

Friends of Blackfoot Snake Activity Project

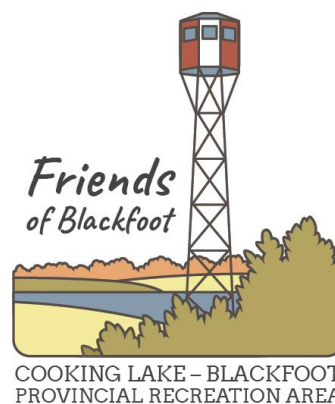
Waskehegan

2023 Report



June 2024

Friends of Blackfoot Society
52365 Range Road 210
c/o Cooking Lake - Blackfoot Provincial Recreation Area
Sherwood Park AB T8G 1A6



2023 FoB Snake WASKEHEGAN , June 2024

Executive Summary

As part of the ongoing citizen science activities of the Friend of Blackfoot (FoB), our snake monitoring project emphasizes spring and fall observations of plains garter snake (*Thamnophis radix*) in the vicinity of the Waskehegan hibernaculum and provides a record of incidental public sightings in the local vicinity of the Cooking Lake Blackfoot Provincial Recreation Area. Volunteers and visitors were again able to enjoy learning from and learning about plains garter snakes at the Waskehegan trailhead area. As in previous years, snake sightings were recorded throughout 2023 by direct observation or by remote camera at a den under the Heritage Interpretive Centre. The dens at Waskehegan continue to be used, tho seemingly fewer snakes were seen this year. Ants may be discouraging snakes from using the site, and vehicle-related mortality may perhaps be reducing snake activity at this site. FoB builds on this project as an opportunity to convey snake-friendly information to members and visitors to the den site.

Background

Plains garter snakes are relatively common in east central Alberta south of Cold Lake (Russell and Bauer 2000). Their preferred habitats in Alberta contain ponds, lakes, sloughs or marshes in aspen parkland and short-grass prairie natural regions. Garter snakes use hibernation as a critical overwinter survival strategy and thus require suitable winter den sites at rock piles, sink holes, mammal burrows, or among tree roots. They feed through the summer on amphibians (primarily frogs), small mammals, worms, invertebrates, and even small fishes.

All key factors for garter snake survival are abundant on the Cooking Lake Moraine and throughout the Beaverhills Biosphere. These snakes are naturally adapted to maintain populations on the moraine and are an essential component of local ecosystems. In particular, the rock rubble base of the moraine (glacial till) provides abundant den sites for hibernating snakes (Kendell 2020). An active plains garter snake den site at the Waskehegan Staging Area of the Cooking Lake Blackfoot Provincial Recreation Area (CLPRA) east of Ardrossan, Alberta was registered with provincial Parks, and Fish and Wildlife, databases in 2020 (Appendix 1).

Members of FoB expressed interest in further documenting snake activity specifically at the den site under the Heritage Interpretive Centre (Centre) and adjacent Parks maintenance area (Shop). Observations often were made in conjunction with the FoB bat house monitoring research project at the same site, and ongoing public information and interpretation activities at the Centre.

Garter snakes in cleared or open ground cover are readily visible and can be counted with minimum disturbance of the snake. In general the approach involves walking slowly around the surveillance area and noting any snakes seen adjacent to the Centre and Shop at Waskehegan staging area. Grass in the area is mowed regularly and there is little or no vegetative cover under a cluster of spruce trees at the site. Den entrances also are in plain sight along the baseboards and skirting of the Centre and the Shop.

The project uses ad hoc observations to document snake activity (temporal and spatial occurrence), and provide benefits to FoB members and CLPRA visitors through natural history information and citizen science activities associated with snakes and the project.

Methods

Observations are made on an ad-hoc basis, often by FoB volunteers in conjunction with weekend activities at the Centre throughout the summer. AB Parks staff also provided comments about snakes seen in the PRA. Additional site visits are made specifically to check for snakes, particularly in April/May and September/October. Observers simply wander the site and record any snake observations. There is a general attempt not to count the same snake more than once but this is not possible in all cases and certainly not on different days. Generic weather information also is noted. Observation and data records are standardized (Appendix 2). Records are created the same day observations are made. Photos by observers are optional.

Since 2022, a motion-sensing camera was set up at one of the main den entrances on the south side of the Info Centre in spring and fall. Images collected were used as additional evidence of snake activity at the site. Other species also were noted among the camera images.

In addition, local residents with an interest in snakes and natural history provided ad hoc observations of snakes seen during the summer on roads in the general vicinity on the moraine. Observations included a minimum of date and location of each sighting.

Results

Snake observations at Waskehegan began in early April and continued throughout the summer in a combination of direct observations and remote camera images (Figure 1). Most of the data involved direct observations in the vicinity of the Heritage Centre (Table 1). Live or dead snakes were recorded. Many searches did not detect any snakes.

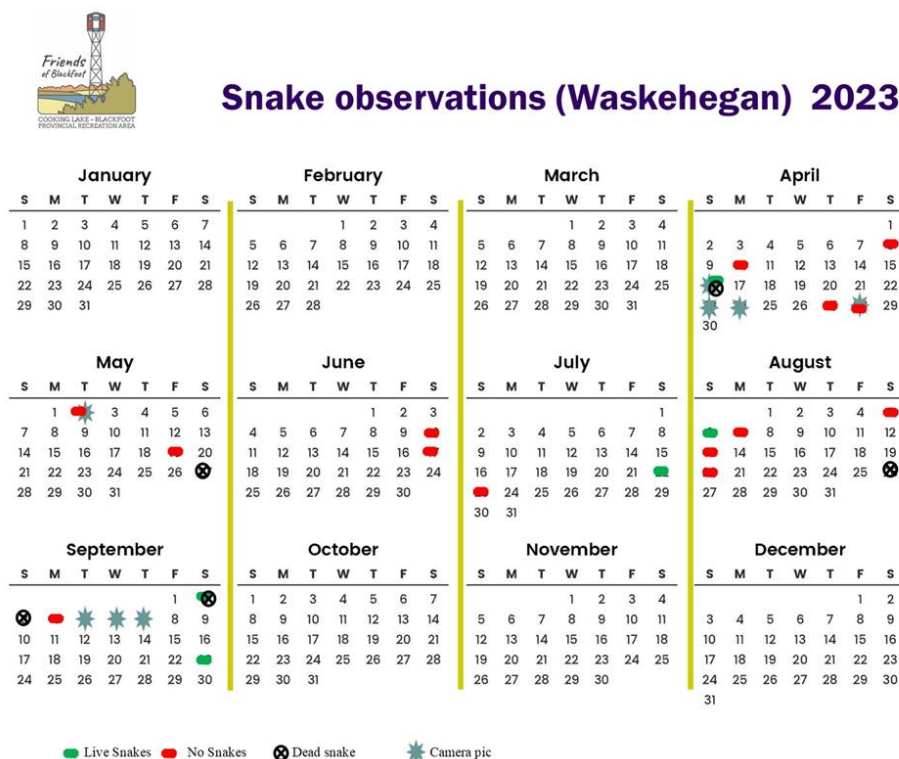


Figure 1.
Cumulative snake
observations, 2023

Direct observations

Table 1. Garter snake observations at Heritage Interpretive Centre, 2023

Date	Volunteer	Y/N	Comments	TOTAL
08-Apr	Margo	N		0
10-Apr	Margo	N		0
16-Apr	Margo	Y/N	2 dead on entrance rd, 1 live @ den entrance 17C	3
27-Apr	Margo	N		0
28-Apr	Margo	N		0
02-May	Margo	N	nothing @ Wask	0
19-May	Margo	N		0
27-May	Ruth/Jim	Y	2 dead nr Centre sign	2
10-Jun	Maria	N		0
17-Jun	Margo	N		0
22-Jul	Cliff	Y	2 nr shop door	2
23-Jul	Erla	N		0
05-Aug	Chantal	N		0
06-Aug	Maria	Y	1 sm snake cloudy 23C lt breeze	1
07-Aug	Cathie	N	sunny warm nice breeze	0
13-Aug	Cliff	N	hot & sunny	0
20-Aug	Maria	N	cool day	0
26-Aug	Margo	Y	all dead 1 med, 1 lge@ entrance, 1 sm nr flags	3
27-Aug	Cliff	N	[snake cam installed]	0
02-Sep	Cliff	Y	2 nr shop door, 1 live & 1 dead nr entrance rd	4
03-Sep	Ruth/Jim	Y	1 dead nr entrance rd	1
04-Sep	Cathie	N	cloudy smoky 10C stiff breeze	0
23-Sep	Maria	Y	multiple sightings @ den entrance Could be 2 or more snakes ?	2



Camera observations

Spring 2023

In spring 2023, the snake camera was in place from April 6 to May 20. Snakes were seen on four days in April as well as May 2 (Table 2). Two snakes were seen moving into the den or sunning on the ledge below the facing boards on warm sunny days. One snake went up under the boards but came back out. One large snake appeared to leave the den and not come back.

Table 2. Snakes detected on remote camera at den entrance, April 6 to May 20 2023

Date	sun/cloud	Temp °C	Time (24hr)	# snakes	Size	Comments	SPRING 2023
16-Apr	sunny	23	14:24	1	Lge	Moving into den	
Apr 23	Clear	16	15:00	1	Med	In	
Apr 24	Clear	24	16:43	1	Med	In & out	
Apr 28	Sunny	18	11:14	1	Med	Sunning @ entrance	
May 2	Sunny	30	13:24	1	Lge	out	

Fall 2023

In fall 2023, the snake camera was in place from Aug 27 to Oct 20. Snakes were seen on only five occasions, all in early September. Images largely involved small snakes spending time on the ledge below the facing boards and then moving up under the boards.

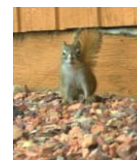
Table 3. Snakes detected on remote camera at den entrance, August 27 to October 20 2023

Date	sun/cloud	Temp °C	Time (24hr)	# snakes	Size	Comments	FALL 2023
05-Sep	Clear	15	13:34	1	sm		
05-Sep	Clear	16	14:28	2	sm		
06-Sep	Clear	21	15:03	1	sm		
07-Sep	Clear	20	12:37	1	sm	on ledge	
07-Sep	Clear	22	12:48	1	med	On ledge, moved in	



Other Species use of the site:

Other species detected on the snake camera included deermouse, snowshoe hare, robin, red squirrel, porcupine, and a cat. The porcupine was the most common night visitor and repeatedly passed the camera.



Porcupine(s?) repeatedly passed by the camera in spring and fall. Images suggest it may have been one individual that passed through on evening forays and paid little attention to the snake den. On occasion, robins dropped by and photo-bombed the camera. One young robin was apparently hunting flies on the wall.

A large ginger tom cat that patrolled the area at the south den entrance regularly in previous years was seen only once on the camera in 2023. This cat used to check the primary den entrance nearly every night and directly harassed some snakes. The owner relocated early in the year and took the cat away.

Public reports

Local Parks staff at Waskehegan reported seeing occasional snake activity near the Centre and in the adjacent maintenance yard in April 2023. One particularly large female snake was seen at Blackfoot Staging Area.

One local resident (Pattenden) provided snake observations scattered throughout the summer from May to August (Table 4). These sightings occurred east of Blackfoot Staging Area.

Table 4. Garter snake observations east of Elk Island National Park, 2023.

Date	Live/Dead	Number	Comment
1-May	Live	1	Large, about 1 km north on RR 193
2-May	Dead	1	Large RR193
3-May	Dead	1	Islet lake staging area, on shore
14-May	Live	1	Large, in yard
18-May	Live	1	Large RR193
31-May	Dead	1	Large, Twp 530 near RR 193
31-May	Live	1	Twp Rd 515A
31-May	Live	1	Large, in yard
2-Jun	Live	1	Large, in yard
4-Jun	Live	1	Large, in yard
8-Jun	Live	1	Large, compost heap next to cutline
9-Jun	Live	2	Large and medium, compost heap next to cutline
10-Jun	Live	1	Large, RR194
12-Jun	Live	1	Large, compost heap next to cutline
15-Jun	Live	5	Large, compost heap next to cutline
16-Jun	Live	1	Large, compost heap next to cutline at 11:00
16-Jun	Live	3	2 large, 1 small compost heap next to cutline at 17:00
16-Jun	Live	1	Large, near martin condo

17-Jun	Live	3	Large, compost heap next to cutline
17-Jun	Live	1	Large, in yard
19-Jun	Live	1	Medium, compost heap next to cutline
21-Jun	Live	5	Large, compost heap next to cutline
21-Jun	Live	2	Large, near martin condo
22-Jun	Live	2	Large, compost heap next to cutline
24-Jun	Live	7	Large, medium, small, compost heap next to cutline
25-Jun	Live	3	Large, compost heap next to cutline
26-Jun	Live	2	Large, compost heap next to cutline
26-Jun	Live	5	Large, near martin condo
27-Jun	Live	2	1 Large, 1 medium, compost heap next to cutline
28-Jun	Live	3	2 Large, 1 medium, compost heap next to cutline
28-Jun	Dead	1	Medium, RR193
29-Jun	Live	1	Medium, compost heap next to cutline
30-Jun	Live	1	Large, compost heap next to cutline
1-Jul	Live	1	Large, compost heap next to cutline
1-Jul	Live	1	Large, near martin condo
2-Jul	Live	1	Large, compost heap next to cutline
2-Jul	Dead	1	Medium, Twp 530 near RR 193
3-Jul	Dead	1	Large, Twp 530 near RR 193
4-Jul	Live	7	Large, compost heap next to cutline
5-Jul	Live	4	3 Large, and 1 small, compost heap next to cutline
12-Jul	Live	1	Large, near martin condo
12-Jul	Live	1	Large, compost by sauna
15-Jul	Live	1	Large, RR193
17-Jul	Live	2	Large, compost heap next to cutline
23-Jul	Live	2	Large, compost heap next to cutline
23-Jul	Live	1	Medium, in yard
24-Jul	Live	1	1 Large, 1 medium, compost heap next to cutline
25-Jul	Live	1	Medium, in yard
28-Jul	Live	2	Large, compost heap next to cutline
28-Jul	Live	1	Medium, in yard
29-Jul	Live	4	1 Large, 1 medium, 2 small, compost heap next to cutline
30-Jul	Live	2	1 Large, 1 medium, , compost heap next to cutline
8-Aug	Dead	1	Medium, Twp 530 near Mike's house
9-Aug	Live	3	1 Large, 2 small, near martin condo

Most of these snakes were found in a private yard and in association with a compost pile largely consisting of grass clippings. Others were found dead on local roads.

Citizen Science

Beyond the specific engagement of the volunteers who made and recorded snake observations, direct information was provided to visitors at the centre during the summer. Written material regarding garter snakes at Waskehegan, and in general in Alberta, is available. In addition, FoB volunteers were able to explain the local den sites and snake activity patterns to visitors. Nine FoB members were involved in the data collection.

On each occasion when snakes were present, the public seemed to thoroughly enjoy the experience and were happy to have them pointed out.

The snake monitoring activity program at Waskehegan also gave rise to a formal survey of dead snakes on Range Road 210 throughout summer 2023. A separate report provides results of the road survey and is available from FoB.

Discussion

Plains garter snakes continue to use the Waskehegan dens under the Interpretive Centre and the maintenance shop. However, the number of snakes seems considerably less than in previous years. Actual observations are quite 'hit and miss' and snake images on the remote camera also were limited this year (relative to other years). However, our observations confirm snake activity at this site in spring and fall, coinciding with general behaviour of snakes moving out of the den in April/May and into the den in September. This timeline also reflected the increased mortality of garter snakes on the range road adjacent to Waskehegan during spring and fall.

Our project cannot determine why snake sightings may have declined. There is considerable ant activity at the Heritage Centre. Many ants are seen all around the base of the building on the south side, including areas at or adjacent to den entrances previously used by the snakes. In particular, there is considerable short clipped grass present at the lower edge of the facing boards on the south side where snakes often go in or out of the den. AB Parks applied ant control in mid summer that seemed to reduce the number of ants seen later in the year, but the cumulative grass clippings were still present and may have blocked some den entrances or spaces within the walls or under the building used as travel paths to preferred winter sites by the snakes. At least any effects of the cat harassing snakes at the main entrance area are no longer possible. The number of dead snakes found at the Waskehegan intersection with Range Road 210 between May 2 and October 3 2023 (71 dead garter snakes recorded) suggests this too may be a significant factor affecting the denning population at this site.

Data herein are limited by the methodology. Ad hoc observations can document activity but cannot be used to assess overall snake abundance nor detailed temporal or seasonal patterns. Snake activity at the den site was ephemeral and it seemed opportunistic chance that snakes were seen by direct observation. Similarly, the remote camera, while being present 24hr a day may have missed some snake activity. However, activation of the camera by small rodents, butterflies, grasshoppers, flies, and moths indicates the camera was active if and when movement was within the sensitivity settings. It is possible that snakes move too slowly to trip the camera in some situations.

Regardless of the limitations, the observations of where and when snakes were recorded do provide useful information.

- Spring activity was detected in early April, as reinforced by observations by local AB Parks staff
- Spring and fall activity was more likely on sunny days and at temperatures above 15C. However, more observations are needed to refine any effects of weather on snake activity
- The remote camera extended the known activity period into October. However, these snakes seemed to stay at the entrance in the sun and were not seen to leave the den site.
- There was more activity recorded by the camera in fall than in spring. It may be that snakes in spring are focused on leaving the den and heading out to their summer habitats, whereas in the fall, they return to the den site and linger, at times emerging on sunny days prior to going into winter torpor.
- Harassment by ants and presence of grass clippings at den entrances and under the facing boards may discourage snakes from using these areas.

Overall, the project continues to provide interesting and useful information regarding local snake activity. FoB members and visitors seem keen to learn more about snakes in general and the den sites in particular. It also offers ongoing opportunities to address misinformation, fear, or concern about snakes. In general, the snake information is well received and appreciated.

Recommendations:

- continue observations in coming years, both direct observations and snake cam efforts
- continue to engage members and public with factual snake-friendly information
- continue to develop interpretative materials for the info centre, including a copy of this report
- extend scope to perhaps include additional public input from local residents
- consider checking other staging areas of CLBF for snake activity, particularly in fall
- address the ongoing issue with ants, but without affecting access and use of the den by the snakes



2023 FoB Snake WASKEHEGAN , June 2024

Acknowledgements

This ad hoc project is fuelled by the efforts of a few FoB members and interested local residents. Parks staff also are engaged with the project, and the snakes. Parks also donated the remote camera used at the den site.

Special recognition goes to the FoB members who voluntarily made observations: Maria Basaraba, Cathy and Herb Gale, Mary Martens, Jim and Ruth Shewfelt, and Cliff Smith. And to C Pattenden for providing additional local snake records.

Prepared by Margo Pybus, on behalf of FoB

Associated Literature

Kendell, K. 2020. Garter snake (*Thamnophis* spp.) surveys at historical den sites in Alberta 2017-2019. Data Report, Alberta Conservation Association, Sherwood Park, Alberta. 17pp + App.

Russell, A.P., and A.M. Bauer. 2000. The amphibians and reptiles of Alberta. University of Calgary Press, Calgary, AB. 279 pp.

Appendix 1: Snakes at Waskehegan {hibernaculum record as submitted to AB Parks and Fish & Wildlife databases in 2020}

There has been a general feeling for some time regarding the possibility of a snake winter den at the entrance of Waskehegan staging area of Cooking Lake Blackfoot Provincial Recreation Area (PRA). On September 20 2020, I was present at the entrance from 11 am to 5:30 pm and confirmed considerable activity of plains garter snakes (*Thamnophis radix*), including their disappearance under the Heritage Centre as well as the nearby Parks workshop.

Species: *Thamnophis radix*, plains garter snake

Location: UTM - 12 U 370693 5930351

Descriptor: Waskehegan Staging Area entrance, Cooking Lake Blackfoot Recreational Area

Observation: Underground snake dens in the long-term gravel backfill associated with the Heritage Info Centre as well as the Parks workshop and maintenance building. Significant snake activity on warm sunny day in late summer. Various entrances along the south-facing foundations of the centre and the workshop.

All snakes were plains garter snakes. Size ranged from ~25 to 70 cm. All snakes disappeared under the buildings or adjacent concrete doorstep.

Observer: Margo Pybus, AB Fish and Wildlife

Background

The range of plains garter snakes (*Thamnophis radix*) and red-sided garter snakes (*T. sirtalis*) overlap as common residents in parkland habitats of central Alberta, including the Cooking Lake Moraine. Both snake species use winter den sites as underground hibernacula to support their occurrence in northern climates. There are a few den sites documented on the moraine already but I have been unable to find a report for the Waskehegan staging area.

Additional Observations

Members of the Friends of Blackfoot (FoB) occasionally find plains garter snakes in or around the Heritage Centre. The observations date back quite a few years and across spring/summer/fall time periods.

Dead snakes are found occasionally above ground on the south side of the centre in spring.

General feelings among some long-term FoB members that the centre likely is a wintering site.

On September 20, 2020 I was at the centre from 11 am to 5:30 pm. The weather was warm (daytime high ~20C), sunny, and dry. In total I saw at least 24 different plains garter snakes, ranging in size from ~25 cm to over 70 cm. All snakes eventually disappeared under the centre or the workshop.

The first snake was seen ~1pm along the southwest wall of the centre. I followed this snake and it eventually disappeared under the concrete ramp in front of the entrance to the workshop. Through midafternoon, I saw more individual snakes and each one eventually disappeared under the workshop or the Heritage Centre. Snake activity picked up between 4 and 5:30 pm. A dozen snakes were noted in this time period alone.

Snakes disappeared through various pre-existing holes in the concrete footings or the metal flashing at the base of the south walls of the workshop. I began to pay more attention and spent more time looking for snakes around the two buildings. I also checked the work compound and associated buildings as well as the CO trailer. I did not see snakes at any of these sites, although CO Karen Hayduk told me she has seen a few snakes near the trailer but no particular pattern was apparent.

This appears to be a significant garter snake hibernaculum. FoB may want to consider developing an education and monitoring project to document snake activity in spring and fall. Increased profile for the value of snakes on the moraine also could be a benefit to PRA visitors.



Snake Gallery:

