

I. Project Title:

Translocation of northern pike from the Yampa River upstream from Craig, Colorado.

II. Principal Investigators:

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III. Project Summary:

Northern pike, *Esox lucius*, is an exotic predatory species which has become established in the Yampa River. Northern pike escaped from Elkhead Reservoir (on Elkhead Creek, a tributary of the Yampa River near Craig, Colorado) where it was originally stocked to provide sportfishing. Since escapement, the species has established a large, reproducing population in the upper Yampa River (Nesler 1995; personal communication with John Hawkins, Colorado State University and Richard Anderson, Colorado Division of Wildlife). The large population provides a source for continual movement of northern pike into the lower Yampa River and further downstream into the Green River where they coexist with three endangered fishes — Colorado pikeminnow *Ptychocheilus lucius*, razorback sucker *Xyrauchen texanus*, and humpback chub *Gila cypha*. Northern pike provide a significant predatory risk to these species, especially juveniles and small adults of Colorado pikeminnow and razorback sucker, as well as other native species in the basin (e.g., flannelmouth sucker *Catostomus latipinnis* and roundtail chub *G. robusta*) that have been considered for listing under the Endangered Species Act in the past (Martinez 1995; Nesler 1995). Northern pike were identified as presenting a significant risk to the endangered fishes by a majority of Upper Basin researchers in surveys conducted during the late 1980s (Hawkins and Nesler 1991).

The Recovery Program has established an active program to control nonnative fishes in the mainstem rivers of the Upper Basin to assist in recovery of the endangered fishes. To date, the Recovery Program has initiated nonnative reduction efforts for channel catfish and northern pike in the Yampa and Green rivers, and small cyprinids in the Colorado and Green river drainages. In some cases, such as the Yampa River, northern pike have been removed from the main channel and stocked

into offchannel impoundments to provide fishing opportunities for local anglers. Temporarily reducing the pike population through mechanical means appears to be a viable option for the rivers of the Upper Basin (Lentsch et al. 1996), although complete eradication is unlikely. A small, non-reproducing population of northern pike in the Gunnison River was reduced with relatively little effort applied at a time when pike were vulnerable (McAda 1997). Initial sampling efforts in the Yampa River suggest that substantial numbers of northern pike can be captured during spring when they enter shallow floodplain habitats for spawning (Nesler 1995; John Hawkins, personal communication; USFWS unpublished data).

The aquatic management plan for the Yampa River includes trapping northern pike in the river and transporting them to ponds in the Yampa Valley that qualify under the Nonnative Stocking Procedures (CDOW 1998). Preliminary efforts in 2001 and 2002 showed that large numbers of anglers were attracted to the ponds at the Yampa State Wildlife Area when northern pike were stocked there (personal observation). Translocation may reduce the numbers of northern pike in the Yampa River to benefit endangered fishes and still provide recreational opportunities for anglers.

IV . Study Schedule: 2001 to ???

V. Relationship to RIPRAP:

GREEN RIVER ACTION PLAN: YAMPA AND LITTLE SNAKE RIVERS

III.A.1.b. Control northern pike.

III.A.1.b.(1) Remove and translocate northern pike and other sportfishes from Yampa River.

VI. Accomplishment of FY 2002 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

In 2002, northern pike removal in the upper Yampa River by the U.S. Fish and Wildlife Service occurred on The Nature Conservancy's Carpenter Ranch just upstream of Hayden, Colorado, and the State Wildlife Management Area just downstream of Hayden. Multiple fyke nets were set at both locations from 26 April to 7 June. Nets were fished continuously until they were moved to alternate locations. Nets were left in place during weekends (except on some State Wildlife Management Area sites) but checked only during week days. Between both locations, 237 northern pike were captured compared to 230 fish captured during a comparable sampling period in 2001. As in 2001, the majority of fish (149) were captured from Carpenter Ranch, with only 88 fish captured from the State Wildlife Management Area. The majority of fish were captured during the first three weeks of removal activity (Figure 1). The average total length of fish removed was 598 mm, and length of fish ranged from 190 to 1,054 mm (median TL= 722 mm). The size range of fish removed in 2002 was nearly identical to that removed from the study area during 2001, with most fish ranging between 500 mm and 800 mm (Figure 2).

Among the northern pike removed from the upper Yampa River in 2002, 165 fish were marked

with red, numbered floy tags and stocked into one of two fishing ponds on the Colorado Division of Wildlife's State Wildlife Management Area. In addition, 30 fish expired in the nets, and 33 were sacrificed to provide age information to the Colorado Division of Wildlife. In addition, 10 of the fish captured were fish previously marked with yellow floy tags as part of a study by Colorado State University to investigate spawning movements of Yampa River northern pike. All but one of the study fish were returned to the Yampa River.

Shortcomings include the failure to gain access to additional sites for removing northern pike from the Yampa River.

VII. Recommendations:

1. Continue removal using fyke nets and initiate main-channel electrofishing.
2. Using the Yampa River Partnership, gain access to additional sites for setting fyke nets.

VIII. Project Status:

The project is subject to review prior to continuation.

IX. FY 02 Budget Status:

- A. Funds provided: \$55K
- B. Funds expended: \$55K
- C. Difference: -0-
- D. Percent of the FY 2002 work completed: 100
- E. Recovery Program funds spent for publication charges: -0-

X. Status of Data Submission:

Data will be sent to the database manager upon completion of the project in 2002. Data are currently being entered onto spreadsheets in excel.

XI. Signed: **Tim Modde** **10 December 2002**
Principle Investigator Date

References:

CDOW (Colorado Division of Wildlife). 1998. Aquatic Wildlife Management Plan: Yampa River Basin. Aquatic Wildlife Section, Denver.

Hawkins, J. A., and T. P. Nesler. 1991. Nonnative fishes in the upper Colorado River basin: an issue

paper. Final Report. Colorado State University Larval Fish Laboratory and Colorado Division of Wildlife, Fort Collins.

Lentsch, L. D., R. T. Muth, P. D. Thompson, B. G. Hoskins, and T. A. Crowl. 1996. Options for selective control of nonnative fishes in the upper Colorado River basin. Final Report to the Recovery Program for the Endangered Fishes of the Upper Colorado River. Publication 96-14, Utah Division of Wildlife Resources, Salt Lake City, Utah.

Martinez, P. J. 1995. Coldwater Reservoir Ecology. Colorado Division of Wildlife, Federal Aid in Fish and Wildlife Restoration Project F-242R-2, Job Final Report, Fort Collins.

McAda, C. W. 1997. Mechanical removal of northern pike from the Gunnison River, 1995–1996. Final Report to the Recovery Program for the Endangered Fishes of the Upper Colorado River, Project 58. U. S. Fish and Wildlife Service, Grand Junction, Colorado.

Nesler, T.P. 1995. Interactions between endangered fishes and introduced game fishes in the Yampa River, Colorado, 1987-1991. Final Report, Federal Aid Project SE-3. Colorado Division of Wildlife, Fort Collins.

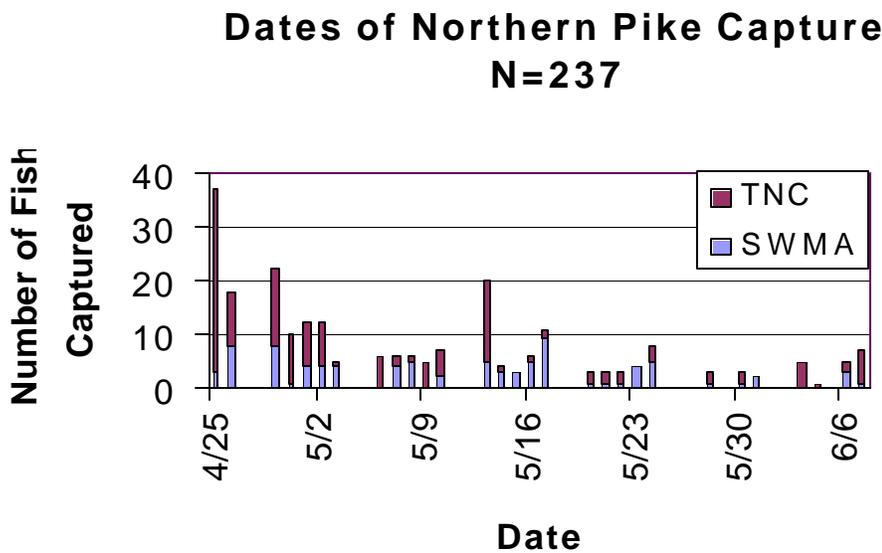
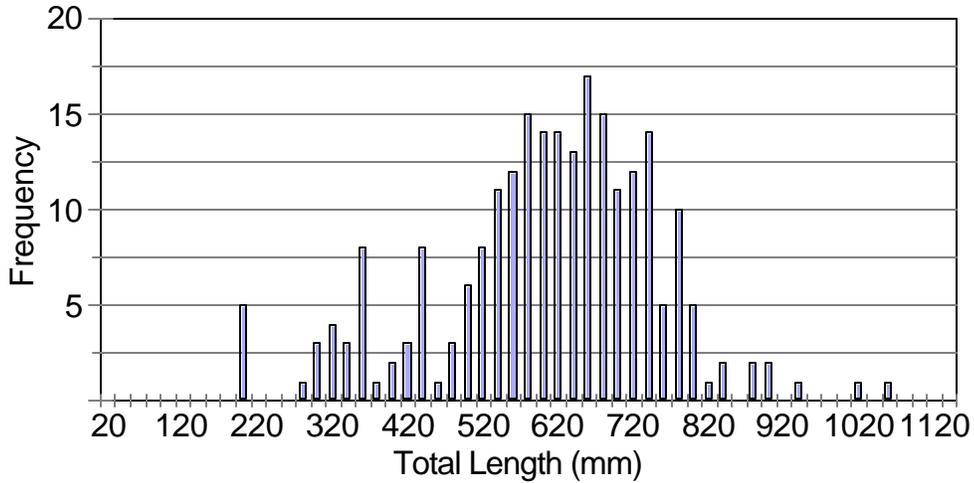


Figure 1. Numbers, locations and dates of northern pike collected from upper Yampa River between 26 April

Yampa River Northern Pike Near Hayden Length Frequency Distribution



and 7 June, 2002, by the U.S. Fish and Wildlife Service. TNC= Carpenter Ranch, SWMA = Colorado Division of Wildlife State Wildlife Management Area downstream of Hayden.

Figure 2. Length frequency of northern pike collected from the upper Yampa River between 26 April and 7 June, 2002, by the U.S. Fish and Wildlife Service.

