

# Reintroduction of Native Fish Species to Coal Creek

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## Introduction

- Location
- Study Area – collection and release sites
- Background
- Species

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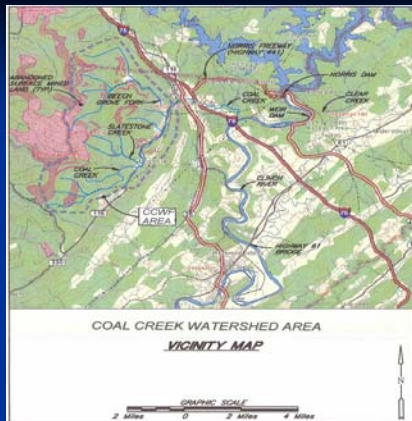
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## Location/Study Area



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## Background

Surface Mining Control and Reclamation Act of 1977

Coal Creek Watershed Foundation (2000)

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## Background

### Coal Creek Currently

- Fish populations in Coal Creek watershed have been stressed by land use practices dominated by a history of coal mining.
- Some species have been lost
- Coal Creek is isolated by cold releases from Norris Dam so missing species can not recruit naturally.

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Most fish species (27) have survived sedimentation and water quality problems.



Photos by Virginia Tech, Virtual Aquarium

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## Reintroduction Species

### Target Species

- Telescope shiner
- Warpaint shiner
- Tennessee shiner
- Whitetail shiner
- Rainbow darter

### Opportunistically collected species

- Fantail Darter
- American brook lamprey

500 individuals each

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## Why restore now?

- Efforts have been put forth by CCWF to restore the health of Coal Creek
- There are signs of environmental recovery (additional insect diversity and improved fish community indices).
- There is increased interest in restoring biodiversity.

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## Benefits / Objectives

- Improve the biological integrity of Coal Creek and its tributaries (form and function).
- Improved bioassessment ratings and healthier fisheries.
- Help preserve native fish diversity.
- Want to cause lowest initial stress to promote long-term survival
- Want to be efficient, so fish are held for the shortest time possible
- Project focus is to release with high survival

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## Objectives

- Collect, transport and release species
- Monitor reproductive success/survival



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## Methods

- Collection
- Tagging
- Release
- Monitor



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## Collection

### Shocking



- Common method for fish collection
- Usually efficient
- Involves less handling of fish
- Quick, one-time stress
- Current (AC,DC), voltage, conductivity

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## Collection

### Seining

- Kick seining
- Fish are fully aware
- More handling time
- Longer duration of stress
- Methods are species specific-some more sensitive than others



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## Collection

### Holding

- Fish collected and put in 5 gal buckets
- Transferred to holding coolers, monitored for temp and DO
- Then bagged in oxygenated bags in the coolers-counted as bagged

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## Tagging

### Rainbow Darters

- VIE (visible implant fluorescent elastomer)
- Injected at specific sites on the fish
- Marked for seasonality



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## Release

- Transport fish in coolers to release site
- Acclimate bag water temp to release site temperature—within 2°C



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## Monitor

Summer of 2008

Seining – safest method

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## Weather Dependent

- Project success depends on rainfall
- Currently, water levels extremely low
- Survival/Repro. -dependent on fish movement, flow, temperature
- Comparative study?
- Biological/physiological responses to environmental conditions

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## Thanks

- TDEC
- TVA
- Americorps
- Clinch River Trout Unlimited
- Coal Creek Watershed Foundation (CCWF)
- Dept. of Forestry, Wildlife & Fisheries

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## Volunteers or Questions for Coal Creek Fish Restoration

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- or Joyce Coombs, 865-974-7229  
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