

2024 PRAIRIE CANADA PIPING PLOVER CENSUS: SASKATCHEWAN RESULTS

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Piping Plovers (*Charadrius melodus*) are small migratory shorebirds that have been listed as endangered since the original designation in 1985.¹ The first International Piping Plover Census (IPPC), a concerted effort to count all Piping Plovers in Canada, the USA, Mexico, and the Caribbean, was conducted in 1991.² Nature Saskatchewan coordinated the Saskatchewan portion of the IPPC, which took place once every five years until and including 2016. The IPPC did not take place in 2021, due to COVID-19, and it is uncertain if it will be continued in the future. In 2024, Nature Saskatchewan, in partnership with the Canadian Wildlife Service and many partners and volunteers, conducted a Prairie Canada Piping Plover Census (PCPPC) across Alberta (AB), Saskatchewan (SK), and Manitoba (MB).

The goal of the 2024 PCPPC was to survey all breeding habitat known to be either currently or recently suitable for Piping Plovers in order to count all adult birds. To ensure comparable results, surveys followed the same methods used in all past IPPCs. Breeding pairs and unpaired adults were counted across AB, SK and MB, from 27 May to 16 June 2024. This survey window was chosen to repeat similar past IPPC windows, and to maximize overlap with incubating plovers.

In SK, 174 basins (Figure 1) were selected for surveys based on previous Piping Plover occurrences or potential suitable habitat. A total of 127 surveyors, involving 1,116 person-hours of effort, covered all suitable and sub-suitable Piping Plover habitat (sandy/gravelly beaches and shorelines) at each basin as thoroughly as possible. Nearly all basins were surveyed by foot, with a few surveyed by boat. All landholders whose property needed to be crossed to reach

the shoreline were contacted for access permission. Results regarding the number and breeding status of birds, location, survey conditions, habitat, threats, and presence of leg bands were recorded on individual datasheets or submitted through a digital data collection application (Survey123).

In SK, a total of 810 individual Piping Plover adults (including 244 pairs) were observed on 57 of the 174 surveyed basins. The highest density of Piping Plovers was in the southcentral/Missouri Coteau region (Figure 2) with 62 per cent (502) observed across only four basins: Lake Diefenbaker, Chaplin Lake, Willow Bunch Lake, and Reed Lake; with Lake Diefenbaker containing 34 per cent of the entire Prairie Canada population. Use of the lake by 91 pairs and 305 birds is even higher than during the 2016 census (80 pairs and 207 birds) and much higher than the all-time low of seven pairs and 21 birds in 2011.^{3,4} The 2011 count is an anomaly as the other international censuses have yielded at least 28 pairs and 75 birds.

Although still supporting a large majority of the population, Chaplin Lake was at an all-time low this year with 91

birds (highest count was 359 in 2011 and lowest count was 105 in 2001), while Reed Lake was at an all-time high of 40 birds, almost doubling its previous record high of 21 birds.^{4,5,6} Willow Bunch Lake supported 66 adults, which was higher than its lowest recorded count of eight in the previous census, but only about half of its record high of 124 birds in 1996.^{3,7}

Altogether, 37 basins had a higher result than the previous census, while 34 basins had a lower result. Fourteen basins recorded all-time lows, including typically higher-count basins of Chaplin, Frederick, Horizon, Big Muddy, East Coteau, West Reflex, and Aroma Lakes; while three basins — Big Quill Lake, Fife Lake, and Redberry Lake — that historically held a larger number of Piping Plovers (435, 53, and 21 respectively)^{2,7} again had no plover presence.

At Lake Diefenbaker, three pairs included in the results were counted outside of the census window (on 17 and 21 June) after the initial survey had taken place under poor survey conditions due to extremely high winds. In addition, three basins considered surveyed with no resulting plovers were checked outside

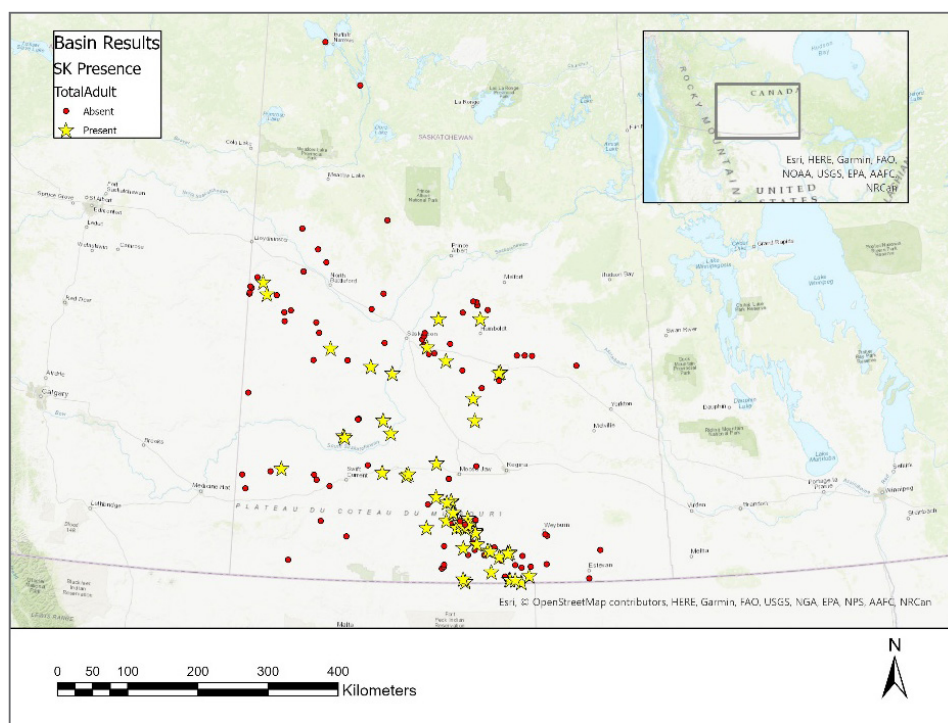


FIGURE 1. Piping Plover presence or absence at surveyed basins in Saskatchewan during the 2024 Prairie Canada Piping Plover Census.

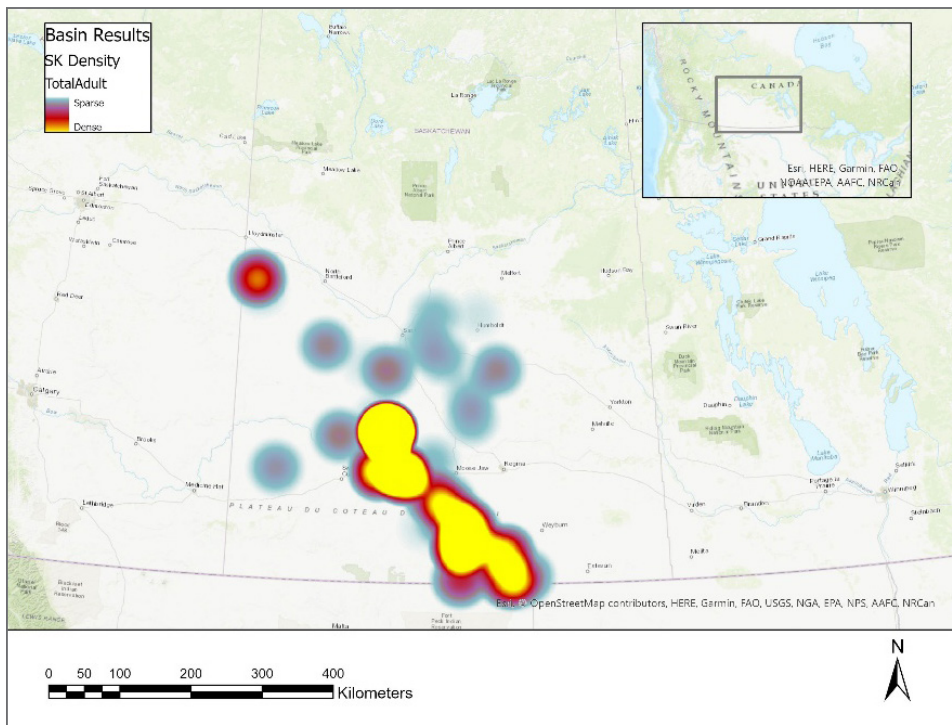


FIGURE 2. Density of Piping Plovers observed in Saskatchewan during the 2024 Prairie Canada Piping Plover Census.

the survey window. Redberry Lake was surveyed on 18 June with no Piping Plovers observed. Middle and Miller Lakes were checked within a week and a half prior to the census window and were confirmed to have no habitat, as the basins were flooded, so they were not revisited during the census window.

At the basin level, the most common threat category listed in Saskatchewan was livestock (with 50 per cent of the basins reporting this threat category), followed by predators (41 per cent), and vegetation encroachment (36 per cent). Less common threats were vehicles (13 per cent), industry (nine per cent), and buildings (five per cent). Approximately 10 per cent of the basins were reported as having no real threats, while 11 per cent of the basins had threats that were lumped into an “other” category and were described as recreation-related threats such as firepits, windsurfers, park development, traffic, noise, and garbage. One basin can have multiple data submissions (e.g. multiple surveyors covering different sections, or one surveyor over more than one day); thus, a single basin can have the same threat listed multiple times. In terms of relative abundance, predators, vegetation encroachment, and livestock all made up approximately 25 per cent each of the total threats reported (Figure 3).

Five colour-banded birds were reported in SK during the 2024 PCPPC. Four birds have been identified, with one banded at Lake Diefenbaker in 2012 (Figure 4), one banded in Montana in 2014 (and is known to winter in North Padre Island, Texas), and two banded in North Dakota in 2016.

Key learnings from the census begin with the low number of Piping Plovers. The 887 Piping Plovers reported in the 2024 PCPPC is the lowest-ever recorded census result for the combined prairie provinces. However, the 810 birds in Saskatchewan was very similar to the 2001, 2011, and 2016 survey results, but 400 to 700 fewer birds than the ~1,200 to 1,500 birds seen on the 1991, 1996 and 2006 surveys (Figure 5).^{2,3,4,5,6,7} Annually surveying a subset of basins in SK would offer better insight to Piping Plover distribution and abundance, as SK contains more Piping Plovers than any other jurisdiction. In addition, collaboration with other jurisdictions (e.g. USA Northern Great Plains) to evaluate population trends and re-establish an international survey for breeding Piping Plovers, once every five years, should be prioritized. In future surveys, efficiency could be improved through pre-survey aerial reconnaissance and continuing the use of a digital data collection method. Lastly, it is recommended to maintain support for initiatives that lead to improved

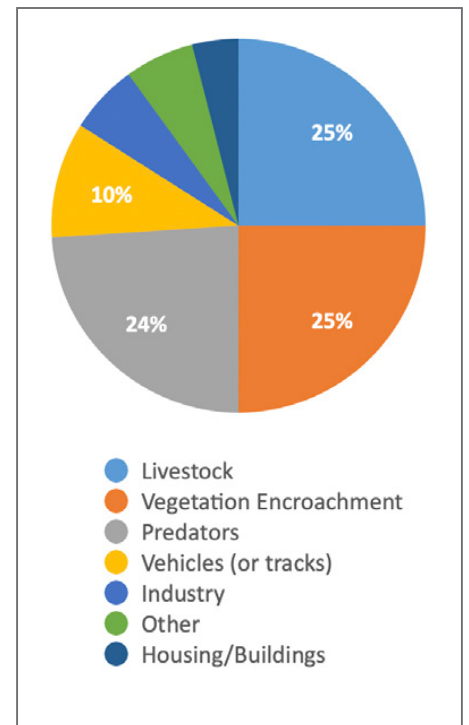


FIGURE 3. Relative abundance (%) of threats reported during surveys in the 2024 Prairie Canada Piping Plover Census.

Piping Plover habitat, such as increased education and awareness of Piping Plovers and their habitat requirements, ensuring implementation of wetland conservation policies, and maintaining financial support for stewardship actions that mitigate negative effects of livestock on Piping Plover habitat.

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Finally, a huge thank you to all the landholders who allowed surveyors to access basins through their properties. It truly takes a community!



FIGURE 4. Piping Plover observed at Lake Diefenbaker during the 2024 PCPPC, originally banded at the same basin in 2012; photograph taken by Evan Larson.

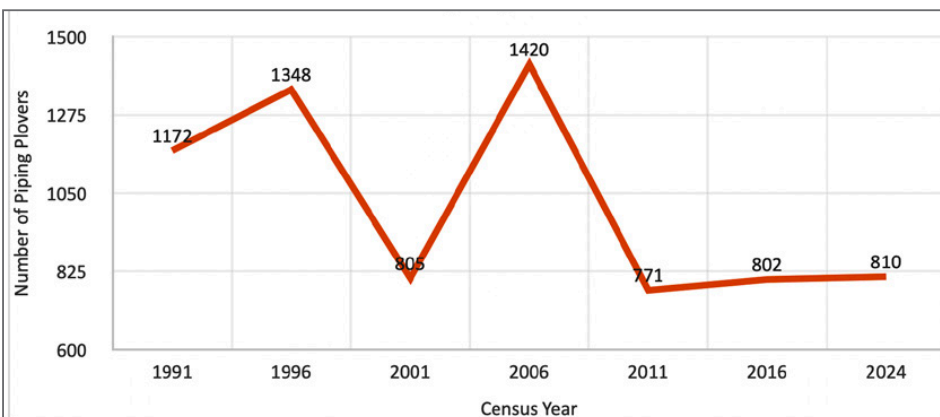


FIGURE 5. Comparison of Saskatchewan region census results from all IPPCs (1991-2016) and the 2024 Prairie Canada Piping Plover Census.^{2,3,4,5,6,7}

1. COSEWIC (2013) COSEWIC assessment and status report on the Piping Plover *circumcinctus* subspecies (*Charadrius melodus circumcinctus*) and the *melodus* subspecies (*Charadrius melodus melodus*) in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xiv + 39 pp. (Species at Risk Public Registry website).
2. Haig SM, Plissner JH (1993) Distribution and Abundance of Piping Plovers: Results and Implications of the 1991 International Census. *Condor* 95:145-156.
3. Elliott-Smith E, Dlabola E, Anderson A, Bidwell M, Hofer C, Sandoval G (2016) Data from the 2016 International Piping Plover Breeding Census. U.S. Geological Survey, unpublished data.
4. Elliott-Smith E, Bidwell M, Holland AE, Haig SM (2015) Data from the 2011 International Piping Plover Census: U.S. Geological Survey Data Series 922, 296 p., <http://dx.doi.org/10.3133/ds922>.
5. Elliott-Smith E, Haig SM, Powers BM (2009) Data from the 2006 International Piping Plover Census: U.S. Geological Survey Data Series 426, 332 pp.
6. Ferland CL, Haig SM (2002) The 2001 International Piping Plover and Snowy Plover Census. Report to USGS Forest and Rangeland Ecosystem Science Center, Corvallis, OR.
7. Plissner JH, Haig SM (1997) The 1996 International Piping Plover Census. Report to USGS Forest and Rangeland Ecosystem Science Center, Corvallis, OR. 🐦