AD-A121 162 ENVIRONMENTAL ASPECTS OF OPERATION AND MAINTENANCE ... 1/2
ORWELL LAKE AND DAM OTTERTAIL COUNTY MINNESOTA(U) CORPS
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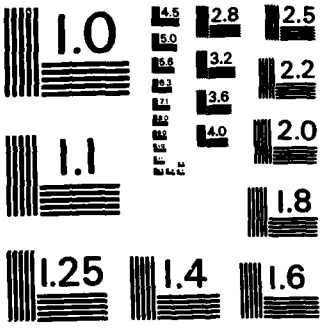

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DEPARTMENT OF THE ARMY
ST. PAUL DISTRICT, CORPS OF ENGINEERS
1135 U. S. POST OFFICE & CUSTOM HOUSE
ST. PAUL, MINNESOTA 55101

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NEGATIVE DECLARATION

In accordance with the National Environmental Policy Act of 1969, the St. Paul District, Corps of Engineers, has assessed the environmental impacts of the following project:

OPERATION AND MAINTENANCE
ORWELL LAKE AND DAM
OTTERTAIL COUNTY, MINNESOTA

The environmental review process indicates that the proposed action does not constitute a major Federal action significantly affecting the quality of the human environment. Therefore, an environmental impact statement will not be prepared.

The attached finding of fact summarizes our environmental review. Those who have information which may alter this finding of fact and lead to a reversal of this decision should notify the District Engineer within 30 days.

8 May 1975

MAX W. NOAH
Colonel, Corps of Engineers
District Engineer

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

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Approved for public release; distribution unlimited.

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Environmental assessment
Orwell Lake

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Orwell Lake and Dam are located in Ottertail County, Minnesota, on the Ottertail River, and are operated primarily for the dual purpose of flood control and improvement of low-water flow. Flood runoff stored in the spring may be retained in the lake until needed during later months. The fluctuating water levels caused by operation adversely affect existing vegetation and fish and wildlife.

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FINDING OF FACT
ENVIRONMENTAL ASPECTS OF
OPERATION AND MAINTENANCE ACTIVITIES AT
ORWELL LAKE AND DAM
OTTERTAIL COUNTY, MINNESOTA

DEPARTMENT OF THE ARMY
ST. PAUL DISTRICT, CORPS OF ENGINEERS
1135 U.S. POST OFFICE AND CUSTOM HOUSE

MAY 1975

FINDING OF FACT
ENVIRONMENTAL ASPECTS OF
OPERATION AND MAINTENANCE ACTIVITIES AT
ORWELL LAKE AND DAM
OTTERTAIL COUNTY, MINNESOTA

General: The following is prepared in accordance with provisions in paragraph 4b(2) of Engineer Regulation 1105-2-507 (Preparation and Coordination of Environmental Statements) to document Findings of Fact concerning the environmental aspects of the proposed action discussed herein.

Introduction: We have reviewed the environmental impacts associated with the St. Paul District, Corps of Engineers, operation and maintenance activities at Orwell Lake and Dam. The review was based largely on an environmental report prepared by the Center for Environmental Studies, Tri-College University, Fargo, North Dakota. Pertinent Corps of Engineer reports were also utilized in the assessment process.

Project Location: Orwell Lake and Dam are located in Ottertail County, Minnesota, on the Ottertail River (Exhibit 1). Orwell Dam is located approximately 6 miles southwest of the community of Fergus Falls, Minnesota, and approximately 38.6 miles upstream from the confluence of the Ottertail River with the Red River of the North. Orwell Lake stretches about 4 miles above the dam.

Description of Action: Orwell Lake and Dam are operated primarily for the dual purpose of flood control and improvement of low-water flow. The lake usually is drawn down by 15 March to sufficiently accommodate the expected spring runoff. Flood runoff stored in the spring may be retained in the lake until needed during later months to help meet downstream water requirements provided that flood control storage is made available by 15 March of each year. Releases from the lake during both flood periods and low-flow periods depend upon the current volume of storage, as well as current and forecasted values of both lake inflow and downstream flow requirements.

Normally the lake will be filled to elevation 1070.0 by spring runoff. Following the spring runoff period, the release from the dam will usually never be less than 40 cubic feet/second (cfs). Outflow from the lake is increased as required to supplement natural flows at critical points downstream. Flood control storage is made available in the lake by inaugurating a program of winter releases about 20 September each year, which assures a drawdown at least to elevation 1048.0 by 15 March. Exhibit 2 shows pertinent data associated with lake operations.

The project is meeting the purposes for which it was designed. The Orwell Flood Control Project is part of the Comprehensive Flood Control Plan of the Red River of the North Drainage Basin. Flooding on the Ottertail River has been abated by the dam. However, since the Ottertail River contributes only 1.6 percent of the total flow in the Red River of the North Basin, its effects on the total basin are minimal.

The Minnesota Department of Natural Resources leases approximately 2500 acres of project lands adjacent to the lake and manages the area for pheasants and waterfowl.

Potential Impacts of the Action: The following parameters relating to potential impacts of the operation and maintenance activities have been reviewed and considered in arriving at the findings below:

Parameters Considered

Natural Parameters

a. Existing Vegetation
b. Fishery Habitat
c. Wildlife Habitat
d. Soil Erosion
e. Air Quality
f. Surface Water
g. Groundwater
h. Floodplain Encroachment
i. Endangered Species
j. Unique Natural Feature(s)

Cultural Parameters

a. Existing/Potential Land Use
b. Historic Values
c. Prehistoric Values
d. Aesthetic Values
e. Economic Development
f. Residential Patterns
g. Recreation Opportunities
h. Noise Levels
i. Navigation
j. Controversy
k. Archaeological Values

Discussion of Potential Impacts: Unless the individual parameters are discussed below, the environmental effect on those parameters listed above by the operation and maintenance activities is considered minimal.

Existing Vegetation - The annual drawdown inhibits the growth of aquatic plants in the littoral zone of the lake. This results in loss of habitat for littoral dwelling fish species and leaves unsightly and erosion-prone bare shorelines as drawdown progresses over the summer.

Fishery Habitat - As stated above, the drawdown adversely affects habitat for littoral dwelling fishes such as largemouth bass, bluegill, and northern pike. Also the fluctuating water levels inhibit the spawning of species that require shallow water to spawn in. They may spawn in the shallow water and then have their eggs exposed as the lake is drawn down. The dam also acts as a barrier to upstream migration of both game and rough fishes.

Wildlife Habitat - The fluctuating water levels adversely affect furbearing mammals such as muskrat and mink as these species require stable water levels. The lake does serve as a resting site for migrating waterfowl. Some waterfowl are known to use the project for nesting, but unstable water levels prevent large numbers of ducks from utilizing the lake for this purpose. Minnesota DNR management of the adjacent lands has had a beneficial impact upon wildlife.

Soil Erosion - The areas of shoreline that are alternately inundated and exposed are generally devoid of vegetation and subject to some wave erosion.

Surface Water - The project has changed 4 miles of river into a 1100-acre lake. The main effect upon surface water by the project is flow regulation. Spring floodwaters are stored in the lake and later released to augment low flows in late summer. Water quality in the lake is good. The only problems are associated with local turbidity at points of shore erosion.

Economic Development - The project has provided for the prevention of economic losses from floods. As of 1 January 1975, the cumulative net economic benefit from flood control was $2,500,400.

Recreational Opportunities - Recreation was not one of the purposes for the construction of Orwell Lake. The lake does provide some fishing opportunities but not of the quality of the many natural lakes in the area. Some hunting is allowed on the adjacent lands managed by the Minnesota DNR.

Archaeological Values - In compliance with Section 106 of the National Historic Preservation Act of 1966 and Executive Order 11593, the National Register of Historic Places has been consulted. As of April 1975, there were two sites on the Ottertail River listed on the Register but neither is located in the project area. These sites should not be affected by operation and maintenance activities at Orwell Lake and Dam. In addition, coordination with the National Park Service and the Minnesota State Historic Preservation Officer has been initiated. (See exhibit 3).

Conclusions: I conclude that Orwell Lake and Dam are adequately serving the purposes of flood control storage and low-water augmentation for which they were designed. However, since the widely fluctuating water levels have an adverse effect on fish and wildlife habitat and expose the shoreline to erosion, this office will conduct further study into determining if the levels of Orwell Lake can be somewhat stabilized and still perform the functions for which the lake was constructed.

Finding: From the foregoing considerations, I find that the continued operation and maintenance of Orwell Lake and Dam is in the public interest and will not significantly affect the quality of the human environment. As a consequence, I have determined that an environmental impact statement is not required by the provisions of Section 102 of the National Environmental Policy Act, Public Law 91-190, and applicable Corps of Engineers regulations and guidance.

8 May 1975

MAX W. NOAH
Colonel, Corps of Engineers
District Engineer

Exhibit 1 Location Map

Orwell Lake and Dam

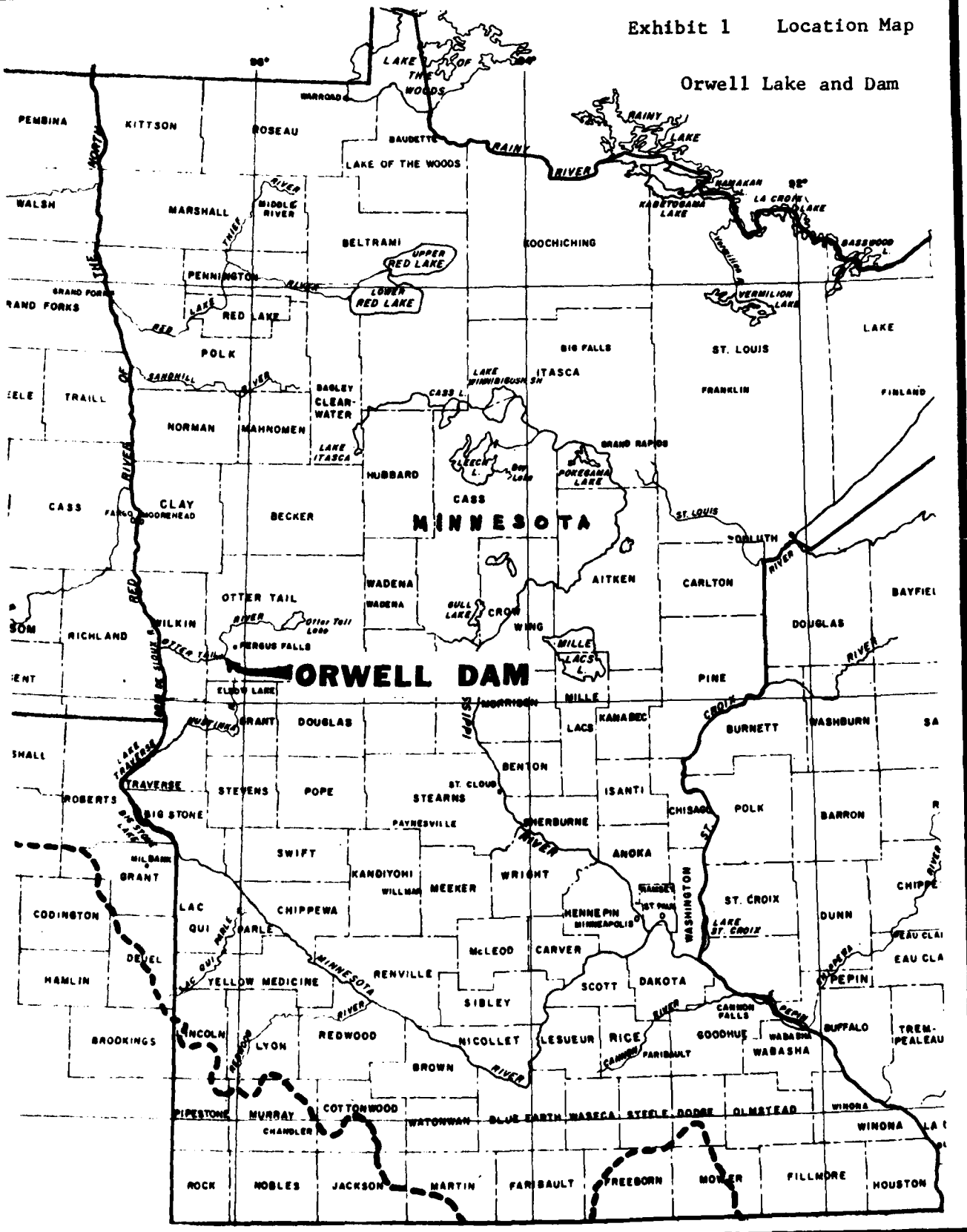

EXHIBIT 2 OPERATION DATA FOR ORWELL LAKE AND DAM

Total drainage area	1,820 sq. mi.
Effective drainage area (below main lake region)	245 sq. mi.
Pool elevation at spillway design flood	1075.0 ft. m.s.l.
Capacity at spillway design flood elevation	20,400 acre-feet
Normal full pool elevation	1070.0 ft. m.s.l.
Normal low pool elevation	1048.0 ft. m.s.l.
Fee title to elevation	1073.0 acres
Capacity at normal full pool (elevation 1070.0)	14,100 acre-feet
Capacity at normal low flow (elevation 1048.0)	1,000 acre-feet
Effective storage capacity	13,100 acre-feet
Lake area at normal full pool	1,110 acres
Lake area at normal low pool	210 acres
Lake length at normal full pool	4.0 miles
Maximum lake width at normal full pool	1.0 mile
Discharge for water year 1973 (cfs)	
Maximum (March 15, 1973)	914
Minimum (July 16, 1973)	53
Period of record (approximately 22 years	
Maximum (June 17, 1953)	1710
Minimum (August 5, 1970)	.70

DEPARTMENT OF THE ARMY
ST. PAUL DISTRICT, CORPS OF ENGINEERS
1210 U. S. POST OFFICE & CUSTOM HOUSE
ST. PAUL, MINNESOTA 55101

IN REPLY REFER TO
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29 April 1975

Mr. Kenneth Krabbenhoft
Regional Director
Midwest Region
National Park Service
1709 Jackson Street
Omaha, Nebraska 68102

Dear Mr. Krabbenhoft:

We are now in the process of assessing the environmental effects of the operation and maintenance activities at Orwell Lake and Dam, Ottertail County, Minnesota (Figure 1).

The Corps of Engineers operates and maintains the Orwell Project which consists of a dam and a lake operated primarily for the purpose of controlling spring floods. The subsequent release of the stored water additionally regulates water supply and pollution abatement during low-flow periods.

In compliance with section 106 of the National Historic Preservation Act of 1966 and Executive Order 11593, we are requesting your comments concerning the existence of any historical, archaeological and paleontological resources which may exist in the project area.

The Environmental Review for the project is scheduled for completion in May 1975. You will be informed of the results of this review.

If you have any questions, please do not hesitate to contact this office.

Sincerely yours,

MAX W. NOAH
Colonel, Corps of Engineers
District Engineer

2 Incls
1. Project Location Map
2. Identical letters list