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WATERFOWL BANDING, INNOKO AND IDITAROD RIVERS, ALASKA, 1954

**Submitted
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PHYSICAL ASPECTS

Itinerary

I departed from Kenai with Ref. Supvr. D. L. Spencer in N708 on 17 July and was left at Anvik on 19 July. Arrangements were made here for having a boat built and securing help for the summer. Rudolph Chase of Anvik and Henry Deacon of Holikachuk were hired. We departed Anvik on 26 June and journeyed up the Yukon River to Rapids Fish Camp. Here we painted our newly built boat and readied it for the ensuing season. On 28 June we departed Rapids Fish Camp and traveled the Shageluk and Holikachuk Sloughs to Holikachuk on the Innoko River.

On 5 July, after receiving bird bands from the Regional Office, we departed for the mouth of the Iditarod River and established a base camp. From 6-8 July we banded birds on the Innoko and Iditarod Rivers in the vicinity of camp. Between 9-15 July we traveled from the terminus of the Iditarod to Dikeman banding birds and returned to Holikachuk because we had run out of goose and nearly out of duck bands. On 16 July we spent the day in town. Between 17-18 July we journeyed to the Iditarod camp and returned to Holikachuk obtaining brood production information. We stayed in Holikachuk 19-21 July awaiting bird bands and an outboard motor part.

From 22-24 July we banded birds; the first day we traveled to the Iditarod camp and the next two days we worked in the vicinity of our camp. We journeyed from camp up the Iditarod to the Yetna River between 25-26 July. We banded on the Yetna between 27-29 July, and on 30 July we went back to our Iditarod camp. On 31 July we banded in the vicinity of camp. On 1 August our 10 h.p. outboard motor broke down and was damaged beyond

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immediate repair. We used our spare motor and journeyed down to Holikachuk. This was the end of the banding season for us because of the motor, and plus the fact that the three previous days had yielded only zero to fifteen birds a day.

Equipment

Motors. Two outboard motors, a 10 and a 5 h.p. Johnson, were used during the summer. Both motors had been used for the past three years and had not had a major overhaul. The 10 h.p. engine was used the most and consequently gave us the most trouble. It would not function properly at low speeds, the steering shaft broke, and finally the side of the engine block cracked open rendering the motor useless. The 5 h.p. engine never did develop full horsepower and was of little use except as an emergency unit.

A 10 h.p. engine is not of sufficient horsepower rating for the Innoko operation. Camp had to be moved nearly everyday in order to assure obtaining waterfowl to band. This moving entailed carrying all our camping gear, food, fuel, and banding supplies. All this weight slowed the boat down considerably thus hindering the banding effort. It is suggested for the future that a 25 and a 15 or a pair of 15 h.p. engines be used for this particular banding operation.

Boats. A boat had to be built by a local man as none were available that were suitable for banding purposes. Furthermore the cost would have been prohibitive to have brought a FWS boat from downriver. The boat is a flatbottomed scow, square ended, and upturned at the bow. It is 18 feet 6 inches long overall and 3 feet wide at the bottom. The draft when empty is 1 inch and when loaded 6 inches. The boat was a bit crowded with

all the camping gear, food, gas, and other odds and ends, but served admirably all summer, especially in negotiating shallow sloughs and lakes. This boat is now stored at Holikachuk.

A 28 foot river boat was also chartered to haul freight to the camps. Other than several freight hauls it was of little use because of its excessive weight; therefore not amenable to use with the scow and the one motor.

Fuel. The only point of supply for the Innoko and Iditarod Rivers is Holikachuk, thus when departing for a trip enough fuel must be carried for the return journey. This extra "backpacking" of fuel adds extra weight to the boat and makes the trip longer and more expensive than should be necessary.

It is suggested for future operations in the Innoko region that fuel be purchased in the Spring at Railroad City, from there it can be hauled by the Dementoff Navigation Co. to selected spots on the Innoko and Iditarod Rivers. By positioning fuel early in the Spring, time and money would be saved.

Weather

There was little snow this winter and as a result, after breakup on 6 May, the water level of the Innoko River was the lowest Frank Walker of Holikachuk can remember. Since Spring the weather has continued mild through 15 July with one exception; a heavy rainstorm on the upper Innoko and Iditarod watersheds. Water levels came up 14 inches and gave benefit of higher water for one week. From 16 July onward, there has been cloudy weather and rain almost everyday; resulting in raising water levels.

The low water levels this season has restricted boat travel to the main rivers. Shown in Figure 1 are the areas where waterfowl were banded. These areas closely approximate the areas that were accessible to boat travel. Most of the lakes were inaccessible as the channels leading into them were too shallow or dry.

BIOLOGICAL ASPECTS

Banding

A total of 1231 waterfowl was banded from 5-31 July. Presented in Table 1 is a species break down by time and numbers.

Places, Numbers, and Movement. Presented in Figure 1 is the extent of banding activities. This figure also mirrors to a large measure the distribution of waterfowl concentrations.

Ducks were most numerous on the Innoko River and its tributaries between Holikachuk and the mouth of the Iditarod River, the lower part of the Iditarod River, and the lower Yetna River. A few lakes adjacent to the rivers visited afoot and contained many broods. Geese, numbering into the thousands, were most numerous on the Iditarod River from its terminus to Dikeman and on the lower Yetna River.

Banding activities and general river travel reduced the number of waterfowl seen. If frequently disturbed, it is believed that ducks would move out of an area or hide when a motor was heard. As flightless geese are quite mobile on land, they move out of an area the first time they are disturbed, and are not always likely to return. Banding schedules attest to the fact that less birds are banded in the same area on the days following the initial attempt. From 9-13 July we traveled up the Iditarod from

TABLE 1. Number of Birds Banded in Relation to Time.

July	Lesser Canada Goose	White- fronted Goose	Lesser Snow Goose	Mallard	Pintail	Widgeon	Green- winged Teal	Shoveler	Total
5	13				83	5			101
6	10				36				46
7	40			2	25				67
8		11			18			6	35
9		63			10				73
10	25	41							66
11	87	26		3	37				153
12	71	20			9				100
13	49	26			3		2		80
14	4	13			9				26
15			1		31		2		34
17				1	35	2	23		61
18					44	7	9	9	69
22					8				8
23	56				37	7	11		111
24					25		5		30
25		6			2				8
26	17			4	3	6	1		31
27	49	2			21	12			84
28	25				5				30
29				1	7	7			15
30									
31					3				3
Total	446	208	1	11	451	46	53	15	1231

its terminus to Dikeman and sighted thousands of geese. On the return trip, 14-15 July, only several hundred were observed. On 11 July we saw a white goose among some Canadas and whitefronts, again on 15 July it is believed that this same white goose was sighted with other geese 16 miles away from the place where first observed. By river, this distance is roughly 60-70 miles.

Sex Ratios. Presented in Table 2 are the ratios for all birds banded. The ratios are nearly equal in some cases and not in others. Too few birds were banded in some instances and distorted ratios could be the result of coincidence. Only one irregularity was noted; that of the juvenile lesser Canada goose, whose ratio of males to females was approximately one and a half to one.

Banding Techniques. Dabbling duck broods were caught by herding the birds ashore as a unit and then hunting for them in the grass. Geese would go ashore as soon as the boat was seen and they were caught by running them down or by hunting for them in the grass.

Suggested Methods For Future Use. Catching waterfowl by running them down or by hunting for them in the grass is a laborious and time consuming method. This is especially true for widgeon and shoveler which are most difficult to herd ashore. Widgeon were numerous in the Innoko area but only 46 were banded because of the time involved in herding them ashore.

Some other method is needed to catch geese and especially ducks if we are to increase our yearly production rate. A net trap suited to mobility would appear to be feasible for catching waterfowl.

To catch ducks, a net would be needed that is two to three hundred

TABLE 2. Sex Ratios.

Species	Juvenile		Adult	
	Male	Female	Male	Female
Mallard	4	7		
Shoveler	4	11		
Widgeon	16	30		
Green-winged Teal	27	26		
Pintail	208	243		
White-fronted Goose	5	18	87	98
Lesser Canada Goose	222	167	26	30

y- long by six feet wide. If this net were placed across a slough at a forty-five degree angle it would stop all ducks and effectively turn them toward shore. A collecting pot with extending wing connected to the net across the slough should catch and hold birds even when no humans are near. The part of the net across the slough does not have to be anchored to the bottom for dabbling ducks as this net is just used to turn the birds toward shore and into the collecting pot. A trap set somewhat like the one described above was used with 200 feet of dip net. This net was far too short to accomplish the job. However the net did stop and catch 40-60 ducks on two different occasions, but failed to hold the birds as the retaining wings from the pot were too short.

A trap set like the one described for ducks would also work for geese. In the case of geese, much more net would be needed because of their mobility. Perhaps as much as a quarter to a half a mile in length by six feet wide. Geese will move readily to and on land and cannot be herded by men afoot. It is thought, that if an airplane could be used to frighten the geese into and hold them in the water, that a ground crew could then exert control over the birds and herd them ashore and into a net. First, airplane herding should be tried on flightless geese to ascertain what control can be exerted from the air.

Brood Sizes and Ages

Presented in Table 3 are the brood sizes and ages by time interval. It will be noted that brood sizes increase with age, this may be caused by inadequate sampling, and to amalgamation of two or more broods. Brood size and age information for mallard, green-winged teal, and shoveler are not included in this table as it is felt that not enough data were gathered

TABLE 3. Brood Sizes and Ages.

Pintail				
Age	28 Jun.- 8 July	July 9-19	July 20-29	Average
1A	6/23/3.8			6/23/3.8
1B	6/35/5.8			7/38/5.4
1C	8/37/4.6	1/3/3		8/37/4.6
2A	11/54/4.9	5/18/3.6		16/72/4.5
2B	13/65/5	35/158/4.5	19/64/3.3	67/287/4.2
2C	7/36/5.1	32/151/4.7	30/133/4.4	69/320/4.6
3		3/10 /3.3	36/160/4.4	39/170/4.3
Widgeon				
1A	2/13/6.5	2/7/3.5	1/5/5	5/25/5
1B		8/51/6.3	1/5/5	9/56/6.2
1C			3/10/3.3	3/10/3.3
2A	1/7/7	1/9/9	17/67/3.9	19/83/4.3
2B		4/15/3.7	6/27/4.5	10/42/4.2
2C			1/2/2	1/2/2
3				

to be of use.

Pintail broods of the same age show a progressive decrease in size during July. Age classes 2B and 2C show this best as there is a larger sample for these classes than others. This could mean that the birds born earlier suffer less mortality, and that the birds born later or as renests suffer more.

Aging Techniques. Broods were aged according to A Guide For Aging Duck Broods In The Field by J. B. Gollop and W. H. Marshall. Most ducks can readily be put into the proper classes. However the distinction between some of the subclasses are difficult to observe in the field, especially on days with poor visibility or rain. The distinctions hardest to make are between subclasses 1C and 2A and 2C and 3.

Banding Vs. Brood Studies

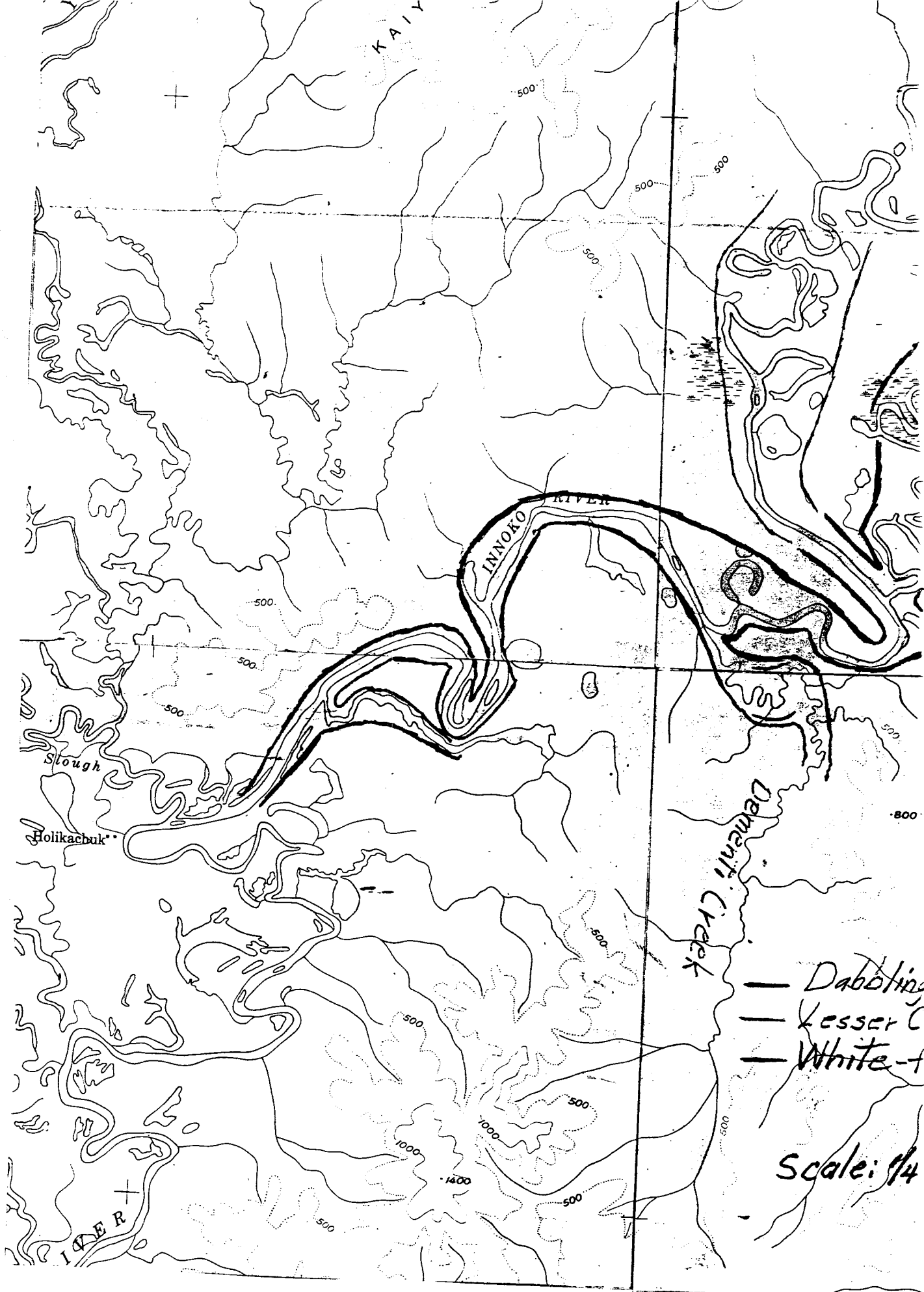
The reasons for incompatibility of banding and brood studies are discussed under the heading Places, Numbers, and Movement. If possible brood and production studies should be undertaken on separate areas from banding areas. Also the banding crew leader should concentrate his efforts on production studies with assists from the banding crew when needed; otherwise the banding crew could be continuing their work at the same time as the production studies. In this way information on ages, sizes, production, and methodology can be obtained, and at the same time the banding program can go forward.

Submission of Reports

On page 2 of WNM 20 there is a discussion about the feasibility of submitting production reports as late as 6 August. This later date is much more desirable than the 20 July deadline. As can be seen in Table 3

most of the pintail broods were in class 2 with a few entering class 3 during the latter part of July, and widgeon broods were in the younger subclasses of class 2. Undoubtedly more broods would be produced and more mortality would be suffered by these species as time elapsed; therefore the later production information could be submitted the more its accuracy.

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- Dabbling
- == Kesser C
- White-t

Scale: 1/4

Fig. 1. Distribution of water fowl.

