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Black Duck Joint Venture Monitoring Surveys  
Newfoundland and Labrador, 1991

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I. ABSTRACT

From 13 May 1991 to 7 June 1991, the second year of the Black Duck Joint Venture Monitoring Surveys was completed in Newfoundland and Labrador. A late spring delayed start up by one week overall, and a further 1 week delay of 22 - 27 May 1991 for the northern component was necessary. Concern for complete funding resulted in the delayed survey of 3 plots on the island portion, and resulted in low detection of Black Ducks on those specific areas.

Overall, a greater number of waterfowl were detected in 1991. Indicated pairs of Black Ducks per 100 km<sup>2</sup> were up by 25% over 1990 numbers. Generally plots that held relatively large numbers of waterfowl in 1990 were also most important in 1991 and greater numbers were observed. Five years of consecutive data for 7 plots in the Central Forest Ecoregion demonstrated the greatest numbers of Black Ducks recorded thus far. Those data were particularly weighted by large numbers of waterfowl on the 2 northeasterly plots. Extraordinary numbers of Black Ducks were banded in this area in late summer - early fall. Data for Canada Geese were more varied and less suggestive of trend.

The survey required approximately 80 hours of helicopter time and the final cost approximated \$72K including contractual assistance.

## II. INTRODUCTION

Surveys to implement the 1991 Black Duck Joint Venture (BDJV) Monitoring Program for Newfoundland and Labrador were initiated on 13 May 91. A very late spring chronology and associated low temperatures delayed start-up by 1 week over previous years. Twenty-five plots (10km x 10km) were completed by 7 June 91 although initially 3 plots were placed on hold due to possible financial constraints.

Seven plots in the Central Forest Ecoregion have been in place since 1987, and these data continue to provide some indication of population trend for this region of insular Newfoundland that supports about 50% of the Black Duck breeding population.

## III. METHODS

Surveys of the BDJV monitoring program followed the standardized procedure of 3 observers in addition to the pilot with the front observer doubling as a navigator and recorder. Surveys, using a Jet Long Ranger, were flown at low level (mean 16m A.G.C.) at reduced speeds of 80 kph to 112 kph down to a hover, depending on complexity of habitat and need for detailed observation. We attempted to survey potential habitat of lakes, ponds, streams, and peatlands within the 100 km<sup>2</sup> plots. For most wetlands, the pilot maintained a course about 30m from the back shore to maximize detection of Black Ducks which often occur along the edges of wetlands.

#### IV. RESULTS

##### 1. Time and flight hour requirements

Approximately 80 hours of flying time were required. Total costs including contractual assistance and field expenses was 72K.

##### 2. Waterfowl

Significantly greater numbers of most waterfowl were detected on plots in Spring 1991 (Table 1), for example 312 indicated pairs of Black Ducks (12.5 prs/100 km<sup>2</sup>) in 1991 versus 247 indicated pairs (9.9 prs/100 km<sup>2</sup>) in 1990. A similar pattern of relative abundance on plots was noted in 1991 as previously, i.e. plots with relatively large numbers of waterfowl in 1990, also supported relatively large numbers in 1991. Some species were observed in markedly greater numbers such as Pintail.

Unusual sightings were limited and included Bufflehead for the first time.

Trends indicated by the seven plots for central Newfoundland suggest a substantial increase for some dabbling ducks over the previous 3 years (Table 2 , Figure 1). Canada Geese numbers were at about the levels recorded in 1989 (Table 3, Figure 2).

##### 3. Raptors and other birds

Shorebirds on plots comprised mostly Greater Yellowlegs, Spotted Sandpiper, and Snipe. Greater Yellowlegs were particularly ubiquitous. Herring Gulls were commonly encountered in low numbers whereas Greater Black-Backed Gulls were more restricted in distribution, notably a small breeding colony on plot 3 (Table 4).

Raptor observations were sparse although Ospreys were common throughout. A Great-Horned Owl nest with 2 chicks at 3 weeks of age was observed on plot 20, Labrador on 6 June 1991 (Table 4).

#### 4. Mammal observations

Moose and Caribou were frequently encountered but notably scarce in Labrador. We detected very young moose calves (<1 week of age) around mid May. River Otter were detected several times and 1 porcupine was observed (Table 4).

#### V. DISCUSSION

Greater numbers of indicated pairs of Black Ducks were observed in 1991 and may be positive evidence of reduced harvests of that species associated with delayed openings of hunting seasons, curtailment of January hunting on wintering grounds in Nova Scotia and reduced bag limits.

The late spring may have short-stopped pairs flying further north to breed, however, most Black Ducks were observed as discreet pairs or singles. As well, it is unlikely that insular Newfoundland supports migrating Black Ducks enroute Labrador. Groups of birds that could be interpreted as migrant were rarely seen. As well, the pair to single ratio was fairly balanced suggesting breeding was proceeding at that time, noting that initial start-up of surveys was delayed by 1 week. Larger than average numbers of hatch year Black ducks were banded at the Carmanville banding station near Plot 2 in August-September providing circumstantial evidence that the detected increase on

plots represented resident breeders.

VI. ACKNOWLEDGEMENTS

Special credit goes to the expert skills of pilot Geoff Goodyear. With 5 years of waterfowl identification experience his contribution was tremendous. Thanks to Wayne Lidster and Chris Baldwin who surprised me with their keen eyesight and abilities. Hopefully we have a finely tuned "machine" for next year.

Table 1. Waterfowl Observation Black Duck Joint Venture, Newfoundland & Labrador 1991

Plot	Date	Time: S/F of Plot	Weather Conditions	Blk. Duck <sup>1/</sup>	R-n. Duck	G.-w. Teal	Scaup	C. Gold.	C. Merg.	R.-b. Merg.	C. Goose	C. Loon	Other
1	91/05/13	1103/1305	190° @ 10k + 8°C, overcast Rainshowers	5/11.6	8/14.0	2/2.0	-	-	1/0.0	-	3/5.0	4/3.0	U.I. Duck 1/0.0 Yellowlegs 9/0.0 Snipe 1/0.0
5(c)	91/05/13	1515/1620	220° @ 5k +12° overcast, showers	5/8.3	15/7.3	-	-	5/2(14),7	5/7.0	-	6/11.0	5/0.0	Yellowlegs 16
	91/05/14	0652/0812	180° @ 5k + 3° overcast, light rain showers										H.G. 1
2(a)	91/05/15	0747/1033	270° @ 5k 0° sunny, scattered cloud to 100% over. for 75%	11/11.0	63/16.38	5/3.0	-	2/3.0	-	1/0.0	4/0.0	6/3.0	Yellowlegs 2/2.0 Snipe 0/3.0 Spotted S. 0/1.0 Caspian Tern 1/1.0
7(f)	91/05/15	1745/1947	Calm + 6° sunny ☼ 80% overcast, scattered showers	7/4.0	16/2.22	1/2.0	-	2/0.0	2/0.0	-	4/0.0	4/0.0	Yellowlegs 1/4.0
11	91/06/07	0617/0750	270° @ 10k + 5° high overcast	1/4.0	5/5.0,2.0	4/3.0	-	4/6(14),0	-	-	-	2/1.0	H.G. 2/0.6 Yellowlegs 3/4.0 Snipe 0/1.0 Spotted S. 1/6.0 Yellowlegs 5/4.3
4(b)	91/05/16	0640/0947	250° @ 10k 0° sunny, 20% cloud	9/16.4	22/12.8	0/3.0	-	-	-	-	6/2.0	8/4.0	
8(h)	91/05/16	1752/2000	240° @ 10k + 12° 95% overcast	2/1.0	11/2.17	2/0.0	-	2/1.6	2/0.8	-	4/0.0	4/2.0	Yellowlegs 1/6.0 Snipe 1/4.0 Sandpiper 0/1.0
6(e)	91/05/18	0848/1052	350° @ 5k 0° 100% high overcast	3/2.0	42/15.0	2/2.0	-	4/1.0,19	1/3.0	-	-	2/0.0	snipe 1/1.0
3	91/06/07	1025/1145	300° @ 15k + 12° high overcast	-	3/2.0,3	0/2.0	-	-	-	2/0.0	2/0.0	2/0.0	H.G. 1/5.0 GBBC 57/5.3 Kingfisher 1/0.0 Yellowlegs 0/2.0 Spotted S. 3/5.0

Table 1. (Page 2)

Plot	Date	Time: S/F of Plot	Weather Conditions	Blk. Duck <sup>v</sup>	R.-n. Duck	G.-W. Teal	Scaup	C. Gold.	C. Merg.	R.-b. Merg.	C. Goose	C. Loon	Other
9(J)	91/05/18	1720/1930	030° @ 15k + 12° overcast	7/6,0	19/20,7	3/2,0	(L)0/1,0	1/0,0	-	0/14,0	5/2,5	3/4,0	Yellowlegs 0/5,0 Snipe 1/0,0 H.G. 0/2,0
18	91/05/19	0632/0920	Calm -1° sunny & 30% cloud cover	2/4,0	-	-	-	13/14,0	4/0,0	-	12/3	1/3,0	Yellowlegs 3/4,0 H.G. 9/0,0
13	91/05/19	1737/1945	270° @ 15k + 5° sunny	1/5,0	11/6,0	-	-	2/1,0	2/5,0	-	6/1,0	3/0,0	Yellowlegs 5/2,0 Snipe 0/1,0
19	91/05/20	0704/0858	260° @ 5k + 1° sunny	1/1,5	7/6,0	1/3,0	-	4/4,0	1/0,0	-	-	1/1,0	Yellowlegs 3/4,0 Snipe 0/1,0 Spotted S. 0/3,0 H.G. 1/3,0 R. Grouse 0/1,0
16	91/06/06	1710/1908	330° @ 15k + 18°C sunny	1/5,54	2/24,0	-	-	8/10(14),0	1/0,0	-	-	0/5,0	H.G. 1/1,0 GBBG 1/1,0 Yellowlegs 0/3,0 Snipe 0/2,0 Spotted S. 1/2,3
15	91/05/20	1804/2025	280° @ 15k +15° ↑ overcast	28/17,23	62/17,64	53/1,38	(G)0/1,3	9/5,0	4/2,0	-	15/4,54	1/5,0	Pintail 2/0,0 Bufflehead 1/0,0 Yellowlegs 1/2,0 Snipe 0/2,0 Spotted S. 1/5,0 C. Tern 0/4,0
12	91/05/21	0649/0915	240° @ 5k +13° overcast	2/4,0	17/74,10	3/3,0	(L)0/1,0	2/14,0	3/3(14),6	-	3/2,0	4/0,0	Yellowlegs 2/5,0 Snipe 0/2,0 Spotted S. 0/2,0 H.G. 0/15,0
14	91/05/28	0654/0850	240° @ 10k +2° ↑ overcast	17/6,0	24/8,15	12/4,0	-	18/9,9	0/1,3	-	11/11,7	3/2,0	Yellowlegs 0/2,0 H.G. 1/2,0
17	91/05/28	0955/1115 1150/1158	120° @ 10k +12° ↑ overcast	3/2,0	2/1,4	3/3,0	-	6/2,3	0/14,0	2/14,0	12/1,0	-	Yellowlegs 1/2,0 Snipe 0/1,0 Spotted S. 0/6,0 GBBG 5/5,0

Table 1. (Page 3)

Plot	Date	S/F of Plot	Time:	Weather	Blk. Duck <sup>1/2</sup>	R.-n. Duck	G.-w. Teal	Scaup	C. Gold.	C. Merg.	R.-b. Merg.	C. Goose	C. Loon	Other
10	91/05/28	1815/2050	1815/2050	020° @ 6k +13° overcast	10/6,0	8/6,9	4/0,0	(G)9/3,0	12/11,2	2/1,0	10/2,0	10/4,3	3/0,0	Yellowlegs 1/8,0 Snipe 0/2,0 H.G. 0/1,0 GBRG 2/0,0
25	91/05/31	1802/2002 2030/2042	1802/2002 2030/2042	060° @ 15k +7° sunny Broken high	35/19,3	9/1,6	15/7,3	(C)6/2,5 (L)1/2,0	10/5,6	2/0,0	3/1,0	9/6,3	1/0,0	Mallard 1/0,0 Pintail 6/3,4 <sup>♂</sup> Surf Scoter 14/1,3 Yellowlegs 6/2,0 Snipe 0/5,0 Spotted S. 1/1,0 Solitary S. 0/1,0 H.G. 1/3,0
20	91/06/06	0700/0815	0700/0815	360° @ 15 knots sunny + 3°C 50% ice	0/3,0	-	1/0,0	-	1/1,0	2/1,0	2/0,0	4/0,0	1/0,0	S. Scoter 0/0,4 <sup>♂</sup> H.G. 1/2,0 Yellowlegs 0/1,0
23	91/06/06	1010/1210	1010/1210	330° @ 10k sunny + 12°C 10% ice	11/5,0	21/4,7	4/13,0	-	5/4,3	4/2,0	1/0,0	7/4,0	2/0,0	S. Scoter 1/1,0 H.G. 1/3,0 Yellowlegs 1/6,0 Snipe 1/2,0 Spotted S. 2/2,0
24	91/06/02	1500/1650	1500/1650	020° @ 15k + 5° overcast drizzle	7/2,0	5/2,2 <sup>♂</sup>	1/1,0	(G)0/3,0	38/3/2,20	3/1,0	0/1,0	4/2,5	2/2,0	Blk X Mall 1/0,0 Blk. Scoter 1/1,0 Surf Scoter 17/3,2 H. Merg 1/0,3 <sup>♂</sup> Yellowlegs 2/9,0 Snipe 2/3,0 Dowitch. 0/3,0 Phalarope 2/0,0
21	91/06/05	1500/1548	1500/1548	330 @ 10k + 7° sunny ↑ scattered cloud	1/0,0	1/0,0	1/0,0	(L)1/1,0	3/2,2 <sup>♂</sup>	3/2,2 <sup>♂</sup>	1/0,0	6/3,6	Yellowlegs 1/6,0	
22	91/06/05	1844/1957	1844/1957	90° ice cover + 10° sunny 50% ice cover	1/5,0	1/0,0	4/0,0	(L)1/0,0	4/0,0	1/3,0	1/0,0	3/5,0	3/5,0	Pintail 0/2,0 Yellowlegs 3/6,0 Snipe 0/2,0 H.G. 1/1,0 Raven 0/1,0



Table 1. (Page 4)

	Blk.Duck <sup>1</sup>	R.-n.Duck	G.-w. Teal	Scaup	C.Gold.	C.Merg.	R.-b.Merg.	C. Goose	C.Loon	Other
<u>Subtotal Newfoundland</u>	115/103,46	337/148,202	95/33,38	9/6,3	92/57,46	28/23,17	15/4,0	103/46,73	56/33,0	U.I. Duck 1/0,0 Pintail 2/0,0 Bufflehead 1/0,0 H. Gull 16/23,0 GBB Gull 65/11,0 G.Yellowlegs 37/75,0
Indicated Pairs	223 <sup>1</sup>	337 <sup>2</sup>	128	9	149	51	19	149	89	
Density (Pairs/100 km <sup>2</sup> )	11.7	17.7	6.7	0.5	7.8	2.7	1.0	7.8	4.7	
<u>Subtotal Labrador</u>	55/34,3	36/7,15	26/21,3	9/8,5	61/15,31	12/7,0	8/2,0	33/20,14	6/2,0	Blk X Mall 1/0,0 Mallard 1/0,0 Pintail 6/5,4 H. Merg. 1/0,3 <sup>d</sup> S. Scoter 32/5,11 Blk Scoter 1/1,0 Yellowlegs 13/30,0 H. Gull 4/9,0
Indicated Pairs	89	36	47	9	76	19	10	53	8	
Density (Pairs/100 km <sup>2</sup> )	14.8	6.0	7.8	1.5	12.7	3.2	1.7	8.8	1.3	
<u>Grand Total</u>	170/137,49	373/155,217	121/54,41	18/14,8	153/72,77	40/30,17	23/6,0	136/66,87	62/35,0	U.I. Duck 1/0,0 Pintail 8/5,4 Mallard 1/0,0 Blk X Mall 1/0,0 H. Merg. 1/0,3 <sup>d</sup> S. Scoter 32/5,11 Blk Scoter 1/1,0 H. Gull 20/38,0 GBB Gull 65/11,0 Yellowlegs 50/105,0
Indicated Pairs	312	373	175	18	225	70	29	202	97	
Density (Pairs/100 km <sup>2</sup> )	12.5	14.9	7.0	0.7	9.0	2.8	1.2	8.1	3.9	

<sup>1</sup>Included 5 indicated pairs for a group of 500<sup>d</sup> observed on a late survey of plot 16

<sup>2</sup>Single ring-necked ducks and scaup not tallied as indicated pairs due to skewed sex-ratio on breeding grounds.

Table 2. Comparison of 1987 to 1991 Black Duck data for 7 plots in Central Newfoundland. Repetition of the 7 plots in the Central Forest Ecoregion allowed comparisons to previous years. Black Duck numbers were substantially higher in 1991 than previous years.

Plot	1987	1988	1989	1990	1991
A	9/4 <sup>1/</sup>	4/10	4/6	5/6	11/11
B	5/6	7/3	3/7	5/5	9/16
C	1/7	6/3	5/3	6/6	5/8
E	2/1	3/8	4/2	1/6	3/2
F	3/4	1/6	8/5	4/6	7/4
H	0/6	6/11	2/4	3/5	2/1
J	1/2	5/6	8/2	1/10	7/6
TTL	21/30	32/47	34/29	25/44	44/48
TTL Indicated Pairs	51	79	63	69	92

Adequate statistical testing for trend will have to await further surveys.

Figure 1. Indicated BDJV pair data for 7 plots in Newfoundland

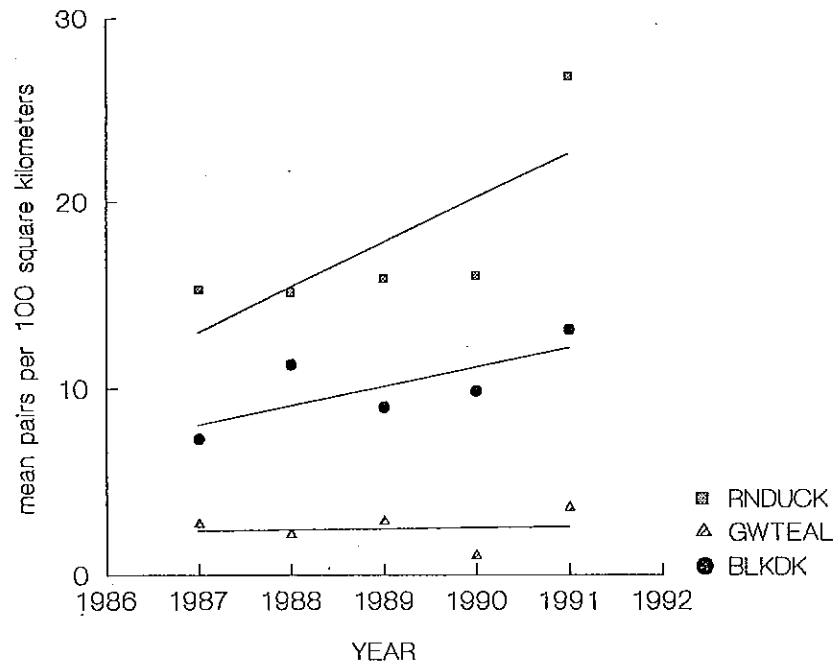


TABLE 3. Comparison of 1987 to 1991 Goose data for 7 plots in Central Newfoundland.

Plot	1987	1988	1989	1990	1991
A	1/1,6 <sup>1/</sup>	4/1,0	3/1,0	2/2,0	4/0
B	3/2,0	5/2,0	8/5,0	5/3,0	6/2
C	9/1,0	11/1,0	7/6,0	9/5,0	6/11
E	0	0	0	0	0
F	0/1,0	0/3,0	0/2,0	1/0,0	4/0
H	2/0,0	5/1,0	5/0,0	3/0,3	4/0
J	4/3,11	4/0,0	5/3,0	2/0,5	5/2
TTL	19/8,17	29/8,0	28/17,0	22/10,8	29/15
TTL Indicated Pairs	27	37	45	32	44

1/ Pairs/singles, groups of 3 or more

Figure 2. Indicated BDJV Canada Goose data for 7 plots in Newfoundland

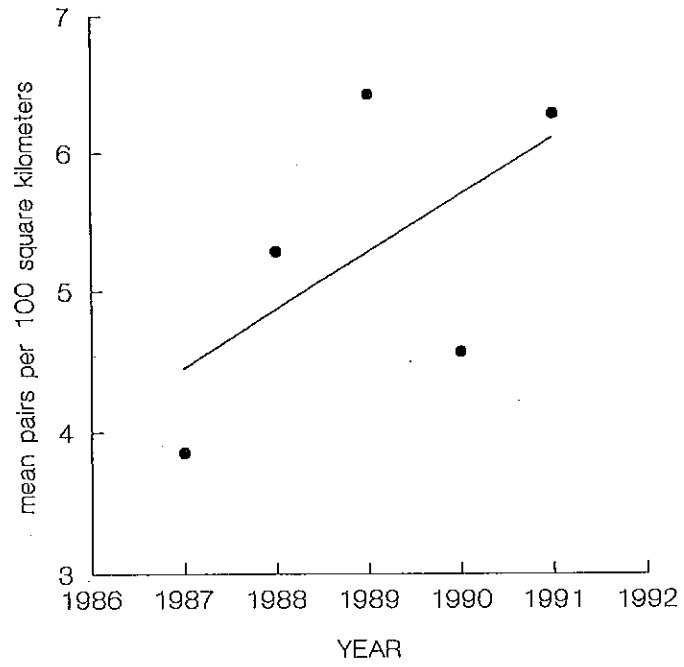


Table 4. Other bird and mammal observations for Black Duck Joint Surveys, 1991

Plot	Date	Time: S/T of Plot	Weather Conditions	RAPTORS							MAMMALS				
				Osprey	Merlin	Eagle	Coshawk	G.H.Owl	Other	Moose	Caribou	Beaver	Other		
1	91/05/13	1103/1305 1515/1620	190° @ 10k + 8°, overcast rainshowers	0/1,0	0/3,0	0/1 <sup>1</sup> ,0	0/1,0	-	-	-	15	-	1	1	Muskrat
5 (c)	91/05/13	1740/1845	220° @ 5k +12° overcast, showers	1/2,0	-	-	-	-	-	-	13 (+1 calf)	85	2	-	-
	91/05/14	0652/0812	180° @ 5k + 3° overcast, light rain showers	-	-	-	-	-	-	-	-	-	-	-	-
2 (a)	91/05/15	0747/1033	270° @ 5k 0° sunny, scattered clouds to 100% overcast for 75% of survey	0/1(nest)	-	-	-	-	-	-	14	-	5	-	-
7 (f)	91/05/15	1745/1947	calm + 6° sunny & 80% overcast, scattered showers	0/1	-	-	-	-	-	-	24	11	8	8	R. otter 0/1,0
4 (b)	91/05/16	0640/0947	250° @ 10k 0° sunny 20% cloud	0/1,0	0/1,0	-	0/1,0	0/1	-	-	4	-	1	-	-
8 (h)	91/05/16	1752/2000	240° @ 10k + 12°, 95% overcast	0/2,0	-	-	-	-	-	-	7	-	-	-	-
3	91/06/07	1025/1145	300° @ 15k + 12° high overcast	0/1,0	-	-	-	-	-	-	-	-	-	5	Raven 0/1,0

Table 4. (Page 2)

Plot	Date	Time: S/F of Plot	Weather Conditions	RAPTORS							MAMMALS				
				Osprey	Merlin	Eagle	Goshawk	G.H.Owl	Other	Moose	Caribou	Beaver	Other		
6(e)	91/05/18	0848/1052	350° @ 5 0% 100% overcast	0/1,0	-	-	-	-	-	-	6(+1calf)	-	-	-	
9(j)	91/05/18	1720/1930	030° @ 15 + 12° overcast	0/1,0	-	-	-	0/1,0	-	-	18	12	4	-	
18	91/05/19	0632/0800	calm - 1° sunny & 30% cloud cover	-	-	-	-	-	-	-	-	5	-	-	
11	91/06/07	0615/0750	270° @ 10k + 5°C high overcast	-	-	-	-	-	-	crow 0/0.6 (dump)	2(+1calf)	5(+1calf)	3	1 Black Bear	
13	91/05/19	1737/1945	270° @ 15 + 5% sunny	-	0/1,0	-	-	-	-	-	9	43	5	-	
19	91/05/20	0704/0858	260° @ 5 + 1° sunny	-	-	-	-	-	-	-	-	11(+1calf)	3	-	
15	91/05/20	1804/2025	280° @ 15 +15 ↑ overcast	0/1,0	0/1,0	-	-	-	-	-	13(+1calf)	20	4	-	
12	91/05/21	0649/0915	240° @ 5 + 13° overcast	-	1	-	-	-	-	-	7(+1calf)	28	-	-	
14	91/05/28	0654/0850	240° @ 10 + 2° ↑ overcast	0/2,0	0/2,0	-	-	-	-	-	16	11	2	-	
16	91/06/07	1710/1908	330° @ 15k + 18°C sunny	-	-	-	-	-	-	-	-	-	-	-	-

----- NO RAPTORS ----- NO MAMMALS -----

Table 4. ( Page 3 )

Plot	Date	Time: S/F of Plot	Weather Conditions	RAPTORS							MAMMALS					
				Osprey	Merlin	Eagle	Coshawk	G.H.Owl	Other	Moose	Caribou	Beaver	Other			
17	91/05/28	1 0955/1115 2 1150/1158	120° @ 10 + 12° ↑ overcast	-	-	-	-	-	-	-	-	26(+3calf)	30	-	-	
10	91/05/28	1815/2050	020° @ 6 +13° overcast	1/7,0	-	-	-	-	-	-	-	9(+2calf)	23(+2calf)	9	2 R. Otter	
25	91/05/31	1 1802/2002 2 2030/2042	060° @ 15 + 7° sunny & broken high	0/2,0	0/2,0	-	-	-	-	-	-	-	-	-	4	-
20	91/06/06	0700/0815	360° @ 15 knots sunny, 50% ice + 3°C	-	-	-	-	-	-	1c2 chicks @ 3 weeks	-	-	-	-	-	-
24	91/06/02	1500/1650	020° @ 15 + 5° overcast & drizzle	0/1,0	0/1,0	-	-	-	-	-	-	1	-	-	1	R. Otter 0/0,3
21	91/06/05	1500/1548	330° @ 10k + 7° sunny ↑ scattered cloud 90% ice cover	-	-	-	1	-	-	-	-	-	2	1	-	-
22	91/06/05	1844/1957	030° @ 20k + 10° sunny 50% ice cover	-	-	-	-	-	-	-	-	-	2	1	-	-
23	91/06/06	1010/1210	330° @ 10k sunny + 12°C 10% ice 2	0/3,0	-	-	-	-	-	-	-	-	-	-	2	1 Porcupine