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DULBI RIVER GOOSE SURVEY,

by

Mike Motschenbacher

Key Words: White-fronted Goose  
Canada Goose  
Koyukuk Geographic Area  
Dulbi River  
Waterfowl Survey

Koyukuk National Wildlife Refuge  
P.O. Box 287  
Galena, Alaska 99741

**On Reserve**

December 17, 1984

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TITLE: Dulbi River Goose Survey

DATES: 4-6 July 1984

AUTHOR: Mike Motschenbacher, USFWS, Koyukuk NWR

DATA SUPPLIED BY: Mike Nunn, USFWS, Koyukuk NWR  
Mike Motschenbacher, USFWS, Koyukuk NWR  
Jason Nunn, Volunteer, Koyukuk NWR

ABSTRACT: A survey of white-fronted goose (Anser albifrons) and Canada goose (Branta canadensis) broods was conducted on 58 3/8 miles of the Dulbi River in Alaska. Four hundred and fifty-four adult and 234 young white-fronted geese and 87 adult and 107 young Canada geese were observed. Geese were concentrated in the lower reaches of the Dulbi River, with the number of young increasing logarithmically with distance down the river.

NARRATIVE:

Introduction: A river survey of goose broods was conducted on the Dulbi River in Alaska to develop trend data for goose production on the Koyukuk National Wildlife Refuge (NWR). The Dulbi River provides important habitat for brood rearing by two goose species, white-fronted goose (Anser albifrons) and Canada goose (Branta canadensis).

Study Area and Methods: The Dulbi River was surveyed for 58 3/8 miles, starting 0.5 miles downstream of the mouth of Cottonwood Creek (T. 3 S., R. 13 E., sec. 24, Kateel River Meridian) and ending downstream at Barney Attla's abandoned cabins, 5 1/8 miles upstream from the Koyukuk River (T. 1 s., R. 11 E., sec. 12, Kateel River Meridian).

Access to the study area was made by a chartered Cessna 206, using a gravel bar on the Dulbi River as a landing strip. The river was surveyed in 1/8 mile segments, using a Zodiac inflatable raft with a 6 hp Evinrude outboard motor. Departure from the study area was made in a Piper Super Cub and a Cessna 180, both equipped with floats.

Observations were made using 10X binoculars. Goose brood species, size, and age class were recorded. Birds one year old and older were classified as adults. Incidental avian and mammalian species were also recorded.

Statistical comparisons were made using the "Students" t test.

Results and Discussion: Four hundred and fifty-four adult and 234 young white-fronted geese and 87 adult and 107 young Canada geese were observed. Due to mixing of broods, only four Class I and two Class II white-fronted goose broods and six Class I Canada goose broods were used to obtain mean brood sizes (Table 1). The mean brood size of Class I white-fronted geese was  $5.8 \pm 2.50$  and of Class II was  $4.5 \pm 0.71$ . The mean brood size for Class I Canada goose broods was  $5.7 \pm 3.33$ .

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Age classes of the young geese observed are shown in Table 2. The average age of young white-fronted goose broods was  $16.0 \pm 6.61$  days and of Canada goose broods was  $10.7 \pm 4.74$  days.

Goose distributions on the Dulbi River are shown in Figures 1 and 2. White-fronted and Canada geese were more abundant closer to the mouth of the Dulbi River. The number of goslings of both species increased logarithmically. Adult white-fronted goose density increased from 1.0 geese/mile before mile 26  $\frac{3}{8}$  to 13.1 geese/mile after mile 26  $\frac{3}{8}$ . The density of adult Canada geese was fairly constant at 1.5 adult geese/mile. The increased goose population near the mouth of the Dulbi River may be due to better nesting and/or brood rearing habitat near the mouth of the Dulbi River. The habitat near the mouth of the river seems to be more marshy than the habitat around the upper reaches of the river. There is a possibility that goose broods may be migrating downstream. There was a difference, though not significant ( $P > 0.05$ ), between the ages of goose broods in the upper one half and lower one half of the study area. The average age of white-fronted goose broods was  $16.6 \pm 12.84$  days in the upper area and  $15.8 \pm 21.28$  days in the lower area. The average age of Canada goose broods was  $10.2 \pm 5.37$  days in the upper area and  $11.2 \pm 4.46$  days in the lower area.

Non-breeding adult geese were molting during the survey. Flightless white-fronted geese were observed on 5, 6 July, and flightless Canada geese were observed on 4, 5, 6 July.

A total of 30 avian species and three mammalian species were identified along the Dulbi River (Table 3). Evidence of reproduction was found for twelve of the species. Five duck species were observed with broods. The average brood size, distribution of age classes and number of young ducks observed are listed in Tables 1 and 2. An active red-tailed hawk (Buteo jamaicensis) nest with at least two downy chicks was sighted on the top of a white spruce tree (Picea glauca) on the north bank of the Dulbi River in T. 3 S., R. 13 E., N. ~~NE~~  $\frac{1}{4}$  sec. 16, Kateel River Meridian. A total of seven black bears (Euarctos americanus). All seven were seen during the last day in the last ~~28  $\frac{5}{8}$  miles of the survey.~~

#### Management Recommendations:

If this survey is conducted on a yearly basis, it can be used to provide an index for goose populations on the Koyukuk NWR. More detailed goose distribution studies in this area should provide more information on what factors are responsible for the goose density being higher in the lower part than the higher part of the Dulbi River.

The length of river surveyed can be increased with an increased use of an outboard motor. On the first day of the survey, the motor was used sparingly, and the amount of river surveyed was 11  $\frac{1}{8}$  miles. On the second day, the motor was used all day at about half throttle and 18  $\frac{5}{8}$  miles of river were surveyed. On the third day, the motor

was used all day at full throttle, and 28 5/8 miles of river were surveyed. The rate of gas consumption at full throttle was about 5 mpg. Fifteen gallons of gas should be sufficient to survey most of the brood habitat on Dulbi River.

The floor boards of the Zodiac raft need to be repaired or replaced. Some pieces of the floor were broken or missing. The boards would not connect firmly, coming loose throughout the float and allowing water, in the bottom of the raft, to soak some of the equipment.

Table 1. Waterfowl brood size on the Dulbi River during 4-6 July 1984.

Species	Brood Size			
	$\bar{X}$	s	n	Range
white-fronted goose ( <u>Anser albifrons</u> )	5.3	2.07	6 <sup>a</sup>	3-9
Canada goose ( <u>Branta canadensis</u> )	5.7	3.33	6 <sup>a</sup>	2-11
American wigeon ( <u>Anas americana</u> )	7.0	0.82	4	6-8
northern shoveler ( <u>Anas clypeata</u> )	4.7	1.53	4	3-6
pintail ( <u>Anas acuta</u> )	3.5	2.12	2	2-5
mallard ( <u>Anas platyrhynchos</u> )	-	-	1	5
goldeneye ( <u>Bucephala</u> spp.)	4.5	0.71	2	4-5

<sup>a</sup> Used only broods accompanied by one or two adults.

Table 2. Number and Age Class of waterfowl young on the Dulbi River during 4-6 July 1984.

Species	Age Class						Total Number Observed in All Age Classes
	IA	IB	IC	IIA	IIB	IIC	
white-fronted goose ( <u>Anser albifrons</u> )	4	40	169	4	4	5	234 <sup>a</sup>
Canada goose ( <u>Branta canadensis</u> )	15	49	25	0	0	0	107 <sup>b</sup>
American wigeon ( <u>Anas americana</u> )	22	6	0	0	0	0	28
northern shoveler ( <u>Anas clypeata</u> )	14	0	0	0	0	0	14
pintail ( <u>Anas acuta</u> )	0	5	2	0	0	0	7
mallard ( <u>Anas platyrhynchos</u> )	5	0	0	0	0	0	5
goldeneye ( <u>Bucephala</u> spp.)	0	5	4	0	0	0	9

<sup>a</sup> 8 young were not classified.

<sup>b</sup> 18 young were not classified.

Table 3. Avian and mammalian species observed on Dulbi River during 4-6 July 1984.

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red-throated loon (Gavia stellata)  
trumpeter swan (Cygnus cygnus)  
Canada goose (Branta canadensis)<sup>a</sup>  
white-fronted goose (Anser albifrons)<sup>a</sup>  
mallard (Anas platyrhynchos)<sup>a</sup>  
pintail (Anas acuta)<sup>a</sup>  
American wigeon (Anas americana)<sup>a</sup>  
northern shoveler (Anas clypeata)<sup>a</sup>  
green-winged teal (Anas crecca)  
goldeneye (Bucephala spp.)<sup>a</sup>  
bufflehead (Bucephala albeola)  
red-breasted merganser (Mergus serrator)  
northern harrier (Circus cyaneus)  
red-tailed hawk (Buteo jamaicensis)<sup>a</sup>  
semipalmated plover (Charadrius semipalmatus)  
spotted sandpiper (Actitis macularia)  
Lesser yellowlegs (Tringa flavipes)<sup>b</sup>  
rock sandpiper (Calidras ptilocnemis)  
glaucous gull (Larus hyperboreus)  
mew gull (Larus canus)<sup>a</sup>  
Arctic tern (Sterna paradisaea)  
great horned owl (Bubo virginianus)  
belted kingfisher (Megaceryle alcyon)  
bank swallow (Riparia riparia)<sup>c</sup>  
common raven (Corvus corax)  
robin (Turdus migratorius)  
waxwing (Bombycilla spp.)  
yellow warbler (Dendroica petechia)  
rusty blackbird (Euphagus carolinus)  
redpoll (Carduelis spp.)  
  
beaver (Castor canadensis)  
black bear (Euarctos americanus)  
moose (Alces alces)<sup>a</sup>

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<sup>a</sup> Adult with young

<sup>b</sup> Broody adult

<sup>c</sup> Observed nesting colonies

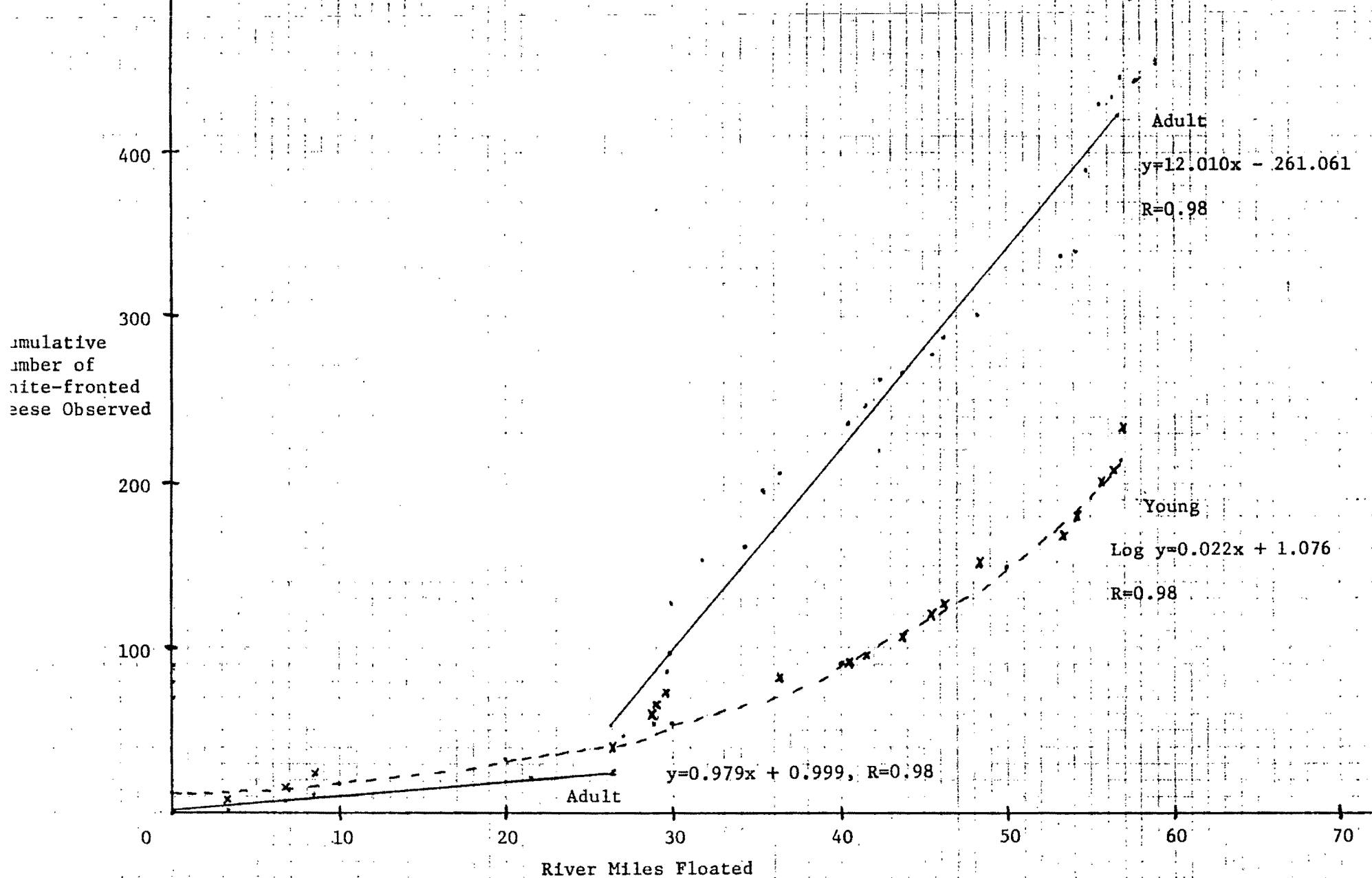


Figure 1. Cumulative number of white-fronted geese (*Anser albifrons*), adult and young, observed on the Dulbi River float trip on 4-7 July 1984.

— Adult  
 --- Young

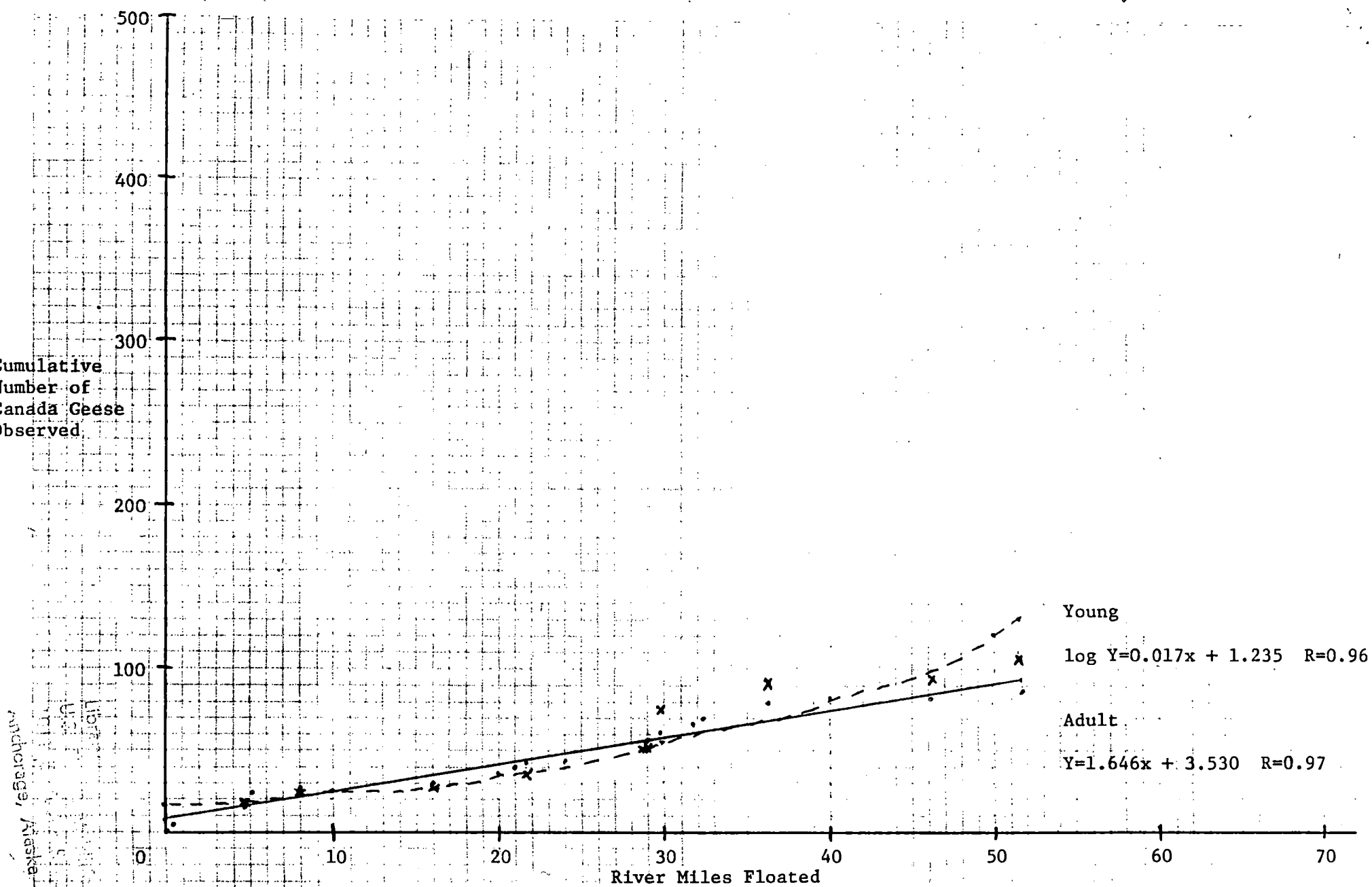


Figure 2. Cumulative number of Canada geese (Branta canadensis), adult and young, observed on the Dulbi River float trip on 4-7 July 1984.

— Adult  
 --- Young