Work Task G1: Data Management

FY11 Estimate	FY11 Actual Obligations	Cumulative Expenditures Through FY11	FY12 Approved Estimate	FY13 Proposed Estimate	FY14 Proposed Estimate	FY15 Proposed Estimate
$700,000	$678,848.47	$1,749,315.36	$700,000	$950,000	$950,000	$950,000

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Start Date: FY07

Expected Duration: FY55

Long-term Goal: Data management will be an ongoing task for species research, system monitoring, habitat creation, post-development monitoring, and habitat maintenance programs.

Conservation Measures: All.

Location: System-wide.

Purpose: Develop and maintain an accessible, multi-disciplinary, spatially referenced, relational database to consolidate, organize, document, store, and distribute scientific information related to the LCR MSCP.

Connections with Other Work Tasks (past and future): Database management is integral in the successful completion of work tasks undertaken for Fish Augmentation (Section B), Species Research (Section C), System Monitoring (Section D), Habitat Creation (Section E), Post-Development Monitoring (Section F), Adaptive Management (Section G), and Habitat Maintenance (Section H).

Project Description: To fully implement the LCR MSCP, a database management system is being developed to manage data collected through the species research, system monitoring, habitat creation, post-development monitoring, adaptive management, and habitat maintenance programs. Database design, initial implementation, and maintenance are funded through this work task.

Previous Activities: Hardware was purchased to increase data storage for the implementation of the centralized database. The intranet/document/calendar management system was maintained and modified, for future needs of the LCR MSCP. Implementation of remote data collection from field data loggers began at Beal Lake. The automatic collection of remote data into a centralized database allows for the secure transmission of data with integrated quality control to support mission critical projects. The native fish database was maintained.

Database design and implementation of a centralized Database Management System (DBMS) is completed. The planning, acquisition, and data modules for the LCR MSCP centralized database

have been completed. All data modules will be phased in according to priority for the implementation of the HCP. Data modules consist of an application for input of data (data entry) within a centralized database, to include quality assurance and quality control. On an annual phased approach all project and species projects will be incorporated into the database.

FY11 Accomplishments: Document processing for the Minckley Library continued throughout FY11 and is now nearing completion. Approximately 10,000 library documents have been digitized and organized using bibliographic software, and error checking has been performed to ensure consistency and accuracy. Development of the online archive, which will include a comprehensive bibliography of all library holdings and instructions on how to access, search, download, save, and print individual documents continues along a trajectory for a timely and successful completion. It is anticipated that all work will be completed by March 2012.

The new LCR MSCP website was completed. The native fish database continued to be maintained. The LCR MSCP data management requirements document was developed to provide standards in handling and processing data for contractors. Analysis of existing data models (MS Excel or MS Access) has been completed and a test DBMS had been created in SQL Server 2008. Key features of the LCR MSCP DBMS are development of standard naming conventions, program reference tables, project reference tables and data flows. To this end a data flow design has been developed that serves as a template for designing new data models within the LCR MSCP DBMS.

Design of a Work Order process that links LCR MSCP HCP work tasks and conservation measures to the data has been developed and initial programming has begun. A set of input forms has also been programmed for vegetation monitoring. These forms now serve as a template for future input form design. Some design and software testing has been done to provide access to the SQL Server 2008 DBMS via SharePoint.

The intranet/document/calendar management system (SharePoint 2010) was upgraded. The development of remote data collection from field data loggers will continues.

FY12 Activities: The native fish database continued to be maintained. Work will continue on Minckley Library document processing and additional requests for copyright clearances will be made until blanket copyright permissions have been secured with primary publishers. All digitized versions of library documents will continue to be organized using bibliographic software, and error checking will be performed to ensure consistency and accuracy. An online archive holding all digital versions of documents found within the library will be developed. An inventory of all reprint library holdings, and instructions on how to access, search, download, save, and print individual documents in the library will also be provided.

Database and software development continues. Database implementation will continue for all projects. The southwestern willow flycatcher, yellow-billed cuckoo, system-wide bird and vegetation monitoring data modules will be phased in according to priority for the implementation of the HCP. Data modules consist of an application for input of data (data entry) within a centralized database, to include quality assurance and quality control. The intranet/document/calendar management system (SharePoint 2010) will be modified to work with all data modules. The development of remote data collection from field data loggers will

continue. The new LCR MSCP website was launched during FY12, and maintenance work for the site has begun. Development of a new internet web interface for the fish database will also begin and will be linked to LCR MSCP's website.

Proposed FY13 Activities: The native fish database will continue to be maintained. Database and software development will continue. Database design and implementation of a centralized DBMS will continue in an annually phased approach for all projects. The planning, acquisition, and data modules for the LCR MSCP centralized database development will continue. The development of remote data collection from field data loggers will continue. Update and maintenance of the LCR MSCP website will continue. Development of a new internet web interface for the fish database will also continue and will be linked to the LCR MSCP's website. The development of the LCR MSCP Data Management plan will commence.

Pertinent Reports: *Draft LCR MSCP Database Management Framework Requirements Analysis* is available upon request.