

# **Recommendations to Smith and Bybee Lakes Management Committee for Phased Approach to Habitat Enhancement**

submitted by Jim Morgan 6/25/96

Smith and Bybee Lakes Management Committee, with the support of the Technical Advisory Committee, has endorsed management options for the enhancement of aquatic habitat in the lakes area. Two options were endorsed: one option is considered the minimum action needed to effectively control and enhance the hydrology necessary to achieve management objectives, and the second option is considered the maximum practical approach for achieving management objectives.

## **Minimum Option**

**Removal of Existing Dam and Control Structure  
Construction of Open Structure with Ability to Retain Water  
Ability to Augment Water by Pumping**

## **Maximum Practical Option**

**Removal of Existing Dam and Control Structure  
Construction of Open Structure with Ability to Retain Water  
Ability to Augment Water by Pumping  
Separate Western Arm of Bybee Lake with an Adjustable Weir  
Connect Western Arm of Bybee Lake Directly with the Columbia Slough**

## **Recommended Phased Approach to Implementation**

### **Phase I**

Implementation of the minimum option can proceed while additional information is gathered for determining environmental impacts and costs of implementing the remaining items in the maximum practical option. Cost estimates are for capital only.

1. Removal of existing earthen dam could be done at the time of construction of the replacement structure since the necessary equipment will be available and the removed material will be useful in construction of the new structure. The existing structure may have salvage value that would offset the cost of removal. Removal should occur at the same time of construction of the replacement structure.  
Cost: May be cost neutral as part of constructing new structure.
2. An existing design used by Ducks Unlimited appears to an appropriate design for allowing unobstructed flow while having the ability to retain water. This simple structure is relatively inexpensive, with engineering and project management costs at a minimum due to existing plans and engineering experience in implementation.  
Cost: Estimated \$ 287,500

3. Three options are available for providing the ability to pump water into the lakes at any time of year: pump from the Columbia River, pump from groundwater wells, or pump from the Columbia Slough. A permit exist for the first source while no permits exist for the latter two sources.

Cost from Columbia River:	\$700,000
from groundwater wells:	\$2,000,000
from Columbia Slough:	\$15,000 - 25,000

4. Implement monitoring plan to evaluate impact of opening lakes to direct influence of river hydrology, before and after construction of the replacement structure. Acquire additional information, including lake bathymetric data, impact of fill and access necessary for construction of adjustable weir separating the western arm of Bybee Lake, and model flows between proposed connection between Bybee western arm and the Columbia Slough.

## **Phase II**

Phase II would include exercising the remaining portions in the maximum practical option: separating the western arm of Bybee Lake and providing a direct connection with the western arm to the Columbia slough.. The remaining activities in the maximum practical option may not be practical without the implementation of the minimum option. This data will be gathered in the implementation of Phase I, as discussed above. We would proceed with Phase II only after we learn from Phase I.