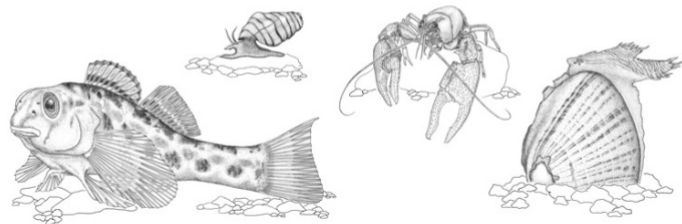


Alabama Aquatic Biodiversity Center



2020 – 2021 - AABC Report

Culture and Recovery Activities:

The following stocking activities were completed by AABC staff in 2020-2021.

Species	Locality	Date	# Released
<i>Toxolasma cylindrellus</i> – E Pale Lilliput	Bear Creek, near Rock Creek confluence, Colbert Co.	17 June 2020	396
<i>Medionidus conradicus</i> – P1 <i>Cumberland Moccasinshell</i>	Bear Creek, near Rock Creek confluence, Colbert Co.	17 June 2020	8
<i>Margaritifera hembeli</i> – T Louisiana Pearlshell	Beaver Creek, US Forest Service property, Grant Parish, LA	27 July 2020	94
<i>Medionidus parvulus</i> – E Coosa Moccasinshell	Little Cahaba River, TNC Locality, Bibb Co., AL	7 July 2020	23
<i>Pleurobema athearni</i> – P1 Canoe Creek Clubshell	Big Canoe Creek, St. Clair Co., AL	15 July 2020	1,500
<i>Leptoxis foremani</i> – E Interrupted Rocksnail	Terrapin Creek, downstream of CR 71 bridge crossing, Cherokee Co., AL	24 July 2020	2,129
<i>Leptoxis picta</i> – P1 Spotted Rocksnail	Cahaba River, gravel run down river of AL 25, Bibb Co., AL	24 July 2020	1,752
<i>Epioblasma capsaeformis</i> – E <i>Oystermussel</i>	Paint Rock River, above Butler Mill, Madison Co., AL	2 October 2020	500
<i>Lemiox rimosus</i> – E <i>Birdwing Pearlymussel</i>	Paint Rock River, Jones Property, Jackson Co., AL	2 October 2020	575
<i>Lemiox rimosus</i> – E <i>Birdwing Pearlymussel</i>	Paint Rock River, above Butler Mill, Madison Co., AL	2 October 2020	575
<i>Leptoxis foremani</i> – E Interrupted Rocksnail	Terrapin Creek, downstream of CR 71 Bridge crossing, Cherokee Co., AL	6 July 2021	681
<i>Leptoxis picta</i> – P1 Spotted Rocksnail	Cahaba River, gravel upriver of AL 82 Bridge, Bibb Co., AL	13 Sept. 2021	656
<i>Leptoxis compacta</i> – P1 Oblong Rocksnail	Cahaba River, Mohan Forever Wild Tract, Bibb Co., AL	13 Sept. 2021	745
Total Mollusks Stocked 2020-2021			9,634

10 Species released, 6 federally listed, 7 different streams/rivers.

AABC mussel transformations completed in FY 2021.

Year	Mussel Species	Brood Stock Source	Metamorphosed
2021	<i>Cambarunio nebulosus</i> – P2 Alabama Rainbow	Brushy Creek	18,380
2021	<i>Fusconaia escambia</i> – T Escambia Pigtoe	Conecuh River	2,148
2021	<i>Hamiota perovalis</i> – T Orangenacre Mucket	Brushy Creek	21,361
2021	<i>Lampsilis fasciola</i> Wavyrayed Lampmussel	Paint Rock River	9,609
2021	<i>Lampsilis ornata</i> Southern Pocketbook	Cahaba River	11,350
2021	<i>Lampsilis ovata</i> Pocketbook	Paint Rock River	5,262
2021	<i>Lampsilis virescens</i> – E Alabama Lampmussel	Paint Rock River	68,846
2021	<i>Medionidus conradicus</i> – P Cumberland Moccasinshell	Paint Rock River	1,121
2021	<i>Medionidus parvulus</i> – E Coosa Moccasinshell	Conasauga River	2,719
2021	<i>Toxolasma cylindrellus</i> – E Pale Lilliput	Paint Rock River	23,438
2021 Mussel Transformations			164,234

- Escambia Pigtoe and some Alabama Rainbow transformations were in support of a dissertation research project at the University of Alabama.
- Wavyrayed Lampmussel transformations were in support of a dissertation research project at the University of Michigan.
- Pocketbook and Southern Pocketbook transformations were in support of a US Forest Service research project.
- 2022 cultured mollusk releases are anticipated for Bear Creek, Cahaba River, Elk River, Locust Fork in Alabama and the Duck River in Tennessee (donated to TWRA).
- Coosa Moccasinshell efforts are for a cooperative NFWF project between GA-DNR, TWRA, and USFWS.
- TVA continues to support for Cumberlandian Species Recovery Efforts.

AABC Targeted Survey Activities:

FY- 2020:

A mollusk inventory of the Locust Fork evaluated 46 sites across 3 counties and located 6 petitioned and federally listed species in Blount and Jefferson Counties.

Quantitative mussel survey was completed at 4 permanently fixed monitoring stations in the Cahaba River Basin. The Atkinson Laboratory at the University of Alabama and other agencies assisted with survey efforts.

Stream bed studies and additional surveys for Alabama Pearlshell were completed in Conecuh County.

Staff assisted Jeff Garner with a statewide gastropod inventory.

FY- 2021:

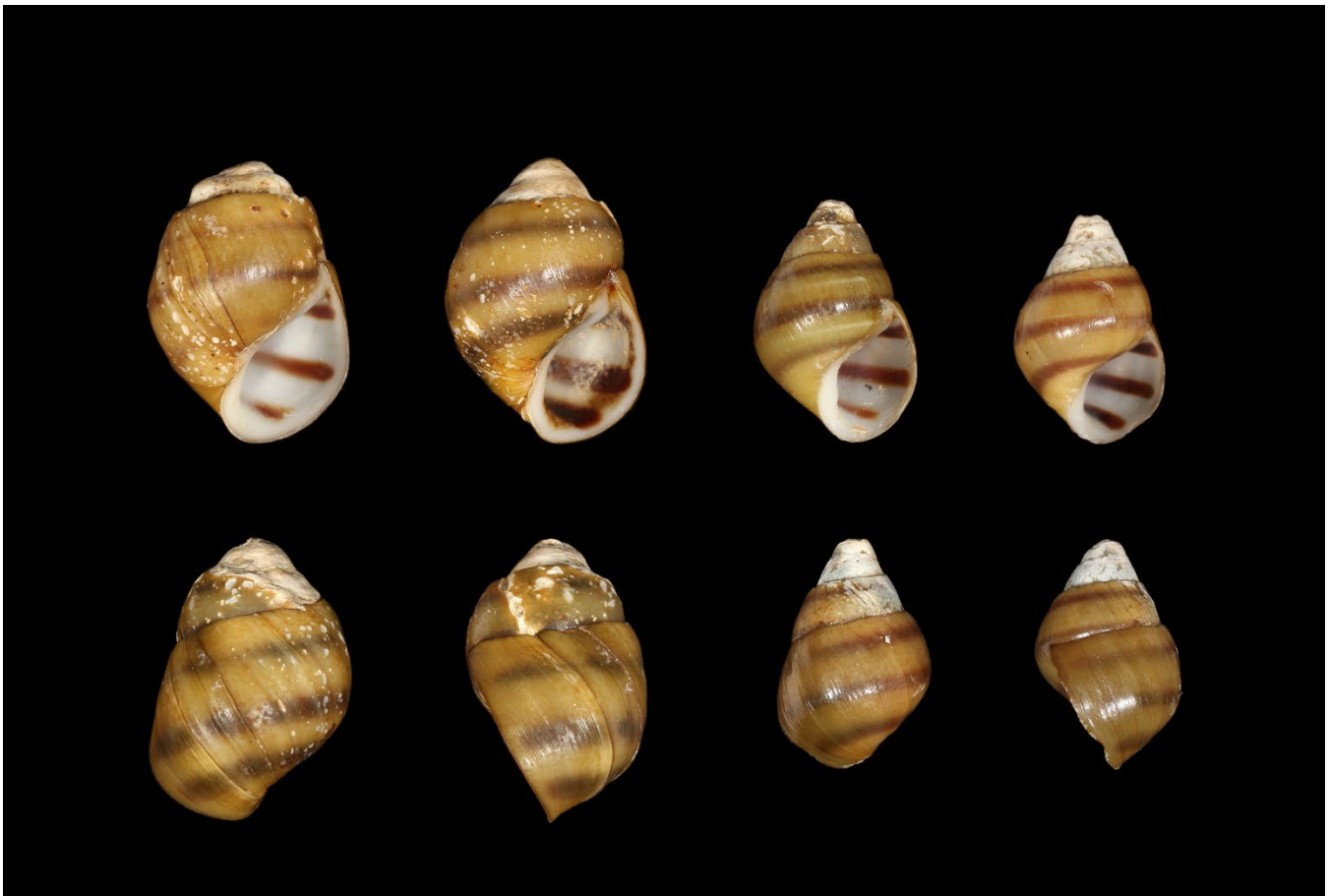
A targeted survey for Pale Lilliput at 54 localities in the upper Paint Rock River basin located additional occurrences in the Estill Fork, Hurricane Creek, Larkin Fork and Lick Fork in Jackson County. The survey also confirmed occurrences of 8 other listed and petitioned species in the upper basin.

Staff assisted Jeff Garner with a statewide gastropod inventory which was concluded in 2021. The project has evaluated gastropods at more than 1,500 localities across the state. A comprehensive report is forthcoming.

AABC Supported Research Activities:

1. A final report for the Cookeville, TN USFWS Field Office: Life history dynamics of *Marstonia ogmorhappe*, Royal Marstonia in Blue Spring and Owen Spring, Marion County Tennessee. Paul D. Johnson, Jeffrey T. Garner, Todd Fobian and Michael Buntin.
2. A final report was submitted to the US Fish and Wildlife Service, Lafayette, Louisiana Field Office: Grow out of Louisiana Pearlshell, *Margaritifera hembeli* (Conrad, 1838) juveniles in support of recovery and possible reintroduction efforts in Louisiana. Todd B. Fobian, Michael L. Buntin, Jesse T. Holifield, Thomas A. Tarpley and Paul D. Johnson.
3. A final report was submitted to the US Fish and Wildlife Service, Daphne, Alabama Field Office: Culture and recovery efforts for the Alabama Pearlshell, *Margaritifera marrianae* (Johnson, 1983). Todd B. Fobian, Michael L. Buntin, Jesse T. Holifield, Thomas A. Tarpley and Paul D. Johnson.
4. A final report was submitted to the US Fish and Wildlife Service, Daphne, Alabama Field Office: Reproductive characteristics and host fish determination of Canoe Creek Clubshell, *Pleurobema athearni* (Gangloff et al. 2006) in Big Canoe Creek drainage (Etowah and St. Clair Counties), Alabama. Todd B. Fobian.
5. A final report was submitted to the US Fish and Wildlife Service, Frankfort, Kentucky Field Office: Evaluating propagation bottlenecks for large river unionids. Carla L. Atkinson and Paul D. Johnson.
6. A final report is in preparation for the US Fish and Wildlife Service, Daphne, Alabama Field Office: Freshwater Mussels and Gastropods of the Main Channel of the Locust Fork of the Black Warrior River, Alabama. 48 pages. Buntin, M.L., J.T. Holifield, T.A. Tarpley and P.D. Johnson.

7. Aceves, A.K., P.D. Johnson, C.L. Atkinson, B.C. van Ee, S.A. Bullard and C.R. Arias. 2020. Digestive gland microbiome of *Pleurobema cordatum*: mesocosms induce dysbiosis. *Journal of Molluscan Studies*. 86(4):280-289. <https://doi:10.1093/mollus/eyaa024>.
8. Wright, A.D., N.L. Garrison, A.S. Williams, P.D. Johnson and N.V. Whelan. 2020. Range reduction of the Oblong Rocksnail, *Leptoxis compacta*, shapes riverscape genetic patterns. *PeerJ*. <https://doi.org/10.7717/peerj.9789>
9. Garrison, N.L., P.D. Johnson and N.V. Whelan. 2021. Conservation genomics reveals low genetic diversity and multiple parentage in the threatened freshwater mussel, *Margaritifera hembeli*. *Conservation Genetics*. <https://doi.org/10.1007/s10592-020-01329-8>.
10. Whelan, N.V., P.D. Johnson, J.T. Garner, N.L. Garrison, and E.E. Strong. 2022. Novel phylogenomic markers reveal prodigious polyphyly in Pleuroceridae (Gastropoda: Cerithioidea). In Press. *Bulletin of the Society for Systematic Biology*.



Leptoxis compacta, Oblong Rocksnail, Cahaba River, Lily Shoals, Bibb County, Alabama. Collected by H.H. Smith, Circa 1919. UF 81145.

This is an example plate of freshwater gastropod of Alabama under completion at the AABC. Currently over 80 species plates have been completed to date.