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 and hatcheries who receive funding through the Recovery Program are required to submit all fishery data to the central database at the completion of their study or rearing season. This mandates that all researchers are required to submit a complete list of all endangered, native and non-native fish handled each year to the central database. Guidelines for the annual tagging list are circulated to researchers each year when requested. 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 or stocking of that fish. Field fish-collection data, radiotelemetry data, stationary PIT tag antennae data, and program funded propagation 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.

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.

The database manager is also tasked with collecting and reporting all data associated with a PIT tag antennae that was installed (8/13/2010) in the Colorado River at the Price Stub dam within the fish passage structure at river mile 188.3. All these data will be reported in this annual report.

Additionally, a young of year (YOY) gila monitoring trip was conducted this year (8/2/2010-8/4/2010) au gratis and the results are included in this annual report.

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 10 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

Database Management

PIT tags have been distributed as researchers and hatchery managers have requested them. An Access database is maintained documenting distribution of all PIT tags that are sent to investigators in both the Upper Basin and San Juan Recovery Programs.

All tagging databases (stocking and river) are up to date through 2008. PIT tagging data from 2010 should be coming in during the next month or so. Tagging data from 2009 and 2010 will be updated over the coming winter. All tagging and stocking databases have been converted to Access. We worked with Karen Holt to provide data for an online database that is available to researchers looking for information on specific PIT tag numbers or general information of distribution of rare fish.

Efforts have continued 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 a more complicated program than the spread sheets currently used, but will ultimately be much more useful for the recovery program.

Efforts in 2009 and 2010 concentrated on providing a consolidated database of all the nonnative fish data that has been accumulated since 2000. These consolidated data will play an important role in ongoing efforts to synthesize this important program in all rivers of the upper basin. This data has been updated through 2009 and have been

handed over to CSU, the contract holder for the basin wide synthesis. Razorback sucker data have been updated through 2008 and have been submitted to Koreen Zelasko (with CSU) for additional survival estimation. Additionally, efforts were made to consolidate the YOY Colorado pikeminnow monitoring data for a long term analysis. Data from the now terminated adult monitoring program were also consolidated into an Access file.

Investigators are not as good at submitting the 'other fish' data as the rare fish data, so we need to update that information. We have been working with researchers to incorporate the more recent data. In addition, we need to update the list of studies that have data included in the database. Work on updating the database is ongoing.

Price-Stub Antennae

The Price Stub Pit tag antennae produced multiple hits during its short operating time. In fact two reads on Colorado pikeminnow occurred only four days after it was installed and operational. One Colorado pikeminnow traveled upstream through the ladder and exactly one month later was detected coming downstream past the antennae. Six roundtail chub were detected that were collected in Blackrocks for the chub estimates in 2008. Seven razorback sucker recently stocked at the Hoagland conservation easement (located between Battlement Mesa and Silt, CO) were detected at the antennae, most of which were headed downstream; however, one razorback swam upstream past the antennae. Considering how close the placement of each of the four antennae are to each other (~10 inches), directionality (upstream vs. downstream) on some of the reads are difficult to distinguish. See table below.

YOY Gila Monitoring

Darek Elverud (Biologist with UDWR) and I conducted a YOY *Gila* spp. seining trip August 2nd-4th from Blackrocks (near the Colorado and Utah state line) through Westwater Canyon. Our main purpose was to locate sites to collect YOY *Gila* spp., in the event the BC agrees with recommendations to bring YOY *Gila* spp. (from this population) into the hatchery system to begin developing humpback (*Gila cypha*) brood. As far as I'm aware, there hasn't been any seining operation throughout this reach in many years. After reading the Chart and Lentsch report from 1999 and reviewing the numbers of *Gila* spp. found in their samples - Darek and I were very pleased at the numbers of YOY *Gila* spp. we came across. The best sites for collecting *Gila* spp. were in the reaches sampled for adults in both Westwater Canyon and Blackrocks. However, YOY *Gila* spp. were available in all our collection sites with the exception of one (Cottonwood Wash) which was expected due to the site being sedimented (disconnected) away from the main channel. In total, we sampled 14 different sites ranging from true backwaters to side channels and calm areas along the shore of the main channel. We handled and released ~1400 YOY *Gila* spp. Our methods were random single seine hauls covering only a very small proportion of the available 'calm' water habitat. Our random samples produced 0 to 312 YOY *Gila* spp. with an average of ~100 *Gila* spp. per seine. YOY *Gila* spp. are difficult to identify to species.

VII. Recommendations: Continue the transition to Access. Continue to search for data to add to the database. Consider YOY *Gila* spp. monitoring in the future. Continue collecting data from Price-Stub antennae.

VIII. Project Status: Project is currently behind schedule, but is catching up. Database management is scheduled to continue through the length of the Recovery Program.

IX. FY 10 Budget

A.	Funds Provided:	60,846
B.	Funds Expended:	60,846
C.	Difference:	0
D.	Publication Charges:	0

X. Status of Data Submission: Tagging data from 2010 should be coming in soon.

XI. Signed: T.A. Francis, November 9, 2010

2010 Price Stub PIT tag antennae reads and associated capture and stock histories.
(CS = Colorado pikeminnow; RT = roundtail chub; RZ = razorback sucker)

Last 4 digits of tag	Species	Date Detected	Direction through ladder	Stock Date	Capture History	Length	Weight	Capture River	RMI at capture	Capture Project
2486	CS	8/16/2010	upstream		4/29/1999	491	841	CO	187.7	CS EST CO
					5/17/2004	600	2190	CO	170.8	CS EST CO
					7/20/2004	590		CO	172.8	SM REMOVAL CO
					6/2/2005	603	2475	CO	175.5	CS EST CO
B5FC	CS	8/16/2010	unknown		6/11/2009	489	985	CO	50.7	CS EST CO
C42D	RT	8/25/2010	unknown		10/28/2008	278		CO	136	HB EST BLACKROCKS
E208	RT	8/28/2010	unknown		10/28/2008	228		CO	136	HB EST BLACKROCKS
9C68	RT	8/29/2010	downstream		10/28/2008	214		CO	136	HB EST BLACKROCKS
BC51	RT	8/29/2010	downstream		10/14/2008	257	142	CO	136	HB EST BLACKROCKS
EDB1	RT	9/5/2010	unknown		10/28/2008	237		CO	136	HB EST BLACKROCKS
9B7A	RT	9/6/2010	unknown		10/27/2008	298		CO	136	HB EST BLACKROCKS
2486	CS	9/16/2010	downstream		4/29/1999	491	841	CO	187.7	CS EST CO
					5/17/2004	600	2190	CO	170.8	CS EST CO
					7/20/2004	590		CO	172.8	SM REMOVAL CO
					6/2/2005	603	2475	CO	175.5	CS EST CO
					8/16/2010			CO	188.3	PRICE-STUB ANTENNAE
2941	RZ	10/11/2010	downstream	9/28/2010		231		CO	227.6	GJ RZ STOCK
1E1C	RZ	10/15/2010	downstream	10/13/2010		247		CO	227.6	GJ RZ STOCK
20BC	RZ	10/16/2010	upstream	9/28/2010		237		CO	227.6	GJ RZ STOCK
6B72	RZ	10/16/2010	downstream	10/13/2010		339		CO	227.6	GJ RZ STOCK
E9CA	RZ	10/18/2010	downstream	10/14/2010		252		CO	227.6	GJ RZ STOCK
3140	RZ	10/18/2010	downstream	10/14/2010		270		CO	227.6	GJ RZ STOCK
ACD8	RZ	10/18/2010	unknown	10/13/2010		225		CO	227.6	GJ RZ STOCK