



Visual survey and habitat association of three rare darters (*Etheostoma cinereum*, *Percina burtoni*, and *Percina williamsi*) in the Little River, Blount County, Tennessee






R. Trent Jett
M.S. Candidate
University of Tennessee-Knoxville
Forestry, Wildlife, and Fisheries







Introduction

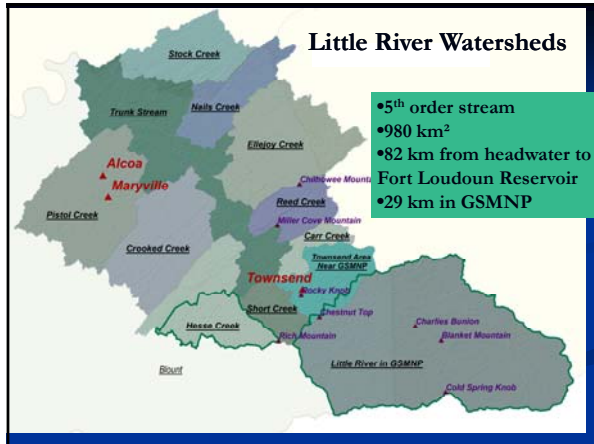
750 freshwater fish species in N. America
(Page and Swofford 1984)
150 (20%) are darters
363 crayfish species
~4200 species of aquatic insects



Tennessee Aquatics

Five major drainage systems
~ 300 species of native fish (Etnier 2001)
129 species of freshwater mussels (Parmalee 1998)
76 species of crayfish

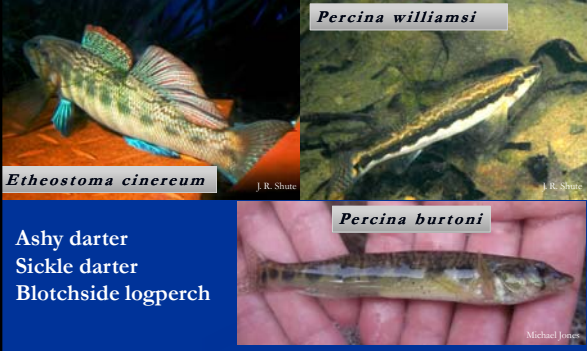








Introduction

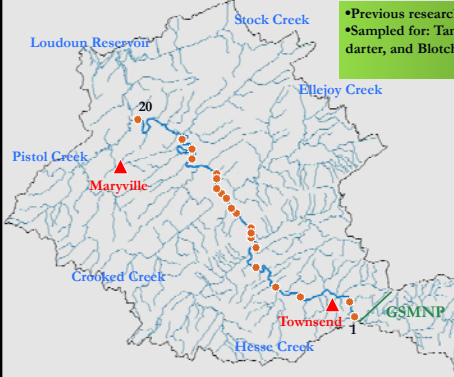


Etheostoma cinereum
Ashy darter
Sickle darter
Blotchside logperch

Percina williamsi

Percina burtoni

Site description



- Previous research by Heacock (1995)
- Sampled for: Tangerine darter, Sickle darter, and Blotchside logperch

GSMNP

Justification for Research

Siltation (agriculture), pollution (septic)

Fish impediments

Reintroduction programs



Research Objectives

Document local population densities along the main stem of the Little River
Record micro-habitat preferences during Spring, Summer, and Fall

What are the current populations of our target species on the Little River and where are they found?

Research Methods

Snorkel/SCUBA 20 sites along the Little River from the GSMNP boundary to Hwy 33 bridge during spring, summer, and fall
Record number of target species identified at each sample site
Measure micro-habitat for each individual encountered

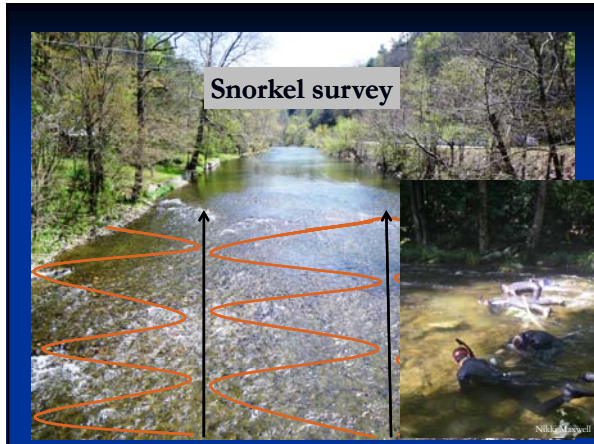
Methods

Objective 1: Snorkel/SCUBA 20 sites along the Little River

•Measure water clarity with Secchi disk and turbidity meter
(Heacock 1995)

•Snorkel pool, run, and riffle





Methods

Objective 2: Record number of target species identified at each sample site

- Record number and location of all target species observed

Difficulties:

- Identification of species
- Snorkeler disturbance of individual fish

The image contains two photographs. The left one shows a fish labeled *Percina burtoni* in a stream, circled in white. The right one shows a close-up of a fish in a stream with a snorkeler's mask and snorkel visible above the water.

Methods

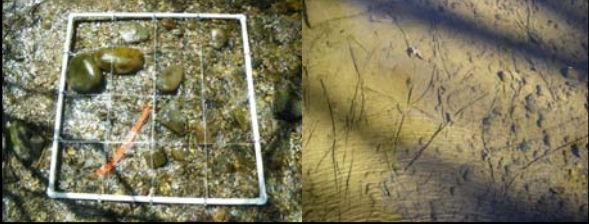
Objective 3: Measure micro-habitat for each individual encountered

- Collect water chemistry readings for site
- Record Large Woody Debris abundance
- Measure velocity for riffle, run, and pool
- Measure velocity at darter locations (Stauffer et al. 1996)

The image contains three photographs. The left one shows a person in a wetsuit using a pole in a stream. The middle one is a diagram of a stream bed with various fish species. The right one shows a handheld digital water meter displaying "1302".

Methods

- Measure substrate at darter locations (Chipps and Perry 1994)
- Measure silt in pool





Acknowledgments

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Questions?
