Surveys of birds using the Penticton Oxbows, January to November 2019 Compiled by Rick McKelvey January 2020

Introduction

There are now five years of surveys of birds using the Penticton oxbows; this report summarizes the results for 2019. As in the past, counts were conducted at approximately monthly intervals from January through November. Procedures and locations have been described previously in other reports, available on the Friends of the Oxbow's website (www.pentictonoxbows.ca). Counts in 2019 were conducted by A. Boddin and myself, with assistance from A. Garland.

Overall 2019 approximated the longterm average for temperature, but was considerably drier than the norm in the spring and much wetter in the fall (Fig. 1.). There were generally fewer days where there was ice on the oxbows, and surveys were thus able to be conducted for each month, except December.

Species diversity

The number of species seen in total in 2019 was higher than in the past, as a result of more species of non-waterbirds being detected (Fig 2). Total number of bird species seen in each year was 58, 57, 60, 72 and, 76 respectively. The upward trend in the total number of species seen each year may be a result of more diligent detection of species, rather than an actual increase in diversity. Waterbird species diversity is considered accurate as birds on the oxbows are much easier to detect than are smaller birds inhabiting the surrounding riparian areas.

The number of species seen per survey (Fig. 3.) shows no discernable pattern over the years we have been conducting surveys on the oxbows. One might expect a flush of birds in both the spring and fall, as a result of migration. However, in the last two years more species have been detected during the summer than in the first three years of surveys. That is likely a result of more diligence in looking for, and hearing, small riparian species during the breeding season. One would expect at some point the number of species detected throughout the year to stabilize, and future surveys may show a leveling off of the diversity recorded. Breeding bird surveys might also be contemplated. In any event, with what seems to be a relatively robust number of species recorded throughout the year on the oxbows, the value of those small habitats is well demonstrated.

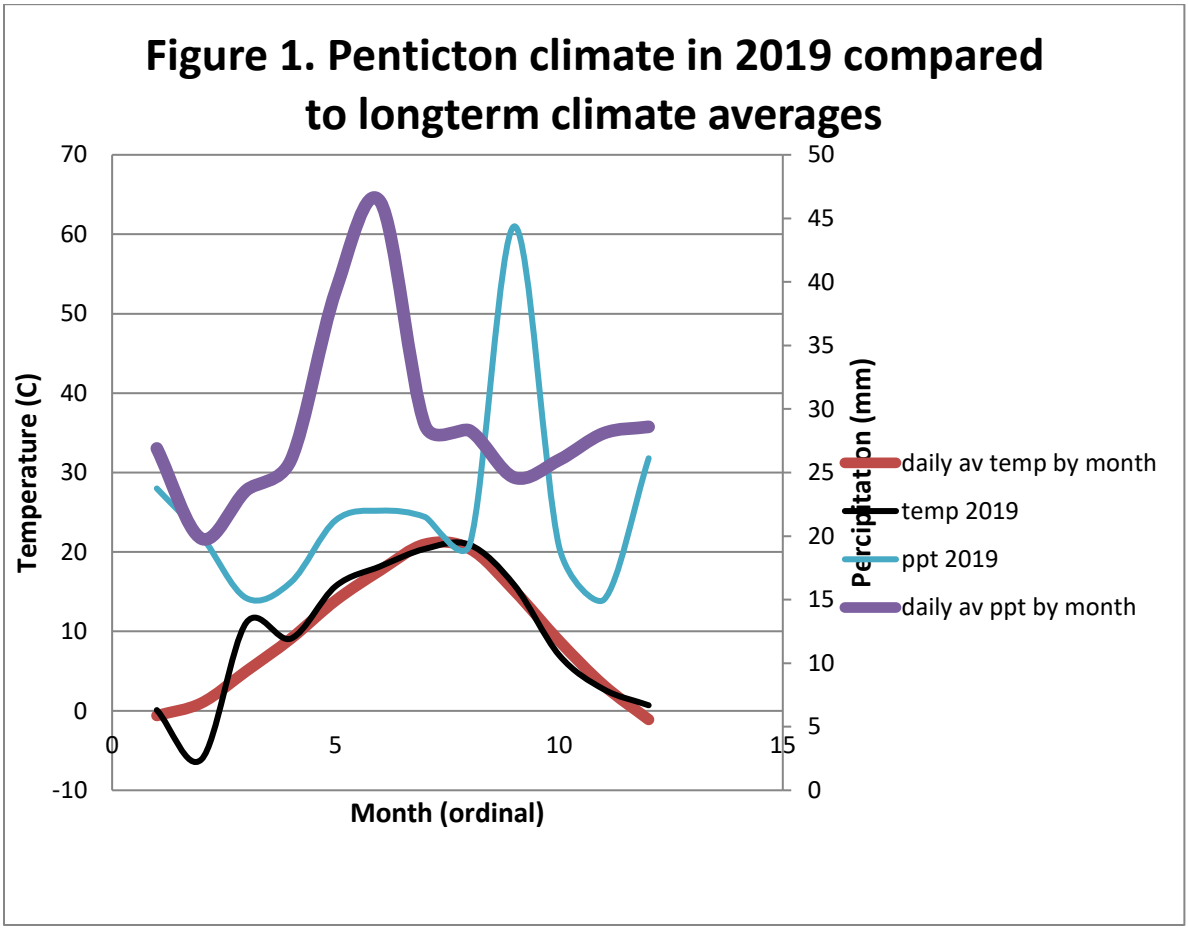


Figure 1. Penticton climate in 2019 compared to longterm climate averages
Temperature (C)
Precipitation (mm)
Month (ordinal)
daily av temp by month
temp 2019
ppt 2019
daily av ppt by month

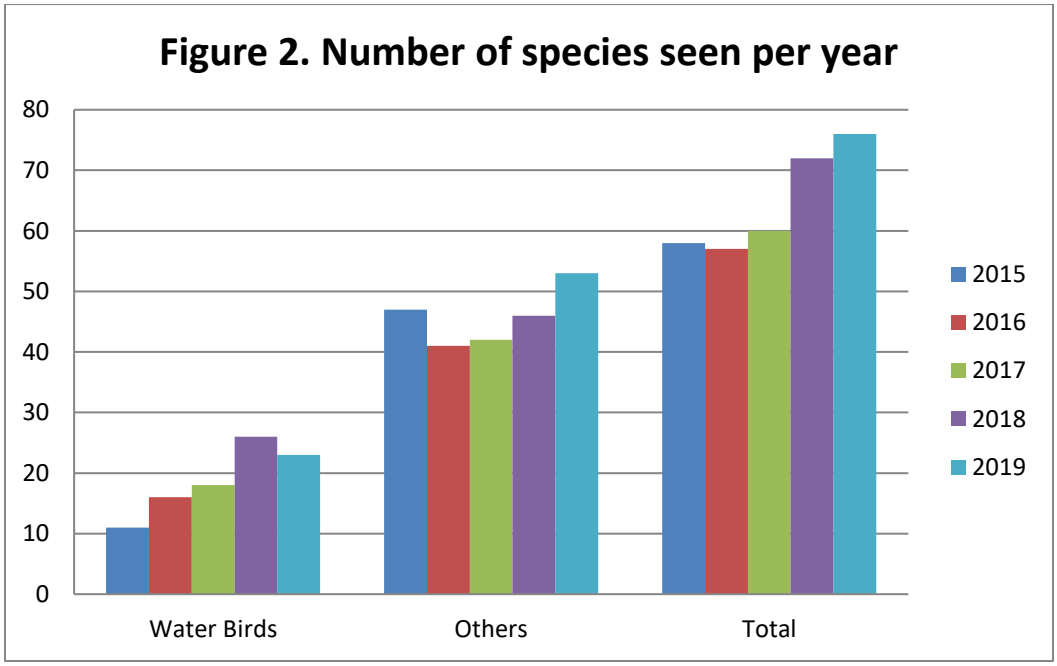
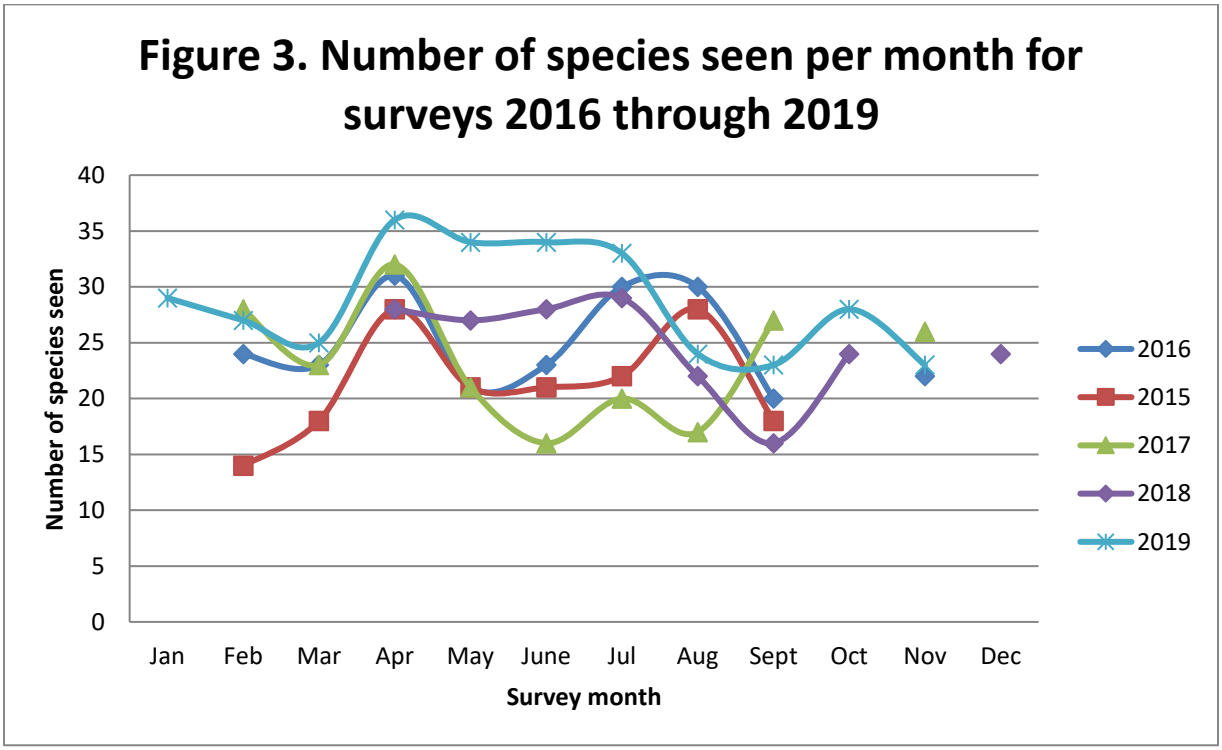


Figure 2. Number of species seen per year
Water Birds
Others
Total
2015
2016
2017
2018
2019



Total numbers birds seen

The total number of birds seen in 2019 followed a similar pattern to previous years, in that there were peaks during migration periods, but overall counts this year were generally higher than in previous years (Fig. 4). As mentioned above the higher numbers in 2019 are a result generally of higher numbers of non-waterbirds being seen, and this may itself be a result of more diligent detection this year than in the past. Water birds were more abundant in migration periods (Fig. 5) and non-water birds were most abundant in the fall migration period. (Fig. 6).

The actual number of birds seen on each survey on each oxbow for all years of data was reported in the update of 2018. Numbers seen in 2019 are attached as Appendix 1.

Figure 4. Total number of birds seen per survey per year on Penticton oxbow surveys 2015-19.

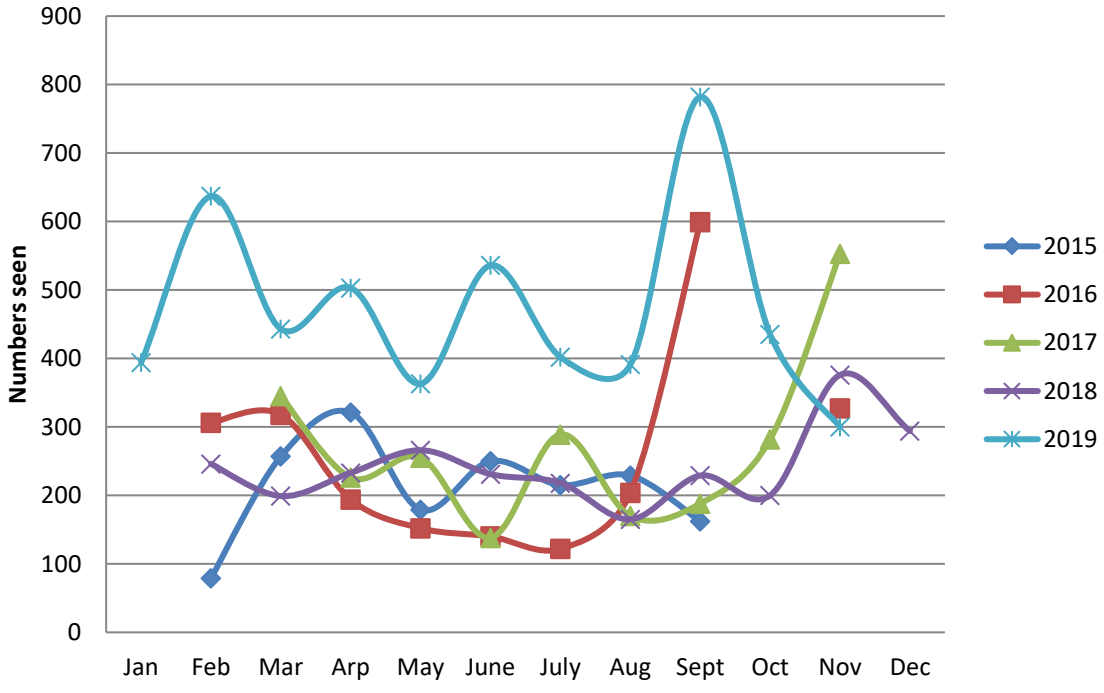
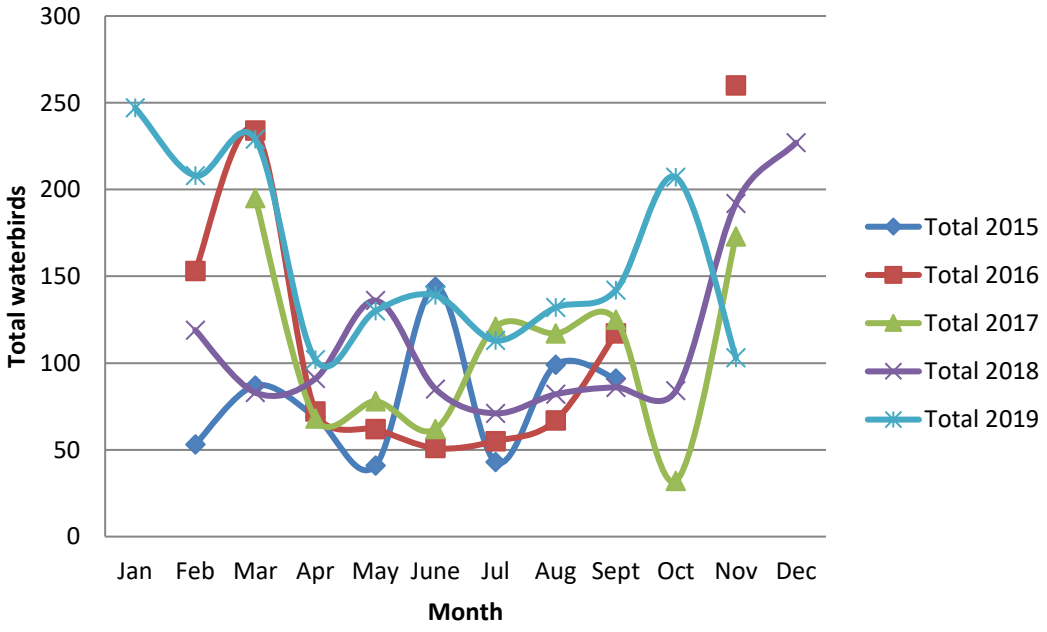
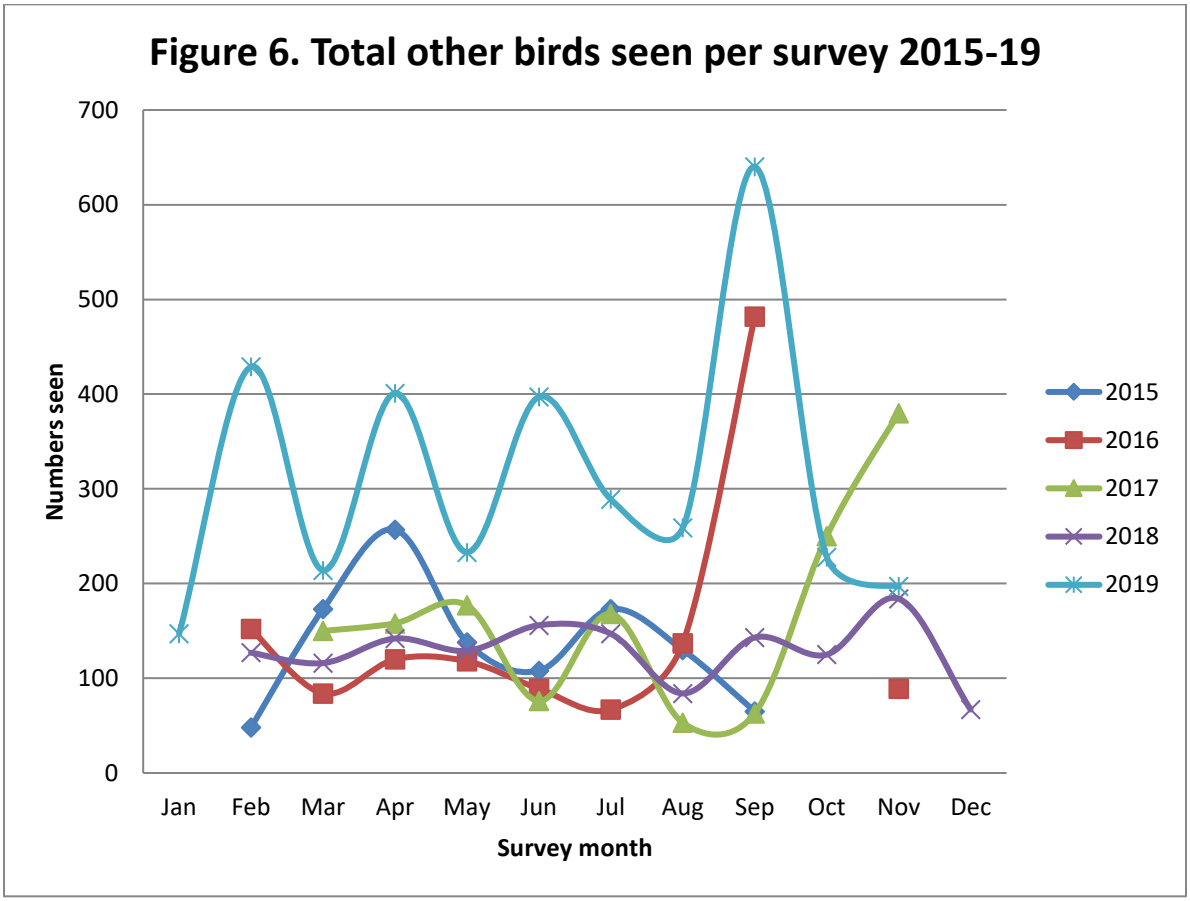


Figure 5. Total waterbirds seen per survey 2015-19



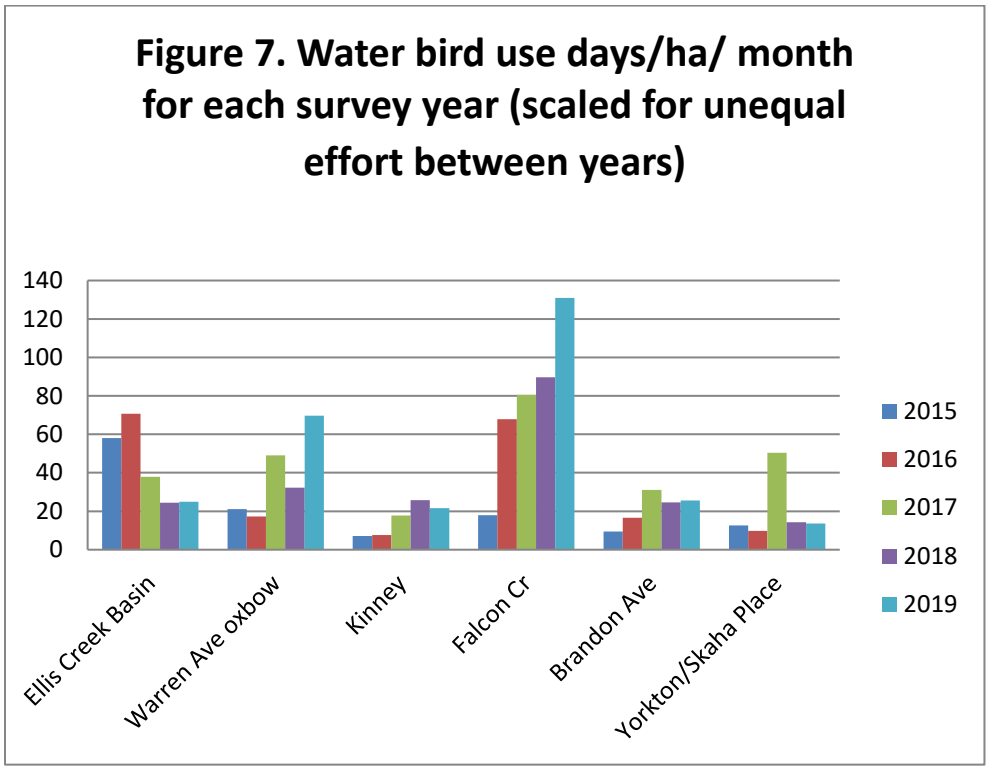


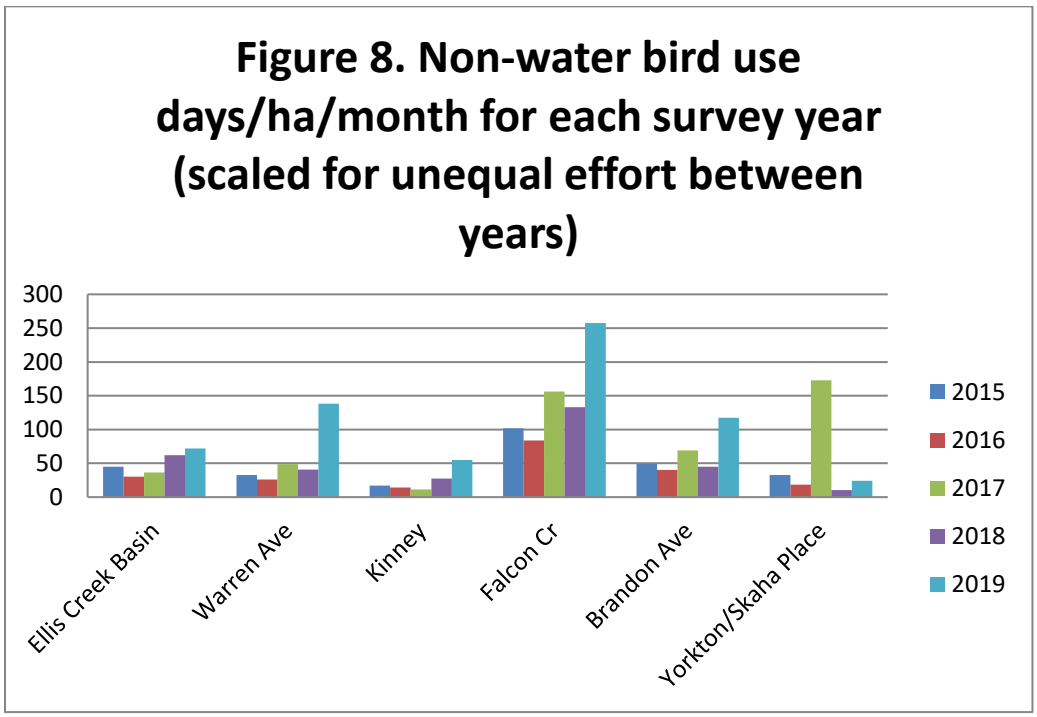
Rates of use of oxbows for water birds

In the past the rate of use of each oxbow by waterbirds, non-waterbirds and total birds has been reported as a function of the area of each oxbow. The area calculation used was simply the area of open water of each oxbow as determined by measurement on Google Earth airphotos. However, two shortcomings in this approach have come to light. In the past the rate of use of each oxbow by non-waterfowl has also been reported as a function of the area of open water. It is more likely, however, that non-waterbird use is a function of the area of riparian vegetation around the oxbows, and not directly related to the area of open water. As the areas around the oxbows tend to blend into adjacent oxbows and the surrounding residential neighbourhoods, determining the actual area of riparian habitat on each oxbow is not possible. For comparative purposes, therefore, it seems useful to continue to report the rates of use of non-waterbirds in relation to the amount of open water on each oxbow.

The second problem with comparing rates of use between years is that the survey effort has been different between years, ranging from seven to 11 surveys per year (i.e. surveys were not conducted in all months each year). To overcome this problem data in this report are shown as bird-use days/ha/survey, thus hopefully making the rates-of-use comparison somewhat more accurate.

Having said all the above, the trends in use rates for waterbirds and non-waterbirds appear to be a bit random, as shown in Figures 7 and 8. More years of data will likely be required before anything definitive can be said about how the various oxbows compare to each other. Clearly there are a lot of factors at play affecting rates of use. These data are summarized in table form in Appendix 2.





Turtle counts.

Turtle numbers were high in May and again in August in 2019 but were seldom seen on other survey dates (Fig. 9). Turtles may have been less visible in 2019, possibly because the bird surveys started earlier than in previous years. The best time of day to count turtles seems to be mid-day, so for a proper census of turtles, specific surveys may be required. Total number of turtles seen by month for each year of the survey is shown in Fig. 10. Numbers in general seem to be highest in spring after emergence, and then to decline over the course of the summer. Visibility is likely the key factor in these apparent fluctuations, not actual population changes.

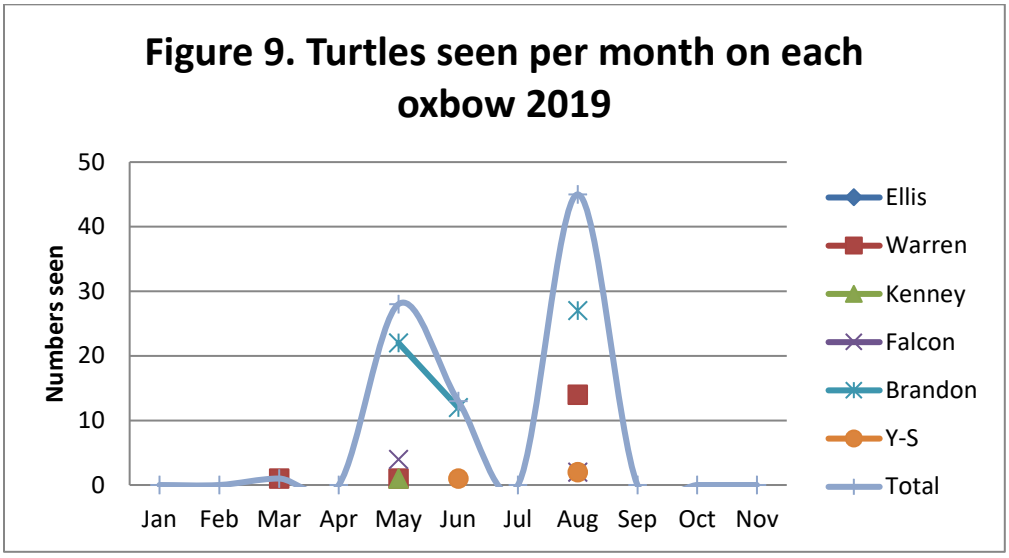


Figure 9. Turtles seen per month on each oxbow 2019
Numbers seen
50
40
30
20
10
0
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov
Ellis
Warren
Kenney
Falcon
Brandon
Y-S
Total

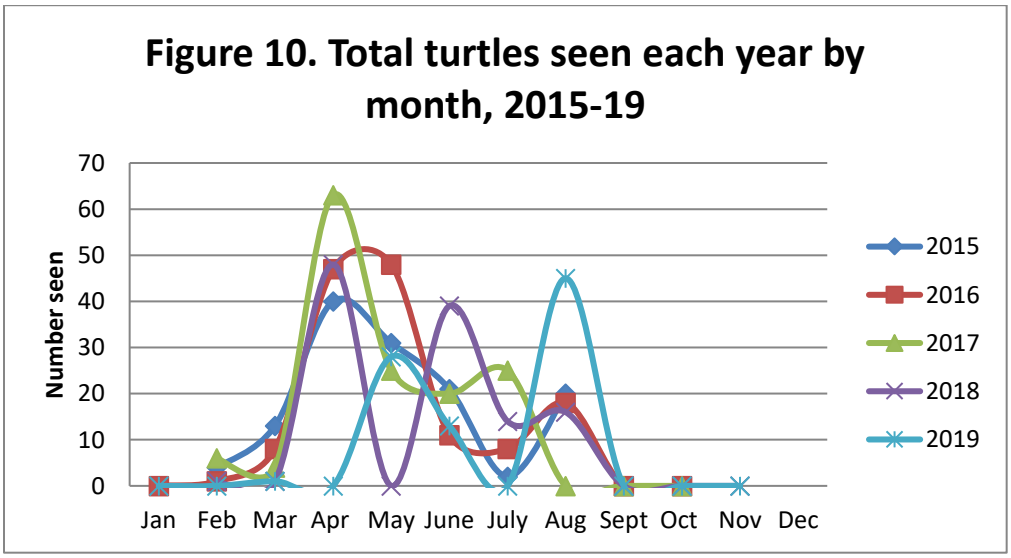


Figure 10. Total turtles seen each year by month, 2015-19
Number seen
70
60
50
40
30
20
10
0
Jan Feb Mar Apr May June July Aug Sept Oct Nov Dec
2015
2016
2017
2018
2019

Appendix 1. Number of waterbirds, non-waterbirds and turtles seen each survey on the Penticton oxbows 2019.

2019			
	Water birds	Other birds	Turtles
Jan	247	147	0
Feb	208	429	0
Mar	229	214	1
Apr	102	401	0
May	130	233	28
Jun	139	397	13
Jul	113	289	0
Aug	132	259	45
Sep	142	640	0
Oct	207	228	0
Nov	103	197	0
Dec	No data	No data	No data

Appendix 2. Bird-use day summaries by survey year for each oxbow surveyed corrected for number of surveys per year.

Oxbow	Non-waterbird use days/ha/survey 2015	Non-waterbird use days/ha/survey 2016	Non-waterbird use days/ha/survey 2017	Non-waterbird use days/ha/survey 2018	Non-waterbird use days/ha/survey 2019	Waterbird use days/ha/survey 2015	Waterbird use days/ha/survey 2016	Waterbird use days/ha/survey 2017	Waterbird use days/ha/survey 2018	Waterbird use days/ha/survey 2019
Ellis	45	30	37	62	72	58	71	38	24	25
Warren	33	26	49	41	138	21	17	49	32	70
Kinney	17	14	11	27	55	7	8	18	26	22
Falcon	102	84	156	133	258	18	68	81	90	131
Brandon	49	40	69	45	117	9	17	31	25	26
Yorkton	33	18	173	10	24	13	10	50	14	14