



SURVEY OF RUSH DARTER (*ETHEOSTOMA PHYTOPHILUM*)
ON THE
BANKHEAD NATIONAL FOREST

2019-2022



COLLABORATIVE EFFORT

- **National Forests in Alabama** – Allison Cochran, James Jolly, John Moran
- **Alabama Power Company** – Jeff Baker, Dylan Shaw, Chad Finch, Steve Krotzer (retired)
- **ADEM** – Cal Johnson
- **USFWS**
- **GSA**
- **Others**

BACKGROUND

- Three small, widely separated populations found only in the upper Black Warrior River drainage above the fall line.
- The Rush Darter was listed as endangered in 2011.
- Designated Critical Habitat in 2012 – includes stream segments downstream but not on the Bankhead National Forest (BNF).

OBJECTIVES

- 2019 – initially to determine if Rush Darter were present on the BNF. Prior surveys by others were not extensive and did not find Rush Darter.
- 2021 to present –
 - Determine distribution on BNF, where and when they are on the landscape
 - Identify key habitat features
 - Identify key life history aspects
- Going forward
 - Use information to ensure Forest management activities do not negatively impact Rush Darter habitat or populations.
 - Identify opportunities to improve Rush Darter habitat.
 - Develop a long-term monitoring plan.

KEY FINDINGS – HABITAT

- Habitat types occupied by Rush Darter on the BNF
 - Streams – 1st to 4th order
 - Approx. 3.0 miles of stream occupied on BNF
 - Flood Plain
 - Springs\Seeps
 - Ephemeral ponds
 - Semi-permanent pond
 - Ephemeral wetlands
 - Permanent marsh-type wetland



SPAWNING HABITAT

Ephemeral and semi-permanent ponds, and ephemeral and permanent wetlands were utilized for spawning. In one instance, spawning occurred in a waterfall plunge pool on a 1st order intermittent stream.

- Gravid females were found in these areas in March and fry in April and May.
- 2021 was a relatively wet year and the Rush Darter adults and young-of-year (YOY) were present in ephemeral ponds and wetlands throughout the year.
- In 2022 these same areas were completely dry by June. All year classes in the ponds were assumed to have perished when dried.



Background scale - mm

GENERAL APPEARANCE

ADULTS

Reproductively Inactive

Males and females - background coloration olive to yellowish; dark brownish pigment overlays head and body.

Male only - dark spot on anterior membrane of the first dorsal fin.

Spawning Capable

Males and Females - yellowish background; overlaying pigment medium to golden brown rather than dark brown.

Females – Abdomen distended and genital papillae protruding and enlarged

Males – Dark spot on anterior membrane of first dorsal fin more intense and can extent to adjacent membranes.

RI

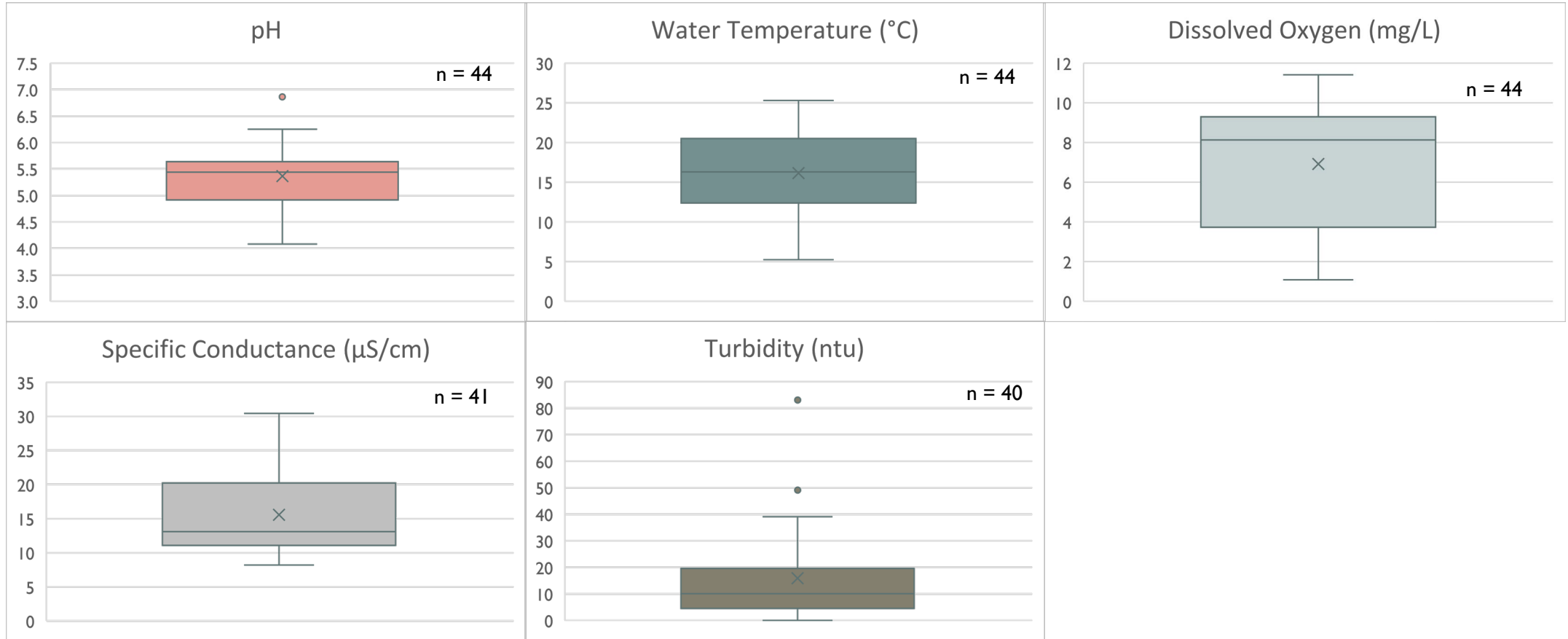


SC
Male



SC gravid female

WATER QUALITY



Measurements are across 9 sites occupied by Rush Darter, Feb through Nov 2022 using an Aqua Troll 600 sonde.

SPECIES ASSOCIATES

Name	Habitat Type	
	Stream	Flood Plain
Rough Shiner	X	
Creek Chub	X	
Bluehead Chub	X	X
Southern Brook Lamprey	X	
Creek Chubsucker	X	
Striped Shiner	X	
Green Sunfish	X	X
Blackspotted Topminnow	X	
Blackbanded Darter	X	
Crayfishes	X	X
Salamander - Ambystomatidae		X
Salamander - Plethodontidae	X	X
Eastern Newt		X
Frogs and Toads – various	X	X
Cottonmouth	X	X
Creek Chub	X	
Blacktail Redhorse	X	
Bluegill	X	

QUESTIONS?



Photo by Dylan Shaw