

**COLORADO RIVER RECOVERY PROGRAM  
FY 2003 ANNUAL PROJECT REPORT**

**RECOVERY PROGRAM  
PROJECT NUMBER: 109**

I. Project Title:

Development of a northern pike control program in the middle Green River.

II. Principal Investigator(s):

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III. Project Summary:

Northern pike have established a reproducing population in the upper Yampa River and have expanded their number and range within the Yampa and Green rivers. The purpose of this project is to actively control adult northern pike in the middle Green River and develop an effective control program. The goal is to sufficiently reduce the abundance of adults such that predatory and competitive impacts on growth, recruitment, and survival of endangered and other native fishes are minimized. The study objectives are to:

1. Capture and remove (lethal) adult northern pike from reaches of the middle Green River.
2. Reduce the abundance of adult northern pike in the middle Green River.
3. Determine the efficiency of removal efforts.
4. Identify the means and levels of northern pike control necessary to minimize the threat of predation/competition on endangered and other native fishes.

Results suggest depletive effects. With the same sampling effort, 248 northern pike were captured and removed in 2001; 42 in 2002; and 22 in 2003.

IV. Study Schedule:      Initial year- 2001  
   Final year- Ongoing

V. Relationship to RIPRAP:

Green River Action Plan: Mainstem

- III. Reduce impacts of nonnative fishes and sportfish management activities (nonnative and sportfish management).
- III.A.4. Develop and implement control programs for nonnative fishes in river reaches occupied by the endangered fishes to identify required levels of control. Each control activity will be evaluated for effectiveness, then continued as needed.
- III.A.4.a. Northern pike in the middle Green River.

VI. Accomplishment of FY 2003 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

Task 1 Capture and remove northern pike and other nonnative fishes.

Known concentration areas for northern pike in the middle Green River during spring include: mouth of Brush Creek (RMI 304.5), Cliff Creek (RMI 302.9), Stewart Lake Drain (RMI 300.0), Ashley Creek (RMI 299.0) and Sportsman Drain (RMI 296.6). The primary habitats sampled were large relatively deep backwaters and tributary mouths. Sampling methods included the use of fyke nets, trammel nets and electrofishing. Trammel nets were regularly used in conjunction with electrofishing as a productive sample method.

*2003 Results*

A total of 22 northern pike and one tiger musky were removed from the middle Green River between March 31 and June 26, 2003. Removal efforts remained the same as in previous years while fewer pike are being encountered. Lengths of pike ranged from 423 mm to 984 mm with an average of 664 mm. The tiger musky was 271 mm and was collected in the mouth of Ashley Creek near Jensen. The cleithra of all northern pike collected were removed from the fish for age analysis. Analysis of the cleithrum has not been completed.

Four of the northern pike captured were found with 250 mm razorback suckers in their stomachs. Razorback suckers had recently been stocked in the area and were readily encountered while sampling. This was confirmed in these four fish by gut analysis and PIT-tag data from the stocked razorback suckers.

Other nonnative species collected included channel catfish, smallmouth bass, and walleye. Native species sampled included flannelmouth sucker, Colorado pikeminnow, razorback sucker, bluehead sucker, and roundtail chub. Smallmouth bass numbers seem to be increasing in this section of the Green River.

*2002 Results*

River flows were extremely low in the middle Green River during 2002. This made it difficult to find areas to sample and remove northern pike. Several traditional backwater and other flooded areas that have produced many northern pike in previous years with higher flows were too shallow or nonexistent. A total of 42 northern pike were removed from the middle Green River from March - June 2002. Lengths of pike ranged from 295 mm to 896 mm with an average of 632 mm. Analysis of the cleithrum showed ages from 0 through 7 years. Most of the fish were four or five years old.

Other nonnative species collected included channel catfish, smallmouth bass, and walleye. Native species sampled included flannemouth sucker, Colorado pikeminnow, razorback sucker, bluehead sucker, and roundtail chub.

### *2001 Results*

A total of 248 northern pike were removed from the middle Green River from March - June 2001. Lengths of pike ranged from 175 mm to 950 mm with an average of 612mm. The cleithra of all northern pike collected were removed from the fish for age analysis. Analysis of the cleithrum of northern pike indicate age classes from age 1+ through ten years old. Most pike collected were of the 2 - 4 year age class and ranged from 400 to 800 mm in length. Only 10 pike were aged older than six years.

Other nonnative species collected included 1170 channel catfish of which 1082 were collected near the mouth of the Duchesne River, 91 smallmouth bass with highest concentrations in the Duchesne River and Pariette Draw, and 33 walleye, mostly caught in the section of river from Split Mountain to the razorback spawning bar. Native species sampled included 235 flannemouth sucker, 70 Colorado pikeminnow, 33 razorback sucker, 18 bluehead sucker, and 5 roundtail chub.

### Task 2 Data entry and analysis.

FY-2003 field data has been entered into a database. Analysis and summary of data will be complete by December 2003.

## VII. Recommendations:

Continue with northern pike control in the middle Green River. Focus more on areas known to be concentration areas for northern pike including the Jensen and Duchesne River areas. Continue age analysis using cleithra to track changes in the composition of the middle Green River northern pike population. Continue collection of data on other sympatric species encountered while conducting removal efforts.

We also recommend expanding the control efforts to target smallmouth bass.

## VIII. Project Status: on track and ongoing

### IX. FY 2003 Budget Status

A. Funds Provided: \$53,100

- B. Funds Expended: \$53,100
- C. Difference: \$ 0
- D. Recovery Program funds spent for publication charges: \$0

X. Status of Data Submission:

PIT tagging data will be submitted to the database manager by December 1, 2003.

- XI. Signed: Ron Brunson November 6, 2003  
Principal Investigator Date