

I. Project title: Removal of channel catfish from the Yampa River

II. Principal Investigators:

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III. Project Summary:

The goal of this project was to reduce channel catfish abundance in the Yampa River Canyon (rm 10-45), and in the process, identify the most effective mechanical method to remove channel catfish. To determine the effectiveness of catfish removal, four strata (each approximately nine miles in length) were selected. Each stratum was divided into treatment (removal) and control (no removal) reaches. In 1998, several gear types (e.g., hoop nets, fyke nets, electroshocking, angling, and trot lines) were used from which electrofishing and angling were determined the most effective for removing channel catfish. In 1998, a total of 1346 catfish weighing 755 pounds were removed. In 1999, eight removal trips (electrofishing and angling) were made through Yampa Canyon between 28 June and 10 September. A total of 3076 channel catfish weighing 1951 pounds were removed. On the last trip, catch per angling hour data was collected in all treatment and control sections. Preliminary results showed that in the fall the treatment sections had fewer fish than the control sections in three of the four reaches and that catfish populations were reduced 60 - 80 percent. 1999 was the last field season.

IV. Study Schedule:

a: Initial year: 1998

b: Final year: 1999

V. Relationship to RIPRAP:

Green River Action Plan: Yampa and Snake Rivers

III.B.3. Nonnative fish removal in Yampa Canyon.

VI. Accomplishment of FY 99 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

From July to September, 1999, eight sampling trips in the Yampa River were completed. During the first two trips electrofishing and angling were used to remove 330 channel catfish from the four treatment reaches (17.5 total river miles); thereafter electrofishing was discontinued due to low flows. During the next six trips Fish and Wildlife Service staff and volunteer anglers removed 2,518 channel catfish from treatment reaches and 558 channel catfish from control reaches; a total of 3,076 channel catfish were removed. The last two sampling trips (August 30-September 10) were used to compare the catch per unit of effort (catch/angling hour) between treatment and control reaches. Two trips were required to sample each of the treatment and control reaches. An analysis of variance confirmed significantly higher CPUE data in control areas (areas where fish were not removed prior to the end of the study).

Mean Angling CPUE	Treatment	Control
Reach 1	3.50	5.14
Reach 2	2.06	4.84
Reach 3	2.17	4.14
Reach 4	1.56	5.05

Population size in each treatment reach was estimated using regression (removal based estimate comparing total captures with CPUE per trip). Estimates were determined from three of the four treatment reaches. Among these three reaches, channel catfish populations were reduced by 68.4% (reach 2), 59.6% (reach 3), and 83.3% (reach 4), respectively. Population size of channel catfish in Yampa Canyon was much lower than expected, and appeared to be vulnerable to capture by angling during the baseflow period when reduced flows concentrate fish, increasing their vulnerability to removal efforts.

VII. Recommendations:

Data will be summarized and analyzed and the final report will be prepared. The results of this study indicates that removal of significant numbers of channel catfish from the Yampa River is possible. We recommend that removal efforts of channel catfish from the Yampa River in Dinosaur National Monument (DNM) be initiated to remove catfish from the river above Warm Springs (rmi 4.0) in humpback chub occupied habitat. Such an effort would require close coordination and approval from DNM. Although it appears possible to significantly reduce the population size of channel catfish from the Yampa River in DMN, we need to determine that removal will positively impact humpback chub populations in the canyon. Therefore, we propose that following initiation of channel

catfish removal in the Yampa River, a monitoring effort be continued to determine if humpback chub in Yampa Canyon positively response to catfish removal.

VIII. Project Status:

This project is on track.

IX. FY 99 Budget Status:

		Service, <u>Vernal</u>	<u>Total</u>
A.	Funds Provided:	90.8K	90.8K
B.	Funds Expended:	90.8K	90.8K
C.	Difference:	0	0
D.	Recovery Program funds spent for publication charges: \$0.00		

X. Status of Data Submission:

Data has not been submitted to the database manger. Findings of 1998 and 1999 activities have been presented in a progress. A comprehensive report of findings from 1999 field season activities will be prepared by August, 2000. Data is being entered in dBASE files and will be submitted to the program database manager upon completion of the study.

XI. Signed: Timothy Modde 12/7/99
 Principal Investigator Date