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# Shorebird observations and surveys at Luck Lake, Saskatchewan: 1993–2002

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Gerard W. Beyersbergen

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Canadian Wildlife Service, Prairie and Northern Region 2009

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# **Shorebird observations and surveys at Luck Lake, Saskatchewan: 1993–2002**

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## Abstract

Partial surveys and site visits were made six times from 1995-1998 to Luck Lake in southwest Saskatchewan. It was surveyed extensively in the fall of 1996 and in the spring of 2001 and 2002 to determine the use of the basin by migrant shorebirds. The lake was surveyed by a combination of all-terrain vehicle and on foot to check the shoreline and two basins. Complete lake surveys were conducted weekly from 12 July to 12 September 1996, five times from 12 May to 2 June 2001, and twice from 16 to 25 May 2002. A large variety of shorebirds (28 species including 18 northern migrant species) was observed during the surveys. Red-necked Phalaropes (*Phalaropus lobatus*) were the most abundant shorebird observed (peak of 14,881 in 2001). During the spring migration period, Semipalmated Sandpipers (*C. pusilla*; 13,635 in 2001), Stilt Sandpipers (*Calidris himantopus*; 7319 in 2001), and Sanderling (*C. alba*; 6645 in 2001) were the most abundant shorebirds on the lake. In the fall migration period, Dowitchers (*Limnodromus* spp.; 4951 in 1996), Lesser Yellowlegs (*Tringa flavipes*; 3837 in 1998) and Hudsonian Godwits (*Limosa haemastica*; 3357 in 1995) were the most abundant shorebirds. Over 43,700 shorebirds were observed on a one-day count in May 2001, and the peak total was over 51,000 shorebirds in 2001. Even though shorebird numbers are reduced due to drought in some years, such as 2002, the high numbers of birds using the lake when conditions are suitable qualify the area as a Regional level shorebird site under the Western Hemisphere Shorebird Reserve Network.

## Résumé

Des relevés partiels et des visites ont été effectués six fois dans la période 1995-1998 au lac Luck, dans le sud-ouest de la Saskatchewan. On a réalisé des relevés étendus à l'automne 1996 et aux printemps 2001 et 2002 pour déterminer l'utilisation de ce lac par les oiseaux de rivage en migration. On a procédé en véhicules tout-terrain et à pied pour la couverture du rivage et de deux bassins. Des relevés complets du lac ont été réalisés hebdomadairement du 12 juillet au 12 septembre 1996, cinq fois du 12 mai au 2 juin 2001, et deux fois entre le 16 et le 25 mai 2002. Une grande diversité d'oiseaux de rivage (28 espèces dont 18 espèces de passage nichant dans le nord) a été observée durant les relevés. Le Phalarope à bec étroit (*Phalaropus lobatus*) a été l'oiseau de rivage le plus abondant (pic d'abondance de 14 881 individus en 2001). Durant la période de migration printanière, le Bécasseau semipalmé (*Calidris pusilla*; 13 635 individus en 2001), le Bécasseau à échasses (*C. himantopus*; 7319 en 2001), et le Bécasseau sanderling (*C. alba*; 6645 en 2001) ont été les oiseaux de rivage les plus abondants au lac. Durant la période de migration automnale, les oiseaux de rivage les plus abondants ont été les bécassins (*Limnodromus* spp.; 4951 en 1996), le Petit Chevalier (*Tringa flavipes*; 3837 en 1998) et la Barge hudsonienne (*Limosa haemastica*; 3357 en 1995). Plus de 43 700 oiseaux de rivage ont été dénombrés au cours d'une journée en mai 2001, et le total des pics d'abondance des espèces a été de plus de 51 000 oiseaux en 2001. Même si les effectifs d'oiseaux de rivage se trouvent réduits à cause de la sécheresse certaines années, comme en 2002, le grand nombre d'oiseaux utilisant le lac quand les conditions y sont favorables fait que l'endroit pourrait être désigné site d'importance régionale au sein du Réseau de réserves pour les oiseaux de rivage dans l'hémisphère occidental.

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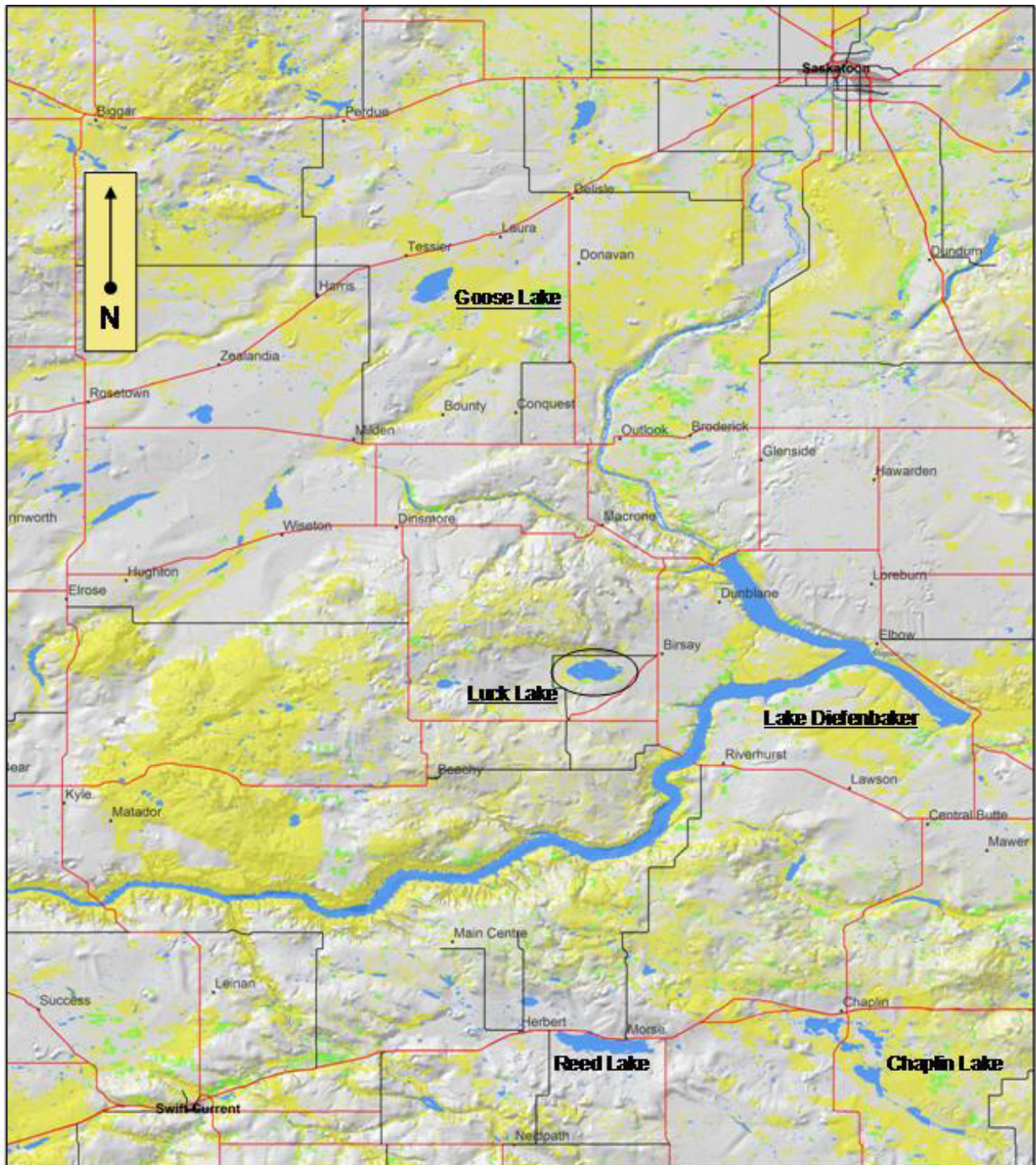


## 1.0 Introduction

Shorebirds migrate annually great distances between breeding and wintering areas in North America, primarily following three routes along the Atlantic and Pacific coasts and through the interior mid-continent. Many species of shorebirds are capable of continuous flights of several thousand kilometres, fuelled by fat (energy) reserves (Castro and Myers 1989, Gudmundsson et al. 1991, Harrington et al. 1991, Tsipoura and Burger 1999), while others require stops along the way in areas of suitable habitat to rest and feed to replenish energy reserves. Along the coastal migration routes, traditional stopover sites or staging areas are found within a narrow corridor. In the interior mid-continent, however, migration occurs along a much broader front, which allows shorebirds to take advantage of available wetland habitat that varies significantly across the region and on an annual basis. These wetland habitats may include small wetland complexes (Niemuth et al. 2006) as well as larger lakes. Large concentrations of migrant shorebirds have been observed on traditional lakes throughout the interior of the continent, and these sites have been identified as being highly important stopover sites for shorebird migration (Harrington and Perry 1995, Morrison et al. 1995).

Prairie wetlands are hydrologically dynamic, with wetland availability and condition being variable within and between years, depending on precipitation and weather patterns. Shorebirds adapt readily to these changing water regimes and are opportunistic in their use of wetland habitat. The prairie region currently provides numerous and variable wetland habitats (Skagen and Knopf 1994, Colwell and Oring 1988, Rundle and Fredrickson 1981) suitable for migrant and staging arctic nesting shorebirds, as well as prairie breeding shorebirds. Shorebird migration staging in the Canadian prairies was initially documented through aerial surveys (Dickson and Smith 1988, Smith and Dickson 1989). Subsequently, there has been an increased effort to identify key shorebird staging lakes across the prairie landscape and to monitor species use and numbers at these sites through intensive ground surveys. The Quill Lakes (Alexander and Gratto-Trevor 1997), Last Mountain Lake (Colwell et al. 1988), Kutawagan Lake wetland complex (Beyersbergen and Norton 2005), Chaplin, Old Wives and Reed lakes (Beyersbergen and Duncan 2006) and numerous other Saskatchewan lakes were found to support large concentrations of shorebirds during spring and fall migration.

Luck Lake (Figure 1) is a shallow alkaline lake set in the flats below Douglas and Archer ridges of the Coteau escarpment in southwest Saskatchewan (Roy 1996). It is approximately 44 km south of the Town of Outlook and 9 km north of the hamlet of Lucky Lake. Marked year-to-year fluctuations occurred in water levels. In 1987, a large wetland enhancement project, part of the Saskatchewan Heritage Marsh Program, was undertaken whereby the lake was divided by dikes into three basins. An irrigation water inflow was located in the west basin with a connecting outlet in the west dike to the central basin. The two outer basins retain water longer than the central basin which goes dry under extreme drought conditions. The Important Bird Areas program ([www.ibacanada.com/sites.html](http://www.ibacanada.com/sites.html)) lists Luck Lake, which contains approximately 1,800 ha of freshwater marsh and about 200 ha of grassland and shrub thickets, as a Globally Significant Site for wading (shorebird) concentrations.



**Figure 1.** Geographic location of Luck Lake in the southwest Saskatchewan landscape

Initial shorebird observations on the lake were recorded in 1943 (Roy 1996), with more consistent observations occurring from the mid-1980s onwards. M. Gollop (Roy 1996) observed 1400 Marbled Godwits on the lake during aerial surveys on 22 July 1985. During the Canadian prairies aerial shorebird survey project, 944 shorebirds were recorded, mostly unidentified species, on Luck Lake during the period of 23–26 May 1987 (Smith and Dickson 1989). A site visit on 1 June 1988, during an aerial survey of the region, found the lake to be dry (CWS unpubl. data). Regular surveys of the lake were conducted from 1989 to 1994 by Mike and Bernie Gollop (Roy 1996) in various seasons. Some peak species numbers, recorded during a variety of surveys of the lake by F. Roy, included 1320 Pectoral Sandpipers in August 1989, 1675 White-rumped Sandpipers, 1540 Long-billed Dowitchers and 1775 Red-necked Phalaropes in May/June 1990, 2500 Hudsonian Godwits in August 1991, and 2390 Stilt Sandpipers in July 1992 (Roy 1996).

Incidental observations over several years coupled with a two-year study to investigate Luck Lake were used to determine whether it is an important area for shorebird migration staging. Initial results of the surveys conducted on Luck Lake were presented in the publication “*The Blue Jay*” (Norton and Beyersbergen 2002), and this report will provide a detailed summary of results of all surveys or observations made during the period 1993 to 2002.

## **2.0 Methods**

### ***2.1 Aerial Survey***

The single aerial survey of Luck Lake was conducted using a fixed-wing aircraft at an altitude of about 30 m above ground level and air speed ranging between 130 km/h and 160 km/h, depending on bird densities, habitat conditions, and shoreline complexity. The survey was conducted by one observer who identified and counted all shorebirds and recorded the data on an audio cassette recorder. The data recorded on shorebird observations included time, location, number of birds, and identification by species or size category (Appendix 1). Specific species identification was limited to small groups of birds or shorebirds with distinguishable features such as larger size, colouration, or flight pattern. The similarity of several species of smaller shorebirds, the mixing of multiple species of shorebirds in large flocks, and the speed of the aircraft resulted in the majority of shorebirds being identified only by size category. Observation data were transcribed from tape onto hard-copy field data forms at the end of each day (Appendix 2). These data were then entered into a computer spreadsheet.

### ***2.2 Ground Surveys***

Surveys were conducted using a combination of all-terrain-vehicles (ATVs), on foot along select shoreline areas or by vehicle along the east and west dike roadways. The area was divided into survey sections based on distinct wetland basins or shoreline segments.

Shorebirds were identified using binoculars and/or a 15-60X spotting scope. The data were recorded using audio-cassette recorders and included the species or size category (Appendix 1), number of birds, and location by survey section. Birds were identified by size when they could not be identified to the species level due to similarities of several species of smaller shorebirds,

mixing of multiple species of shorebirds in large flocks, or distance from the observer. Long-billed and Short-billed Dowitcher were not distinguished by observers and were generally classed as “Dowitchers.”

Each day, upon completion of the survey, observation data were transcribed onto hard-copy field data forms (Appendix 2). These data were then entered into a computer spreadsheet for later analysis.

Surveys of the lake were conducted in 1993 (spring), 1995 (fall), 1996 (fall), 1997 (spring), 1998 (spring/fall), 2001 (spring/fall) and 2002 (spring). The lake was surveyed aurally once in 1993, and on the ground the remaining times, including once in 1995, nine times in 1996, three times in 1998, six times in 2001 and twice in 2002. The lake was completely surveyed on all but three occasions: 3 August 1995 (only west and centre basins surveyed), 11 May 1997 (drove along west dike roadway), and 21 May 1998 (entire south shoreline and the two dike roadways were surveyed).

Spring surveys usually began in early to mid-May and ran through the first week of June to capture the peak numbers of the various shorebird species migrating through the area. Weather conditions were generally favourable for survey, and all basins in the complex were surveyed on a regular basis during the spring migration period. The one exception was in 2001, when the west shore was inaccessible due to high-water levels every period except 18 May. In 2002, drought-induced factors shortened the survey period.

### 3.0 Results and Discussion

An aerial survey of Luck Lake was conducted as part of the shorebird surveys of Chaplin, Old Wives and Reed lakes on 26 May 1993 (Table 1). There were slightly fewer than 4000 shorebirds observed on the lake, with most identified to size category (Appendix 1). Some of the larger species were fully identified, including 125 American Avocet, a local breeding species, and 50 Black-bellied Plover, an arctic migrant.

**Table 1.** Observations of shorebirds during aerial surveys of Luck Lake on 26 May 1993

| Species                 | Survey section |             |           | Total       |
|-------------------------|----------------|-------------|-----------|-------------|
|                         | West           | Centre      | East      |             |
| Black-bellied Plover    | 2              | 10          | 38        | 50          |
| American Avocet         | 10             | 115         |           | 125         |
| Willet                  |                | 19          | 6         | 25          |
| Marbled Godwit          |                |             | 5         | 5           |
| Shorebird—arge          |                | 8           | 2         | 10          |
| Shorebird—medium        | 518            | 137         | 1         | 656         |
| Shorebird—other         | 70             | 412         |           | 482         |
| Shorebird—small         | 1040           | 1403        | 1         | 2444        |
| <b>Total shorebirds</b> | <b>1640</b>    | <b>2104</b> | <b>53</b> | <b>3797</b> |

During a ground visit on 11 July 1995, R. Dickson recorded 3420 Hudsonian Godwits, an arctic migrant, on Luck Lake in association with 2250 Marbled Godwits, a prairie breeding species (R. Dickson, Canadian Wildlife Service—CWS, Edmonton, pers. comm.). The previous high of 2500 Hudsonian Godwits had been observed on the lake by Mike Gollop (Saskatchewan Tourism and Renewable Resources, Saskatoon) and Bernie Gollop (CWS, Saskatoon) on 19 July 1991 (Roy 1996). There were vast expanses of mudflats around the entire shoreline during the Dickson visit that provided extensive feeding areas for both species of godwits. Large post-breeding flocks of Marbled Godwits have been observed to stage in early July through August on prairie lakes, with juveniles migrating several weeks after the adults (Gratto-Trevor 2000). The abundance of godwits on Luck Lake in mid-July was likely such an occurrence, and although the age of godwits was not determined, given the timing it was likely that the bulk of the birds were adults.

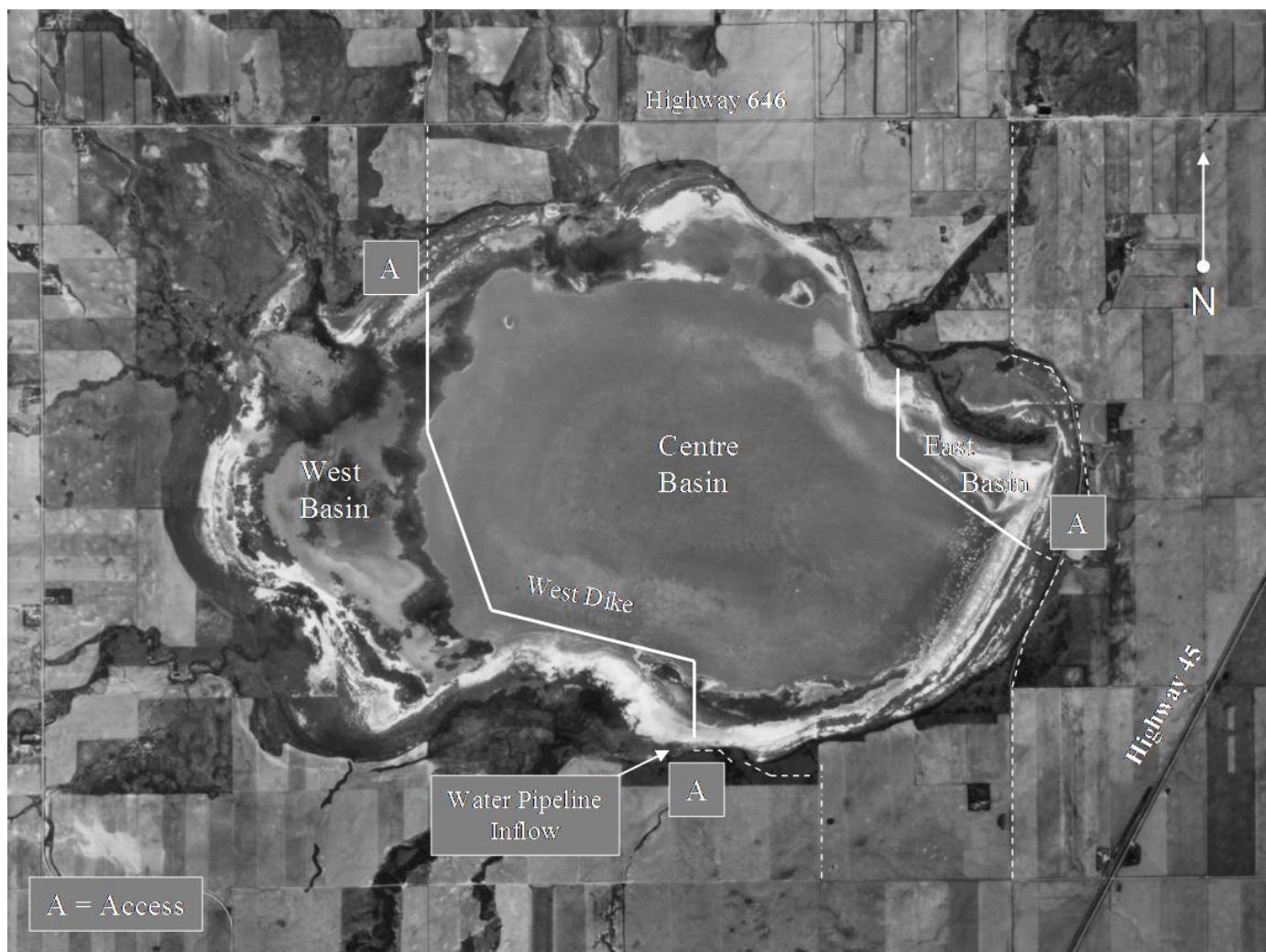
I visited Luck Lake on 3 August 1995 to view the build-up of godwits staging on the basin and conducted a partial ground survey of the lake along the south shore and the west dike roadway (Table 2, Figure 2). Hudsonian Godwit numbers were still high, 65% of total birds, but the number of Marbled Godwits had dropped considerably, indicating that most of the birds had likely commenced or continued their southward migration. Lesser Yellowlegs and Dowitcher spp. were the next most abundant of total shorebird species observed in the area surveyed, at 8.8% and 12.5%, respectively.

Shorebirds were systematically surveyed at Luck Lake during the fall migration period in 1996 when nine surveys were conducted during a two-month period from 12 July to 12 September (Table 3, Appendix 3) (R. Neufeldt, Saskatchewan Wetland Conservation Corporation, now Saskatchewan Water Authority). Shorebird numbers increased over the weeks, reaching a peak single-day total of 8278 birds on 21 August. Yellowlegs (spp.) and Semipalmated Sandpipers reached their peak numbers of 2528 and 1703 birds respectively, on this same day while Dowitchers (spp.) peaked at 4951 birds on 5 September. Hudsonian and Marbled Godwits did not reach the high numbers recorded in previous years and peaked at 320 and 285 birds respectively. The prairie-nesting Wilson's Phalarope appeared to stage on the lake for a short period, reaching a peak of 706 individuals on 31 July before resuming migration. Summing the peak number of individuals for each of the species that used the lake in the fall of 1996, a total of 12,369 shorebirds was observed using the wetland.

I visited the lake on 11 May 1997 and drove my truck along the west dike. The water level appeared to be high, with almost no or a very minimal amount of shorebird habitat visible on the lake, which was teeming with waterfowl. While travelling along the dike, I observed a pair of Wilson's Phalarope on the lake.

A partial survey of the south shoreline and the two dike roadways on Luck Lake was completed during a site visit on 21 May 1998 (Table 4, Appendix 4). Stilt Sandpipers were the prominent species, accounting for nearly 62% of the 4099 shorebirds observed. The American Avocet numbered 159 birds or about 4% of the total shorebirds.





**Figure 2.** Aerial photographic image of Luck Lake showing dikes, basins and water inflow locations and details

**Table 2.** Observations of shorebirds at Luck Lake on 3 August 1995

| <b>Species</b>          | <b>Survey section</b> |               | <b>Total</b> |
|-------------------------|-----------------------|---------------|--------------|
|                         | <b>West</b>           | <b>Centre</b> |              |
| Black-bellied Plover    | 11                    | 67            | 78           |
| Semipalmated Plover     |                       | 87            | 87           |
| American Avocet         | 8                     | 4             | 12           |
| Lesser Yellowlegs       | 250                   | 207           | 457          |
| Willet                  | 20                    | 5             | 25           |
| Hudsonian Godwit        | 7                     | 3350          | 3357         |
| Marbled Godwit          | 25                    | 302           | 327          |
| White-rumped Sandpiper  |                       | 10            | 10           |
| Baird's Sandpiper       |                       | 6             | 6            |
| Semipalmated Sandpiper  |                       | 72            | 72           |
| Dowitcher spp.          | 643                   | 9             | 652          |
| Red-necked Phalarope    | 122                   |               | 122          |
| <b>Total shorebirds</b> | <b>1086</b>           | <b>4119</b>   | <b>5205</b>  |

The lake was revisited during the fall migration period in 1998 and two surveys were conducted, two days apart, along the entire shoreline of the lake. Two observers recorded a total of 12,383 shorebirds (Table 4) on the first survey, while the numbers dropped by almost half to 6507 shorebirds the next survey on 19 July. Lesser Yellowlegs, Dowitcher (spp.), and Stilt Sandpiper were the three most prominent species during both surveys. However, large numbers of all three species had continued their migration between the two survey days, resulting in the dramatic drop in numbers. Marbled and Hudsonian godwits staged on the lake, but numbers were much lower than in previous years, with species peaks of 473 Marbled godwits on 17 July and 553 Hudsonian godwits on 19 July.

Regular surveys were initiated on Luck Lake in the spring of 2001, with two observers systematically checking the entire shoreline during five surveys from 12 May to 2 June. The first survey on 12 May recorded the highest number of Dowitchers, an early migrant species, at 3217 individuals (Table 5, Appendix 5). An influx of shorebirds before the 21 May survey resulted in the highest spring counts of Baird's Sandpiper, Semipalmated Sandpiper, Stilt Sandpiper, and Red-necked Phalarope. Sanderlings, which tend to be the latest arctic migrant through the area, peaked at 6645 birds on 2 June. An interesting observation was 19 Whimbrel, an arctic-nesting species that has been irregularly recorded during our shorebird surveys across the Canadian prairie region. The highest count for a local-nesting species, the American Avocet, was attained on 12 May. The sum of all the species single day peak counts resulted in total usage of the wetland by at least 51,045 shorebirds in the spring of 2001.

**Table 3.** Observations of shorebirds during ground surveys at Luck Lake in the fall of 1996

| <b>Species</b>          | <b>July<br/>12</b> | <b>July<br/>18</b> | <b>July<br/>24</b> | <b>July<br/>31</b> | <b>August<br/>14</b> | <b>August<br/>21</b> | <b>August<br/>28</b> | <b>September<br/>5</b> | <b>September<br/>12</b> |
|-------------------------|--------------------|--------------------|--------------------|--------------------|----------------------|----------------------|----------------------|------------------------|-------------------------|
| Black-bellied Plover    |                    | 1                  | 69                 | 88                 | 79                   | <b>155</b>           | 20                   | 16                     | 67                      |
| American Golden Plover  |                    |                    |                    |                    |                      |                      |                      | <b>16</b>              |                         |
| Piping Plover           |                    |                    |                    | <b>1</b>           |                      |                      |                      |                        |                         |
| Semipalmated Plover     |                    |                    | 1                  | <b>97</b>          |                      | 1                    |                      | 4                      |                         |
| Killdeer                | 8                  | 1                  | 1                  | 1                  | <b>9</b>             | 7                    | 7                    | 9                      |                         |
| American Avocet         | 40                 | 86                 | 66                 | <b>68</b>          | 31                   | 26                   | 24                   | 10                     | 3                       |
| Greater Yellowlegs      | 1                  | 1                  | 4                  | 1                  | 7                    |                      | <b>8</b>             |                        |                         |
| Lesser Yellowlegs       |                    |                    | 12                 | 2                  | <b>37</b>            |                      | 11                   |                        |                         |
| Yellowlegs spp.         | 192                | 538                | 883                | 1008               | 1869                 | <b>2528</b>          | 1707                 | 575                    | 205                     |
| Willet                  | 54                 | 79                 | 82                 | <b>124</b>         | 48                   | 27                   | 25                   |                        |                         |
| Spotted Sandpiper       | <b>3</b>           |                    | 3                  |                    | 1                    | 2                    | 1                    |                        |                         |
| Hudsonian Godwit        | 259                | 20                 | <b>320</b>         | 38                 | 40                   | 73                   | 126                  | 47                     | 7                       |
| Marbled Godwit          | 20                 | 22                 | 14                 | 10                 | 69                   | <b>285</b>           | 14                   | 1                      | 3                       |
| Ruddy Turnstone         |                    |                    |                    |                    |                      | <b>2</b>             |                      |                        |                         |
| Sanderling              |                    |                    |                    |                    |                      |                      | 3                    | 7                      | <b>26</b>               |
| Pectoral Sandpiper      |                    |                    | 4                  | 80                 | 118                  | <b>121</b>           | 84                   | 8                      | 12                      |
| Baird's Sandpiper       | 22                 | 6                  | 1                  | <b>85</b>          | 74                   | 27                   | 2                    | 4                      | 3                       |
| Semipalmated Sandpiper  | 3                  | 16                 |                    | 85                 | 781                  | <b>1703</b>          | 1214                 | 154                    | 15                      |
| Stilt Sandpiper         | 157                | 146                | 21                 | 108                | 147                  | 473                  | <b>935</b>           | 101                    | 54                      |
| Shorebird–medium        | 176                | 990                | 156                | 46                 | 31                   | 1                    | 210                  | 45                     | 40                      |
| Shorebird–other         |                    |                    |                    | 350                |                      |                      |                      |                        |                         |
| Shorebird–small         | 5                  | 41                 | 8                  | 21                 | 257                  | 200                  | 253                  | 81                     | 5                       |
| Dowitcher spp.          | 178                | 559                | 1132               | 1198               | 1652                 | 2315                 | 3444                 | <b>4951</b>            | 3369                    |
| Wilson's Snipe          | 1                  |                    |                    | 2                  | 2                    | 3                    | <b>6</b>             | 3                      | 2                       |
| Wilson's Phalarope      | 45                 | 163                | 189                | <b>706</b>         | 391                  | 326                  | 81                   | 27                     |                         |
| Red-necked Phalarope    | 50                 | <b>183</b>         | 61                 | 5                  | 19                   | 3                    |                      |                        |                         |
| <b>Total shorebirds</b> | 1214               | 2852               | 3027               | 4124               | 5662                 | 8278                 | 8175                 | 6059                   | 3811                    |

**Bold numbers** represent the species single-day peak numbers during the survey period.



**Table 4.** Observations of shorebirds at Luck Lake during the spring and fall of 1998

| <b>Species</b>          | <b>Spring</b> | <b>Fall</b>    |                |
|-------------------------|---------------|----------------|----------------|
|                         | <b>May 21</b> | <b>July 17</b> | <b>July 19</b> |
| Black-bellied Plover    | 219           | 8              | 2              |
| Piping Plover           |               |                | 2              |
| Semipalmated Plover     |               | 23             | 63             |
| Killdeer                | 5             | 46             | 23             |
| American Avocet         | 159           | 37             | 69             |
| Greater Yellowlegs      |               | 121            | 10             |
| Lesser Yellowlegs       |               | 3837           | 2284           |
| Willet                  | 23            | 404            | 19             |
| Spotted Sandpiper       |               |                | 4              |
| Hudsonian Godwit        |               | 442            | 553            |
| Marbled Godwit          | 38            | 473            | 14             |
| Ruddy Turnstone         | 5             | 2              | 1              |
| Red Knot                | 26            |                |                |
| Sanderling              | 331           | 1              |                |
| Dunlin                  | 4             |                |                |
| Pectoral Sandpiper      |               | 12             | 71             |
| White-rumped Sandpiper  | 250           |                |                |
| Baird's Sandpiper       |               | 6              | 17             |
| Semipalmated Sandpiper  | 641           | 159            | 263            |
| Least Sandpiper         |               | 9              | 40             |
| Stilt Sandpiper         | 2524          | 2575           | 849            |
| Shorebird–small         | 55            | 3              |                |
| Dowitcher spp.          | 3             | 3812           | 1863           |
| Wilson's Phalarope      | 40            | 490            | 450            |
| Red-necked Phalarope    | 3             | 304            |                |
| <b>Total shorebirds</b> | <b>4099</b>   | <b>12383</b>   | <b>6507</b>    |

Because water conditions in the centre basin of the lake deteriorated during the summer, only one survey was conducted, on 31 July 2001 during the fall migration period (Table 5). Red-necked Phalarope, Stilt Sandpiper, and Semipalmated Sandpiper were the most prominent arctic migrants, but their numbers were low compared to the spring survey counts. There were eight Whimbrel recorded on Luck Lake during the fall migration. American Avocets at 1109 individuals or 14.5% of the total shorebirds represented the highest count for local breeding species and were likely staging on Luck Lake from wetlands in the surrounding landscape prior to commencing their migration.

By the spring of 2002, water conditions had improved somewhat with the spring melt and runoff, but that changed quickly and only two surveys were conducted (Table 6, Appendix 6). Shorebird numbers were down substantially from 2001, with the exception of Baird's Sandpiper, which accounted for 52% of the 3327 shorebirds observed May 16.

Red-necked Phalarope, 2217 birds, and Semipalmated Sandpiper, 1668 birds, were the most abundant migrant species on 25 May. American Avocet numbers were about 20% of the number observed in the spring of 2001. Because of the drought conditions, surveys were discontinued on Luck Lake in 2002 after completion of the May 25 survey.

**Table 5.** Observations of shorebirds at Luck Lake in 2001

| Species                 | May 12      | May 16     | May 21       | May 23    | June 2      | July 31 |
|-------------------------|-------------|------------|--------------|-----------|-------------|---------|
| Black-bellied Plover    | 48          | 147        | <b>727</b>   | 550       | 158         | 9       |
| American Golden Plover  | <b>78</b>   | 34         | 26           |           |             |         |
| Piping Plover           |             |            |              | 1         | <b>2</b>    | 4       |
| Semipalmated Plover     | 22          | 5          | <b>63</b>    | 7         |             | 227     |
| Killdeer                | <b>7</b>    | 3          | 4            | 2         | 5           | 4       |
| American Avocet         | <b>997</b>  | 985        | 923          | 593       | 810         | 1109    |
| Lesser Yellowlegs       | 65          | 5          | <b>40</b>    |           |             | 459     |
| Willet                  | 102         | <b>107</b> | 100          | 67        | 78          | 42      |
| Spotted Sandpiper       |             | <b>6</b>   | 3            |           |             | 5       |
| Whimbrel                |             | <b>19</b>  |              |           |             | 8       |
| Hudsonian Godwit        | <b>12</b>   |            | 1            |           |             | 366     |
| Marbled Godwit          | <b>88</b>   | 51         | 35           | 26        | 9           | 268     |
| Ruddy Turnstone         |             |            | <b>13</b>    | 7         | 4           | 1       |
| Red Knot                | 5           | 5          | 4            | <b>9</b>  | 5           |         |
| Sanderling              | 289         | 253        | 2637         | 707       | <b>6645</b> | 61      |
| Dunlin                  | 14          | 14         | 15           | <b>17</b> |             |         |
| Pectoral Sandpiper      | 8           | 5          | <b>947</b>   | 6         |             | 9       |
| White-rumped Sandpiper  |             | <b>30</b>  | 1            | 1         | 1           |         |
| Baird's Sandpiper       | 1233        | 1482       | <b>1855</b>  | 773       | 1001        | 742     |
| Semipalmated Sandpiper  | 4380        | 7616       | <b>13635</b> | 2133      | 2126        | 985     |
| Least Sandpiper         |             | 5          | <b>95</b>    | 20        |             | 62      |
| Stilt Sandpiper         | 853         | 2989       | <b>7319</b>  | 4387      | 602         | 1028    |
| Shorebird-small         | 73          | 245        | 1094         | 5         | 165         | 148     |
| Dowitcher spp.          | <b>3217</b> | 918        | 30           | 2         |             | 243     |
| Wilson's Snipe          | <b>3</b>    |            | 1            |           | 1           | 1       |
| Wilson's Phalarope      | <b>220</b>  | 108        | 50           | 9         | 65          | 702     |
| Red-necked Phalarope    | 636         | 4432       | <b>14881</b> | 3241      | 821         | 1135    |
| <b>Total shorebirds</b> | 12302       | 19317      | 43772        | 12013     | 12340       | 7609    |

**Bold numbers** represent the species single-day peak number during the survey period.

**Table 6.** Observations of shorebirds at Luck Lake during the spring of 2002

| <b>Species</b>          | <b>May 16</b> | <b>May 25</b> |
|-------------------------|---------------|---------------|
| Black-bellied Plover    | 46            | 148           |
| Piping Plover           |               | 1             |
| Semipalmated Plover     | 1             | 4             |
| Killdeer                | 3             | 1             |
| American Avocet         | 103           | 197           |
| Lesser Yellowlegs       | 3             |               |
| Willet                  | 53            | 37            |
| Upland Sandpiper        |               | 2             |
| Long-billed Curlew      |               | 1             |
| Marbled Godwit          | 12            | 16            |
| Red Knot                | 2             |               |
| Sanderling              | 10            | 389           |
| Pectoral Sandpiper      | 77            | 9             |
| Baird's Sandpiper       | 1728          | 8             |
| Semipalmated Sandpiper  | 339           | 1668          |
| Least Sandpiper         |               | 23            |
| Stilt Sandpiper         | 597           | 102           |
| Shorebird–medium        |               | 8             |
| Shorebird–small         | 347           | 119           |
| Wilson's Phalarope      | 6             | 2             |
| Red-necked Phalarope    |               | 2217          |
| <b>Total shorebirds</b> | <b>3327</b>   | <b>4952</b>   |

## 4.0 Conclusions

Luck Lake is a typical prairie lake that undergoes periods of drought, low water, and flooding along the lakeshore but is readily used by local and migrant shorebirds when conditions are suitable. The lake is an important staging or stopover area for migrant species, but numbers have been quite variable between years and seasons. Several species, including the Hudsonian Godwit, traditionally appear in high numbers at the lake, indicating its importance, especially during the fall migration period. The high number of local species such as the American Avocet, Marbled Godwit, and Willet indicates that it is also an important wetland for prairie-nesting species. Although the Piping Plover was observed on a number of our surveys, it has never been recorded as breeding on the lake, even during the international surveys held every five years.

The installation of an outlet from the regional irrigation system helps ameliorate low lake water conditions in some years, but the wetland still needs the flush of precipitation from snow melt or summer rains on the local landscape. This is especially critical during dry years when there is an increased demand for water from agricultural needs while water supplies are low in the Lake Diefenbaker reservoir.

The lake receives special status under the Saskatchewan Heritage Marsh Program, but the site needs further recognition because of its importance to shorebirds. Shorebird numbers (>50,000 in 2001) would qualify Luck Lake as a Regional level reserve (Morrison et al. 1995) in the Western Hemisphere Shorebird Reserve Network (WHSRN). Several sites in Prairie Canada are listed in the network already, including Chaplin/Old Wives/Reed lakes, the Quill Lakes, and Last Mountain Lake in Saskatchewan and Beaverhill Lake in Alberta. Other WHSRN sites in Canada include the Bay of Fundy, bordering Nova Scotia and New Brunswick, and the Fraser River Estuary in British Columbia. Inclusion of Luck Lake in the WHSRN may provide some incentive to local conservation groups to safeguard the lake for its continuing role in the conservation of shorebirds.

## **5.0 Acknowledgements**

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## 6.0 Bibliography

- Alexander, S. A. and C. L. Gratto-Trevor. 1997. Shorebird migration and staging at a large prairie lake and wetland complex: the Quill Lakes, Saskatchewan. Occasional Paper Number 97, Canadian Wildlife Service, Prairie and Northern Region. Ottawa, Ontario. 47 pp.
- Beyersbergen, G. W. and M. R. Norton. 2005. Shorebird Migration Staging on the “Kutawagan Lake wetland complex” in the Mount Hope-Prairie Rose (PFRA) Community Pasture, Saskatchewan. Canadian Wildlife Service Technical Report Series No. 424. Prairie and Northern Region. Edmonton, Alberta. v + 27pp.
- Beyersbergen, G. W. and D. C. Duncan. 2007. Shorebird Abundance and Migration Chronology at Chaplin Lake, Old Wives Lake and Reed Lake, Saskatchewan: 1993 and 1994. Canadian Wildlife Service Technical Report Series No. 484. Prairie and Northern Region. Edmonton, Alberta. vi + 46 pp.
- Castro, G. and J. P. Myers. 1989. Flight range estimates for Shorebirds. Auk, Vol. 106, pp. 474-476.
- Colwell, M. A. and L. W. Oring. 1988. Habitat use by breeding and migrating shorebirds in south-central Saskatchewan. Wilson Bulletin 100: 554-566.
- Dickson, H. L. and A. R. Smith. 1988. Canadian Prairie Shorebird Program: an update. Wader Study Group Bulletin 52: 23-27.
- Gratto-Trevor, Cheri L. 2000. Marbled Godwit (*Limosa fedoa*). The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/492>
- Gudmundsson, G. A., A. Lindstrom, and T. Alerstam. 1991. Optimal fat loads and long-distance flights by migrating Knots *Calidris canutus*, Sanderlings *C. alba*, and Turnstones *Arenaria interpres*. IBIS 133: 140-152.
- Harrington, B. A., F. J. Leeuwenberg, S. L. Resende, R. McNeil, B. T. Thomas, J. S. Gear, and E. F. Martinez. 1991. Migration and mass change of White-rumped Sandpipers in North and South America. Wilson Bulletin 103 (4): 621-636.
- Harrington, B. and E. Perry. 1995. Important Shorebird Staging Sites Meeting Western Hemisphere Shorebird Network Criteria in the United States. United States Department of the Interior, Fish & Wildlife Service Publication, October, 1995, 121 pp.

- Morrison, R. I. G., R. W. Butler, G. W. Beyersbergen, H. L. Dickson, A. Bourget, P. W. Hicklin, J. P. Goossen, R. K. Ross, and C. L. Gratto-Trevor. 1995. Potential Western Hemisphere Shorebird Reserve Network Sites for Shorebirds in Canada: Second Edition 1995. Canadian Wildlife Service Technical Report Series Number 227, Canadian Wildlife Service, Ottawa, Ontario. 104 pp.
- Niemuth, N. D., M. E. Estey, R. E. Reynolds, C. R. Loesch, and W. A. Meeks. 2006. Use of wetlands by spring-migrant shorebirds in agricultural landscapes of North Dakota's Drift Prairie. *Wetlands* 26 (1): 30-39.
- Norton, M. R. and G. W. Beyersbergen. 2002. Shorebird Migration at Luck Lake, SK. *Blue Jay* 60 (4): 199-206.
- Rundle, W. D. and L. H. Frederkson. 1981. Managing seasonally flooded impoundments for migrant rails and shorebirds. *Wildlife Society Bulletin* 9(2): 80-87.
- Roy, J. F. 1996. Birds of the Elbow. Special Publication No. 21, Natural History Society of Saskatchewan, Regina, Saskatchewan. 325 pp.
- Skagen, S. K. and F. L. Knopf. 1994. Migrating shorebirds and habitat dynamics at a prairie wetland complex. *Wilson Bulletin* 106 (1): 91-105.
- Smith, A. R. and H. L. Dickson. 1989. Prairie Shorebird Survey 1987. Unpublished Report, Canadian Wildlife Service, Edmonton, Alberta. 60 pp.
- Tsipoura, N. and J. Burger. 1999. Shorebird diet during spring migration stopover on Delaware Bay. *The Condor* 101: 635-644.

## 7.0 Appendices

**Appendix 1.** Scientific names, species AOU alpha-codes and size categories for shorebirds observed during surveys at Luck Lake, Saskatchewan

| Common Name            | Scientific Name                    | Alpha-code | Size Category |
|------------------------|------------------------------------|------------|---------------|
| Black-bellied Plover   | <i>Pluvialis squatarola</i>        | BBPL       | Medium        |
| American Golden Plover | <i>Pluvialis dominica</i>          | AGPL       | Medium        |
| Semipalmated Plover    | <i>Charadrius semipalmatus</i>     | SEPL       | Small         |
| Piping Plover          | <i>Charadrius melodus</i>          | PIPL       | Small         |
| Killdeer               | <i>Charadrius vociferus</i>        | KILL       | Medium        |
| American Avocet        | <i>Recurvirostra americana</i>     | AMAV       | Large         |
| Greater Yellowlegs     | <i>Tringa melanoleuca</i>          | GRYE       | Large         |
| Lesser Yellowlegs      | <i>Tringa flavipes</i>             | LEYE       | Medium        |
| Willet                 | <i>Catoptrophorus semipalmatus</i> | WILL       | Large         |
| Spotted Sandpiper      | <i>Actitis macularia</i>           | SPSA       | Small         |
| Upland Sandpiper       | <i>Bartramia longicauda</i>        | UPSA       | Large         |
| Whimbrel               | <i>Numenius phaeopus</i>           | WHIM       | Large         |
| Long-billed Curlew     | <i>Numenius americanus</i>         | LBCU       | Large         |
| Hudsonian Godwit       | <i>Limosa haemastica</i>           | HUGO       | Large         |
| Marbled Godwit         | <i>Limosa fedoa</i>                | MAGO       | Large         |
| Ruddy Turnstone        | <i>Arenaria interpres</i>          | RUTU       | Medium        |
| Red Knot               | <i>Calidris canutus</i>            | REKN       | Medium        |
| Sanderling             | <i>Calidris alba</i>               | SAND       | Small         |
| Semipalmated Sandpiper | <i>Calidris pusilla</i>            | SESA       | Small         |
| Least Sandpiper        | <i>Calidris minutilla</i>          | LESA       | Small         |
| White-rumped Sandpiper | <i>Calidris fuscicollis</i>        | WRSA       | Small         |
| Baird's Sandpiper      | <i>Calidris bairdii</i>            | BASA       | Small         |
| Pectoral Sandpiper     | <i>Calidris melanotos</i>          | PESA       | Medium        |
| Dunlin                 | <i>Calidris alpina</i>             | DUNL       | Small         |
| Stilt Sandpiper        | <i>Calidris himantopus</i>         | STSA       | Medium        |
| Wilson's Snipe         | <i>Gallinago delicata</i>          | WISN       | Medium        |
| Wilson's Phalarope     | <i>Phalaropus tricolor</i>         | WIPH       | Medium        |
| Red-necked Phalarope   | <i>Phalaropus lobatus</i>          | RNPH       | Small         |
| Dowitcher spp.         | <i>Limnodromus</i> spp.            | DOWI       | Medium        |
| Yellowlegs spp.        | <i>Tringa</i> spp.                 | YELL       | Medium        |
| Shorebird-large        |                                    | SHLA       | Large         |
| Shorebird-medium       |                                    | SHME       | Medium        |
| Shorebird-other        |                                    | SHOT       | Mixed         |
| Shorebird-small        |                                    | SHSM       | Small         |





**Appendix 3.** Detailed shorebird survey results for Luck Lake, Saskatchewan, in 1996  
Numbers of birds observed are given by survey section and date. See  
Figure 2 for a key to the location of the survey sections

| Species                | Survey section |        |      | Total |
|------------------------|----------------|--------|------|-------|
|                        | West           | Centre | East |       |
| Survey date: July 12   |                |        |      |       |
| Killdeer               | 5              | 3      |      | 8     |
| American Avocet        |                | 28     | 12   | 40    |
| Greater Yellowlegs     |                | 1      |      | 1     |
| Yellowlegs spp.        | 7              | 117    | 68   | 192   |
| Willet                 | 4              | 30     | 20   | 54    |
| Spotted Sandpiper      |                | 3      |      | 3     |
| Hudsonian Godwit       |                | 259    |      | 259   |
| Marbled Godwit         | 1              | 16     | 3    | 20    |
| Baird's Sandpiper      |                | 7      | 15   | 22    |
| Semipalmated Sandpiper |                | 3      |      | 3     |
| Stilt Sandpiper        |                | 132    | 25   | 157   |
| Shorebird—medium       | 125            | 51     |      | 176   |
| Shorebird—small        |                |        | 5    | 5     |
| Dowitcher spp.         |                | 177    | 1    | 178   |
| Wilson's Snipe         |                | 1      |      | 1     |
| Wilson's Phalarope     | 7              | 30     | 8    | 45    |
| Red-necked Phalarope   |                | 50     |      | 50    |
| July 12 Total          | 149            | 908    | 157  | 1214  |
| Survey date: July 18   |                |        |      |       |
| Black-bellied Plover   |                |        | 1    | 1     |
| Killdeer               | 1              |        |      | 1     |
| American Avocet        | 1              | 47     | 38   | 86    |
| Greater Yellowlegs     |                | 1      |      | 1     |
| Yellowlegs spp.        | 40             | 166    | 332  | 538   |
| Willet                 | 13             | 29     | 37   | 79    |
| Hudsonian Godwit       |                | 8      | 12   | 20    |
| Marbled Godwit         |                | 10     | 12   | 22    |
| Baird's Sandpiper      |                |        | 6    | 6     |
| Semipalmated Sandpiper |                | 1      | 15   | 16    |
| Stilt Sandpiper        |                | 1      | 145  | 146   |
| Shorebird—medium       |                | 750    | 240  | 990   |
| Shorebird—small        | 16             |        | 25   | 41    |
| Dowitcher spp.         | 16             | 80     | 463  | 559   |
| Wilson's Phalarope     | 24             | 97     | 42   | 163   |
| Red-necked Phalarope   |                | 164    | 19   | 183   |
| July 18 Total          | 111            | 1354   | 1387 | 2852  |

**Appendix 3** continued

| Species                | Survey section |        |      | Total |
|------------------------|----------------|--------|------|-------|
|                        | West           | Centre | East |       |
| Survey date: July 24   |                |        |      |       |
| Black-bellied Plover   |                |        | 69   | 69    |
| Semipalmated Plover    |                | 1      |      | 1     |
| Killdeer               | 1              |        |      | 1     |
| American Avocet        | 2              | 30     | 34   | 66    |
| Greater Yellowlegs     | 2              | 2      |      | 4     |
| Lesser Yellowlegs      | 6              | 6      |      | 12    |
| Yellowlegs spp.        | 77             | 353    | 453  | 883   |
| Willet                 | 22             | 17     | 43   | 82    |
| Spotted Sandpiper      |                | 1      | 2    | 3     |
| Hudsonian Godwit       |                | 307    | 13   | 320   |
| Marbled Godwit         |                | 5      | 9    | 14    |
| Pectoral Sandpiper     |                | 3      | 1    | 4     |
| Baird's Sandpiper      |                |        | 1    | 1     |
| Stilt Sandpiper        |                | 9      | 12   | 21    |
| Shorebird—medium       | 20             | 46     | 90   | 156   |
| Shorebird—small        |                | 8      |      | 8     |
| Dowitcher spp.         | 76             | 728    | 328  | 1132  |
| Wilson's Phalarope     | 73             | 87     | 29   | 189   |
| Red-necked Phalarope   | 30             | 31     |      | 61    |
| July 24 Total          | 309            | 1634   | 1084 | 3027  |
| Survey date: July 31   |                |        |      |       |
| Black-bellied Plover   |                |        | 88   | 88    |
| Piping Plover          |                |        | 1    | 1     |
| Semipalmated Plover    |                | 2      | 95   | 97    |
| Killdeer               |                | 1      |      | 1     |
| American Avocet        | 2              | 39     | 27   | 68    |
| Greater Yellowlegs     |                |        | 1    | 1     |
| Lesser Yellowlegs      |                |        | 2    | 2     |
| Yellowlegs spp.        | 22             | 459    | 527  | 1008  |
| Willet                 | 5              | 23     | 96   | 124   |
| Hudsonian Godwit       |                | 37     | 1    | 38    |
| Marbled Godwit         |                | 8      | 2    | 10    |
| Pectoral Sandpiper     |                | 4      | 76   | 80    |
| Baird's Sandpiper      |                | 12     | 73   | 85    |
| Semipalmated Sandpiper |                | 22     | 63   | 85    |
| Stilt Sandpiper        |                | 51     | 57   | 108   |
| Shorebird—medium       | 1              | 45     |      | 46    |
| Shorebird—other        |                |        | 350  | 350   |
| Shorebird—small        | 11             |        | 10   | 21    |
| Dowitcher spp.         |                | 1041   | 157  | 1198  |
| Wilson's Snipe         |                | 2      |      | 2     |
| Wilson's Phalarope     | 89             | 425    | 192  | 706   |
| Red-necked Phalarope   |                | 5      |      | 5     |
| July 31 Total          | 130            | 2176   | 1818 | 4124  |

**Appendix 3** continued

| Species                | Survey section |        |      | Total |
|------------------------|----------------|--------|------|-------|
|                        | West           | Centre | East |       |
| Survey Date: August 14 |                |        |      |       |
| Black-bellied Plover   |                | 63     | 16   | 79    |
| Killdeer               | 1              | 7      | 1    | 9     |
| American Avocet        | 1              | 7      | 23   | 31    |
| Greater Yellowlegs     |                | 7      |      | 7     |
| Lesser Yellowlegs      |                | 37     |      | 37    |
| Yellowlegs spp.        | 214            | 1153   | 502  | 1869  |
| Willet                 |                | 43     | 5    | 48    |
| Spotted Sandpiper      |                | 1      |      | 1     |
| Hudsonian Godwit       |                | 33     | 7    | 40    |
| Marbled Godwit         |                | 25     | 44   | 69    |
| Pectoral Sandpiper     | 3              | 75     | 40   | 118   |
| Baird's Sandpiper      |                | 74     |      | 74    |
| Semipalmated Sandpiper |                | 764    | 17   | 781   |
| Stilt Sandpiper        |                | 147    |      | 147   |
| Shorebird–medium       | 12             | 19     |      | 31    |
| Shorebird–small        | 21             | 199    | 37   | 257   |
| Dowitcher spp.         |                | 1652   |      | 1652  |
| Wilson's Snipe         | 1              | 1      |      | 2     |
| Wilson's Phalarope     | 20             | 344    | 27   | 391   |
| Red-necked Phalarope   |                | 19     |      | 19    |
| August 14 Total        | 273            | 4600   | 719  | 5662  |
| Survey date: August 21 |                |        |      |       |
| American Avocet        |                | 16     | 10   | 26    |
| Baird's Sandpiper      |                | 23     | 4    | 27    |
| Black-bellied Plover   |                | 82     | 73   | 155   |
| Wilson's Snipe         | 3              |        |      | 3     |
| Dowitcher spp.         | 10             | 2301   | 4    | 2315  |
| Hudsonian Godwit       |                | 73     |      | 73    |
| Killdeer               | 2              | 3      | 2    | 7     |
| Marbled Godwit         |                | 184    | 101  | 285   |
| Pectoral Sandpiper     |                | 88     | 33   | 121   |
| Red-necked Phalarope   |                | 3      |      | 3     |
| Ruddy Turnstone        |                | 1      | 1    | 2     |
| Semipalmated Plover    |                |        | 1    | 1     |
| Semipalmated Sandpiper | 117            | 1522   | 64   | 1703  |
| Shorebird–medium       |                |        | 1    | 1     |
| Shorebird–small        |                | 75     | 125  | 200   |
| Stilt Sandpiper        | 22             | 447    | 4    | 473   |
| Spotted Sandpiper      |                |        | 2    | 2     |
| Willet                 |                | 8      | 19   | 27    |
| Wilson's Phalarope     | 5              | 288    | 33   | 326   |
| Yellowlegs spp.        | 226            | 1894   | 408  | 2528  |
| August 21 Total        | 385            | 7008   | 885  | 8278  |

**Appendix 3** continued

| Species                  | Survey section |        |      | Total |
|--------------------------|----------------|--------|------|-------|
|                          | West           | Centre | East |       |
| Survey date: August 28   |                |        |      |       |
| Black-bellied Plover     |                | 18     | 2    | 20    |
| Killdeer                 | 1              | 3      | 3    | 7     |
| American Avocet          |                | 24     |      | 24    |
| Greater Yellowlegs       | 8              |        |      | 8     |
| Lesser Yellowlegs        | 11             |        |      | 11    |
| Yellowlegs spp.          | 255            | 1263   | 189  | 1707  |
| Willet                   |                | 19     | 6    | 25    |
| Spotted Sandpiper        | 1              |        |      | 1     |
| Hudsonian Godwit         |                | 126    |      | 126   |
| Marbled Godwit           |                | 14     |      | 14    |
| Sanderling               |                | 3      |      | 3     |
| Pectoral Sandpiper       | 3              | 34     | 47   | 84    |
| Baird's Sandpiper        |                | 2      |      | 2     |
| Semipalmated Sandpiper   | 24             | 934    | 256  | 1214  |
| Stilt Sandpiper          | 45             | 884    | 6    | 935   |
| Shorebird–medium         |                | 210    |      | 210   |
| Shorebird–small          | 2              | 245    | 6    | 253   |
| Dowitcher spp.           |                | 3444   |      | 3444  |
| Wilson's Snipe           | 2              | 3      | 1    | 6     |
| Wilson's Phalarope       |                | 70     | 11   | 81    |
| August 28 Total          | 352            | 7296   | 527  | 8175  |
| Survey date: September 5 |                |        |      |       |
| Black-bellied Plover     |                | 10     | 6    | 16    |
| American Golden Plover   |                | 2      | 14   | 16    |
| Semipalmated Plover      |                | 4      |      | 4     |
| Killdeer                 |                | 5      | 4    | 9     |
| American Avocet          |                | 10     |      | 10    |
| Yellowlegs spp.          | 38             | 399    | 138  | 575   |
| Hudsonian Godwit         |                | 47     |      | 47    |
| Marbled Godwit           |                | 1      |      | 1     |
| Sanderling               |                | 7      |      | 7     |
| Pectoral Sandpiper       | 2              | 3      | 3    | 8     |
| Baird's Sandpiper        | 1              | 3      |      | 4     |
| Semipalmated Sandpiper   | 59             | 95     |      | 154   |
| Stilt Sandpiper          | 1              | 94     | 6    | 101   |
| Shorebird–medium         |                | 3      | 42   | 45    |
| Shorebird–small          |                | 81     |      | 81    |
| Dowitcher spp.           | 1              | 4307   | 643  | 4951  |
| Wilson's Snipe           | 2              | 1      |      | 3     |
| Wilson's Phalarope       | 2              | 25     |      | 27    |

**Appendix 3** continued

| Species                          | Survey section |        |      | Total |
|----------------------------------|----------------|--------|------|-------|
|                                  | West           | Centre | East |       |
| <b>September 5 Total</b>         | 106            | 5097   | 856  | 6059  |
| <b>Survey date: September 12</b> |                |        |      |       |
| Black-bellied Plover             |                | 18     | 49   | 67    |
| American Avocet                  | 3              |        |      | 3     |
| Yellowlegs spp.                  | 65             | 140    |      | 205   |
| Hudsonian Godwit                 |                | 7      |      | 7     |
| Marbled Godwit                   |                | 3      |      | 3     |
| Sanderling                       |                |        | 26   | 26    |
| Pectoral Sandpiper               |                | 7      | 5    | 12    |
| Baird's Sandpiper                |                | 1      | 2    | 3     |
| Semipalmated Sandpiper           | 1              |        | 14   | 15    |
| Stilt Sandpiper                  |                | 6      | 48   | 54    |
| Shorebird–medium                 | 6              | 34     |      | 40    |
| Shorebird–small                  |                | 5      |      | 5     |
| Dowitcher spp.                   | 107            | 3261   | 1    | 3369  |
| Wilson's Snipe                   |                | 2      |      | 2     |
| <b>September 12 Total</b>        | 182            | 3484   | 145  | 3811  |

**Appendix 4.** Detailed shorebird survey results for Luck Lake, Saskatchewan, in 1998

Numbers of birds observed are given by survey section and date.

See Figure 2 for a key to the location of the survey.

| Species                | Survey section |        |      | Total |
|------------------------|----------------|--------|------|-------|
|                        | West           | Centre | East |       |
| Survey date: May 21    |                |        |      |       |
| Black-bellied Plover   | 55             | 164    |      | 219   |
| Killdeer               |                | 5      |      | 5     |
| American Avocet        | 6              | 153    |      | 159   |
| Willet                 | 4              | 19     |      | 23    |
| Marbled Godwit         | 13             | 25     |      | 38    |
| Ruddy Turnstone        |                | 5      |      | 5     |
| Red Knot               | 11             | 15     |      | 26    |
| Sanderling             | 88             | 243    |      | 331   |
| Dunlin                 | 1              | 3      |      | 4     |
| White-rumped Sandpiper | 119            | 131    |      | 250   |
| Semipalmated Sandpiper | 239            | 402    |      | 641   |
| Stilt Sandpiper        | 1299           | 1225   |      | 2524  |
| Shorebird–small        |                | 55     |      | 55    |
| Dowitcher spp.         |                | 3      |      | 3     |
| Wilson's Phalarope     |                | 40     |      | 40    |
| Red-necked Phalarope   | 3              |        |      | 3     |
| May 21 Total           | 1838           | 2488   |      | 4326  |
|                        |                |        |      |       |
| Survey date: July 17   |                |        |      |       |
| Black-bellied Plover   | 2              | 6      |      | 8     |
| Piping Plover          |                |        |      |       |
| Semipalmated Plover    | 2              | 21     |      | 23    |
| Killdeer               | 33             | 13     |      | 46    |
| American Avocet        | 18             | 1      | 18   | 37    |
| Greater Yellowlegs     | 105            | 9      | 7    | 121   |
| Lesser Yellowlegs      | 2917           | 899    | 21   | 3837  |
| Willet                 | 365            | 39     |      | 404   |
| Spotted Sandpiper      |                |        |      |       |
| Hudsonian Godwit       | 262            | 177    | 3    | 442   |
| Marbled Godwit         | 236            | 61     | 176  | 473   |
| Ruddy Turnstone        |                | 2      |      | 2     |
| Sanderling             |                |        | 1    | 1     |
| Pectoral Sandpiper     | 2              | 10     |      | 12    |
| Baird's Sandpiper      | 4              | 2      |      | 6     |
| Semipalmated Sandpiper | 92             | 67     |      | 159   |
| Least Sandpiper        |                | 9      |      | 9     |
| Stilt Sandpiper        | 1886           | 700    |      | 2586  |
| Shorebird–small        | 3              |        |      | 3     |
| Dowitcher spp.         | 2622           | 787    | 403  | 3812  |
| Wilson's Phalarope     | 441            | 49     |      | 490   |
| Red-necked Phalarope   |                | 4      | 300  | 304   |
| July 17 Total          | 8979           | 2856   | 929  | 12764 |

**Appendix 4** continued

| Species                | Survey section |        |      | Total |
|------------------------|----------------|--------|------|-------|
|                        | West           | Centre | East |       |
| Survey date: July 19   |                |        |      |       |
| Black-bellied Plover   |                | 2      |      | 2     |
| Piping Plover          | 2              |        |      | 2     |
| Semipalmated Plover    | 16             | 47     |      | 63    |
| Killdeer               | 16             | 7      |      | 23    |
| American Avocet        | 22             |        | 47   | 69    |
| Greater Yellowlegs     | 1              | 9      |      | 10    |
| Lesser Yellowlegs      | 1524           | 744    | 16   | 2284  |
| Willet                 | 8              | 11     |      | 19    |
| Spotted Sandpiper      | 1              | 3      |      | 4     |
| Hudsonian Godwit       | 481            | 62     | 10   | 553   |
| Marbled Godwit         | 4              | 10     |      | 14    |
| Ruddy Turnstone        |                | 1      |      | 1     |
| Pectoral Sandpiper     | 68             | 3      |      | 71    |
| Baird's Sandpiper      | 4              | 13     |      | 17    |
| Semipalmated Sandpiper | 147            | 116    |      | 263   |
| Least Sandpiper        |                | 40     |      | 40    |
| Stilt Sandpiper        | 818            | 31     |      | 849   |
| Dowitcher spp.         | 946            | 774    | 143  | 1863  |
| Wilson's Phalarope     | 310            | 29     | 111  | 450   |
| July 19 Total          | 4368           | 1902   | 327  | 6597  |

**Appendix 5.** Shorebird observations by basin during surveys at Luck Lake in 2001  
See Figure 2 for locations of survey basins.

| Species                | Survey section |        |      |           | Total |
|------------------------|----------------|--------|------|-----------|-------|
|                        | West           | Centre | East | Northeast |       |
| Survey date: May 12    |                |        |      |           |       |
| Black-bellied Plover   | 19             | 28     | 1    |           | 48    |
| American Golden Plover | 58             | 20     |      |           | 78    |
| Semipalmated Plover    | 9              | 13     |      |           | 22    |
| Killdeer               | 2              | 5      |      |           | 7     |
| American Avocet        | 575            | 329    | 59   | 34        | 997   |
| Lesser Yellowlegs      | 9              | 22     | 9    | 25        | 65    |
| Willet                 | 42             | 54     | 4    | 2         | 102   |
| Hudsonian Godwit       | 12             |        |      |           | 12    |
| Marbled Godwit         | 72             | 13     | 2    | 1         | 88    |
| Red Knot               | 5              |        |      |           | 5     |
| Sanderling             | 285            | 4      |      |           | 289   |
| Dunlin                 | 13             | 1      |      |           | 14    |
| Pectoral Sandpiper     | 1              | 7      |      |           | 8     |
| Baird's Sandpiper      | 615            | 618    |      |           | 1233  |
| Semipalmated Sandpiper | 1864           | 2508   |      | 8         | 4380  |
| Stilt Sandpiper        | 627            | 10     |      | 216       | 853   |
| Shorebird—small        | 24             | 49     |      |           | 73    |
| Dowitcher spp.         | 1871           | 101    |      | 1245      | 3217  |
| Wilson's Snipe         | 3              |        |      |           | 3     |
| Wilson's Phalarope     | 112            | 38     | 8    | 62        | 220   |
| Red-necked Phalarope   | 506            |        | 120  | 10        | 636   |
| May 12 Total           | 6724           | 3820   | 203  | 1603      | 12350 |
| Survey date: May 16    |                |        |      |           |       |
| Black-bellied Plover   | 52             | 95     |      |           | 147   |
| American Golden Plover | 28             | 6      |      |           | 34    |
| Semipalmated Plover    | 3              | 2      |      |           | 5     |
| Killdeer               | 1              | 2      |      |           | 3     |
| American Avocet        | 422            | 478    | 53   | 32        | 985   |
| Lesser Yellowlegs      | 5              |        |      |           | 5     |
| Willet                 | 62             | 30     | 11   | 4         | 107   |
| Spotted Sandpiper      | 1              | 5      |      |           | 6     |
| Whimbrel               | 19             |        |      |           | 19    |
| Marbled Godwit         | 24             | 16     |      | 11        | 51    |
| Red Knot               | 5              |        |      |           | 5     |
| Sanderling             | 174            | 79     |      |           | 253   |
| Dunlin                 | 12             | 2      |      |           | 14    |



**Appendix 5 continued**

| Species                | Survey section |        |      |           | Total |
|------------------------|----------------|--------|------|-----------|-------|
|                        | West           | Centre | East | Northeast |       |
| Pectoral Sandpiper     |                | 5      |      |           | 5     |
| White-rumped Sandpiper | 30             |        |      |           | 30    |
| Baird's Sandpiper      | 746            | 724    | 12   |           | 1482  |
| Semipalmated Sandpiper | 6045           | 1541   | 30   |           | 7616  |
| Least Sandpiper        | 5              |        |      |           | 5     |
| Stilt Sandpiper        | 2813           | 35     | 1    | 140       | 2989  |
| Shorebird–small        |                | 245    |      |           | 245   |
| Dowitcher spp.         | 677            |        |      | 241       | 918   |
| Wilson's Phalarope     | 14             | 30     | 64   |           | 108   |
| Red-necked Phalarope   | 2500           | 162    | 1770 |           | 4432  |
| <b>May 16 Total</b>    | 13638          | 3457   | 1941 | 428       | 19464 |

|                            |       |       |     |      |       |
|----------------------------|-------|-------|-----|------|-------|
| <b>Survey date: May 21</b> |       |       |     |      |       |
| Black-bellied Plover       | 68    | 659   |     |      | 727   |
| American Golden Plover     | 24    | 2     |     |      | 26    |
| Semipalmated Plover        | 36    | 27    |     |      | 63    |
| Killdeer                   | 1     | 3     |     |      | 4     |
| American Avocet            | 431   | 340   | 8   | 144  | 923   |
| Lesser Yellowlegs          | 6     | 21    | 13  |      | 40    |
| Willet                     | 36    | 47    | 15  | 2    | 100   |
| Spotted Sandpiper          |       | 1     | 2   |      | 3     |
| Hudsonian Godwit           |       | 1     |     |      | 1     |
| Marbled Godwit             | 26    | 9     |     |      | 35    |
| Ruddy Turnstone            | 2     | 11    |     |      | 13    |
| Red Knot                   | 3     | 1     |     |      | 4     |
| Sanderling                 | 1100  | 1536  | 1   |      | 2637  |
| Dunlin                     | 6     | 9     |     |      | 15    |
| Pectoral Sandpiper         | 890   | 49    | 8   |      | 947   |
| White-rumped Sandpiper     | 1     |       |     |      | 1     |
| Baird's Sandpiper          | 981   | 849   | 25  |      | 1855  |
| Semipalmated Sandpiper     | 6408  | 7216  | 11  |      | 13635 |
| Least Sandpiper            | 95    |       |     |      | 95    |
| Stilt Sandpiper            | 4323  | 2255  | 35  | 706  | 7319  |
| Shorebird–small            | 342   | 734   | 18  |      | 1094  |
| Dowitcher spp.             | 19    | 11    |     |      | 30    |
| Wilson's Snipe             | 1     |       |     |      | 1     |
| Wilson's Phalarope         | 25    | 9     | 16  |      | 50    |
| Red-necked Phalarope       | 10065 | 4310  | 206 | 300  | 14881 |
| <b>May 21 Total</b>        | 24889 | 18100 | 358 | 1152 | 44499 |

**Appendix 5 continued**

| Species                | Survey section |        |      |           | Total |
|------------------------|----------------|--------|------|-----------|-------|
|                        | West           | Centre | East | Northeast |       |
| Survey date: May 23    |                |        |      |           |       |
| Black-bellied Plover   | 149            | 561    | 3    |           | 713   |
| American Golden Plover |                |        | 2    |           | 2     |
| Piping Plover          | 1              |        |      |           | 1     |
| Semipalmated Plover    | 7              |        |      |           | 7     |
| Killdeer               | 2              | 1      | 1    |           | 4     |
| American Avocet        | 288            | 535    | 33   | 116       | 972   |
| Willet                 | 27             | 63     | 9    | 1         | 100   |
| Marbled Godwit         | 16             | 28     |      | 7         | 51    |
| Ruddy Turnstone        |                | 13     |      |           | 13    |
| Red Knot               |                | 10     |      |           | 10    |
| Sanderling             | 501            | 237    | 2    |           | 740   |
| Dunlin                 | 16             | 1      |      |           | 17    |
| Pectoral Sandpiper     | 5              | 2      | 2    |           | 9     |
| White-rumped Sandpiper | 1              |        |      |           | 1     |
| Baird's Sandpiper      | 625            | 751    | 61   | 40        | 1477  |
| Semipalmated Sandpiper | 2018           | 1227   | 38   | 320       | 3603  |
| Least Sandpiper        | 20             | 1      |      |           | 21    |
| Stilt Sandpiper        | 4329           | 318    | 135  | 193       | 4975  |
| Shorebird–small        | 5              |        | 41   | 5         | 51    |
| Dowitcher spp.         | 2              |        |      |           | 2     |
| Wilson's Phalarope     | 5              | 4      | 13   | 2         | 24    |
| Red-necked Phalarope   | 966            | 2554   | 211  | 160       | 3891  |
| May 23 Total           | 8983           | 6306   | 551  | 844       | 16684 |
| Survey date: June 2    |                |        |      |           |       |
| Black-bellied Plover   | 53             | 105    |      |           | 158   |
| Piping Plover          | 1              | 1      |      |           | 2     |
| Killdeer               | 2              | 3      |      |           | 5     |
| American Avocet        | 354            | 229    | 3    | 224       | 810   |
| Willet                 | 8              | 69     | 1    |           | 78    |
| Marbled Godwit         |                | 9      |      |           | 9     |
| Ruddy Turnstone        |                | 4      |      |           | 4     |
| Red Knot               | 5              |        |      |           | 5     |
| Sanderling             | 5219           | 876    | 550  |           | 6645  |
| White-rumped Sandpiper |                |        | 1    |           | 1     |
| Baird's Sandpiper      | 745            | 110    | 66   | 80        | 1001  |
| Semipalmated Sandpiper | 1896           | 75     | 75   | 80        | 2126  |
| Stilt Sandpiper        | 550            | 37     |      | 15        | 602   |
| Shorebird–small        | 70             |        |      | 95        | 165   |
| Wilson's Snipe         | 1              |        |      |           | 1     |
| Wilson's Phalarope     | 48             | 10     | 1    | 6         | 65    |
| Red-necked Phalarope   | 663            | 47     |      | 111       | 821   |
| June 2 Total           | 9615           | 1575   | 697  | 611       | 12498 |

**Appendix 5** continued

| Species                | Survey section |        |      |           | Total |
|------------------------|----------------|--------|------|-----------|-------|
|                        | West           | Centre | East | Northeast |       |
| Survey date: July 31   |                |        |      |           |       |
| Black-bellied Plover   | 9              |        |      |           | 9     |
| Piping Plover          | 4              |        |      |           | 4     |
| Semipalmated Plover    | 52             | 115    | 60   |           | 227   |
| Killdeer               | 4              |        |      |           | 4     |
| American Avocet        | 110            | 971    | 28   |           | 1109  |
| Lesser Yellowlegs      | 205            | 241    | 13   |           | 459   |
| Willet                 | 11             | 29     | 2    |           | 42    |
| Spotted Sandpiper      |                | 5      |      |           | 5     |
| Whimbrel               |                | 8      |      |           | 8     |
| Hudsonian Godwit       | 34             | 331    | 1    |           | 366   |
| Marbled Godwit         | 38             | 229    | 1    |           | 268   |
| Ruddy Turnstone        |                | 1      |      |           | 1     |
| Sanderling             |                | 61     |      |           | 61    |
| Pectoral Sandpiper     | 3              | 6      |      |           | 9     |
| Baird's Sandpiper      | 442            | 162    | 138  |           | 742   |
| Semipalmated Sandpiper | 174            | 676    | 135  |           | 985   |
| Least Sandpiper        |                | 52     | 10   |           | 62    |
| Stilt Sandpiper        | 426            | 341    | 261  |           | 1028  |
| Shorebird—small        | 52             | 96     |      |           | 148   |
| Dowitcher spp.         | 76             | 167    |      |           | 243   |
| Wilson's Snipe         | 1              |        |      |           | 1     |
| Wilson's Phalarope     | 99             | 529    | 74   |           | 702   |
| Red-necked Phalarope   | 420            | 681    | 34   |           | 1135  |
| July 31 Total          | 2160           | 4701   | 757  |           | 7618  |

**Appendix 6.** Shorebird observations by basin during surveys at Luck Lake in 2002  
See Figure 2 for a key to the location of the survey.

| Species                | Survey section |        |      | Total |
|------------------------|----------------|--------|------|-------|
|                        | West           | Centre | East |       |
| Survey date: May 16    |                |        |      |       |
| Black-bellied Plover   | 32             | 13     | 1    | 46    |
| Semipalmated Plover    | 1              |        |      | 1     |
| Killdeer               |                | 3      |      | 3     |
| American Avocet        | 98             | 5      |      | 103   |
| Lesser Yellowlegs      | 3              |        |      | 3     |
| Willet                 | 24             | 27     | 2    | 53    |
| Marbled Godwit         | 2              | 9      | 1    | 12    |
| Red Knot               | 2              |        |      | 2     |
| Sanderling             |                | 10     |      | 10    |
| Pectoral Sandpiper     |                | 77     |      | 77    |
| Baird's Sandpiper      | 1585           | 113    | 30   | 1728  |
| Semipalmated Sandpiper | 195            | 144    |      | 339   |
| Stilt Sandpiper        | 557            |        | 40   | 597   |
| Shorebird–small        | 84             | 213    | 50   | 347   |
| Wilson's Phalarope     | 6              |        |      | 6     |
| May 16 Total           | 2589           | 614    | 124  | 3327  |
| Survey date: May 25    |                |        |      |       |
| American Avocet        | 81             | 116    |      | 197   |
| Baird's Sandpiper      | 5              |        | 3    | 8     |
| Black-bellied Plover   | 12             | 8      | 128  | 148   |
| Killdeer               |                | 1      |      | 1     |
| Long-billed Curlew     |                | 1      |      | 1     |
| Least Sandpiper        | 23             |        |      | 23    |
| Lesser Yellowlegs      |                |        |      |       |
| Marbled Godwit         | 8              | 4      | 4    | 16    |
| Pectoral Sandpiper     | 9              |        |      | 9     |
| Piping Plover          | 1              |        |      | 1     |
| Red-necked Phalarope   | 371            | 1846   |      | 2217  |
| Red Knot               |                |        |      |       |
| Sanderling             | 123            | 194    | 72   | 389   |
| Semipalmated Plover    |                | 4      |      | 4     |
| Semipalmated Sandpiper | 465            | 1190   | 13   | 1668  |
| Shorebird–medium       | 8              |        |      | 8     |
| Shorebird–small        | 74             | 15     | 30   | 119   |
| Stilt Sandpiper        |                | 88     | 14   | 102   |
| Upland Sandpiper       |                | 2      |      | 2     |
| Willet                 | 32             | 2      | 3    | 37    |
| Wilson's Phalarope     | 2              |        |      | 2     |
| May 25 Total           | 1214           | 3471   | 267  | 4952  |

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