Work Task E15: Backwater Site Selection

FY10 Estimates	FY10 Actual	Cumulative Accomplishment Through FY10	FY11 Approved Estimate	FY12 Proposed Estimate	FY13 Proposed Estimate	FY14 Proposed Estimate
$286,750	$4,331.69	$1,286,599.50	$20,000	$20,000	$20,000	$20,000

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Start Date: FY06

Expected Duration: FY19

Long-term Goal: Habitat creation.

Conservation Measures: BONY2, RASU2, and FLSU1.

Location: Reaches 3-6; California, and Nevada, River Mile 22-276, Arizona, California, and Nevada.

Purpose: The backwater site selection process is used to evaluate and prioritize potential sites for backwater habitat creation for razorback sucker, bonytail, and flannelmouth sucker.

Connections with Other Work Tasks (past and future): E16 is used with this work task to identify projects other than existing backwaters for habitat creation.

Project Description: Backwater site selection consists of a five-step process to evaluate existing backwaters along the Colorado River within the LCR MSCP planning area, from reaches 3 to 6. This ultimately results in the conceptual-level planning efforts for a select number of sites, which would become available for the Program Manager to select for inclusion into the program. New backwaters, which may be constructed separate from the existing river channel (and its associated backwaters), are excluded from this effort, and would follow the general site-selection process (E16). Backwaters may be disconnected or connected with the main channel of the Lower Colorado River. Backwaters that are disconnected from the LCR channel are of considerably higher value to bonytail and razorback sucker than connected backwaters in the LCR, and are the preferred type of backwater to achieve LCR MSCP conservation goals for these species.

Because some 1,000 backwaters currently exist within LCR MSCP reaches 3-6, the backwater site selection effort was divided into two phases: reaches 5-6 represent the first phase, and reaches 3-4 will represent the second.

Previous Activities: Backwater Site Selection starts with Step 1, an inventory and review of existing GIS data, aerial videos, and photographs to quantify the number, size, and location of currently existing backwaters, and to identify land ownership at a broad

level. Reclamation personnel work with land managers and resource agencies to identify land use issues, and other regulatory constraints, which is used to generate a list of candidate sites (approximately 25) for further evaluation. Helicopter reconnaissance flights are conducted during winter low-flow periods to confirm the presence of water year-around at these candidate sites, prior to conducting any site visits.

Steps 2 and 3 entail conducting brief (1-2) day visits at each of the (25) candidate sites, and a biological rating effort. Biological and physical data are collected and entered into a biological suitability model, established specifically for this effort. The model generates a biological suitability rating, such as poor, moderate, good, or excellent. This rating provides decision makers with a basic scientific understanding of the potential of each site, in their existing conditions, to provide habitat for LCR MSCP covered fish species. Once the biological ratings are established, Reclamation solicits input from cooperating land managers, resource agencies, and the general public, as sites are selected and prioritized for further evaluation and planning. Approximately four to five sites are chosen for further evaluation from the (25) candidate sites evaluated in steps 2-3.

Step 4 of the process includes conducting quarterly sampling to construct a one-year environmental baseline for each of the four to five candidate backwater sites that proceed to this point. While this environmental baseline is being constructed, Reclamation works with the landowner (and appropriate project stakeholders) to develop a conceptual habitat creation plan and preliminary cost estimates for project implementation. At the conclusion of Step 4, sites may be selected by the Program Manager for implementation into the program Step 5. Site selection is considered to be final once an executed land use agreement is in place between Reclamation and the appropriate land manager.

FY10 Accomplishments: In response to technical challenges associated with creating and maintaining backwaters free from non-native species, as well as public comments associated with current isolated LCR MSCP backwaters, the decision has been made to postpone further conceptual planning for backwater habitat creation to provide additional time to perform further research on screening requirements for non-native fish, revising backwater habitat design criteria, and evaluating alternative water supply and filtration methods. A five-year backwater strategy has been drafted to address how the program will address backwater-related research and development issues.

A workshop was held in January 2010, focusing on habitat goals by reach and state. Although backwaters were not specifically discussed, the program commitments and focus of future backwaters will reflect the intent to focus on backwaters within the state of California. The step 1 inventory report for backwaters in reaches 3 and 4 will be completed and the final report posted to the LCR MSCP website. Following the completion of this report, further backwater site selection efforts will be suspended, with future work following the direction of the new backwater strategy.

The following activities are taking place in support of the backwater strategy, but are funded through Imperial Ponds Conservation Area (E14):

1. Additional non-native fish entrainment studies to resolve outstanding needs to filter Colorado River surface water to a slot size capable of excluding all non-native fish eggs and larvae will be performed. The expanded research will be performed at Imperial Ponds. This research is intended to result in a set of revised slot size criteria for filtering water through a primary system (wedge wire screen), as well as development of secondary screening systems (sand filter or other technique). The study would also include testing of a secondary filtration system, to determine the effectiveness of such a configuration. If the recommended slot size criteria can be met, this information would be used to determine what site improvements to make at Imperial Ponds (or potentially Beal Lake also) to meet the needs of the program. In FY10 the contract is in place to test sand filters as a secondary filtration technique. The testing will be conducted in FY11

2. A series of six spawning beds were installed at Imperial Ponds, in support of ongoing native fish habitat use research. The design of these spawning beds is intended to evaluate the use of geotextiles (as a vegetation barrier), a prototype gradation of gravels and rock, and site fidelity of razorback suckers to a particular spawning location. On-going fishery related monitoring is evaluating usage of the spawning beds.

FY11 Activities: Evaluating sand filters as a secondary filtration tool is scheduled for March to coincide with the presence of larval fishes. The summary of the findings of the testing is expected later in the year. Additional secondary treatment technologies, such as the use of microscreens, are also being evaluated through literature searches and potential by on-site visits at facilities currently using this technology. During this fiscal year, the distribution and comment on the 5 year strategy is anticipated.

Additional activities identified in the strategy that will help guide the selection process, such as determining salinity, oxygen, and temperatures limitations of native fish, are on-going, but funded through other work tasks.

Proposed FY12 Activities: Minimal activities are projected until the five-year backwater strategy is completed. At that time, backwater inventory and selection is anticipated to resume at increased funding levels and focus on backwaters within the state of California. However, the budgets may be revised in the future based on promising technologies and would follow the normal work plan process.

Pertinent Reports: N/A