

COLORADO RIVER RECOVERY PROGRAM
FY 2012 ANNUAL PROJECT REPORT

RECOVERY PROGRAM
PROJECT NUMBER: 98b

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

II. Bureau of Reclamation Agreement Number(s): R10PG40040

Project/Grant Period: Start date: 10/01/2006
End date: 09/30/2012
Reporting period end date: 09/30/2012
Is this the final report? Yes X No _____

III. Principal Investigator:

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IV. Abstract:

The objective of this study is to remove as many northern pike and smallmouth bass as possible from the Yampa River from Hayden to Craig, CO. We use electrofishing boats to sample this reach seven times a year. We euthanize all smallmouth bass and any northern pike < 20 in. Northern pike > 20 in. are taken to the Yampa River State Park headquarters pond for angling opportunities for the public. We removed 467 northern pike, 139 smallmouth bass, and 1,168 white suckers during 2012 in this project.

V. Study Schedule: 2004-ongoing.

VI. 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

VII. Accomplishment of FY 2012 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

Northern Pike Removal

We conducted at least 5 electrofishing passes (7 and 8 in some sections) through our 38-mile study section of the upper Yampa River from Hayden to Craig. We did not conduct a mark-recapture population estimate (as was done until 2009) because the Biology Committee decided the benefit of obtaining an imprecise population estimate did not outweigh the cost of marking and releasing northern pike that otherwise could be removed from the system. Thus all passes were used as removal passes. We removed 467 northern pike of all sizes from our study reach (392 adults \geq 300 mm TL, 75 juveniles). All northern pike $<$ 508 mm were euthanized and the remaining were translocated to the Yampa River State Park headquarters pond for angling opportunities.

Length-frequency of pike captured in 2012 shows small and large size classes present (Figure 1). Younger fish are well-represented in the sample, indicating successful spawning and recruitment in the last few years. We did not observe depletion among passes (Figures 2 and 3). After conducting 5 full passes, we decided we could catch more northern pike and smallmouth bass if we reallocated effort from the uppermost reach to the middle and lower reaches of our study area. We conducted 7 passes in the lower section (RMI 141-135) and 8 passes in the middle section (RMI 151-141). As in past years, we observed that some reaches contained more northern pike than others, most notably RMI 141-137 and 151 (Figure 4).

Northern Pike Foreign Tags

In 2012, we captured 6 northern pike that had been tagged by previous investigators with Floy tags. The colors of the Floy tags included white, yellow, grey and red, and the fish ranged from 655-865 mm. Four of these tagged fish were tagged within this project in previous years from as many as 5 years ago. One was tagged by researchers downstream in 2012 as part of a mark-recapture population estimate, and the other was tagged in Elkhead Reservoir in 2011 and presumably escaped into the Yampa River during high flows of 2011.

Smallmouth Bass

One hundred thirty-nine smallmouth bass (61-412 mm) were captured in this study, and 9 were tagged or fin clipped (5 grey, 4 left pelvic fin clipped). Six of the 9 fish were escapees from Elkhead reservoir, and the remaining three had been tagged by other researchers downstream. One was initially tagged 89 miles downstream of where we captured it 2 years later. All bass captured were euthanized. On June 12 we captured 12 spawning smallmouth bass at the confluence of the Elkhead and Yampa rivers. On June 19, we returned to this location and observed 5 spawning nests that contained recently hatched smallmouth bass. This location has now been noted as a smallmouth bass spawning area to be monitored in future years.

White Sucker

This was the first year in this project where we removed white sucker. We removed 1,168 white sucker (48-588 mm). Of these, 445 measured < 200 mm and 723 measured \geq 200 mm. We saw no depletion from our efforts (Figure 6). Netting these suckers probably allowed us to document native suckers in our study area. We captured 3 bluehead suckers and 1 flannelmouth sucker as far upstream as RMI 147. We also captured 1 bluehead x white hybrid and 4 flannelmouth x white hybrids.

Thunder Ranch

Although Thunder Ranch is not associated with the upper Yampa River, the Biology Committee asked us to remove northern pike from this wetland located approximately at RM 310 on the Green River under this scope of work. Thus, the netting results will be reported here. We set 5 trammel nets and 1 gill net for 9 days at the Thunder Ranch wetland to remove as many northern pike as possible. We removed 366 northern pike from March 21-31. We saw a slight depletion from the first night to the last night (Figure 8). However, during the middle of our sampling, we did not set nets in the wetland for 2 days and the catch went from 29 to 96. Northern pike could have redistributed within the wetland over this period to produce this large catch on March 27. The length frequency of the sample appears to be unimodal in distribution. The sample is probably made of one age class that was spawned within the wetland in 2011 (Figure 7). Other nonnative fishes captured by the hundreds included white sucker and black bullhead. Nonnative fishes also captured at lower abundances included channel catfish, green sunfish, bluegill, and common carp. Only one native fish was captured during this netting; an individual razorback sucker was captured 3 different times. The peak flows from the Green River were not high enough to connect the Thunder Ranch wetland to the river in 2012.

VIII. Recommendations:

We used rafts for the last few sampling events in this project, and the last day (June 19) we did our work at 375 cfs. At these flows, we seemed to find more bass than northern pike, but sampling was difficult due to shallow water. We recommend conducting 5 passes as early as possible in the spring to remove as many northern pike as possible, and conducting the last 2 passes at lower flows later in the summer to target the smallmouth bass spawn.

Six bass and one northern pike were known escapees from Elkhead Reservoir in our sample. Elkhead Reservoir is a source for both bass and northern pike. Until Elkhead Reservoir is addressed as a source, removal efforts downstream will be undermined by smallmouth bass and northern pike escaping from Elkhead Reservoir. We recommend using rotenone to eliminate smallmouth bass and northern pike from Elkhead Reservoir. Conducting a rotenone project in the reservoir likely would take some time to approve and complete, thus a rigid weir in Elkhead Creek might be considered to document and

preclude escaped fish from reaching the Yampa River and critical habitat downstream.

We visited Thunder Ranch on September 10 and observed hundreds of large common carp swimming with their backs out of the water, but could not confirm presence of northern pike. The maximum depth of the wetland appeared to be less than 1 ft. deep. Under average winter conditions, this wetland would freeze solid and kill any remaining fish. It is likely continued drying into October and average winter conditions will reduce in size and freeze the remaining wetland. We recommend letting environmental conditions determine the fate of the remaining fish and not pursue any more effort to remove northern pike from the wetland.

IX. Project Status: The project is ongoing.

X. FY 2012 Budget Status:

- A. Funds Provided: \$170,664.40
- B. Funds Expended: \$170,664.40
- C. Difference: 0
- D. Percent of the FY 2012 work completed, and projected costs to complete:100
- E. Recovery Program funds spent for publication charges:0

XI. Status of Data Submission: Data will be submitted to Travis Francis, USFWS-Grand Junction CRFP.

XII. Signed: Aaron Webber October 1, 2012
Principal Investigator Date

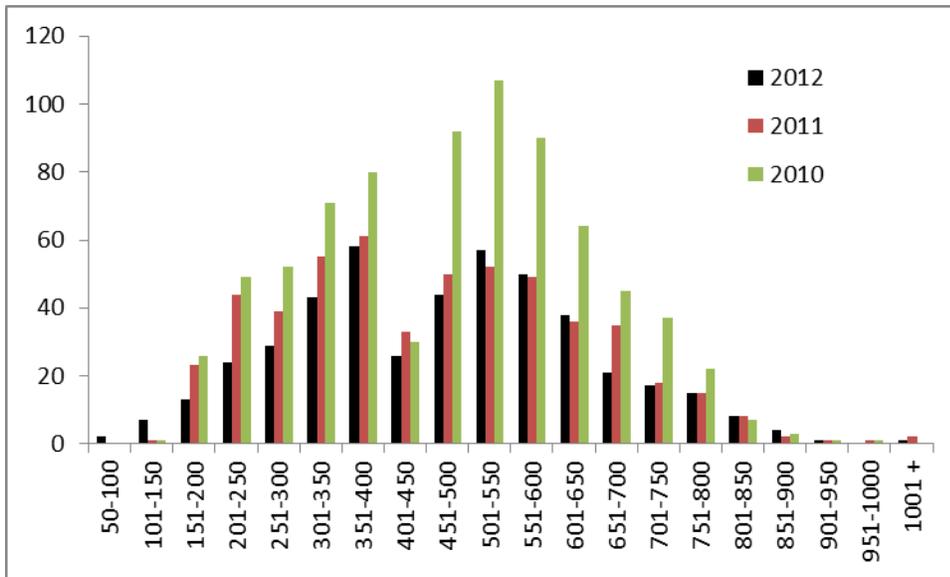


Figure 1. Length frequency (TL mm) of Yampa River northern pike captured 2009-2011.

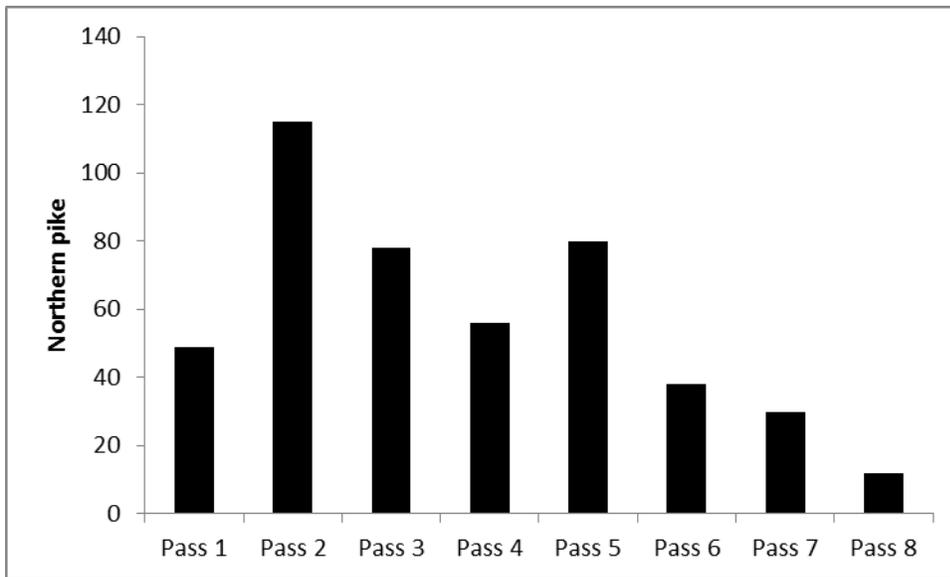


Figure 2. Northern pike captured by pass in the Yampa River, 2012. The entire study area was sampled only through pass 5; passes 6 and 7 consisted of RM 151-135 and pass 8 consisted only of RM 151-143.

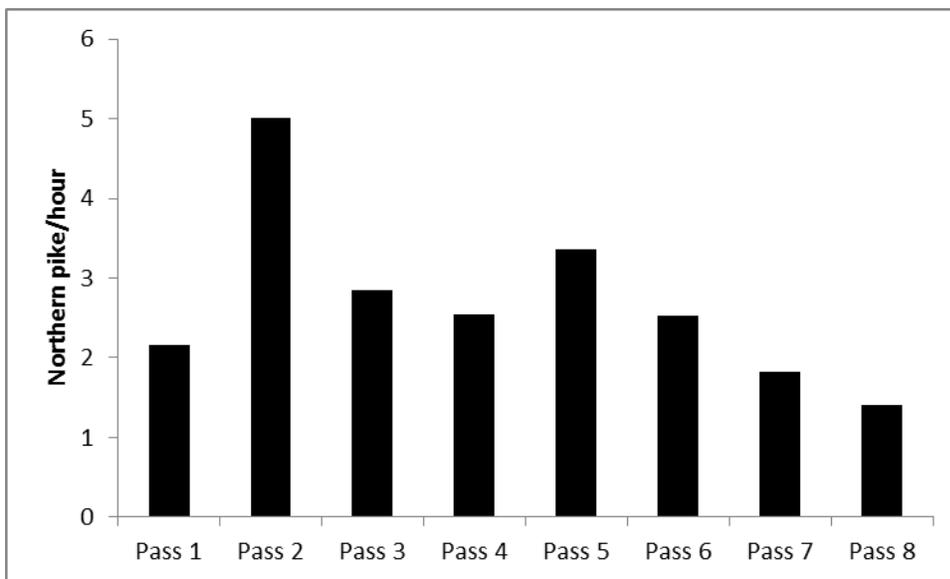


Figure 3. Northern pike captured per hour by pass, Yampa River 2012.

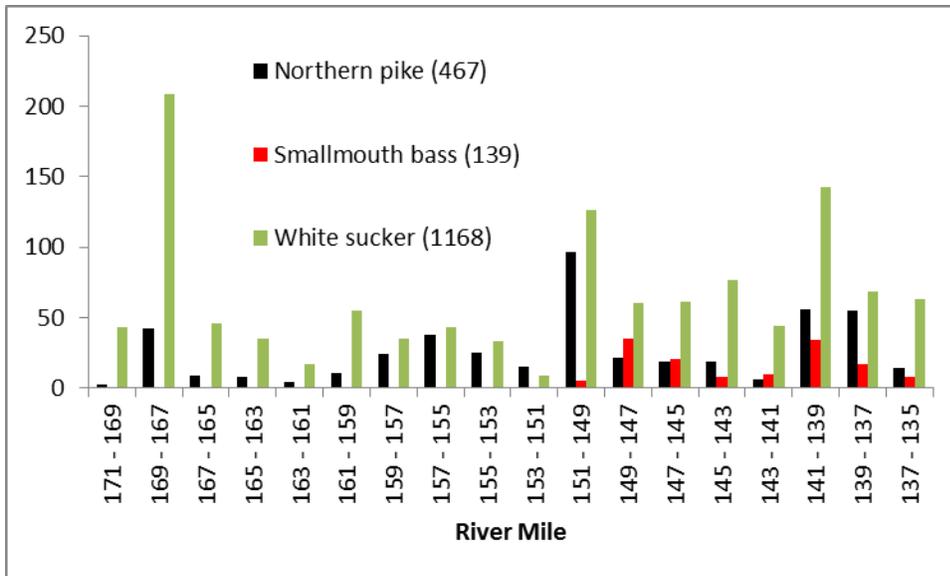


Figure 4. Total number of northern pike, smallmouth bass, and white sucker captured by river mile reach, Yampa River 2012.

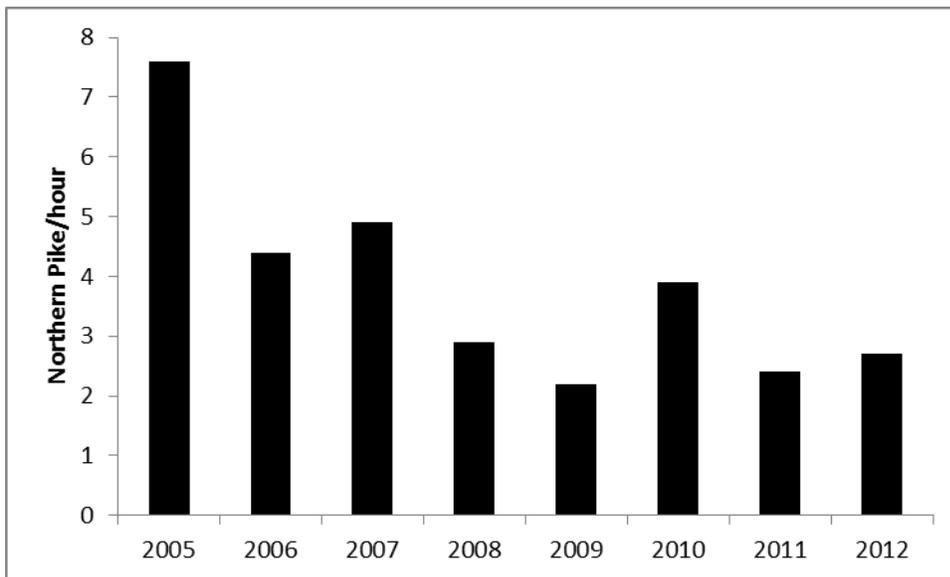


Figure 5. Overall northern pike catch rates by hour, 2005-2012 for project 98b.

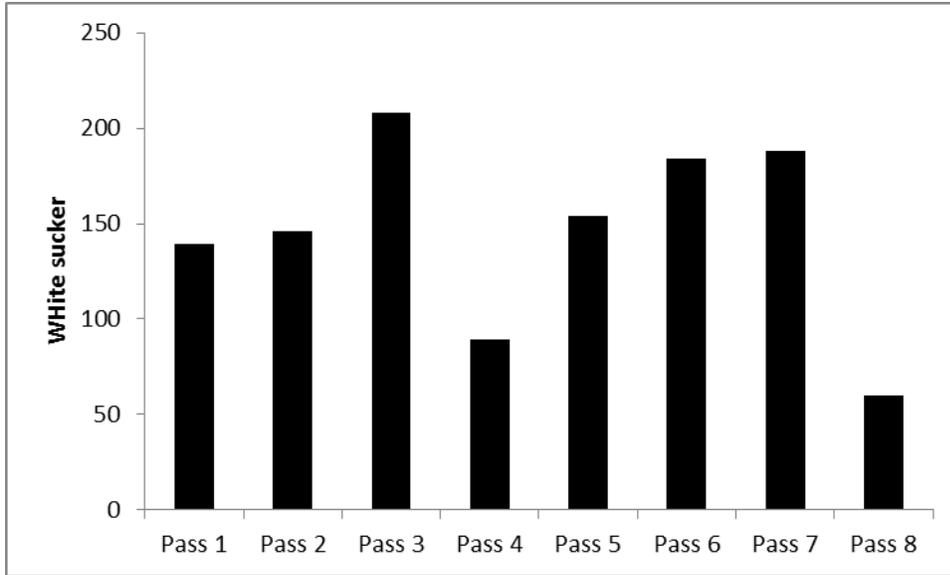


Figure 6. Number of white sucker removed by pass from the Yampa River between Hayden and Craig during 2012 in project 98b.

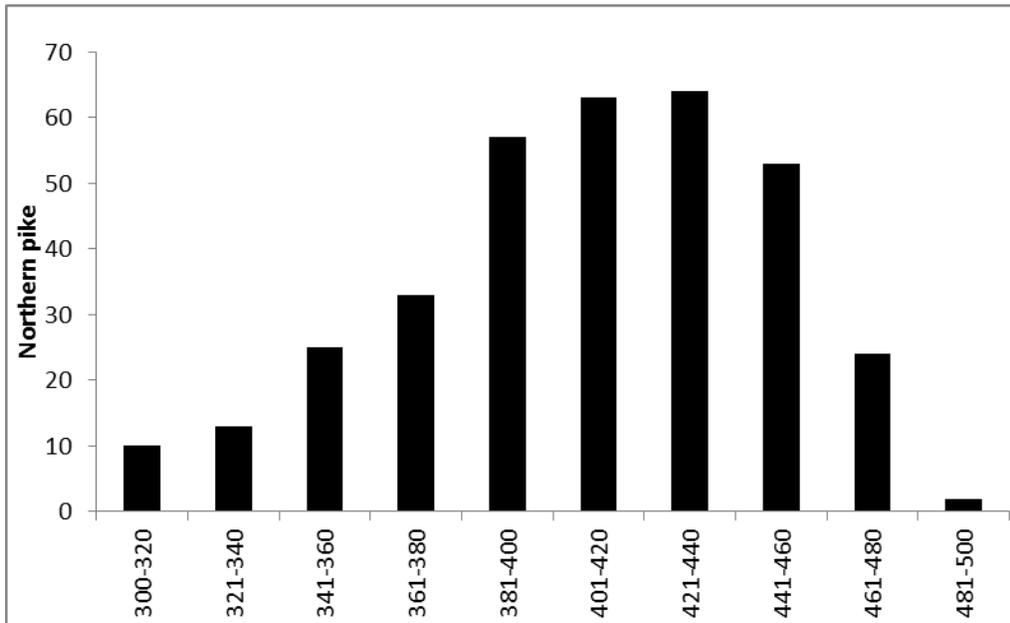


Figure 7. Length frequency of northern pike netted from Thunder Ranch wetland from 3/21-3/31/2012.

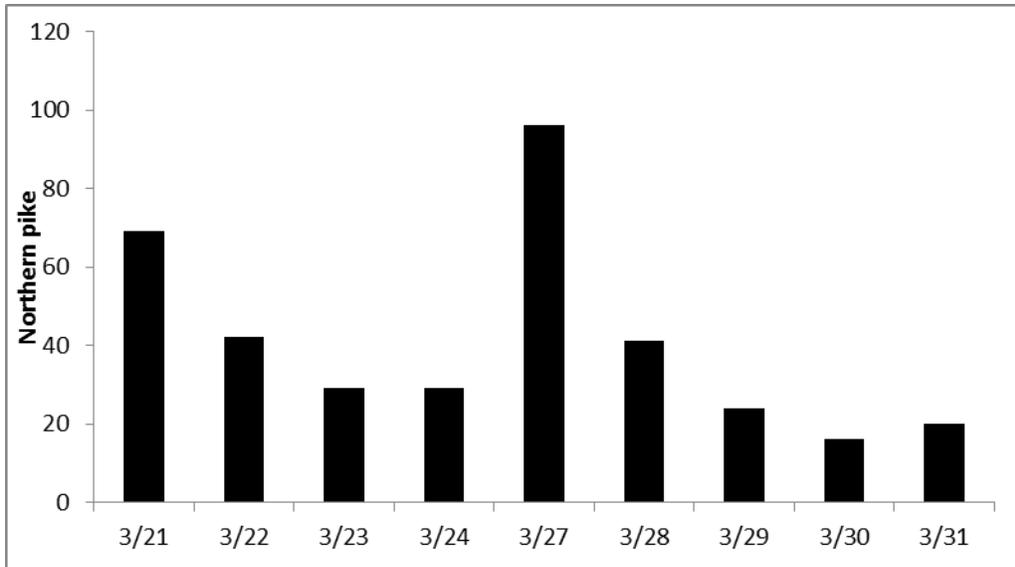


Figure 8. Number of northern pike netted with 5 trammel and 1 gill net in Thunder Ranch wetland from 3/21-3/31/2012.