

I. Project Title: Development and Implementation of a Northern Pike Control Program in the Middle Green River

II. Principal Investigator(s):

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III. Project Summary:

The purpose of this project is to decrease the adult northern pike population in the middle Green River and to 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:

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.

Progress to date includes the removal of 376 northern pike from the middle Green River over five years. Following the removal of 248 northern pike in 2001, catch rates have remained relatively low and steady at 22 – 42 northern pike removed per year.

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

V. Relationship to RIPRAP:

General Recovery Program Support Action Plan

- III. Reduce negative impacts of nonnative fishes and sportfish management activities (nonnative and sportfish management).
- III.A. Reduce negative interactions between nonnative and endangered fishes.

- III.A.2. Identify and implement viable active control measures.
- III.A.2.c. Evaluate the effectiveness and develop and implement an integrated, viable active control program.

Green River Action Plan: Mainstem

- III. Reduce negative impacts of nonnative fishes and sportfish management activities (nonnative and sportfish management).
- III.A. Reduce negative impacts to endangered fishes from sportfish management activities.
- 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, and then continued as needed.
- III.A.4.a. Northern pike in the middle Green River.

VI. Accomplishment of FY 2005 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

Task 1. Analyze northern pike cleithra collected during FY-2004 for age.

This task was completed. Cleithra were analyzed for all northern pike caught during the 2004 field season.

Task 2. Analyze preserved stomachs collected from northern pike during FY-2004.

This task was completed. All stomachs were analyzed for contents upon removal.

Task 3. Capture and remove northern pike and other nonnative fishes.

This task was completed. Known concentration areas for northern pike in the middle Green River during spring include: mouth of Brush Creek (RM 304.5), Cliff Creek (RM 302.9), Stewart Lake Drain (RM 300), Ashley Creek (RM 299) and Sportsman Drain (RM 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.

2005 Results

Removal effort in FY2005 included 110 fyke net-nights and thirty-one hours of electrofishing. This effort began on March 21 and ended June 09, 2005. A total of 37 northern pike were removed. Lengths of northern pike ranged from 290 mm to 935 mm with an average length of 627 mm. Length frequencies of northern pike caught in 2005 show a shift toward larger fish (Figure 1).

Northern pike catch rates continue to be low in the middle Green River since removal efforts began in 2001 (Table 1; Figure 2). Fyke net catch rates were 0.56 pike/net-night in 2001, then down to 0.06 pike/net-night in 2002, 0.03 pike/net-night in 2003, 0.11 pike/net-night in 2004, and 0.14 pike/net-night in 2005. Electrofishing resulted in the removal of 12 northern pike in 2005. Five of these were collected during intensive efforts to collect smallmouth bass in this reach of the river. The electrofishing efforts directed toward northern pike removal resulted in a catch rate of 0.5 northern pike/hour.

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

Table 1. Catch rates and total number of northern pike removed from the middle Green River: 2001 – 2005.

Year	Catch Per Unit Effort		# Caught
	#/ electrofishing hour	#/Fyke net-night	
2001		0.56	248
2002		0.06	42
2003		0.03	22
2004	0.5	0.1	27
2005	0.5	0.14	37

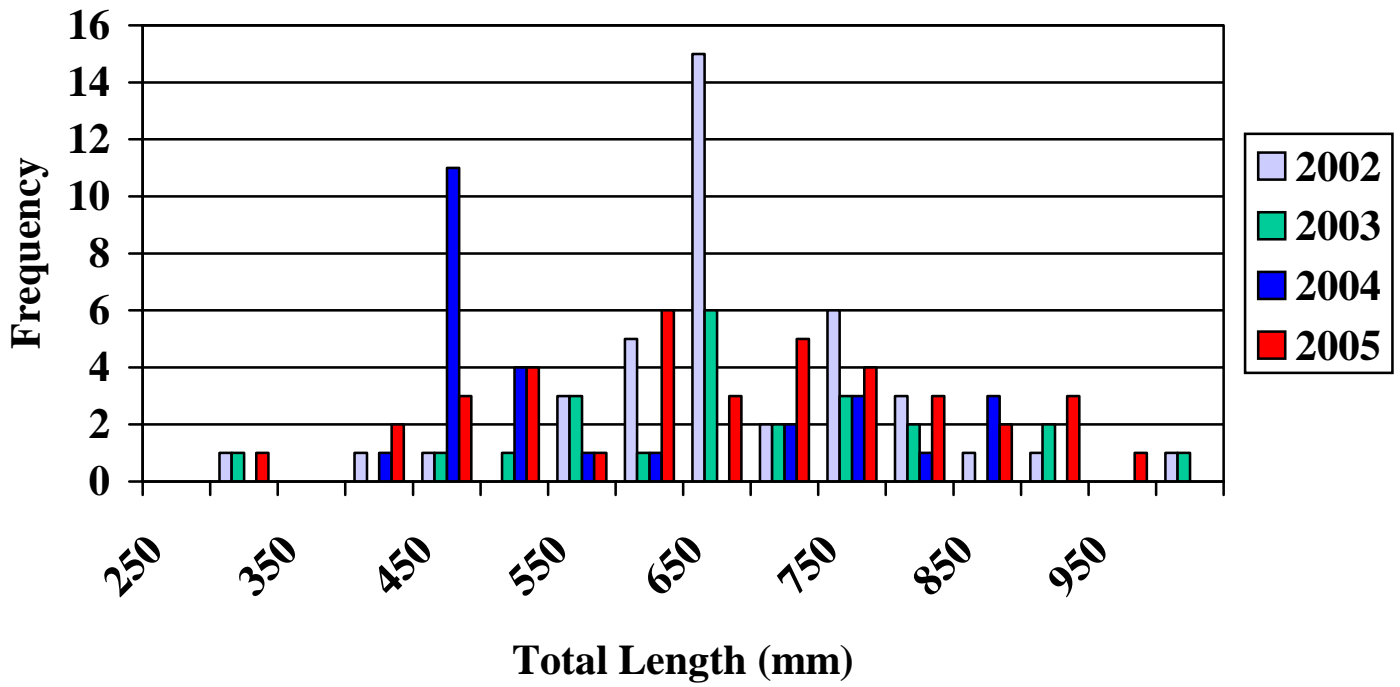


Figure 1. Length frequency of northern pike caught in the middle Green River: 2002 – 2005.

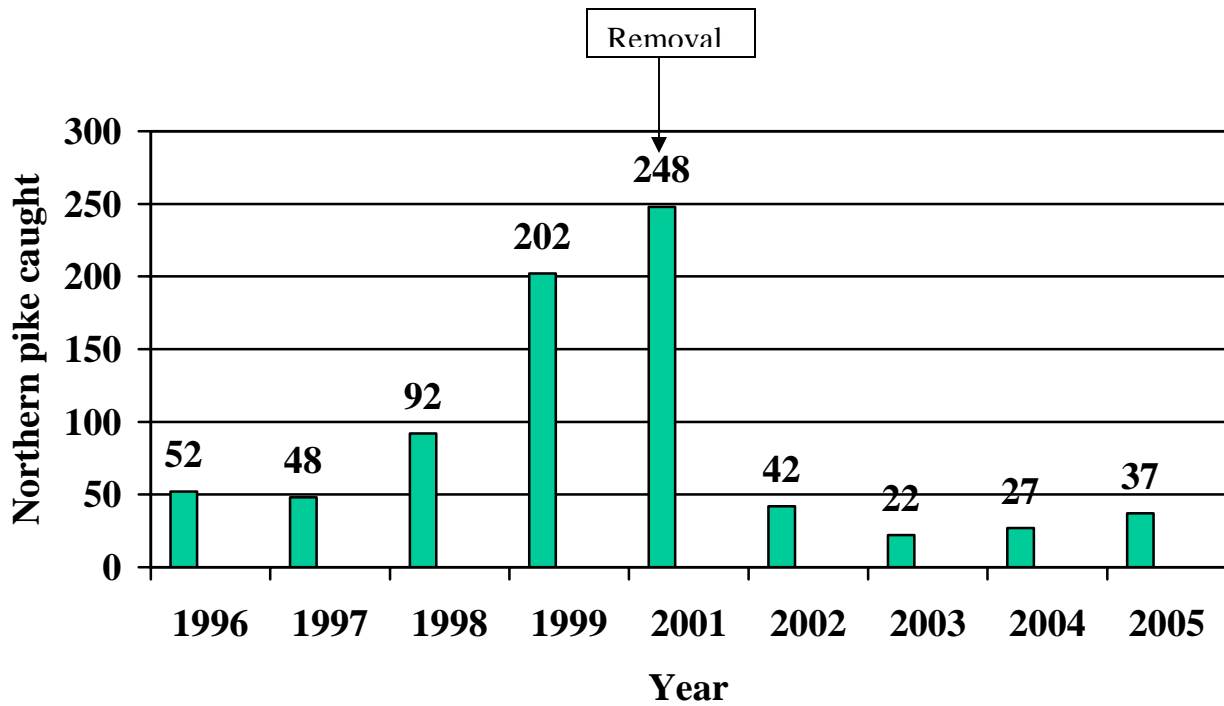


Figure 2. Number of northern pike captured in the middle Green River from 1996 – 2005.

Task 4. Data entry and analysis.

The data for this removal effort has been entered into a database. Analysis will be complete by December 2005.

Task 5. Prepare Recovery Program FY-2005 annual progress report.

Annual report was completed in November 2005.

VII. Recommendations:

Continue with northern pike control in the middle Green River. Continue age analysis using cleithra to track potential 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.

VIII. Project Status: On track and ongoing

IX. FY 2004 Budget Status

- A. Funds Provided: \$30,900
- B. Funds Expended: \$30,900
- C. Difference: \$0
- D. Percent of the FY 2005 work completed, and projected costs to complete: 100%
- E. Recovery Program funds spent for publication charges: \$0

X. Status of Data Submission:

All tagging data for 2001 – 2004 have been submitted to the database manager. Tagging data for 2005 will be submitted by January 2005.

XI. Signed: Ron Brunson October 28, 2005
Principal Investigator Date