

Cochrane Ecological Institute

Owl Survey 2014 – by Anton Lehnig



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Preface

The Internship at the Cochrane Ecological Institute (CEI) and Wildlife Reserve in Cochrane, Alberta, Canada was about planning, conducting and evaluating an Owl Survey.

A survey is generally a more or less systematic search for subject-specific relevant data. In this case I surveyed a certain area in regard to different owl species. A survey concerning wildlife in any way requires well-founded knowledge about the ecology of the surveyed species itself and as well the habitat in which it is discovered in. For Owl surveys it is crucial to know about the ecology of the different species and their certain calls. Owl survey methods vary with species' behaviour, breeding season and nesting habits. All these different aspects have to be taken into consideration.

The preliminary activity was a profound literature research on the different owl species, which are expected to be found in the foothills of the Rocky Mountains and different approaches on owl survey methods. The used literature is listed in the references.

Most owl survey approaches aim for an owl monitoring on a long-term basis over several years. This CEI survey is a one-time survey with the goal to get a good insight on how to plan and conduct a certain project concerning wildlife and how to evaluate the data recorded during the project.

The main focus of this survey was to detect different owl species in a certain area and to identify them as, "residential" or "migrating" owls. The methods and material which have been used to put this owl survey into effect, will be described in detail in the next chapters.

Methods and Material

Methods

For detecting the different owl species, the standardized "Inventory Methods for Owl Surveys of the Government of British Columbia" were used¹. This is a playback-recall method with which owl calls of different species are broadcasted in a certain area at a certain time, to see if there is any response to the broadcasted call. Additionally two different owl survey approaches were used, the "Manitoba Nocturnal Owl Survey"² and "Sheep River Valley Owl Monitoring Project #5 – 2003". Through these three approaches the project was planned and at some point modified, if some methods couldn't be applied or had to be considered differently. One example would be the Call-playback method described in the "Inventory Methods for Owl Surveys of the Government of British Columbia", where only one call of one owl species is broadcasted in one survey session. In this case this method was too time-consuming and had to be modified. Alternatively the method used by the "Sheep River Valley Owl Monitoring Project #5 – 2003" has been used. With this method the calls of several owl species were played in a series from the smallest species to the largest. Further details will be explained in the protocol.

¹ http://www.for.gov.bc.ca/hts/risc/pubs/tebiodiv/owl/owl_protocols_2k6.pdf

² [http://www.naturenorth.com/summer/creature/owl/owl_new/2%20-%202015%20MB%20Owl%20Survey%20Instructions%20\(with%20Wilson's%20snipe\).pdf](http://www.naturenorth.com/summer/creature/owl/owl_new/2%20-%202015%20MB%20Owl%20Survey%20Instructions%20(with%20Wilson's%20snipe).pdf)

Owl calls should be played at various times. Although nocturnal owl species are mostly active and vocal during the night time, some daylight sessions must be carried out as well. The owl species³ referred to in the Inventory Methods¹ are all nocturnal owl species with unclear responding patterns for the daytime. In addition to the regular night time call-playback procedure, an attempt was conducted to see if these nocturnal owls are also responding throughout daytime.

Routes, Transects and Listening spots

A main point was to find a suitable area and to conduct appropriate routes during the day time for a most convenient survey during the night.

Therefore GPS points at certain places, which were most suitable for performing the call-playback method were set up. With these GPS points it was easier to navigate during the night as well as to keep track of the routes for evaluation of the collected data.

Call-Playback Procedure

Night Time Surveys

GPS waypoints and routes which have been recorded earlier, have been used to navigate to these certain landmarks for starting the main survey by using the Call-Playback-Method. Once the first waypoint of a certain route was reached the survey was carried out like described in the protocol.

Like it is suggested in the BC Manual¹, only single male calls of the targeted species have been used. During one survey and due to limited time and personnel the method of the “Sheep River Valley Owl Monitoring Project #5 – 2003” where several owl calls were played in one spot. The call of one species suspected in the area was played and then listened for an answer for approximately 2 minutes. For each species 2 sequences of Call-Playback and then listening have been implemented before going on with the next species. If there was no response after the first sequence of playback for all species suspected, the survey was continued at the next stop of the survey route. It was estimated to use not more than 20-25 minutes for one sample station. At each broadcast the speaker was oriented in different directions to make sure that the most possible space was covered. After each station the observations were filled in the adapted survey form.

If there was a response from an owl, the broadcast was stopped immediately and listened from at least 2 different positions to determine the direction where the owl was calling from. All spotted owls got a GPS waypoint for the location, for a rough estimation where to find the individual again and to tell if it was resident or a floater. (See figure 1)

Returning Surveys (when Owl was detected during the night)

All marked waypoints of an owl during the night were return to the next morning short before dawn to perform a visual search. The intention was to confirm the species and location and to determine a possible pair status or to find a nest. When approaching the waypoint the calls of the expected species were broadcasted again, but with a lower volume than during the initial detections. The searches were

³ Nocturnal owls that respond to call-playback of recorded calls are (Barred, *Strix varia*, Boreal, *Aegolius funereus*, Flammulated, *Otus flammeolus*, Great Horned, *Bubo virginianus*, Northern Saw-whet, *Aegolius acadicus*, Northern Spotted, *Strix occidentalis caurina*, and Western Screech-owl, *Megascops kennicottii*)

all confined by the partly limited right for land entering. Where no permit for entering the land existed the search was implemented from the same spot like during the initial detection.

In cases with a land entering permit there was the chance to get as close as possible to the location of the suspected individual. If the individual couldn't be located at the waypoint the search was extended by searching the area in concentric circles with an increasing radius. If the owl couldn't be detected within a certain time, the search was aborted and continued at sunset. If the owl was still not detected, it was considered that the owl may have moved. Then the whole survey route was repeated during the following night.

Whether the owl was detected or not it also have been searched for nesting signs, whitewash, feathers, pellets and prey remains. Any signs have been noted in the survey forms.

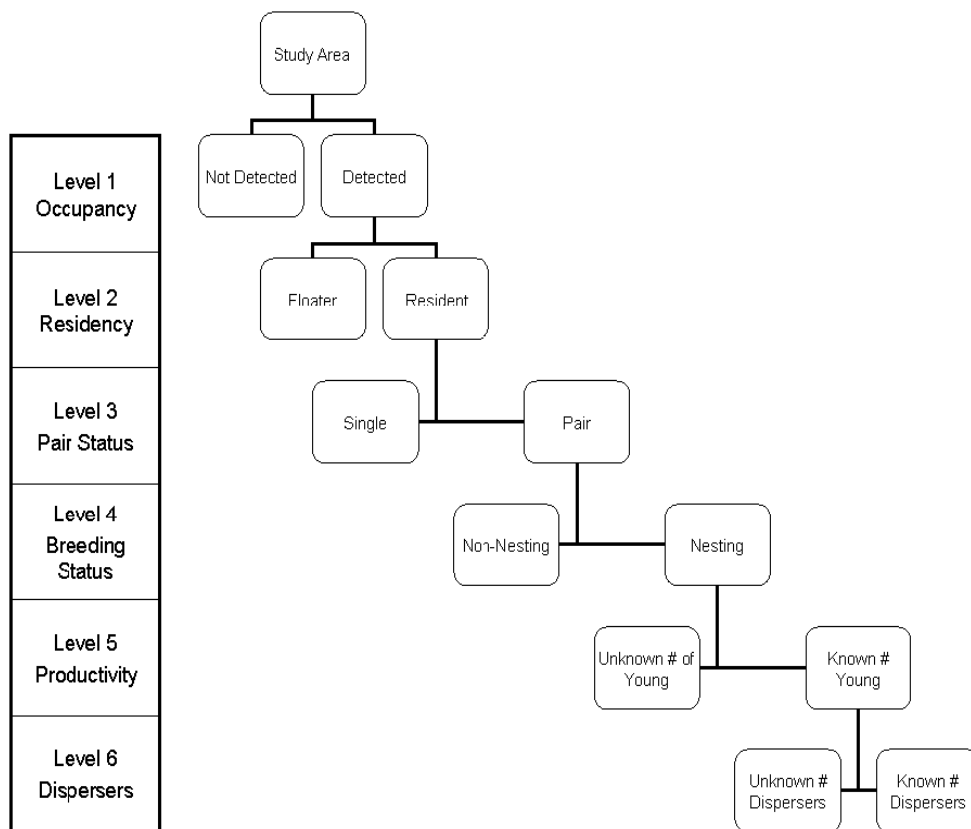


Figure 1 Level of information in owl surveys

Protocol

1. An initial Survey was made to find the right size for the area which was considered to be surveyed. Due to the fact that the most of the land considered to be the survey area is privately owned, the most of the survey routes were orientated on country roads with public access and not on the home range of the considered species. For some areas permission for entering the land were granted. All survey areas will be indicated in the Map. On the basis of this initial area survey appropriate listening stops where set up. For areas with permission for land entering denser survey routes where established.

2. Walking transects and listening spots were established during the main survey without an initial survey. All listening spots were tracked with a GPS unit. This method also saved time.
3. Every survey route was conducted at different times to cover as much time of night and day as possible.
4. During daytime surveys, visual searches were performed also.
5. At each stop along the different routes the following procedure was established. Initially it was listened for any owl activity for a few minutes. If no owl activity was detected owl calls were played in the order Northern Pygmy Owl, Northern Saw-Whet Owl, Western Screech Owl, Boreal Owl, Barred Owl and Great Horned Owl. It is important to start with the smaller owls because the call of the greater owls can make them remain silent. After the playback of a call of one species there was a small break to listen for an answer.
6. The distance between each stop was depending on the habitat and relief of the area about 700 meters. In woodless area the distances were up to 2000 meters and in areas with a strong relief the distances were down to 300 meters, especially at hill tops.
7. During heavy weather conditions, like strong wind or heavy precipitation the survey was not conducted. Weather conditions produce noise and the more background noises the lower is the chance to spot an owl through its calls and also the chance for the owl to hear the played calls drops significantly. If the weather conditions changed during a survey, it was stopped and continued in better conditions.
8. If possible survey routes were repeated but at different times of the night respectively day.
9. For each survey a new survey sheet* was filled in.
10. If an owl was heard calling, special precaution for the next stop had to be made. Because some owl species can be heard over considerable distances and or move on to another location. If it was clearly the same owl it was counted as one individual. If it was unclear, another individual was recorded.
11. When detecting an owl at different times at several stops which are close together, for example in one night at stop 7 and in another night at stop 8 it is considered to be the same owl that just slightly moved.

Material and Mechanisms

Equipment

- Portable remote speakers
- Digital audio player
- GPS device + spare batteries
- Binoculars
- Camera
- Clipboard for Survey sheets
- Compass
- Map of the survey area
- Flashlight
- Cell phone (in case of emergency)
- Survey Data forms
- Recordings of owl calls

For the call-playback method portable remote speakers connected to a digital audio player have been used. To keep track of the single surveys the template offered by the Manitoba's Nocturnal Owl Survey has been adapted to the project and used to fill in the recorded data. Also a GPS unit has been used to record tracks, routes and waypoints. The owl calls used were from different sources⁴ including self-recorded calls. Only single male calls for the targeted species have been used.

Survey forms

To keep track of the data collected during the single surveys the survey form provided by the "Manitoba Nocturnal Owl Survey" has been adapted to the CEI Owl Survey. They have been used to fill in important data like owl species, routes, weather conditions, dates and times, etc. (See Annex)

Working Procedure

The first step in the process of conducting this project was to find a suitable area. Therefore a Township map with the land owners was obtained. It was crucial to know the land owners to get in touch with them in case the area was considered to be a suitable survey area, because the land entering is restricted on private land. Once a suitable area with an appropriate size was selected all roads with public access were reviewed. This was to get an overview on how capable the area around these roads were in regard to the survey. All owls seen or heard during this initial road observation were documented as well. Once the survey area was selected, the most suitable routes were defined. For huge areas without public road access it was necessary to get permission for land entering by the owner. It wasn't possible to get permission for all big patches without public access. Some land owners doesn't want to have these kind of studies conducted on their land, because a lot of areas in the Rocky View County are farmland used for kettle or horse ranching.

Once the survey area was completely established, the survey itself was initiated. Over the period of three months (November, December and January) about 60 single surveys were conducted. Most of them were road surveys because the route networks were sufficient for the most part. For three big and more remote areas there could be obtained a land entering permit for a more comprehensive survey. Further details you will find in the section Survey Area.

⁴ <http://www.owlpages.com/sounds.php> ; <http://www.learner.org/jnorth/tm/spring/OwlDictionary.html> ; http://www.naturenorth.com/summer/sound/Owl_Calls.html ;

Survey Area

The survey area is located in the north-western part of the Rocky View County. It was the area with the most forest covered land nearby the CEI and therefore the most suitable habitat for more different owl species. The area is exactly located between the points

A (51°21'30.70"N; 114°42'14.21"W),

B (51°26'43.63"N; 114°42'15.98"W),

C (51°26'44.65"N; 114°33'51.10"W)

D (51°21'29.73"N; 114°33'50.20"W).

The closest town is Cochrane. The area covers about 120 km² and almost the half of it is covered by forest. For the survey not only the forest covered areas are suitable but also open areas with trees nearby. Especially species like the Great Horned Owl prefer areas with openings surrounded by trees to perch on.

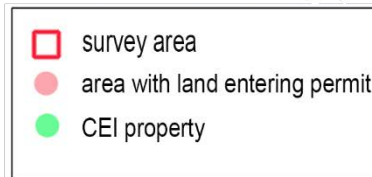
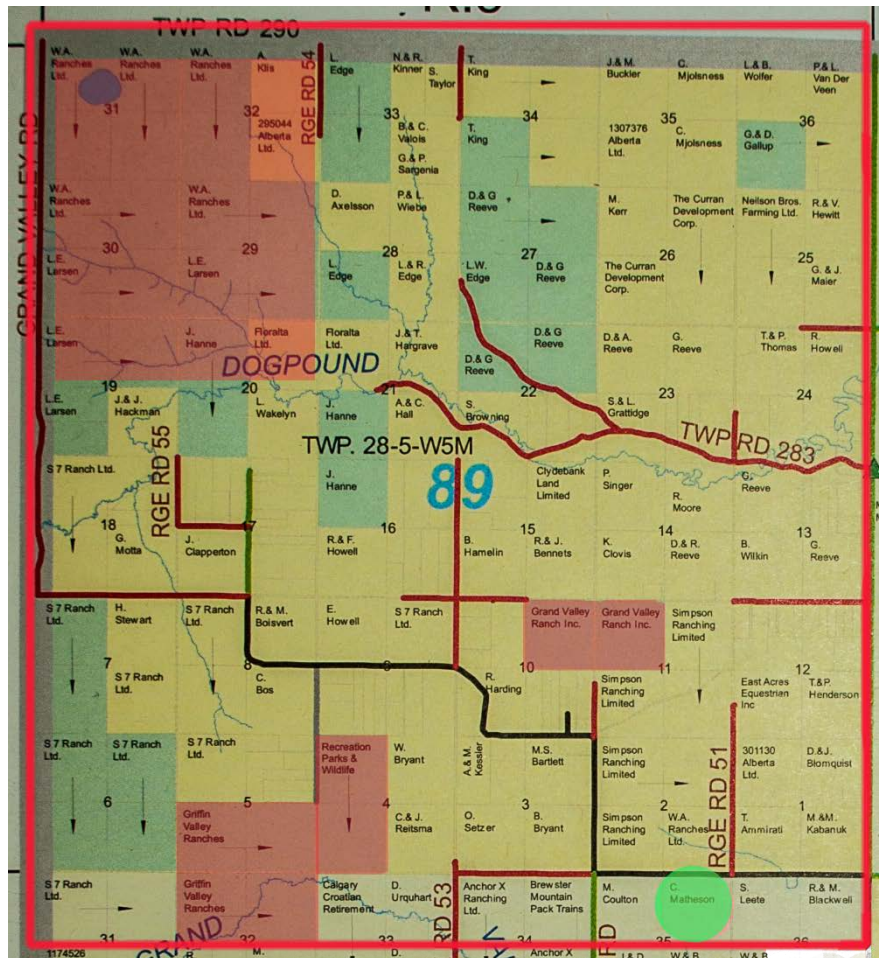


Figure 1 Township map with land owners

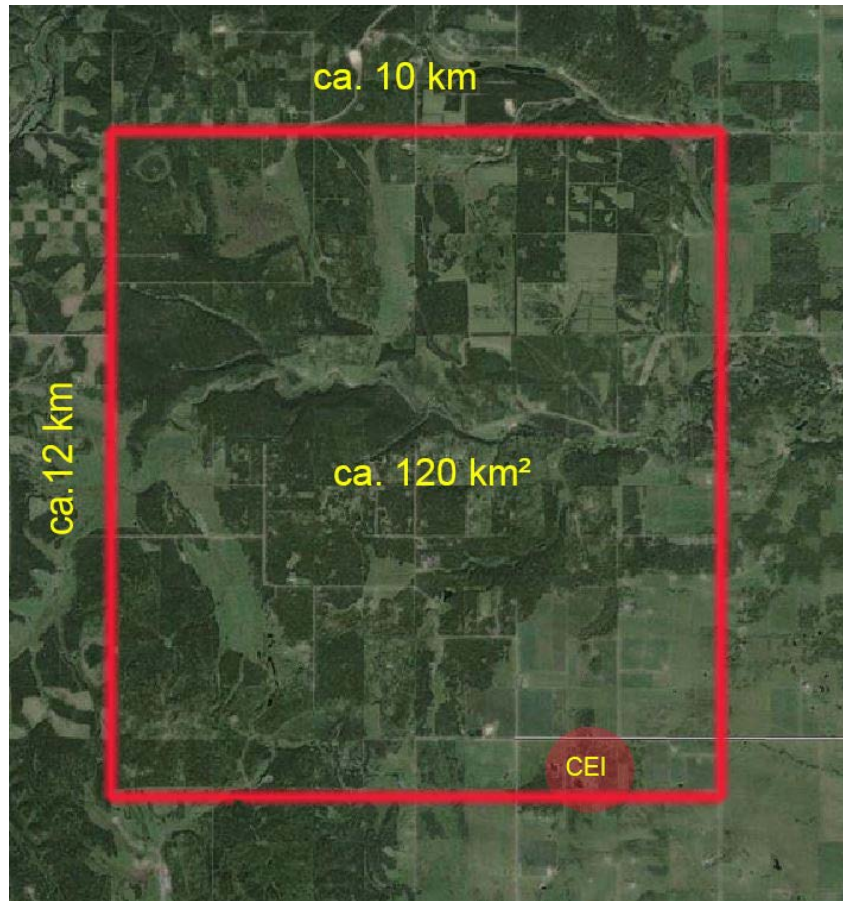


Figure 2 satellite picture of the survey area

Expected Owl Species

The owl species expected to be in this particular area at this particular time of the year were, for the Call-Playback procedure the Barred-Owl, *Strix varia*, Boreal-Owl, *Aegolius funereus*, Great Horned-Owl, *Bubo virginianus*, Northern Saw-whet-Owl, *Aegolius acadicus* and Western Screech-Owl, *Megascops kennicottii*. Species which also were expected to inhabit this area during the winter, were Great Grey-Owl, *Strix nebulosa*, Northern Hawk-Owl, *Surnia ulula*, Northern Pygmy-Owl, *Glaucidium gnoma*, Long-Eared-Owl, *Asio otus* and Snowy-Owl, *Bubo scandiacus*. According to the most literature all these species could be expected to be in this particular area at this particular time of the year. Most of these Owls are year round residents apart from juvenile owls which have to find a new territory. The only owl species which is a winter resident is the Snowy-Owl, *Bubo scandiacus*. Most of them migrate south in the winter, depending on available food resources.

Other species which inhabit this area but migrate more south in the winter are Short-Eared-Owl, *Asio flameus* and Burrowing-Owl, *Athene cunicularia*.

Results

Concerning the Survey

The main goal was to detect owl species which were expected to be in the preselected survey area and to give references about residency and pair status. For the overall results of the survey a precise proposition can't be made yet, because not all of the data is evaluated at the moment. The suggested time in the literature is for owl surveys the mating and breeding season because owl are most vocal during this period, but as we speak of living creatures, we can't predict the way they behave in different situations. Like with every living individual there come different patterns of behavior, although same in species and descent, most of them would react different in some kind of way, same with owls. The most literature says, owls would not respond or respond in a way that would make the survey inefficient. From my experience and in my point of view a survey could be less efficient than it could be but would never be inefficient. Even if you're wrong in doing one thing this way, you'll learn and do it in another way the next time and at one point in the most efficient way. My experience is limited in the way that I couldn't find out how the different owl species would react in their mating and breeding season, because according to the most literature, I only surveyed during the season in which they are at least vocal. To agree with these statements, I noticed very low activity in general and very low vocal activity, but only for the period of three month from November till January. But no statement can't be made if there is more activity in the survey area during the other seasons. What I can say is that there was owl activity in the survey area, general and vocal. I also got responses to for the played calls. To say there is no response during winter season is completely wrong, but to make any solid statements on how much more activity would be in the mating and breeding season, a year round survey has to be implemented.

Owl species

The owl species which have been detected in the survey area during the time from the beginning of November, 2014 until the end January, 2015 were Great Horned-Owl, *Bubo virginianus*, Great Grey-Owl, *Strix nebulosa*, Boreal-Owl, *Aegolius funereus*, Northern Hawk-Owl, *Surina ulula*, Western Screech-Owl, *Megascops kennicottii*, Northern Saw-whet-Owl, *Aegolius acadicus* and Snowy Owl, *Bubo scandiacus*.

All these species were actually detected by visual contact. They were either seen or heard. Some species only have been heard, others just have been seen and still others have been both seen and heard.

More precise information on how many individuals of the different species have been detected and their whereabouts in the survey area as well as residency and pair status can't be made yet due to the missing evaluation of the data at this point.

Sources

Literature

North American Owls : Biology and Natural History, 2nd Edition Hardcover – September 17, 2002

by Paul Johnsgard

Life Histories of North American Birds of Prey, VOLUMES ONE AND TWO Paperback – 1968 by Arthur Cleveland Bent

Owls of the World: Their Evolution, Structure and Ecology Hardcover – June 30, 1992

by John A. Burton

Inventory Methods for Owl Surveys, Standarts for Components of British Columbia's Biodiversity No. 42 Revised Draft July, 2006, by Doris Hausleitner, M.Sc.,R.P.Bio.

Manitoba's Nocturnal Owl Survey, 2014 General Information and Instructions by Dr. James Duncan

Sheep River Valley Owl Monitoring Project #5 – 2003, November, 2003 by Wayne W. Smith

www.owlpages.com

<http://www.allaboutbirds.org/guide/browse/43,13/>

Calls

<http://www.owlpages.com/sounds.php>

<http://www.learner.org/jnorth/tm/spring/OwlDictionary.html>

http://www.naturenorth.com/summer/sound/Owl_Calls.html

Figures

Figure 1: *Inventory Methods for Owl Surveys*, Standarts for Components of British Columbia's Biodiversity No. 42 Revised Draft July, 2006, by Doris Hausleitner, M.Sc.,R.P.Bio.

Figure 2: Township map Rocky View County, Alberta, Canada

Figure 3: Google Earth (51° 24' 25.51'' N 114° 38' 06.30'' W)

Survey Forms: adapted survey forms from *Manitoba's Nocturnal Owl Survey*, 2014 General Information and Instructions by Dr. James Duncan

Appendixes
 Survey Forms
 Survey Form 1

CEI 2014 NOCTURNAL OWL SURVEY

Route # / -

I.e. 52E/11-12

Mon Day

20

Visit no.

Weather Conditions:

Snow Cover (%) Max Depth (cm) Min Depth (cm)

Wind Cloud Cover Precipitation

Start of Survey: 0 1 2 3 4 5 | 1 2 3 4 5 | None Trace Rain Snow +/- °C

End of Survey: 0 1 2 3 4 5 | 1 2 3 4 5 | None Trace Rain Snow +/- °C

Stop	Time (24hr) and Odometer (km)	Species C:code	Repeat?	Direction to Owl	Distance to each owl (m)					Traffic Count (# cars)	Noise Level (1-4)	Comments	Other Species (# heard)	
					<200	200-500	500-1000	1000-1000+	1000+				Amer. Woodcock	Ruffed Grouse
1	<input type="text"/> : <input type="text"/> <input type="text"/>													
2	<input type="text"/> : <input type="text"/> <input type="text"/>													
3	<input type="text"/> : <input type="text"/> <input type="text"/>													
4	<input type="text"/> : <input type="text"/> <input type="text"/>													
5	<input type="text"/> : <input type="text"/> <input type="text"/>													

CEI 2014 NOCTURNAL OWL SURVEY

Stop	Time (24hr) and Qdometer(km)	Species Code	Repeat	Direction to Owl	Distance to each owl (m)				Traffic Count (# cars)	Noise Level (1-4)	Comments	Other Species (# heard)					
					200-500	500-1000	1000-2000	2000+									
6																	
7																	
8																	
9																	
10																	
Stop																	

Use these lines for additional owls. Please note the stop numbers.

2014 Cochrane Ecological Institute(CED) NOCTURNAL OWL SURVEY

ROUTE DATA SUMMARY FORM

ROUTE NAME: _____

Route Number (i.e., 62G/05-01): _____

Closest Town: _____

Route Status (check one): Established _____ Modified _____ New _____

Route Map attached (circle one): Yes No

SURVEYOR NAME: _____

ASSISTANT(S):

NUMBER OF OWLS DETECTED - TALLEY SUMMARY:

- WASO (Western Screech Owl)	- LEOW (Long-eared Owl)
- NSWO (Northern Saw-whet Owl)	- NOHO (Northern Hawk Owl)
- GHOW (Great Horned Owl)	- SNOW (Snowy Owl)
- BARR (Barred Owl)	
- BOOW (Boreal Owl)	
- GGOW (Great Gray Owl)	- UNOW (Unknown Owl)

Notes: |

INSTRUCTIONS AND CODING INFORMATION

SURVEY WINDOW: end of October till the 10th of December 2014

TIMING: Rotational daylight survey beginning at sunrise or before sunset and night survey beginning after sunset

WEATHER: If possible, the survey should be conducted on a calm day with little wind (Beaufort force 3 or less, see below) and no precipitation (see coding below). **SNOW:** In the space provided, estimate the percent snow cover on survey route (e.g. 33%, if two-thirds of route is snow-free). Snow depth is estimated to the nearest cm, for both maximum and minimum depths.

ROUTE: Every route will be scouted in daylight before conducting night survey.

STOPS: Depending on the size of the area each route should consist of 5 - 10 stops. Stops should be located every 1.6 km along the survey route as much as possible. However, if a stop is unsafe or too noisy, move to the next suitable location.

MAP: Please return the map (if provided) or provide a photocopy of a map (topographic map preferred) showing your route location with the route start, each stop, and point, and each owl detected clearly marked.

Broadcasting: Calls should be broadcasted at every stop

WEATHER CODES	CLOUD COVER:	NOISE LEVEL CODES (Choose only one!)
WIND (Beaufort Scale) 0. Calm, smoke rises vertically. 1. Light air movement, smoke drifts. 2. Slight breeze, wind felt on face. 3. Gentle breeze, small twigs move. 4. Moderate breeze, small branches move. 5. Fresh breeze, small trees sway.	1. 0-25% 2. 25-50% 3. 50-75% 4. 75-100% 5. Fog	1. None or slight, relatively quiet, little interference. 2. Moderate, some interference with broadcast and/or listening. 3. High, substantial interference with broadcast and/or listening. 4. Excessive noise, extreme interference with broadcast and/or listening. ☹️ TRAFFIC ☹️ Record number of vehicles which pass by during broadcast period.

OWL SPECIES CODES			
BARR - Barred Owl	GGOW - Great Gray Owl	EASO - Eastern Screech-Owl	NOHO - Northern Hawk Owl
BOOW - Boreal Owl	GHOW - Great Horned Owl	LEOW - Long-eared Owl	UNOW - Unknown Owl
BNOW - Barn Owl	NSWO - Northern Saw-whet Owl	SEOW - Short-eared Owl	

If more than four owls are heard on a single stop, use the additional lines found at the end of the data sheets, and mark the stop number accordingly.

REPEAT? Mark > Y = in this column when the same individual owl is heard calling at multiple stops. If owl is a different individual, please leave blank.

DIRECTION TO OWL: Determine the direction that the owl began calling from. Mark one of the following directions in the space provided (N, NE, E, SE, S, SW, W, NW).

DISTANCE TO OWL: Check off the box that best describes the distance to the owl from your survey stop when the owl first began to call.

Zeugnis / Certificate

des praktischen Studiensemesters / of the practical study semester

Frau/Mrs. / Herr/Mr. Anton Lehnig

geboren am / born in 04.11.1984 Geburtsort / place of birth Spremberg, Germany

Student/Studentin des Fachbereichs Forstwirtschaft der Fachhochschule Eberswalde / Student of the Faculty of Forestry at the University of Applied Sciences Eberswalde,

hat in der Zeit vom / accomplished her/his internship between August 2014 February 2015 (= 26 Wochen / Weeks)

in / at:

Cochrane Ecological Institute

Cochrane, Alberta

Canada

(Name und Ort der Praktikumsstelle / name and place of the hosting institution)

das praktische Studiensemesters erfolgreich / ~~nicht erfolgreich abgeleistet.~~ / successfully / ~~not successfully~~

Der thematische Schwerpunkt des Praktikums bestand in: / Technically, the internship focused on:

setting up and conducting an owl survey under supervision

creating a work sheme and gathering data

evaluation of the data

working with injured or orphaned wildlife animals

feeding and medication

rescue injured and orphaned wildlife animals

Cochrane April 29, 2015

Ort, Datum
Place, Date

Stempel
Stamp

Verantwortlicher der Praktikumsstelle
Representative of the host institution

Evaluationsformular / Evaluation form

des praktischen Studienseesters / of the practical study semester

Wenn zwei Praktikumsstellen besucht wurden, bitte zweimal ausfüllen /
If two internships have been accomplished, please fill out the form twice

Name der/des Studierenden / Name of Student	Anton Lehnig
Kontakt (private Email, private Telefonnummer (z.B. Eltern), etc.) / Contact (private Email, home phone (e.g. parents), etc.)	anton.lehnig@hnee.de
Jahr der Immatrikulation / Year of enrolment	2012
Name und Kontakte zu der Praktikumsstelle / Name and Contact of the Host Organisation	Cochrane Ecological Institute and Wildlife Reserve Ken Weagle; ken@ceinst.org
Praktikumsland / Country of Internship	Canada
Ort des Praktikums / Place of the internship	Cochrane, Alberta
Zeitraum des Praktikums & Wochenzahl / Period of Internship & No. of weeks	22. August 2014 - 21. February 2015 26 weeks
Thematische Ausrichtung des Praktikums (z.B.: Forschung, Forstwirtschaft, Naturschutz, Tourismus, etc.) / Focus of Internship (e.g. research, forestry, conservation, tourism ,etc.)	research on owls and work at a wildlife reserve
Art der Tätigkeiten (kurze Beschreibungen) / Type of Activities (brief notes)	<ul style="list-style-type: none"> - set up and conduct an owl survey under supervision of the Cochrane Ecological Institute - work at the wildlife reserve - feed the wildlife animals and give them medication - helped to rescue injured wildlife - release recovered wildlife - helped to keep the facilities in good condition - helped out at the dog and cat kennel - helped to mark big horn sheep through a project of the University of Calgary
Sprache(n) / Language(s)	English

<i>Evaluation</i>	sehr gut <i>very good</i>	gut <i>good</i>	befriedigend <i>medium</i>	ausreichend <i>sufficient</i>	mangelhaft <i>insufficient</i>
Kommunikation vor Praktikumsbeginn / <i>Communication before the internship</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Betreuung/Organisation / <i>Supervision / Organisation</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Arbeitsbelastung / <i>Workload</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fachlicher / Wissenschaftlicher Anspruch / <i>Technically / Scientifically demanding</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Infrastruktur (Transport, Unterbringung, etc.) / <i>Infrastructure (Transport, accommodation etc.)</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fachliche Einbindung / <i>Technical Integration</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Persönliche Einbindung / <i>Personal Integration</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Freizeitangebot / <i>Leisure Activities & Opportunities</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Abschließende Betrachtung / <i>Conclusion</i>	sehr hoch <i>very high</i>	hoch <i>high</i>	befriedigend <i>medium</i>	gering <i>low</i>	nicht vorhanden <i>not at all</i>
Fachliche Bereicherung / <i>Technical Enrichment</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Persönliche Bereicherung / <i>Personal Enrichment</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Empfehlenswert / <i>Recommendable</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Zusätzliche Anmerkungen /
Additional remarks:

Anton was a very good student and fit well into the activities of CEI. He was very open to doing new or additional work and had a true interest in wildlife and his research. He also assisted us with our research and made a significantly contribution in all activities he did. He was a credit to your institution and would be welcome back at CEI at any time.

Ken Weagle

April 29, 2015

