

A Brief Survey of Amphibians at the Beaverhill Bird Observatory

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Abstract

Searches for amphibians were conducted at the Beaverhill Natural Area during the month of August 2017. Three pairs of daytime and nighttime searches were conducted. Only wood frogs were seen on site while a tiger salamander was seen nearby. Boreal chorus frogs were heard by observatory staff in the spring. It is unlikely that there are Canadian toads on site due to lack of any sightings.



Wood frog (*Rana sylvatica*) at Beaverhill Natural Area

Introduction

The Beaverhill Natural Area is located on the south-east corner of Beaverhill Lake about 80 km east of Edmonton. Located within the natural area, the Beaverhill Bird Observatory (BBO) is a research and education station that was established in 1984 to monitor the diversity and abundance of breeding and migratory birds. Recently they have been expanding their research to look into other wildlife residents as well. Not much is known about the species of amphibians within the natural area since the last amphibian survey was done a number of years ago. A new survey was required to accurately document the amphibian species in the area and to give suggestions as to where future research should be concentrated. I searched likely trails around BBO that are good habitat for amphibians, including ponds, the dry lake bed, in pocket gopher holes and along flooded paths. The goal was to document which species were seen and the locations of the sighting and to lay groundwork for future studies.

Methods

The study was conducted in August 2016 as that was the earliest in the summer that outside influences would allow. Since the breeding season for frogs had finished, acoustic surveys of frogs could not be done. Therefore, only visual searches were performed. Six visual searches were conducted to try and find amphibians on site. Three of the searches were at night for 1 hour each to find nocturnal amphibian species such as the Canadian Toad and the Tiger Salamander. The other three searches were done during the day for 2 hours each to find species such as the Boreal Chorus Frog and the Wood Frog. The nighttime and daytime searches were paired and done on the same day. The searches were conducted on August 8th, August 18th and



Beaver run out into Lister Lake



First new pond found near Sora Pond



Second new pond found near Sora Pond

August 24th. The first pair of searches were done alone and the next two pairs were done with the help of Matthew Robinson.

Nighttime searches were mostly carried out by walking along the trails with headlamps as the reflective quality of toad's and would make it easier to find the specimens in the dark along straight paths with little vegetation. The first nighttime search was conducted at 11 p.m. and the second two done at 10 p.m. The straight paths Long-eared Owl Lane, BBO Boulevard, Swallow Grid, Accipiter Alley, Flicker Freeway, parts of Harrier Highway, Weasel Wynd and Warbler way were chosen for the night surveys to lessen the chances of getting lost in the woods as navigating in the dark in unfamiliar terrain can be difficult. Another method used during nighttime searches was to slowly drive the car along the road to the gate looking for movement along the ground or eye shines.

Daytime searches included walking along Harrier Highway, Duck Drive, BBO Boulevard, Flicker Freeway, Warbler Way, Short-eared Owl Street, Long-eared Owl Street, Robin's Route, Weasel Wynd, and the Swallow Grid. Searching along waterlines and around the dry lakebed as well as digging in any fresh looking pocket gopher holes along the paths were also part of daytime searches. These searches were conducted at 8 a.m. for the first search and 1:30 and 2 p.m. for the second and third searches. Sora Pond and the edge of Lister Lake were searched on the first daytime search. Two smaller and shallower ponds to the north and north east of Sora Pond were found on the second search and were subsequently included in the search area.



Plains garter snake (*Thamnophis radix*) at Beaverhill Natural Area

Discussion

The weather varied between searches, there were overcast skies and a fine drizzle during four of the searches, the other two searches were clear. While the rain was a detriment to seeing the amphibians due to poor visibility, this type of weather is preferred by amphibians as they require their skin to be moist at all times. So even though amphibians are more active in this type of weather, they are usually easier to see on dry days. Since both types of weather have their good and bad points I do not believe that weather is a big factor in finding amphibians. I believe the best weather to find and research the amphibians is while



Promising cattle pond in the access field to the natural area



Water over the weir

it is overcast but not raining. The cloud cover makes it easier to see into water as it reduces the glare on the water surface allowing you to look into the water to see frogs who float at the surface or sit on the bottom of shallower areas.

The only species of amphibian observed in the study was the wood frog (*Rana sylvatica*). However, Boreal Chorus Frogs (*Pseudacris maculate*) were heard singing in spring by BBO staff. There is also historical anecdotal evidence that tiger salamanders (*Ambystoma tigrinum*) lived near Beaverhill Lake when it had water. No Canadian toads (*Bufo hemiophrys*) were seen or heard and the staff at the BBO did not see any toadlets during emergence anytime between July and early September (Environment Parks Canadian Toad). Since toads occur in large groups at that time and are extremely active, it would seem likely they would have been seen by BBO staff if they were present. One salamander was seen crossing the highway west of Tofield at around 11:00 p.m., so there is a high chance that salamanders are present in the area but none were seen during the visual surveys as they are not always readily visible on land (Environment Parks Tiger Salamander).

All of the amphibians we were hoping to locate are cryptic species and are easiest to see when moving. Frogs were easiest to see when they fled from stepping near them and so subsequently, just walking around the edges of ponds and wet areas was the best way to confirm presence. It is difficult to see adult frogs in highly vegetated water but this is good habitat for frog tadpoles and is the most likely place to find boreal chorus frogs. Wood frogs were also easily found in the open water made by beaver runs at the edge of Lister Lake. Several plains garter snakes (*Thamnophis radix*) were found there, as well as plenty of mosquitos.

The water level at Lister Lake had risen during the spring and it was overflowing the weir. This meant that there was some water in the dry lake bed and we searched around the tall grass there. A few Wood Frogs were found but there was mostly only ducks. The water had also created mudflats which we dug in to see if there were any toads or salamanders as they have been known to bury themselves.

Most of the wood frogs were seen on the shore of Sora Pond, as well as two small ponds to the north and north east of Sora Pond. The two ponds coordinates are: UTM UPS: 12U 0399075 – 5915718 and 12U 0399085 – 5915681. Only one



Dealing with mosquitos while holding a garter snake.

frog was found on the trails and few were in the dry lake bed. The sandy field outside of the BBO gates was also checked during the night survey although nothing was found there. A couple of adult wood frogs were seen crossing the range road after we crossed the field. A cattle pond was located just outside the BBO area that looks to have promising breeding habitat for amphibians. Its GPS coordinates are UTM UPS: 12U 0397179 – 5915297.

It was easy to see animals in the dark because their eyes reflect light. I believe if there had been toads their eyes would have been the first thing we would have seen. I had an encounter with an unidentified pair of eyes on the first night survey and it left me feeling a little uncomfortable. It was probably a coyote but I could not be sure. Sometimes it was hard to differentiate eye shines and wet grass because the grass had dew on it and it would catch the light and look similar to eye shines when they were spaced correctly. However, when those eye shines fly through the trees, you know it's an owl. We saw several flying around at night. Unfortunately, I was unable to identify them because our headlamps did not provide enough light.



Attempting to rain over the dry lake bed

Recommendations

A survey in the spring when breeding of frogs would be the best time to study them. Auditory surveys are efficient to indicate whether a species is breeding at a site and if the observers move slowly enough they can find individual frogs by pinpointing where a call is coming from. Looking for egg masses is a good method of locating breeding sites of Wood Frogs and Boreal Toads as their egg masses tend to be obvious and not well hidden. The egg masses of Boreal Chorus Frogs on the other hand are small masses attached to the bottom of vegetation and are extremely hard to find and tend to not be worth the effort if individuals can be found singing. When they hatch, tadpoles and larvae will become more active as they age and grow in size. They are easiest to observe in clear open water as they tend to hang close to the surface and create ripples when they dive. When walking up to a completely calm pool and suddenly there are a scattering of small ripples, suspect tadpoles.

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Citations

Alberta Environment and Parks. Canadian toad (*Bufo hemiophrys*). Retrieved January 28, 2017, from <http://aep.alberta.ca/fish-wildlife/wild-species/amphibians/toads/canadian-toad.aspx>

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