Surveys of birds using the Penticton Oxbows, March 2024 through February 2025 Compiled by Rick McKelvey March 2025

Introduction

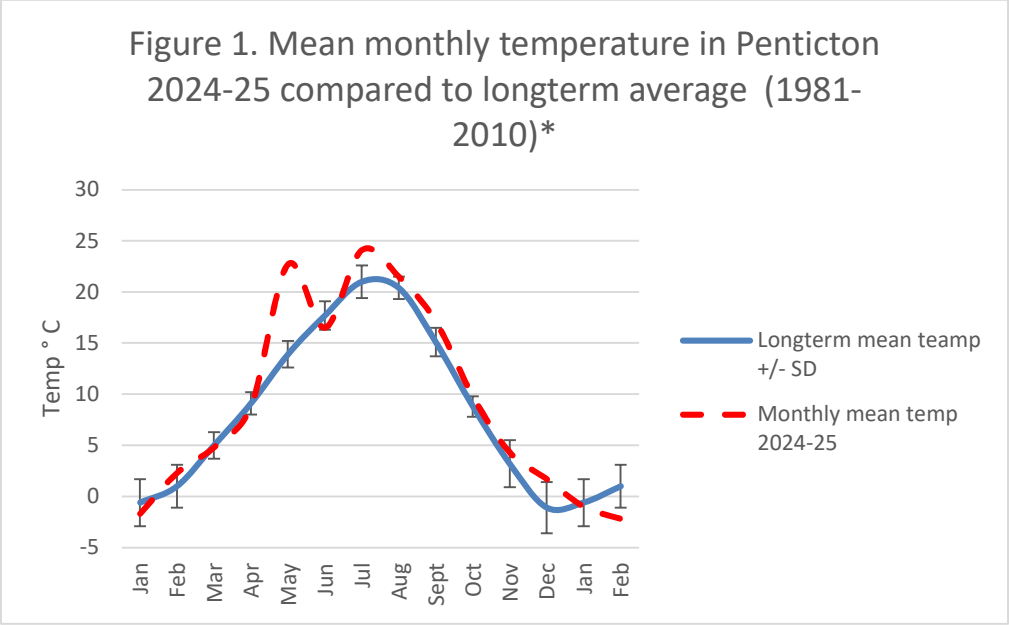
This report marks the 10th year of bird surveys on the Penticton oxbows conducted by the Friends of the Oxbows and the South Okanagan Naturalists' Club. As for the past couple of years, data have been summarized over what is considered a more accurate reflection of the seasonal use of the oxbows, namely Spring (March through May), Summer (June through August), Fall (September through November), and Winter (December through February of the next calendar year). The phenology of bird use of the oxbows varies between years but the importance of the oxbows is better reflected on a seasonal basis. General procedures and locations have been described previously in other reports, available on the Friends of the Oxbow's website (www.pentictonoxbows.ca) or directly from the link below. Counts in 2024-25 were conducted by A. Bodden, A. Garland and R. McKelvey at monthly intervals.

https://pentictonoxbows.ca/wordpress/wp-content/uploads/2017/04/16DecBirdCountReport.pdf

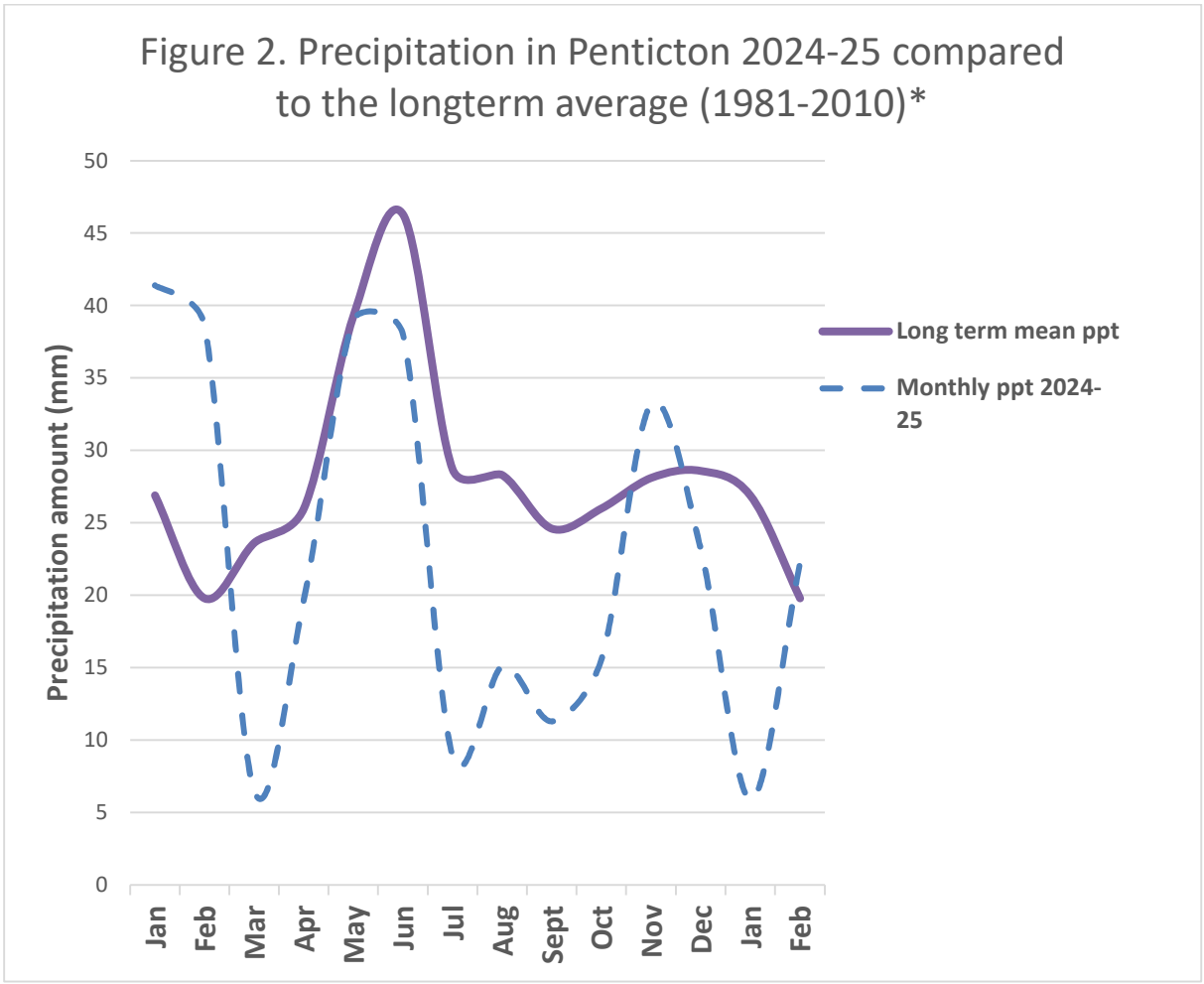
Climate in 2024-25

Temperatures in 2024-25 were within normal range for most of the year, with the exception of May and July, when temperatures were hotter than the average, and February 2025, when temperatures were slightly lower than the norm. (Fig. 1). Temperature norms from Environment and Climate Change Canada now include standard deviations, which also are plotted in Figure 1. May and July (2024) and February (2025) temperatures were not within the norms

Precipitation was again quite different from the norm and generally quite erratic (Fig. 2). March was substantially dryer than normal, as was the period from July through October, and again in January, 2025. February and November were wetter than normal. Normal data for precipitation from Environment and Climate Change Canada do not as yet include standard deviations, but it's clear this was an unusual year for dryness. Comparing the total precipitation received this year (318.6 mm) with the amount normally received (392.9 mm, sum of average precipitation from monthly climate norms) further indicates this was a dry year.



* Data for Penticton Airport from Environment Canada data base.



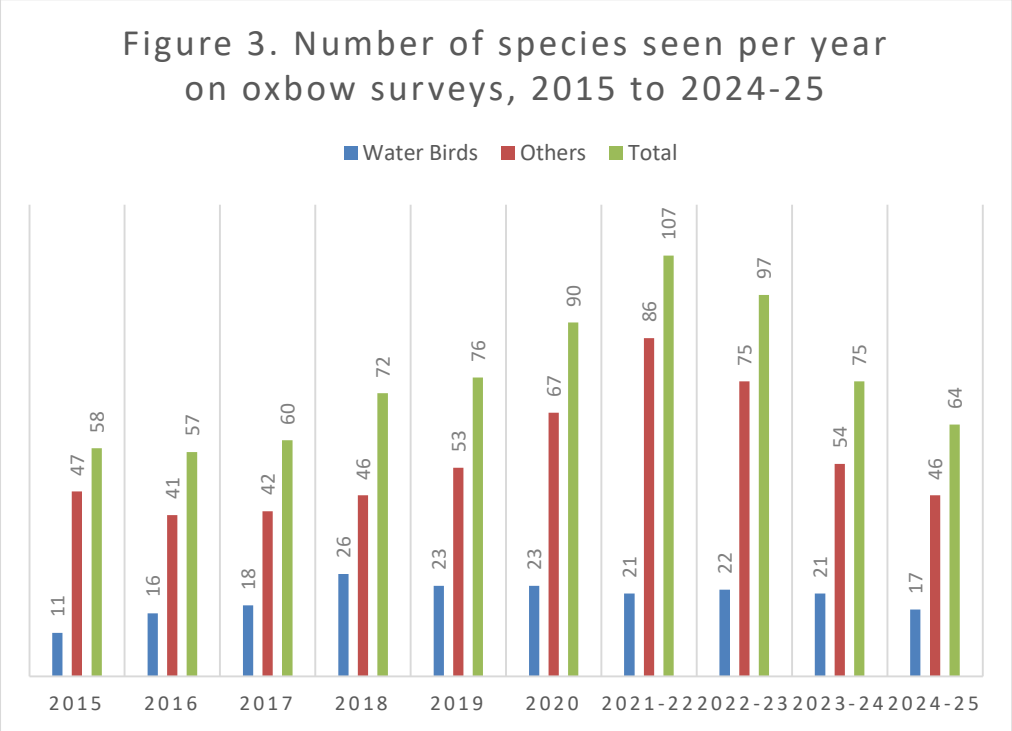
*Data for Penticton Airport from Environment Canada data base.

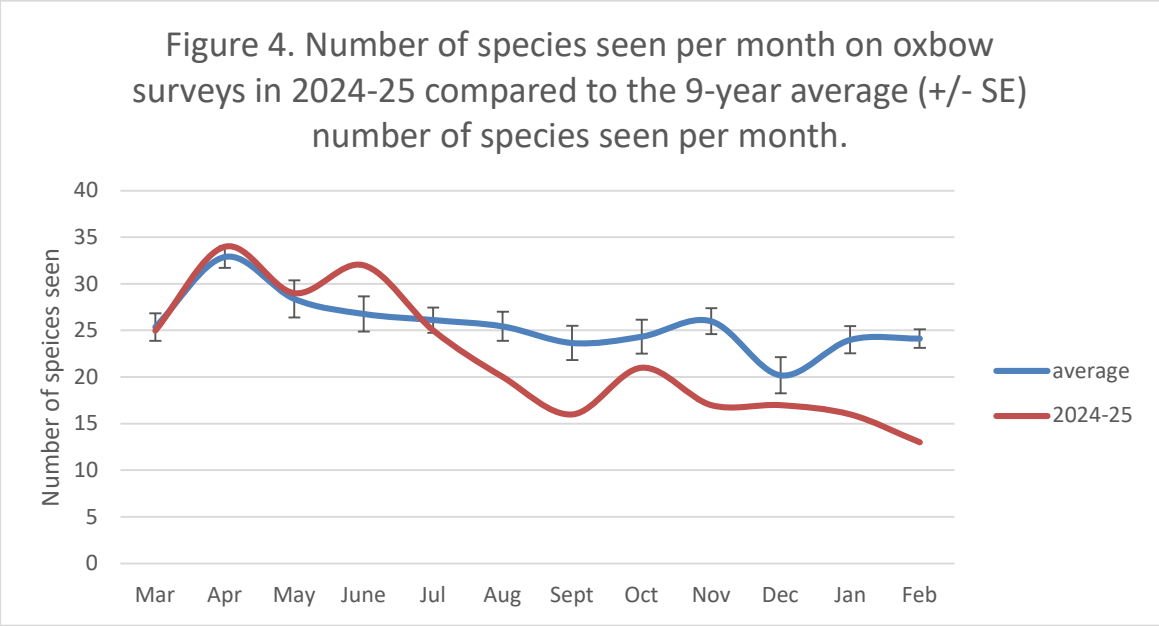
Species diversity

The number of species seen in 2024-25 was again lower than in the previous years, as a result of fewer species of both non-waterbirds and waterbirds being recorded (Fig 3). Waterbird species diversity was lower than the previous year by four species, comparable to the low counts seen when surveys first began. Reasons why so few waterbird species were seen this year are unclear, but the apparent deterioration of the oxbows over the years is suspected as being one cause. Each year the vegetation becomes thicker with consequently less open water. Future surveys will determine if the reduction in species diversity of waterbirds is a trend, adding to the urgency of revitalizing the oxbows.

Percentage of species comprising approximately 90% of the birds seen over the past four years of surveys are shown in Appendix 1.

The number of species seen per month in 2024-25 compared to the average numbers seen in previous years is shown in Fig. 4. Species abundance was average or above in spring, and then below the previous nine-year average for the rest of the year.





Numbers of birds seen

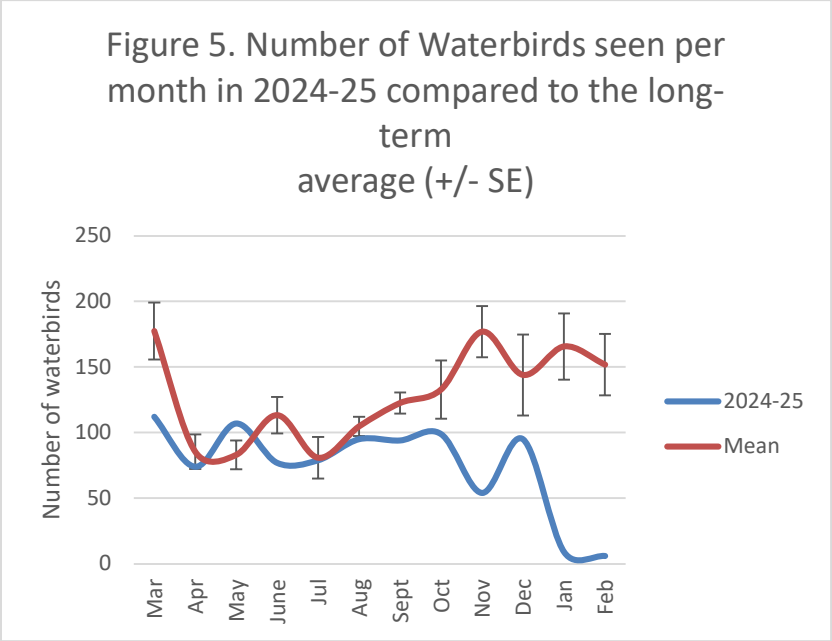
As has been mentioned in previous reports there is much variation in the numbers of birds seen both between months and between years and 2024-25 was no exception. Numbers of waterbirds and non-waterbirds seen per month in 2024-25 compared to the mean numbers seen per month in previous surveys are shown in Figs. 5 and 6. Actual numbers of those two groups seen this year can be found by month in Appendix 2. Data from the previous winter period are included in the two figures to give context for the data trends for the current year. For clarity, the spring period for 2024-25 was March through May 2024, the winter period was December 2024 through February 2025. Data on the left side of the graph therefore are from the previous winter period (December 2023 through February 2024).

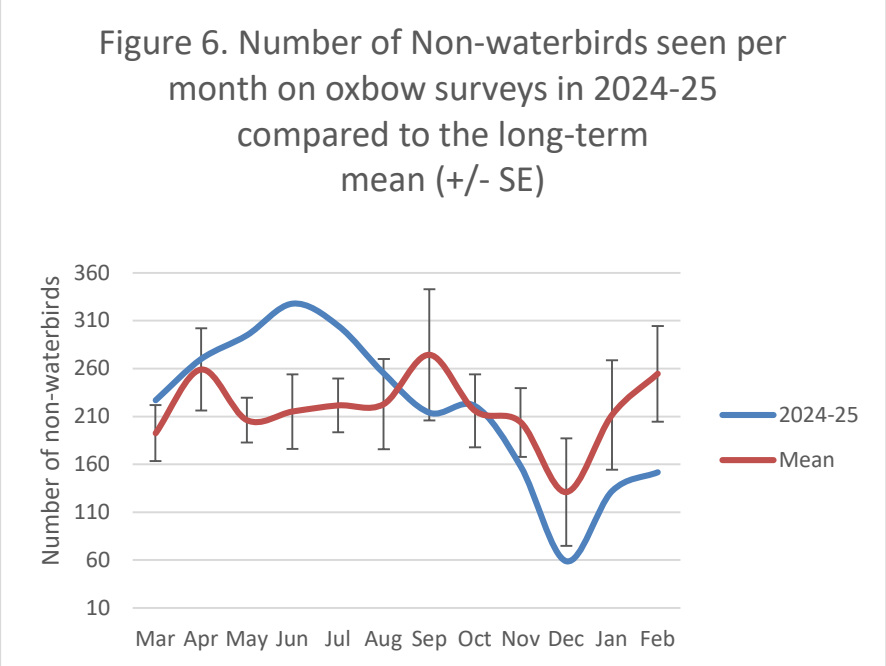
Waterbird numbers in 2024-25 were lower throughout most of the year in comparison to the average numbers seen per month in previous surveys (Fig. 5). Averages of previous surveys indicate winter numbers have been similar between years, with declines to lower numbers in spring and summer, and an increase through fall back to higher numbers in winter. In 2024-25 numbers were near average for spring and summer but below average for fall and winter. Migration peaks were not noticeable.

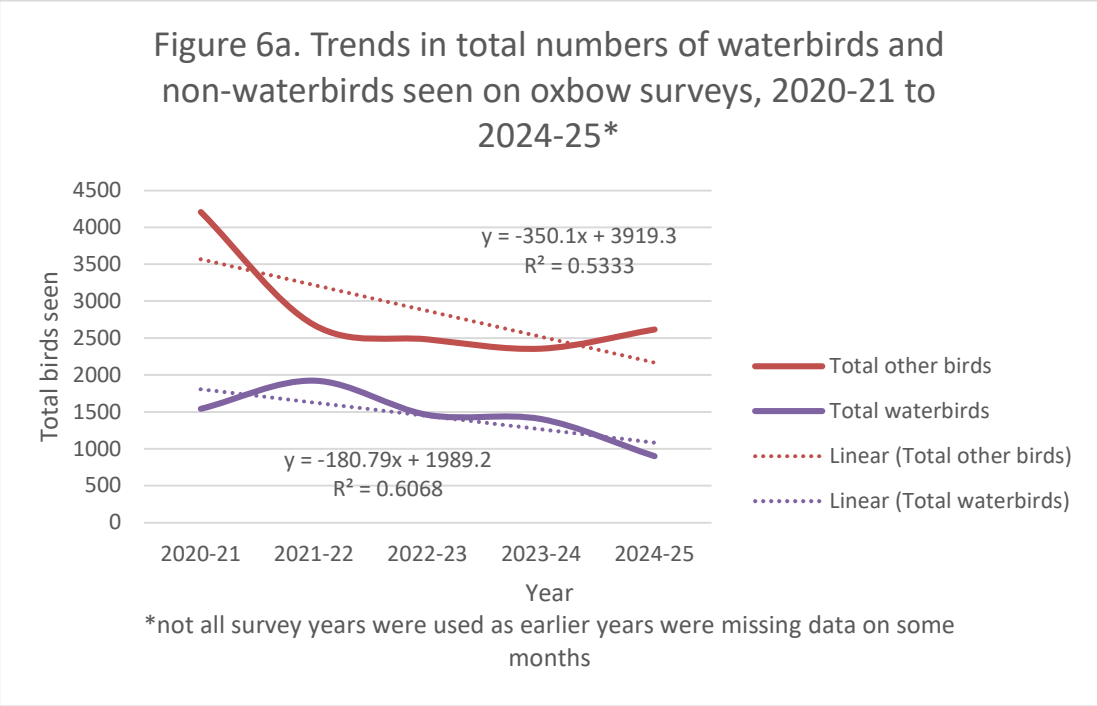
Numbers of non-waterbirds seen (Fig. 6) were higher than average in spring followed by a decline into early winter and a slight increase in mid to late winter. Observations indicate that most non-waterbirds wintering near the oxbows are essentially non-migratory introduced species, such as House Sparrows, European Starlings, Rock Doves and European Collared Doves.

Our impression of surveys over the past several years has been that we are seeing fewer birds each year, in spite of the variability noted elsewhere in this report between years, months and oxbows. When trends in the numbers of waterbirds and non-waterbirds are examined from the last five years of surveys it appears our impressions are accurate (Fig. 6a). As noted above, the oxbows continue to silt in and deteriorate, and each year more impacts from adjacent developments and squatters have been observed. We are assuming that the declines we are seeing are a result of local changes to habitat, but we have no

comparable data from elsewhere to say whether there has also been a decline in regional numbers of birds, and that being reflected in the numbers seen on the oxbows.







Resident Waterfowl and Productivity

Mallard numbers in 2024-25 were average or slightly below through spring and summer but were well below average in fall and winter (Fig. 7). No influx during migration or over winter was noted. Wood ducks started off the year in low numbers but were then seen in higher than average numbers to late summer. Subsequently they were slightly below average in fall and winter. (Fig. 8).

Productivity was low this year compared to previous years, with only a maximum of two Mallard, three Wood Duck and two Canada Goose broods being recorded (Table 1). Since we began collecting data on brood sizes, Mallard productivity has declined, while Wood Duck productivity remains high, though brood numbers are variable. Canada Goose productivity is also variable. Geese do not seem to breed on the oxbows every year, or at least to bring their young to the oxbows, from, for example, the Okanagan River Channel. Maximum numbers of broods and brood sizes are summarized in Table 2 for data collected since 2020-21.

Figure 7. Number of Mallards seen per month in 2024-25 compared to monthly mean numbers (+/-SE) , 2015-16 - 2023-24.

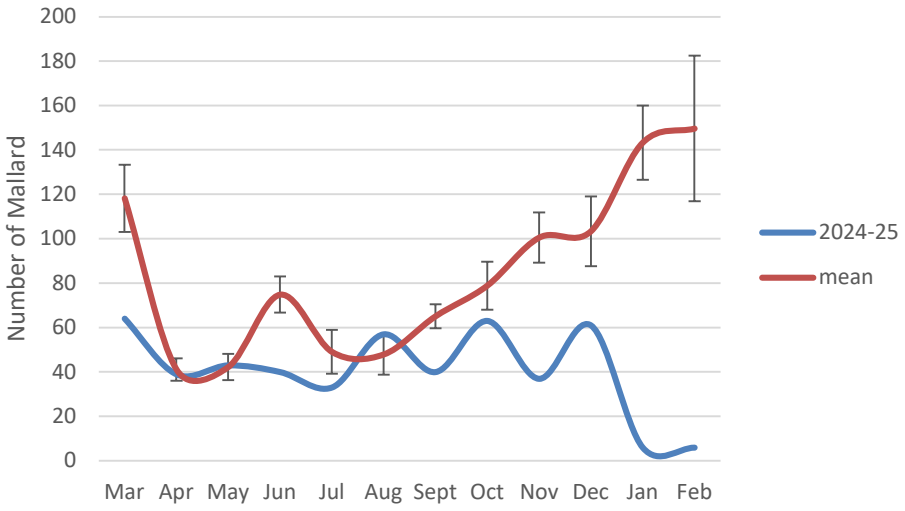


Figure 8. Number of Wood Ducks seen per month in 2024-25 compared to monthly mean numbers (+/-SE) , 2015-16 - 2023-24.

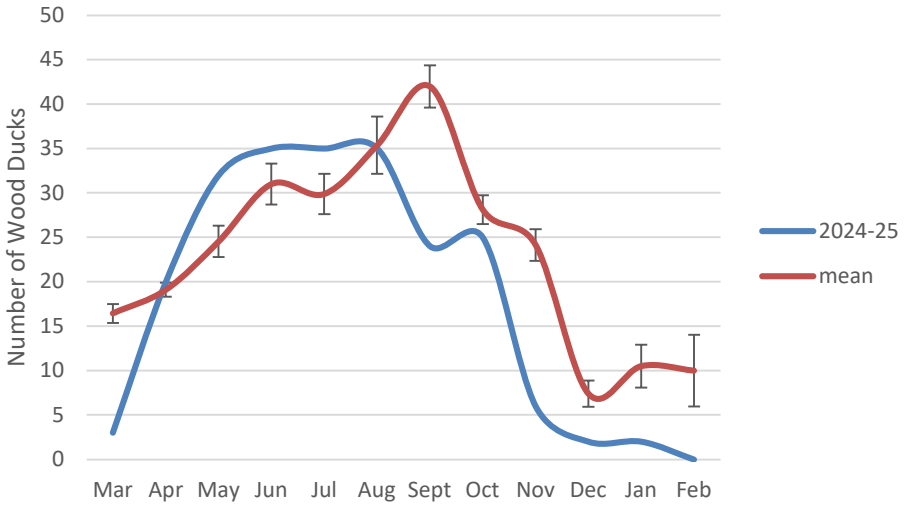


Table 1. Number and size of broods seen on oxbows in 2024-25.

Date	15 May	19 June	17 July
MALL			
Broods	3	5	2
Young	15	12	6
WODU			
Broods	1	2	2
Young	6	8	7
CAGO			
Broods	2		
Young	18	2	

Table 2. Maximum number of broods and young seen on the oxbows from 2020-21 to 2024-25.

Year	Mallard broods	Number of ducklings	Wood Duck broods	Number of ducklings	Canada Geese broods	Number of goslings
2024-25	5	15	2	8	2	18
2023-24	2	10	3	34	2	20
2022-23	2	6	5	15		
2021-22	9	40	8	26		
2020-21	9	46	5	23	1	11

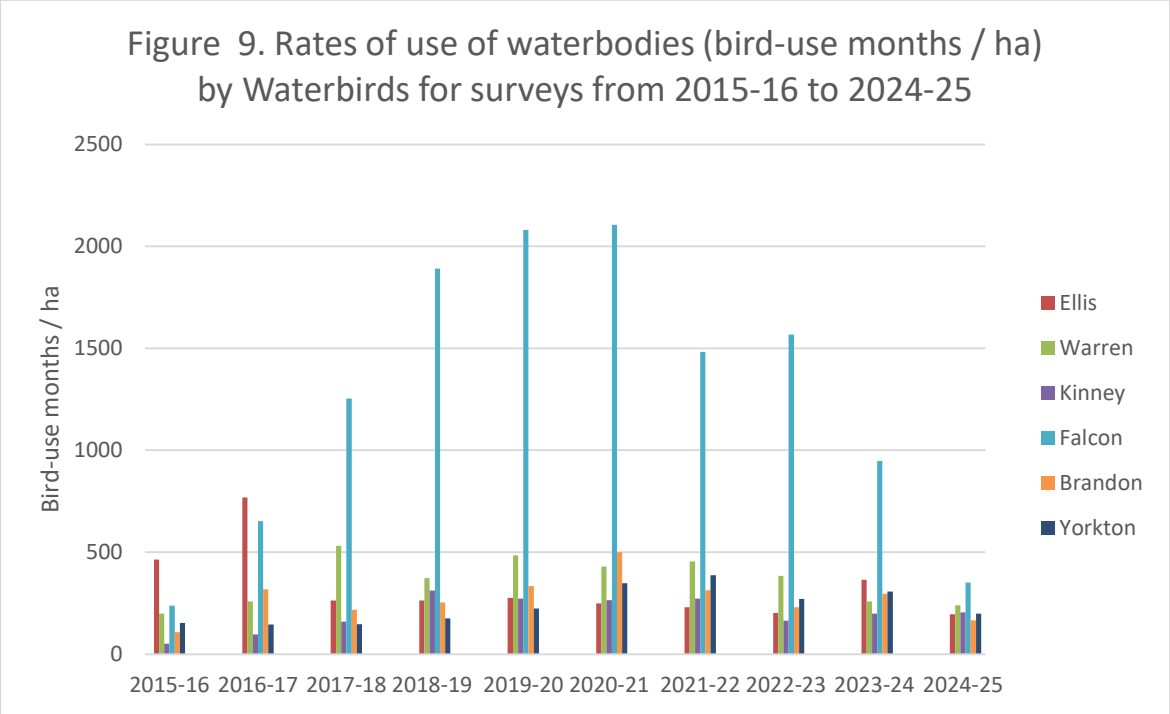
Rates of use of oxbows by birds

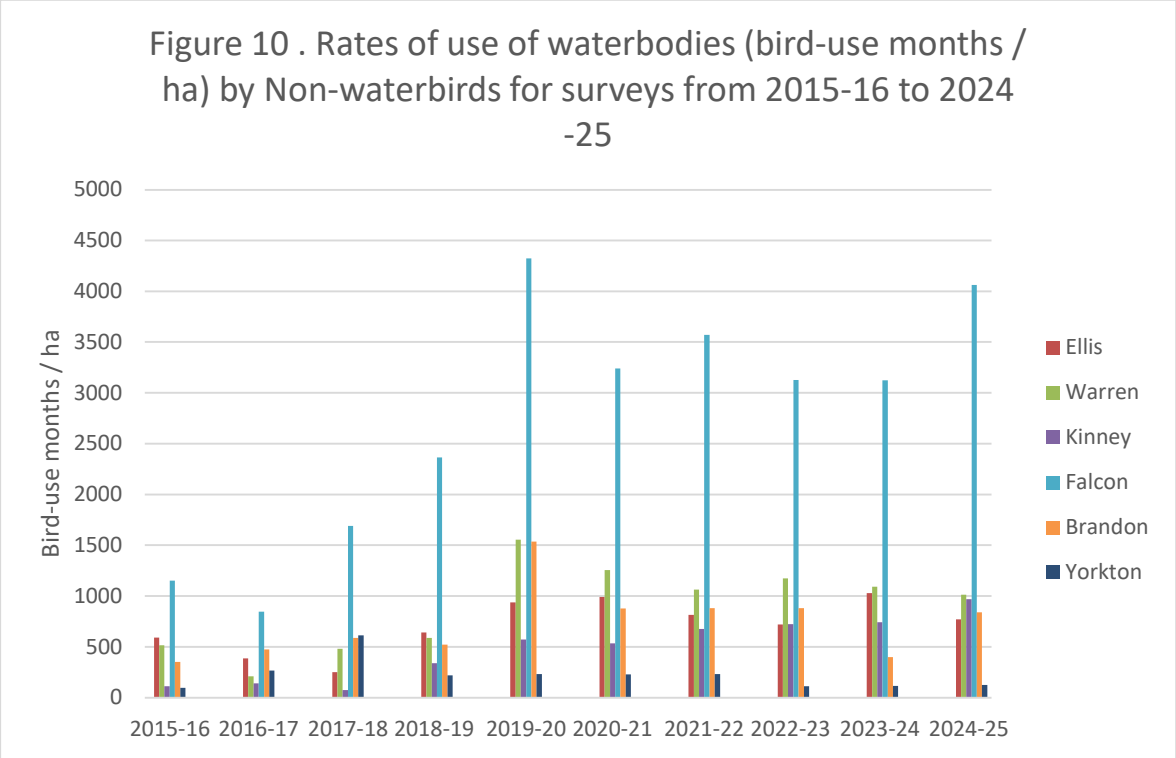
The rate of use of each oxbow by waterbirds and non-waterbirds is reported here as a function of the area of water on each oxbow as determined by measurements on Google Earth. Although non-waterbird use of the oxbow environs is more likely a function of the area of the surrounding riparian habitat, it has not been possible to delimit and measure that habitat area. Many non-waterbirds will use habitats in the surrounding neighbourhoods as well as those close to the oxbows; riparian vegetation and neighbourhood habitats blend together and remain ill defined. For this report, rates of use of the oxbows by non-waterbirds also uses the area of open water as a surrogate for the actual, unmeasured habitat base.

In this report the rates of use of the wetland habitats are reported as bird-use months per hectare, corrected for unequal number of months of surveys each year, and all data are again reported from March through February. Relative rates of use of each oxbow for waterbirds and non-waterbirds are shown in Figs. 9 & 10, respectively. These data are further summarized in table form in Appendix 3.

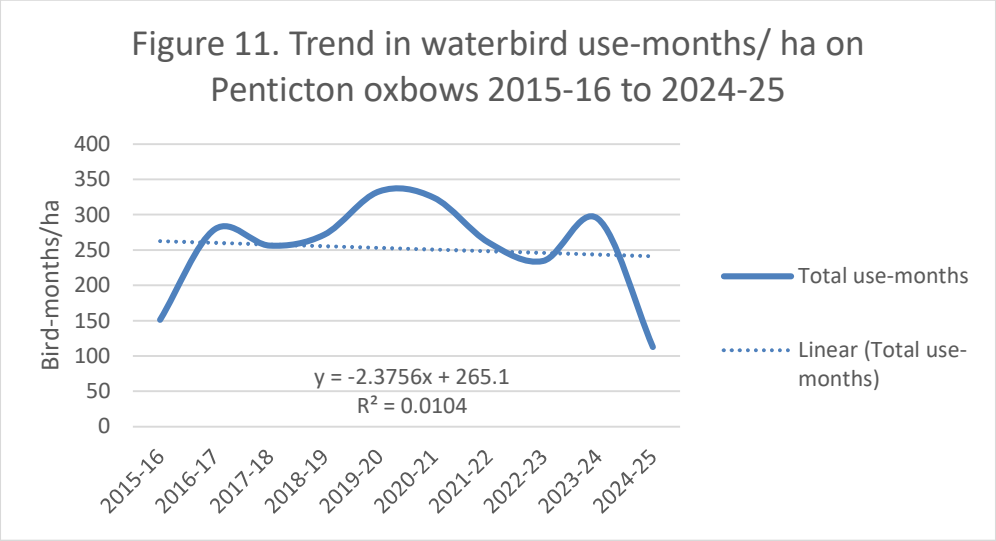
The rates of use of the oxbows by waterbirds continues to be similar one oxbow to the other, though variable between years, except for the Falcon Avenue oxbow. That oxbow has in the past gotten disproportionately high use by both waterbirds and non-waterbirds. That is likely because the habitat on that oxbow is quite varied on both sides of the waterbody, there is good riparian development and coarse woody debris, and because there are several backyard bird feeders near the wetland. In some years, some landowners have also grain-fed the ducks, which keeps the numbers of waterbirds high even in the coldest parts of the winter. Direct feeding of the ducks was not evident this winter, although ducks were seen to be landing in one yard where bird feeders were present. The trend of high use rates on the Falcon Ave oxbow by waterfowl have trended downward since 2020-21. That oxbow appears to be silting in very rapidly, and the larger patches of open water that once attracted so many ducks are filling in with Cattail and Yellow Flag Iris. In 2024-25 the rate of use of that wetland was very similar to the rates seen on the other oxbows.

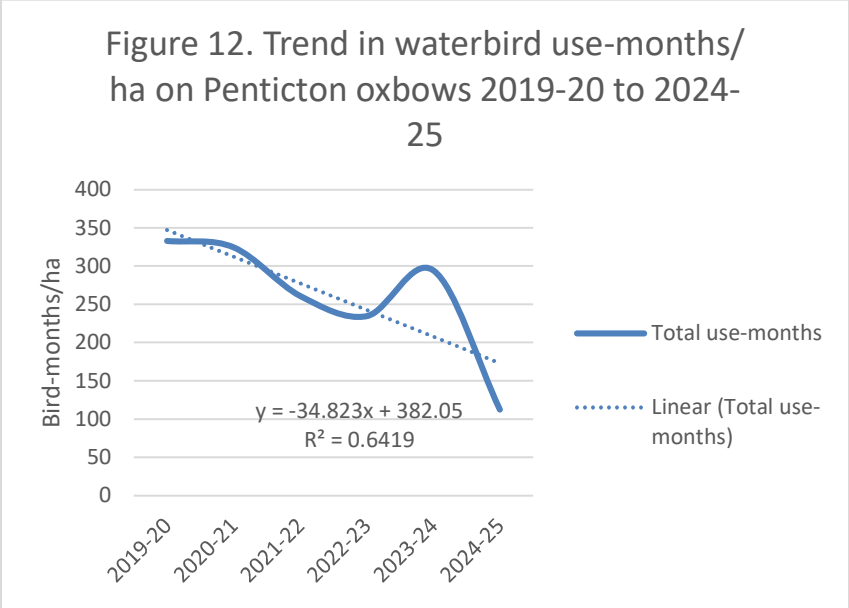
The rate of use of the Falcon Ave oxbow by non-waterbirds continues to be much higher than the other oxbows. We attribute this again to the presence of well-used backyard feeders. While some native birds use those feeders the most abundant species are those well adapted to the city, such as European Starlings, House Sparrows, European Collared Doves, and Rock Pigeons.





As explained in previous reports, survey effort for the first four years of this project may not have been as consistent as one might have wished, owing to the numbers of people involved, individual abilities to identify and count birds, and the tendency to not attempt counts in the winter period. Since 2019-20 the same three people have conducted the survey, so from the point of view of effort those surveys are much more consistent than surveys before that time, with one exception. In 2019-20 there was no count in December, a hold over from the protocol of the first four survey years. When data from all surveys are used, corrected for the number of surveys each year, the trend in usage of the oxbows by waterbirds has now become negative (Fig.11). When data from the first four surveys are excluded, the trend in waterbird usage is strongly negative (Fig. 12).





The trends in non-waterbird usage are shown in Figures 13 and 14, for data from all 10 surveys, and for data from only the last six years, respectively. Data from all 10 surveys seems to indicate an upward trend. However, the first four surveys show a relatively low rate of use, while the latter six surveys, with what is believed to be more consistent effort and likely less error, show a decling rate of use and the trend is clearly negative. With the assumed better precision in surveys of the last six years, it would seem that the trend in both waterbird and non-waterbird usage is downward over all the oxbows combined.

Figure 13. Trend in non-waterbird use-months/ha on Penticton oxbows 2015-16 to 2024-25

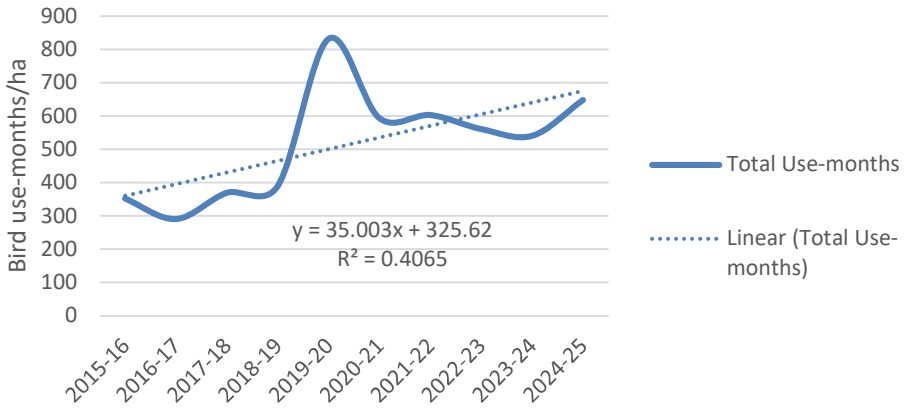
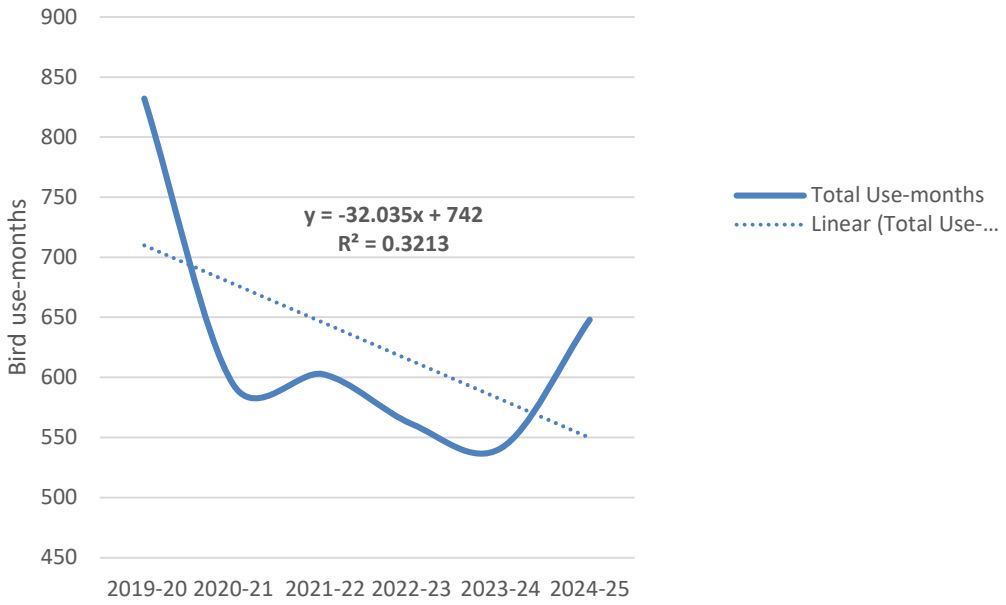
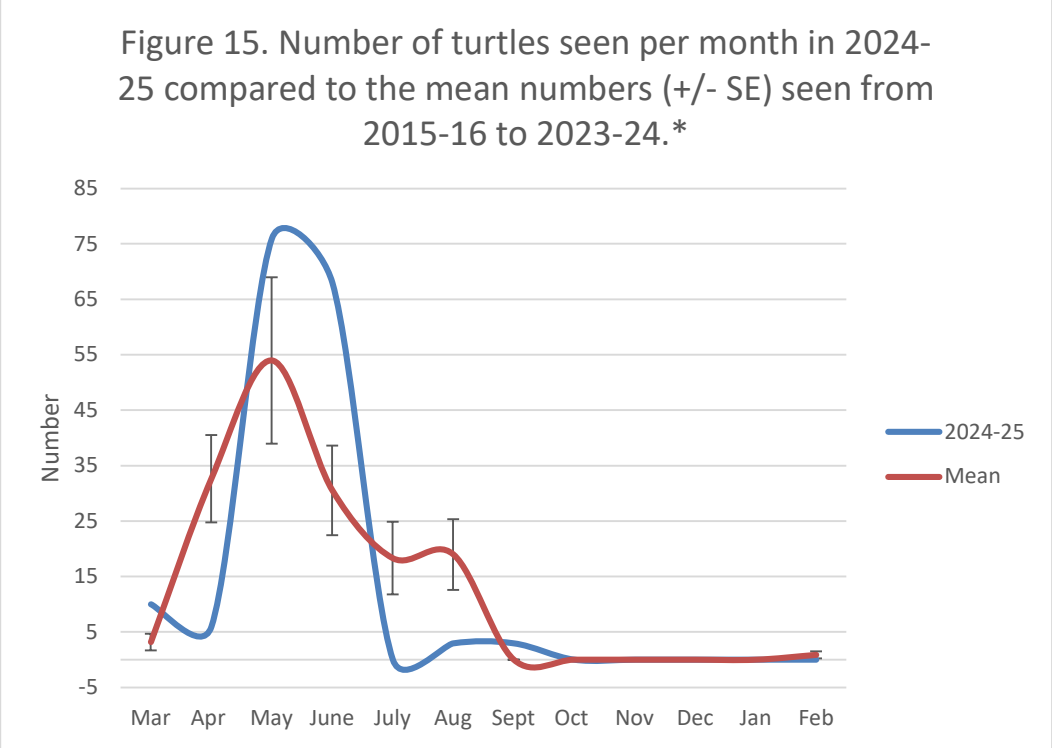


Figure 14. Trend in non-waterbird use-months/ha on Penticton oxbows 2019-20 to 2024-25



Turtle counts.

Turtles were first seen in March, reached peak numbers in May, were not seen in July and very rarely in late summer (Fig. 15). July was quite hot, and the turtles did not see the need to bask any longer, at least at the times we visited the wetlands. The maximum number of Red Sliders this year was six, and they have only ever been recorded in the Warren Avenue oxbow. Red Sliders observed were all of a large size, and do not seem to be breeding.



*Negative numbers result from curve smoothing

Appendix 1. Species comprising approximately 90% of the birds seen over the past four years of oxbow surveys by year.

2021-22	%	2022-23	%	2023-24	%	2024-25	%
Mallard	25.1	Mallard	21.5	Mallard	21.9	Mallard	14.4
Starling	15.2	Starling	11.8	Starling	13.9	Starling	12.9
Wood Duck	10.2	Wood Duck	8.4	California Quail	8.1	Red-winged Blackbird	12.7
Red-winged Blackbird	10.0	California Quail	7.7	Wood Duck	7.4	House Sparrow	8.6
House Sparrow	5.7	Red-winged Blackbird	6.9	Red-winged Blackbird	6.7	Collared Dove	7.9
California Quail	4.2	House Sparrow	5.4	House Sparrow	6.0	California Quail	7.4
Collared Dove	3.9	Collared Dove	5.2	Collared Dove	5.3	Wood Duck	6.5
Rock Pigeon	2.2	Rock Pigeon	3.9	Cedar Waxwing	3.0	Rock Pigeon	3.6
Song Sparrow	1.9	House Finch	3.5	Canada Goose	3.0	American Goldfinch	2.2
Northern Flicker	1.8	Canada Goose	2.5	Rock Pigeon	2.8	Canada Goose	2.2
Cedar Waxwing	1.7	Dark-eyed Junco	2.5	House Finch	2.2	Song Sparrow	2.1
House Finch	1.7	Cedar Waxwing	2.3	Song Sparrow	1.9	Dark-eyed Junco	1.8
American Goldfinch	1.3	Northern Flicker	2.0	Dark-eyed Junco	1.9	House Finch	1.7
Canada Goose	1.0	American Robin	1.7	Northern Flicker	1.4	Northern Flicker	1.7
American Robin	1.0	Song Sparrow	1.7	Bufflehead	1.4	Yellow-rumped Warbler	1.6
American Crow	0.9	American Goldfinch	1.5	American Robin	1.2	Bufflehead	1.3
Pine Siskin	0.9	Bufflehead	1.1	American Crow	1.1	Cedar Waxwing	1.1
Bufflehead	0.8			American Goldfinch	1.0		

Appendix 2. Number of waterbirds, non-waterbirds and turtles seen each survey month on Penticton oxbows in 2024-25.

Month	Waterbirds	Non-waterbirds	Turtles
Mar	112	227	0
Apr	74	270	10
May	107	295	6
June	77	328	76
July	79	305	68
Aug	95	255	0
Sept	94	214	3
Oct	99	221	3
Nov	54	158	0
Dec	95	59	0
Jan	9	132	0
Feb	6	152	0

Appendix 3. Bird-use months/ha summaries by survey year for each oxbow surveyed, corrected for number of surveys per year.

Waterbirds

	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
Surveys per year	8	9	7	11	11	12	12	12	12	12
Ellis	58	96	26	22	25	21	19	17	30	16
Warren	25	32	53	31	44	36	38	32	22	20
Kinney	6	12	16	26	25	22	23	14	17	17
Falcon	30	81	125	157	189	175	123	131	176	29
Brandon	13	40	22	21	30	42	26	19	25	14
Yorkton	19	18	15	15	20	29	32	23	26	17

Non-Waterbirds

	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
Surveys per year	8	9	7	11	11	12	12	12	12	12
Ellis	74	48	25	53	85	83	68	60	86	16
Warren	64	26	48	49	141	105	89	98	91	20
Kinney	14	18	7	28	52	44	56	60	62	17
Falcon	144	106	169	197	393	270	297	261	260	29
Brandon	44	59	59	44	140	73	73	73	33	14
Yorkton	12	33	61	18	21	19	19	9	10	17