

COLORADO RIVER RECOVERY PROGRAM  
FY 2012 ANNUAL PROJECT REPORT

RECOVERY PROGRAM  
PROJECT NUMBER: 15

I. Project Title: Identification and Curation of Larval and Juvenile Fish by Colorado State University Larval Fish Laboratory.

II. Bureau of Reclamation Agreement Number(s): 09FGT402858, Mod 004

Project/Grant Period: Start date (Mo/Day/Yr): 12/10/08  
End date: (Mo/Day/Yr): 11/30/13  
Reporting period end date: 09/30/12  
Is this the final report? Yes \_\_\_\_\_ No X

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IV. Abstract: This ongoing project provides (1) Larval Fish Laboratory (LFL) taxonomic, analytical, and curatorial services for specific Recovery Program projects, (2) incidental taxonomic services and consultation, and (3) cataloging of other Upper Colorado River Basin (UCRB) collections and ongoing maintenance and management (curation) of the LFL Collection, including controlled access to and use of collection holdings and data by UCRB and other researchers. These tasks are accomplished as soon as possible after respective sets of collections or requests are received.

V. Study Schedule: Ongoing project since 1995. Specified project collections are identified and processed annually and the resultant data provided to the principal investigator as soon as logistically possible after the collections are received. These currently include collections for Projects 22F (Task 1a, Yampa, Middle-Green, and White River Colorado pikeminnow and razorback sucker larval abundance, 158 (Task 1b, sampling middle Green River drift and backwaters for Age-0 Colorado pikeminnow), 160 (Task 1c, light-trap and seine sampling in lower Green River for age-0 razorback sucker), and additional samples associated with Green River data collection for floodplain wetland sampling (Task 1d, larval trigger study), as well as otolith analyses in for Project 161 (Task 1e, age-0 smallmouth bass from the Colorado River). General collection maintenance activities (e.g., fluid level and container checks) are conducted annually; other maintenance and management concerns are addressed as needed, and newly deposited and backlog collections are cataloged as time permits (Task 2). Responses to requests for loans, collection use, or information on collection holdings, sampling, sample preservation and handling, and taxonomy also are provided as needed.

- VI. Relationship to RIPRAP: This project is related to General Recovery Program Support Action Plan V (monitor populations and habitat and conduct research to support recovery actions—research, monitoring, and data management). Identification and processing of Project 22F, 158, 160, FR 164, and FR 165 collections and otolith analyses for Project 161 contribute to Tasks V.A (measure and document population and habitat parameters to determine status and biological response to recovery actions) and V.B (conduct research to acquire needed life history information). The remainder of the project specifically addresses Task V.E (provide for long-term care, cataloging, and accessibility of preserved specimens) and, in that preserved specimens are the ultimate natural history database, contributes to Task V.A.1 (conduct interagency data management program to compile, manage, and maintain all research and monitoring data collected by the Recovery Program).
- VII. Accomplishments of FY 2012 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

Task 1, Taxonomic Services—For Task 1a, Project 22F, we processed 182 preserved 2011 drift-net collections from the Yampa River in Echo Park (725 lots, 4,954 specimens) and 328 preserved 2011 razorback sucker light-trap collections from the Green River (911 lots, 22,140 specimens). For Task 1b, we did not receive any 2011 drift-net collections at Split Mountain, but processed 86 preserved 2011 backwater collections from the middle Green River (261 lots, 20,733 specimens). For Task 1c, we did receive 2011 light-trap and seine collections from the lower Green River which were completed and results sent to investigators. Regarding Task 1d, otolith analyses, which were delayed, are now underway after field samples were delivered. Results have been forwarded to the responsible investigators for analysis and reporting and all processed specimens have been catalogued and shelved as part of the LFL Collection.

Shortcomings—Lower Green River razorback collection data has not yet been submitted, collection properly cataloged and shelved as part of Task 1c. Work on Task 1c will continue in winter 2012–2013.

Shortcomings—The requisite field data for those catalog records has not yet been verified by Project 160 researchers. Work on Task 1e will continue in winter 2012–2013.

Task 2, Ongoing Collection Maintenance and Management—As of September 30<sup>th</sup>, we have: (1) added a total of 2,763 lots of fish (69,780 specimens) from UCRB collections or investigations to the catalogued collection (Appendix A), (2) submitted an updated *Access* database version of our catalog records through FY 2011 (selected fields, flat file) to the Interagency Database Management Program (IDMP) archive, (3) made collection holdings and selected data available to UCRB researchers and other interested parties, including specimens used for developmental study of cyprinid larvae for Project 149 and inventory checks requested by the NPS, (4) responded to incidental requests from UCRB researchers for taxonomic assistance or consultation on larval-fish sampling and collection handling matters, (5) corrected incidentally found errors in our catalog database, and (6) conducted an annual fluid level and condition check of our holdings. As of 30 September 2012, we maintain and manage 114,754 lots of cataloged fish (3,729,165 specimens) collected from the UCRB or used for UCRB Recovery Program investigations. These holdings represent about 95% of all LFL cataloged lots (96% of catalogued specimens).

No significant progress was made in FY 2012 towards plans for housing the LFL Collection and other natural history collections on campus together as a university natural history museum. The project awaits approval and adequate development-grant funding.

Shortcomings—Resolution of some data entry problems and cataloging of some backlog collections have been deferred to FY 2013.

VIII. Recommendations: We recommend continued annual support of Project 15 with sufficient funds for processing newly preserved collections covered by this project, incidental taxonomic services and consultation, and on-going maintenance and management (curation) of all UCRB specimens held by LFL.

IX. Project Status: On-track and ongoing.

X. FY 2012 Budget Status

A. Funds Provided: \$152,742

B. Funds Expended: \$121,387

C. Difference: \$31,355

Explanation: Additional work remains to accomplish 2012 task; see Section VI.

D. Percent of FY 2012 work completed and projected costs to complete: about 75% of work completed; funds are sufficient to complete tasks. .

E. Recovery Program funds spent for publication charges: \$0

XI. Status of Data Submission (Where applicable): Data for Project 22F 2011 collections were internally submitted to Kevin Bestgen and data for projects 158, 160, and 161 were distributed to PI's. An updated *Access* database version of our catalog for UCRB holdings (selected fields, flat file) through FY 2011 was submitted to the IDMP archive on November 11, 2011.

XII. Signed: Darrel E. Snyder 11 November 2012  
Principal Investigator Date

Signed: Sean C. Seal 11 November 2012  
Principal Investigator Date

Signed: Kevin R. Bestgen 11 November 2012  
Principal Investigator, Date  
Project Manager

APPENDIX A:

Study-year sets of Upper Colorado River Basin collection-species lots cataloged as part of the Colorado State University Larval Fish Laboratory Collection from October 1, 2011 through September 30, 2012 (2,763 lots; 69,780 specimens).

Catalog No.	Field Numbers	Description of Sample Sets
47664-669	(non-UCRB collection)	
99640-654	UDWR-11GR-UI010 to UI077, UIST1 and UIST2	11UDWR Unidentified fish/samples
118063-087	(non-UCRB collection)	
118088-348	UDWR-10GR-BW01 to BW23	10 SN, Green R, Backwater Eval, UT
118349-811	(non-UCRB collection)	
118812-990	LFL-11YA-SBF101 to SBF	11 Small-bodied fish, EL/SN, Yampa R, CO
118992-9902	FWS/V-11RZ-001 to 553, 555, UNK	11 Larvae, RZ LT, Green R., Vernal, UT
119905-958	LFL-12CAID-CO01 to CO03, GR01 to GR10,WH01 to WH05	12 Catostomid Identification Workshop, Colorado, Green and White River
119959-20683	LFL-11YA-7022 to 8263	11 Larvae, DR, Yampa R, Echo Pk,DNM,CO
120690-1307	LFL-11GR-LW001 to LW048	11 SN, Green R, Lodore-Whirlpool, CO, UT