

I. Project Title: Colorado non-native fish stocking regulations evaluation

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III. Project Summary:

The "Procedures for stocking nonnative fish species in the upper Colorado River basin" were adopted by the state wildlife agencies of Colorado, Utah and Wyoming, and the U.S. Fish and Wildlife Service, Region 6, in 1996. Colorado addressed the requirement to "ensure that all State and private stocking of nonnative fishes in the upper Colorado River basin is in compliance with the Procedures" in 1999, by restricting fish stocking in waters below 6,500 feet in elevation in the Colorado, Gunnison, White, Yampa, and Green river basins. These regulations, in conjunction with the existing lake license permit regulations, serve to meet the intent of the Procedures. The Colorado Wildlife Commission conditioned their approval of these new stocking regulations by requiring an evaluation of the regulations' effectiveness in achieving a biological response. The Colorado Division of Wildlife developed a Geographic Information System (GIS) approach and criteria upon which this evaluation will be based and entered into a contract with the Wyoming Geographic Information Science Center, University of Wyoming, Laramie, for spatial depiction and analyses of data sets.

IV. Study Schedule: 2000-2003

V. Relationship to RIPRAP:

GENERAL RECOVERY PROGRAM SUPPORT ACTION PLAN

III. Reduce negative impacts of nonnative fishes and sportfish management activities.

III.B. Reduce negative impacts to endangered fishes from sportfish management activities.

III.B.4.a.(1) Evaluate effectiveness of Colorado's stocking regulations.

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

Task 1. Determine number and distribution of pond, lake, and reservoir resources within the 6,500-foot elevation boundary surrounding critical habitat reaches of the Gunnison and Colorado rivers.

Task complete. Digital format and documentation for this information will be available upon project completion.

Task 2. Determine the locations of ponds and riverine backwaters involved in nonnative fish control treatments.

Task complete for Colorado River. Digital location of ponds by treatment category is near completion for Gunnison River.

Task 3. Determine species composition and stocking records of these ponds, lakes and reservoirs from available records.

Goal to obtain complete 1998–2000 stocking records for nonnative nonsalmonid fish from private sector via a request for voluntary submission of data for date, site, species number and size of fishes stocked not achieved. An estimated two thirds of these private stocking data remain extant, but unavailable due to statute of limitations on requirement for vendors to maintain these records for Colorado Division of Wildlife inspection. Another major limitation of some data is the lack of explicit information needed to assign spatial coordinates for stocking locations within one-square-mile. Thus, the ability to perform pre- and post- nonnative fish stocking regulation implementation analyses or spatial proximity and cluster analyses is compromised. As a result, exactly where some stocking events occurred remains unknown and excludes these data from spatial depiction or analyses. Available data will be presented along with other data including lake license, stocking permit and agency stocking records for nonnative nonsalmonid fishes.

Task 4. Determine distribution and/or density of regulated species within Task 1 study area and mainstem rivers from available records.

A visual spatial comparison of nonnative species of interest has been devised to illustrate potential relationships to floodplain ponds and backwater distribution and concentrations of these species.

Task 5. Determine the location of waters and species stocked by private landowners receiving CDOW lake license permits. Determine the location of waters and species requested by private landowners for which CDOW lake license permits were denied.

Summaries of available data for both components of this task are complete.

Task 6. Determine the change in backwater distribution and density of regulated nonnative fish species and native fish species in the Colorado River from river mile 185 to 152 via the backwater seining nonnative fish control project (87B), electrofishing control project (89), and riverine monitoring of nonnative fish control in Colorado and Gunnison River floodplain ponds (C-18/19). Years 2000–2003.

Inconsistencies in fish collection methods (electrofishing vs. seining, backwater selection criteria, fish sampling vs. depletion) limit direct statistical comparisons of indices of target

species abundance between studies and years. The most comparable sampling schemes (sampling method, intensity, pass) will be compared in an attempt to identify changes in distribution and density of selected species in the Grand Valley reach of the Colorado River. Another comparison of all fish of selected species caught by various studies will be made in a comprehensive effort to further identify “hot spots” with potential management or research significance.

Task 7. Conduct a risk assessment of stocking as a significant pathway for introduction into Colorado River endangered fish critical habitat using the “Generic Nonindigenous Aquatic Organism Risk Analysis Review Process” (Risk Assessment and Management Committee. 1996. Generic nonindigenous aquatic organisms risk analysis review process. Report to the Aquatic Nuisance Species Task Force. 24pp.).

Due to the known incompleteness of private stocking records prior to the implementation of Colorado Nonnative Fish Stocking Procedures, a full-scale risk assessment, as outlined in the scope-of-work, will not be performed. Some components may be addressed and projections made via other indices based on available spatial data and trends.

VII. Recommendations:

CDOW should continue the spatial tracking of annual nonnative nonsalmonid stocking data in order to monitor this activity in relation to recovery efforts. Coordination between CDOW’s licensing and permitting staff and their respective record storage and retrieval systems for private stocking should be prioritized, stressing the annual reporting of nonsalmonid stocking to the USFWS to comply with the Stocking Procedures.

Future reporting of nonnative fish stocking should require explicit site details to facilitate digital spatial location of species-specific stocking data. Stocking permits continue to be issued that lack adequate information to identify receiving waters for nonsalmonids. Scrutiny should be applied to fish importation permits with generic or statewide destinations to identify if the fish are destined for the upper Colorado River basin. Documenting stocking activity by out-of-state vendors of nonnative, nonsalmonid fishes remains vague, as no method presently exists to detect all such transactions or acquire records of such stocking activity.

Current regulations for stocking nonsalmonids above 6,500’ within the UCRB, and anywhere within the San Juan Basin may allow stocking activity to occur without reporting of stocking details, including location. These deficiencies in documenting potential sources of nonnative fish reaching critical habitat, including potential stocking of nonsalmonids directly into streams and rivers in these areas, should be discussed and addressed to maximize the effectiveness of the GIS framework to track stocking activity related to protection and recovery of native fishes.

There presently is a lack of readily comparable data to quantify the distribution and abundance of regularly stocked fish species in backwaters, particularly within the pond concentrations of the Grand Valley reach of the Colorado River. This lack of data to track centrarchids and other stocked fishes that take up residence in backwaters precludes ongoing

evaluations of the effectiveness of stocking/screening regulations in controlling their numbers and their implications for recovery of native fishes. Such a monitoring program, as directed by the Stocking Procedures, should be developed and implemented.

VIII. Project Status: Draft final report will be prepared and submitted by June 30, 2003.

IX. FY 2002 Budget Status

- A. Funds Provided: \$40,193
- B. Funds Expended: \$ 2,500 expended, \$6,000 obligated.
- C. Difference: \$31,693 (Risk Assessment Panel will not be convened).
- D. Percent of the FY 2002 work completed, and projected costs to complete:
- E. Recovery Program funds spent for publication charges: None to date.

X. Status of Data Submission (Where applicable): Not applicable.

XI. Patrick J. Martinez 12 December 2002
Name **Date**