

**COLORADO RIVER RECOVERY PROGRAM
FY 2007 ANNUAL PROJECT REPORT**

**RECOVERY PROGRAM
PROJECT NUMBER: 150**

I. Project Title: White sucker control in the middle Green River – pilot study

II. Principal Investigator(s):

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III. Project Summary:

The Upper Colorado River Endangered Fish Recovery Program has determined that control of nonnative fish in the upper Colorado River Basin is essential to the recovery of the four endangered fish species: Colorado pikeminnow (*Ptychocheilus lucius*), razorback sucker (*Xyrauchen texanus*), humpback chub (*Gila cypha*), and bonytail (*Gila elegans*). This determination has been documented specifically for razorback sucker in Section 4.3.2 of the Razorback Sucker Recovery Goals (USFWS 2002). No catch information has been collected for adult white sucker (*Catostomus commersonii*), as they are not yet a target species for the Program; however, according to middle Green River young-of-year (YOY) Colorado pikeminnow sampling, abundance of YOY white sucker increased in the Green River over the 2003 to 2005 sampling period. In addition, the species is known to hybridize with razorback sucker, in addition to flannelmouth (*Catostomus latipinnis*) and bluehead sucker (*Catostomus discobolus*). Because of the high risk to native species, this species should be actively controlled in the Green River.

IV. Study Schedule: Initial year - FY - 2007 Final year - FY 2008

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.1.C.1 Implement actions to minimize hybridization between white sucker and razorback sucker.
- III.A.2. Identify and implement viable active control measures.

GREEN RIVER ACTION PLAN: MAINSTEM

III. Reduce impacts of nonnative fishes and sportfish management activities (nonnative and sportfish management).

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.

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

Task 1. One white sucker collecting pass from Split Mountain boat ramp to the White River (UDWR Vernal; June 2007 – 2008).

The white sucker removal pass began on 18 June and ended on 27 June 2007. The pass began at Split Mountain boat ramp and ended at the confluence of the Green and White rivers. Twenty-seven white suckers were removed during this shoreline electrofishing effort. Catch-per-effort (CPE) for white sucker during this pass was 0.78 WS/hour. White sucker were located predominantly within the Split Mountain (RM 319.3) to Jensen Bridge (RM 301.8) reach (20 of 27), but were somewhat scattered throughout the entire study area. Table 1 shows the number of white sucker removed during each project, the average length, range, and the catch-per-unit-effort for that project. The main purpose of this pass was to limit the potential of white sucker to hybridize with native suckers; therefore, our goal is to reduce the overall size of white sucker captured in the middle Green River. Age at maturation studies suggest that white sucker from the White River system in southwestern Missouri begin to spawn at around age-3 or approximately 275mm (Wakefield and Beckman 2005). Number of white sucker greater than 275mm is also included in Table 1 for reference. Figure 1 shows the length frequency for all white suckers by project. Only white sucker from the UDWR, Vernal smallmouth bass removal project (passes 1-6) are shown in the figure.

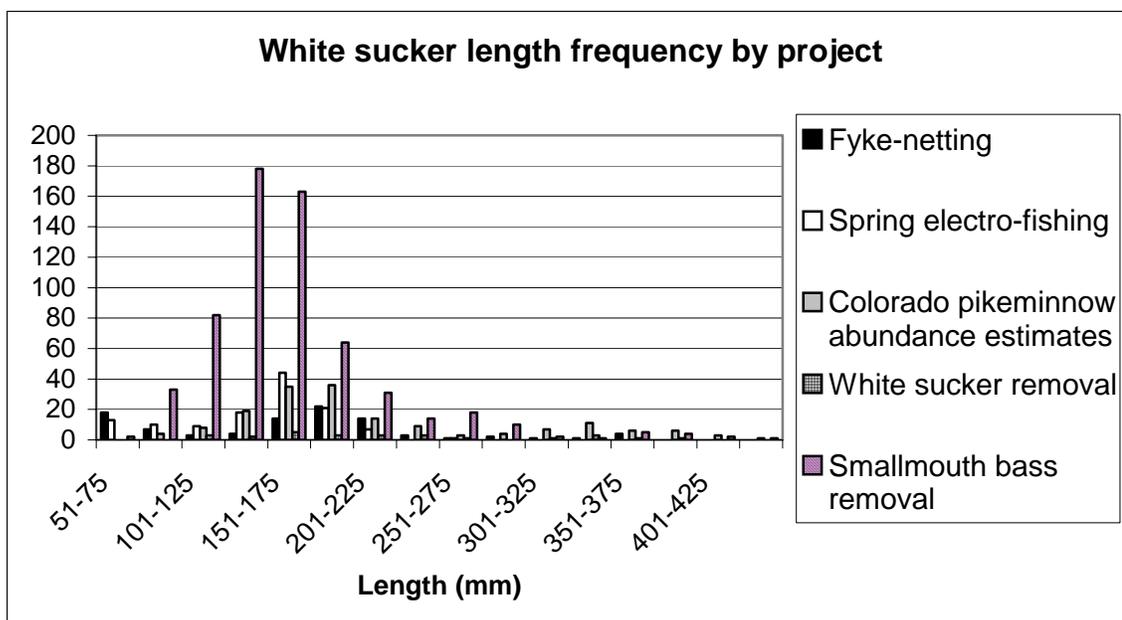
	Number	Average Length (mm)	Range (mm)	CPUE (# WS/hour)	Number > 275mm
Early spring fyke-netting	95	167.1	60-369	8.64*	0
Early spring electrofishing	123	147.2	56-265	43.2	8
Colorado pikeminnow abundance estimates	167	215.3	82-430	1.31	41
White sucker removal	29	225	111-396	0.841	6
Smallmouth bass removal	598	63.5	17-445	5.4**	22

*Effort is actually # WS/fyke net-night (one fyke net set for one night).
 **Does not include effort from Echo Park reach. CPUE would likely increase if this project was included.

Task 2. White sucker incidental take during the smallmouth bass removal project (USFWS CRFP – Vernal, UDWR – Vernal; July – October 2007-2008).

The U.S. Fish and Wildlife Service, Colorado River Fisheries Project (CRFP) and the Utah Division of Wildlife Resources (UDWR), Moab office, completed 15 smallmouth bass removal passes from Echo Park (RM 244) to Split Mountain (RM 318) between June and September 2007. White sucker numbers increased over the removal period, peaked during the 10th pass, and declined thereafter. Over all passes, 673 white suckers were removed. See Table 1.

UDWR, Vernal completed nine smallmouth bass removal passes from July through October, 2007. White sucker numbers stayed relatively low compared with the Echo Park reach; however, 42 white suckers were removed during pass 8, the highest number collected from any pass. A total of 151 white suckers was removed during this effort. See Table 1.



Task 3 (not included in original scope of work). White sucker incidental take during other spring sampling (UDWR – Vernal; March – May 2007-2008).

Crews spent 11 fyke-net nights and 2.85 hours of electrofishing during spring nonnative removal efforts. Most effort was focused in the mouths of Ashley, Brush, and Cliff creeks, and the Stewart Lake drain. In addition, crews spent 127.08 hours shoreline electrofishing during the Colorado pikeminnow abundance estimates. The summary of

these projects is included in other annual reports; therefore, only white suckers removed during these efforts are presented herein.

A total of 385 white suckers were removed from the middle Green River during these two projects. Ninety-five white suckers were collected in fyke nets for a total CPE of 8.64 WS/fyke-net night; 123 white sucker were removed in early spring electrofishing for a CPE of 43.2 WS/hour; and 167 white sucker were removed as bycatch during the Colorado pikeminnow abundance estimate work for a CPE of 1.31 WS/hour. All white sucker collected during these efforts was removed in accordance with state nonnative removal policies. See Table 1.

Task 4. Data entry, analysis, and reporting – October/November 2007-2008

Annual RIP Report (Nov 2007) – Completed and submitted 8 November, 2007

VII. Recommendations:

- Continue removing white sucker captured as incidental take from other projects. In the spring, white sucker tend to congregate in off channel habitats, similar to northern pike; therefore, we should continue white sucker removal during this effort and the pikeminnow abundance estimates (when we saw the most large fish) especially.
- Effort was lowest during the actual white sucker removal pass. Therefore, it is not as important to be on the river in late June as it is at other times of the year (i.e., spring). This pass was also used to tag bluehead and flannelmouth sucker, so it was not a complete waste of time; however, a different time of year might be better for both tasks.
- Age at maturation studies in other parts of the country suggest that maturation occurs at age-3 (approximately 275mm). It is likely slightly different in the Green River; therefore, we may want to pursue such a study for this system.

VIII. Project Status:

On track and ongoing

IX. FY 2007 Budget Status

- A. Funds Provided: \$0 (covered by there species program)
- B. Funds Expended: \$0
- C. Difference: \$0
- D. Percent of the FY 2007 work completed, and projected costs to complete: 100%
- E. Recovery Program funds spent for publication charges: \$0

XI. Signed: Trina Hedrick 11/01/2007
Principal Investigator Date

XII. Literature Cited

Wakefield, C.K. and D.W. Beckman. 2005. Life history attributes of white sucker (*Catostomus commersonii*) in Lake Taneycomo and associated tributaries in southwestern Missouri. *The Southwestern Naturalist* 50:423-434.

U.S. Fish and Wildlife Service. 2002. Colorado pikeminnow (*Ptychocheilus lucius*) recovery goals: amendment and supplement to the humpback chub recovery plan. U.S. Fish and Wildlife Service, Mountain-Prairie Region (6), Denver, Colorado.

U.S. Fish and Wildlife Service. 2002. Razorback sucker (*Xyrauchen texanus*) recovery goals: amendment and supplement to the humpback chub recovery plan. U.S. Fish and Wildlife Service, Mountain-Prairie Region (6), Denver, Colorado.

U.S. Fish and Wildlife Service. 2002. Bonytail (*Gila elegans*) recovery goals: amendment and supplement to the humpback chub recovery plan. U.S. Fish and Wildlife Service, Mountain-Prairie Region (6), Denver, Colorado.