NORTHLAND POWER

Burk's Falls West Solar Project

Natural Heritage Site Investigation Report

November 16, 2011

Northland Power Inc.
on behalf of
Northland Power Solar
Burk's Falls West
Toronto, Ontario

Natural Heritage Site Investigation Report

Burk's Falls West Solar Project

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Project Report

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Northland Power Inc.
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1. Introduction

1.1 Project Description

Northland Power Solar Burk's Falls West L.P. (hereinafter referred to as "Northland") is proposing to develop a 10-megawatt (MW) solar photovoltaic project titled Burk's Falls West Solar Project (hereinafter referred to as the "Project"). The Project will be located on approximately 40 hectares (ha) of land, located south of Highway 520 at the border of Armour and Ryerson Townships, in the single tier municipality of Armour Township (Figure 1.1).

1.2 REA Legislative Requirements

Ontario Regulation (O. Reg.) 359/09 – *Renewable Energy Approvals Under Part V.0.1 of the Act*, (herein referred to as the "REA Regulation") made under the *Environmental Protection Act* identifies the Renewable Energy Approval (REA) requirements for renewable energy projects in Ontario. Per Section 4 of the REA Regulation, ground mounted solar facilities with a name plate capacity greater than 10 kilowatts (kW) are classified as Class 3 solar facilities and require a REA.

Section 26 of the REA Regulation requires proponents of Class 3 solar projects to undertake a natural heritage site investigation for the purpose of determining

a) whether the results of the analysis summarized in the Natural Heritage Records Review report prepared under Subsection 25(3) are correct or require correction, and identifying any required corrections

b) whether any additional natural features exist, other than those that were identified in the Natural Heritage Records Review report prepared under Subsection 25(3)

c) the boundaries, located within 120 m of the project location, of any natural feature that was identified in the records review or the site investigation

d) the distance from the project location to the boundaries determined under Clause (c).

Natural Feature is defined in Section 1.1 of the REA Regulation to be all or part of

a) an area of natural and scientific interest (ANSI) (earth science)

b) an ANSI (life science)

c) a coastal wetland

d) a northern wetland

e) a southern wetland

f) a valleyland

g) a wildlife habitat, or

h) a woodland.

In respect of woodlands and valleylands, Section 1(1) of O. Reg. 359/09 requires that these features be located south and east of the Canadian Shield as shown in Figure 1 in the Provincial Policy Statement issued under Section 3 of the *Planning Act*. This figure shows that the proposed Project is located on the Canadian Shield, and therefore valleylands and woodlands as defined by O. Reg. 359/09 cannot be located on the Project location.

Subsection 3 of Section 26 of the REA Regulation requires the proponent to prepare a report setting out the following:

1. A summary of any corrections to the report prepared under Subsection 25(3) and the determinations made as a result of conducting the site investigations under Subsection (1).
2. Information relating to each natural feature identified in the records review and in the site investigations, including the type, attributes, composition and function of the feature.
3. A map showing
   i. the boundaries mentioned in Clause (1)(c)
   ii. the location and type of each natural feature identified in relation to the project location, and
   iii. the distance mentioned in Clause (1)(d).
4. The dates and times of the beginning and completion of the site investigation.
5. The duration of the site investigation.
6. The weather conditions during the site investigation.
7. A summary of methods used to make observations for the purposes of the site investigation.
8. The name and qualifications of any person conducting the site investigation.
9. Field notes kept by the person conducting the site investigation.

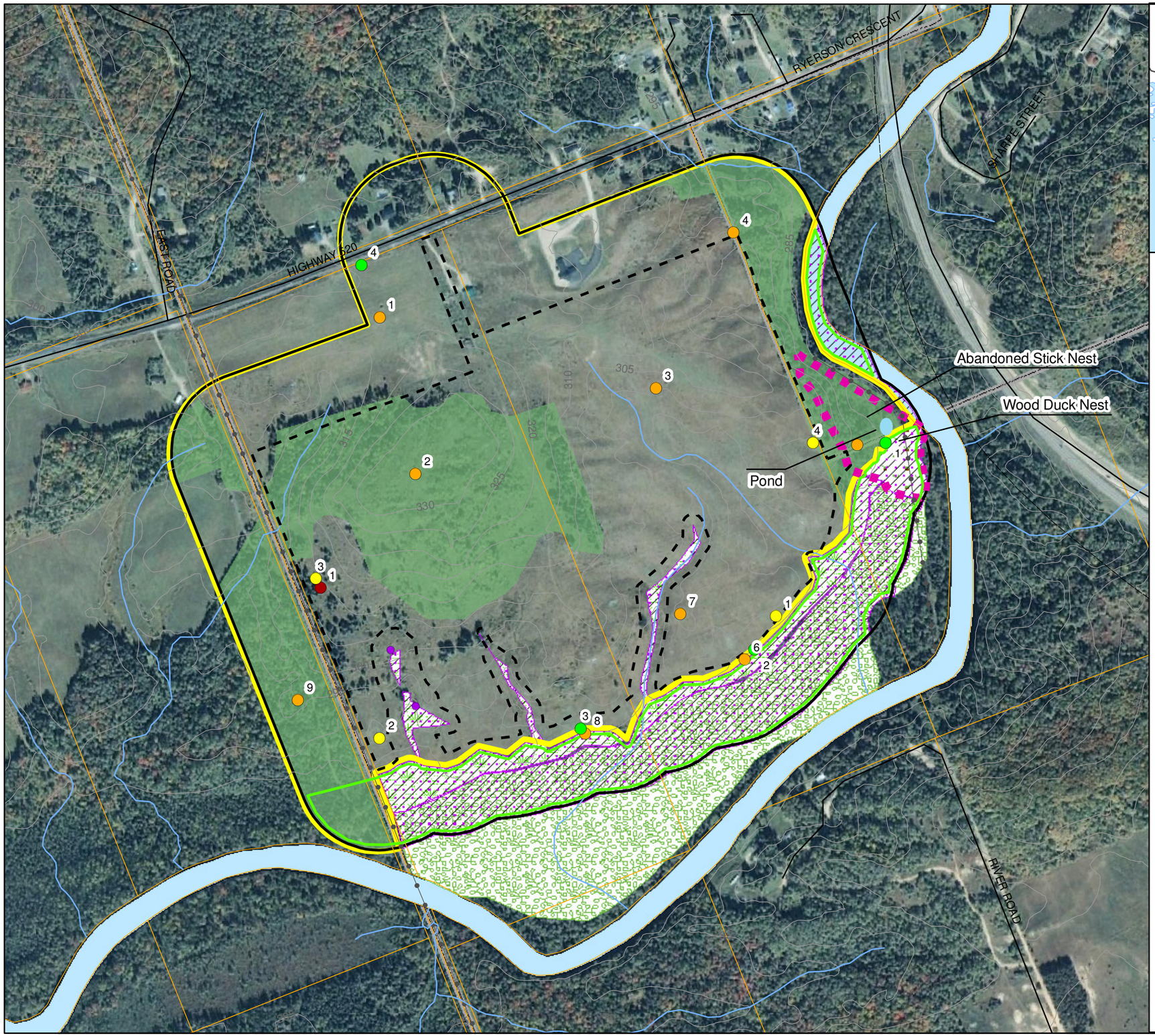
This Natural Heritage Site Investigation Report has been prepared to meet these requirements.

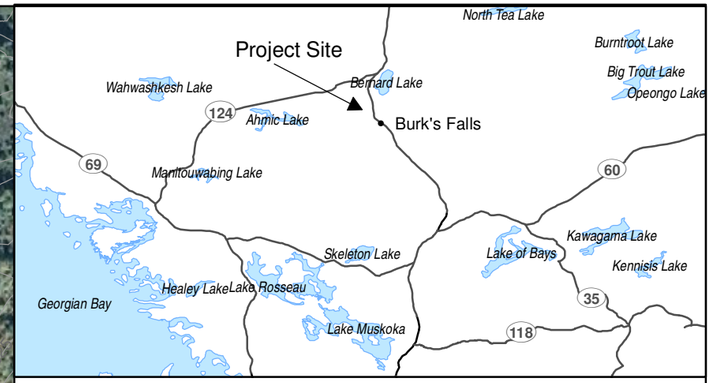
2. Summary of Results of Natural Heritage Records Review

Table 2.1 summarizes the results of the Natural Heritage Records Review Report (Hatch Ltd., 2011a).

Table 2.1 Summary of Records Review Determinations

Determination to be Made	Yes/No	Description
Is the Project in or within 120 m of a Provincial Park or Conservation Reserve	No	
Is the Project in a natural feature?	No	
Is the Project within 50 m of an ANSI (earth science)?	No	
Is the Project within 120 m of a natural feature that is not an ANSI (earth science)?	Yes	Wetlands are present within 120 m of the Project location.





Legend

- Amphibian Point Count Location
- Diurnal Raptor Point Count Location
- Nocturnal Raptor Point Count Location
- Breeding Bird Point Count
- Seepage Area
- Road
- Railway
- Trail
- Transmission Line
- Topographic Contour (5 m Interval)
- Project Location
- 120 m from Project Location
- Parcel
- Milksnake Habitat/Raptor Winter Feeding and Roosting Area
- Woodland Supporting Amphibian Breeding / Western Chorus Frog Habitat / Waterfowl Nesting Area
- Waterfowl Stopover and Staging Area / Turtle Over-wintering Sites
- Snapping Turtle Habitat / Northern Map Turtle Habitat
- Animal Movement Corridor
- Woodland / Raptor Nesting Habitat / Animal Movement Corridor
- Wetland Supporting Amphibian Breeding Habitat

Wetland

- Mineral Mixed Swamp
- Mineral Alder Thicket Swamp
- Mineral Meadow Marsh

NORTH

0 50 100 200 Metres

1:6,000

Notes:
1. Base and Environmental data downloaded from LIO, Feb 18, 2011.
2. Produced by Hatch under licence from Ontario Ministry of Natural Resources, Copyright (c) Queens Printer 2011.
3. Spatial referencing UTM NAD 83.
4. Satellite imagery obtained from Google earth Pro, captured 2007.

Figure 1.1
Northland Power Inc.

Burk's Falls West Solar Project
Project Location and Natural Heritage Features

HATCH

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3. Site Investigation Methodology

3.1 Site Investigation 1

3.1.1 Date, Time and Duration of Site Investigation

- Date: May 3, 2011
- Start Time: 2001 hours
- Duration: approximately 2.25 hours

3.1.2 Weather Conditions During Site Investigation

- Temperature: 7°C at start to 5°C at end
- Beaufort Wind: 0
- Cloud Cover: 100% at start to clear at end

3.1.3 Name and Qualifications of Person Conducting Site Investigation

The site investigation was completed by Zach O'Krafka and Levi Snook.

Zack O'Krafka is an Environmental Technologist with 5 years of research and field investigation experience. He is a specialist in fisheries assessments, waterfowl and wildlife management and a certified wetland evaluator. He has diplomas in environmental studies from Sir Sandford Fleming College. He has participated in several natural heritage assessments for proposed solar and wind projects in southern and central Ontario.

Levi Snook is an Environmental Scientist with experience conducting environmental assessments on proposed hydroelectric, wind, and solar energy sites. He has diplomas in environmental science from Sir Sandford Fleming College and a degree in biology from Trent University. He has expertise in terrestrial assessments in support of Natural Heritage studies that include conducting Ecological Land Classifications, as well as wildlife inventories, including amphibian and reptile surveys.

3.1.4 Survey Methods

The purpose of this site investigation was to

- conduct an amphibian calling survey. The survey was conducted in accordance with the protocols of the marsh monitoring program, i.e. 180 degree, 3-minute surveys. Four survey locations were used; these locations are identified within Figure 1.1.
- conduct an owl nesting survey. A single call playback station was used in the area of potential nesting habitat, and is shown in Figure 1.1. Playbacks consisted of 3 minutes of passive observations, followed by alternating 30 second playback of owl calls and 30 seconds of passive observation. Owl species whose calls were broadcast included species whose observation would contribute toward identification of significant woodland raptor nesting habitat; Northern Saw-whet Owl, Long-eared Owl and Barred Owl. Following the call playbacks, 3 minutes of passive observation was completed.

A copy of the field notes kept by the observers is provided in Appendix A.

3.2 Site Investigation 2

3.2.1 Date, Time and Duration of Site Investigation

- Date: May 4, 2011
- Start Time: 1030 hours
- Duration: approximately 5 hours

3.2.2 Weather Conditions During Site Investigation

- Temperature: 7 to 11°C
- Beaufort Wind: 2
- Cloud Cover: 5 to 40%

3.2.3 Name and Qualifications of Person Conducting Site Investigation

The site investigation was completed by Zach O'Krafka and Levi Snook. Their qualifications have been previously provided.

3.2.4 Survey Methods

The purpose of this site investigation was to

- conduct a snake emergence survey. The survey was conducted by completing transects of lands on and within 120 m of the Project location. Transects were spaced 20 m apart within wooded or shrubby areas, and 50 m apart in open areas.
- conduct a raptor nesting survey. Four call playback stations were used and are shown in Figure 1.1. Playbacks consisted of 3 minutes of passive observations, followed by alternating 30 second playback of raptor calls and 30 seconds of passive observation. Raptor species whose calls were broadcast included species whose observation would contribute toward identification of significant woodland raptor nesting habitat; Northern Goshawk, Cooper's Hawk, Sharp-shinned Hawk, Red-shouldered Hawk, Broad-winged Hawk and Merlin. Following the call playbacks, 3 minutes of passive observation was completed.

A copy of the field notes kept by the observers is provided in Appendix A.

3.3 Site Investigation 3

3.3.1 Date, Time and Duration of Site Investigation

- Date: May 31, 2011
- Start Time: 2100 hours
- Duration: approximately 1 hour

3.3.2 Weather Conditions During Site Investigation

- Temperature: 28°C
- Beaufort Wind: 0
- Cloud Cover: 0%

3.3.3 Name and Qualifications of Person Conducting Site Investigation

The site investigation was completed by Sean K. Male and Caleb Coughlin.

Sean K. Male, M.Sc. is a Terrestrial Ecologist specializing in assessments of terrestrial habitat, flora and fauna. Sean received his Bachelors of Science (Honours) in Biology from Queen's University, where he completed his Honour's thesis under Dr. Raleigh J. Robertson, studying the impacts of nestbox density in Tree Swallows (*Tachycineta bicolor*) on nest-building behaviour. He then completed a Master's of Science degree in the Watershed Ecosystem Graduate Program at Trent University under Dr. Erica Nol. Sean's thesis focussed on examining the impacts of a Canadian diamond mine on a population of breeding passerines. For his thesis, Sean spent two summers in the Canadian arctic studying populations of Lapland Longspurs (*Calcarius lapponicus*) around the Ekati Diamond Mine, located 300 km northeast of Yellowknife. While at Trent, Sean participated in the Northern Saw-whet Owl (*Aegoius acadicus*) Migration Banding Project at the Oliver Centre. Following his time at Trent, Sean participated in the Landscape Monitoring Program, participating in a study of the impacts of woodlot size on breeding birds.

Sean joined Hatch as a Terrestrial Ecologist in 2006. Since joining Hatch, Sean has participated in several environmental assessments for hydro and wind power developments. He has developed and implemented baseline monitoring and impact assessment programs for both terrestrial wildlife and plant communities, including detailed bird and bat studies for several wind power developments, including the proposed 100-MW Coldwell Wind Power Development near Marathon, Ontario, a proposed 20-MW facility near Port Dover, Ontario, and a proposed 110-MW wind facility in southwestern Ontario. Sean has also conducted terrestrial and wetland vegetation surveys for several proposed hydropower projects totalling over 40 MW in southern and northern Ontario and has participated in fisheries surveys for several of these projects.

Caleb is an environmental technologist with extensive knowledge of GIS systems with more than 5 years experience specializing in fisheries and fish habitat assessments. Projects have included spawning and/or spawning habitat surveys on 14 river systems pertaining to 29 proposed/existing hydroelectric facilities. As an environmental technologist Caleb is required to assess wildlife populations and vegetation communities. To date he has completed or assisted in completing in excess of 30 terrestrial studies. Projects include wildlife and avian impact studies in relation to wind and solar developments as well as intercontinental flight patterns of waterfowl, landowner habitat enhancement plans constructed to enhance wildlife winter food availability with emphasizes on wild turkey populations, Flora and Fauna inventories with respect in potential inundated or areas of impact and several species at risk studies. Caleb has been trained in the Southern Ontario Wetland Evaluation System.

3.3.4 Survey Methods

The purpose of this site investigation was to

- conduct a repeat of the amphibian calling survey conducted during Site Investigation 1. The survey was conducted in accordance with the protocols of the marsh monitoring program, i.e., 180 degree, 3-minute surveys. Four survey locations were used; these locations are identified within Figure 1.1.
- conduct a Common Nighthawk survey. This consisted of a combination of area searches of the Project location, during movement between amphibian calling locations, as well as a 15-minute point count from a high point on the northern end of the Project location with good visibility of the entire Project location.

A copy of the field notes kept by the observers is provided in Appendix A.

3.4 Site Investigation 4

3.4.1 Date, Time and Duration of Site Investigation

- Date: June 1, 2011
- Start Time: 0530 hours
- Duration: approximately 3.5 hours

3.4.2 Weather Conditions During Site Investigation

- Temperature: 23°C
- Beaufort Wind: 2-3
- Cloud Cover: 0%

3.4.3 Name and Qualifications of Person Conducting Site Investigation

The site investigation was completed by Sean K. Male and Caleb Coughlin. Their qualifications have been previously provided.

3.5 Survey Methods

The purpose of this site visit was to

- describe vegetation communities according to the Ecological Land Classification (ELC) according to the ELC for southern Ontario. Representative points were selected within the woodland and wetland communities. ELC data sheets were completed and are provided in Appendix A.
- conduct a breeding bird survey of the available habitats on and within 120 m of the Project location. The breeding bird survey consisted of a combination of area searches and point counts. Area searches consisted of recording bird observations while moving between point count locations, while point counts consisted of nine, 10-minute, unlimited distance point count surveys within the woodland. Locations of point count surveys are shown in Figure 1.1.

A copy of the field notes kept by the observers is provided in Appendix A.

3.6 Site Investigation 5

3.6.1 Date, Time and Duration of Site Investigation

- Date: June 15, 2011
- Start Time: 20:30 hours
- Duration: approximately 45 minutes

3.6.2 Weather Conditions During Site Investigation

- Temperature: 21°C
- Beaufort Wind: 1
- Cloud Cover: 20%

3.6.3 Name and Qualifications of Person Conducting Site Investigation

The site investigation was completed by Levi Snook. His qualifications have been previously provided.

3.6.4 Methods

The purpose of this site investigation was to conduct a Common Nighthawk survey. This consisted of a 15-minute point count from a high point on the northern end of the Project location with good visibility of the entire Project location, as well as area searches of the Project location.

A copy of the field notes kept by the observers is provided in Appendix A.

3.7 Site Investigation 6

3.7.1 Date, Time and Duration of Site Investigation

- Date: June 16, 2011
- Start Time: 0620 hours
- Duration: approximately 2.5 hours

3.7.2 Weather Conditions During Site Investigation

- Temperature: 15 to 21°C
- Beaufort Wind: 1
- Cloud Cover: 0 to 20%

3.7.3 Name and Qualifications of Person Conducting Site Investigation

The site investigation was completed by Levi Snook. His qualifications have been previously provided.

3.7.4 Methods

This site investigation was completed for purposes beyond the requirements of the Natural Heritage Assessment, however observations from this site investigation have been incorporated into the Natural Heritage Assessment where relevant.

A copy of the field notes kept by the observers is provided in Appendix A.

4. Results of Site Investigation

4.1 General Site Description

The Project location is characterized by its rolling topography. The majority of the Project location is used for agricultural purposes including an active livestock (i.e., cattle) operation. The agricultural fields are used as cattle pasture and for the production of hay. The areas that are not in agricultural production are comprised of woodlands.

4.2 Vegetation Observations

Natural vegetation communities have been identified on and within 120 m of the Project location and include woodlands and wetlands. A discussion of these vegetation communities is provided below. A map of the vegetation communities on and within 120 m of the Project location is provided in Figure 4.1.

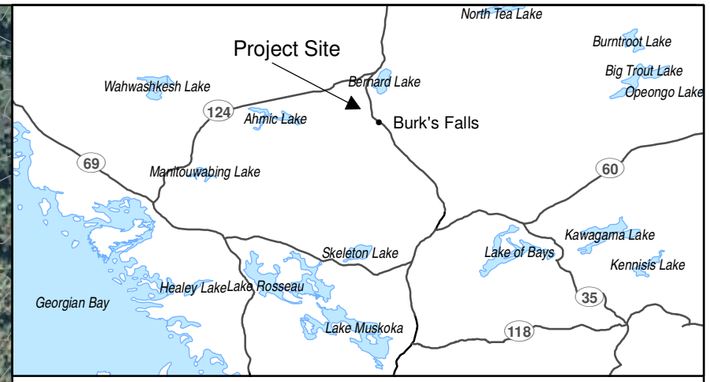
4.2.1 Woodland Communities

Several woodland communities are present on and within 120 m of the Project location.

A description of these woodland vegetation communities on or within 120 m of the Project location is provided below. Location of forest communities are shown in Figure 4.1.

4.2.1.1 Fresh-Moist Balsam Fir Coniferous Forest (FOC)

This woodland community is located within 120 m west of the Project location. The woodland is dominated by coniferous trees, predominantly Balsam Fir and White Spruce, with occurrences of Trembling Aspen in the overstorey and along any edges which are present along the hydro line corridor and access road to the Magnetewan River. The woodland had 100% canopy cover which limited any understory or ground cover growth, with sparse trillium and sphagnum moss recorded. The woodland community was described as mid-aged, with occasional deadfall/logs of varying size classes, and rare occurrences of standing snags.



Legend

- Seepage Area
- Watercourse
- Road
- Railway
- Trail
- Topographic Contour (5 m Interval)
- Project Location
- 120 m from Project Location
- Parcel
- Waterbody

Ecological Land Classification Boundaries

- **CUM1-1 - Dry-Moist Old Field Meadow Type**
- **CUT1 - Mineral Cultural Thicket Ecosite**
- **FOC - Fresh-Moist Coniferous Forest Ecosite (Balsam Fir)**
- **FOD - Dry-Fresh Deciduous Forest Type**
- **FOD3-1 - Dry-Fresh Poplar Deciduous Forest Type**
- **FOD5-4 - Dry-Fresh Sugar Maple - Ironwood Deciduous Forest Type**
- **MAM3-5 - Narrow Leaved Sedge Mineral Meadow Marsh**
- **SWM - Mixed Swamp Ecosite**
- **SWT3-1 - Alder Mineral Thicket Swamp Type**

0 62.5 125 250 Metres

NORTH

1:6,000

Notes:
1. Base and Environmental data downloaded from LIO, Feb 18, 2011.
2. Produced by Hatch under licence from Ontario Ministry of Natural Resources, Copyright (c) Queens Printer 2011.
3. Spatial referencing UTM NAD 83.

Figure 4.1

Northland Power Inc.

Burk's Falls West Solar Project
Ecological Land Classification

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4.2.1.2 Dry-Fresh Sugar Maple-Ironwood Deciduous Forest Type (FOD5-4)

This woodland community is located on the Project location. The woodland was dominated by Sugar Maple and Ironwood, with American Elm and Basswood associates. There was no understorey present within the woodland, and ground cover was dominated by trillium, sphagnum moss, and horsetails. The woodland community was described as a young community, with occasional occurrences of standing snags and deadfall logs in the smallest size class. Shallow relatively low fertile soils are thought to be the main factor in the low diameter size classes dominating the woodlot. While grazing livestock keep ground cover and understorey vegetation to a minimum.

4.2.1.3 Dry-Fresh Poplar Deciduous Forest Type (FOD3-1)

This woodland community is located within 120 m east of the Project location. The woodland is dominated by Trembling Aspen and Largetooth Aspen in the overstorey, with immature overstorey species along with white spruce and hawthorn in the subcanopy. There was no understorey noted within the woodland, while the ground cover was described as abundant and dominated by grasses, goldenrods and oxeye daisy.

4.2.2 Wetland Communities

The LIO mapping identified an unevaluated wetland within 120 m south of the Project location. The site visit confirmed the presence of this wetland and determined that it extends beyond the area shown on the LIO mapping. The wetland communities are described further below, and locations of communities are shown in Figure 4.1.

4.2.2.1 Narrow-leaved Sedge Mineral Meadow Marsh (MAM3-5)

This wetland community transitions from the alder thicket swamp to upland meadow communities. The community exists as a narrow band, 20 to 75 m wide, of vegetation between these two communities, and along the bottoms of drainage channels coming off the upland areas. Sedges dominated the vegetation community with green, beaked, awl fruited and small fruited sedges recorded. Horsetails, golden rods, and Canada blue joint grass was also present although primarily on the peripheries or any slightly higher topography areas within the marsh. Three narrow fingers extend northward within project location. The most western of the three follows a small watercourse to its origin, a seepage area located on a hill side. The other two fingers are low-lying areas which drain the project location. With no defined channel or observations of flow during any of the filed visits these are not considered either permanent or intermittent watercourses.

4.2.2.2 Alder Mineral Thicket Swamp (SWT3-1)

This wetland community represents the largest proportion of wetland communities present within 120 m of the Project location, and is located in the lowlands north of the Magnetawan River. The community is dominated by alders. As previously stated on the northern edge of the alder lowland there is a meadow marsh while on the southern end a narrow band of mixed forest exists between the river and wetland. The transition area between the mixed forest and alder wetland is subtle with a few tamarack, black spruce and yellow birch present. No defined channel is present within the wetland the water is generally thought to drain in a western direction before entering the river. During the May 31 investigation, water depths within the Alder Thicket ranged from a few centimetres to 40 cm, all areas were heavily vegetated and were not considered open water.

4.2.2.3 Mixedwood Swamp

This is a small swamp community located within 120 m southeast of the Project location. The swamp community is a continuation of the alder thicket to the west although higher topography contributes to the change in vegetation from Alder thickets to a mixture of aspen and spruce with sedges dominating the ground cover. This area is confined by a steep hill to the northwest and the river on the east and south. A small pond exists within a camping lot on the northern edge providing a small area where robust emergent's exist.

4.2.3 Other Vegetation Communities

Beyond woodland and wetland communities described above, there are cultural vegetation communities recorded on and within 120 m of the Project location. These communities are described as a Cultural Meadow (CUM) and a Cultural Thicket (CUT).

Cultural meadow areas have been maintained in a cultural meadow state as a result of agricultural use (i.e., lands actively used for production of hay/pasture of livestock). The communities typically consist of grassland areas of mixed species, interspersed with common weedy vegetation of active farmlands, including such species as clover, asters, milkweed, and yarrow. There are scattered shrubs throughout the cultural meadow community on the Project location.

The cultural thicket community exists in a single area where old pasture is transitioning to woodland community, and consists of a mix of weedy species and immature tree species (sugar maple, poplar, balsam fir).

4.3 Wildlife Observations

Wildlife species observed on the Project location during the time of the site investigation are listed in Table 4.1.

Table 4.1 Wildlife Species Observed on the Project Location

Common Name	Scientific Name	Rank		At Risk Status	
		Global (GRank)	Provincial (SRank)	COSEWIC	SARO
Mammals					
Moose	*Alces alces*	G5	S5	-	-
White-tailed Deer	*Odocoileus virginianus*	G5	S5	-	-
Skunk	*Mephitis mephitis*	G5	S5	-	-
Snowshoe Hare	*Lepus americanus*	G5	S5	-	-
Birds					
Canada Goose	*Branta candensis*	G5	S5	-	-
Mallard	*Anas platyrhynchos*	G5	S5	-	-
Wood Duck	*Aix sponsa*	G5	S5	-	-
Ring-billed Gull	*Larus delawarensis*	G5	S5	-	-
Turkey Vulture	*Cathartes aura*	G5	S5B	-	-
American Woodcock	*Scolopax minor*	G5	S4B	-	-
Ruffed Grouse	*Bonasa umbellus*	G5	S4	-	-
Mourning Dove	*Zenaida macroura*	G5	S5	-	-
American Crow	*Corvus brachyrhynchos*	G5	S5B	-	-

Common Name	Scientific Name	Rank		At Risk Status	
		Global (GRank)	Provincial (SRank)	COSEWIC	SARO
Common Raven	*Corvus corax*	G5	S5	-	-
Blue Jay	*Cyanocitta cristata*	G5	S5	-	-
Belted Kingfisher	*Megaceryle alcyon*	G5	S4B	-	-
Northern Flicker	*Colaptes auratus*	G5	S4B	-	-
Downy Woodpecker	*Picoides pubescens*	G5	S5	-	-
White-breasted Nuthatch	*Sitta carolinensis*	G5	S5	-	-
Red-eyed Vireo	*Vireo olivaceus*	G5	S5B	-	-
Willow Flycatcher	*Empidonax traillia*	G5	S5B	-	-
Swainson's Thrush	*Catharus ustulatus*	G5	S4B	-	-
Veery	*Catharus fuscescens*	G5	S4B	-	-
American Robin	*Turdus migratorius*	G5	S5B	-	-
Black-capped Chickadee	*Poecile atricapillus*	G5	S5	-	-
Cedar Waxwing	*Bombycilla cedrorum*	G5	S5B	-	-
Indigo Bunting	*Passerina cyanea*	G5	S4B	-	-
Common Yellowthroat	*Geothlypis trichas*	G5	S5B	-	-
Mourning Warbler	*Oporornis philadelphia*	G5	S4B	-	-
Black-and-White Warbler	*Mniotilta varia*	G5	S5B	-	-
Ovenbird	*Seiurus aurocapilla*	G5	S5B	-	-
Chestnut-sided Warbler	*Dendroica pensylvanica*	G5	S5B	-	-
Black-throated Green Warbler	*Dendroica virens*	G5	S5B	-	-
American Redstart	*Setophaga ruticilla*	G5	S5B	-	-
American Goldfinch	*Carduelis tristis*	G5	S5	-	-
Common Grackle	*Quiscalus quiscula*	G5	S5B	-	-
Red-winged Blackbird	*Agelaius phoenecius*	G5	S4	-	-
Eastern Meadowlark	*Sturnella magna*	G5	S4B	-	-
European Starling	*Sturnus vulgaris*	G5	SE	-	-
White-throated Sparrow	*Zonotrichia albicollis*	G5	S5B	-	-
Chipping Sparrow	*Spizella passerina*	G5	S5B	-	-
Clay-Colored Sparrow	*Spizella pallida*	G5	S4B	-	-
Song Sparrow	*Melospiza melodia*	G5	S5B	-	-
Savannah Sparrow	*Passerculus sandwichensis*	G5	S4B	-	-
Amphibians					
Spring Peeper	*Pseudacris crucifer*	G5	S5	-	-
Western Chorus Frog	*Pseudacris triseriata*	G5	S3	THR	-

Common Name	Scientific Name	Rank		At Risk Status	
		Global (GRank)	Provincial (SRank)	COSEWIC	SARO
Northern Leopard Frog	*Rana pipiens*	G5	S5	-	-
American Toad	*Bufo americanus*	G5	S5	-	-
Gray Treefrog	*Hyla versicolor*	G5	S5	-	-
Green Frog	*Rana clamitans*	G5	S5	-	-
Wood Frog	*Rana sylvatica*	G5	S5	-	-

Acronyms/Definitions

Global

G5 – **Very common** (demonstrably secure under present conditions)
G4 - **Apparently Secure** (Uncommon but not rare)
T – Denotes that the rank applies to a subspecies or variety.

Provincial

S5 – Secure (Common, widespread, and abundant in the nation or state/province)
S4 – **Apparently Secure** (Uncommon but not rare; some cause for long-term concern due to declines or other factors)
B Designation applies to a breeding population

At Risk Status

COSEWIC Committee on the Status of Endangered Wildlife in Canada
SARO Species at Risk in Ontario
THR Threatened

4.3.1 Wildlife Habitat

The Significant Wildlife Habitat Technical Guide (SWHTG) (MNR, 2000) identifies four main types of wildlife habitat:

- habitat for seasonal concentrations of animals
- rare or specialized habitats for wildlife
- habitat for species of conservation concern
- wildlife movement corridors.

Each of these types of wildlife habitat is considered further below and how they were considered during the site investigation. Where possible, these habitat types are considered in relation to the Significant Wildlife Habitat Ecoregion Criteria Schedules (SWHECS) – Addendum to Significant Wildlife Habitat Technical Guide (MNR, 2009). The SWHECS relates ecological land classifications to potential significant wildlife habitat types for Ecoregions 5E, 6E, and 7E. The Project is located within Ecoregion 5E, however draft criteria schedules for this Ecoregion are still being developed and are currently unavailable (MNR, 2009). As a result, criteria schedules for Ecoregion 6E are relied upon where relevant.

4.3.1.1 Habitats of Seasonal Concentrations of Animals

There are many different kinds of seasonal concentration areas, with the likelihood of occurrence of one of these areas depending on the characteristics of the study location. Those that were

considered during the site investigations, and the discussion of their potential occurrence on the Project location, are discussed below.

- Winter deer yards – Winter deer yards are sheltered areas where white-tailed deer congregate during the winter months. As white-tailed deer are not adept at moving through deep snow, a key component of a winter deer yard is a core area predominantly composed of coniferous trees with a 60% canopy cover. The ELC codes that may provide wintering deer areas and were observed on or within 120 m of the Project location are coniferous forest (FOC), and Dry-Fresh Poplar-White Birch Deciduous Forest (FOD3). These communities and their potential for provision of Stratum 1 deer wintering habitat, which is the only stratum of deer wintering habitat that can be considered significant, are discussed separately below.
    - FOD3 – This community is found in a small (~1.5 ha) woodland between the Project location and the Magnetawan River east of the Project location. The woodland community was described as a young forest community, and as such, would not provide suitable Stratum 1 deer wintering habitat.
    - FOC – Coniferous forest communities are restricted to an area of woodland dominated by Balsam Fir within 120 m west of the Project location. Canopy coverage within the woodland was >60%, while the woodland was considered to be mid-aged. However, this site was described as not having an understorey, which would be inconsistent with the provision of Stratum 1 deer wintering habitat. Further, the amount of coniferous habitat available within this portion of the woodland is small when compared with the large wooded areas present within the local landscape. As a result, this coniferous forest community is determined to not meet the requirements of Stratum 1 deer wintering habitat.
- Moose late winter habitat – Moose late winter habitats are similar to winter deer yards in that they consist of coniferous stands with at least 60% canopy closure, and in which most trees are at least 6 m tall. Ecoregion criteria schedules have not been prepared for moose late winter habitat. Of the woodlands identified on the Project location, candidate late winter moose habitat for moose was identified solely within the coniferous forest community within 120 m west of the Project location. As was identified above with respect to deer wintering areas, the absence of understorey as well as small size of the coniferous woodland within the landscape indicates that this feature would not provide candidate significant late winter moose habitat.
- Colonial bird nesting sites – Colonial bird nesting sites are locations where colonial species, such as herons, gulls, terns, and swallows traditionally nest in colonies of varying size. Swallow colonial-nesting bird breeding habitat are found associated with eroding banks, sandy hills, pits, steep slopes, rock faces, or piles within several ELC codes. Of these codes, only cultural meadows (CUM) were recorded on or within 120 m of the Project location, there was a single area of exposed soils that may provide suitable colonial nesting habitat for swallows, however a thorough search of the area during the breeding season identified no occurrences of swallow nesting activity (i.e., excavated nest sites). Heron and Egret colonial nest sites are found associated with deciduous and mixedwood swamp or fens, while gull colonial nest sites are found on rocky islands or peninsulas within a lake or large river; the only one of these habitats identified within 120 m of the Project location was an area of mixedwood swamp. This feature was thoroughly searched during the site investigation and no heron or egret colonial nesting sites

were identified. Therefore, this candidate significant colonial bird nesting sites were not identified on or within 120 m of the Project location.

- Waterfowl stopover and staging areas – Waterfowl traditionally congregate in larger wetlands and relatively undisturbed shorelines with vegetation, corresponding with several wetland ELC Codes during spring and fall migration. Further, during the fall migration, waterfowl may commonly congregate in feeding or roosting ponds. The watercourses on the Project location were determined to not provide suitable habitat for migratory waterfowl given that they are extremely shallow and narrow features, and the small amount of meadow marsh habitat, the only corresponding wetland ELC code, present within 120 m of the Project location is a narrow strip of marshland that would be incapable of supporting large numbers of migratory waterfowl. However, the Magnetewan River has been identified as a waterfowl migratory stopover area (Azimuth Environmental Consultants, 2005). Therefore, the Magnetewan River is a candidate significant waterfowl stopover or staging areas found within 120 m of the Project location.

- Waterfowl nesting – Waterfowl nesting sites can consist of relatively large, undisturbed upland areas adjacent to ponds or wetlands corresponding with several ELC codes (of which thicket swamp (SWT) and meadow marsh (MAM) were recorded within 120 m of the Project location. Area searches of adjacent upland habitats to these areas did not identify any occurrences of nesting waterfowl (either through direct observations of nests, or flushing waterfowl from the upland areas). Wood Duck nesting occurs within cavity trees, and an active wood duck nest was identified within the woodland/mixed swamp community within 120 m east of the Project location. Therefore, this habitat is considered to be a candidate significant waterfowl nesting area within 120 m of the Project location.

- Shorebird and landbird migratory stopover areas – Shorebird and landbird migratory stopover areas are found along the shorelines of the Great Lakes and James Bay, as the Project location is located more than 120 m away from these areas, this habitat type cannot occur on the Project location.

- Raptor winter feeding and roosting areas – This combined habitat type features suitable raptor roosting sites (FOC) in proximity to winter feeding areas (CUM). Suitable foraging habitat is found on and within 120 m of the Project location, while suitable roosting habitat is present within the woodland within 120 m west of the Project location. Therefore, candidate significant raptor winter feeding and roosting areas are found on and within 120 m of the Project location.

- Wild turkey winter range – Similar to winter deer yards, wild turkey rely on coniferous forest stands for winter protection. Ecoregion criteria schedules have not been prepared for wild turkey winter range. As was noted for winter deer yards, coniferous forest content is found in the woodland community within 120 m west of the Project location. However, no evidence of wild turkey occurrence was noted during the site investigations, and wild turkey are relatively uncommon within this portion of the province. As a result, this habitat type is not considered to be present on the Project location.

- Turkey vulture summer roosting areas – Turkey vulture summer roosting areas traditionally consist of cliff ledges and large snags. Ecoregion criteria schedules have not been prepared for turkey vulture summer roosting areas. No cliff ledges were noted during the site investigation,

and there were few large dead or partially dead trees present within the area. Further, any large or dead trees exhibited no evidence of white-washing, which would be expected were the tree supportive of turkey vulture roosting. Though several turkey vultures were recorded during the breeding bird surveys, these observations were birds originating from areas more than 120 m from the Project location, and was consistent with turkey vulture foraging on the wing. Therefore this habitat type is not found on or within 120 m of the Project location.

- Reptile hibernacula – Reptile hibernacula are commonly found in rock piles and rock crevices, no ELC codes are specified in the Ecoregion Criteria Schedule. Though there are small outcrops of bedrock on the Project location around the woodland community on the Project location, no candidate hibernacula features were identified during the site investigations. Further, area transects of the site during the snake emergence period, completed in associated with Site Investigation 2, failed to identify any occurrences of snakes. Therefore, it is determined that there are no candidate hibernacula found on or within 120 m of the Project location..

- Bat hibernacula – Bat hibernacula are found in caves or abandoned mines. These features were not identified on or within 120 m of the Project location during the site investigation.

- Bullfrog concentration areas – Bullfrog concentration areas are predominantly found in areas of marsh habitat. Though a narrow strip of marshland habitat was identified within 120 m of the Project location, the area of marshland did not contain pockets of deep water required to support bullfrog concentrations, and no bullfrogs were recorded during the amphibian breeding surveys completed within the wetland habitats. Therefore, this candidate significant wildlife habitat is not found on or within 120 m of the Project location.

Therefore, candidate significant waterfowl stopover and staging areas, waterfowl nesting areas, and raptor winter feeding and roosting areas are present on or within 120 m of the Project location.

4.3.1.2 Rare Vegetation Communities or Specialized Habitat for Wildlife

Rare vegetation communities include alvars, tall-grass prairies, savannahs, old-growth forest, cliff and talus slopes, and sand barrens. None of these vegetation communities were identified during the site investigation. Vegetation communities that were observed during the site investigation have been previously described in Section 4.1; none of these communities are considered to be rare or uncommon within the local or provincial area.

Specialized wildlife habitats include

- areas that support species that have highly specific habitat requirements
- areas with high species and community diversity
- areas that provide habitat that greatly enhances species survival.

There are many habitat types that may meet these definitions; those that were considered during the site investigations as they had the potential to be present in the area, and the discussion of their potential occurrence on the Project location, are addressed below.

- Habitat for area-sensitive species – The SWHECS identifies the following types of habitat for area sensitive species that can be considered significant:

- Marsh Bird Breeding Habitat – Of the ELC codes that can support this habitat type, there is only a small area of meadow marsh present within 120 m of the Project location. None of the indicator species were recorded during the breeding bird surveys. Further, small size of this suitable habitat would not support marsh birds requiring large areas of habitat for breeding. Therefore, this habitat type is not found on or within 120 m of the Project location.
- Area-Sensitive Bird Breeding Habitat – Of the ELC codes that can support this habitat type, only FOC and FOD were observed on or within 120 m of the Project location. Woodlands must be greater than 30 ha in size, which restricts areas of suitable habitat to the woodland within 120 m of the Project location west and north of the Project location. None of the indicator species were recorded from the portions of the woodland community within 120 m north of the Project location. Within the woodland within 120 m west of the Project location, only one of the indicator species, Ovenbird, was observed. A minimum of three indicator species must be observed within a woodland community in order for that community to be considered significant. Further, areas of forest within 120 m of the Project location are predominantly located less than 100 m from the forest edge, and are therefore considered to be edge habitats and not forest interior habitats capable of supporting area sensitive species. As a result, this habitat type is not found on or within 120 m of the Project location.
- Open Country Bird Breeding Habitat – Cultural meadows, such as those found on or within 120 m of the Project location, may support this habitat type. None of the indicator species were identified during the breeding bird survey, and only one of the common species, Eastern Meadowlark, was recorded. Therefore, as none of the indicator species was identified, this habitat type is determined to not be found on or within 120 m of the Project location.
- Shrub/Early Succession Bird Breeding Habitat – Though one of both the indicator and common species were recorded during the site investigation, Willow Flycatchers (the common species) were recorded from the wetland community, which does not correspond with the ELC code for this habitat type, while the Clay-colored Sparrow was recorded from a small area of shrub thicket less than 30 ha in size. Given that Willow Flycatchers are a persistent and distinctive calling species during the breeding season, the absence of observations from this community indicates that they are not breeding within this area. Therefore, this candidate significant habitat type is not found on or within 120 m of the Project location.

- Foraging areas with abundant mast – An abundance of beech and oak trees, species which serve as a primary food source for black bears, was not recorded on or within 120 m of the Project location during the site investigation. Similarly, no large patches of berry producing shrubs, or mountain ash, apple or black cherry trees were recorded. As a result, this specialized habitat is not found.
- Woodlands supporting amphibian breeding ponds – Vernal pools were not recorded within the woodlands (FOD, FOC) that are found on or within 120 m of the Project location, however a small wetland pond was identified within the small woodland within 120 m east of the Project

location. Therefore, this woodland and associated pocket of wetland is identified as a candidate significant woodland supporting amphibian breeding habitat.

- Wetlands supporting amphibian breeding habitat – Amphibian were recorded as breeding within the wetland community within 120 m south of the Project location. Therefore, these wetlands are considered to be a candidate significant breeding habitat within 120 m of the Project location.
- Turtle nesting/over-wintering habitat – These habitats are found associated with certain wetland ELC codes, of which the previously discussed narrow strip of meadow marsh present within 120 m of the Project location is the sole habitat identified within 120 m of the Project location. No sand and/or gravel necessary to support turtle nesting was identified adjacent to these communities, and therefore turtle nesting habitat is nor found on or within 120 m of the Project location. As a permanent waterbody, turtle over-wintering habitat may be found within the Magnetawan River within 120 m of the Project location; this is considered to be a candidate significant wildlife habitat.
- Specialized raptor nesting habitat – Raptor nesting habitat is found associated with intermediate-aged to mature woodland communities associated with the following ELC codes (FOD, FOC) that are greater than 120 ha in size. Of the woodland communities on and within 120 m of the Project location, there are three communities identified that are greater than 10 ha in size. Therefore, candidate significant specialized raptor nesting habitat is found on and within 120 m of the Project location.
- Mink, otter, marten, and fisher denning sites – Denning sites for these members of the weasel family were not recorded on or within 120 m of the Project location during the site investigation.
- Moose calving areas/aquatic feeding areas/mineral licks – Neither mineral licks nor moose calving areas were identified on or within 120 m of the Project location during the site investigation. Portions of the shoreline of the Magnetawan River are identified as a known moose aquatic feeding area (Azimuth Environmental Consultants, Inc., 2005), and a moose was recorded along the shoreline, more than 120 m from the Project location, during Site Investigation 4. However, no wetland habitats capable of providing moose aquatic feeding areas were identified along the portions of the Magnetawan River within 120 m of the Project location, and therefore candidate significant aquatic feeding areas are not found on or within 120 m of the Project location.
- Cliffs and caves – These features were not identified on or within 120 m of the Project location during the site investigation.
- Seeps and springs – Two seepage areas were identified within 120 m of the Project location. Therefore, this candidate significant wildlife habitat is considered further.

As a result specialized raptor nesting habitat, woodlands supporting amphibian breeding habitat, wetlands supporting amphibian breeding habitat, seepage areas, and turtle over-wintering sites are considered to be candidate significant wildlife habitats.

4.3.1.3 Habitat of Species of Conservation Concern

Species of conservation concern that were considered during the site investigation include the following:

- Olive-sided Flycatcher – Olive-sided Flycatchers use tall trees or snags in open areas. Though suitable breeding habitat is found, no Olive-sided Flycatchers were recorded during breeding birds surveys completed within suitable habitats. As none were observed on or within 120 m of the Project location and also given that its distinctive call was not recorded, they are determined to not be present on the Project location.
- Common Nighthawk – There is very little bare ground present on or within 120 m of the Project location that would serve as suitable breeding habitat for Common Nighthawk. Areas of suitable habitat were walked during the time period suitable for Common Nighthawk nesting and no nighthawks were observed. In addition crepuscular surveys completed to detect Common Nighthawk foraging flights in the area did not identify any observations of the species. As a result, it is determined that Common Nighthawk do not occur on or within 120 m of the Project location.
- Canada Warbler – Though suitable woodland habitat is found on and within 120 m of the Project location, area searches and point counts completed during the breeding bird season did not identify any occurrences of Canada Warbler. As none were observed on or within 120 m of the Project location and also given that its distinctive call was not recorded, they are determined to not be present on the Project location.
- Golden-winged Warbler – There is only a small amount of suitable breeding habitat present on or within 120 m of the Project location. The portions of suitable breeding habitat were searched during the breeding bird season and no Golden-winged Warblers were detected. As none were observed on or within 120 m of the Project location and also given that its distinctive call was not recorded, they are determined to not be present on the Project location.
- Milksnake – As Milksnake are habitat generalists, suitable habitat is present on and within 120 m of the Project location.
- Five-lined Skink – Five-lined Skinks are associated with moderately dense or open deciduous or mixed woodlands with logs and slash piles. There was a single open woodland identified on the Project location, however the woodlands was described as young and there were no logs or slash piles, critical features of skink habitat, identified within the woodland.
- Western Chorus Frog – Western Chorus Frogs were recorded calling within the wetland community associated with the woodland east of the Project location. As a result, suitable habitat is found within 120 m of the Project location.
- Species of turtles – It is expected that Northern Map Turtles and Snapping Turtles may be found within the Magnetawan River, as well as the wetland community within 120 m south of the Project location. No turtle nesting sites were identified on the Project location during baseline investigations, therefore suitable habitat for these species is restricted to areas within 120 m of the Project location.

Based on the results of the site investigation, potential habitat for Milksnake, Western Chorus Frog, Northern Map Turtle, and Snapping Turtle will be considered during the evaluation of significance.

4.3.1.4 Animal Movement Corridors

The SWHTG (MNR, 2000) defines animal movement corridors as "elongated, naturally vegetated parts of the landscape used by animals to move from one habitat to another". Animal movement corridors were considered during the site investigation. Such features were found to be present within the Magnetawan River (including shoreline/riparian areas), and adjacent wetlands, within 120 m of the Project location, and the woodlands on and within 120 m of the Project location.

These features will be further assessed in the evaluation of significance report.

5. Conclusions

Based on the results of the site investigation identified above, there are some minor corrections to the Records Review Report required. These are identified in Table 5.1.

Table 5.1 Corrections to Records Review Report

Natural Heritage Feature	Results of Records Review	Correction Required Following Site Investigation
Wetlands	Wetland habitats were present within 120 m of the Project location.	The amount of wetland habitat available within 120 m of the Project location is greater than identified through the Records Review. Updated mapping of wetland communities is shown in Figure 1.1
Wildlife Habitat	No specific wildlife habitat features were identified during the Records Review on or within 120 m of the Project location.	Specific wildlife habitat features that were identified during the site investigations included • habitat for species of conservation concern (Milksnake, Western Chorus Frog, Snapping Turtle, Northern Map Turtle) • seasonal concentration areas (waterfowl stopover and staging area, waterfowl nesting area, raptor winter feeding and roosting area) • specialized habitat for wildlife (raptor nesting habitat, woodland supporting amphibian breeding habitat, wetlands supporting amphibian breeding habitat, turtle over-wintering sites and seepage areas) • animal movement corridors. The locations of these features are shown in Figure 1.1.

The following natural features are present on and within the vicinity of the Project location and will require an evaluation of significance in order to determine whether an environmental impact study is required:

- wildlife habitat on and adjacent to the Project location including
  - habitat for species of conservation concern (Milksnake, Western Chorus Frog, Snapping Turtle, Northern Map Turtle)
  - seasonal concentration areas (waterfowl stopover and staging area, waterfowl nesting area, raptor winter feeding and roosting area)
  - specialized habitat for wildlife (raptor nesting habitat, woodland supporting amphibian breeding habitat, wetlands supporting amphibian breeding habitat, turtle over-wintering sites and seepage areas)
  - animal movement corridors
- wetland communities within 120 m of the Project location.

6. References

Hatch Ltd. 2011a. Burk's Falls West Solar Project – Natural Heritage Records Review. Prepared for Northland Power Inc. on behalf of Northland Power Solar Burk's Falls West L.P.

Hatch Ltd. 2011b. Burk's Falls West Solar Project – Water Body Site Investigation Report. Prepared for Northland Power Inc. on behalf of Northland Power Solar Burk's Falls West L.P.

Ministry of Natural Resources (MNR). 2009. Significant Wildlife Habitat Ecoregion Criteria Schedules – Addendum to Significant Wildlife Habitat Technical Guide. Working Draft.

MNR. 2000. Significant Wildlife Habitat Technical Guide. Fish and Wildlife Branch, Wildlife Section and Science Development and Transfer Branch, Southcentral Sciences Section.

Appendix A

Site Investigation Field Notes

BFW-FROG PT. 1

Amphibian Point Count Data Form

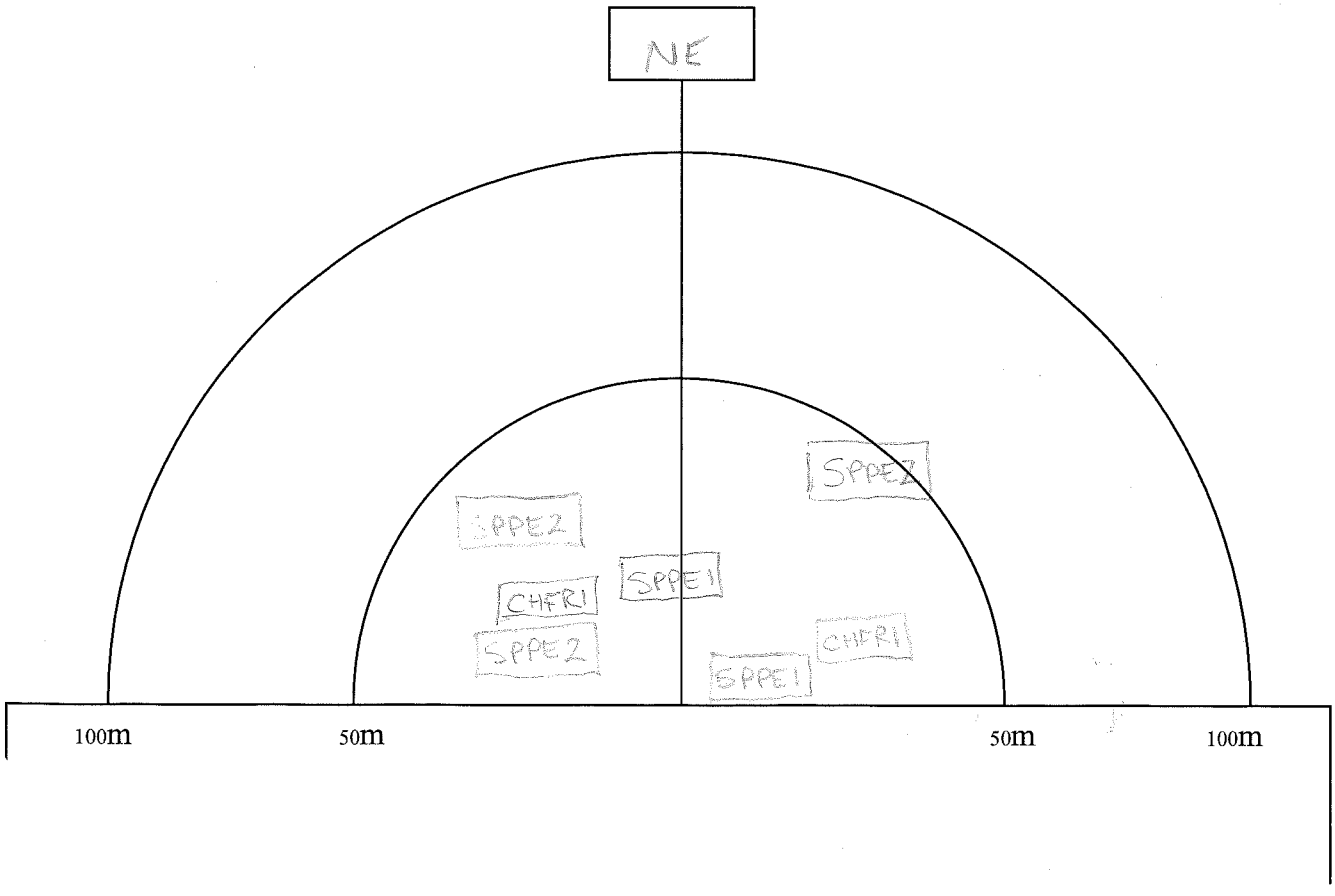
Observer: Levi Snode / Zac O'Konska	Site: Rock's Falls West	Date: May 3
Station ID: GPS Point 669 (Levi GPS)	Visit #: 1	Start Time (HH:MM): 8:46pm
Beaufort Wind Scale: 0	Cloud Cover (%): 100	Finish Time (HH:MM): 8:51pm
Precipitation: Light Rain	Visibility:	Temperature (°C): 6°C
Remarks:		

Aerial Foragers		
Species	**IN***	**OUT****
AMTO		
BCFR		
BULL		
CHFR	✓	
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE	✓	
WOFR		

Call Level Codes	
CODE 1	Calls not simultaneous, number of individuals can be accurately counted.
CODE 2	Some calls simultaneous, number of individuals can be reliably estimated.
CODE 3	Full chorus, calls continuous and overlapping, number of individuals cannot be reliably estimated

***Check if species is calling from inside 100-meter station area.**

****Check if species is calling from outside 100-meter station area.**



Amphibian Point Count Data Form

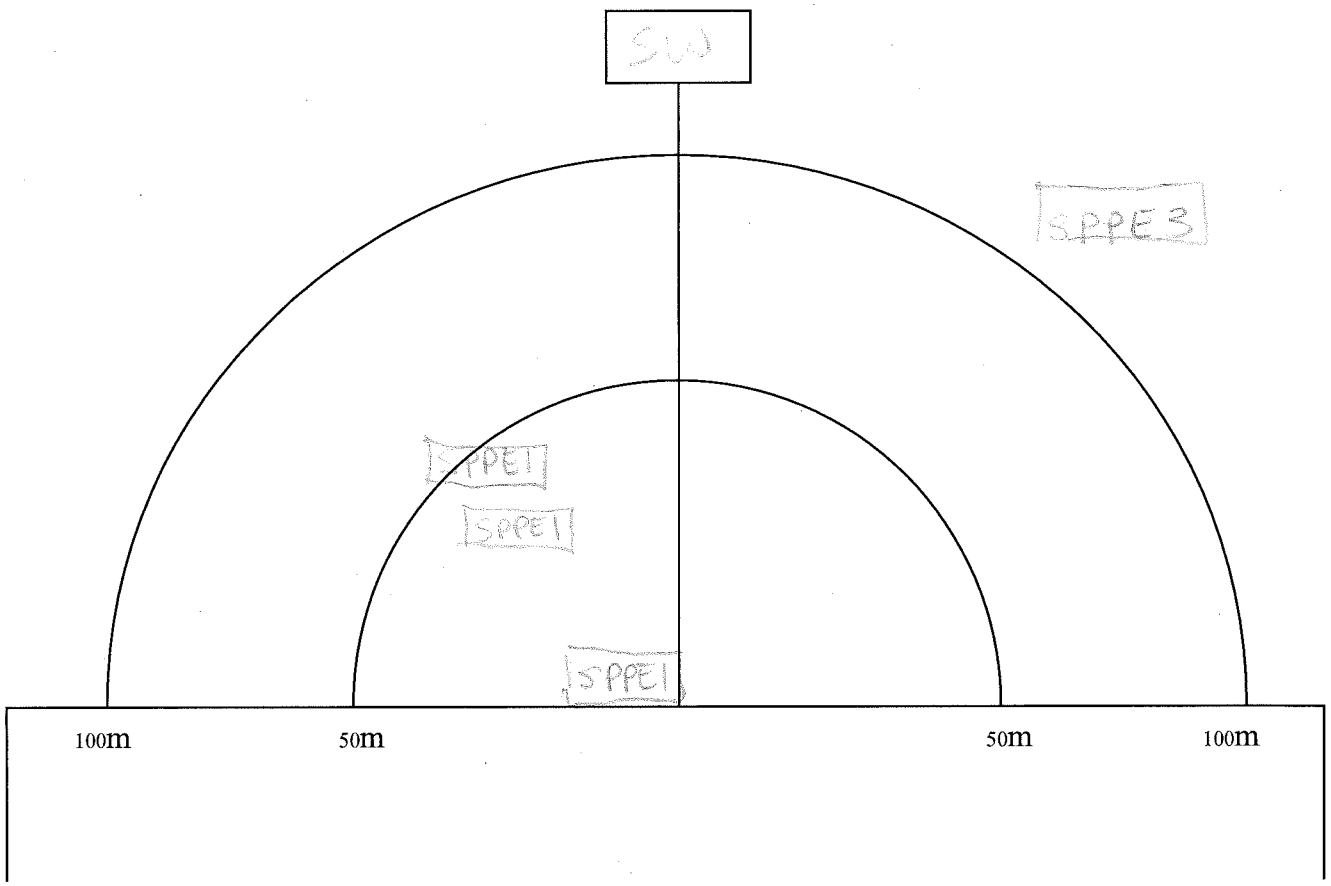
Observer: Jon Swick / Zac O'Krafka	Site: Burke's Falls West	Date: May 3/11
Station ID: BFW-Floor (Jon's GPS)	Visit #: 1	Start Time (HH:MM): 9:03 pm
Beaufort Wind Scale: 0	Cloud Cover (%): 100	Finish Time (HH:MM): 9:06 pm
Precipitation: Light Rain	Visibility:	Temperature (°C):
Remarks:		

Aerial Foragers		
Species	**IN***	**OUT****
AMTO		
BCFR		
BULL		
CHFR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE	✓	✓
WOFR		

Call Level Codes	
CODE 1	Calls not simultaneous, number of individuals can be accurately counted.
CODE 2	Some calls simultaneous, number of individuals can be reliably estimated.
CODE 3	Full chorus, calls continuous and overlapping, number of individuals cannot be reliably estimated

***Check if species is calling from inside 100-meter station area.**

****Check if species is calling from outside 100-meter station area.**



Amphibian Point Count Data Form

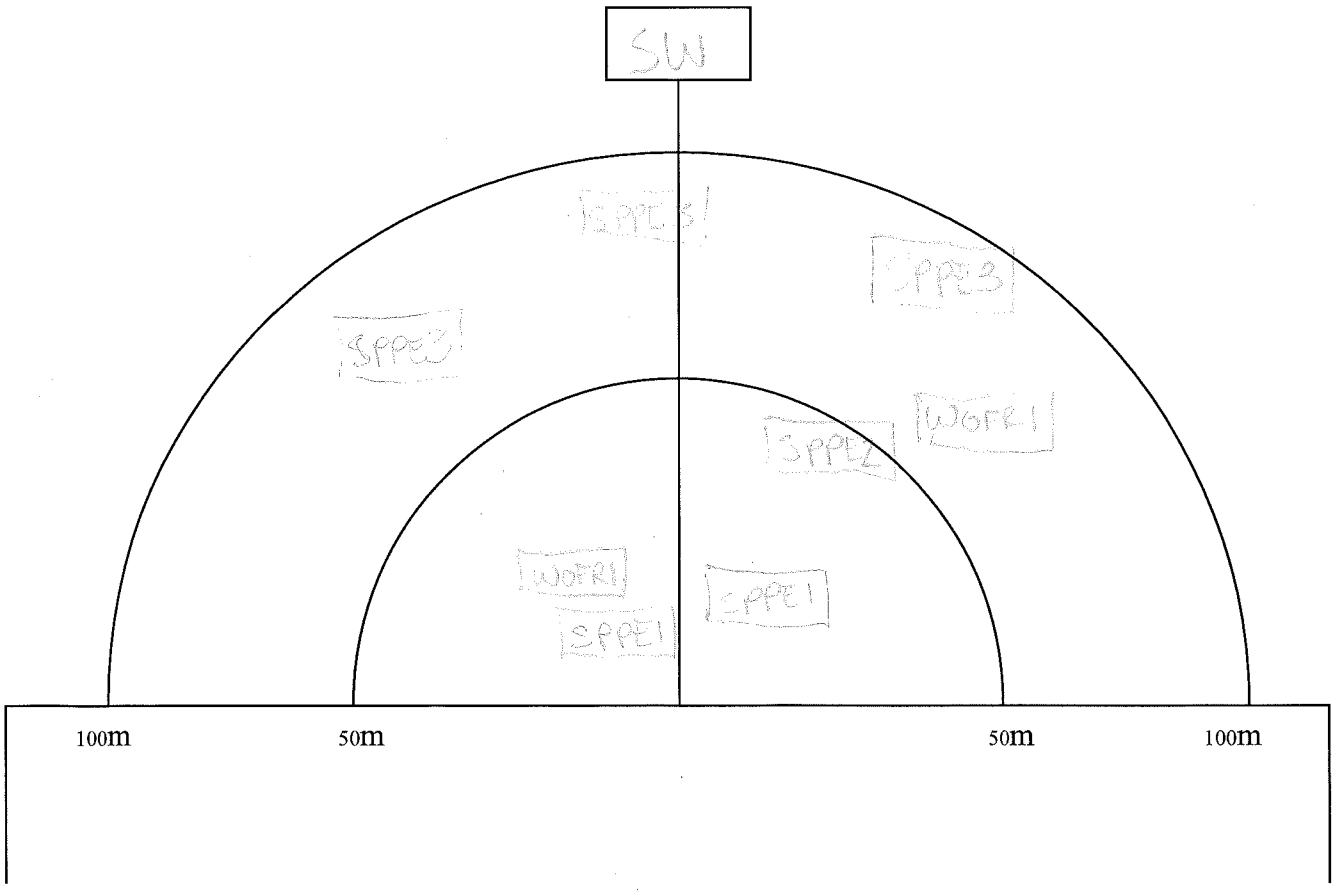
Observer: Levi Snook/Zac O'Krafka	Site: Burke Falls West	Date: May 3/11
Station ID: BFW-Ekos3 (Zac's GPS)	Visit #: 1	Start Time (HH:MM): 9:18pm
Beaufort Wind Scale:	Cloud Cover (%): 100%	Finish Time (HH:MM): 9:21pm
Precipitation: light rain	Visibility:	Temperature (°C): 6°C
Remarks:		

Aerial Foragers		
Species	**IN***	**OUT****
AMTO		
BCFR		
BULL		
CHFR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE	✓	
WOFR	✓	

Call Level Codes	
CODE 1	Calls not simultaneous, number of individuals can be accurately counted.
CODE 2	Some calls simultaneous, number of individuals can be reliably estimated.
CODE 3	Full chorus, calls continuous and overlapping, number of individuals cannot be reliably estimated

***Check if species is calling from inside 100-meter station area.**

****Check if species is calling from outside 100-meter station area.**



Amphibian Point Count Data Form

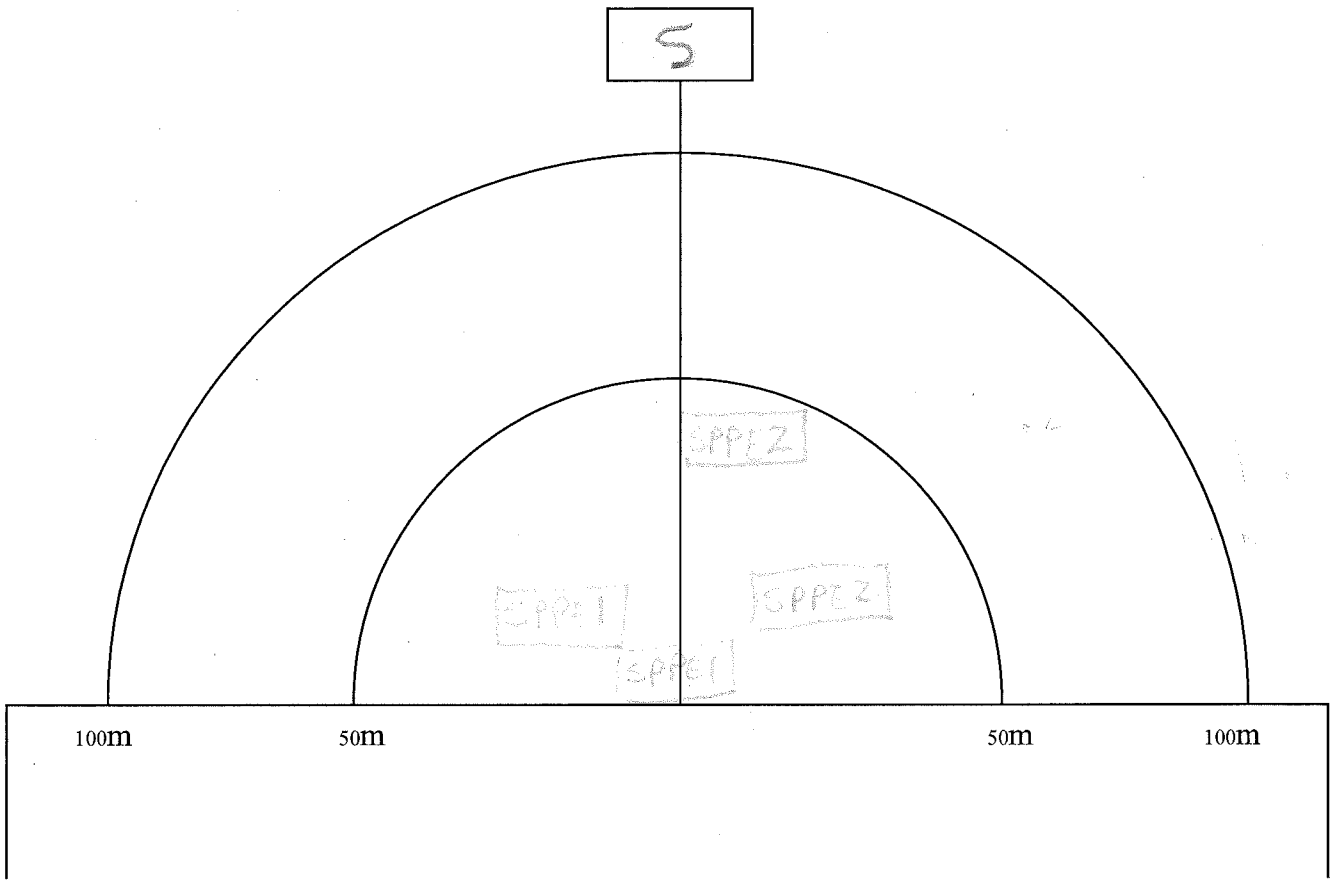
Observer: Ken Cook / Zac Ok	Site: Eureka Flats West	Date: May 3/11
Station ID: EW-FROG-4 (Zac's GPS)	Visit #: 1	Start Time (HH:MM): 10:09 pm
Beaufort Wind Scale: 0	Cloud Cover (%): 0	Finish Time (HH:MM): 10:12 pm
Precipitation: None	Visibility:	Temperature (°C): 5°C
Remarks:		

Aerial Foragers		
Species	**IN***	**OUT****
AMTO		
BCFR		
BULL		
CHFR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE	✓	
WOFR		

Call Level Codes	
CODE 1	Calls not simultaneous, number of individuals can be accurately counted.
CODE 2	Some calls simultaneous, number of individuals can be reliably estimated.
CODE 3	Full chorus, calls continuous and overlapping, number of individuals cannot be reliably estimated

***Check if species is calling from inside 100-meter station area.**

****Check if species is calling from outside 100-meter station area.**



Point Count Data Form

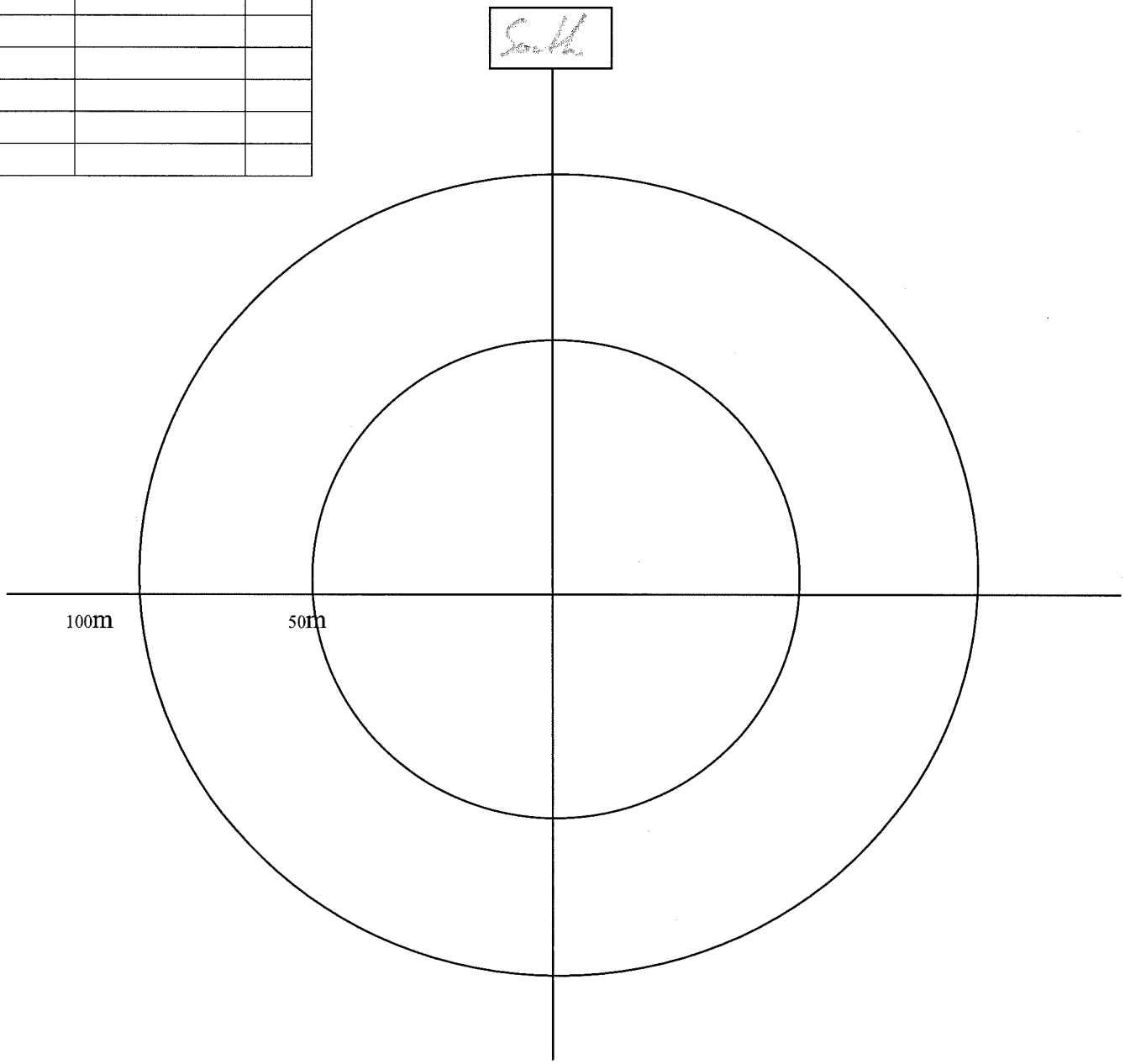
Observer: Z. O'Krafka / A. Svoak	Site: Burks Falls West	Date: 4 May 2011
Station ID: BfW Raptor 1	Visit #: 1	Start Time (HH:MM): 13:48
Beaufort Wind Scale: 2	Cloud Cover (%): 5 %	Temperature (°C): 11°C
Precipitation: None	Visibility: 100%	Finish @ 14:02
Remarks: — No Response — Can hear road also east side of property		

Symbols

Aerial Foragers		
Species	Tally	No.

Singing/calling bird
Simultaneous song/diff. birds
Pair together
Family group (incl. # of adults)
Obs. but not calling or singing
Known change in position.
Nest

Outside/Flythru	



Point Count Data Form

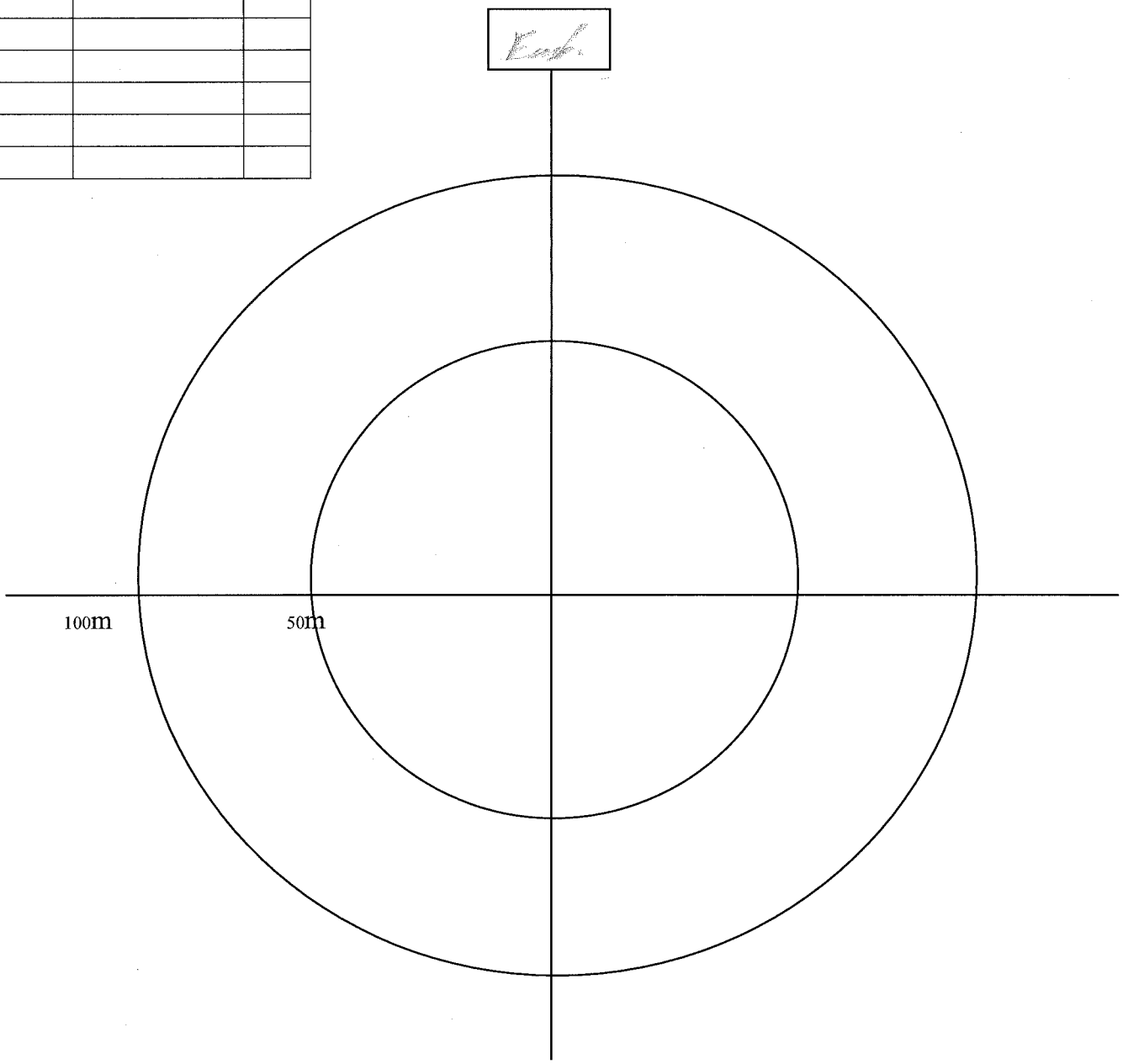
Observer: 2 Ottawa/k. Swan	Site: Bark's Point West	Date: 4 May 2011
Station ID: BPW Response 2	Visit #: 1	Start Time (HH:MM): 11:07
Beaufort Wind Scale: 2	Cloud Cover (%): 50	Temperature (°C): 11°C
Precipitation: none	Visibility: 100	Finish: 11:20
Remarks: - No Response		

Symbols

Aerial Foragers		
Species	Tally	No.

Singing/calling bird
Simultaneous song/diff. birds
Pair together
Family group (incl. # of adults)
Obs. but not calling or singing
Known change in position.
Nest

Outside/Flythru	



Point Count Data Form

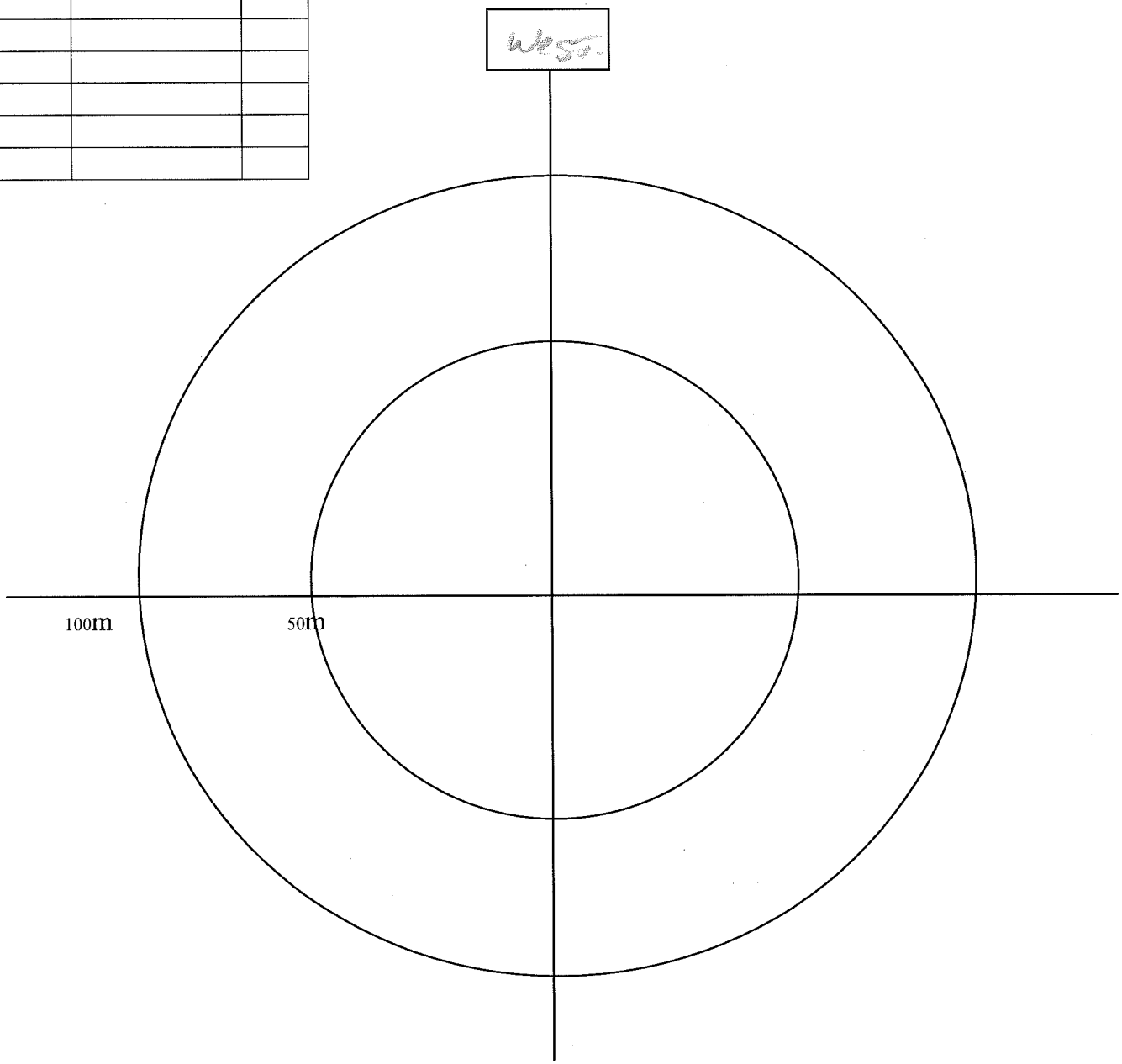
Observer: Z O'Kennon / L. Sowa	Site: Burk's Falls West	Date: 4 May 2021
Station ID: BFW - Report - 3	Visit #: 1	Start Time (HH:MM): 14:34
Beaufort Wind Scale: 1	Cloud Cover (%): 10%	Temperature (°C): 11°C
Precipitation: None	Visibility: 100%	Finish: 14:50
Remarks: - No Response		

Symbols

Singing/calling bird
Simultaneous song/diff. birds
Pair together
Family group (incl. # of adults)
Obs. but not calling or singing
Known change in position.
Nest

Aerial Foragers		
Species	Tally	No.

Outside/Flythru	



Point Count Data Form

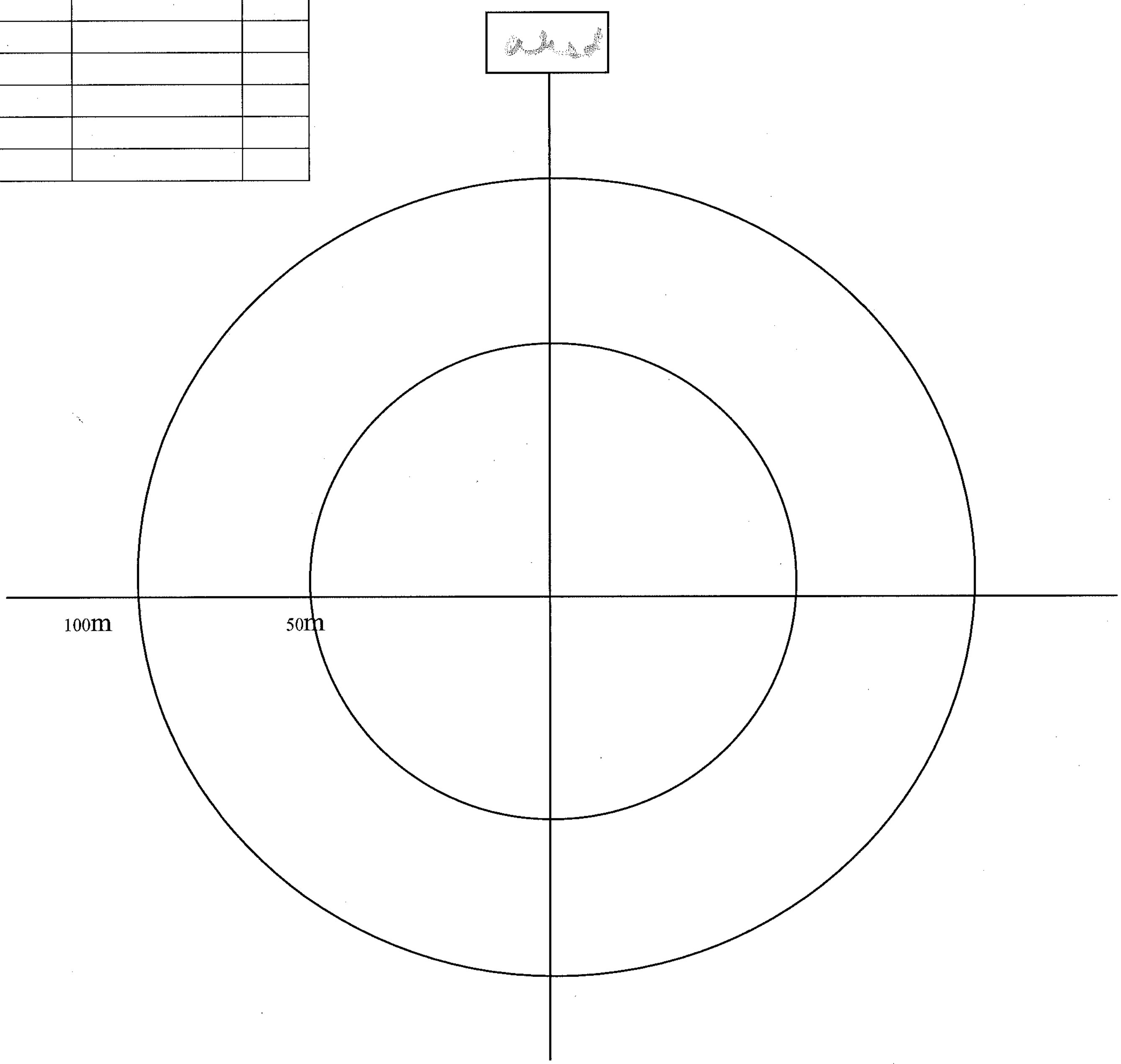
Observer: L. Snook / Z. O'Kralla	Site: Burke's Farm West	Date: 4 May 2011
Station ID: BFW Raptor 4	Visit #:	Start Time (HH:MM): 14:53
Beaufort Wind Scale: 2	Cloud Cover (%): 30%	Temperature (°C): 11 °C
Precipitation: None	Visibility: 100%	Finish @ 15:11
Remarks: — No Response		

Symbols

Aerial Foragers		
Species	Tally	No.

Singing/calling bird
Simultaneous song/diff. birds
Pair together
Family group (incl. # of adults)
Obs. but not calling or singing
Known change in position.
Nest

Outside/Flythru	



Point Count Data Form

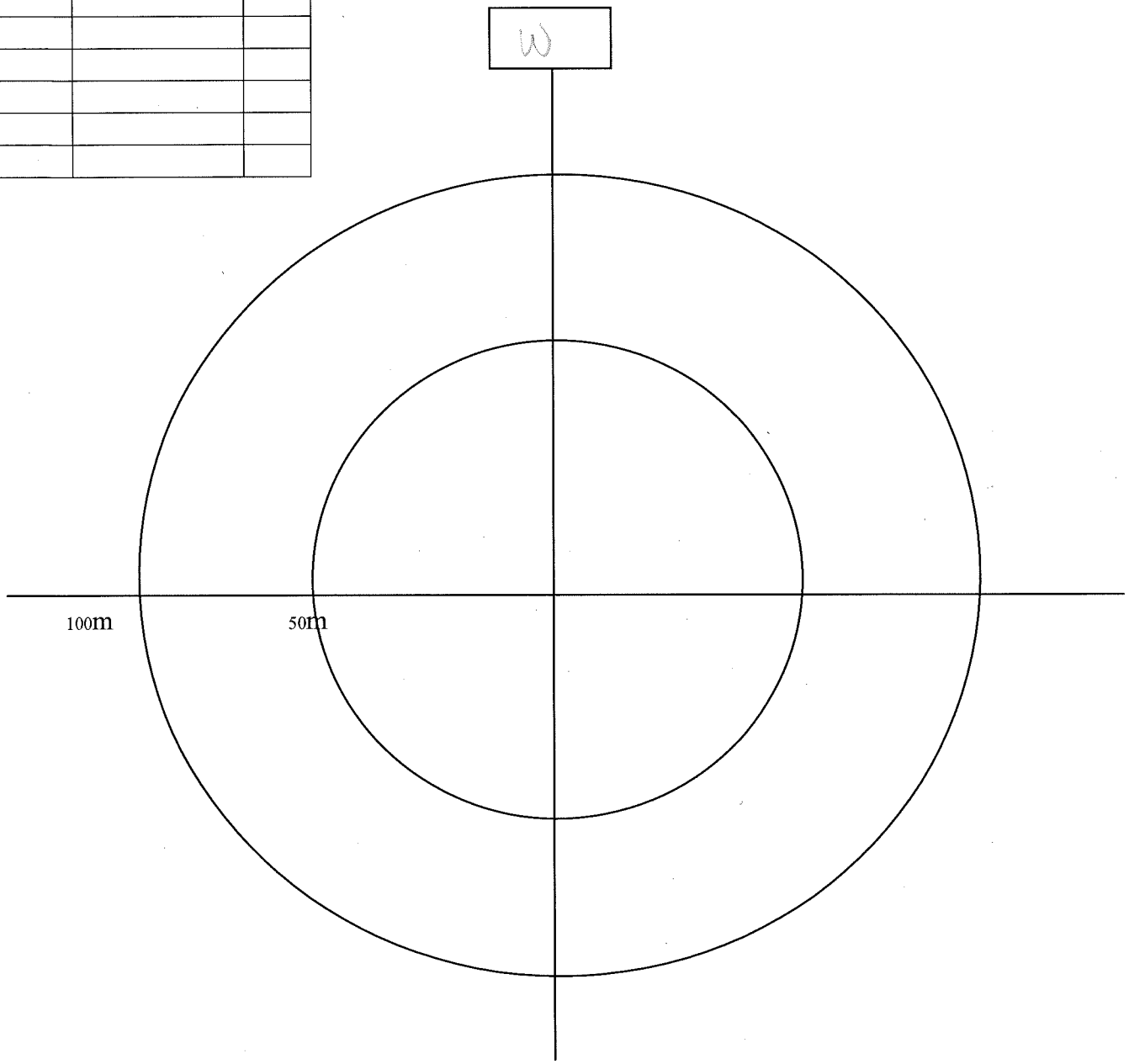
Observer: Lou Sorkin/Zac O'Keefe	Site: Rocks Falls West	Date: May 3/11
Station ID: BFW-OWL1 (Zac's GPS)	Visit #: 10%	Start Time (HH:MM): 9:40pm
Beaufort Wind Scale: 0	Cloud Cover (%): 1	Temperature (°C): 6°C
Precipitation: NONE	Visibility:	
Remarks: No Responses		

Symbols

Aerial Foragers		
Species	Tally	No.

Singing/calling bird
Simultaneous song/diff. birds
Pair together
Family group (incl. # of adults)
Obs. but not calling or singing
Known change in position.
Nest

Outside/Flythru	



3 May 2011 - Burk's Falls West
- Temp 7°C @ 20:01
Overcast - light rain on and off

- Stick nest located @ the east side of property in ~~wet~~ Back way GPS point - BurksW Stick 1
Photo's taken on Lewis camera
@ 20:30 - Nest in Poplar tree
- No sign of any species around.

- Photo's of wet area by river looks like someone camping area
Could be vernal pool - South [illegible]
pool area GPS point - Vern-Pool 1
- lots of peepers going
- Amphibian Survey done from same GPS point

- Amphibian Survey # 2 @ 21:03
- peepers
GPS point - BFW Frog 2

- Amphibian Survey @ 21:15
- GPS point - BFW Frog 3

GPS point - BFW Owl 1
@ 21:40
- Sky clearing very calm and [illegible]
- Owl call back same species
[illegible] as ESO site (Eco region 6).
- No Response

- GPS point BFW Frog 4
location off of road where peepers where singing - Amphibian Survey

- Finish @ site @ 22:17
Temp 0°C - Clear sky
Wind 0

4 May 2011 - Burk's Falls West
Temp 7°C - Wind 2.
Sunny Cloud cover 5%

- GPS point BFW Woodduck 1
is a cavity tree - flushed female wood duck out of it when walked by
Feathers are at base of [illegible]
- Photo's 1-3 taken

"Rite in the Rain"

GPS point 179 - is the start of wetland boundary
photo # 3 also taken
1

GPS point 180 - on wetland boundary line
photo # 4 taken.

GPS point 181 - point on wetland
photo # 5 taken

GPS point 182 - point on wetland boundary
photo # 6 taken

GPS point 183 - point on wetland Boundary
photo # 7 taken

- line of wetland seem to be
fairly distinct hills to North Slopping
down and the levelly off
- Vegetation still distinct more from
green grass still present in wetland area.

- GPS point 184 - extention of wetland
between 2 hilled areas coneted to wetland
on South end. photo # 8 taken

GPS point 185 - hilly valley way holding
water connected to wetland
photo # 9 taken

GPS point 186 - in valley area that holds
water

GPS point 187 - point in wetland area
in valley section
- Some flow of the water
- photo # 10 taken

GPS point 188 - wet area
photo # 11

GPS point 189 - Start of wet
area that runs down to wetland
photo # 12, 13 taken

GPS point 190 along water course area
on west side

GPS point 191 - along water/wet area
between hill sides

GPS point 192 - along west side

"Rain in the Rain"

GPS point 193 - where corrected back to large wetland area

GPS point 194 - on wetland boundary - photo # 14 taken

- GPS point 195 - another point where water course is coming between hilled areas to wetland
photo # 15 taken

- GPS point 196 - photo of old cattail wetland area

GPS point 197 - along east side of water course between hill sides

GPS point 198 - End of pretty grass at top of hill

GPS point 199 - Along west side of wetland between hill sides

GPS point 200 - West side of where wet/water course meets wetland again

GPS point - 201 - Wetland edge photo # 16 taken

- GPS point - 202 - Small culvert for water to flow down hill to wetland
photo # 17, 18 taken
- Some flow on north side of culvert

GPS point 203 - Wet area between to hilly areas west boarder of property

GPS point 204 - from top of hills water flows Carly well

GPS point 205 - Top of water course going thru hills and heading to wetland
Spring, water seepage area
- 3 photos on my BlackBerry

GPS point 206 - along west side of water course

GPS point 207 west side of water course

GPS point 208 - west side of water course

"Rain in the Rain"

GPS point 207 - where water diversion needs back with large wetland

GPS point 210 - wetland boundary

GPS point 211 End of wetland boundary and where property fence meets

- Seems to follow the Mapping fairly close except for the 5 water diversion/runoff areas that flow to manmade lined areas to wetland.
- track Saved as Bfw Wetland 1.
@ 12:53

- Start Snake Survey @ 12:47
Very Sunny - Temp 116
Wind SE 5% Cloud cover

Start at SE Corner of Property.
GPS point 212.

GPS point - Bfwsnake Pt 1 - Photo of open sand area. Some sand with top soil & rocks along fence row
3 photos taken on Black Berry (#'s 7,8,9)

NO GPS point - End point of Transect 1
photo of pond taken - east property
photo # 7 on Black Berry. Corner of property NE

- Did a little search of wooded area in North East Corner

GPS point - 213 Start of Transect #2

GPS points Bfwsnake Pt 2.
- Photos of Barren soils from top
3 photos taken on Black Berry - #'s (8,9,10)

GPS point 214 End of transect #2

GPS point 215 - Start of Transect #3

GPS point 216 - End of Transect #3

GPS point 217 - Start of Transect #4

GPS point 218 - End of Transect #4

Raptor Survey @ 13:48
GPS Point Bfw-Raptor-1
- No Response

Letter in the Rain

Raptor Survey @ 12:37
GPS point BCW - Raptor 2
- No Response
- GPS pt Didn't save the location is near the shelterbelt and there is a roadway to the south of the area where ML point was but is the location

- Raptor Survey @ 14:34
GPS point BCW - Raptor - 3
- No Response

- Raptor Survey @ 14:53
GPS point BCW Raptor 4
- No Response

Finish on Site @ 15:21
Temp 11°C - Sunny
- Cloud cover 40%
- Wind 2

Wetland Point Count Data Form

Observer: SKM/CC	Site: BFL	Date: May 31 '11
Station ID: [redacted] PT 1	Visit #: 2	Start Time (HH:MM): 09:16
Beaufort Wind Scale: 0	Cloud Cover (%): 0	Temperature (°C): 28
Precipitation: —	Visibility: clear	
Remarks:		

Aerial Foragers		
Species	Tally	No.

Symbols

Singing/calling bird RWBL

Simultaneous song/diff. birds RWBL — RWBL

Pair together SWSP

Family group (incl. # of adults) CAGO

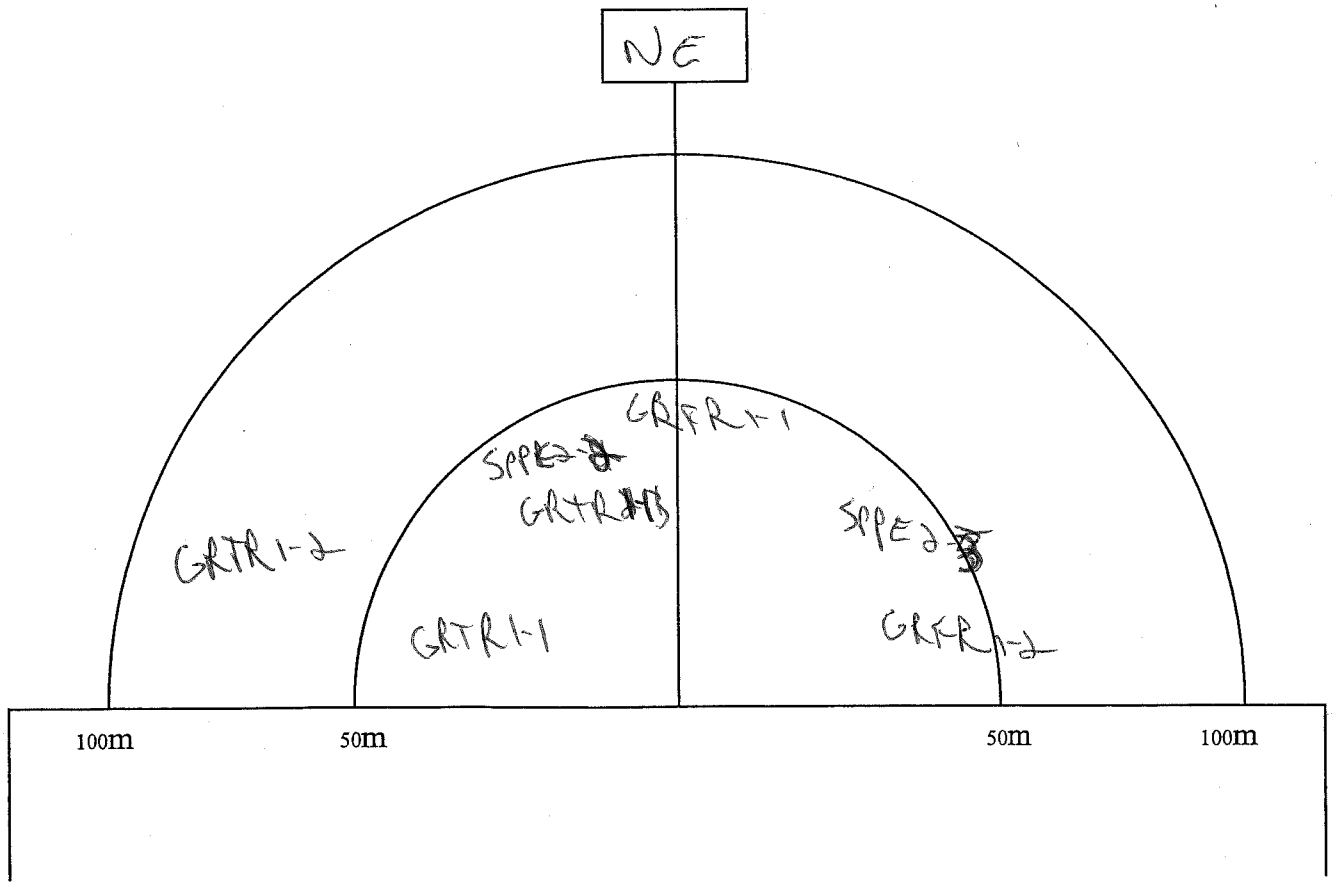
Obs. but not calling or singing GTBH

Known change in position. RWBL → RWBL

Nest ☆ TRES

Outside/Flythru	

1 woodcocks in field new joint



Wetland Point Count Data Form

Observer: SKM/CC	Site: BFW	Date: May 31 / 11
Station ID: PT 2	Visit #: 2	Start Time (HH:MM): 21:26
Beaufort Wind Scale: 0	Cloud Cover (%): 0	Temperature (°C): 26
Precipitation: —	Visibility: clear	
Remarks:		

Symbols

Singing/calling bird RWBL

Simultaneous song/diff. birds RWBL — RWBL

Pair together SWSP

Family group (incl. # of adults) CAGO

Obs. but not calling or singing GTBH

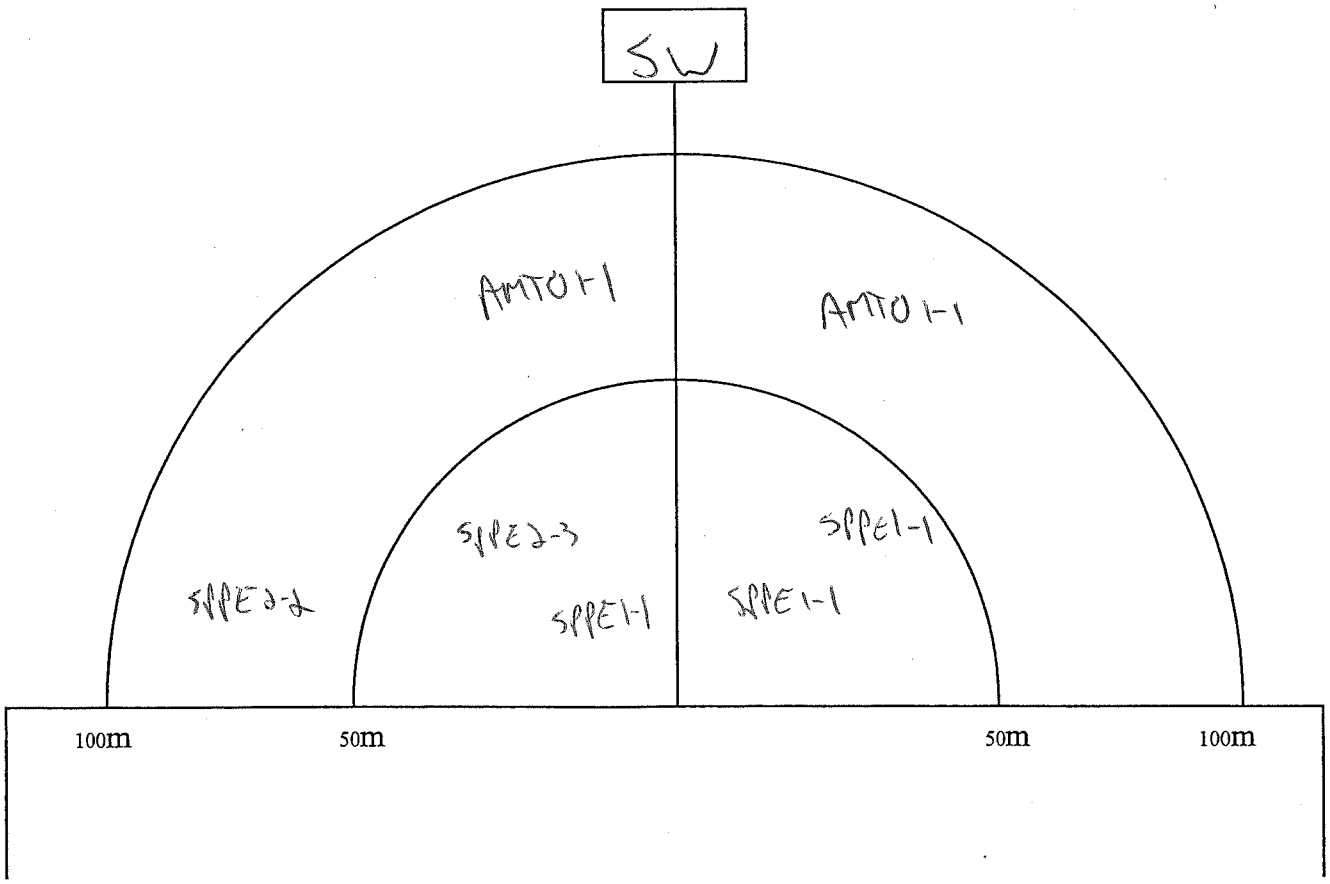
Known change in position. RWBL → RWBL

Nest TREES

Aerial Foragers		
Species	Tally	No.

Outside/Flythru	

AMTO 3



Wetland Point Count Data Form

Observer: SKM/CC	Site: BFL	Date: May 31/11
Station ID: PT 3	Visit #: 2	Start Time (HH:MM): 21:19
Beaufort Wind Scale: 0	Cloud Cover (%): 0	Temperature (°C): 25
Precipitation: —	Visibility: clear	
Remarks:		

Aerial Foragers		
Species	Tally	No.

Symbols

Singing/calling bird RWBL

Simultaneous song/diff. birds RWBL RWBL

Pair together SWSP

Family group (incl. # of adults) CAGO

Obs. but not calling or singing GTBH

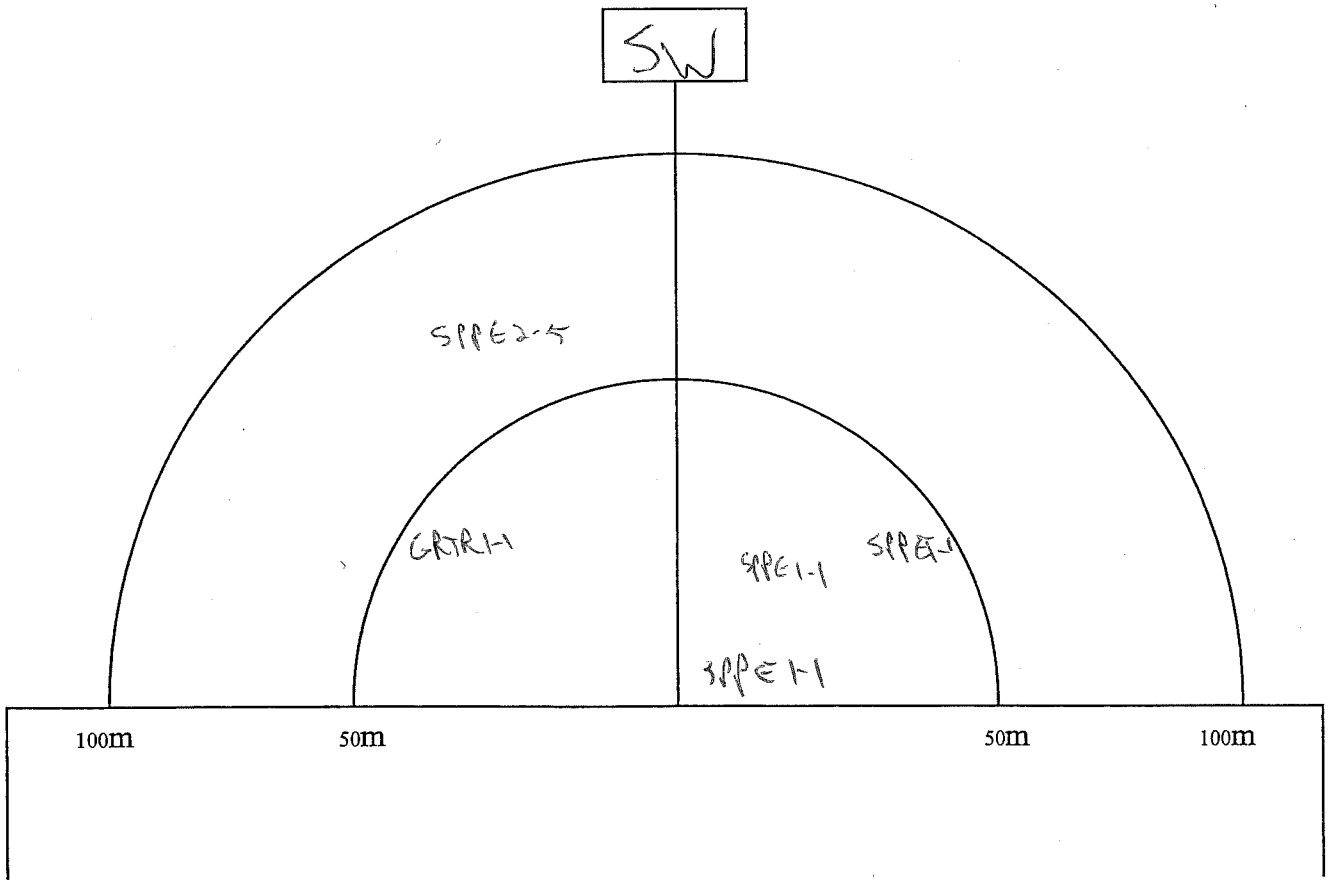
Known change in position. RWBL RWBL

Nest TREE

Outside/Flythru	

NOLF

VEER



Wetland Point Count Data Form

Observer: SKM/CC	Site:	Date:
Station ID: PT 4	Visit #: 2	Start Time (HH:MM): 21:57
Beaufort Wind Scale: B1	Cloud Cover (%):	Temperature (°C):
Precipitation:	Visibility:	
Remarks:		

Symbols

Singing/calling bird

Simultaneous song/diff. birds

Pair together

Family group (incl. # of adults)

Obs. but not calling or singing

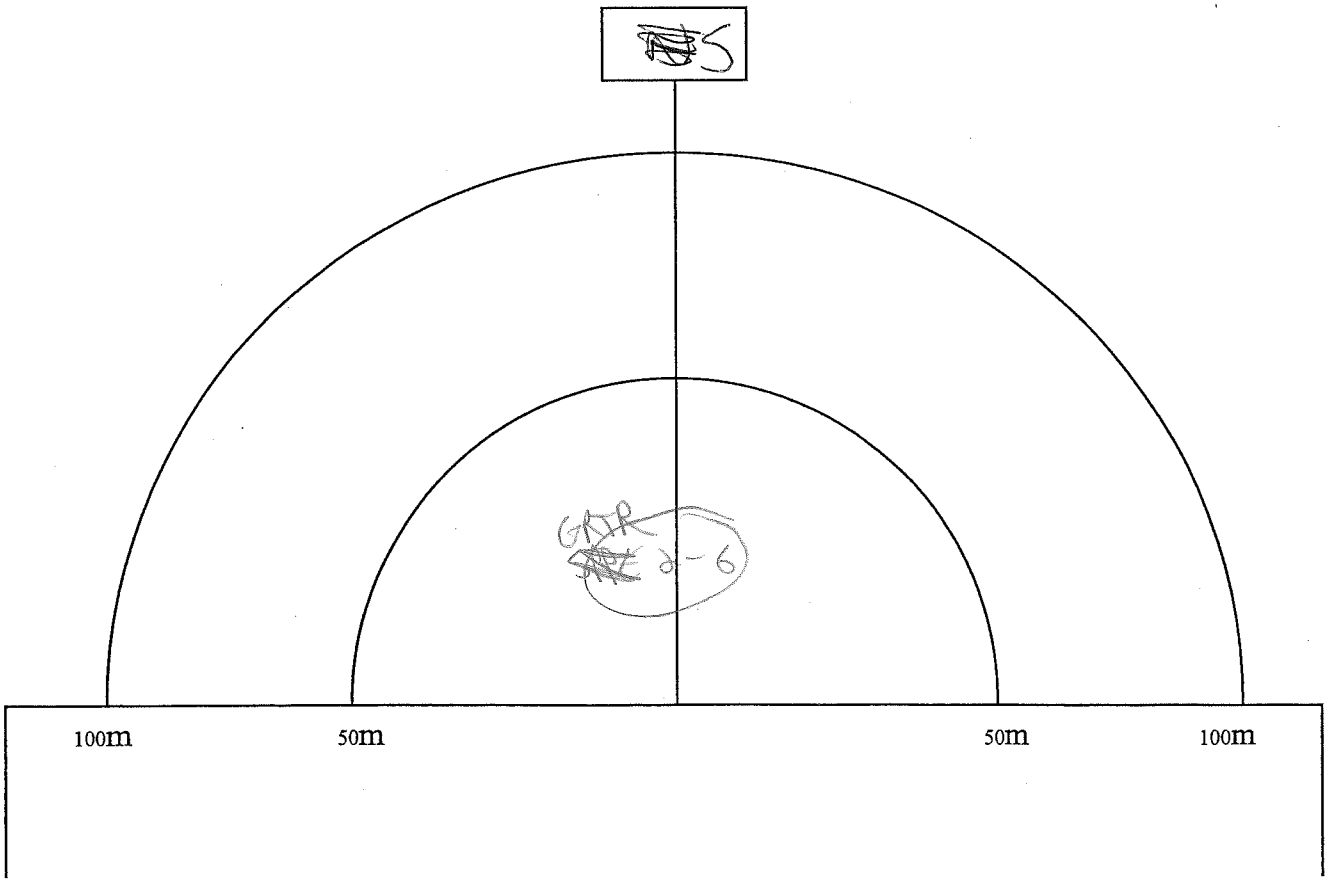
Known change in position.

Nest

Aerial Foragers		
Species	Tally	No.

Outside/Flythru	

Amato se



Point Count Data Form

Observer: SKM	Site: BFV	Date: June 1 / 11
Station ID: PC01	Visit #: 1	Start Time (HH:MM): 05 54
Beaufort Wind Scale: B2	Cloud Cover (%): 0	Temperature (°C): 23
Precipitation: —	Visibility: clear	
Remarks: field; small pond near road; residences across street		

Aerial Foragers	
Species	Tally

Symbols

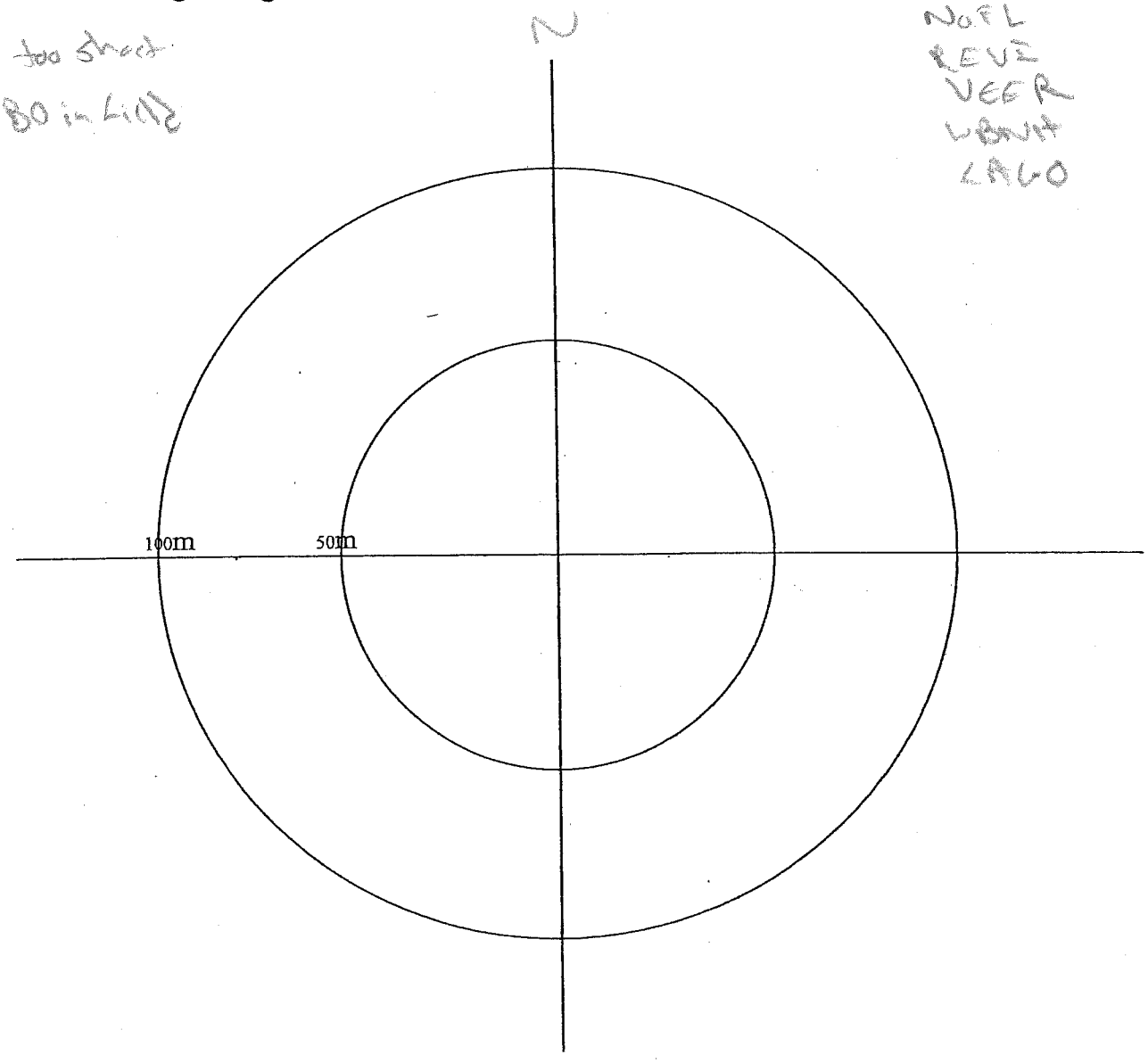
- RWBL — Single bird, singing/calling
- RWBL + RWBL — Diff. birds of same sp.
- Pair together
- Family group
- Obs., but not calling/singing
- Known change in position

Height

1 - BTH
2 - close to TH
3 - V BS
4 - WABS

Outside/Flythru
OVEN
CHIS
AMRO
COYE
AMCR
BLJA
RBGR
SAVS
NOFL
REVI
VEER
WBNU
LALO

→ Grasses too short for BoBO in Fall



Point Count Data Form

Observer:	Site:	Date:
Station ID:	Visit #:	Start Time (HH:MM):
Beaufort Wind Scale:	Cloud Cover (%):	Temperature (°C):
Precipitation:	Visibility:	
Remarks:		

Aerial Foragers	
Species	Tally

Symbols

RWBL — Single bird, singing/calling

RWBL — RWBL — Diff. birds of same sp.

Pair together

Family group

Obs., but not calling/singing

Known change in position

Height

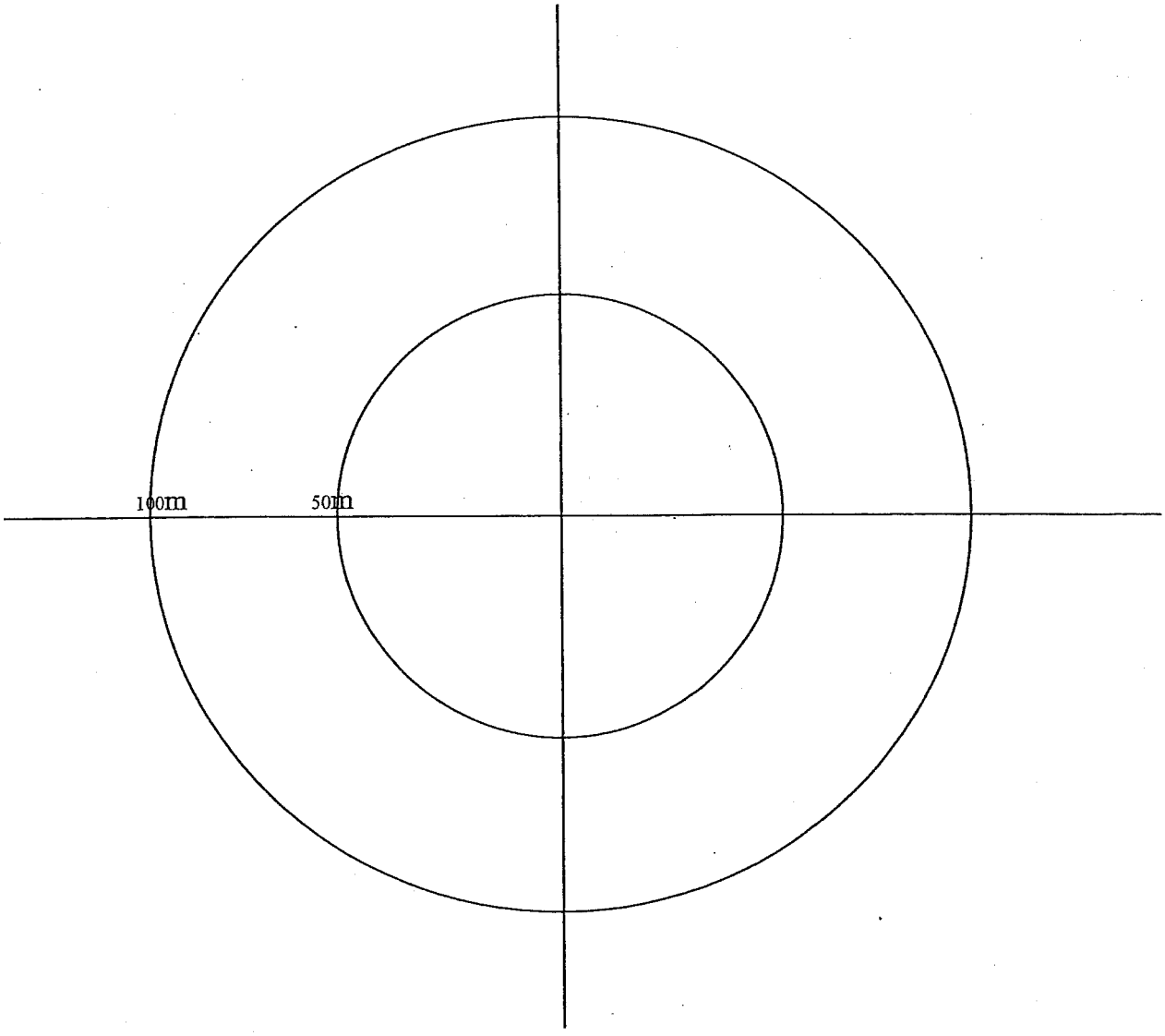
1 - BTH

2 - close to TH

3 - W BS

4 - WABS

Outside/Flythru



Point Count Data Form

Observer: Sam	Site: BFL	Date: June 1
Station ID: PC00	Visit #: 1	Start Time (HH:MM): 0618
Beaufort Wind Scale: 1 2 3	Cloud Cover (%): 0	Temperature (°C): 15
Precipitation: —	Visibility: clear	
Remarks: Open, low height scrub; shallow bedrock		

Aerial Foragers	
Species	Tally

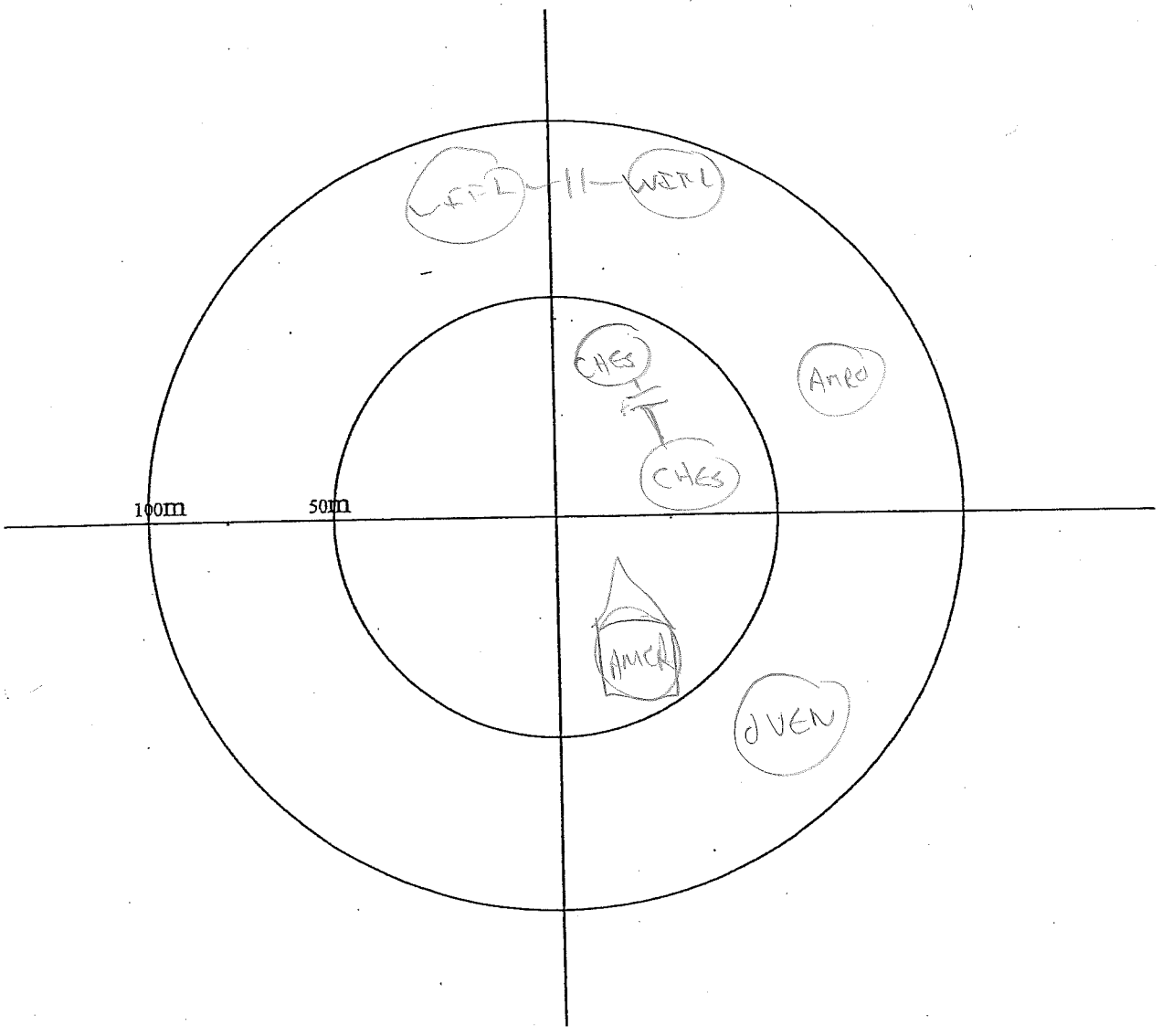
Symbols

- RWBL — Single bird, singing/calling
- RWBL — RWBL — Diff birds of same sp.
- Pair together
- Family group
- Obs., but not calling/singing
- Known change in position

Height

1 - BTH
2 - close to TH
3 - U BS
4 - WABS

Outside/Flythru
AMCR
COYE
WORM



Point Count Data Form

Observer:	Site:	Date: June 1/11
Station ID: PC03	Visit #: 1	Start Time (HH:MM): 06:40
Beaufort Wind Scale: 1-2	Cloud Cover (%): —	Temperature (°C): 21
Precipitation: —	Visibility: clear	
Remarks: grassland; scattered shrubs; minor traffic noise Ca 17		

Aerial Foragers	
Species	Tally

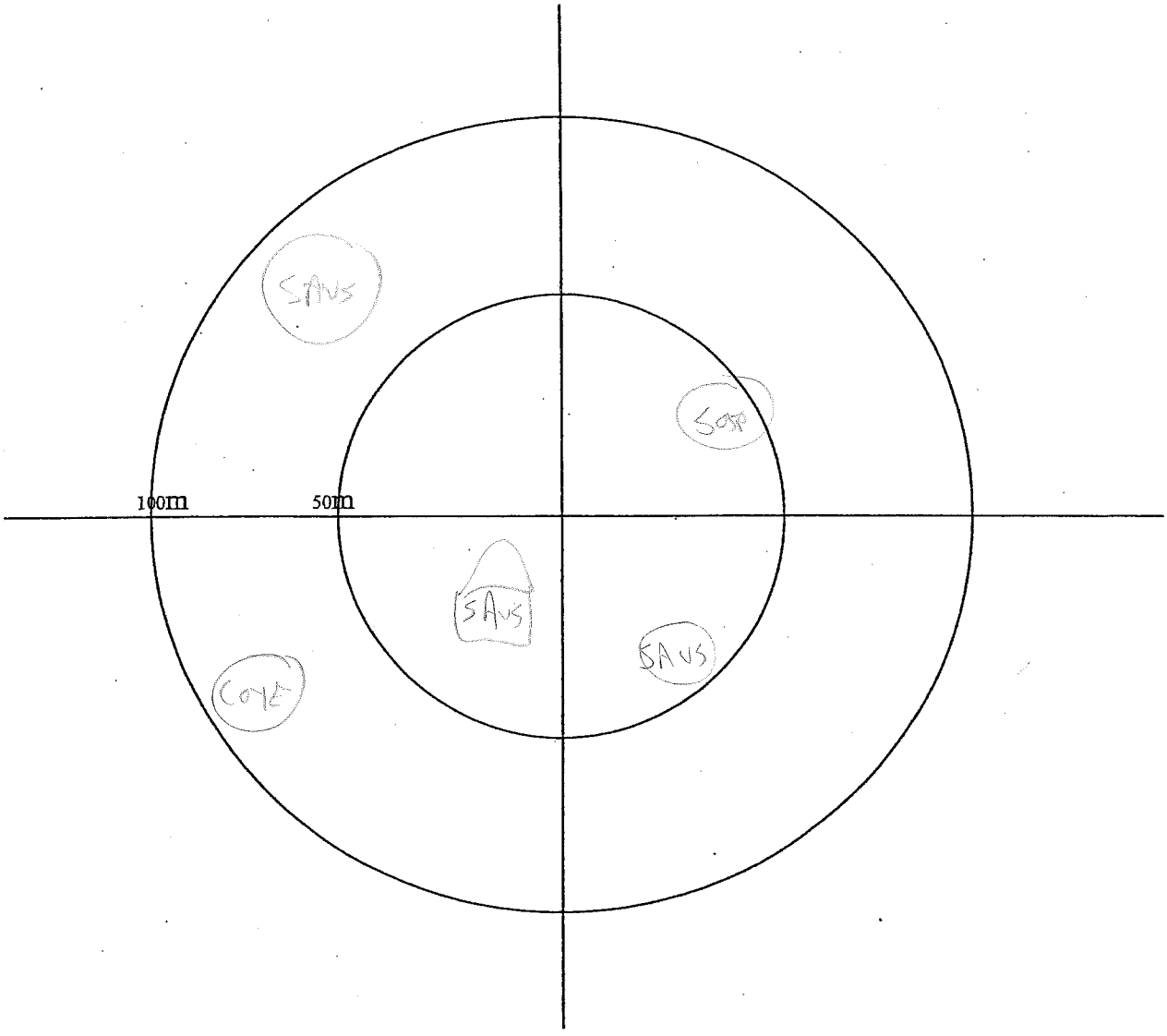
Symbols

- RWBL — Single bird, singing/calling
- RWBL — RWBL — Diff. birds of same sp.
- Pair together
- Family group
- Obs., but not calling/singing
- O—>O known change in position

Height

1- BTH
2- close to TH
3- V BS
4- WABS

Outside/Flythru
AmCR
BLJA
CORA
EAME



Point Count Data Form

Observer: SAM	Site: BTL	Date: June 1/11
Station ID: PC04	Visit #: 1	Start Time (HH:MM): 0707
Beaufort Wind Scale: 03	Cloud Cover (%): 0	Temperature (°C): 21
Precipitation: —	Visibility: clear	
Remarks: open poplar shrub edge		

Aerial Foragers	
Species	Tally

Symbols

RWBL — Single bird, singing/calling

RWBL + RWBL — Diff birds of same sp.

Pair together

Family group

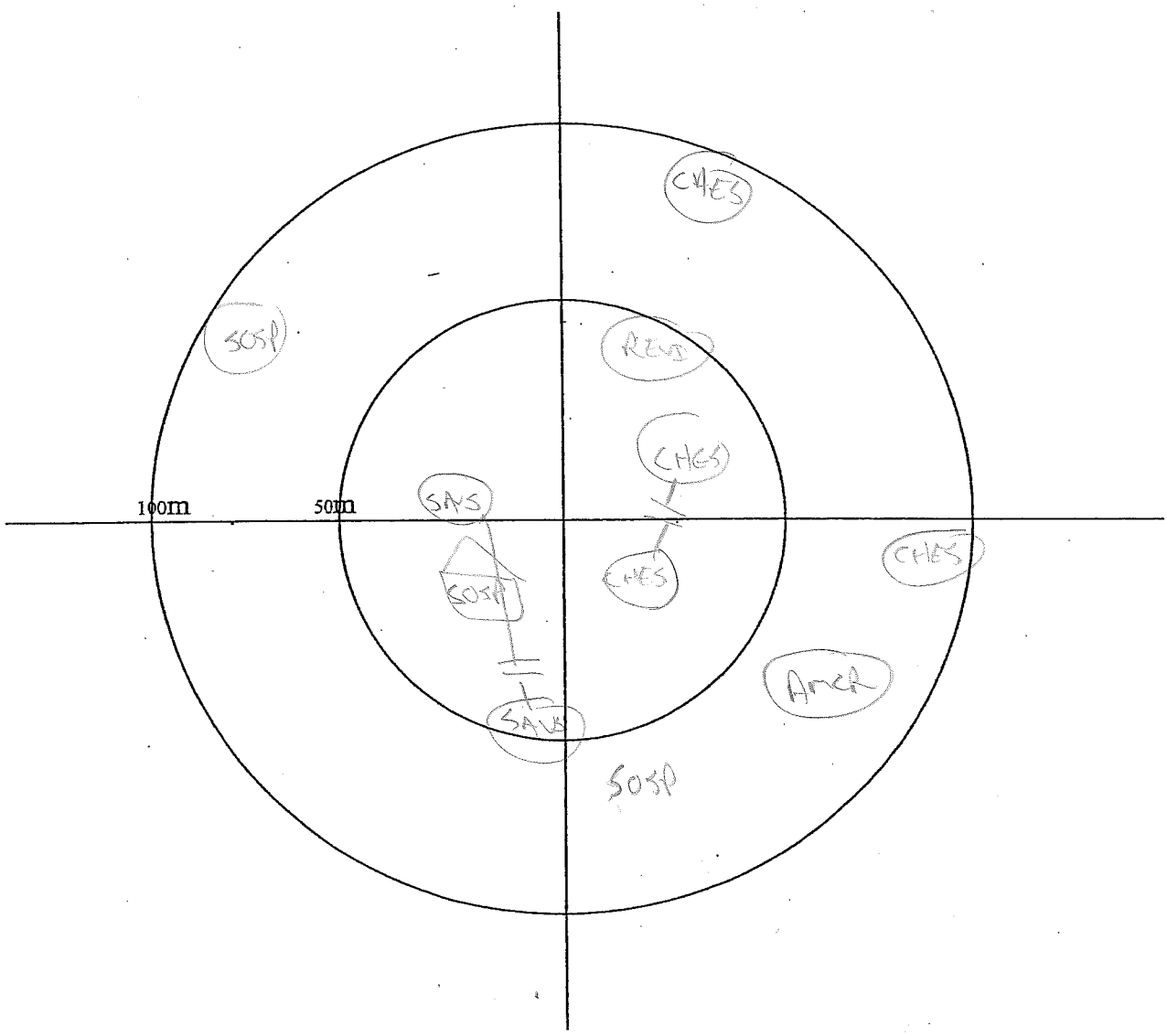
Obs., but not calling/singing

Known change in position

Height

1 - BTH
2 - close to TH
3 - UBS
4 - WABS

Outside/Flythru
SAVS
EAPE
AMCR
MOOO



Point Count Data Form

Observer:	Site: BTH	Date: Jun 1 11
Station ID:	Visit #: 1	Start Time (HH:MM): 0725
Beaufort Wind Scale:	Cloud Cover (%): 0	Temperature (°C):
Precipitation:	Visibility:	
Remarks:		

Aerial Foragers	
Species	Tally

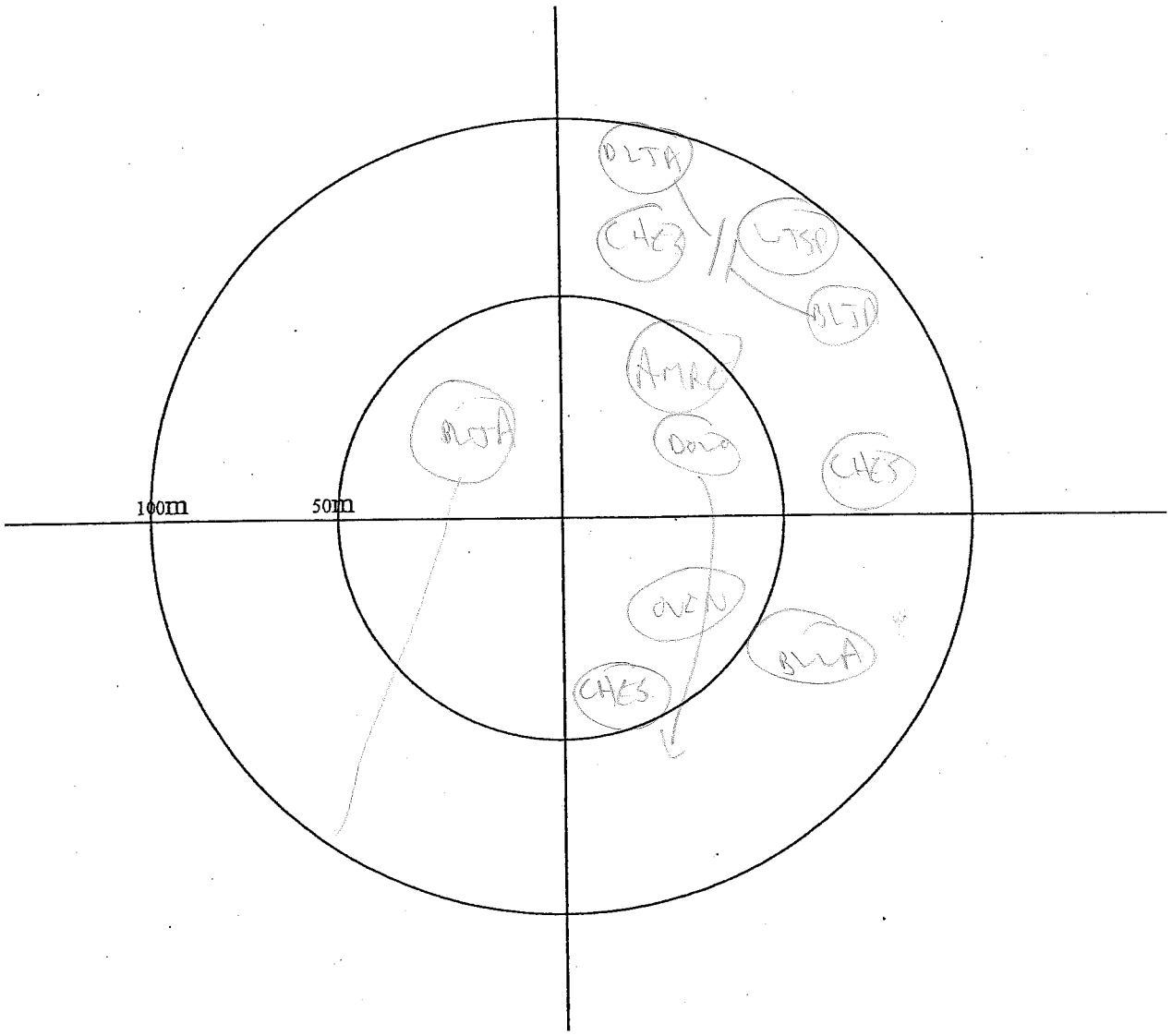
Symbols

- RWBL — Single bird, singing/calling
- RWBL → ← RWBL — Diff. birds of same sp.
- Pair together
- Family group
- Obs., but not calling/singing
- Known change in position

Height

1 - BTH
2 - Close to TH
3 - V BS
4 - WA BS

Outside/Flythru
BLJA



Point Count Data Form

Observer: Shan	Site: BAL	Date: June 1
Station ID: PC06	Visit #: 1	Start Time (HH:MM): 07:45
Beaufort Wind Scale: B3	Cloud Cover (%): 0	Temperature (°C): 23
Precipitation: —	Visibility: —	
Remarks: edge of shady + light + flat		

Aerial Foragers	
Species	Tally

Symbols

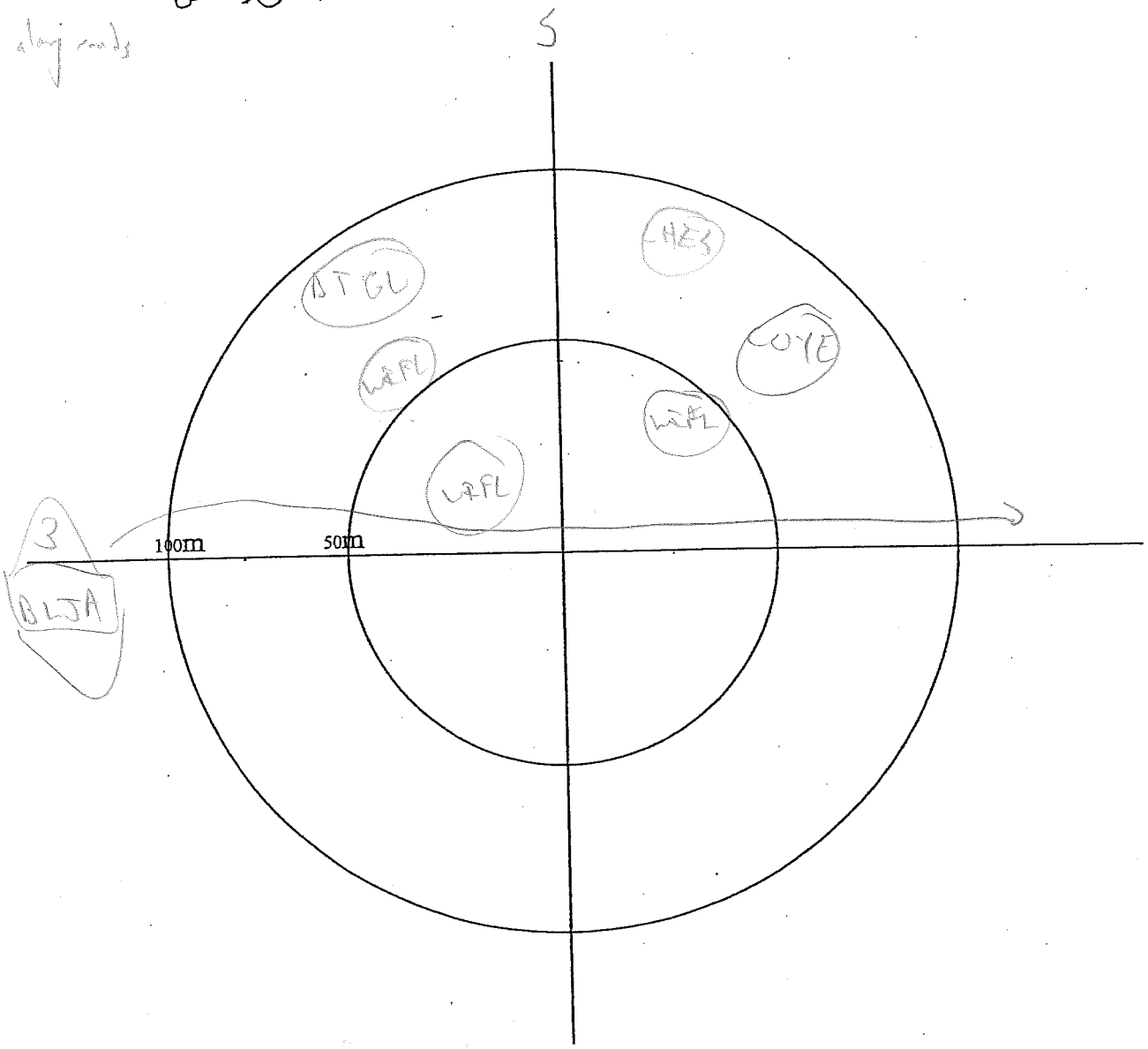
- RWBL — Single bird, singing/calling
- RWBL + RWBL — Diff. birds of same sp.
- Pair together
- Family group
- Obs., but not calling/singing
- Known change in position

Height

1 - BTH
2 - close to TH
3 - V BS
4 - WABS

Outside/Flythru
AMGR-4
AMRO
NOFL
TRVU - soaring above C.T.
BT

deer tracks along roads
skunk



Point Count Data Form

Observer: SKM	Site: BPC	Date: June 1 /11
Station ID: PC 07	Visit #: 1	Start Time (HH:MM): 08:10
Beaufort Wind Scale: 3	Cloud Cover (%): 0	Temperature (°C): 23
Precipitation:	Visibility: clear	
Remarks:		

Aerial Foragers	
Species	Tally

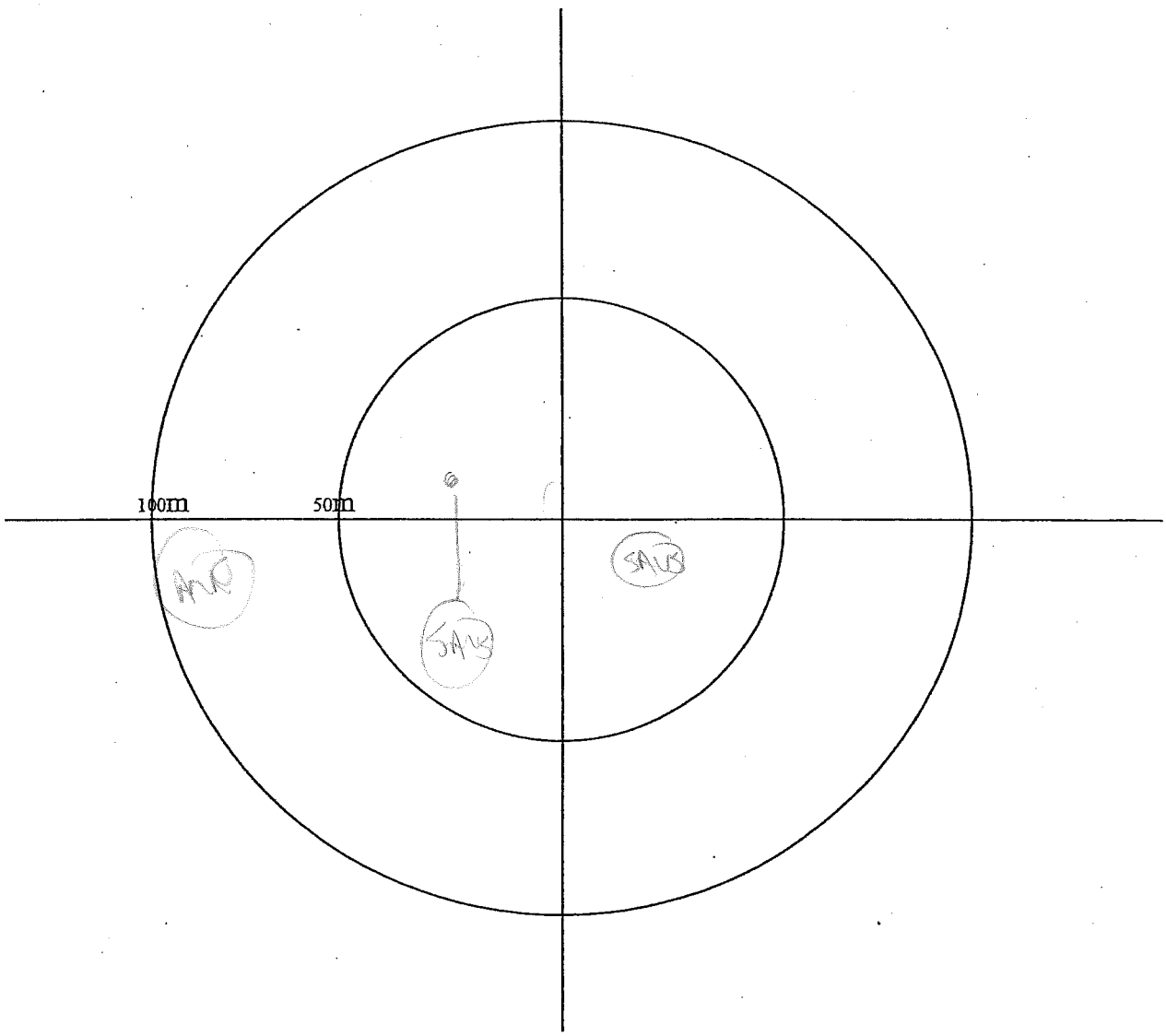
Symbols

- RWBL — Single bird, singing/calling
- RWBL + RWBL — Diff. birds of same sp.
- Pair together
- Family group
- Obs., but not calling/singing
- Known change in position

Height

1 - BTH
2 - close to TH
3 - W BS
4 - WABS

Outside/Flythru
AMCR
UBPL
CORA 11



GPS-41 - FOC — Closest ECC is FOC4

ELC COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: West of Hydro Line		POLYGON:	
SURVEYOR(S):	DATE: June 1	TIME: start / finish	
UTMZ:	UTME:	UTMN:	

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
G TERRESTRIAL G WETLAND G AQUATIC	G ORGANIC G MINERAL SOIL G PARENT MIN. G ACIDIC BEDRK. G BASIC BEDRK. G CARB. BEDRK.	G LACUSTRINE G RIVERINE G BOTTOMLAND G TERRACE G VALLEY SLOPE G TABLELAND G ROLL. UPLAND G CLIFF G TALUS G CREVICE / CAVE G ALVAR G ROCKLAND G BEACH / BAR G SAND DUNE G BLUFF	G NATURAL G CULTURAL	G PLANKTON G SUBMERGED G FLOATING-LVD. G GRAMINOID G FORB G LICHEN G BRYOPHYTE G DECIDUOUS G CONIFEROUS G MIXED	G LAKE G POND G RIVER G STREAM G MARSH G SWAMP G FEN G BOG G BARREN G MEADOW G PRAIRIE G THICKET G SAVANNAH G WOODLAND G FOREST G PLANTATION

SITE	COVER
G OPEN WATER G SHALLOW WATER G SURFICIAL DEP. G BEDROCK	G OPEN G SHRUB G TREED

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	1	4	Balsam Fir > Trembling Aspen White Spruce
2	SUB-CANOPY	3	3	Balsam Fir
3	UNDERSTOREY	—	0	None
4	GRD. LAYER	7	1	Trillium, Sphagnum Moss

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:	BA:

SIZE CLASS ANALYSIS:	A	< 10	A	10 - 24	D	25 - 50	N	> 50
STANDING SNAGS:	N	< 10	R	10 - 24	R	25 - 50	N	> 50
DEADFALL / LOGS:	O	< 10	O	10 - 24	O	25 - 50	N	> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG	X	MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE: Fresh	DEPTH OF ORGANICS: 3cm		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK: Unknown		(cm)

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:		
COMMUNITY SERIES:		
ECOSITE:		
VEGETATION TYPE:		
INCLUSION		
COMPLEX		

Notes:

ELC STAND CHARACTERISTICS

SITE:	
POLYGON:	
DATE:	
SURVEYOR(S):	

TREE TALLY BY SPECIES:

PRISM FACTOR

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AVG
Balsam Fir	18						
Trembling As	3						
White Spr	1						
TOTAL							100
BASAL AREA (BA)							
DEAD							

STAND COMPOSITION:

COMMUNITY PROFILE DIAGRAM

Notes:

GDS 4S FODS-4

ELC — COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: Hardwood		POLYGON:	
SURVEYOR(S): Caleb Coughlin	DATE: June 17th	TIME: start / finish	
UTMZ:	UTME:	UTMN:	

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
G TERRESTRIAL	G ORGANIC	G LACUSTRINE	G NATURAL	G PLANKTON	G LAKE
G WETLAND	G MINERAL SOIL	G RIVERINE	G CULTURAL	G SUBMERGED	G POND
G AQUATIC	G PARENT MIN.	G BOTTOMLAND		G FLOATING-LVD.	G RIVER
	G ACIDIC BEDRK.	G TERRACE		G GRAMINOID	G STREAM
	G BASIC BEDRK.	G VALLEY SLOPE		G FORB	G MARSH
	G CARB. BEDRK.	G TABLELAND		G LICHEN	G SWAMP
		G ROLL. UPLAND		G BRYOPHYTE	G FEN
		G CLIFF		G DECIDUOUS	G BOG
		G TALUS		G CONIFEROUS	G BARREN
		G CREVICE / CAVE		G MIXED	G MEADOW
		G ALVAR			G PRAIRIE
		G ROCKLAND			G THICKET
		G BEACH / BAR			G SAVANNAH
		G SAND DUNE			G WOODLAND
		G BLUFF			G FOREST
					G PLANTATION

SITE	COVER
G OPEN WATER	G OPEN
G SHALLOW WATER	G SHRUB
G SURFICIAL DEP.	G TREED
G BEDROCK	

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	2	4	Hard Maple - Ironwood, Am Elm, Basswood
2	SUB-CANOPY	3	2	" " " "
3	UNDERSTOREY			
4	GRD. LAYER	7	1	Trillium, Hayscented, Sphagnum.

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION: BA:

SIZE CLASS ANALYSIS:	A	< 10	O	10 - 24	A	25 - 50	N	> 50
STANDING SNAGS:	O	< 10	N	10 - 24	N	25 - 50	N	> 50
DEADFALL / LOGS:	O	< 10	N	10 - 24	N	25 - 50	N	> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER	X	YOUNG		MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE: Dry	DEPTH OF ORGANICS: 10cm		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK: 5cm		(cm)

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:		
COMMUNITY SERIES:		
ECOSITE:		
VEGETATION TYPE:		
INCLUSION		
COMPLEX		

Notes:

ELC — STAND CHARACTERISTICS

SITE:	
POLYGON:	
DATE:	
SURVEYOR(S):	

TREE TALLY BY SPECIES:

~~PRISM FACTOR~~ [ ] 10 x 10 grid.

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AVG
Hard Mpl	19						
Ironwood	8						
Elm	2						
TOTAL							100
BASAL AREA (BA)							
DEAD							

STAND COMPOSITION:

COMMUNITY PROFILE DIAGRAM

Notes:

FOD 3-1

ELC — COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: Podex - Pond GPS 39		POLYGON:	
SURVEYOR(S): Caleb Coughlin	DATE: June 17	TIME: start / finish	
UTMZ:	UTME:	UTMN:	

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
G TERRESTRIAL	G ORGANIC	G LACUSTRINE	G NATURAL	G PLANKTON	G LAKE
G WETLAND	G MINERAL SOIL	G RIVERINE	G CULTURAL	G SUBMERGED	G POND
G AQUATIC	G PARENT MIN.	G BOTTOMLAND		G FLOATING-LVD.	G RIVER
	G ACIDIC BEDRK.	G TERRACE		G GRAMINOID	G STREAM
	G BASIC BEDRK.	G VALLEY SLOPE		G FORB	G MARSH
	G CARB. BEDRK.	G TABLELAND		G LICHEN	G SWAMP
		G ROLL. UPLAND		G BRYOPHYTE	G FEN
		G CLIFF		G DECIDUOUS	G BOG
		G TALUS		G CONIFEROUS	G BARREN
		G CREVICE / CAVE		G MIXED	G MEADOW
		G ALVAR			G PRAIRIE
		G ROCKLAND			G THICKET
		G BEACH / BAR			G SAVANNAH
		G SAND DUNE			G WOODLAND
		G BLUFF			G FOREST
					G PLANTATION

SITE	COVER
G OPEN WATER	G OPEN
G SHALLOW WATER	G SHRUB
G SURFICIAL DEP.	G TREED
G BEDROCK	

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	1	4	Trembling Aspen, Lodgepole Pine
2	SUB-CANOPY	2	3	Trembling Aspen, White spruce, Hawthorn
3	UNDERSTOREY	N	N	
4	GRD. LAYER	6	4	Grass, Golden Rod, Oxeye Daisy

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION: BA:

SIZE CLASS ANALYSIS:	O	< 10	A	10 - 24	O	25 - 50	N	> 50
STANDING SNAGS:	N	< 10	N	10 - 24	N	25 - 50	N	> 50
DEADFALL / LOGS:	R	< 10	R	10 - 24	N	25 - 50	N	> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER	✓	YOUNG		MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE: Sand	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE: Dry	DEPTH OF ORGANICS: 0.5 cm		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK: unk		(cm)

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:		
COMMUNITY SERIES:		
ECOSITE:		
VEGETATION TYPE:		
INCLUSION		
COMPLEX		

Notes:

ELC — STAND CHARACTERISTICS

SITE:	
POLYGON:	
DATE:	
SURVEYOR(S):	

TREE TALLY BY SPECIES:

PRISM FACTOR [ ] 10 x 10

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AVG
Trembling Aspen	11						
Lodgepole Pine	3						
Hawthorn	3						
White Spruce	4						
TOTAL							100
BASAL AREA (BA)							
DEAD							

STAND COMPOSITION:

COMMUNITY PROFILE DIAGRAM

Notes:

June 18

Burks Falls ALT

MAM-1 : GPS-032

Watercourse GPS-033
Culvert
Alder, wet low land

Edge of GPS-034
River,

Kingfisher

Edge of GPS-035
Narrow 10-30m wide community
starting at Hydrolus
Species -
Balsm Fir A
Black Cherry A
American Elm O
White Birch O

White Spruce - O

GPS - 036 - Wetland
Edge - Possible Finger
- MAM Than Alder
Thicket.

GPS - 037 - MAM
Joe Pye Weed
Sensitive Fern
Alder Red.
Willows - Sm Saplings
Black Ash In
Transition Area between
Alder Thicket and MAM
Green Sedge In Wetter
Areas.
Canada Blue Joint.
Birch

GPS - 038
Edge of offsite
Pond - 10m riparian
Area of Wetland.
Aspen Deadfall West Side

Transition into Trembling Aspen
Quickly - 2-3m Wetland

GPS - 39
ELC Point
Aspen Stand - Runs From
Wetland Edge - See Tracks
Along Field Edge and Rd,
Trailer Lot Not Part it is
manicured Lawn

GPS - 40 Intermittent
to 7 the Classed waterway
Disturbed with Weed + Seed.

GPS - 41 - ELC
West of Hydro line.

Balsam Fir Dominated.
Trembling Aspen - Oc.
White Spruce - R.
Trillium - Ground
Sphagnum - Ground.

S - 42 Spring - photo.
ross. 3m apart
course to Alder wetland.

- 43 - 11 Lacie White
- 40 2.5m tall

gs -

- 44 - Basswood Cavity
. Photo.

S - 45 PLC - Hardwood
st -
rvey - Hard Maple - 9-12m
- Ironwood - 10-15m
- American Elm - 15-20m
- Basswood - 5m
- Average dia of all 9cm

ock - 5cm
Disonics
Cover - Trillium's in this
as - No grass
5cm on Rocks.

ed - Dry

Wildlife Observation
Woodduck - 2
Mallards - 5
Kingfisher - 2
Moose - 1 - Heard walking along River. Investigated. Fresh Tracks
- Hare.
- Deer Beds - Near GPS 39
- Canada Geese.

- Cabin 5.
-

SD
Phone

60
Ht
8
Branches

Leland 23

Point Count Data Form

Observer: SKM	Site: PC08	Date: June 1/2011
Station ID: BTH	Visit #: 1	Start Time (HH:MM): 08:08
Beaufort Wind Scale: B3	Cloud Cover (%): 0	Temperature (°C): 23
Precipitation: —	Visibility: Clear	
Remarks:		

Aerial Foragers	
Species	Tally

Symbols

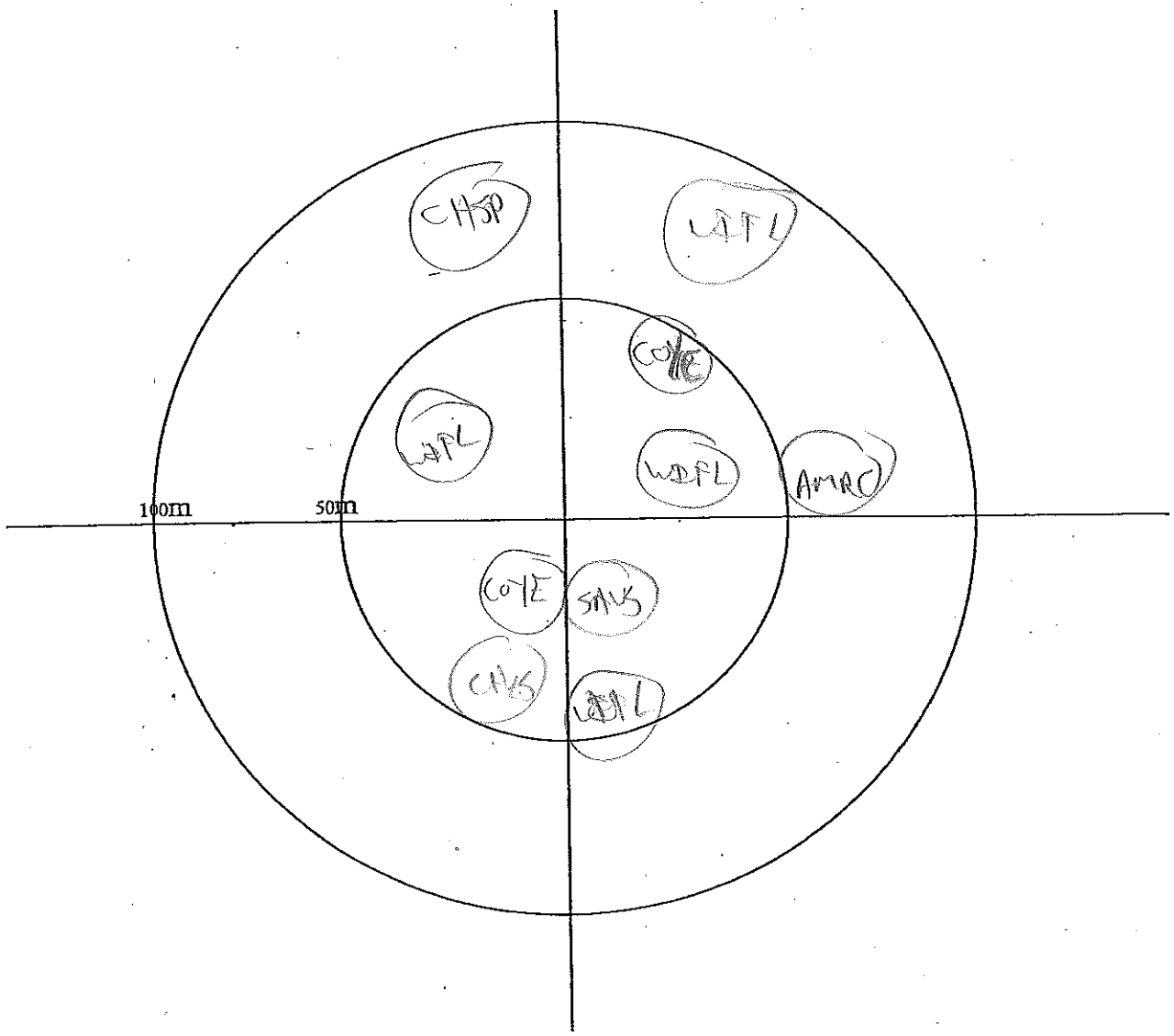
- RWBL — Single bird, singing/calling
- RWBL ← RWBL — 2 ff birds of same sp.
- Pair together
- Family group
- Obs, but not calling/singing
- Known change in position

Height

1 - BTH
2 - close to TH
3 - UBS
4 - WABS

Outside/Flythru
CAGO - flyby
WTSP

5



Point Count Data Form

Observer: SKV	Site: BTV	Date: Jun 1 '11
Station ID: P109	Visit #: 1	Start Time (HH:MM): 08:46
Beaufort Wind Scale: 1	Cloud Cover (%): 0	Temperature (°C): 13
Precipitation: —	Visibility: clear	
Remarks:		

Aerial Foragers	
Species	Tally

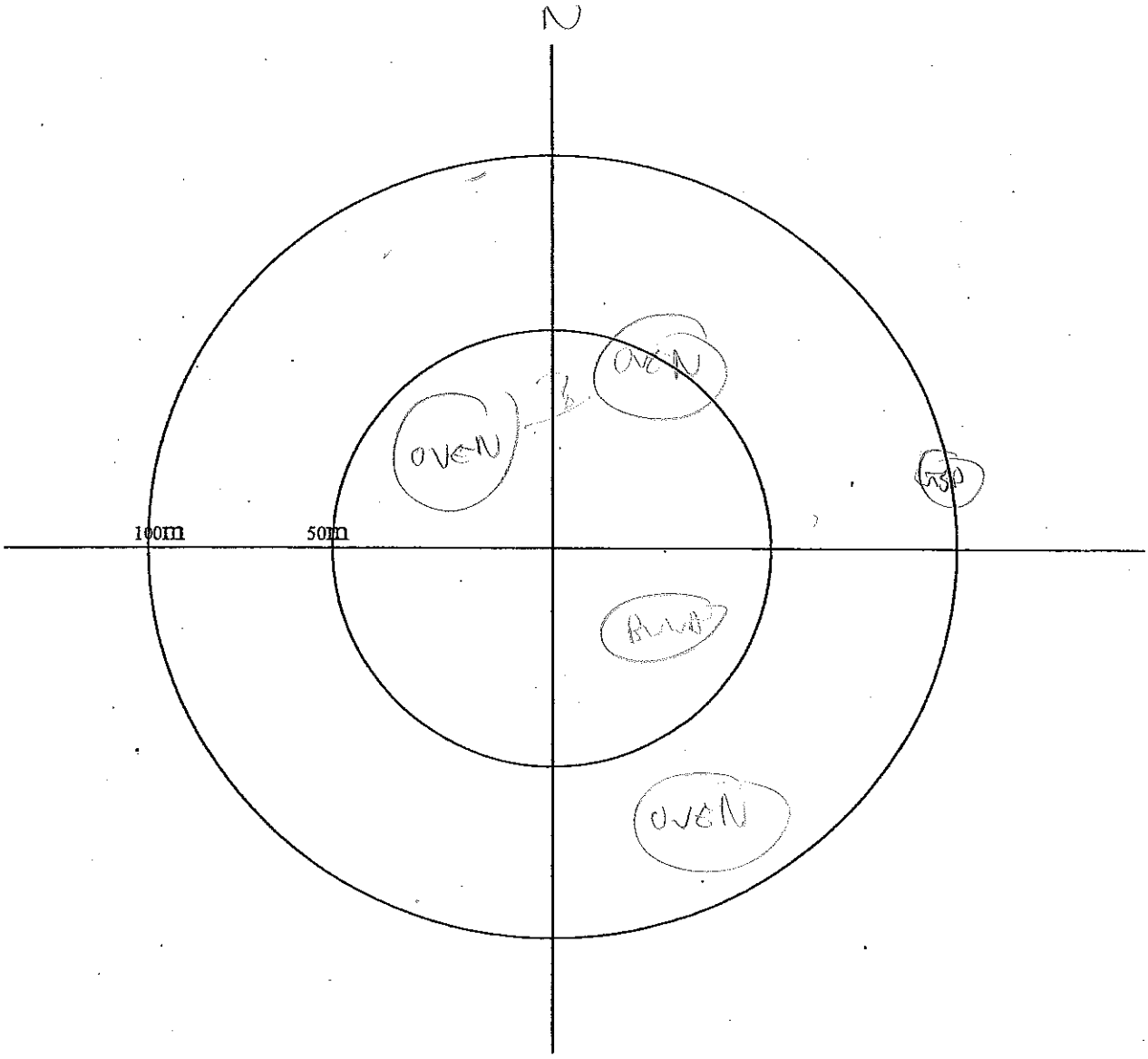
Symbols

- RWBL — Single bird, singing/calling
- RWBL ↔ RWBL — Diff birds of same sp.
- Pair together
- Family group
- Obs., but not calling/singing
- Known change in position

Height

1 - BTH
2 - close to TH
3 - UBS
4 - WABS

Outside/Flythru
OFP



New BTV

05:30 CC
BZ Skin
0% CC
~ 21°C

Note: No BOBO found
→ grasses too short
→ too many shrubs

SAVS - in little field
AMRO
COYE
AMCK
SOSP

AMRE
INBU
DOCEAU - sing
CANE - in Miss field
EWPT

Yellow breast, black bib gray chest → MOWA
wide S edge + wetland
^ Site

@ wetland

CCSP → calling + on shrubby area @ edge of wetland.

[illegible]
MALL-P
BLWA

HATCH™

HATCH™

BREEDING BIRD SURVEY POINT COUNT DATASHEET

Project: Burks Falls West - Chimney Swift Survey Project Number: _____

Point #: 1 Observer: Lori Snook Date (dd/mon/yy): 15/06/11 Time: 8:30pm

GPS file name: BFW-CHSW1 Datum: _____ Zone: _____

UTM: E: _____ N: _____

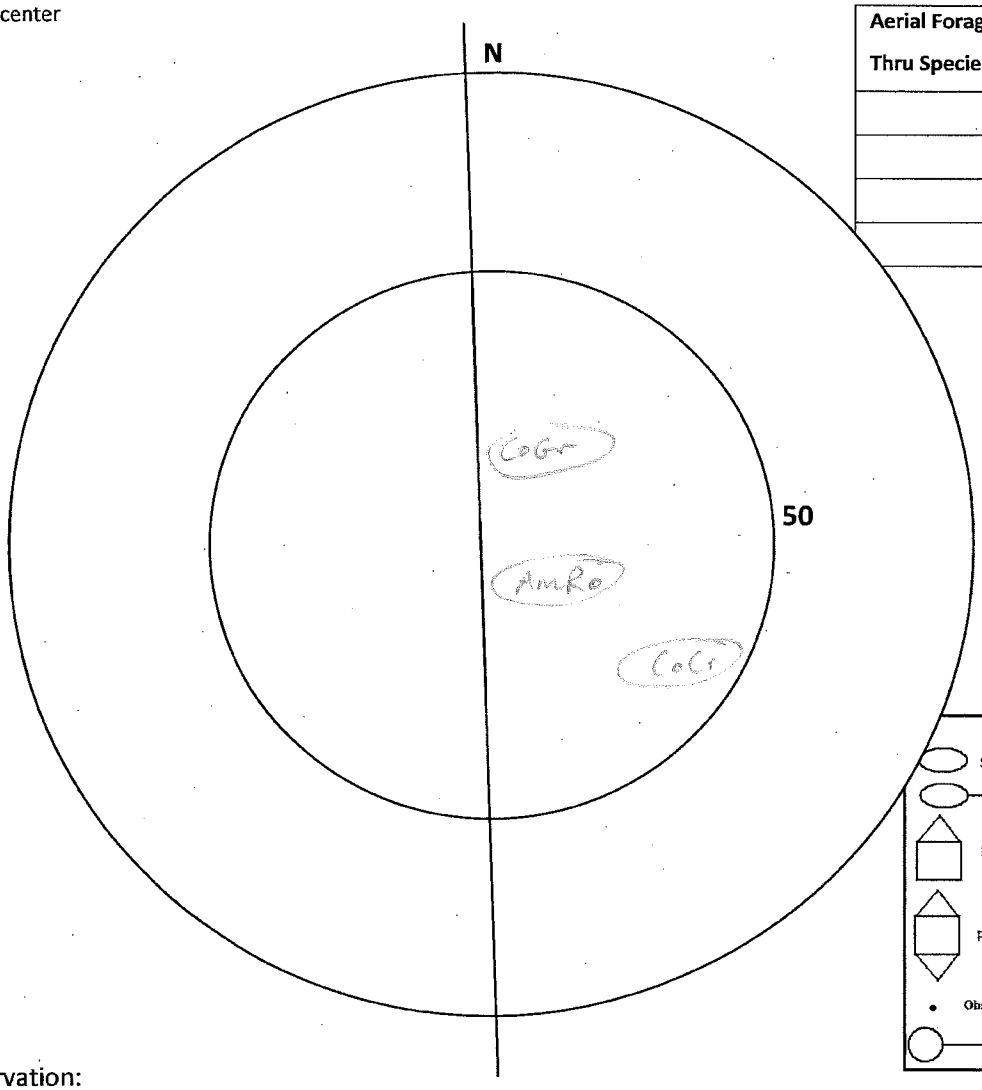
Temperature: 21°C Precip: none Wind speed: B1 Cloud cover: 20%. Photo #: _____

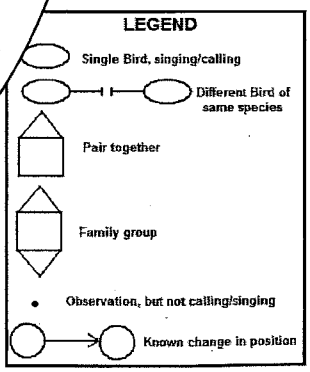
Description of Location: TRAIL, Edge of woodlot, near Building at Front of Property

Habitat Codes (%) Hab 1: _____ ( ) Hab 2: _____ ( ) Hab 3: _____ ( ) Hab 4: _____ ( )

Within 100 of point center

Aerial Forager/Fly Thru Species	#





Incidental Observation:

_____

_____

Notes:

No Chimney Swift Observed; Walked Trail to south exit of field along woodlot adjacent to open field

- 2 other Point Counts at "BFS-CHSW2" and "BFS-CHSW3"
- No Chimney Swift Observed at any location on Site.

HATCH™

BREEDING BIRD SURVEY POINT COUNT DATASHEET

Project: Parks Falls West - Whip-poor-will Survey Project Number: _____

Point #: 1 Observer: Lexi Snook Date (dd/mon/yy): 15/06/11 Time: 9:20pm

GPS file name: BFS-WHIP Datum: _____ Zone: _____

UTM: E: _____ N: _____

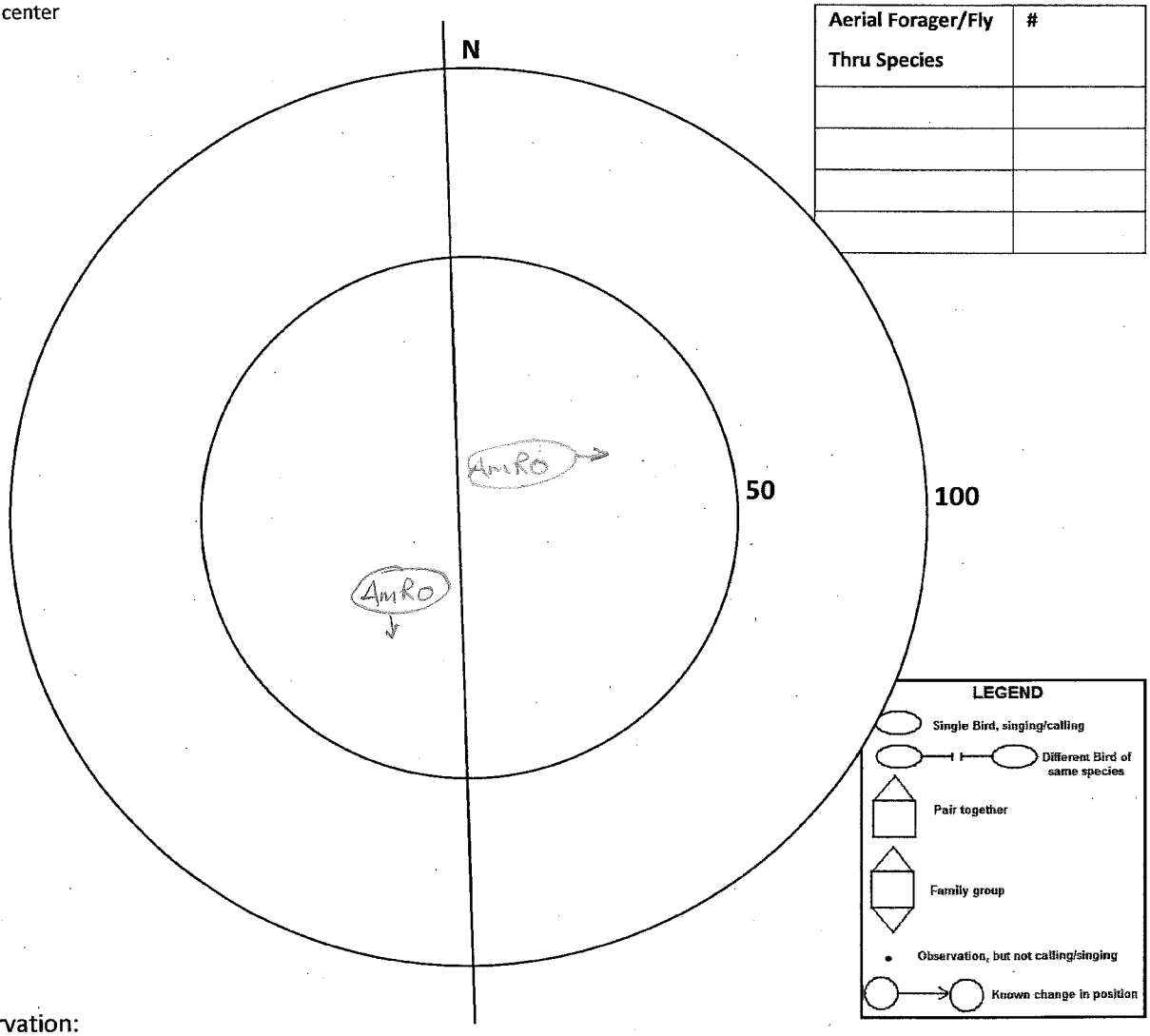
Temperature: 21° Precip: None Wind speed: B1 Cloud cover: 20% Photo #: _____

Description of Location: High elevation on site, centre of woodland

Habitat Codes (%) Hab 1: _____ ( ) Hab 2: _____ ( ) Hab 3: _____ ( ) Hab 4: _____ ( )

Within 100 of point center

Aerial Forager/Fly Thru Species	#



Incidental Observation:

_____

_____

Notes:

Whip-Poor-Will Survey: End Time: 9:50pm

Duration = 30min * No Whip-poor-will Heard/observed

HATCH™

BREEDING BIRD SURVEY POINT COUNT DATASHEET

Project: Burks Falls West - Bobolink Survey Project Number: _____

Point #: 1 Observer: Levi Snook Date (dd/mon/yy): 16/06/11 Time: 6:10pm

GPS file name: BFS-BOB1 Datum: _____ Zone: _____

UTM: E: _____ N: _____

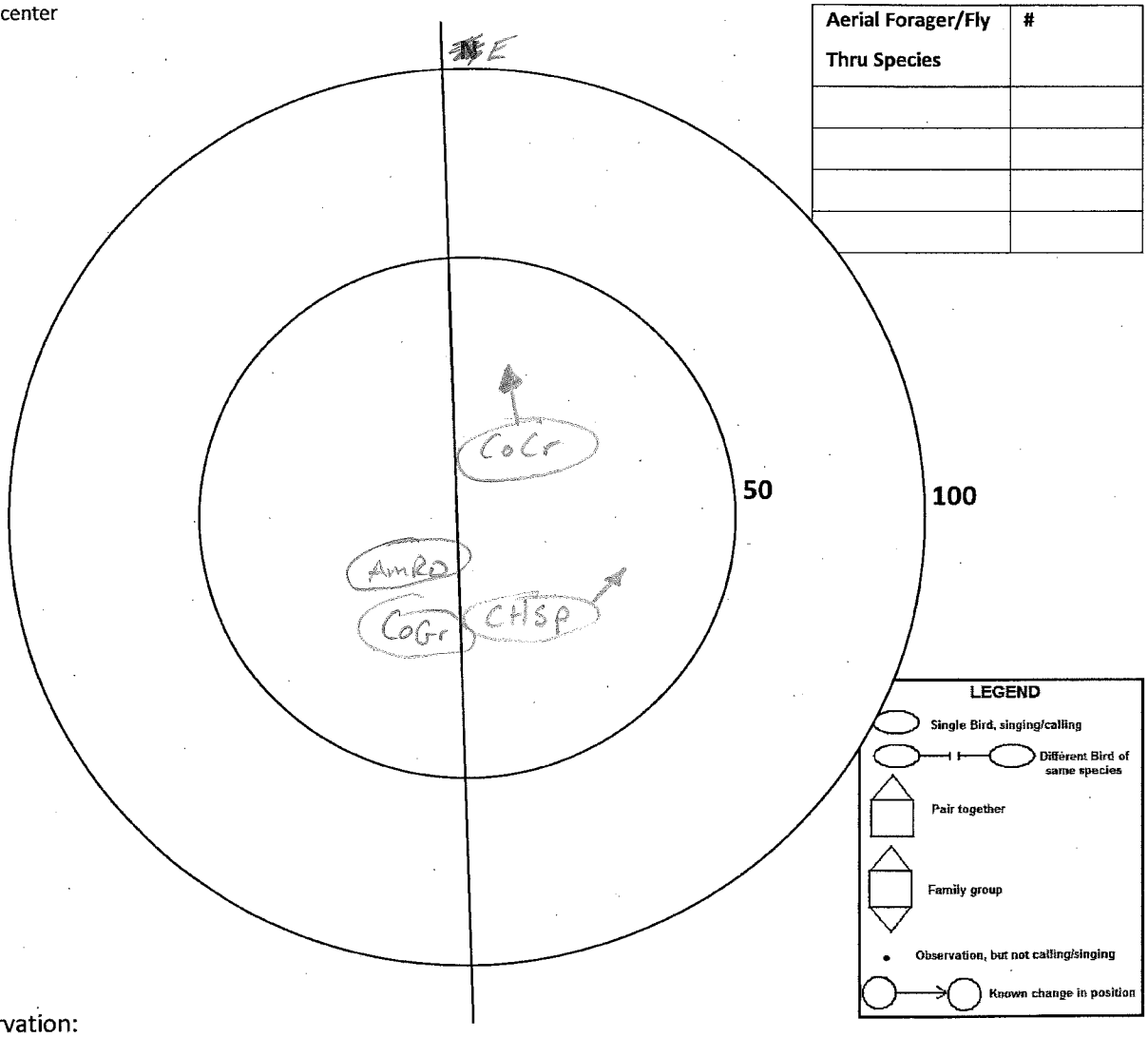
Temperature: 15°C Precip: None Wind speed: B1 Cloud cover: 0% Photo #: _____

Description of Location: Tall grass approximately 1m in Height. High elevation site.

Habitat Codes (%) Hab 1: _____ ( ) Hab 2: _____ ( ) Hab 3: _____ ( ) Hab 4: _____ ( )

Within 100 of point center

Aerial Forager/Fly Thru Species	#



Incidental Observation:

_____

_____

Notes:

No Bobolink observed: End Point Count @ 6:20pm

Duration = 10min

HATCH™

BREEDING BIRD SURVEY POINT COUNT DATASHEET

Project: Banks Falls West - Bobolink Survey Project Number: _____

Point #: 2 Observer: Lexi Snook Date (dd/mon/yy): 16/06/11 Time: 6:25am

GPS file name: BFS-Bob2 Datum: _____ Zone: _____

UTM: E: _____ N: _____

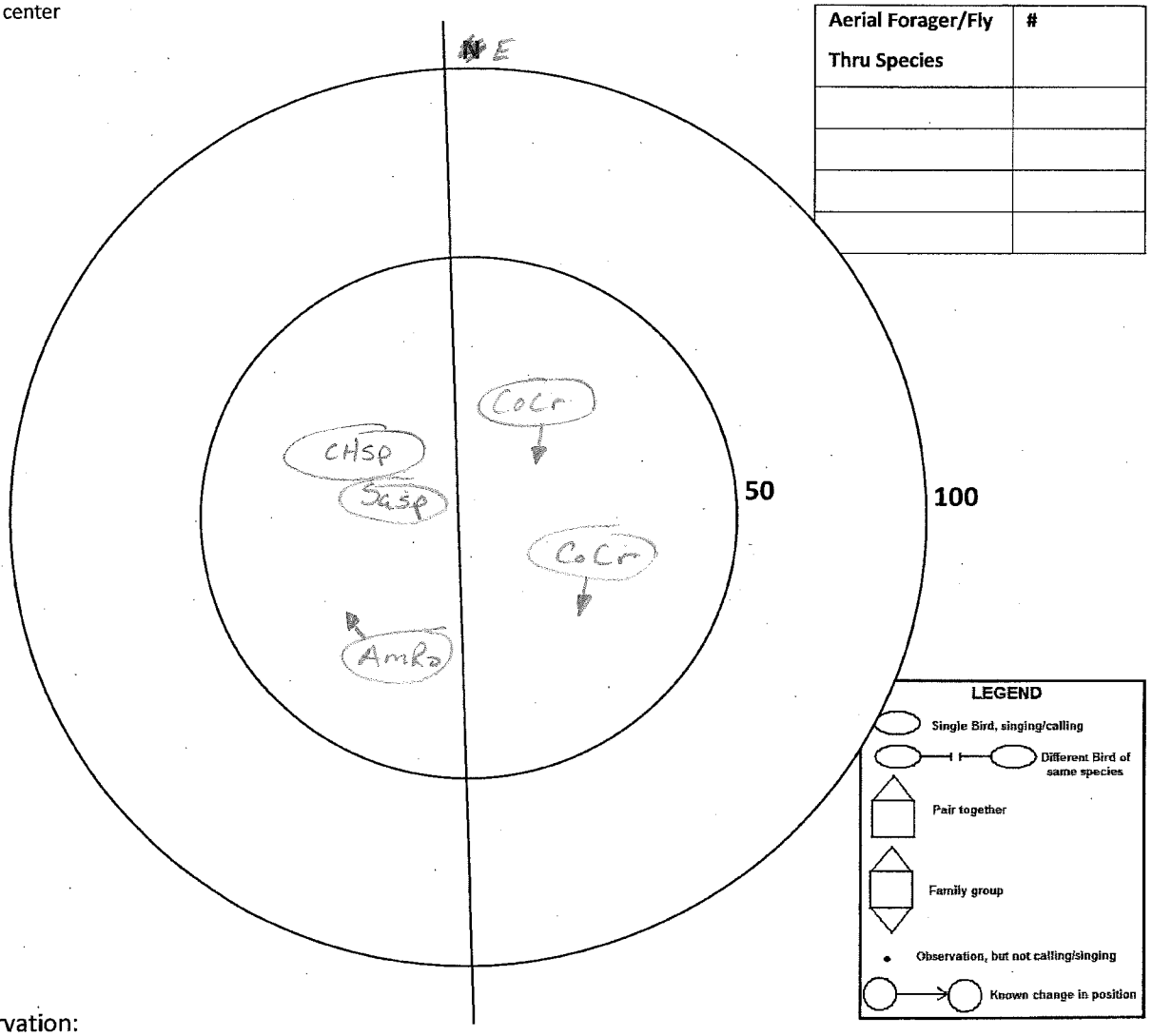
Temperature: 16C Precip: none Wind speed: B1 Cloud cover: 0% Photo #: _____

Description of Location: Tall grass (1m Height) - Short shrubs

Habitat Codes (%) Hab 1: _____ ( ) Hab 2: _____ ( ) Hab 3: _____ ( ) Hab 4: _____ ( )

Within 100 of point center

Aerial Forager/Fly Thru Species	#



Incidental Observation:

_____

_____

Notes:

No Bobolink Observed! End Point count @ 6:35am

Duration = 10min

HATCH™

BREEDING BIRD SURVEY POINT COUNT DATASHEET

Project: BFW - Bobolink Survey Project Number: _____

Point #: 3 Observer: Levi Snook Date (dd/mon/yy): 16/06/11 Time: 6:45am

GPS file name: BFS-BoB3 Datum: _____ Zone: _____

UTM: E: _____ N: _____

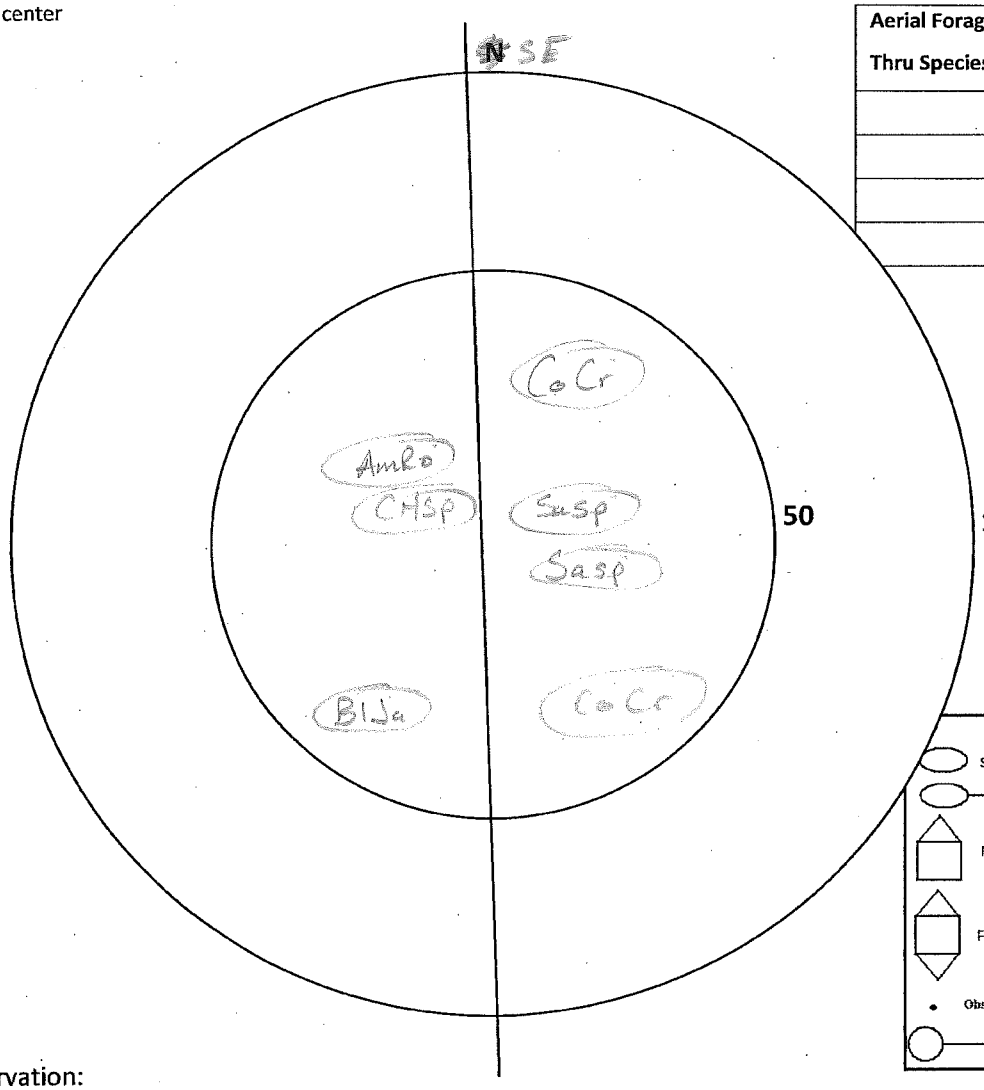
Temperature: 16°C Precip: None Wind speed: B1 Cloud cover: 20% Photo #: _____

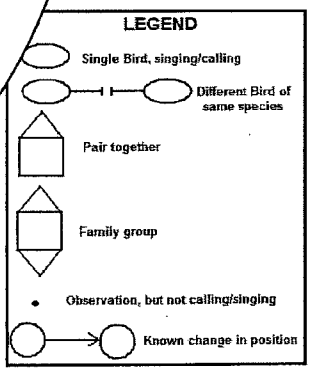
Description of Location: Tall Grass (1m Height)

Habitat Codes (%) Hab 1: _____ ( ) Hab 2: _____ ( ) Hab 3: _____ ( ) Hab 4: _____ ( )

Within 100 of point center

Aerial Forager/Fly Thru Species	#





Incidental Observation:

_____

_____

Notes:

No Bobolink Observed! End PointCount@6:55am

Duration = 10 min

HATCH™

BREEDING BIRD SURVEY POINT COUNT DATASHEET

Project: Burk Falls west - Bobolink Survey Project Number: _____

Point #: 4 Observer: _____ Date (dd/mon/yy): 16/06/11 Time: 7:10 am

GPS file name: BFS - BOB 4 Datum: _____ Zone: _____

UTM: E: _____ N: _____

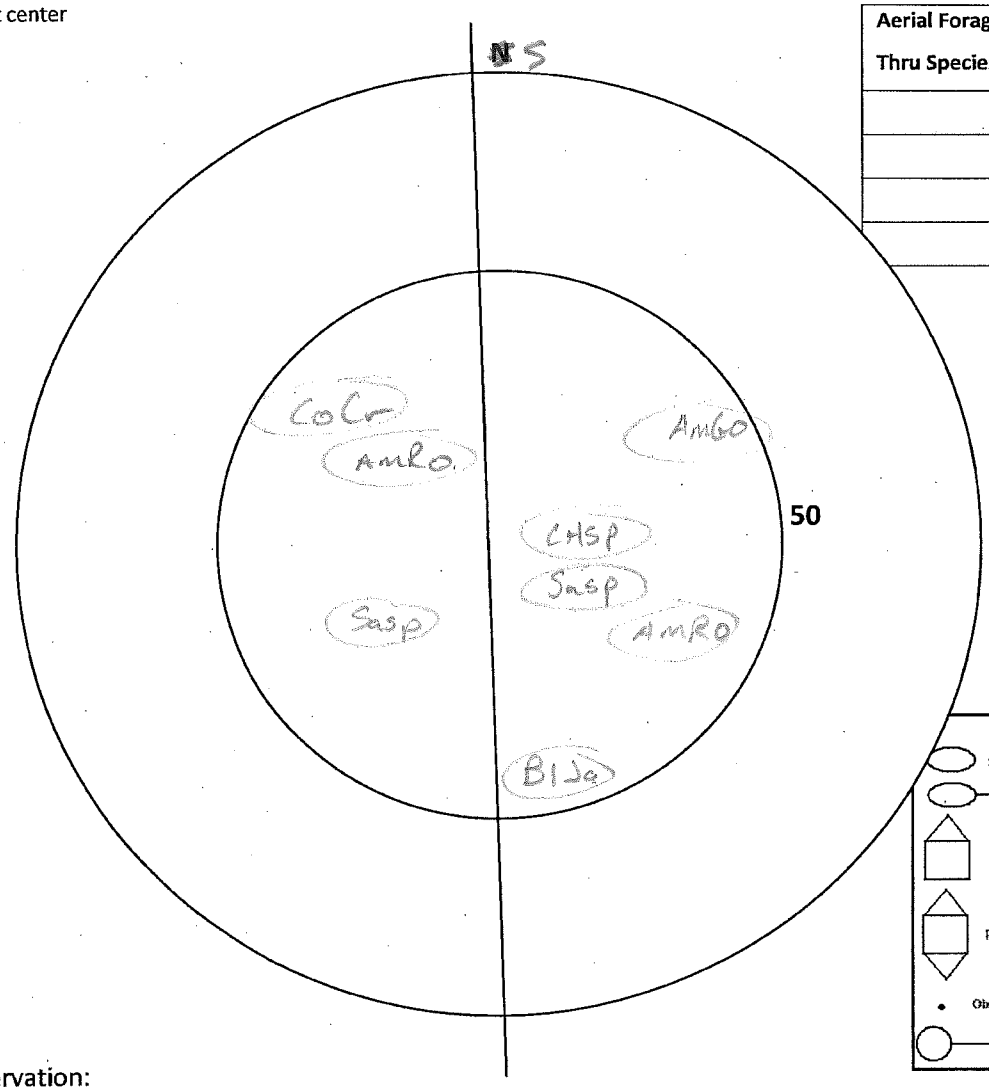
Temperature: 18°c Precip: none Wind speed: B1 Cloud cover: 20% Photo #: _____

Description of Location: Tall Grass (1m Height.

Habitat Codes (%) Hab 1: _____ ( ) Hab 2: _____ ( ) Hab 3: _____ ( ) Hab 4: _____ ( )

Within 100 of point center

Aerial Forager/Fly Thru Species	#



LEGEND
- Single Bird, singing/calling
- Different Bird of same species
- Pair together
- Family group
- Observation, but not calling/singing
- Known change in position

Incidental Observation:

_____

_____

Notes:

2 Bobolink observed | End Point Count @ 7:20am

Duration 10 min

HATCH™

BREEDING BIRD SURVEY POINT COUNT DATASHEET

Project: Bark Falls west - Bobolink Survey Project Number: _____

Point #: 5 Observer: Lewi Snook Date (dd/mon/yy): 16/06/11 Time: 7:35 am

GPS file name: BFS-BOBS Datum: _____ Zone: _____

UTM: E: _____ N: _____

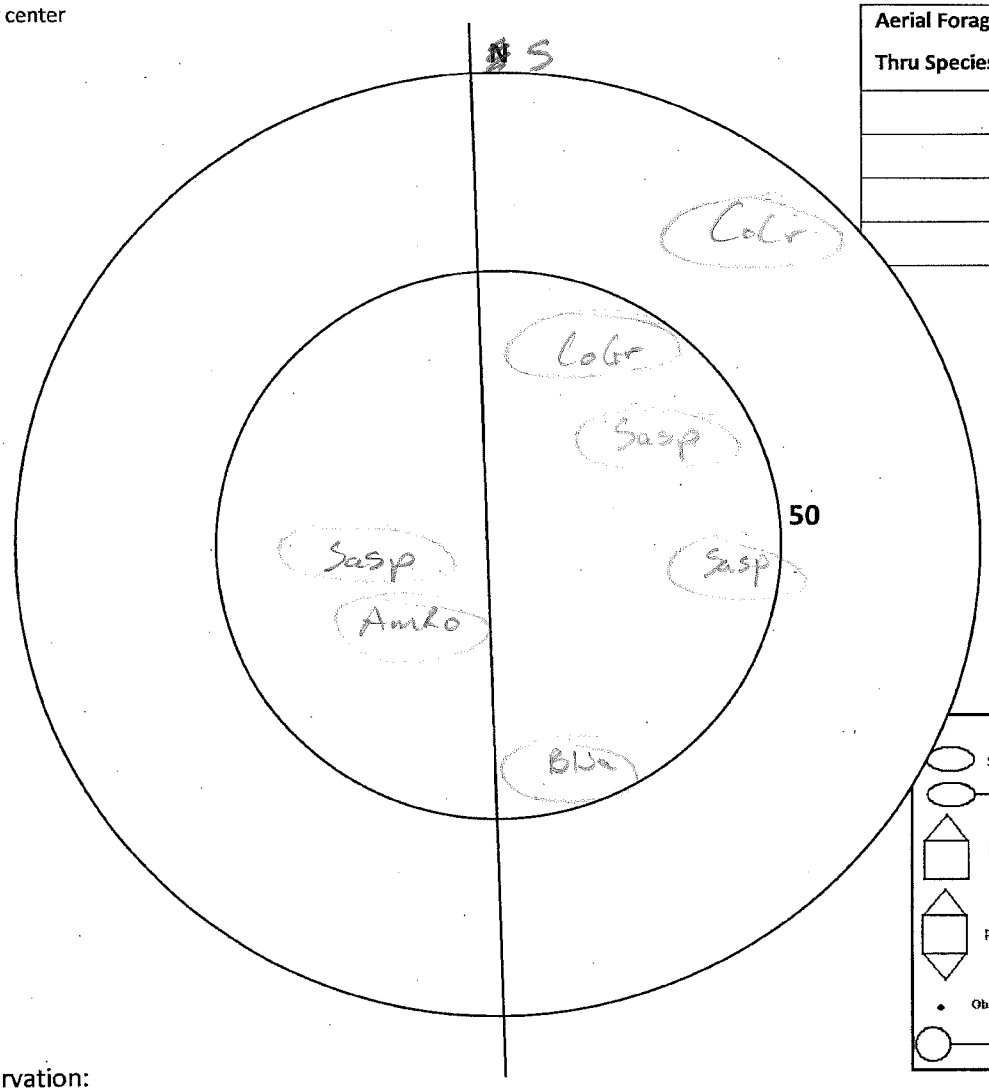
Temperature: 18°C Precip: None Wind speed: B1 Cloud cover: 20% Photo #: _____

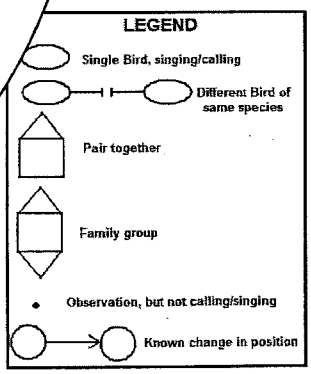
Description of Location: Tall grassland (1m Height.

Habitat Codes (%) Hab 1: _____ ( ) Hab 2: _____ ( ) Hab 3: _____ ( ) Hab 4: _____ ( )

Within 100 of point center

Aerial Forager/Fly Thru Species	#





Incidental Observation:

_____

_____

Notes:

No Bobolinks observed. End point count @ 7:45 am

Duration 10 min

HATCH™

BREEDING BIRD SURVEY POINT COUNT DATASHEET

Project: Burk Falls west - Bobolink Survey Project Number: _____

Point #: 6 Observer: Lewi Snook Date (dd/mon/yy): 06/06/11 Time: 7:50am

GPS file name: BFS - BOBG Datum: _____ Zone: _____

UTM: E: _____ N: _____

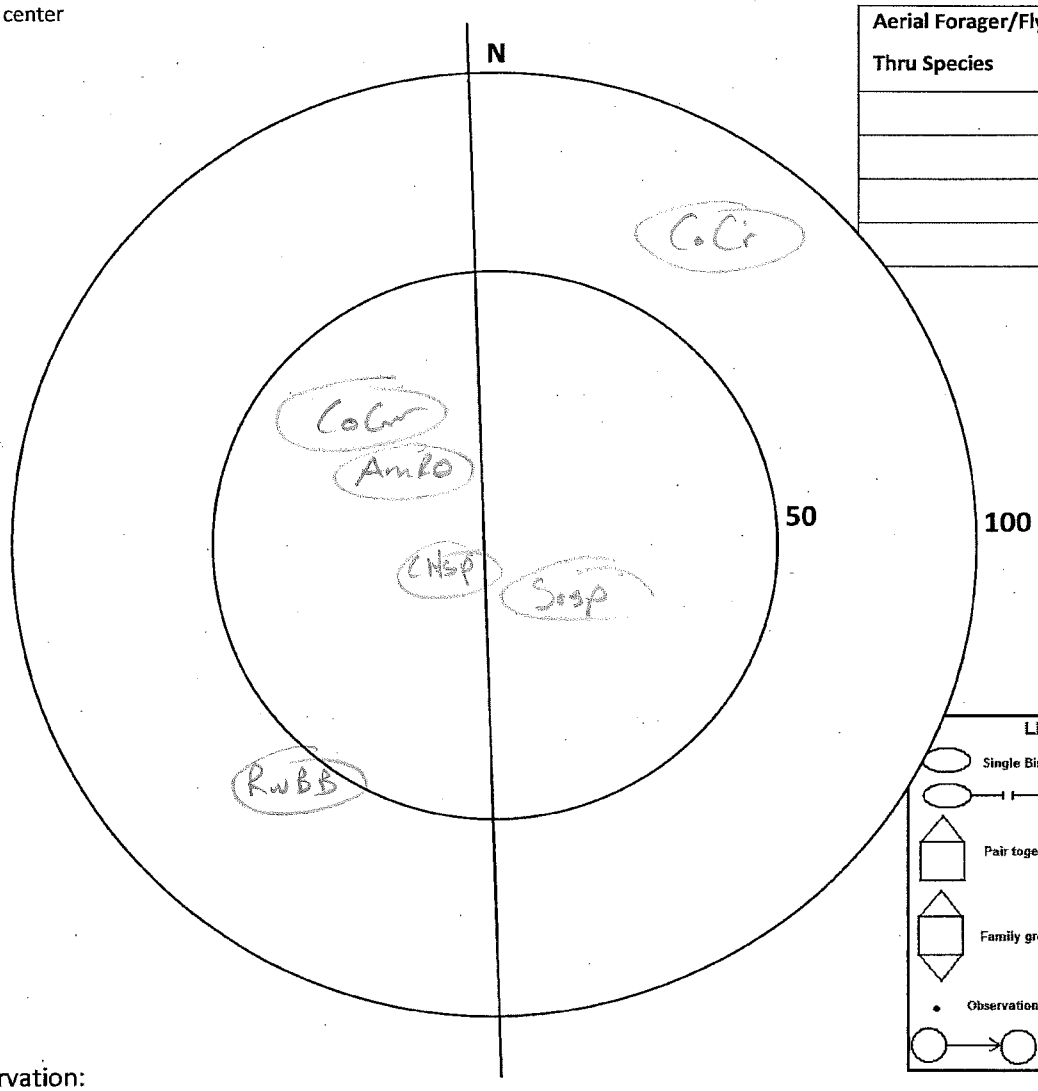
Temperature: 19°C Precip: None Wind speed: Bf Cloud cover: 20 % Photo #: _____

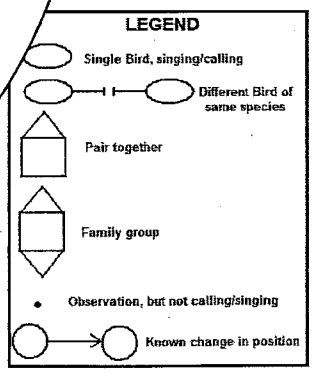
Description of Location: TALL Grassland (low Height

Habitat Codes (%) Hab 1: _____ ( ) Hab 2: _____ ( ) Hab 3: _____ ( ) Hab 4: _____ ( )

Within 100 of point center

Aerial Forager/Fly Thru Species	#





Incidental Observation:

_____

_____

Notes:

No Bobolink observed; End Point Count @ 8:00am

Duration 10 min

HATCH™

BREEDING BIRD SURVEY POINT COUNT DATASHEET

Project: Bunks falls west - Bobolink Survey Project Number: _____

Point #: 7 Observer: Levi Snoek Date (dd/mon/yy): 16/06/11 Time: 8:45am

GPS file name: BFS-BOB7 Datum: _____ Zone: _____

UTM: E: _____ N: _____

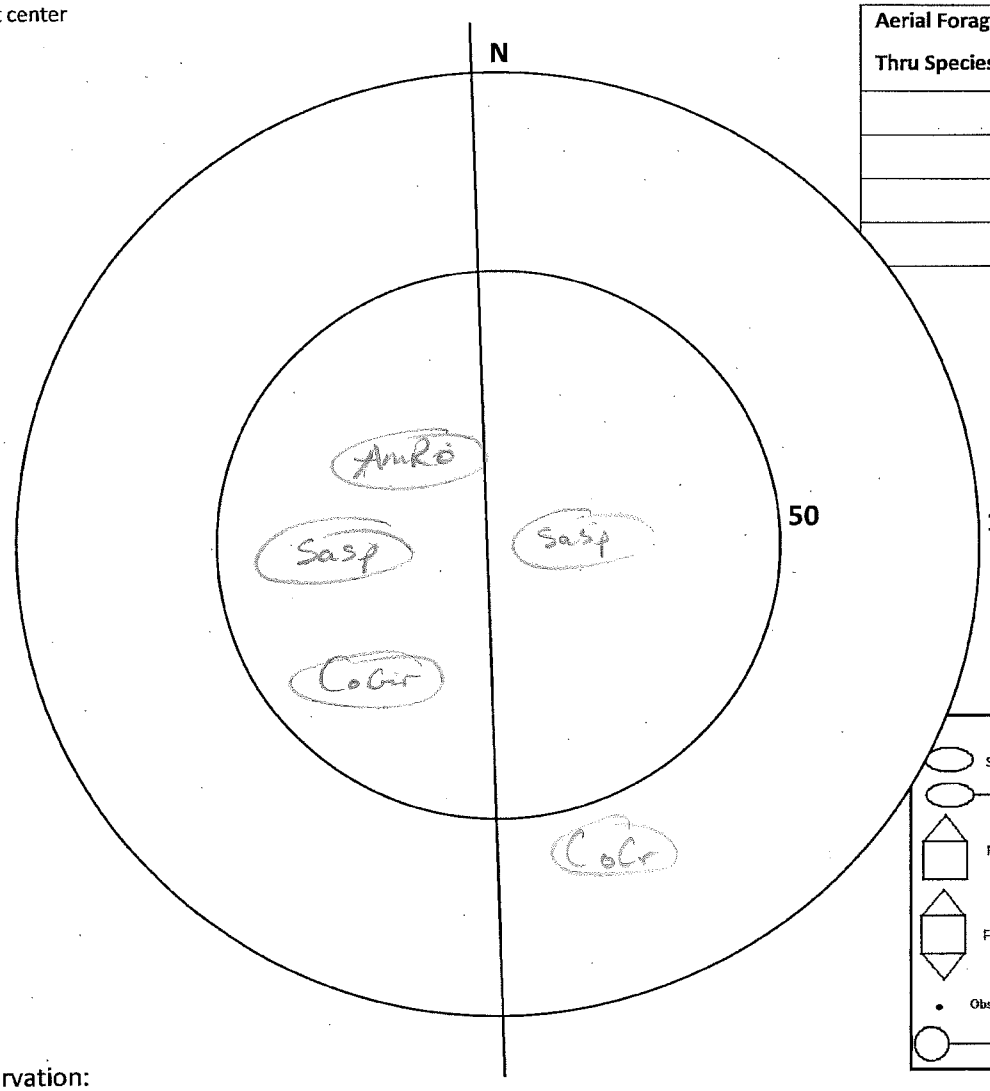
Temperature: 20°C Precip: none Wind speed: B1 Cloud cover: 20% Photo #: _____

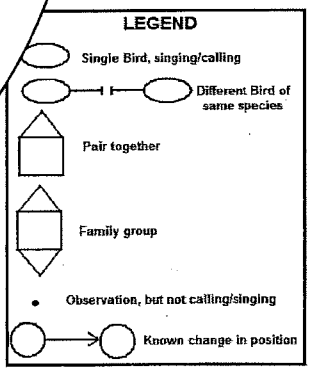
Description of Location: Tall Grassland. (1m Height)

Habitat Codes (%) Hab 1: _____ ( ) Hab 2: _____ ( ) Hab 3: _____ ( ) Hab 4: _____ ( )

Within 100 of point center

Aerial Forager/Fly Thru Species	#





Incidental Observation:

_____

_____

Notes:

No Bobolink Observed! End Point Count @ 8:25am Duration 10min.

HATCH™

BREEDING BIRD SURVEY POINT COUNT DATASHEET

Project: Burks Falls west - Bobolink Survey Project Number: _____

Point #: B Observer: Lewis Snook Date (dd/mon/yy): 16/06/11 Time: 8:35

GPS file name: BFS-BOBB Datum: _____ Zone: _____

UTM: E: _____ N: _____

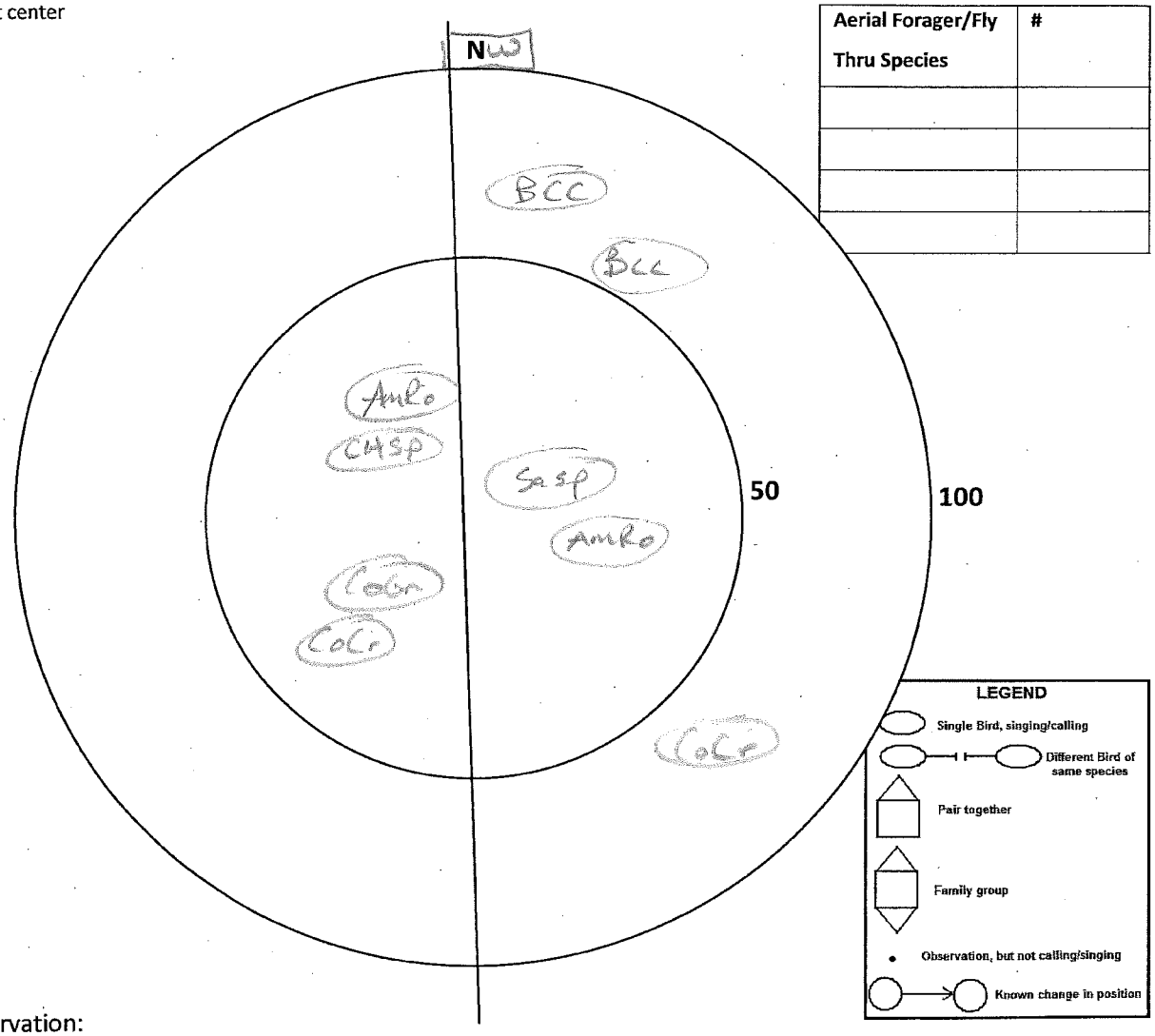
Temperature: 21°C Precip: None Wind speed: B1 Cloud cover: 20% Photo #: _____

Description of Location: Tall grassland (1m height.

Habitat Codes (%) Hab 1: _____ ( ) Hab 2: _____ ( ) Hab 3: _____ ( ) Hab 4: _____ ( )

Within 100 of point center

Aerial Forager/Fly Thru Species	#



Incidental Observation:

_____

_____

Notes:

No Bobolink observed. End point count @ 8:45am

Duration 10 min