

Black Warrior Waterdog and  
Flattened Musk Turtle eDNA  
Survey of Locust Fork

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Survey is a subcomponent of the Locust Fork Strategic  
Habitat Cooperative (The Nature Conservancy)

## Acknowledgements

Jason Throneberry and Alana Reynolds – TNC

Nelson Brooke – Black Warrior Riverkeeper

JJ Apodaca – Tangled Bank Conservation

Sam Howell – Friends of Locust Fork

## Objectives:

- 1) Survey mainstem of Locust Fork for Black Warrior Waterdog and Flattened Musk Turtle using eDNA
- 2) Update distributional data on these federally listed species to provide information to aid water quality improvement and restoration

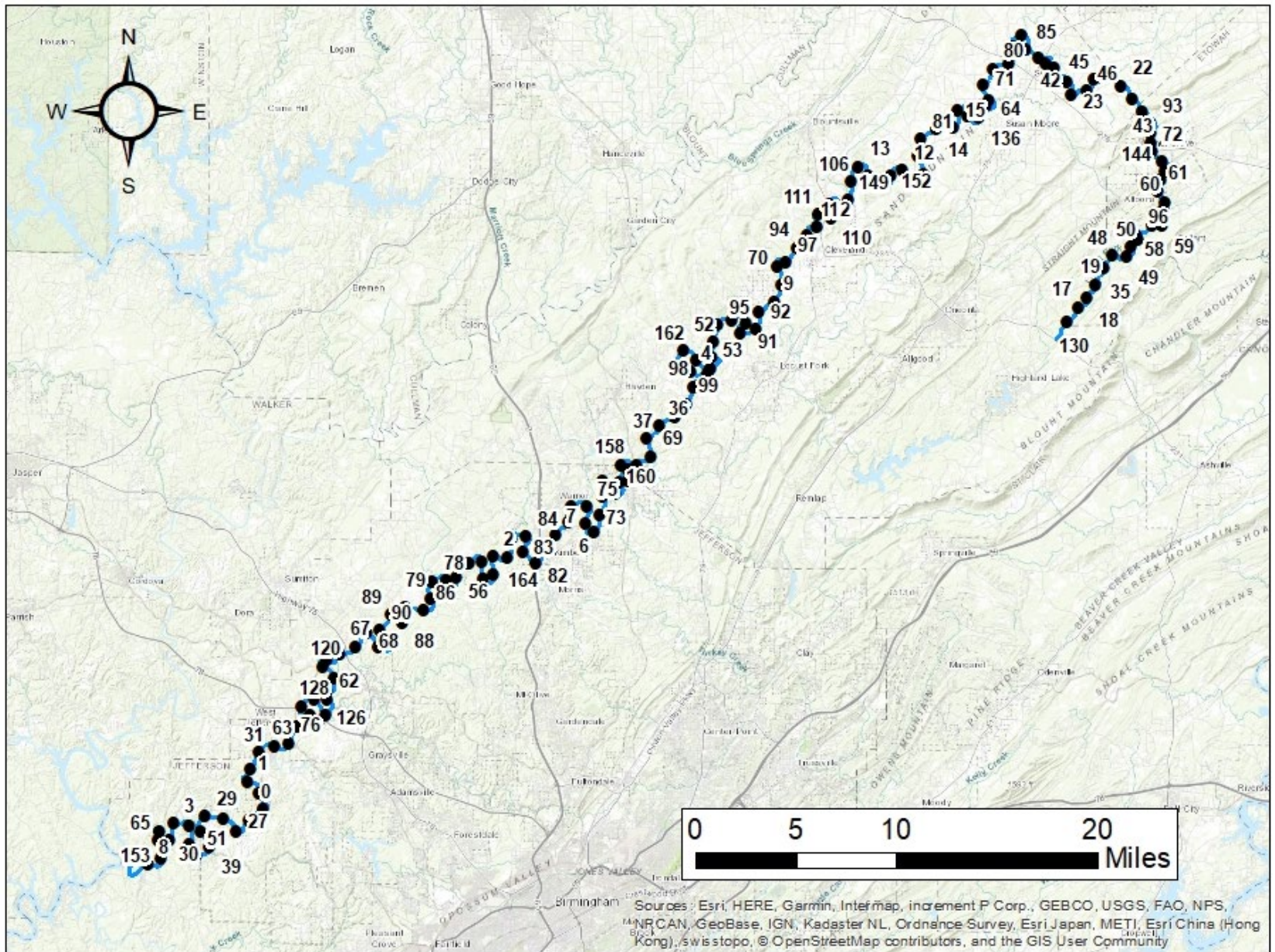
Estimated mainstem survey distance was 200 km (ca. 130 miles) with sampling stations spaced at 1.5 km intervals.

Estimated total sampling stations were 130 with each station to be sampled twice, once during cool season (November – March) and once during warm season (April-September)

Cool season sampling to encompass Black Warrior Waterdog activity period; Warm season sampling to encompass Flattened Musk Turtle activity period

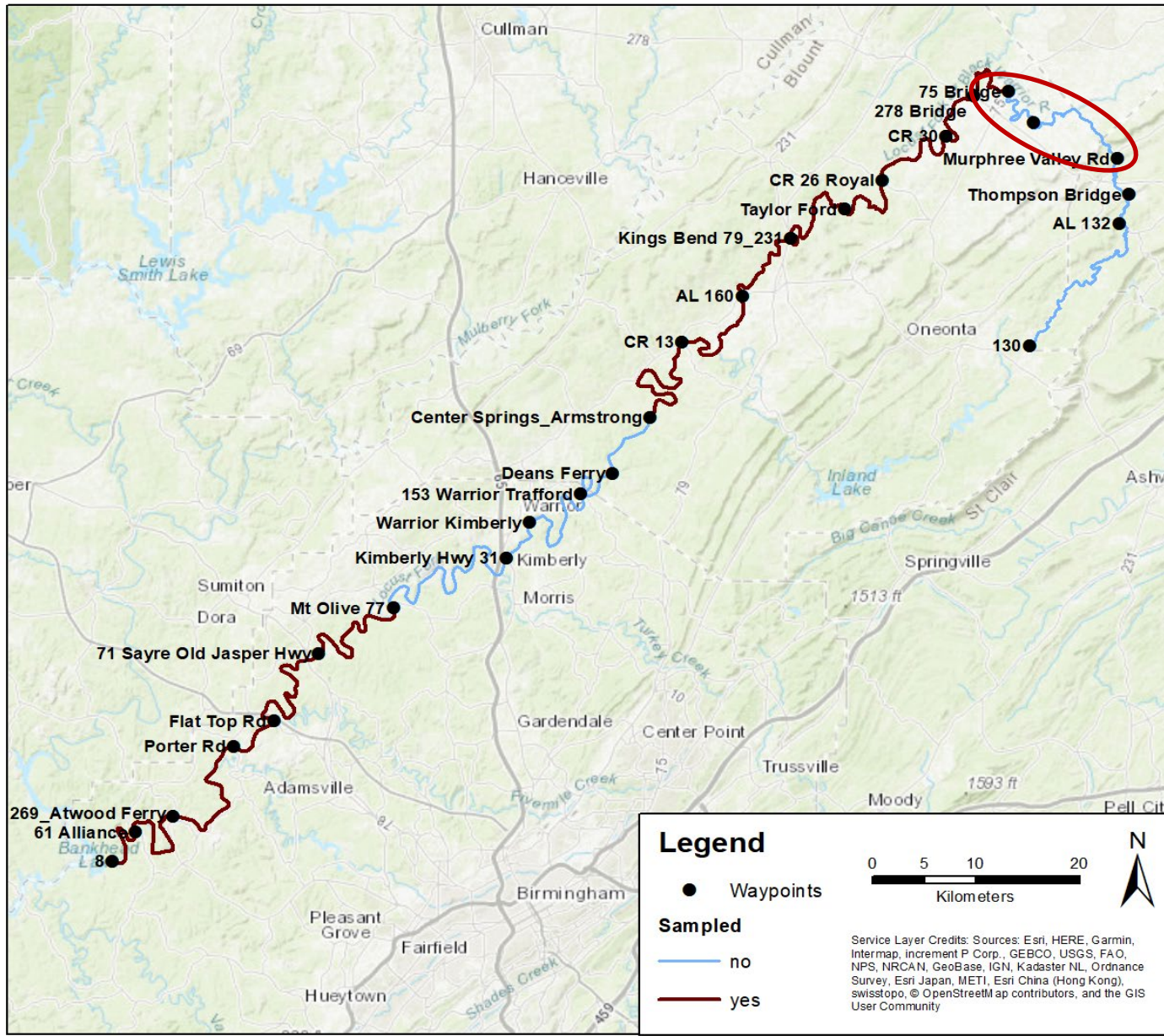
eDNA samples analyzed by Tangled Bank Conservation

# Distribution of potential sample stations on Locust Fork





# Distribution of sampled sections of Locust Fork



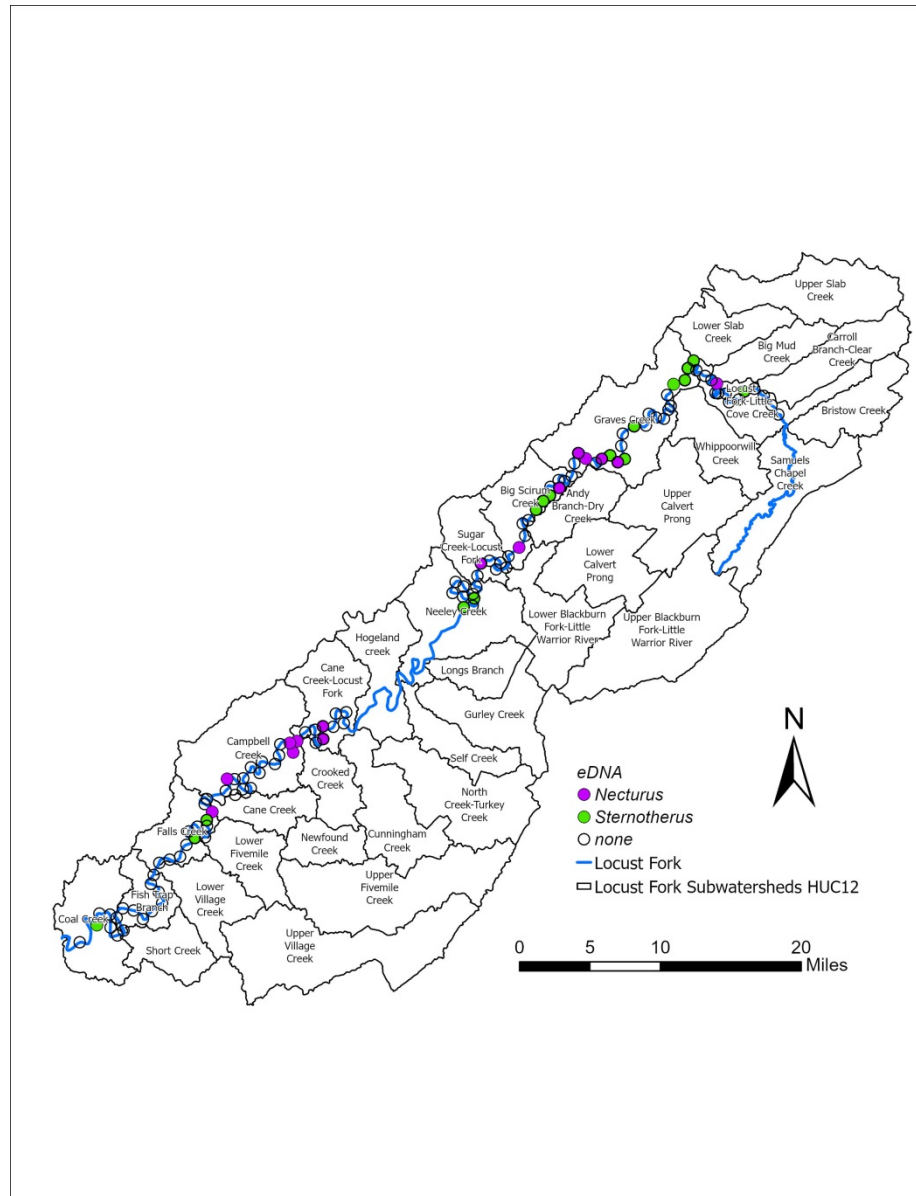
## eDNA samples collected

	Total River km	Total no. stations
Cool season	193	87
Warm season	175	91

## No. stations with eDNA detections

Black Warrior Waterdog	15
Flattened Musk Turtle	17

# Distribution of positive eDNA detections for the Black Warrior Waterdog and Flattened Musk Turtle in the Locust Fork





Additional imperiled species of Locust Fork for which eDNA samples may be screened using metabarcoding analysis:

**Turtles:**  
Alabama Map Turtle (*Graptemys pulchra*), Alligator Snapping Turtle (*Macrochelys temminckii*),

**Fish:**  
Warrior Darter (*Etheostoma bellator*), Vermilion Darter (*Etheostoma chermocki*),  
Watercress Darter (*Etheostoma nuchale*), Rush Darter (*Etheostoma phytophilum*),  
Locust Fork Darter (*Etheostoma* sp. cf. *bellator*), Cahaba Shiner (*Notropis cahabae*),  
Coal Darter (*Percina brevicauda*),

**Mussels:**  
Alabama Spike (*Elliptio arca*), Delicate Spike (*Elliptio arctata*),  
Alabama Heelspitter (*Lasmigona alabamensis*), Upland Combshell (*Epioblasma metastriata*),  
Orangenacre Mucket (*Hamiota perovalis*), Alabama Moccasinshell (*Medionidus acutissimus*),  
Coosa Moccasinshell (*Medionidus parvulus*), Southern Clubshell (*Pleurobema decisum*),  
Dark Pigtoe (*Pleurobema furvum*), Ovate Clubshell (*Pleurobema perovatum*),  
Triangular Kidneyshell (*Ptychobranthus greenii*),

**Snails:**  
Hispid Elimia (*Elimia comma*),  
Gladiator Elimia (*Elimia hydei*), Black Mudalia (*Elimia melanoides*)  
Watercress Snail (*Fontigens nickliniana*), Cylindrical Lioplax (*Lioplax cyclostomaformis*),  
Plicate Rocksnail (*Leptoxis plicata*)