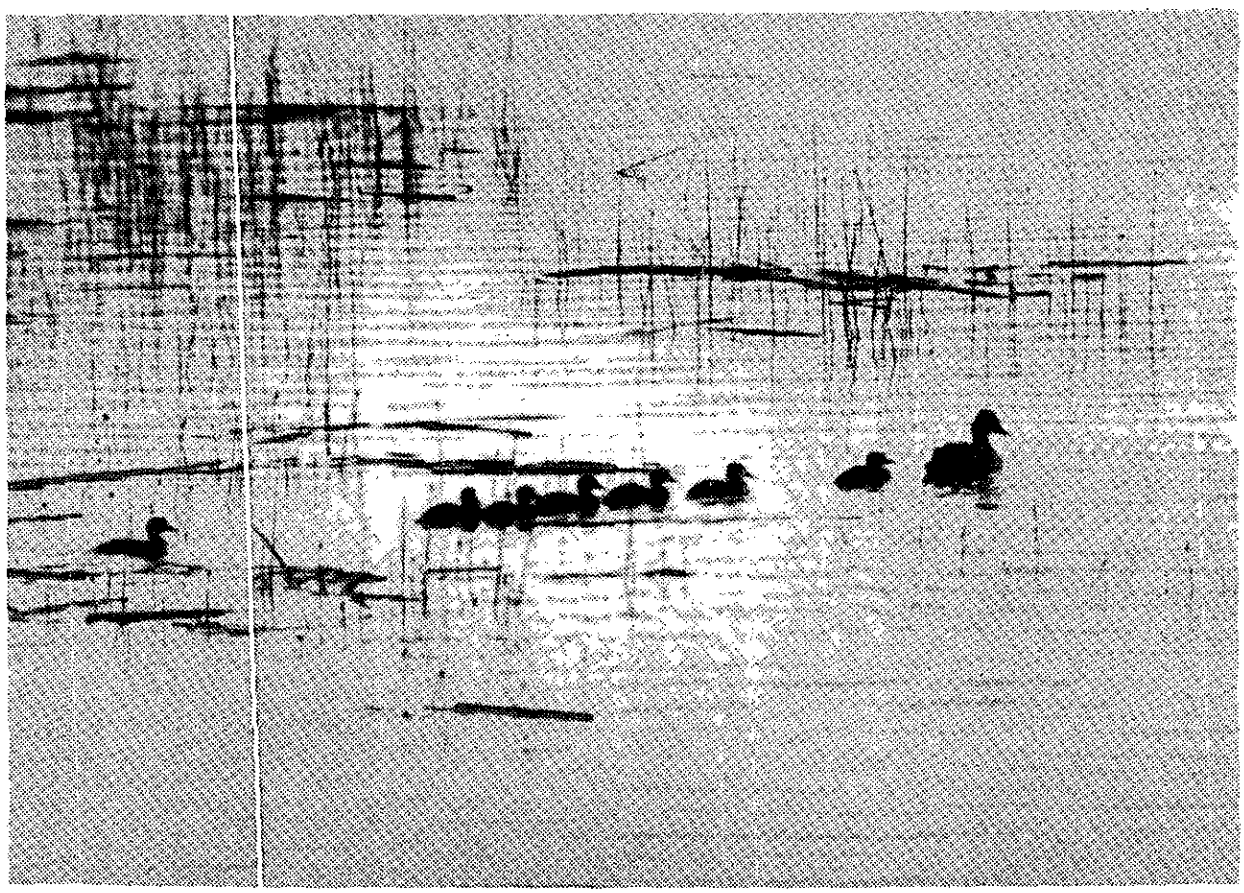
CANADIAN POWER DEVELOPMENT - East Fork Poplar River

Fish and Wildlife Impacts
Mitigation Options
Compensation Opportunities



Montana Department of Fish & Game
Ecological Services Division
January 1979

FISH AND WILDLIFE IMPACTS

Impacts on Fish Populations

East Fork Poplar River game fish populations are dependent on the alternation of gravel riffles with deeper, longer pools presently found in the river. The pools are utilized by northern pike and walleye on a year-round basis. Gravel riffles are the only habitat type used by walleye for spawning. These pools and riffles have been formed by the large streamflows resulting from spring snowmelt.

With the East Fork (Cookson) dam in place in Canada, these pool and riffle forming flows no longer occur. Flows below the dam consist of about 2 cfs of seepage near the base of the dam. This will result in a gradual decrease in the quality of riffles and depth of pools. Pool depth is already marginal for support of self-perpetuating game fish populations. Pools will become too shallow to provide security for game fish and large portions of pools will freeze to the bottom, decreasing living space and concentrating fish in the deepest areas. The fish concentration, decreased pool depth, along with thick ice cover will result in fish kills from low dissolved oxygen during winter. A fish kill due to low dissolved oxygen already occurred in late winter 1978.

Northern pike and walleye, the two game species in the East Fork Poplar River, are both dependent on flows during April and May for spawning and egg incubation. Walleye spawn in clean gravel riffles. They require certain depths and velocities for spawning and egg incubation. Northern pike spawn on flooded terrestrial vegetation. The eggs are adhesive and stick to the vegetation.

For successful reproduction, both species require flows considerably greater than the approximately 2 cfs that seep from the base of the dam.

Reproduction of walleye and northern pike failed entirely in 1977, when the low snowmelt runoff was entirely impounded by Cookson Reservoir. Larger flows are required in April and May to produce the required depths and velocities over gravel riffles and flooding of bank vegetation.

Impacts on Wildlife Populations

The Poplar River drainage in Montana provides either seasonal or yearlong habitat for at least 145 species of birds, 23 species of mammals and 4 species of reptiles and amphibians. The Saskatchewan Power Corporation's Cornach Project is anticipated to cause reduction in streamflows resulting in alteration of wildlife habitat. Habitat alterations will most severely affect waterfowl populations occurring on the East Fork Poplar River, specifically the six species of ducks which nest there: mallards, American wigeon, pintails, gadwalls, blue-winged teal and northern shovelers.

The East Fork Poplar River provides better duck habitat than any portion of the Poplar River system studied. Information collected during 1977 and 1978 indicated that the highest density of breeding pairs, broods, ducklings and the highest reproductive success occurred on the East Fork, and particularly the upper 9 miles.

Relatively high duck populations have been maintained on the East Fork Poplar River because of the interspersion of open water and emergent vegetation. Emergent vegetation provides the necessary cover for duck broods for protection during adverse weather, from predation and from other disturbances. However, when the emergent vegetation covers the entire water surface, the area becomes unsuitable for ducks because of the restriction of brood movement.

Large flows are required during the spring to retard the encroachment of emergent vegetation in order to maintain the interspersion of open water and emergents.

Historically, flooding of the East Fork has prevented the encroachment of emergent vegetation, but under the conditions of a dam, reservoir and a power plant on the East Fork in Canada, the frequency of flooding will be greatly reduced. This will allow the emergent vegetation to expand and eventually cover the entire water surface of the upper reaches of the East Fork, and hence make the area unsuitable for duck production. Eventual losses could be in the order of over 50 percent of the duck production of the East Fork.

Measures to Reduce Impacts (Mitigation Options)

Significant changes in the size and shape of the East Fork Poplar River will result with the installation and operation of Cookson Reservoir and the eventual use of 80 percent of this river by Canada. Habitat for fish and wildlife will be severely degraded because of the reduction in peak flows, depth, width, velocities and the loss of riffle areas.

We recommend the following measures be taken in order to reduce these negative effects on the habitat to a minimum:

1. Release or spill water from Cookson Reservoir to produce a minimum peak flow of 620 cfs throughout the U. S. portion of the East Fork Poplar River. The release should gradually build up to the peak and recede over a period of several days. This release should be timed to follow the natural runoff pattern; it should start no earlier than March 15 nor later than April 5 each year.

2. Release water from the Cookson Reservoir to produce a minimum flow of 15 cfs in April and 10 cfs in May throughout the East Fork Poplar River.

3. Minimum flows at the International Border should never be less than 3 cfs.

4. Canada's use of water in the Poplar River basin should be restricted to the East Fork so that fish and wildlife populations in the West Fork, Middle Fork and main Poplar River will not be affected.

Measures to Offset Fish and Wildlife Losses (Compensation Opportunities)

The following measures are designed to offset the predicted losses in fish and wildlife habitat on the East Fork Poplar River caused by the installation and operation of Cookson Reservoir.

1. The purchase or lease of land at Outlet Creek marsh. This area is located approximately 4 miles east of the point where the East Fork Poplar River enters the United States from Canada. A portion of this area is already owned by the U. S. Government (National Wildlife Refuge System) and managed primarily for waterfowl production.

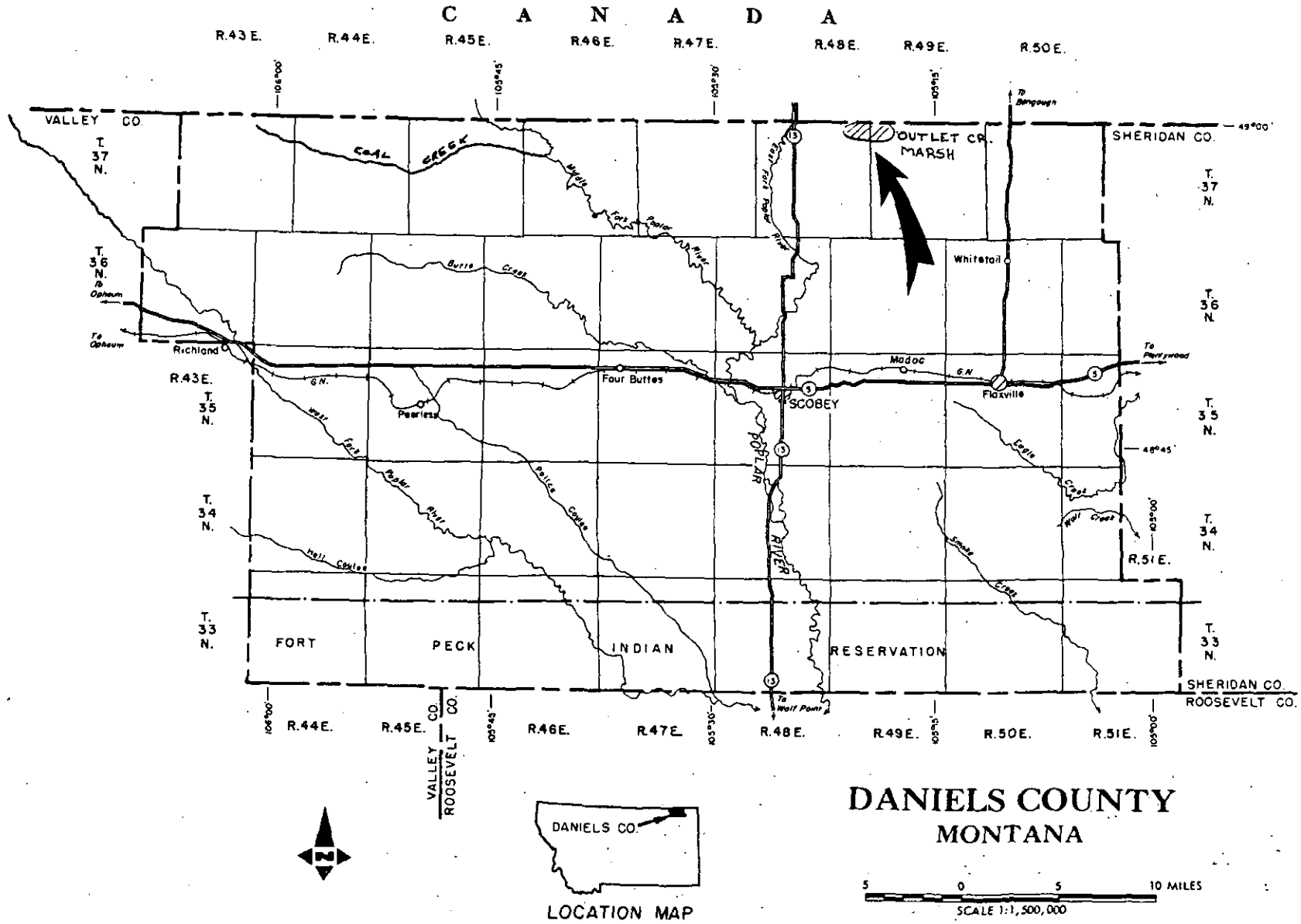
Outlet Creek marsh is within the Poplar River basin, and since it borders Canada, development of the area for wildlife will also benefit Canada. Acquisition or lease of 926 acres is necessary to implement a wildlife development plan, according to personnel from Medicine Lake National Wildlife Refuge. The development plan would involve raising the water levels to increase the amount of open water in the marsh. The subsequent interspersion of open water and emergent vegetation would provide additional habitat for waterfowl and increase the waterfowl production in the Poplar River drainage. Furbearers would also benefit

from the development of this area. The area currently provides habitat for white-tailed deer, pronghorn antelope and sharp-tailed grouse.

2. Dewatering of the East Fork Poplar River due to the installation and operation of Cookson Reservoir will result in the encroachment of emergent vegetation in the river. When these conditions develop, selected portions of land along the East Fork should be either purchased or leased and managed (through fencing) for wildlife. Such areas would provide important habitat (primarily cover) for ring-necked pheasants and white-tailed deer.

3. The purchase or lease and development of Carrol Dam. This area is located approximately 6 miles northwest of Plentywood in northeastern Montana. The area is included in the Plentywood Creek watershed and development would result in a 100-acre pond which would be primarily managed for fish production and water related recreation.

Financing necessary for the purchase or lease and development of fish and wildlife habitat to compensate for project-induced losses in northeastern Montana due to the Canadian developments on the East Fork Poplar River should be provided by the Canadian government.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R.43E.
R.44E.
R.45E.
R.46E.
R.47E.
R.48E.
R.49E.
R.50E.
R.51E.
VALLEY CO.
SHERIDAN CO.
ROOSEVELT CO.
T. 37 N.
T. 36 N.
T. 35 N.
T. 34 N.
T. 33 N.
COAL CREEK
Wolf Point
Butte Creek
Richland
Four Buttes
Peerless
Whitetail
Madoc
Flaxville
SCOBEY
OUTLET CR. MARSH
POPLAR RIVER
Police Coulee
Wolf Coulee
Eagle Creek
Wolf Creek
Smoke Creek
To Bainville
To Opheim
To Wolf Point
FORT PECK INDIAN RESERVATION
DANIELS CO.
LOCATION MAP
DANIELS COUNTY
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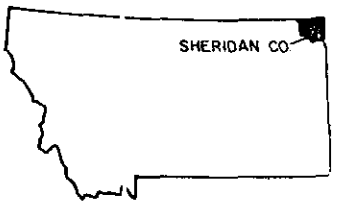

LOCATION MAP

SHERIDAN COUNTY
MONTANA

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