

I. Project Title: Yampa River northern pike exclusion studies

II. Principal Investigator(s):

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III. Project Summary:

The purpose of this investigation is to evaluate low-cost screening exclosures as a means of preventing adult northern pike from spawning in suitable flooded habitats connected to the Yampa River. This approach to nonnative fish control addresses the long-term reduction in reproductive success of this introduced fish species on a large scale – from Stagecoach Reservoir above Steamboat Springs to Craig, Colorado. The success of this approach hinges on identification of all potential pike spawning habitat in the target reach, and gaining cooperation by landowners in the affected area through permission to access pike spawning habitats located on their property. To date, contact information for property owners along the Yampa River has been collected and a questionnaire has been developed to determine landowner cooperation. Northern pike were trapped, tagged, and measured at four study sites during the spring spawning season of 2002. Collections of young-of-the-year pike were conducted at the four study sites and three additional sites. Habitat evaluations were performed for the four study sites and fifteen additional possible spawning areas. An initial habitat-ranking model has been developed and further revisions of this model will provide a system for ranking the quality of spawning areas. Barriers have been installed and will be evaluated during 2003 at two locations where young-of-the-year pike were found in 2002, and the possibility remains to install a barrier at one additional site. Habitat evaluation based on the revised habitat-ranking model for all potential spawning habitats on the Yampa River is planned for the spring of 2003. Collection of young-of-the-year pike will take place during 2003 to evaluate the effectiveness of the barriers.

IV. Study Schedule: July 2001 – December 2003

V. Relationship to RIPRAP:

GREEN RIVER ACTION PLAN: YAMPA AND LITTLE SNAKE RIVERS

III. Reduce negative impacts of nonnative fishes and sportfish management activities.

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

III.A.1.b.(2)(b) Implement remedial measures to reduce pike reproduction in the Yampa River.

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

Task 1. Coordinate with the water conservation district and water user association representatives in the Yampa River basin to determine the number and location of all diversion and return flow sites between Catamount Lake and Craig for future assessment as pike spawning habitat.

Through the help of George Schisler and Kevin Rogers at the Colorado Division of Wildlife we have obtained an aerial video of the Yampa River between Catamount Reservoir and Craig. Black and white NAPP aerial photos have been purchased from the USGS to aid in identifying diversions and return flows in the Yampa River. The USGS also has digitized aerial photos that may be purchased and used in a GIS program to identify and map diversions and return flows in the Yampa River.

Task 2. Conduct site visits of all identified potential habitats to evaluate feasibility of control, and estimate design and materials necessary to implement.

Northern pike were trapped, tagged, and measured at four study sites during the spring spawning season of 2002 to determine the critical time for pike spawning. Collections of young-of-the-year pike were conducted at the four study sites as well as three additional sites. Habitat evaluations were performed at the four study sites as well as fifteen additional possible spawning areas. An initial habitat-ranking model has been developed and further revisions of this model will provide a system for ranking the quality of spawning areas. All potential spawning habitats on the Yampa River will be visited during the spring of 2003, and habitat evaluation based on the revised habitat-ranking model will be conducted.

Task 3. Select sites and conduct pilot screening to test design and materials, and investigate operational constraints and effectiveness.

A seine and trap nets were used to collect all pike trying to enter or exit the sloughs during the spawning season. The seine had both advantages and disadvantages. The advantages were that the seine conformed to the bottom of the sloughs and was easy to work with and modify. The disadvantages were that beaver and muskrat can cause significant damage to a seine and small pike can get through the mesh size we used. Pieces of Kevlar-coated netting of two mesh sizes, poultry wire, and another metal fencing material were tested for resistance to muskrat damage. The Kevlar-coated net with the larger mesh size was not resistant, as hoped, to muskrat damage. PVC-coated poultry wire was used to construct two barriers at sites where young-of-the-year pike were found during 2002, and an additional barrier may be installed at a location where young-of-the-year pike were found.

Task 4. Prepare final report including feasibility of approach and screening materials, evaluation of results from pilot sites for effectiveness and operation requirements, and a proposed scope-of-work required to expand approach to proposed reach-wide scale.

Contact information for property owners along the Yampa River has been collected and a questionnaire has been developed to determine landowner cooperation and the feasibility of expanding this approach reach-wide. A comparison of the young-of-the-year pike found before and after the barrier was installed will help determine the effectiveness of the barriers. A research proposal including an extensive literature review has been completed. Various parts of this proposal will be used in the final report.

VII. Recommendations: Continue project as planned.

VIII. Project Status:

Consider "on track and ongoing". Progress has been made in completing Tasks 1 and 2 and the preliminary work on Task 3. No changes are anticipated for the study design or budget, and we expect to conduct Tasks 3 and 4 as planned. Project success will be gauged by the success of pilot enclosure devices in reducing access and spawning by adult pike in suitable habitats, and by the magnitude of cooperation by private property owners in the target river reach with respect to implementing this control action on a reach-wide scale.

IX. FY 2001 Budget Status

- A. Funds Provided: \$50,000
- B. Funds Expended: \$50,000
- C. Difference: \$ 0
- D. Percent of the FY 2002 work completed, and projected costs to complete: NA
- E. Recovery Program funds spent for publication charges: \$0

X. Status of Data Submission (Where applicable): NA

XI. Signed: Thomas P. Nesler 12-10-2001
Principal Investigator Date

APPENDIX: None