CANADIAN WILDLIFE SERVICE MANUSCRIPT ROUTING

TITLE ECOLOGICAL EVALUATION OF THE PEACE-ATHABASCA DELTA

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MONOGRAPH SERIES _____ REPORT SERIES _____ PROGRESS NOTE _____

ARTICLE _____ NAME OF PERIODICAL _____

PAPER _____ NAME AND DATE OF MEETING _____

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No. of manuscript pages	3
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Ecological Evaluation of the Peace-Athabasca Delta

Report on Summer Employment

1971

by

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Student Assistant

Introduction

The Canadian Wildlife Service began an ecological evaluation of the Peace-Athabasca Delta in 1968. The study area located adjacent to the southwest end of Lake Athabasca in northeastern Alberta covers approximately 2,300 square miles. Water levels in the delta are affected by floods on the Peace, Athabasca and Birch Rivers. Completion of the Bennett Dam on the Peace River near Hudson Hope, B. C. affects the level of the Peace River and the primary objectives of this project are to determine the effects of this dam on the water regime, vegetation patterns and waterfowl use of the delta.

Work Prior to 1971

In the field seasons prior to 1971, a base camp was set up at Fort Chipewyan, Alberta and vegetation sampling was carried out in selected stands along transects set up for aerial photography. Environmental and meteorological measurements were also taken.

The waterfowl phase of the project consisted of spring, fall and breeding pair census as well as nest search and chronology and brood distribution and habitat preference studies.

The 1971 Field Season

A Federal-Provincial Task Force was set up in the spring of 1971 to study the Peace-Athabasca Delta. As a result of overlap in the areas of study of the two projects the hydrology and waterfowl studies were taken over by agencies within the task force. The 1971 field season was to be concerned mainly with vegetation sampling and aerial photography.

We arrived at the Fort Chipewyan field station on May 26, 1971. Approximately a week and a half were spent in getting the camp in shape, launching the boats and getting them running properly. The weather station was also set up and data was collected from it each Monday.

The first phase of the summers work involved constructing and locating target markers on the transects which were to be photographed.

Early in June soil temperatures were taken in a number of stands of different vegetation types in order to determine the depth of ground frost. From this the ground water level can be determined or at least the depth to which water can go. Frost was found only in a few stands. This phase of the study was later discontinued.

Ground sampling of vegetation was carried out in the second week of July using a modified Braun Blanquet scale to rate ground cover. Ground sampling is necessary for comparison to aerial photos used in mapping the different vegetation types. Many of the mudflat stands could not be sampled because early in the year the vegetation was not yet mature and later they were under water.

Aerial photography was carried out in July and again in August on selected transects by G. Gentle and G. Calder. Three types of film, black and white, true color and color I.R. film were used in order to make fine delineations of the various vegetation types.

Perforated four inch diameter plastic piper were put to a depth of six to seven feet in most of the stands on Transect 4. These pipes were used to measure ground water depth and temperatures at weekly intervals. Water samples were also taken from these wells to determine pH and conductivity.

In the beginning of August a new transect (T-16) was set up in the southern part of the delta. Vegetation sampling was carried out and water and soil samples were collected from stands in representative habitats.

A level survey and cutting line was carried out on 28,000 feet of line of T-4. The elevations of the water wells were also determined so that ground water levels could be compared to surface water bodies. Elevations at target markers and in stands 32 and 33 were also taken to check elevations determined for these points by photogrametric methods.

Levels were shot at 100 foot intervals and notes were kept on vegetation in order to determine whether there was a relationship between elevation and vegetation type.

Personal Evaluation of the Summers Work

This summer job was both interesting and informative. Not only was our own project approached from a number of different angles but by living close to the Peace-Athabasca Task Force we came in contact with people studying their own specialized areas of interest. However, we were all basically concerned with the same problem. As a result of the interaction and exchange of ideas between the two camps I think that everyone benefited.

Living and working conditions were very good. Our jobs were clearly outlined and the various phases of the work were carefully explained. This kept up the interest in some phases of the work which might otherwise seemed tedious and without a reason.

I wish to thank all the staff involved for a very enjoyable and educational summer.