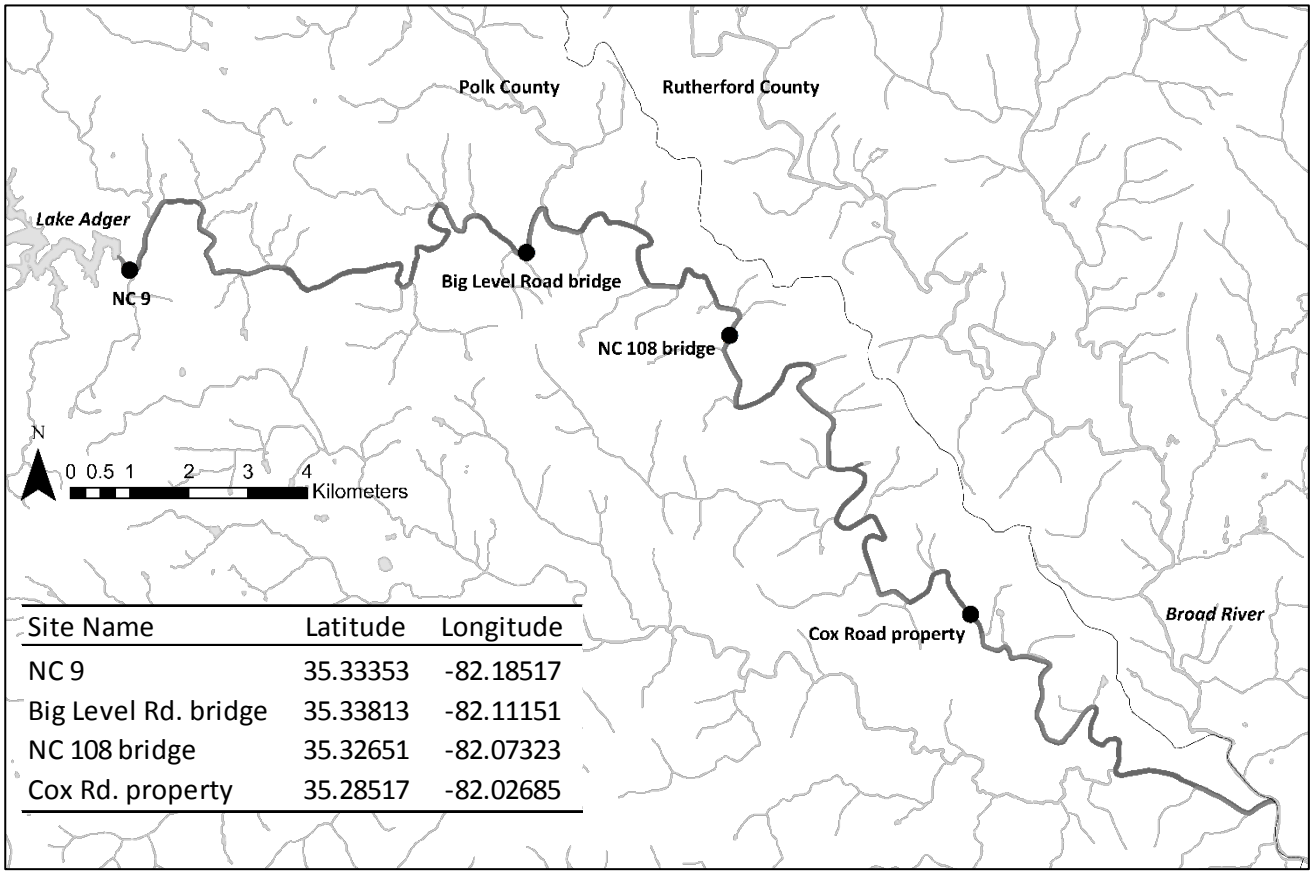
References

Henson, J. C. 1991. Quantitative description and development of a species-specific standard growth form for Largemouth Bass, with application to the relative weight index. Master's thesis. Texas A&M University, College Station.

Kolander, T. D., D. W. Willis, and B. R. Murphy. 1993. Proposed revision of the standard weight (W_s) equation for Smallmouth Bass. North American Journal of Fisheries Management 13:398–400.

TABLE 1.—Mean TL, weight, and W_r of Largemouth Bass and Smallmouth Bass collected from the Green River in June 2017. Standard deviations are reported parenthetically.

Species	N	TL (mm)	WT (g)	W_r
Largemouth Bass	10	275.3 (64.7)	287.6 (192.9)	89.6 (10.0)
Smallmouth Bass	30	258.8 (46.1)	240.8 (128.0)	90.3 (7.1)



Site Name	Latitude	Longitude
NC 9	35.33353	-82.18517
Big Level Rd. bridge	35.33813	-82.11151
NC 108 bridge	35.32651	-82.07323
Cox Rd. property	35.28517	-82.02685

FIGURE 1.—Map of the Green River and informal access areas used during the survey in June 2017. NC 9 is a Polk County-owned gravel parking lot with an informal canoe access. We accessed Big Level Road bridge and NC 108 bridge sites from NCDOT bridges but had to cross private property to access the river. The Cox Road property is a potential access area. Currently there are no formal public access areas on this stretch of the Green River.

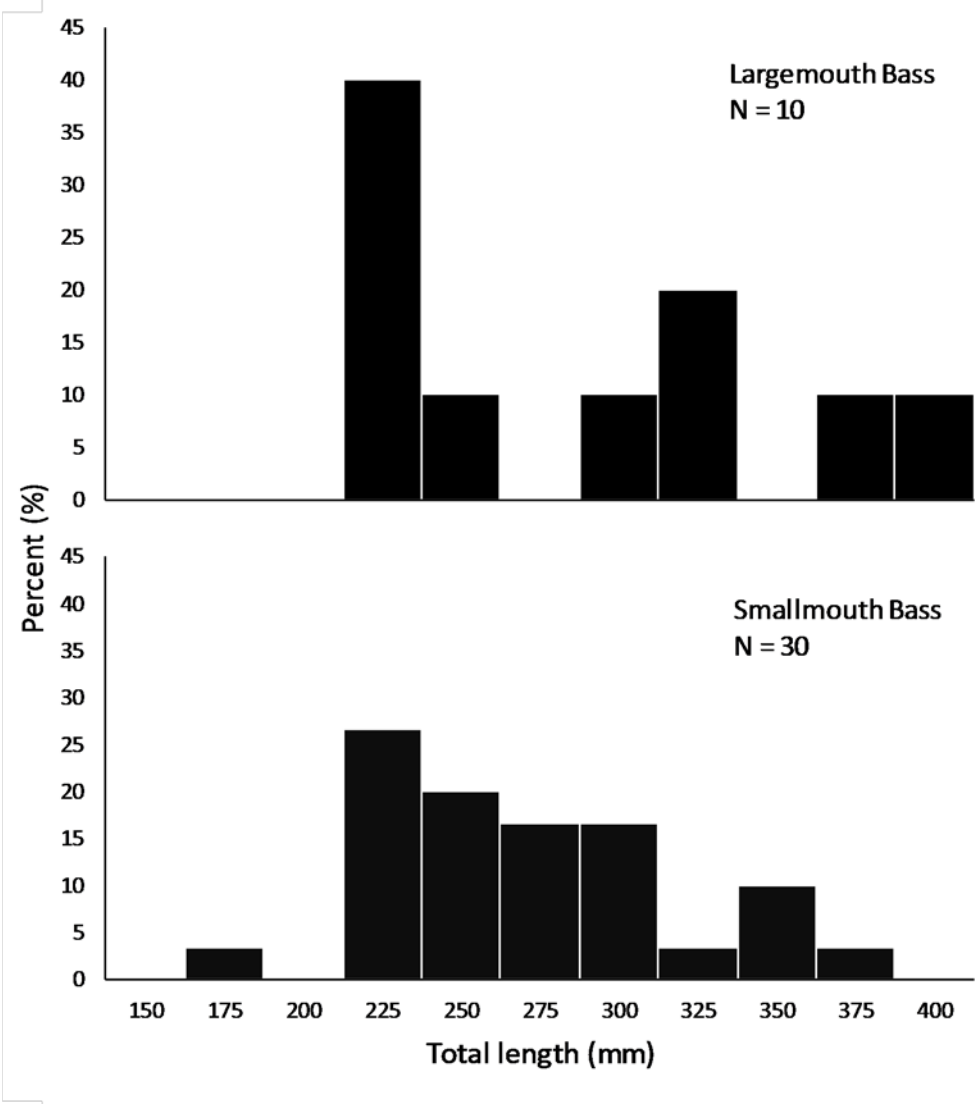


FIGURE 2.—Length frequencies of Largemouth Bass and Smallmouth Bass collected 6 and 7 June 2017 from the Green River.

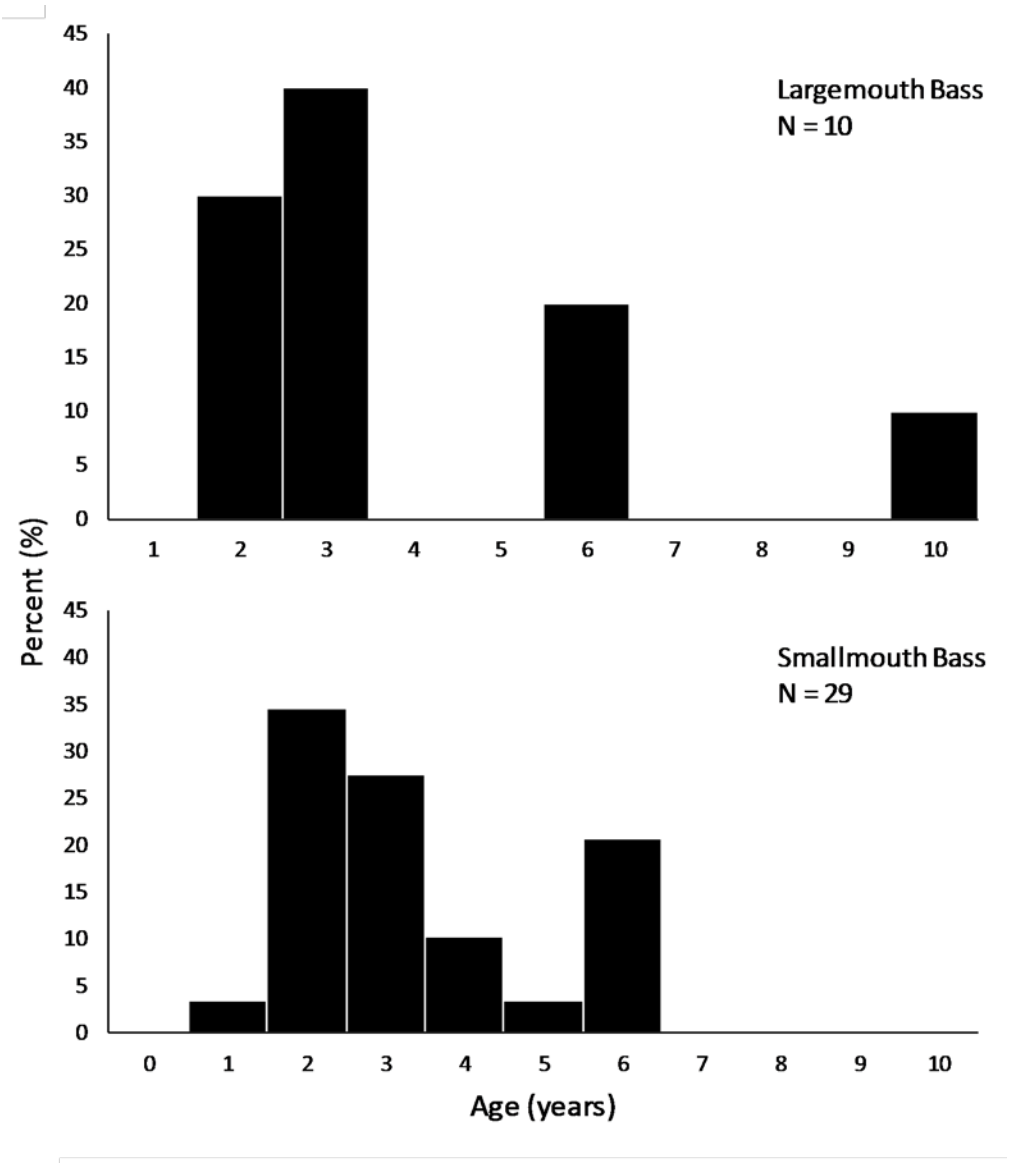


FIGURE 3.—Age frequencies of Largemouth Bass and Smallmouth Bass collected 6 and 7 June 2017 from the Green River.