



## REDSIDE DACE (*CLINOSTOMUS ELONGATES*) IN MILL CREEK, WABASH COUNTY. A STRATEGY FOR POPULATION RESEARCH



*Redside dace fry 8mm (magnification: 40x).*

### Status

Third year of a four-year project

### Funding Sources and Partners

State Wildlife Grant (T07R06), Manchester College,  
DNR Nongame Fund

### Project Personnel

Principal Investigator: Jerry Sweeten, Ph.D.

### Research Technicians

Jacob Wenger (2009)  
Melissa Bowman (2009)  
Delanie Losey (2010)  
Kelsey Airgood (2010)  
Amber Melick (2011)  
Elizabeth Hamman (2011)

### Objectives

1. To determine the distribution, abundance, habitat, prey selectivity and spawning habits of redbside dace in the Mill Creek watershed (Wabash County).
2. To determine the genetic makeup of the Mill Creek redbside dace population.
3. To develop a mechanism (model) to determine suitable redbside dace release sites for population augmentation.
4. To develop redbside dace rearing protocols and test the habitat selection model by redbside dace release trials.

### Methods and Progress

From August 2009 to June 2010, the following benchmarks were completed:



*Amber Melick and Brant Fisher releasing adult redbside dace into Asher Branch.*

1. Larval development was documented through the juvenile stage.
2. A journal article was written regarding larval development
3. Augmentation: A total of 267 redbside dace were moved from Mill Creek to five locations in Asher Branch on March 6 and 7, 2010. An additional 214 redbside dace were released on March 17, 2011, at five locations in Asher Branch.
4. Tissue samples were collected for DNA analysis.
5. DNA analysis continued at the Pritzker Laboratory.
6. Physical parameters (temperature and habitat) were monitored in both Asher Branch and Mill Creek.

### Larval development

Documentation started on May 3, 2011, and lasted until June 2, 2011, when the dace were completely in

their larval stage. The larvae were observed every day and photographed with a Nikon microscope. A descriptive article of the development observed is completed and waiting for final editing. Sketches were made for major benchmarks throughout the development and are included in the article.

### Augmentation

A total of 254 redbside dace were released in five locations in Asher Branch on March 6 and 7, 2010. The water temperature at that time was 7.1 C. Due to high water from rain and snow melt, the 2011 augmentation took place on March 17, 2011, when 214 redbside dace were released at the five release sites in Asher Branch. The water temperature at the release sites was 10 C

Gravid redbside dace were observed in Asher Branch in 2011. While low in numbers, adults were documented in all of the release sites in Asher Branch as well as in non-release downstream sites. In all cases, fish were located in characteristic pools about one meter in depth.



*Amber Melick and Elizabeth Hamman processing redside dace specimens.*

### DNA Analysis

The final collection of tissue samples from Mill Creek was completed in 2011. Samples were analyzed at the Pritzker Laboratory in the Chicago Field Museum. Kevin Fieldheim, Pritzker Laboratory director and molecular ecologist, assisted with microsatellite determination. Interpretation of the data is expected to be completed before the end of 2012.

### Physical Parameters

Water temperature, habitat evaluation, and spawning dates were observed and recorded during spring 2010 in Mill Creek. The redside dace spawn occurs once the water temperature reaches 16 C, and in 2010 this occurred late April through May 2. In 2009 the spawn occurred a week later in May. This suggests that the spawn and development is consistent with the literature that describes the reproductive process for other Cyprinids. Enough embryos were cultured to complete the documentation of larval development.

Cost: \$118,640.00 for complete four year study