I. Project Title: Translocation of northern pike from the Yampa River upstream of Craig, Colorado.

II. Principal Investigators:

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III. Project Summary

This project has been progressing virtually unchanged for four years. For a more detailed description of the background of this project, literature reviews of northern pike and its life history and requirements, effects that non native introductions have on standing stocks, and non native removal history in the Program, please see previous annual reports of this project and the appropriate cross references. Objectives of this study are to reduce numbers of adult northern pike in the study reach, determine population size and structure of northern pike in the study reach and the subsequent changes in the population size and structure after translocation, maintain public support for the Recovery Program by providing off-channel angling opportunities, and to monitor the smallmouth bass population in the study area.

IV. Study Schedule: To be continued as needed

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. Accomplishments of FY 2007 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

Northern Pike Population Estimation and Removal Effectiveness

Six hundred and forty one unique northern pike of all sizes were captured during the study of which 525 were removed. The adult population estimate of northern pike in 2007 was 1608 (572-2643 95% C.I.). Confidence intervals about the estimate were much larger than in previous years. Reasons for this may include estimation assumption

violations, poor catchability as size structure in the population has changed, or unusual sampling conditions as compared to previous years.

Of the estimated 1608 adult northern pike in the 38-mile stretch of upper Yampa River from Hayden to Craig, 393 were removed. This amounts to a removal of 24.4% (see Figure 2), much lower than in previous years. In addition to the 393 adult fish removed, 132 juvenile pike were removed in 2007. Final disposition of all northern pike captured is outlined in Table 1.

Catch rates in 2007 varied by reach (Figure 3). Length frequency of pike captured in 2006 (Figure 4) shows a bimodal distribution. There seems to be a large number of fish in the age-1 and age-2 size classes (CDOW, unpublished data). The general trend has been a shift in size structure to smaller year classes as interannual sampling has progressed from 2004 to the present. For more information see (Finney and Haines, in review).

Northern Pike Foreign Tags

In 2007, we captured 32 pike that had been tagged by previous investigators. Three fish came from the Yampa River upstream of the study site, 10 were from previous years sampling in the reach, 1 came from Chris Hill's study, 16 came from the reach below, and 2 are of unknown origin (blue tag).

Smallmouth Bass

Forty-one individual smallmouth bass were captured during the study period. Movement patterns and population estimation were not possible due to low numbers of recaptures. Smallmouth bass were distributed near the bottom of the study area (Figure 5) and were captured in greater numbers during later passes (Figure 6).

Bluegill, Crappie and Green Sunfish

In 2007, 3 bluegill and 1 crappie, and 2 green sunfish were captured. This is a dramatic decline from the numbers seen in previous years and likely reflects the lower escapement rate from Elkhead Reservoir or their lower survival indicative of a life history being poorly suited to a riverine environment.

VII. Recommendations:

1. Continue with one tagging pass and 6 removal passes.
2. Prepare a comprehensive analysis of the 2004-2007 data.

VIII. Project Status:

The project is considered on track but minor revisions are suggested. It is subject to review prior to continuation.

IX. FY 07 Budget Status:

A. Funds provided: $162,115

B. Funds expended: $162,115
C. Difference: -0-
D. Percent of the FY 2007 work completed: 100
E. Recovery Program funds spent for publication charges: -0-

X. Status of Data Submission:

Submission pending completion of reporting, expected no later than 12/31/07.

XI. Signed: Sam Finney — November 8, 2007
Principal Investigator — Date

Table 1. Final disposition of northern pike captured or removed from the Yampa River study site, 2007. LS= Loudy Simpson, SWA=State Wildlife Area.

	Released	LS	SWA	Died	**Total**
Pass 1	140				**140**
Pass 2		83	62	1	**146**
Pass 3		115	48		**163**
Pass 4		66	17		**83**
Pass 5		32	2		**34**
Pass 6		57	11		**68**
Pass 7		22	12	1	**35**
Total	**140**	**375**	**152**	**2**	**669**

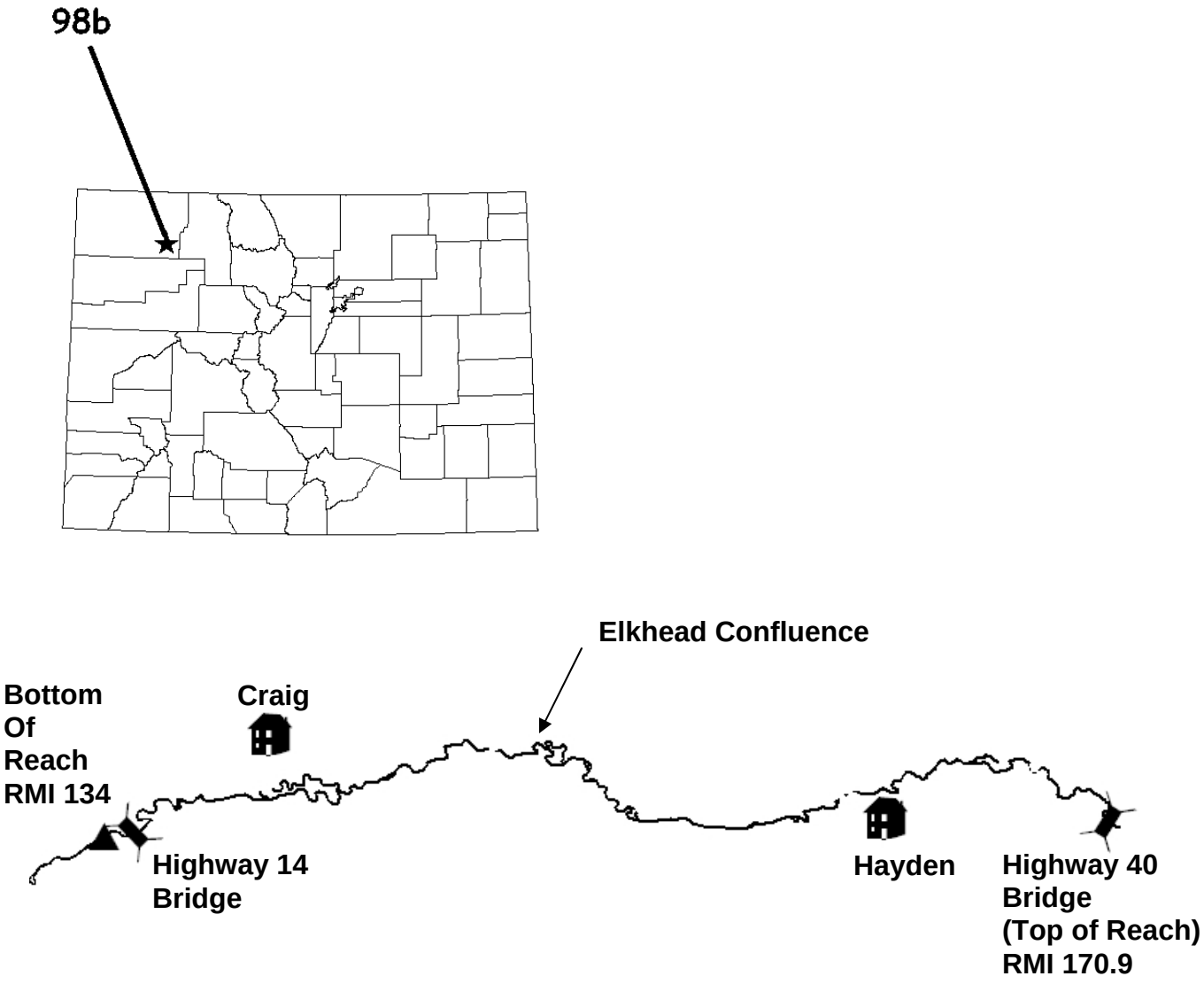

Figure 1.—Upper Yampa River Study Site. RMI= River Mile.

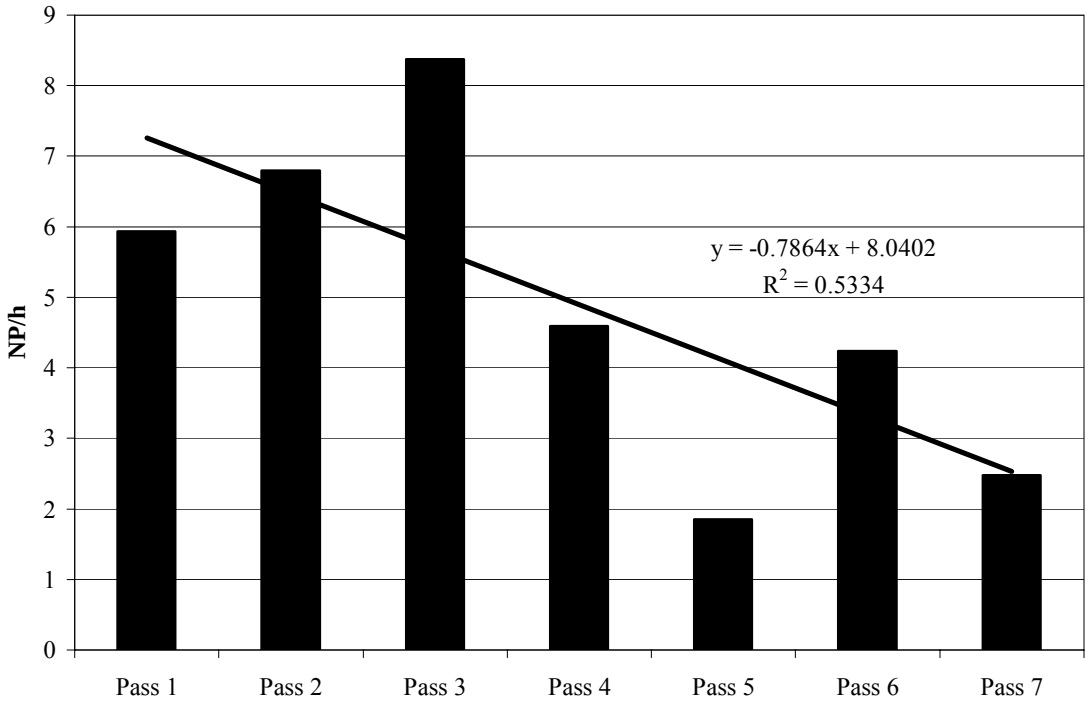

Figure 2. Catch per unit of effort of northern pike by pass, 2007.

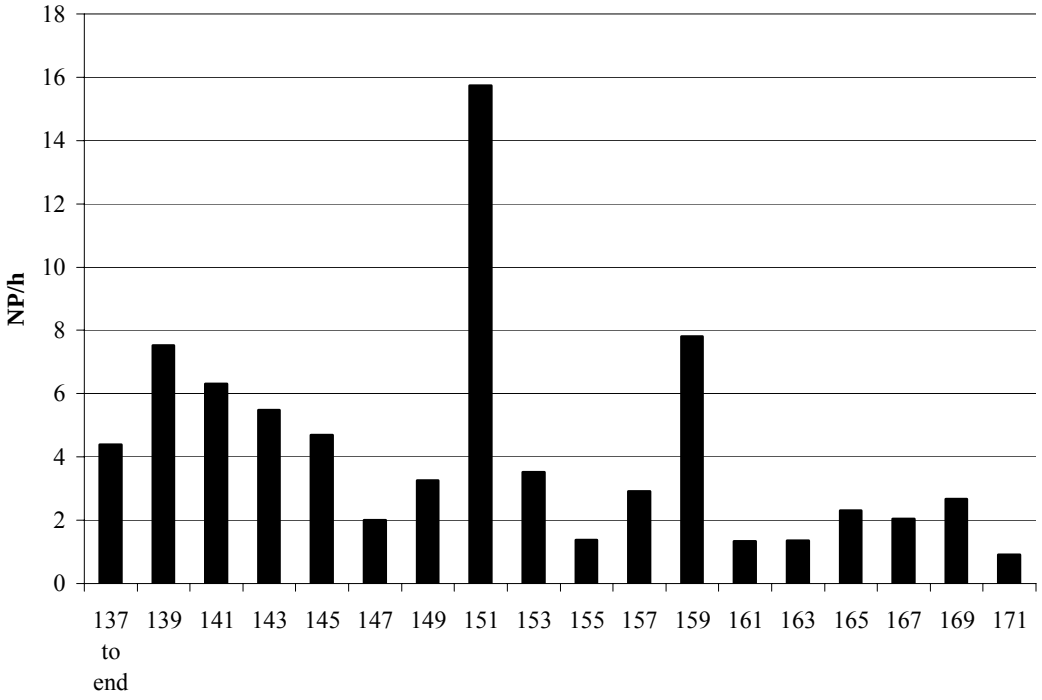

Figure 3. Catch per unit effort (CPUE) for two-mile subreaches in 2007.

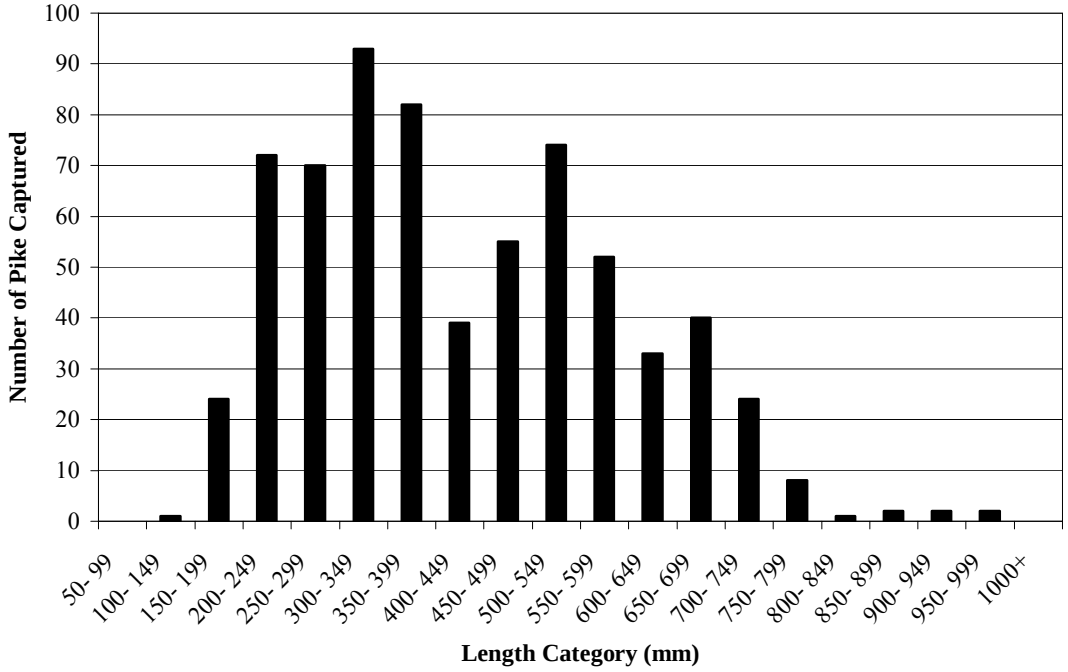

Figure 4. Length frequency of Yampa River northern pike, Spring, 2007.

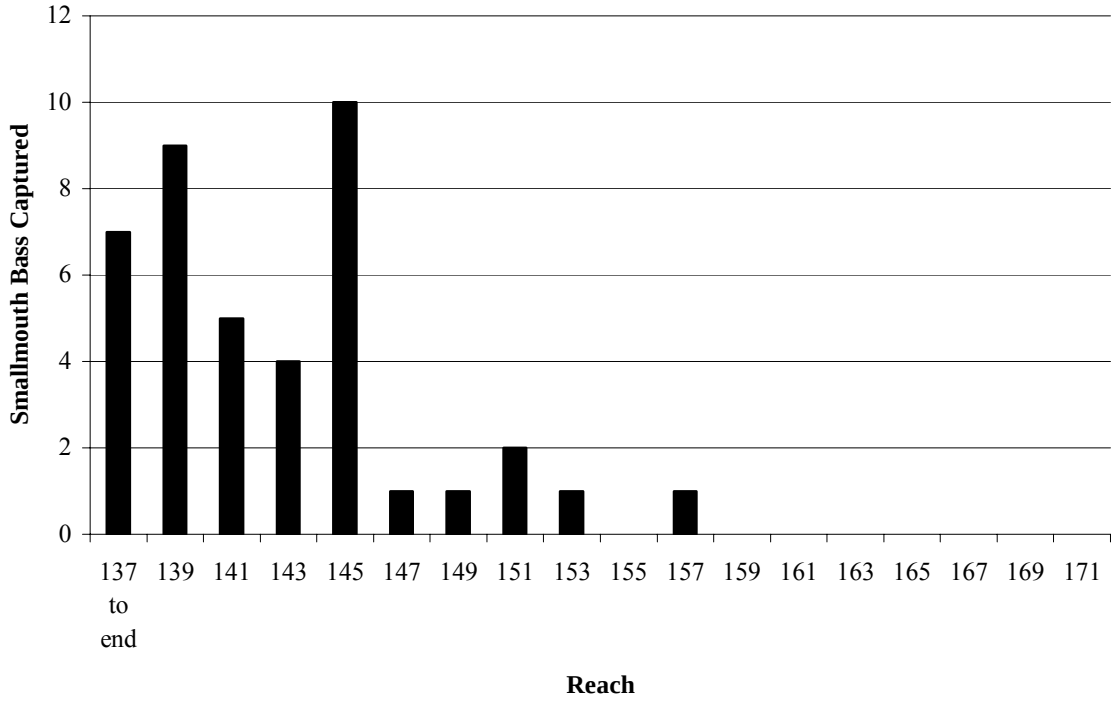

Figure 5. Smallmouth bass encountered by river mile in the Yampa River, Spring 2007.

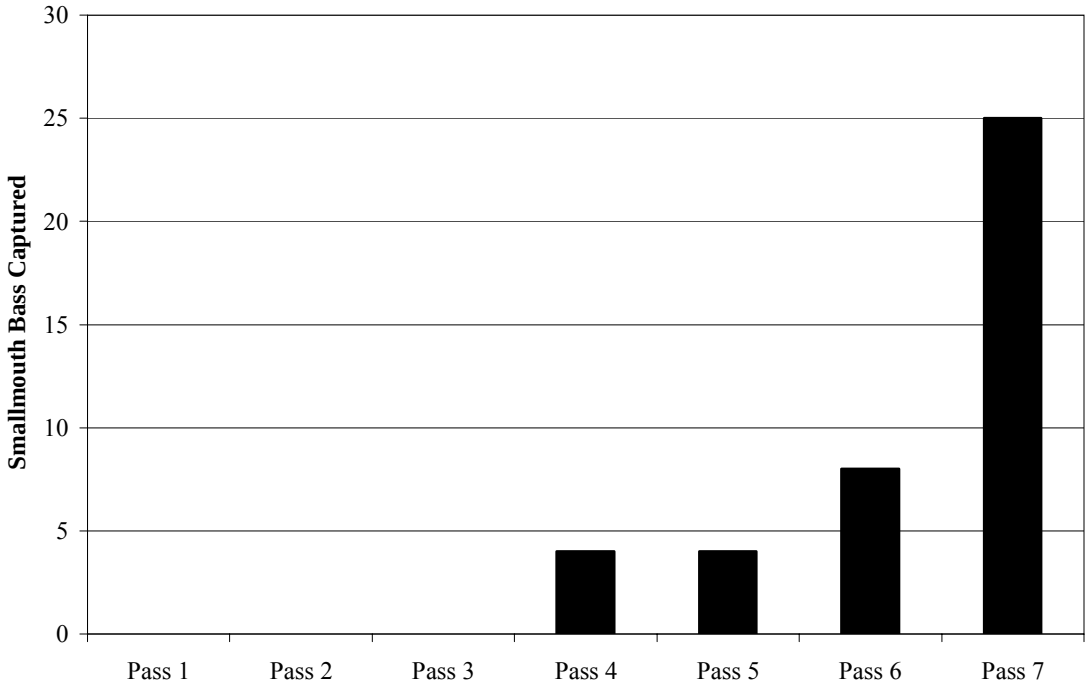

Figure 6. Smallmouth bass encountered by pass in the Yampa River, Spring 2007.

Reference:

Finney, S.T. and G. B. Haines. In Review (To be published at http://www.fws.gov/mountain-prairie/crrip/). Northern pike removal, smallmouth bass monitoring, and native fish monitoring in the Hayden to Craig Reach, Yampa River, 2004-2006. Synthesis Report to the Recovery Program for the Endangered Fishes of the Upper Colorado River, Project 98b, U. S. Fish and Wildlife Service, Vernal, Utah.