

Population Study of Canada Geese of Jackson Hole

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Objectives

Dimmick (1968) considered the 1964 Canada Goose (*Branta canadensis*) of Jackson Hole to be stabilized at approximately 300 birds, of which 40-47 percent were breeding pairs. Despite a near doubling of the Canada Goose populations in the United States between 1955 and 1974, the Pacific Flyway populations of Canada Geese appear to have declined 10 percent (Bellrose 1976). An evaluation of the significance and causes of that decline will require careful studies of the various individual populations of Canada Geese representing the Pacific Flyway. The current status of the Jackson Hole Canada Goose population is unknown, as is the nature of the impacts on that population by the dramatic local increase of the human population and the attendant land use and associated developments. Man-induced environmental factors, i.e., PCB and other toxicants, on the wintering grounds and migration routes exert additional unknown impacts.

Consequently, this study seeks to:

1. Conduct a physical inventory of the Snake River drainage in Jackson Hole to determine the seasonal distribution, size and productivity of the Canada Geese;
2. Identify and evaluate factors influencing goose habitat and productivity; and
3. Formulate management plans for habitat protection and maintenance of goose productivity.

This investigation was initiated in July of 1978 and will terminate in June of 1981.

Methods

Between February 8, 1980 and August 22, 1980 frequent roadside, foot and raft float surveys were made of the numbers, age composition, and distribution of Canada Geese using the Snake River drainage in Jackson Hole. The Wyoming Game and Fish Department continued their aerial breeding censuses of those geese. Quantitative and qualitative measurements of abiotic and biotic parameters at each nest site were continued to assess preferred nesting conditions. The smallest egg present in each unincubated clutch, as determined by the lack of

floatation of the eggs when placed in water, was collected for physical and chemical analyses. Aerial photographs taken in 1945, 1964, and 1975 are being comparatively analyzed photometrically for changes in characteristics of the braided stream channel which may significantly effect goose nesting habitat. In addition, a wide variety of data in land use planning reports on Jackson Hole have been screened and the pertinent information is being analyzed with respect to the degree of impact on Canada Geese.

Results

Mid-winter activity in 1980 was noted primarily around three locations within the study area. The Huckleberry Hot Springs area supported at least 16 geese; 18-55 (usually around 30) were seen around the Nowlin Creek Ponds on the National Elk Refuge (NER); and 11-67 were seen at a private gravel pit just south and west of the South Park Bridge. Additionally, 13-30 were seen grazing on hay distributed for cattle on the Jackson Hole Hereford Ranch and 4-28 along Spring Creek in the northeast corner of the Rafter J subdivision. These individuals may have been members of the NER flock, the gravel pit flock, or perhaps from an undiscovered flock.

Two other locations supported sizeable numbers of geese in the late winter and early spring before breeding commenced. A single goose was noted south of Astoria Hot Springs on March 7, and by March 24th, 51 geese were congregated there and another 5 pair were found between the Astoria Bridge and the Elbow Campground. The other pre-nesting season use area was the oxbow just below Jackson Lake Dam, 27 geese were seen there on March 28th.

Pairs not associated with family groups or larger flocks were first seen along the river on March 4 and on each float trip thereafter until the latter part of the nesting season. The first nest discovered was apparently initiated around March 28th, since this clutch of six hatched on May 3. Brood data suggest the last nests hatched sometime around the 15-20th of June.

A total of 62 goose nests were located; however, due to their placement many were physically inaccessible, or they were located on private land where the landowner refused permission to trespass on his property. Only 41 nests were available for examination. Summaries of those nesting data are presented in Tables 1, 2 and 3.

A total of 47 identifiable broods with 189 goslings were observed. The \bar{x} brood size was 4.02 goslings per brood with a S.D. of 1.98 and a range of 1-11.

Molting aggregations of geese were observed from mid-June into the first week of August. Numbers and distributions of those molters are presented in Table 4. After mid-July the mixing of molting birds with

Table 1. Distribution of Canada Goose nests located in Jackson Hole 1980.

Location	N	%
Elbow Campground to Astoria	21	34
South Park Bridge to Wilson Bridge	18	29
Wilson Bridge to Moose	3	5
Moose to Buffalo River	3	5
Buffalo River to Jackson Lake	4	6
Blackrock Ranger Station to Pinto Ranch	4	6
National Elk Refuge		
Flat Creek March	6	10
Gros Ventre River Bottoms	2	3
Christian Pond	1	2
Total	62	100

Table 2. Nest sites utilized by Canada Geese in Jackson Hole, 1980

Nest Site	N	%
Island (Stable and vegetated)	31	50
Island (Ephemeral gravel & sand)	13	21
March Pond or Stream	1	2
Beaver Pond	2	3
Artificial Pond	4	6
Riverbank	1	2
Pothole	2	3
Hay Field	5	8
Tree	1	2
Osprey Nest	2	3
Total	62	100

Table 3. Physical characteristics of nests and clutch size of nesting Jackson Hole Canada Geese, 1980.

	N	\bar{X}	S.D.	Range
Bank height nearest to nest (m)	38	0.84	44	0.15-2.0
Distance of nest from nearest water, excluding those exceeding 100 m. (m)	40	6.13	9.32	0-100
Clutch size	41	5.00	0.92	3-7

Table 4. Locations and numbers of molting Canada Geese in Jackson Hole, 1980.

Location	Date	N
Elbow Campground to Astoria	7/2	23
South Park to Wilson Bridge	7/1	54
Moose to Buffalo River	7/16	66
Buffalo River to Jackson Lake	7/12	8
Lizard Creek to Flagg Ranch	6/29	101
Blackrock Ranger Station to Pinto Ranch	6/30	49
Elk Ranch Reservoir	6/30	1
Upper Slide Lake to Snake River	6/30	52
Jackson Lake Dam-Third Creek	7/14	212
Elk Refuge	7/10	24
Emma Matilda Lake	6/19	5
Total		595

flying birds made it impossible to make further accurate molting counts.

Literature Cited

- Bellrose, F. C. 1976. Ducks, geese and swans of North America. Stackpole Books, Harrisburg, PA 544 p.
- Dimmick, R. W. 1968. Canada Geese of Jackson Hole, their ecology and management. Wyo. Game and Fish Comm. Bull. No. 11. 86 p.