

-5-

responsible. Oxygen determinations during the winter months will be necessary in order to determine this.

Studies were continued on a restricted basis on the ecology of Swan Lake. General ecological conditions were noted and plankton and bottom samples collected. These studies will be compared with studies from previous summers to determine what important changes were taking place in the Lake as a result of the continuous addition of the effluent from the Colter Bay sewage. It is quite evident from the studies made up to this point that the Lake is serving effectively as a sewage lagoon. Undoubtedly the use of the Lake for this purpose only during the summer months with approximately a nine months period for recovery each year allows it to recover so that the rate of deterioration is not rapid.

Supported by the University of Wyoming.

Some Aspects of Plant and Animal Distribution  
as Affected by Geologic Formations  
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University of Wyoming  
Project Number 112

Research carried on in the summer of 1962 was a continuation of a three year study initiated in 1961. The study will attempt to evaluate and correlate quantitative and qualitative differences of various plant and animal populations occurring on five different geological formations. Study areas were located in Yellowstone National Park on Pitchstone Plateau, 8,800 feet, and on Two Ocean Plateau, 9,200 feet. In the Teton National Forest study areas were located on Big Game Ridge, 9,400 feet, and on Huckleberry Ridge, 9,200 feet. The Moran study area, 6,800 feet, was located in Grand Teton National Park, adjacent to the Biological Research Station. Geological formations represented by these study areas are Middle Pliocene pitchstone or rhyolitic glass; Oligocene pyroclastic andesitic conglomerate from the Wiggins formation; Cretaceous freshwater sedimentary sequence of sandstones, conglomerates, claystones and shales from the Harebell formation; Late Jurassic marine sandstone sediments from the Sundance formation; and sediments of fluvial and glacial origin, respectively.

Field work on the subalpine meadow study areas did not commence until the middle of July because of a late snow melt. From the middle of July until Labor Day a total of 71 mountain pocket gophers (Thomomys talpoides) were collected and frozen for analytical work. Measurements were taken of burrow cross sections on each area. The flowers, stems and leaves and roots of Agoseris, Lupinus, Achillea, and Erigeron were collected and frozen for analytical work. Ectoparasites were collected from each specimen. Two quart soil samples were taken at each area for use in quantitative and qualitative plant growth studies in plant growth chambers. A count of new pocket gopher mound diggings was made on each study area in late August to develop a comparative pocket gopher density index.



-6-

Research will be continued at the University of Wyoming concerning radiation and isotope accumulation, fat analysis, trace element analysis, complete elemental analysis of the parent rock strata, and chromatography analysis of various plant and animal tissues.

Assisted by Ralph Dimmick, University of Wyoming, and Allen G. Smith

Supported by the New York Zoological Society and the National Park Service. Cooperators were Grand Teton National Park, Teton National Forest, Yellowstone National Park, and the U.S. Geological Survey.

Population Study of Canada Geese in Jackson Hole, Wyoming  
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University of Wyoming  
Project Number 113

General Objectives:

1. To determine the seasonal distribution, size, and productivity of the Canada goose population in Jackson Hole.
2. To evaluate the various factors influencing Canada goose habitat and productivity, i.e., variable stream flow, proposed water impoundments, hunter concentrations, etc.
3. To formulate a management plan suitable for protection of the habitat, optimum productivity, and wise harvest of the Canada goose population in Jackson Hole, Wyoming.

Results

Periodic censuses of the Canada goose population in Jackson Hole were made during the year. In 1961 the peak population occurred in late August and early September, when 733 geese were observed. The peak population was observed during September 10-14 when 855 geese were located. The goose population was lowest during the breeding season when 198 were counted on the study area. Approximately 44 per cent of the birds present on the study area during the period of nest site selection and incubation were actually engaged in the production of young.

A total of 40 Canada goose nests was located during the 1962 nesting season. The first nest was initiated April 4, with the peak of nest initiation occurring during April 11-20. The peak of hatching occurred May 16-30; the last clutch hatched June 15. The length of the nesting season was 73 days. Nest success was 62.5 per cent, with 29 nests hatching at least one egg. Mean clutch size for 34 nests believed to be complete was 5.5 eggs, and mean brood size was 4.8 goslings for 38 broods observed during a brood census.

Patterns of water releases from Jackson Lake Dam were examined to detect the influence of the dam upon goose production and movements. During the period 1956-62, these releases were believed to be not detrimental to Canada