

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

II. Principal Investigator(s):

Leisa Monroe / Trina Hedrick
Utah Division of Wildlife Resources
152 E. 100 N.
Vernal, Utah 84078
Phone: (435) 781-9453
Fax: (435) 789-8343
E-mail: leisamonroe@utah.gov
trinahedrick@utah.gov

III. Project Summary:

The purpose of this project is to decrease the adult northern pike population 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:

1. Capture and remove (lethally) 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 396 northern pike from the middle Green River. Following the removal of 248 northern pike in 2001, catch rates have remained relatively low and steady at 20 – 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 2006 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

Task 1. Analyze northern pike cleithra collected during FY-2005 for age.

This task was not completed. No cleithra were removed from northern pike caught during the 2005 field season, thus no cleithra were analyzed in 2006. In addition, no cleithra were collected during the FY2006 field season.

Task 2. Analyze preserved stomachs collected from northern pike during FY-2005.

This task was not completed. No stomachs were removed from northern pike caught during the 2005 field season, thus no stomach contents were analyzed during FY2006. No stomach samples were taken in FY2006; however, this task will resume in FY2007.

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.

2006 Results

Removal effort in FY2006 included 55 fyke net-nights and five hours of electrofishing. This effort began on March 27 and ended May 31, 2006. A total of 20 northern pike were removed. Lengths of northern pike ranged from 365 mm to 790 mm with an average length of 549 mm. Length frequencies of northern pike caught in 2006 show a shift toward smaller 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, 0.14 pike/net-night in 2005 and 0.04 pike/net-night in 2006. Electrofishing resulted in the removal of 18 northern pike in 2006. One of these was 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 0.2 northern pike/hour.

Other nonnative species collected included channel catfish, black bullhead, smallmouth bass, black crappie, white sucker, green sunfish, carp and walleye. Native species sampled included flannelmouth sucker, Colorado pikeminnow, razorback sucker, bonytail, and roundtail chub.

Table 1. Catch rates and total number of northern pike removed from the middle Green River: 2001 – 2006.

Year	Catch Per Unit Effort		
	#/electrofishing hour	#/Fyke net-night	# Caught
2001		0.56	248
2002		0.06	42
2003		0.03	22
2004	0.5	0.1	27
2005	0.5	0.14	37
2006	0.2	0.04	20

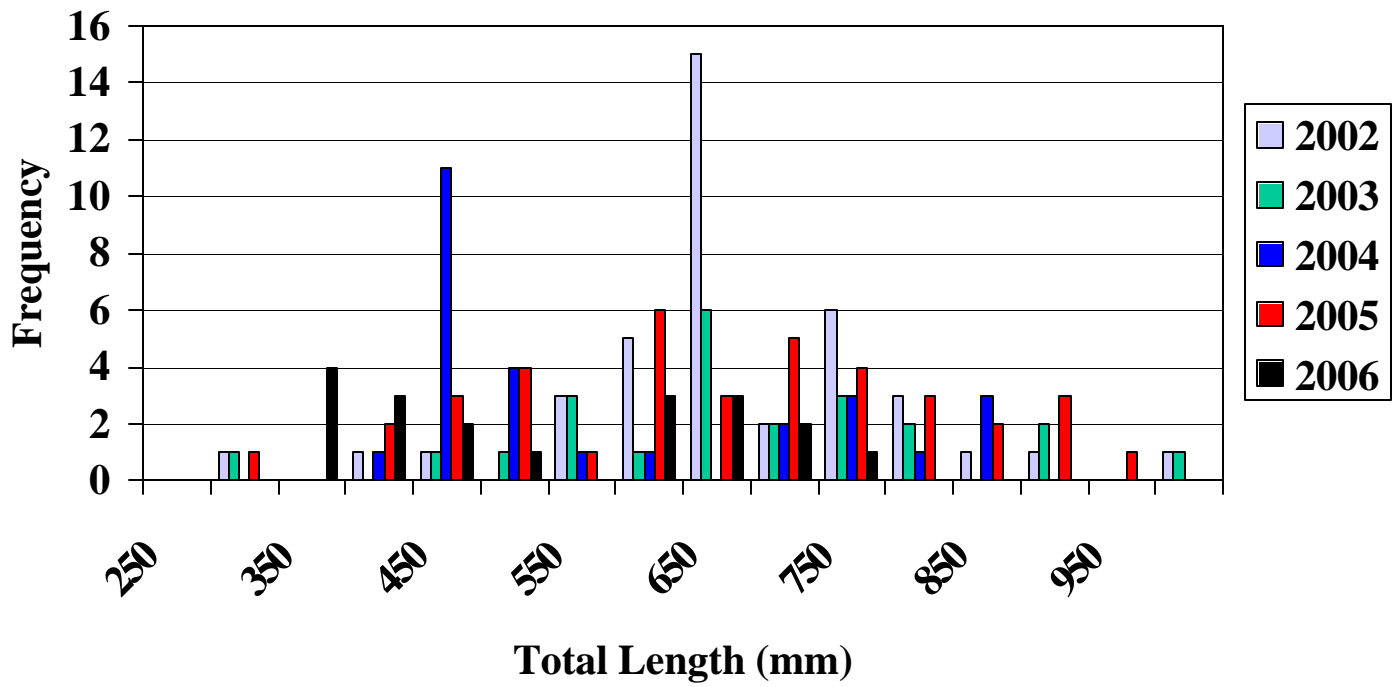


Figure 1. Length frequency of northern pike caught in the middle Green River: 2002 – 2006.

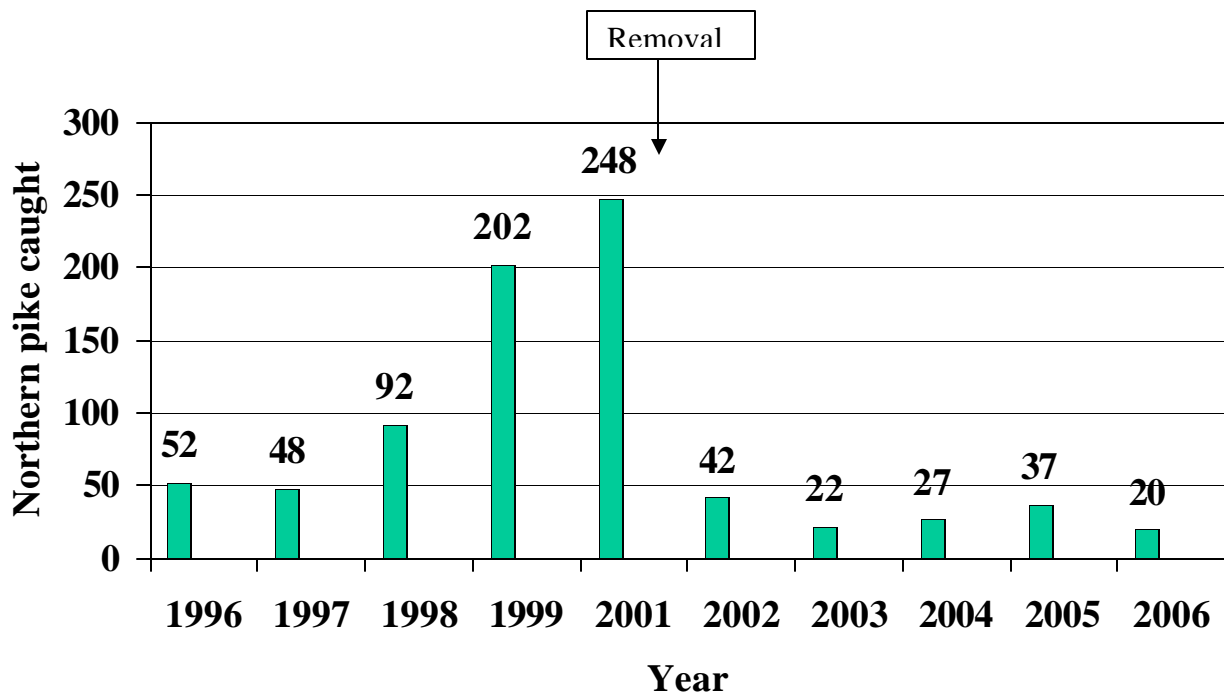


Figure 2. Number of northern pike captured in the middle Green River from 1996 – 2006.

Task 4. Data entry and analysis.

The data for this removal effort has been entered into a database. Analysis will be complete by December 2006.

Task 5. Prepare Recovery Program FY-2006 annual progress report.

Annual report was completed in November 2006.

VII. Recommendations:

Continue with northern pike control in the middle Green River. Discontinue age analysis using cleithra as the population is quite small and has been for a number of years. Resume collection and analysis of stomach samples. Continue collection of data on other sympatric species encountered while conducting removal efforts. Focus more on electrofishing for northern pike as this method seems to be more effective, at least until river otters can be removed from these areas (as they were found to be problematic for fish captured in overnight fyke net sets).

VIII. Project Status: On track and ongoing

IX. FY 2006 Budget Status

- A. Funds Provided: \$30,800
- B. Funds Expended: \$30,800
- C. Difference: \$0
- D. Percent of the FY 2006 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 – 2005 have been submitted to the database manager. Tagging data for 2006 will be submitted by November 2006.

XI. Signed: Leisa Monroe November 01, 2006
Principal Investigator Date