

# DISTRIBUTION OF AMERICAN BROOK LAMPREY *LETHENTERON APPENDIX* IN NORTH CAROLINA

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The American Brook Lamprey *Lethenteron appendix* (Dekay, 1842) (Figure 1) was first discovered in North Carolina in August 1977 in the French Broad River at the mouth of Spring Creek in Hot Springs (Madison County) in western North Carolina by

Tennessee Valley Authority. Until recently, this imperiled species has only been found in Spring Creek (Figure 2; Tracy et al. 2020). In March 2021 we received a report from well-known nature photographer Todd Pusser of a sighting by Rufus Johnson, an amateur fossil-hunter and landowner in Halifax County (Roanoke River basin), of spawning small lampreys in “his” stream. Our initial assumption was they were Least Brook Lamprey *Lampetra aepyptera* (Figure 3) (Abbott, 1860), because it is the only brook lamprey known to be found in eastern North Carolina (Figure 4), along with the much larger parasitic Sea Lamprey *Petromyzon marinus* Linnaeus, 1758 (Figures 5 and 6) (Tracy et al. 2020; Tracy et al. (in press)). One of us (Fritz) held out hope that it might be American Brook Lamprey, because it has been docu-



Figure 1. American Brook Lamprey *Lethenteron appendix*. Arrow pointing to pigmented caudal fin. (Photo by Scott Smith)

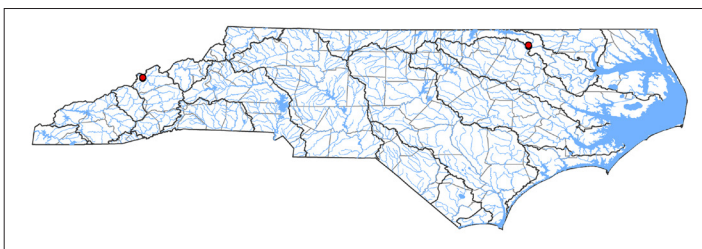


Figure 2. Distribution of American Brook Lamprey *Lethenteron appendix* in North Carolina (old locality on the left, new one on the right). (Tracy et al. in press).



Figure 3. Least Brook Lamprey *Lampetra aepyptera*. (Photo by Scott Smith)

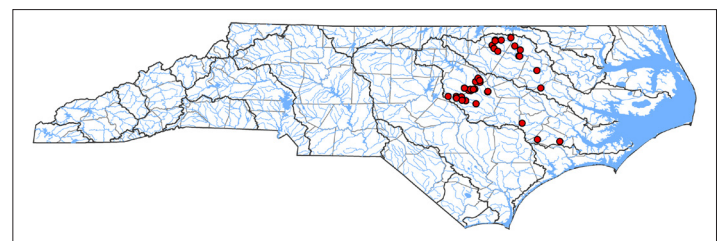


Figure 4. Distribution of Least Brook Lamprey *Lampetra aepyptera* in North Carolina. (Tracy et al. in press)

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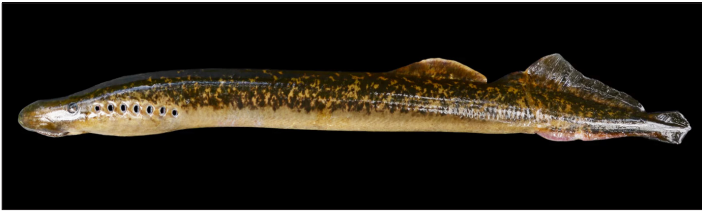


Figure 5. Sea Lamprey *Petromyzon marinus*. (Photo by Brian Zimmerman)

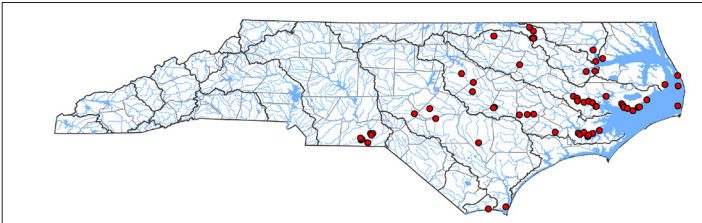


Figure 6. Distribution of Sea Lamprey *Petromyzon marinus* in North Carolina (Tracy et al. in press).



Figure 7. Bryn stalking the lampreys in the tiny stream with Michael supervising. (Photo by Fritz Rohde)



Figure 8. Nest with two lampreys in it. (Photo by Fritz Rohde)



Figure 9. One of the lampreys displaying the pigment in its caudal fin (at tip of arrow). (Photo by Fritz Rohde)



Figure 10. Michael measuring and sexing the lampreys; Bryn recording the data. (Photo by Fritz Rohde)

mented in the nearby Meherrin River drainage in Virginia (Jenkins and Burkhead 1994). He knew this since his master's thesis was on the systematics of this species (Rohde 1979). The Covid pandemic slowed us down for a year, but we visited the area on March 2, 2022. We quickly found adult lampreys in a tiny tributary of a larger unnamed tributary of Quankey Creek (Figure 7) in a nest (Figure 8) and immediately determined, based on dentition (Figure 1) and pigmented caudal fin (Figure 9), that they were indeed American Brook Lamprey. Excitement reigned and there were huge grins on our faces! It's not often that you make a discovery of this magnitude. More individuals were observed in the adjacent, larger unnamed tributary (11 caught overall), and later that afternoon, an additional six adults were also found in nearby Little Quankey Creek. Individuals were measured and sexed (Figure 10) and two saved as voucher material; the rest were released back into the stream after the appropriate amount of viewing (Figure 11). At the end of the day, we caught 17. Thus, this represents the second location of the species in North Carolina, approximately 370 air miles east of the Spring Creek site (Figure 2) and at the southeastern end of its North American range (Figure 12). Surveys for American Brook Lamprey within the Roanoke River basin will continue to document the species' current distribution in North Carolina.





Figure 11. Bryn and Fritz admiring the catch. (Photo by Michael Fisk)

References

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Figure 12. Distribution of the American Brook Lamprey; the two red dots represent the only North Carolina localities. Map adapted from Rohde (1980).

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