

EXECUTIVE SUMMARY

The 6,800-acre Rice Lake Habitat Rehabilitation and Enhancement Project (HREP) lies on the right descending bank of the Illinois Waterway between River Miles (RM) 132.0 and 138.0, near Banner, Illinois. The project is located in Fulton County, Illinois, approximately 24 miles southwest of Peoria, Illinois. The project area encompasses the land and water areas that comprise the Rice Lake State Fish and Wildlife Area (SFWA).

The Rice Lake SFWA has been managed for migratory birds and other wetland dwelling species since the Illinois Department of Natural Resources (ILDNR) purchased tracts of land in the project area during the 1940s, 1950s, 1980s, and 2000s. Site management by the State includes operation of pump stations and water control structures to provide reliable food production for migrating birds. The opportunity exists to increase overall preferred habitat quality and quantity by attenuating summer and fall flooding impacts, and by increasing native floodplain grassland and forest cover.

The goals of the proposed project are to restore and protect wetland, aquatic, and floodplain habitats. The following objectives have been identified to meet these goals:

- (1) increase success rate of annual emergent/moist-soil vegetation production;
- (2) reduce adverse effects of river stage fluctuations on wetland habitat;
- (3) increase fish egress opportunities from Rice Lake during drawdown periods;
- (4) maintain seasonal access between Rice Lake/Big Lake aquatic areas and Illinois Waterway;
- (5) increase off-main channel aquatic habitat in Illinois Waterway; and
- (6) increase natural food and cover for resident and migratory wildlife.

Four enhancement features and their associated construction options were considered to achieve the project goals and objectives (the “No Action” option was assessed for each feature):

A. Perimeter Water Control Levee

1. Construct a 12,500 ft (ft) perimeter levee to a top elevation of 440 ft National Geodetic Vertical Datum (NGVD) and a 2,500 ft overflow spillway with a top elevation of 438 ft.
2. Construct a 12,500 ft perimeter levee to a top elevation of 442 ft NGVD and a 2,500 ft overflow spillway with a top elevation of 440 ft.

B. Pump Station and Conveyance Channel

1. Construct a pump station with a capacity of 50,000 gallons per minute (gpm) and a 4,000 ft discharge channel to manipulate Big Lake water levels.
2. Construct a pump station with a capacity of 133,200 gpm and a 6,700 ft discharge channel to optimize management and operational flexibility for the entire project area.

C. Fish Egress Structures

1. Install a fish egress structure between Rice Lake and the quarry on Duck Island to facilitate fish passage during drawdown conditions.

2. Install fish egress structures connecting Rice Lake to the quarry and Goose Lake to the Illinois Waterway to facilitate fish passage during drawdown conditions.

D. Mast-Tree and Native Grassland Plantings

1. Plant approximately 57 acres of mast producing trees and 352 acres of native grasses and forbs on Duck Island's existing agricultural fields.

2. Plant approximately 147 acres of mast producing trees and 330 acres of native grasses and forbs on Duck Island's existing agricultural fields.

3. Plant approximately 238 acres of mast producing trees and 239 acres of native grasses and forbs on Duck Island's existing agricultural fields.

4. Plant approximately 330 acres of mast producing trees and 147 acres of native grasses and forbs on Duck Island's existing agricultural fields.

5. Plant approximately 352 acres of mast producing trees and 57 acres of native grasses and forbs on Duck Island's existing agricultural fields

Evaluation of the project enhancement features and construction options was accomplished through application of the Wildlife Habitat Appraisal Guide (WHAG) and annualization of outputs and costs. The WHAG evaluation methodology quantifies habitat output in the form of habitat units (HUs) that are used in conjunction with project cost data and functional life expectancy to compare the construction options of the proposed enhancement features. This incremental analysis identifies which combination of enhancement features would be cost efficient and cost effective. The analysis also shows the changes in cost for increasing levels of environmental output.

The recommended plan (shown on Figure ES-1) includes:

- Constructing a perimeter water control levee to a top elevation of 442 ft NGVD with an overflow spillway crest elevation of 440 ft NGVD and installing one gatewell structure (see paragraph A.2. above);
- Providing water control capability by constructing a pump station with a capacity of 133,200 gpm and excavating a discharge channel (see paragraph B.2. above);
- Installing two reinforced concrete fish egress structures, one between Rice Lake and the quarry on Duck Island, and one between Goose Lake and the Illinois Waterway (see paragraph C.1. and C.2. above); and
- Enhancing floodplain habitat by planting 352 acres of mast producing native trees and 57 acres of native grasses and forbs on Duck Island (see paragraph D.5. above).

Construction of the perimeter water control levee would protect interior areas from frequent Illinois Waterway stage fluctuations during the critical growing season for moist-soil food plants. The overflow spillway protects the perimeter water control levee from erosion by equalizing water levels on either side prior to overtopping. Constructing a pump station and discharge channel would allow water level manipulation (timely flooding and drawdowns) that is crucial to improving the success rate of submergent/emergent vegetation and their eventual use by migrating birds. The planting of native grassland and mast-trees on Duck Island would restore historic floodplain cover type diversity and provide food and cover for resident and migratory birds and mammals. Installing a fish egress structure would create access to deep water refuge, therefore increasing the probability of survival for individual fish during the summer drawdown periods.

Implementation of the recommended plan would provide increased water management flexibility and the capability to optimize the quality and quantity of aquatic, wetland, and floodplain habitat at this location. The project outputs meet ILDNR site management goals and objectives and supports the overall goals and objectives of the Upper Mississippi River System – Environmental Management Program (UMRS-EMP), the North American Waterfowl Management Plan, and the Partners in Flight Program.

Per section 107(b) of the 1992 Water Resources Development Act (WRDA), project operation and maintenance, at an estimated average annual cost of \$34,117 would be accomplished by the ILDNR, the non-Federal Sponsor.

The U.S. Army Corps of Engineers (Corps) would be responsible for the Federal share of any mutually agreed upon rehabilitation of the project that exceeds the annual operation and maintenance requirements identified in the final Definite Project Report and that is needed as a result of specific storm or flood events. Rehabilitation of the project is considered to be reconstructive work that cannot be accurately estimated at this time.

In accordance with the 1999 WRDA, a 35-percent non-Federal cost share will be required for general design and construction costs assessable to those project features or portions thereof located on lands not “managed as a national wildlife refuge.” All features identified for the Rice Lake HREP will require cost sharing. A Project Partnership Agreement (PPA) will be executed consistent with this requirement.

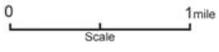
The U.S. Army Corps of Engineers, Rock Island District Engineer, has reviewed the project outputs and determined that the implementation of the selected plan is in the Federal interest. Therefore, construction approval for the Rice Lake HREP is recommended by the District Engineer at an estimated Federal expense of \$11,744,268. The total non-Federal cost share is estimated at \$6,789,044, which will be met using land credits.

UMRS EMP

Figure ES-1 Rice Lake Project Location Map

LEGEND

-  Perimeter Water Control Levee
-  New Water Control Structure
-  New Berm



Regional Map

