

# **LOWER OWENS RIVER PROJECT**

## ***TECHNICAL MEMORANDUM #18***

### **WETLAND/WETLAND MANAGEMENT PLAN BLACKROCK WATERFOWL HABITAT AREA IMPLEMENTATION**

prepared for

**Los Angeles Department of Water and Power  
and  
Inyo County Water Department**

prepared by

**Gary Ahlborn  
Ecosystem Sciences**



February 1999

## **ABOUT TECHNICAL MEMORANDUMS**

Technical memorandums are intended as information/data analysis of specific components in the Lower Owens River ecosystem management planning process. Ultimately, the individual environmental components described in tech memos will be used to build the final management plans for the Lower Owens River Project. Comments, questions, and suggestions on tech memos are encouraged; however, tech memos will not be revised. Criticisms, comments, suggestions, or recommendations which improve analysis or alter a decision on an environmental component will be incorporated into the draft management plans. These plans will in turn be subject to public review and subsequent revision leading to final plans.

**WETLAND/WETLAND MANAGEMENT PLAN  
BLACKROCK WATERFOWL  
HABITAT AREA  
IMPLEMENTATION**

**Table of Contents**

<b>PURPOSE .....</b>	<b>1</b>
<b>OVERVIEW OF MANAGEMENT STRATEGY AND CONCEPTS.....</b>	<b>1</b>
BLACKROCK WATERFOWL HABITAT AREA MANAGEMENT STRATEGY .....	1
MANAGEMENT GOALS .....	2
PROJECT OBJECTIVES .....	2
<b>PLAN IMPLEMENTATION AND OPERATION .....</b>	<b>3</b>
AVERAGE WATER YEAR .....	3
BELOW AVERAGE WATER YEAR .....	3
MINIMUM MAINTAINED WETLANDS .....	4
<b>MANAGEMENT PRIORITIES AND FLEXIBILITY .....</b>	<b>5</b>
<b>MANAGEMENT UNIT SPECIFIC CONSIDERATIONS .....</b>	<b>5</b>
DREW SLOUGH - (MANAGEMENT UNIT 11) .....	5
THIBAUT PONDS/TULARE SWAMP - (MANAGEMENT UNIT 17) .....	5
WAGGONER AREA - (MANAGEMENT UNIT 14) .....	6
WINTERTON AREA - (MANAGEMENT UNIT 15) .....	6
<b>PROJECT IMPLEMENTATION, AND FACILITY MAINTENANCE AND OPERATION GUIDELINES.....</b>	<b>6</b>
PROCEDURES INHERENT TO THE DESIGN OF THE MANAGEMENT PLAN .....	7
SUGGESTED MAINTENANCE AND OPERATION PROCEDURES .....	7

# **WETLAND/WETLAND MANAGEMENT PLAN BLACKROCK WATERFOWL HABITAT AREA IMPLEMENTATION**

## **Purpose**

The purpose of this document is to introduce the Blackrock Waterfowl Habitat Area Management Plan. This introduction reiterates some of the most important topics discussed in Technical Memorandum #15 "RESOURCE MANAGEMENT IN THE BLACKROCK WATERFOWL HABITAT AREA". This introduction serves to discuss and summarize project objectives, management strategies and concepts, and to provide implementation and operational guidelines.

## **Overview of Management Strategy and Concepts**

### Blackrock Waterfowl Habitat Area Management Strategy

It is important to recognize that the Blackrock Waterfowl Habitat Area is a highly altered artificial wetland that would not exist, and cannot be maintained, without a considerable investment of resources. Continued intervention and manipulation of water resources is necessary to properly maintain a variety of wetland habitats. An objective of this plan create and maintain diverse habitat values while minimizing the use, extent and frequency overt and unnecessary intervention and manipulation practices. It is also important to remember that the level of intervention necessary for management of the Blackrock Area is generally contrary to the basic LORP philosophy.

The management approach for each unit is somewhat different, depending on the existing condition and extent of habitat, the configuration and composition of adjacent habitat, existing water conveyance and control structures, and surface topography of the unit. Technical Memorandum #4 discusses the extent and composition of existing wetlands in the Blackrock Waterfowl Habitat Area. While each unit is managed separately, wildlife values are actually derived as a consequence of management in the entire region.

All Management Units will be cycled through a wet and dry phase (see below). Generally the duration of the wet phase will last 2 to 3 times as long as the dry phase. The entire cycle will take from between 5 to 7 years. For example, a particular management unit might be flooded (wet phase) for 3 to 4 years and drawdown (dry phase) for 2 to 3 years; thus the entire cycle would take from 5 to 7 years. The wet phase will be initiated by rapidly flooding the proposed wetlands, then fluctuating the water elevation to enhance seasonal and fringe wetlands.

Any wetland that is maintained in the same condition over many years will likely show a decline in productivity. Simply impounding water year after year generally results in lower productivity in terms of waterfowl, shorebird and water bird use. Periodic disturbance is natural and essential for long-term productivity and wildlife use of managed marshes (Smith and Kadlec 1986). Disturbances, such as drawdown and fire, are commonly used to manipulate plant communities that favor waterfowl use.

The overall strategy is that while the value of any particular area or management unit, to a specific functional species group, e.g., open water birds, will vary as wetlands develop and evolve, other areas will be in a different condition or state, and therefore the Habitat Area will always provide a diverse set of conditions across a relatively broad landscape. The value of any specific site will continue to change as habitat changes but the Blackrock Area as a whole will always provide resources to support an array of fish and wildlife species.

The majority of management objectives apply to all Habitat Management Units. The primary differences among specific areas are subtle differences in management priorities, timing of implementing management actions and the specific amount of wetlands types expected. The extent and type of habitat expected in each of the Management Units is specified below. Habitat specific management objectives will be addressed in the monitoring plan. An example of this type of objective is the mean height, life-form composition, percent canopy cover and patch configuration of adjacent upland nesting habitat. Management will focus on and strive to improve the extent, quality, availability and richness of wetland habitats.

### Management Goals

The management goal of Blackrock Waterfowl Habitat Area is to maintain the existing waterfowl habitat area to provide the opportunity for the establishment of resident and migratory waterfowl populations and to provide habitat for other native species. Diverse natural habitats will be created and maintained through flow and land management, to the extent feasible, consistent with the needs of the "habitat indicator species" for the Blackrock Waterfowl Habitat Area. These habitats will be as self-sustaining as possible.

### Project Objectives

Management goals will be achieved by manipulating, evaluating and monitoring conditions in four separate management units. These four units will be managed in concert to derive a spectrum of fish and wildlife values over time and space. The MOU states that, *"Approximately 500 acres of the habitat area will be flooded at any given time in a year when the runoff to the Owens River watershed is forecasted to be average or above average."* MOU page 16.

The overall project management objectives apply to all Habitat Management Units. The primary differences among specific areas are subtle differences in management priorities, timing of implementing management actions and the specific amount of wetlands types expected. The extent and type of habitat expected in each of the Management Units is specified below. Habitat specific management objectives will be addressed in the

monitoring plan. An example of this type of objective is the mean height, life-form composition, percent canopy cover and patch configuration of adjacent upland nesting habitat. Management will focus on and strive to improve the extent, quality, availability and richness of wetland habitats.

## **Plan Implementation and Operation**

The MOU provides that *"DWP will commence implementation of the other physical features of the LORP such as, the Blackrock Waterfowl Habitat Area, upon the certification of the LORP EIR"*.

### Average water year

*"Approximately 500 acres of the habitat area will be flooded at any given time in a year when the runoff to the Owens River watershed is forecasted to be average or above average."* MOU page 16.

The explicit obligation as stated in the MOU is to flood about 500 acres of wetlands at any given time during average water years. The suggested schedules for each of the four Management Units (Technical Memorandum #15 "RESOURCE MANAGEMENT IN THE BLACKROCK WATERFOWL HABITAT AREA") is only one of an infinite number of possible implementation schedules that meet the acreage requirements in the MOU. The suggested schedules should function as a reasonable example and as starting position to initiate the project. These water releases are a first estimate of an implementation schedule that incorporates the MOU acreage requirements as well as several management concepts embodied in the LORP. These concepts are very important to achieving the long term objectives for the area.

The bottom-line management standards for evaluating successful implementation and operation of the Blackrock Waterfowl Habitat Area (in normal water years) includes:

- Flood about 500 acres at any given time during the year.
- Concurrently operate at least three management units.
- Maintain a diversity wetland types over an extensive area that will attract and provide unique and limiting resources to a wide range of resident and migratory wildlife species.
- Maintain, enhance and increase the extent of wetlands, and increase the long term productive condition and resiliency of wetlands.
- Wetlands should provide cumulative benefits to wildlife and ecosystem resources targeted in other elements of the LORP, such as special status species, delta and riverine-riparian oriented wildlife.

### Below average water year

*"In years when the runoff is forecasted to be less than average, the water supply to the area will be reduced in general proportion to the forecasted runoff in the watershed. (The*

*runoff forecast for each year will be DWP's runoff year forecast for the Owens River Basin, which is based upon the results of its annual April 1 snow survey of the watershed.).*" MOU page 17.

During the below-average water years the overall management strategy should be preserved. The primary difference under these conditions is that the amount of area flooded and/or water released, will be proportionally reduced. The status of each management unit should be considered at the time when reductions are necessary. Several suggestions are offered to help provide guidance for making these reductions.

The best solution is probably a combination of extending the dry phase for units that are in or near their dry stage, and stopping or reducing water releases to units that are in their wet stage. For example, if Unit 11 is in its dry stage and Unit 14 is near the end of its wet stage, reductions could be accomplished by extending Unit 11's dry stage and stopping or reducing input to Unit 14's wet stage. The advantage to this type of approach is that it generally keeps the water cycle intact.

A primary concern when water reduction is necessary, is the increased risk of spreading salt cedar. Deep rapid drawdown in any of the units except Thibaut Ponds (17) will setup optimal conditions for propagation of salt cedar. To the extent possible, large drawdown should be avoided except during the shift from the wet to dry stage.

If possible, only one unit that is in its wet stage should have its water supply altered. This measure should proportionally reduce the risk of establishing new salt cedar populations. Additional inspections of the drawdown areas to detect recruitment of exotic plants should accompany these changes to water management.

### Minimum maintained wetlands

*"Even in the driest years, available water will be used in the most efficient manner to maintain the habitat. The Wildlife and Wetlands Management Plan element of the LORP Plan will recommend the water supply to be made available under various runoff conditions and will recommend how to best use the available water in dry years. The amount of acreage to be flooded in years when the runoff is forecasted to be less than average will be set by the Standing Committee based upon the recommendations of the Wildlife and Wetlands Management Plan and in consultation with DFG."* MOU page 17.

Under the very worst case water conditions, the first priority is to maintain a minimal wetland area in Thibaut Ponds (Unit 17) via the East Spillgate. There are several reasons for this suggestion. First, the Thibaut Ponds Unit appears to be a relic natural spring/seep with a very high diversity of birds including many special status species (Brian Tillemans, unpublished report) and adjacent populations of rare plants. Second, the area is very flat and water tends to spread out over extensive areas as it slowly moves to the south for several miles. Water use in this area is relatively efficient. It is estimated that with a water release of about 360 ac-ft per year (about 25% of the long term water release from Thibaut Ponds East Spillgate, will maintain at least 150 to 250 acres of wetlands on

a short term basis. Water should be released from the beginning of the growing season to about November.

## **Management Priorities and Flexibility**

The actual implementation schedule (when, where, how and much water to release) should evolve as the project continues to develop. The duration of each wet-dry cycle should be determined by feed back from monitoring (adaptive management) and wise professional judgement. The proximate stimulus for reversing the cycle should be based on the development of wetland vegetation in relation to open water, and conversely the reduction of emergent species during the drying phase.

The boundaries for appropriate management are defined and delineated in both quantitative and conceptual terms. Given that basic acreage criteria (500 acres) and the bottom-line management standards (see above) are adhered to, the Blackrock Area should be administered and managed with a great deal of latitude and flexibility. Specific management actions and objectives should be altered as judged appropriate. Feedback for these decisions should be based on professional judgement using both quantitative data from wetland monitoring, and important strategic land management decisions. Tradeoff analysis is an important aspect of the informed decision making process.

## **Management Unit Specific Considerations**

### Drew Slough - (Management Unit 11)

Drew Slough is the lowest priority area. The site has very high potential as shallow seasonal wetlands, nesting habitat. The site also has high potential as fall/winter/spring shorebird foraging areas, and yearlong use for wading birds. Topographic uniformity and position to the Blackrock Ditch make the unit very easy to manage, but also limits diversity in the sites. Perhaps Unit 11 is best managed on an "as needed basis", that is when there is a particular resource need goes to the forefront, then Drew Slough could be managed to obtain this need.

### Thibaut Ponds/Tulare Swamp - (Management Unit 17)

The Thibaut Ponds/Tulare Swamp area is the highest priority area especially under minimum water conditions. Thibaut Ponds - East Spillgate - (northern and western area, tall wet meadow, flooded alkali meadow and emergent wetlands, shallow wetlands, yearlong use). Thibaut Ponds - South Spillgate - (south and south eastern area, shortgrass wet meadow, shallow wetlands, mudflats, adjacent weedy vegetation, fall-winter-spring open water wetlands). This unit is the most "natural" wetland in the Blackrock Waterfowl Habitat Area. While this unit is not the most productive in terms of potential density of birds, it does provide the greatest diversity of unique wetland types and the highest bird species richness in the area. Water use per unit area is very low and persistence of winter ponds is very high. There are no deep water wetlands in this unit.



The unit is best managed by monitoring water releases rather than extent of area flooded. The extent of wetlands in this area appears to be considerably greater than the area actually flooded with surface water, probably due in part to the very gradual terrain in the Thibaut ponds area. Water released through the Thibaut east spillgate supplies both the Thibaut east and south areas and actually continues south and eventually out beyond the unit. Water released from the Winterton Unit (15) moves through a series of sloughs and eventually enters and provides wetland benefit in the Thibaut area.

#### Waggoner Area - (Management Unit 14)

This unit is somewhat less manageable than the Winterton area due mainly to it's proximity to dense stands of salt cedar. Separation of the unit's water supply from to the lakes supply will increase water efficiency and overall potential of this site. The unit has the greatest topographic diversity and probably the greatest extent of deep water wetlands in the area. The proximity of the Waggoner Unit to the fault lakes certainly increases inter-area exchange and enhances the value of both areas.

#### Winterton Area - (Management Unit 15)

The Winterton Management Unit (15) is the highest priority area with respect to its manageability and potential productivity. This management unit is similar to Unit 14, with a high diversity of uplands that will become islands and peninsulas under proposed wetland management. These areas will develop into prime waterfowl nesting and brooding areas. The unit also appears to be very suitable for fall/winter seasonal wetlands and spring/summer drawdowns.

### **Project Implementation, and Facility Maintenance and Operation Guidelines**

Upgrading and enhancing the existing infrastructure is the first step to implementation of the Blackrock Waterfowl Habitat Area (Table 1).

Table 1. Estimated improvements to the Blackrock Wildlife Habitat Area infrastructure.

Management Unit	dikes miles	ditches miles	No. culverts and spillgates	fence miles	livestock gates
Drew Slough #11	1.30	0.00	2	0	0
Waggoner #14	1.00	1.30	4	0	0
Winterton #15	0.25	0.25	1	0	0
Thibaut Ponds #17	0.70	0.00	0	+5	+5
Total	3.25	1.55	7	+5	+5

## Procedures Inherent to the Design of the Management Plan

There are many exotic plant control measures incorporated in the overall management strategy and water control measures suggested for the Blackrock area. The potential risk of infecting new areas with salt cedar or increasing vigor and productivity of existing stands is considered a significant issue in the Waterfowl Habitat Area. As a result, several wetland management practices such as water drawdowns (partial drainage) are restricted to reduce this risk. Other management practices that will help circumvent and limit the spread of tamarisk include, (1) minimizing construction and other disturbance of substrates, (2) providing for good water circulation and drainage in wetlands to minimize accumulation of salts, (3) very limited use of fire for vegetation management, and when fire is used, flushing or leaching along with careful monitoring will follow, (4) timing, duration and extent of wetland drawdowns will be accomplished to minimize the chance of invasion by tamarisk (i.e., winter months), and (5) monitoring designed for early detection of tamarisk recruitment.

## Suggested Maintenance and Operation Procedures

Routine maintenance of facilities (e.g., roads, berms, ditches, gates, etc.) in the Blackrock Waterfowl Management Area are designed to avoid and reduce the risk of expanding the occurrence of salt cedar, and other noxious plants. During lower than average water years, the risk of salt cedar recruitment is accentuated because less available water means a greater concentration of salts and more potential substrate for recruitment (see above). Contingency measures will help prevent establishment of the weeds in the event the new areas become infected. Intelligent scheduling of maintenance activities will help avoid potential impacts to wildlife.

### **Plants**

Reduce the risk establishing new populations of exotic pest plants by appropriate scheduling, early detection of new populations, and contingency measures to eradicate new populations.

- To the extent possible, schedule construction/maintenance during the period when salt cedar seed production is lowest. This period is usually from about November to March.
- Monitor drawdown zones and new maintenance sites to detect recruitment of exotic plants (see Monitoring Plan).
- Mulch or landscape cloth might also be an effective deterrent to germination of weeds at smaller sites.

Contingency measures for management of new populations of exotic pest plants.

If exotic pest plants such as salt cedar, Russian olive, *Lepidium latifolium*, etc., are detected, plants should be controlled as soon as possible and before plants have a chance to become established. A combination of measures is probably appropriate.

- Application of Garlin™ is a safe and very effective means for eradicating young plants. Garlin is a systemic herbicide that breaks down in three days, and can be used in wetlands.
- Hand removal of young plants is an option.

When construction occurs in areas with an established salt cedar population, several precautions should be taken.

- To the extent possible, established plants in the construction zone should be removed (pulled out) as completely as possible, before beginning construction of the structure.
- Barrow areas should be selected very carefully, and generally not include materials from areas with an established population of exotic pest plants. Barrow material should not include stems, roots or other plant parts that might promote spread of the plant.

Focused pre-construction surveys for the presence of special status plants should be conducted with new construction if necessary (see T&E Management Plan).

## **Wildlife**

Reduce the level of disturbance to wildlife by scheduling maintenance activities outside sensitive periods for wildlife, especially nesting. To the extent possible, construction and repair of water control structures and road-side maintenance such as, mowing and grubbing should be scheduled during the **least** sensitive periods for wildlife.

- Generally, the least sensitive period for nesting birds will be from mid-September to early January. For example, loggerhead shrike (mid-January to early September), Le Conte's thrasher (mid-January to early September), California quail (April to August), mallard (February to July) and northern harrier (March to mid-September).
- To the extent possible, roadside vegetation and hedgerows should be left alone, as they provide valuable nesting areas for many birds and increase structural richness in an otherwise two dimensional landscape.