

I. Project Title: **Evaluation of Stocking Sub-adult Colorado pikeminnow via Translocation in the Upper Colorado River between Palisade and Rifle, Colorado**

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III. Project Summary:

The overall goal of this project is to evaluate if translocated, wild and hatchery-reared sub-adult Colorado pikeminnow implanted with radiotags remain in the immediate vicinity of stocking, or move upstream or downstream of the stocking site in the Upper Colorado River from Rifle to Palisade, Colorado.

Monitoring Colorado pikeminnow that had been implanted with radio transmitters in 2001 from boats and automatic data logging stations continued until early-September 2002. A draft final report which was due on 1 August 2002 was forwarded to the Upper Colorado River Endangered Fish Recovery Program propagation and genetics coordinator for review on time. Revisions were made to the report and the report was sent to three peer reviewers and the Biology Committee on 7 October 2002 for review and comment. The principal investigator is completing revisions to the report from comments provided by the peer reviewers. Review of this report and approval by the Biology Committee is anticipated in early-2003; completion and distribution of the final report is anticipated sometime in the first quarter of 2003.

IV. Study Schedule:
a. initial year: 2000
b. final year: 2002

V. Relationship to RIPRAP:

Colorado River Action Plan: Mainstem

IV.A. Augment or restore populations as needed, and as guided by the Genetics

Management Plan.

IV. A. 1.b.(2) Monitor and evaluate results; make recommendations regarding further augmentation.

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

A. FY-2002 Tasks and Deliverables: Tasks 2, 3, and 4.

Task 2: Monitor movements of radiotagged fish
Task Completed.

Task 3: Deploy and maintain water temperature data loggers
Task Partially Completed.

Task 4: a) Prepare annual progress report; b) prepare draft and final report
Tasks Completed.

B. Findings:

2002 Field Investigations

Water Temperature. Temperature data from 22 May 2000 to 13 March 2001 were recorded and downloaded in the Upper Colorado River at RMs 199.7 (Una) and 242.7 (upstream from the Rifle Bridge). However, temperature data recorded at these same two sites from 23 March through September 2002 could not be downloaded because low water precluded access by boat and access via private property could not be obtained. Therefore, this objective (task 3) could not be completely achieved.

Radio Tracking. Monitoring Colorado pikeminnow that had been implanted with radio transmitters in 2001 from boats and automatic data logging stations continued until early-September 2002. The decision was made to leave the three land-based tracking stations in place longer than originally scheduled. The reason for this was that 2002 was an extremely low-water year and it was anticipated that most of the river flow would be diverted into the Government Highline Canal. Moreover, most, if not all, of the river flow, downstream, at the Grand Valley Irrigation Dam at Palisade would be diverted into their canal following runoff. Radio-tagged Colorado pikeminnow that showed a tendency to move downstream might move into and be entrained into these canals. Therefore, it was felt that monitoring the movements of these fish in the river and possibly into the diversion canals should be extended into the summer of 2002 to obtain additional fish-use data and document the possible perishing of listed fish in these canals.

1. Four days were spent in late-March and early-April 2002 tracking radio-tagged Colorado pikeminnow from boats and vehicles. The river reaches of the Upper Colorado that were searched included river miles 232.1 (upstream of Rulison Bridge) to 193.7 (immediately upstream of the Government Highline Diversion Dam in Debeque Canyon). The section of the Upper Colorado River immediately downstream from Price-Stubb Dam (river mile 188.1) to Government Highline Dam was also searched by vehicle.
2. Four days in early-June were used to track river reaches of the Upper Colorado River from a boat. The reaches searched included: 1) Rulison Bridge (river mile 229.9) to Government Highline Diversion Dam, and 2) Grand Valley Irrigation Diversion Dam at Palisade (river mile 185.4) to Redlands Parkway (river mile 166.7).
3. Two days in early-September were spent tracking the Grand Valley Water User's and Orchard Mesa Power canals by vehicle.

Conclusions (taken from the draft final report)

1. Movement was predominantly, but gradually downstream from the release site following stocking for wild radio-tagged Colorado pikeminnow.
2. Post-stocking survival was poor for the 1991 year-class of domestic-reared Colorado pikeminnow that were radio tagged, presumably, as a result of time they were held in the "kettle" at Horsethief.
3. Eight Colorado pikeminnow moved into local irrigation canals (seven into Government Highline, one into Grand Valley Irrigation Canal). At least 50% of the Colorado pikeminnow that moved downstream as far as the Government Highline Diversion Dam moved into this irrigation canal (one of two fish during 2000; six of 12 fish during 2001). Of the seven fish that moved into the Government Highline Canal, five wild adult Colorado pikeminnow eventually perished.
4. Seven Colorado pikeminnow released upstream of the Government Highline Diversion Dam in 2001 remained upstream of the dam.

VII. Recommendations: (from the draft final report)

1. Screen the Government Highline Canal prior to or concurrent with construction of the fishway at the Government Highline Diversion Dam.

2. Retrofit the Redlands Power Canal that diverts water from the Gunnison River with a fish screen as soon as possible to eliminate the possibility of both sub-adult and adult Colorado pikeminnow and stocked razorback sucker that have ascended the fishway and that have been released upstream of the dam from moving into and perishing in this canal system.
3. Monitor the effectiveness of screens in these canals and modify the design and operations as needed.
4. Postpone any stocking or re-locating of listed species upstream from Government Highline Dam on the Upper Colorado River and Redlands Diversion Dam on the Gunnison River until fish screens are operational.
5. Continue to stock domestic-reared razorback sucker harvested from grow-out ponds in the Grand Valley, preferably downstream from the confluence of the Colorado and Gunnison rivers, until fish screens are in place in the above mentioned canals.
6. Collect fish-use information at the trapping facility at the upstream end of the fish passageway planned for Government Highline Dam to determine use of the fishway by Colorado pikeminnow and razorback sucker.
7. Radio-tag Colorado pikeminnow that are collected in the fish trap of the Government

Highline fishway; monitor movement following their release upstream of the dam, and determine the extent of upstream movement and retention in the Upper Colorado River. Radio tagging smaller adult Colorado pikeminnow (e.g., 450–500 mm), could provide the opportunity to further test the hypothesis that smaller Colorado pikeminnow would remain in upstream reaches and are better suited to establish residency than larger adult Colorado pikeminnow (> 500 mm)

8. Monitor any fallback by Colorado pikeminnow over the Government Highline Diversion Dam.
9. Continue to record river water temperatures at Una, Rulison Bridge, and immediately upstream of the Rifle Bridge to establish a water temperature database for reaches between Government Highline Diversion Dam and Rifle. These data will complement the water temperature data that are currently recorded at the USGS gage in Debeque Canyon. Water temperature data could be used to determine if river water temperatures limit the success of Colorado pikeminnow establishing residency and home ranges or spawning in reaches of the Upper Colorado River upstream of Government Highline Dam.

VIII. Project Status:

- A. Project has been completed.
- B. Completion and distribution of the final report is anticipated sometime in the first quarter of 2003.

IX. FY 2002 Budget Status

- A. Funds Provided: \$ 13,000
- B. Funds Expended: \$ 13,000
- C. Difference: \$ -0-
- D. Percent of the FY 2002 work completed, and projected costs to complete: N/A.
- E. Recovery Program funds spent for publication charges: \$ -0- in FY-2002; Anticipated to be about \$1,000 in FY-2003 to print and distribute final report.

X. Status of Data Submission (Where applicable):

- A. Records of all Colorado pikeminnow that were captured during this study and PIT-tagged were computerized and have been provided to the UCRB database manager in Grand Junction, Colorado.

XI. Signed: Bob D. Burdick 12/9/2002
Principal Investigator Date

APPENDIX:

- A. More comprehensive/final project reports. If distributed previously, simply reference the document or report. None.

Prepared and compiled by Bob D. Burdick, 12/09/2002

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