

SASKATCHEWAN'S FIRST SWAINSON'S HAWK WITH SATELLITE RADIO

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Not all ornithologists would agree with Coulson that bird banding represents "the greatest advance in the study of birds in the 20th century"¹ but banding has nonetheless given us much valuable information about where birds go and how long they live. Some of banding's most interesting results involve those birds that travel farthest, such as the Arctic Tern (known as early as 1939 from twelve recoveries to make a figure-eight passage of the Atlantic Ocean, reaching to Antarctica)⁴; Peregrine Falcon,^{2, 6} and Swainson's Hawk.⁵

Recoveries of aluminum leg bands have demonstrated the general progress of the southward migration of Swainson's hawks, but the speed of migration of any individual hawk was not known, and many fewer band recoveries were obtained on the return journey northward. The newer technology of radio satellite tracking of two hawks from Alberta in 1995 demonstrated that these hawks travelled over 10,000 km south to Argentina in 53 and 54 days, respectively. Radio signals were obtained at the "farthest south" locality reached by each hawk on 1 and 3 December, but the radios ceased sending signals by the time for the return journey. Details of the accuracy of these radio signals were provided in the initial article.⁵

Saskatchewan's participation in the expanded radio-satellite program became possible in 1996. To trap the

adult Swainson's Hawks at their nests and apply the backpack radio and harness a week or so before the young are ready to fledge, one places a live Great Horned Owl on the ground near the nest; the anxious parent hawk stoops at the owl and is caught unharmed in a dho-ghaza net. Marc Bechard flew up from Boise, Idaho, and Ursula Banasch of the Canadian Wildlife Service came down from Edmonton. Dr. Colette Wheler of the Western College of Veterinary Medicine loaned a captive Great Horned Owl. Such imported expertise was essential because the experience of CSH in live-trapping adult raptors at their nests had been limited to use of noose-carpets in trapping 32 adult Ospreys on their nests, prior to eggs hatching, in 1988, 1989 and 1990.³

It took the better part of two days to trap two adult Swainson's Hawks. The first adult female hawk was captured 5 km west and over 5 km north of Kindersley on 27 July; radio 25158 (weighing 28 g, less than 3% of its body weight), and aluminum leg band 1807-12825 were applied. The second adult was captured on 28 July, 34 km south and 10 km east of Alsask and given radio 25159.

In total, thirty-six transmitters were applied to adult hawks in 1996 — in two provinces and eight states, including Alberta (5), Saskatchewan (2), Minnesota (2), Idaho (6), Oregon (6), Utah (3), Colorado (3), California (1), and

Arizona (2).² Most radios performed well. Only two radios failed (or that particular hawk died before it could leave its banding site); unfortunately one of these was our hawk banded south-southeast of Alsask, and the other was a hawk from Oregon. The remaining 28 hawks were followed to South America; three got only to Bolivia (with last signals on 27 November and 2 December, but intermittently through 27 May 1997 for the third), while 25 went all the way to Argentina. Most radios were programmed to send a signal (one to four times in eight hours) every sixth day.

What a thrill it was to receive, each week, an e-mail message giving the locations of all 30 hawks. Unlike the 1995 radios, 19 radios sent signals until May, allowing the return northward trips to be plotted for the first time.

The adult female hawk from northwest of Kindersley ranged within a few miles of its nest site for almost exactly one month until 26 August, no doubt feeding its young in and then out of the nest. The next signals came on 3 September at 1.58 p.m. from 5 km northwest of Snipe Lake village, a first movement of 45 km from its nest. During the remainder of that day it apparently continued on southeast another 30 km, being recorded 5 km southeast of Snipe Lake at 3.38 p.m., then 3 km west and 7 km north of Isham at 5.48 p.m. and finally 3 km west but only 2.5 km north of Isham at 7.26 p.m. With the next signals early on 10 September, the hawk had moved little in six intervening days from the previous signals; it was only 3 km south of Isham. On September 22 at 7.46 and again at 9.25 a.m., it was near the hamlet of Sanctuary (see Figure 1), now 110 km from its nest. By 11.05 a.m. it was near Saskatchewan Landing and by 1.49 p.m. was near Shamrock. These three locations and all subsequent locations through to

Argentina are shown on the map and in the accompanying table. The quickest leg of the trip was from south of Bismark, North Dakota, to Groveton, Texas, a distance of 1730 km between 5 and 11 October, or an average of 288 km each day. (We have no way of knowing whether or not it flew every day). It did not reach its wintering quarters in Argentina until 30 November, and it stayed in that locality for only about ten weeks. Before returning, the hawk on 13 February 1997 took a brief visit about 20 km south of where it had spent most of the winter.

The return journey provided the first-ever accurate figures for travel speed on the northward route. The return journey began with a short 325 km trip within Argentina in the first six days, then an additional 50 km by 26 February, then another 1480 km into Bolivia by 4 March and 1330 km to the Upper Amazon area of Brazil by 10 March. No reports came from the "blind area" in northern South America, where few satellites are available for receiving. It reached Chiapas, Mexico on 29 March, Cotulla, Texas on 4 April and Lamar, Colorado on 16 April. It rested in good buteo country in southeast Colorado, moving only another 170 km north by 23 April. Then a big flight of 1575 km in six days (263 km/day) brought it back to its nest near Kindersley, where it was in residence as determined by a visual inspection from the ground. Sadly, it raised no young in 1997. The last radio signal was received by satellite on 24 June, a radio life of 11 months. Radio life is unpredictable, because radios on one hawk from Idaho and another from Oregon lasted for two complete trips to Argentina and back, until 22 and 12 July 1998, respectively.

The map (Figure 1) shows the main locations and dates of both the

FIGURE 1 - SWAINSON'S HAWK MIGRATION



NORTH and CENTRAL AMERICA
1:25,500,000

Radio Satellite Tracked Bird Migration Route
Adult Female Swainson's Hawk
Home Base: Near Kindersley, Saskatchewan

No:	Date	Time	Lat	Long	Distance (km)
Out-going (south)					
1996					
1	Aug. 26	7:35 am	51.5N	109.2W	0
2	Sept. 22	7:46 am	50.8	108.0	110
3	Sept. 22	11:05 am	50.7	108.0	125
4	Sept. 22	1:49 pm	50.2	106.5	230
5	Sept. 28	2:24 pm	48.7	103.8	495
6	Sept. 28	6:40 pm	48.2	103.7	540
7	Oct. 5	1:38 am	46.5	100.8	825
8	Oct. 11	7:35 am	31.0	95.2	2,555
9	Oct. 17	9:47 am	20.7	97.3	3,585
10	Oct. 17	3:09 pm	19.5	96.2	3,740
11	Oct. 23	6:43 pm	12.0	85.3	4,895
12	Oct. 30	3:19 am	8.7	81.7	5,390
13	Nov. 17	5:47 pm	16.0S	63.8W	8,700
14	Nov. 24	1:34 am	27.3	62.2	9,905
15	Nov. 30	5:36 am	33.2	63.8	10,415
16	Feb. 13	6:38 am	34.2	63.7	10,520

Return (north)					
1997					
1	Feb. 19	1:57 pm	31.7S	61.8W	325
2	Mar. 4	0:46 am	17.2	62.5	1,895
3	Mar. 10	5:46 am	7.2	69.2	3,060
4	Mar. 29	2:51 am	16.3N	94.0W	6,475
5	Apr. 4	8:08 am	28.3	99.3	7,905
6	Apr. 16	7:01 pm	38.2	102.3	8,990
7	Apr. 23	3:51 am	38.2	102.3	9,160
8	Apr. 29	6:04 am	51.5	109.2	10,520

* The above points are selected due to map scale



NORTH and CENTRAL AMERICA
1:25,500,000



SOUTH AMERICA
1:80,000,000

southward and northward travel, following essentially the same route both times. This map will appear in the second edition of *The Atlas of Saskatchewan*, due off the presses later in 1999.

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The Best Out of Life, by Ruth and Peter McLintock:
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“And these days when after six bleak months of Saskatchewan winter ‘all suddenly the wind comes soft and spring is here again.’ there rises in all of us, even the most citified, the urge to get out of doors again; to hear the first robin; to find the first purple crocus; to explore for the first time the simple, varied joys that nature offers for her followers. Like Donald Culross Peattie, they will discover that:

‘A man need not know how to name all the oaks or the moths, or to be able to recognize a synclinal fault, or to tell time by the stars, in order to possess nature. He may have his mind solely on growing larkspurs, or he may love a boat and a sail and a blue-eyed day at sea. He may have a bent for making paths, or banding birds, or he may be an inveterate and curious walker. But such a fellow has the best of life.’