



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



Delanie Losey and Jacob Wenger, Manchester College students, release redbside dace in Asher Branch, Wabash County.

Status

Second year of a four-year project

Funding Sources and Partners

State Wildlife Grant, Manchester College,
DNR Nongame Fund

Project Personnel

Principal Investigator: Jerry Sweeten, Ph.D.

Research Technicians

Jacob Wenger, Delanie Losey and Kelsey Airgood

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–June 2010 the following benchmarks were completed:

1. Larval development was documented through the juvenile stage.
2. A journal article was written regarding larval development (being edited)
3. Redside dace (267) were moved from Mill Creek to Asher Creek as part of augmentation.
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

Detailed drawings and pictures, along with written descriptions of RSD larval development began on May 3, 2010, and lasted through June 2, 2010. Descriptions and drawings began at the earliest visible signs of fertilization up to the juvenile life stage. The juvenile life stage was defined as the point at which full fin ray development, along with vertebrae and other bony structures, were visible. At this point, the fish continued to grow in length with no real visible developmental changes observed. An article has been written to document these results and is being edited for journal submission in spring 2011.

Augmentation

On March 6 and 7, 2010, 267 redbside dace adults were collected from Mill Creek and transferred to five pre-determined pools in Asher Branch, Wabash County. Brant Fisher and Marion High School students and their teacher Dale Whonsettler assisted with the capture and release of the fish. Fifty individuals were placed in all but the fifth pool (most upstream), where 67 dace were placed. The water temperature, at the time of release, was 7.1 C and the dissolved oxygen was 14.17mg/L.

On Sept. 13, 2010, Asher Branch was sampled with a seine and hand nets to evaluate if the release was successful. Out of the five pools, young of the year were found in low numbers at the head of small riffles just below each of three pools where the adults had been released (a few were collected and returned to the laboratory for positive identification). Adult fish were found in four of the five pools.

This was a light sampling effort in order not to disturb the fish any more than necessary. The goal of this sampling was to determine if there was any evidence of successful reproduction, not to quantify reproductive success.

An additional 50 adults are scheduled to be moved from Mill Creek to each of the same five pools in Asher Branch early in 2011.

DNA Analysis

Tissue sampling (35 samples) from Mill Creek fish was completed on May 28, 2010. Fisher assisted by obtaining tissue samples from Hannah Creek (Wayne County). From June 14 to 30, DNA isolation and analysis of 100 samples each from Mill Creek and Hannah Creek took place at the Pritzker Laboratory at the Field Museum in Chicago (Kevin Fieldheim, director). Genotyping analysis continues.

Physical Parameters

Water temperature, habitat evaluation, and spawning dates were observed and recorded during spring 2010 in Mill Creek. The redbside 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.



Kelsey Airgood, Manchester College student, measures dissolved oxygen in Asher Branch.



Redside dace larvae.



DNA laboratory work at the Pritzker Laboratory in Chicago (June 2010).