

I. Project Title: **Upper Basin Database**

II. Principal Investigator(s):

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III. Project Summary:

Development of a centralized database was a requirement of the Recovery Program when it was formed in 1986. All researchers who receive funding through the Recovery Program are required to submit all fishery data to the central database at the completion of their study. In addition, all researchers are required to submit a complete list of all endangered fish handled each year to the central database. Guidelines for the annual tagging list are circulated to researchers each year. A consolidated tagging list is compiled and distributed after tagging data are received from all researchers.

Most of the UCRB database consists of the 'all fish' data collected during the different investigations funded by the Recovery Program. These data relate to species, number collection date, site, gear, effort expended, habitat and any other parameter associated with collection of that fish. Only field fish-collection data or radiotelemetry data are required to be submitted. The Recovery Program does not require submitting data from invertebrate, geomorphology, hatchery or laboratory studies. All fishery data associated with a study are due to the database when the final report is approved by the Recovery Program.

All data are stored in individual dBASE files according to project and year(s) of collection. Data are not combined into one large database because of the wide variety of studies and study designs used. A list of field names and data codes has been prepared to guide database development. Investigators who use dBASE and field names and codes from the list do not need to provide any further documentation about the data file. However, any fields not described in the List of Field Names must be fully documented when the file is submitted. Because of the wide variety of study designs file structures vary widely, but all data of the same type are contained in fields with the same name and structure (e. g. the river where sampling occurred is

identified by the same two-digit code in a field named 'RIVER'). Investigators may also submit their data as delimited ASCII files or spreadsheet files. However, these files must contain only raw data aligned in rows and columns suitable for importing into dBASE or another database program. The data codes or numeric format must conform to the list of codes mentioned above. Investigators must also submit complete documentation describing the contents of the file.

The database manager checks each file to ensure that the data conform to the required format and prepares one page of documentation for each file received. The documentation includes name of principal contact, river where data were collected, year of data collection, a brief summary of the study design, description of the data file itself (i.e. field names and description of contents, data codes, etc), and a list of the major reports or publications that are associated with the data file. Future users will be referred to the reports for a complete description of the study design and conclusions of the original researchers.

The database manager also distributes PIT tags to researchers as they request them and maintains a list of all tags and who they are distributed to. PIT tag lists submitted by researchers are compared with this database to identify transcription errors. All errors can not be corrected, but at least a few errors can be eliminated before they are included in the basin-wide tagging list. Other errors are corrected when they are identified.

- IV. Study Schedule: Scheduled to continue for the length of the Recovery Program.
- V. Relationship to RIPRAP: General Recovery Program Support Action Plan.
 - V.A.2. Conduct interagency data management program to compile, manage, and maintain, all research and monitoring data collected by the Recovery Program.
- VI. Accomplishment of FY 05 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

Database Management

PIT tags have been distributed as researchers and hatchery managers have requested them. Beginning in 2004, the new 134 khz tags were distributed in small numbers. So far, the new tags were used in the Colorado River Colorado pikeminnow population estimate and in the Westwater Canyon and Cataract Canyon humpback chub population estimates. Beginning in 2005 all hatchery-reared razorback were equipped with the new tags. Hatchery-reared bonytail were equipped with a combination of the new and old tags. All fish from now on will be equipped with the

new tags. Investigators will have to carry both old and new tag readers for the foreseeable future until enough time has elapsed for fish with the older tags to be recaptured and re-tagged or to die.

The Colorado pikeminnow, razorback sucker, and Gila sp tagging lists were updated through 2004. Tagging data from 2005 will be updated over the coming winter. Stocking databases were also updated through 2004.

Considerable time was spent on switching from the old dBase system to a system based on Access (Microsoft). Most people have not used dBase for quite some time. Data files have been submitted in spreadsheets — Excel or Quattro Pro. However, spreadsheets have upper limits on the number of records that can be contained in a single file and some of the tagging lists have now exceeded that number.

All tagging lists and stocking lists have now been converted to Access, although investigators still submit their data in Excel. Over the years, investigators drifted away from a standard format. Therefore, a revised format was developed in Excel and transmitted to investigators for 2005. The revised format will facilitate rapid incorporation of new data into the database.

All PIT tag numbers received were checked for possible errors by comparing the list of incoming PIT tag numbers with a list of all PIT tags issued. Several minor errors were found and clarified with the original investigators. In the past, the only checking done was to check validity of PIT tag numbers. Beginning in 2000, checks were made on major codes included with the data to ensure consistency with established guidelines. A few inconsistencies were found and corrected. However, by and large the tagging data submitted by researchers is in very good shape when received for inclusion in the data base.

Considerable effort went in to summarizing recapture information of stocked razorback suckers and bonytail. A draft report will be available soon.

Efforts have begun to start bringing the 'other fish' data into consolidated Access files. They currently reside in a variety of Excel, Dbase, and Quattro Pro files. This will be a more complicated process because of the wide variety of data types that fall into this broad category. Access is more complicated program than the spread sheets currently used, but will ultimately be much more useful for the recovery program.

Investigators are not as good at submitting the 'other fish' data as the rare fish data, so I need to update that information. In addition, I need to update the list of studies that have data included in the database. Work on updating the database is ongoing.

- VII. Recommendations: Continue the transition to Access. Continue to search for data to add to the database.
- VIII. Project Status: Project is currently a little behind schedule, but is catching up . Scheduled to continue through the length of the Recovery Program.
- IX. FY 05 Budget
 - A. Funds Provided: 36,800
 - B. Funds Expended: 36,800
 - C. Difference: 0
 - D. Publication Charges: 0
- X. Status of Data Submission: Tagging data from 2005 should be coming in soon.
- XI. Signed: C.W. McAda, December 10, 2005