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

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
Little River Watersheds

• 5th order stream
• 980 km²
• 82 km from headwater to Fort Loudoun Reservoir
• 29 km in GSMNP

Introduction
Empties into Fort Loudoun Reservoir
89 species of native fish historically
15 species of native mussels
Introduction

Ashy darter
Sickle darter
Blotchside logperch

Site description

Site description by Heacock (1995)
Sampled for: Tangerine darter, Sickle darter, and Blotchside logperch

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?

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**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

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**Methods**

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

* Measure water clarity with Secchi diak 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

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)
Methods

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

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Questions?