

**RECOVERY PROGRAM  
FY 2020-2021 SCOPE OF WORK for:**

Recovery Program Project Number: 170

***Development and Maintenance of a Centralized PIT tag Database for the San Juan and Upper Basin Recovery Programs***

Reclamation Agreement number: New 5 year agreement in progress (existing agreement through FY19 is R14AC00084)

Reclamation Agreement term: Anticipated term Oct 1, 2019 – Sept 30, 2024

Note: Recovery Program FY20-21 scopes of work are drafted in May 2019. They often are revised before final Program approval and may subsequently be revised again in response to changing Program needs. Program participants also recognize the need and allow for some flexibility in scopes of work to accommodate new information (especially in nonnative fish management projects) and changing hydrological conditions.

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Category:

- Ongoing project  
 Ongoing-revised project  
 Requested new project  
 Unsolicited proposal

Expected Funding Source:

- Annual funds  
 Capital funds  
 Other [explain]

- I. Title of Proposal: Development and Maintenance of a Centralized PIT tag Database for the San Juan and Upper Basin Recovery Programs (Recovery Programs)
- II. Relationship to RIPRAP: Conduct interagency data management program to compile, manage, and maintain all research and monitoring data collected by the Recovery Programs.
- III. Study Background/Rationale and Hypotheses: STReaMS, the central database of the Recovery Programs, creates a consolidated system to assist researchers and stakeholders with uploading, managing, editing and accessing data. Data support the recovery of endangered species and removal of nonnative fishes, assessment of effects of non-native fish removal, effects of new flow and temperature regimes based on the fish community response, and effects of continued water development.
- IV. Study Goals, Objectives, End Product(s): Investigators of the Recovery Programs have been collecting large quantities of data on stocked and wild endangered fishes. These data are stored in the STReaMS database, which makes it easy to identify individual fish and capture histories and integrate data from various active capture projects as well as Passive Interrogation Arrays (PIAs). The sharing of data between investigators and stakeholders is streamlined to improve

efficiency of data entry and retrieval, and to prevent duplication of records and efforts between and among the various investigations. The master database standardizes content and provides convenient, easy access to all available data.

- V. Study Area: STReaMS will house data from the entire Upper Colorado and San Juan River Basins, including Lake Powell.
- VI. Study Methods/Approach: CNHP and the data managers use standard data management and assessment techniques to ensure data are accurate and as complete as possible.
- VII. Task Description and Schedule:

CNHP will continue to maintain the STReaMS database and add feature enhancements during the Federal FY20-21. Tasks are broken out below.

*Task 1: Server Maintenance*

- Maintain the server, server security, and perform regular database backups
- Maintain the test server and development environment
- Perform necessary software installs and upgrades including Windows operating system, Windows updates, MS SQL Server, MS TFS, and PHP. Ensure all code performs as expected following updates.
- Assess overall performance and optimize resources
- Maintain Database Manager credentials to access SQL Server
- Replace hardware (e.g. server, hard drives, RAM, etc.) as needed and configure new hardware

*Task 2: Website Maintenance and Feature Enhancements*

- Enhancements to existing tools
  - Batch uploads
  - QC tools
  - Movement tool
  - Calculated fields
- Work with Peter Mackinnon and Julie Stahli to ensure complete PIA data in STReaMS
  - Shift units from Loggernet process to new FTPS upload process as they are upgraded
  - Needs assessment and training with Peter and Julie
  - Add and remove PIAs to the automatic upload system as needed
- Work with Database Managers to develop any necessary custom queries, including non-tagged fish queries
- Bug fixes
- Internal testing and stress tests
- Update online help, data dictionary, user manuals, Data Managers user guide, and system documentation
- Train Recovery Program participants on features and enhancements
- Other priorities identified by Recovery Program Database Managers

*Task 3: Project Management*

- Prepare annual reports
- Perform project management and CSU compliance
- Maintain regular communication with Database Managers

VIII. Deliverables, Due Dates, and Budget by Fiscal Year:

Year 2 includes a new server with the latest operating system and software. New software and operating system have a different pricing model based on annual fees. Annual fees for software and operating system are included in Years 3-5.

Each year, an annual report will be submitted by November of each year outlining changes, upgrades and accomplishments.

IX. Budget Summary:

FY2020: \$33,801.43	San Juan: \$10,000	Upper Basin: \$23801.43
FY2021: \$46,677.96	San Juan: \$10,000	Upper Basin: \$36677.96
FY2022: \$32,853.49	San Juan: \$10,000	Upper Basin: \$22853.49
FY2023: \$33,508.94	San Juan: \$10,000	Upper Basin: \$23508.94
FY2024: \$35,342.87	San Juan: \$10,000	Upper Basin: \$25342.87

X. Reviewers:

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