APPENDIX J-5

2013 AERIAL WILDLIFE SURVEY

RAINY RIVER GOLD PROJECT
2013 WINTER AERIAL SURVEY FOR MAMMALS

Submitted by:

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On behalf of:
Rainy River Resources
1111 Victoria Avenue East
Thunder Bay, Ontario
P7C 1B7

May 2013
TC111504

May 16, 2013
TC111504

Mr. Kyle Stanfield, P.Eng
Vice President, Environment & Sustainability
Rainy River Resources Ltd.
1111 Victoria Avenue East
Thunder Bay, ON
P7C 1B7

Dear Mr. Stanfield,

AMEC Environment & Infrastructure is pleased to submit the attached 2013 Winter Aerial Survey for Mammals for the Rainy River Gold Project.

The 2013 study documents the presence and location of wildlife based on tracks or direct observation during February 2013.

We greatly appreciate the opportunity to provide support for your Rainy River Gold Project. Should you have any questions regarding the study, please do not hesitate to contact us.

Yours Sincerely,

AMEC Environment & Infrastructure,
a division of AMEC Americas Limited

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Senior Biologist

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ERRATUM

The following erratum has been prepared in response to comments received on the final 2013 Winter Aerial Survey for Mammals Baseline Report from regulatory agencies.

Section 4 Results and Discussion

P.3: It should be noted that the statement of no pattern or preference to the distribution of white-tailed deer, wolf, red fox, and snowshoe hare tracks was the opinion of the field staff based on field observances only.

P.3: The marten tracks recorded should be identified as *Martes sp.* to represent the possibility of those tracks belonging to other *Martes* species.

P.3 To clarify the statement in the report *". ..deer and moose typically benefit from some level of disturbance as one of their preferred items are young saplings which grow in dense patches in areas that have been cleared by fire or as a result of activities such as forestry and mining";* it is anticipated that clearing of forest for the installation of the transmission line alignment to the mine may create modest browsing opportunities for moose and deer as woody browse vegetation will regenerate along this corridor. Herbicides are not proposed to be used along the transmission line corridor. Mechanical removal of vegetation will be infrequent enough to allow modest regeneration and therefore browsing opportunities.

P.3 As the Fort Frances District is home to both wolves (gray and eastern) and coyotes, the wolf sighting and the wolf tracks should be recorded as *Canis sp.*

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1.0 INTRODUCTION

AMEC Environment & Infrastructure, a division of AMEC Americas Limited (AMEC), was retained by Rainy River Resources Limited (RRR) to conduct an aerial survey for wildlife at the Rainy River Gold Project (RRGP). The RRGP site is located in the Township of Chapple, District of Rainy River, in northwestern Ontario, approximately 65 kilometres (km) northwest of Fort Frances, and 420 kilometres (km) west of Thunder Bay (Figure 1). This survey represents the second of two aerial surveys conducted at the RRGP; the first survey was conducted on April 5, 2012. This report presents the methods and results of this second aerial wildlife survey conducted by AMEC on February 20, 2013.

All Environmental Assessments (EA) conducted under the *Canadian Environmental Assessment Act*, or pursuant to the Ontario *Environmental Assessment Act* must take into account Species at Risk (SAR) that may be affected by project activities, as well as any other wildlife deemed locally significant such as White-tailed Deer (*Odocoileus virginianus*), Moose (*Alces alces*), and furbearing animals such as Eastern Wolf (*Canis lupus*), Red Fox (*Vulpes vulpes*), Pine Marten (*Martes americana*), Lynx (*Lynx canadensis*) and River Otter (*Lontra canadensis*).

Under the Ontario *Endangered Species Act*, 2007 (ESA), if a species is listed as Endangered or Threatened, Section 9 of the Act prohibits killing, harming, harassing, capturing, taking, possessing, collecting, buying, selling, leasing, trading or offering to buy, sell, lease or trade a member of the species. Some of these prohibitions also apply to body parts of a member of the species and to things derived from a member of the species. Similarly, if a species is listed on the ESA as Endangered or Threatened, Section 10 of the Act prohibits damaging or destroying the habitat of the species. The regulations may specifically prescribe an area as the habitat of a species but, if no habitat regulation is in force with respect to a species, habitat is defined to mean an area on which the species depends, directly or indirectly, to carry on its life processes.

Under the federal *Species at Risk Act*, 2002 (SARA), wildlife considered SAR have been listed under either Schedules 1, 2, or 3. Schedule 1 species are those that have had their status reports reviewed by an official panel and are currently accepted with COSEWIC designation, granting them full protection by SARA. Schedule 2 species are species that must have their status reviewed within 30 days of being posted to the schedule and Schedule 3 species are species that must have their status reviewed within one year of being posted. On private land, these prohibitions apply only to listed aquatic species and migratory birds that are also listed in the *Migratory Bird Convention Act*, 2002. In Ontario, the federal SARA only applies on federal lands and defers the responsibility of regulating SAR on private lands to the ESA.

The *Fish and Wildlife Conservation Act* (FWCA) protects Ontario fish and wildlife species, including game mammals, furbearing mammals, certain reptiles and amphibians, game birds and select non-migratory bird species, from hunting, trapping, illegal possession, or the collection of their eggs. The FWCA prohibits the destruction of bear dens and/or the dens of fur

bearing animals such as American Marten, Fisher, Lynx, River Otter, American Mink and Least Weasel, as well as the destruction of Beaver dams, unless a trapper's license is obtained. Both deer and Moose are managed by the Ontario Ministry of Natural Resources (MNR).

2.0 STUDY OBJECTIVES

The objective of this aerial survey was to locate wildlife through the identification of individuals or their tracks. The survey was conducted within the Local Study Area (LSA) including the proposed mine site, the proposed transmission line corridor and alternatives, and five potential aggregate pit sites.

3.0 METHODOLOGY

3.1 Study Area

The study area consists of the proposed mine site area and the proposed transmission line corridor. The mine site consists of relatively flat lands characterized by extensive agricultural land with some streams and small wetlands, mixed Trembling Aspen forests, and areas of rolling rocky outcrops. The proposed transmission line corridor and potential aggregate pit sites stretch across rocky terrain dominated by coniferous and mixed forest.

3.2 Aerial Survey

A winter aerial wildlife survey was undertaken on February 20, 2013. Weather conditions for observation were good to excellent with clear and sunny skies, no precipitation and low wind levels. Tracks were readily detected in a base of 60 to 90 centimetres of snow. Qualified observers sat on either side of the aircraft, and sightings of tracks and wildlife were called out on the intercom system and recorded on a standard form.

This survey provided coverage across the proposed mine site area as well as the proposed transmission line corridor which would join the proposed mine to an existing transmission line occurring approximately 16 km to the northeast of the mine site. For the proposed mine site area, the survey involved flying ten east-west transects that were 17 km long and spaced at 1 km intervals, and four east-west transects that were 5 to 10 km long and also spaced at 1 km intervals (Figure 2). For the proposed transmission line alternatives, the survey involved 11 transect lines that were 13.5 km long and spaced at 1 km (Figure 2). In addition to this, five potential aggregate pit sites were flown over (Figure 2). The aerial surveys were undertaken with a Eurocopter AS350 (A-Star) helicopter and the airspeed traveled during the survey was approximately 70 to 80 kilometres per hour at an elevation of approximately 30 to 40 metres.

4.0 RESULTS AND DISCUSSION

In total, 163 White-tailed Deer, 2 Moose, 1 Eastern Wolf, 4 Red Foxes and 12 Snowshoe Hare were sighted during the 2013 aerial survey (Figures 3 and 5). In addition to this, three Bald Eagles were also observed (Figure 5).

White-tailed Deer tracks and sightings were widespread throughout the study area (Figure 3). These results were expected as winter deer yarding areas were known to be prevalent within the study area. Winter deer yarding areas consist of a core area of mainly coniferous trees (e.g., pines, cedar, spruce) with a canopy cover of more than 60% which provides shelter from snow and wind (MNR 2012). Core deer yards are usually surrounded by mixed or deciduous forest with understory shrubs and small trees, especially white cedar, providing winter food (MNR 2000). Ecosite data was used to identify vegetation communities suitable for deer yarding habitat. The Forestry Management Plan for the Crossroute Forest indicated that deer yarding areas exist across all sizeable intact forest occurring within the study area (MNR 2006).The MNR determines deer yarding areas following methods outlined by Ranta (1998) and includes classification of deer yard quality from low to very high. Based on the results of the winter aerial survey, there does not appear to be any preference shown by deer to those winter deer yarding areas classified as high or very high but rather, deer were scattered throughout all forested areas within the study area (Figure 6).

Moose tracks and sightings were restricted to the boundary of the study area and were only observed to the northeast of the proposed mine site and south of the proposed transmission line corridor (Figure 3). Moose late winter cover areas, like winter deer yarding areas, consist of a core area of mainly coniferous trees (e.g., pines, cedar, spruce) with a canopy cover of more than 60% which provides shelter from snow and wind (MNR 2012). Moose late winter cover areas are generally greater than 50 hectares and are dominated by tall (greater than 6 m) trees in moderately rugged to gentle terrain with deep soils. Areas must rate 3 or 4 in *Selected Wildlife and Habitat Features: Inventory Manual* (Ranta 1998). Ecosite data was used to identify vegetation communities suitable for moose late winter cover areas. None of these areas identified within the study area were associated with moose observations during the winter aerial survey (Figure 6).

Eastern Wolf tracks and sightings were observed in low abundance though scattered throughout the study area. There does not appear to be any particular pattern in their distribution within the study area. This may be reflective of the fact that their prey (deer and hare) are abundant throughout the area and not limiting (Figure 3). Red Fox tracks and sightings were common and scattered throughout the study area (Figure 3). Pine Marten were identified through tracks though no individual sightings were observed and these tracks were restricted to the north-eastern extent of the study area (Figure 3). Snowshoe Hare tracks and sightings, like deer, were also widespread throughout the study area (Figure 4).

Four Bald Eagles were observed in the study area (Figure 5). These observations were associated with large bodies of water and, in the case of those sightings in the northeast end of the study area, in relatively close proximity to two Bald Eagle nests which had been identified during an aerial stick nest surveys conducted by AMEC in April 2012.

5.0 CONCLUSIONS

White-tailed Deer, Eastern Wolf, Red Fox and Snowshoe Hare were scattered throughout the LSA and did not appear to show any patterns or preferences to their distribution. Suitable habitat for these species is abundant within and adjacent to the study area. Like most predators, wolves move to areas where prey is present, thus, significant effects on Eastern Wolf populations in the area are not anticipated unless declines of deer and hare numbers occur. Moose and Pine Marten observations occurred along the boundary of the study area which will not be directly impacted by RRGP activities. In addition, deer and Moose typically benefit from some level of disturbance as one of their preferred food items are young saplings which grow in dense patches in areas that have been cleared by fire or as a result of activities such as forestry and mining.

6.0 CLOSING

This document was prepared exclusively for Rainy River Resources Limited, by AMEC Americas Limited. The quality of information contained herein is consistent with the level of effort involved in AMEC services and based on: i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions and qualifications set forth in this document. This document is intended to be used by Rainy River Resources Limited, subject to the terms and conditions of its contract with AMEC. Any other use of, or reliance upon this document by any third party for any other purpose will be at that party's sole risk.

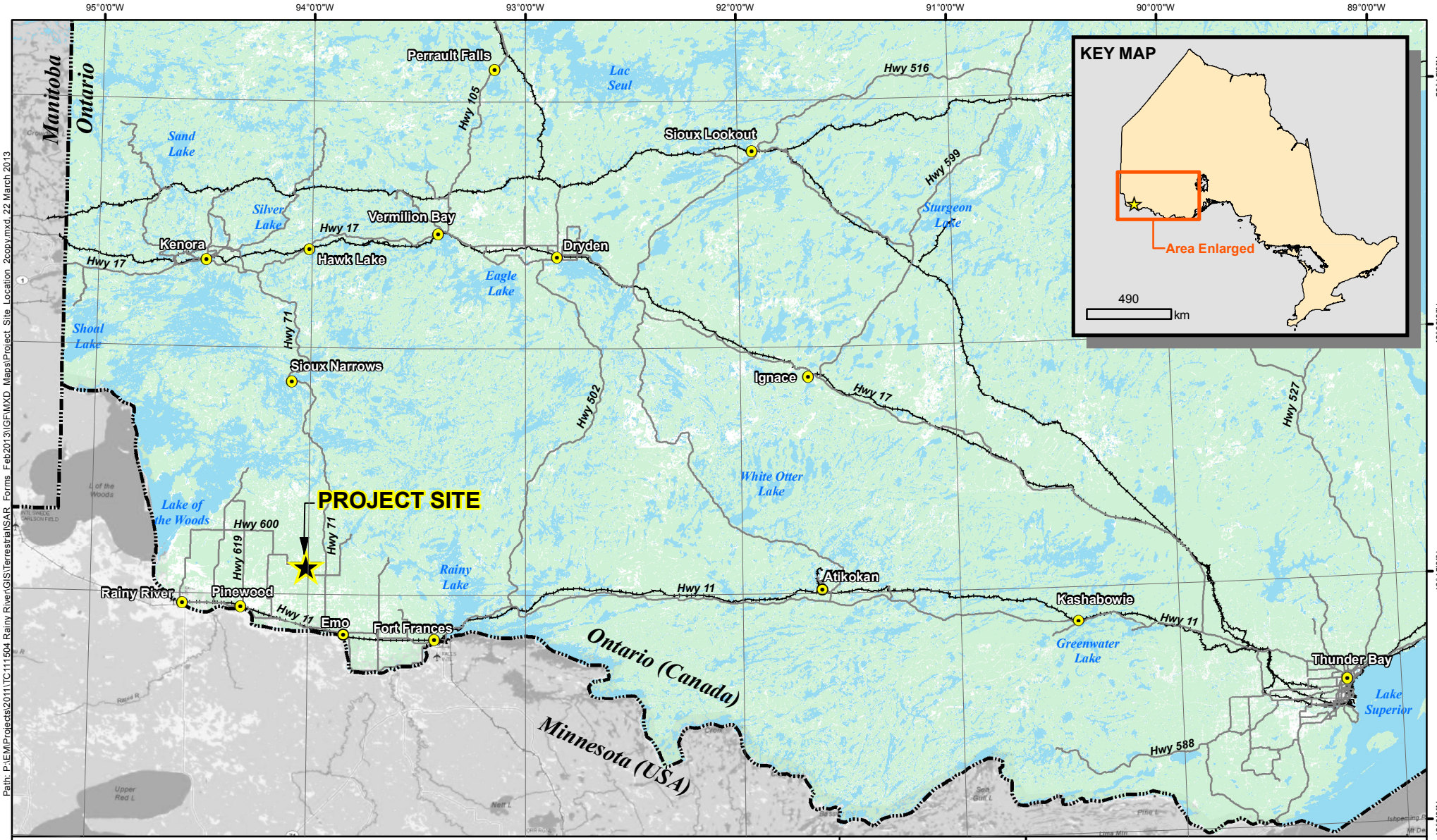
7.0 REFERENCES

Ministry of Natural Resources (MNR). 2000. Significant Wildlife Habitat Technical Guide (SWHTG).

Ministry of Natural Resources (MNR). 2006. 2007 – 2017 Forest Management Plan for the Crossroute Forest.

Ministry of Natural Resources (MNR). 2012. Significant Wildlife Habitat Ecoregion 3E Criterion Schedule Draft.

Ranta, W.B. 1998. Selected Wildlife and Habitat Features: Inventory Manual for Use in Forest Management Planning. Ministry of Natural Resources.



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LEGEND

- Project Site
- Regional Communities
- Provincial / National Border
- Regional Road / Highway
- Railway

0 25 50 100 150 200 250 Kilometres

NOTES:
- Ontario base data extracted from Land Information Ontario (MNR) data warehouse.
- Base data outside of Ontario extracted from ESRI DeLorme World Basemap

Datum: NAD83
Projection: UTM Zone 15N

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Project Location

PROJECT N°: TC111504	**FIGURE: 1**
SCALE: 1:1,800,000	DATE: March 2013

411000 414000 417000 420000 423000 426000 429000 432000 435000 438000 441000 444000 447000 450000 453000

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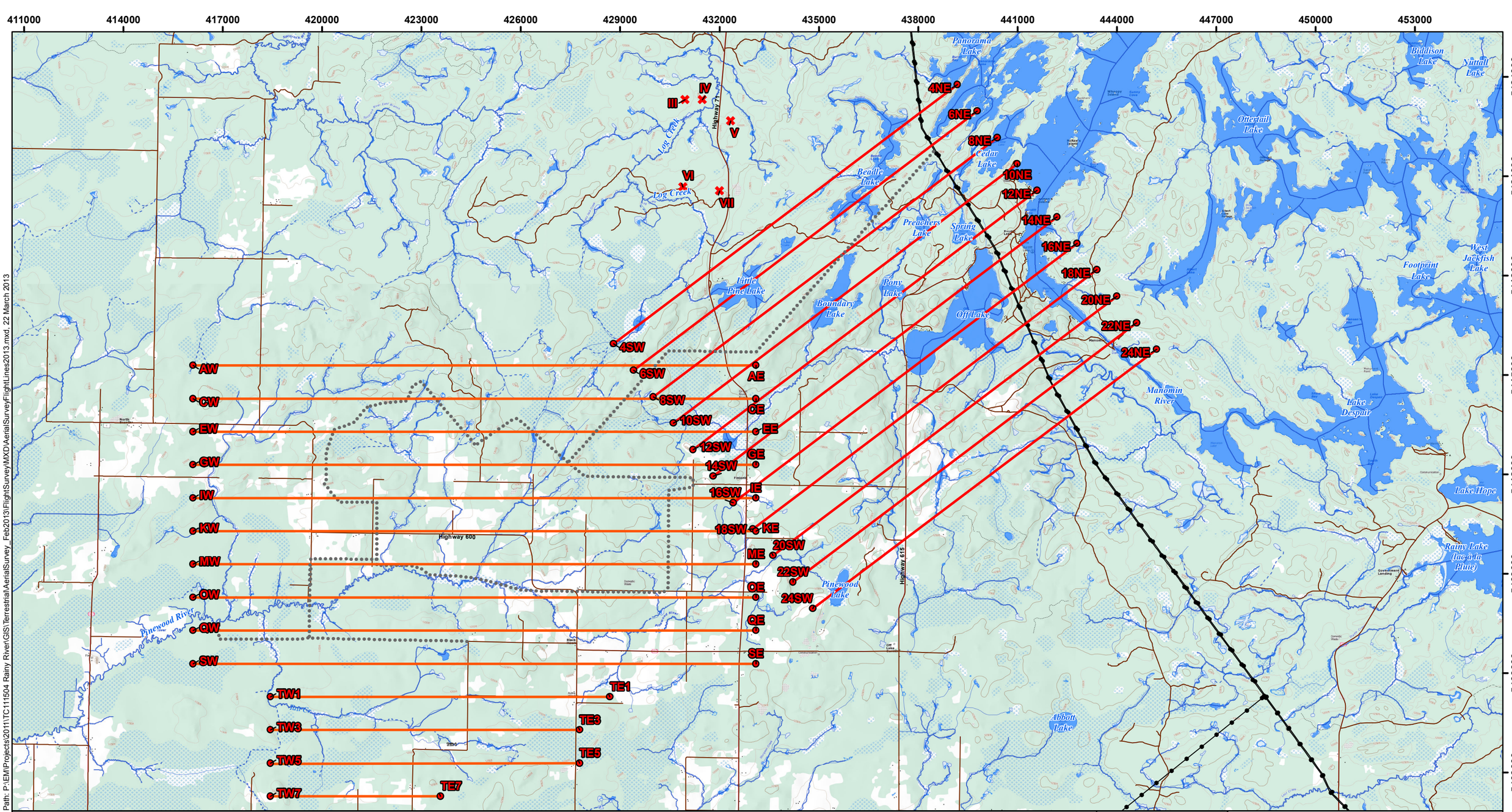

LEGEND

- Approximate Project Boundary
- Potential Aggregate Sites (ID labelled on map)
- Flight Line Transect (ID labelled on map)
- Existing Transmission Line
- Roads
- Permanent Watercourse
- Intermittent (Intermittent Watercourse)
- Waterbody

NOTES:
- Background topographic map extracted from Toporama, Geogratis, NRCan 1:50k DRG

0 3 6 12 18 24 30 Kilometres

Datum: NAD83
Projection: UTM Zone 15N

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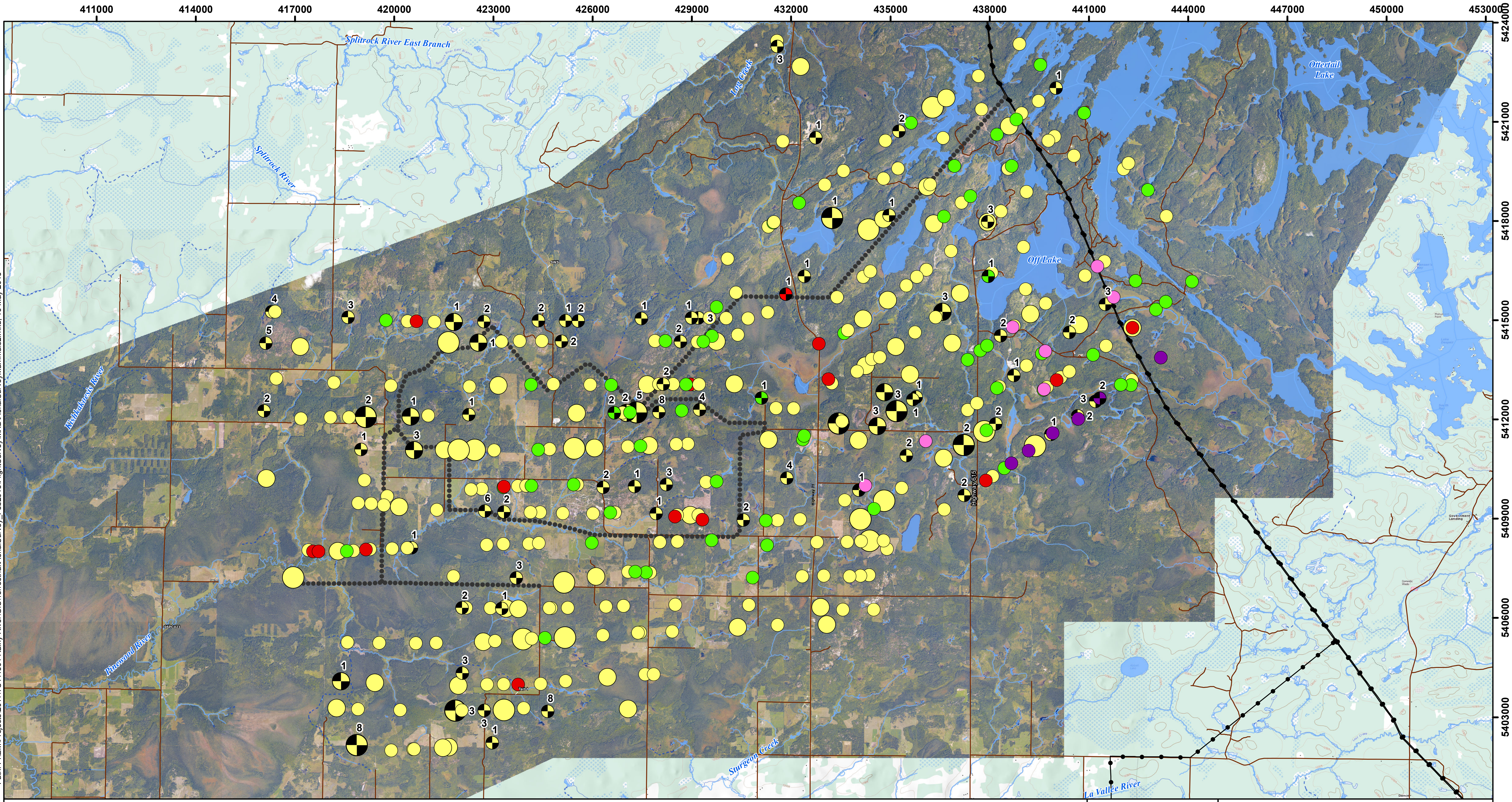
2013 Aerial Survey Transect Lines

PROJECT Nº: TC111504	**FIGURE: 2**
SCALE: 1:110,000	DATE: March 2013



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LEGEND

- Approximate Project Boundary
- Roads
- Existing Transmission Line
- Permanent Watercourse
- Intermittent (Intermittent Watercourse)
- Waterbody

Species Name

- Eastern Wolf
- Moose
- Pine Marten
- Red Fox
- White-tailed Deer

Density

- High
- Medium
- Low

Sighting (Number labelled on map)

NOTES:
- Background topographic map extracted from Toporama, Geogratis, NRCan 1:50k DRG

Datum: NAD83
Projection: UTM Zone 15N

0 3 6 12 18 24 Kilometres

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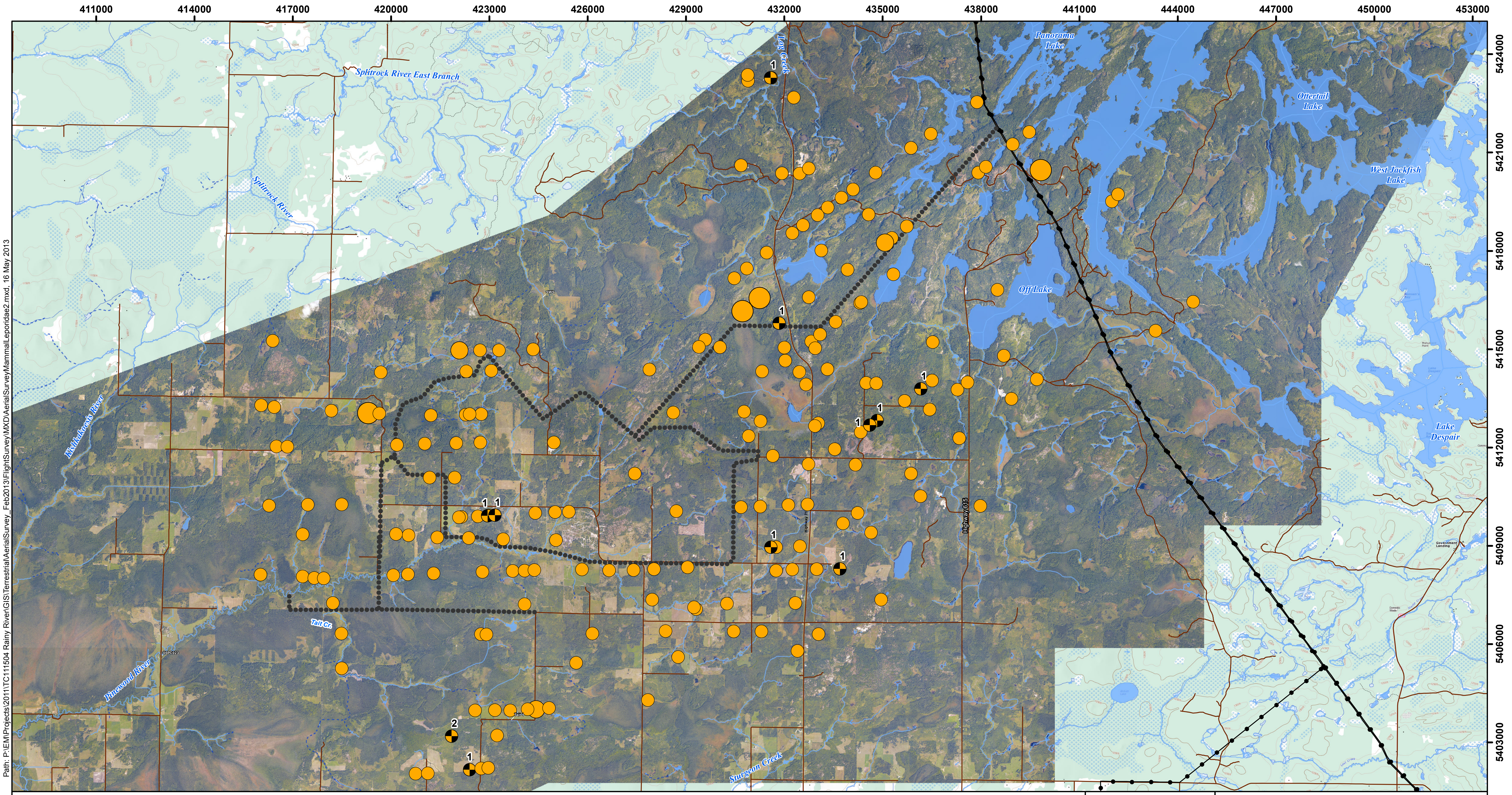
2013 Aerial Survey Results Mammals

PROJECT Nº: TC111504	FIGURE: 3
SCALE: 1:110,000	DATE: May 2013



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LEGEND

- Approximate Project Boundary
- Existing Transmission Line
- Roads
- Permanent Watercourse
- Intermittent (Intermittent Watercourse)
- Waterbody

Species Name

- Snowshoe Hare
- Sighting (Number labelled on map)

Density

- High
- Medium
- Low

NOTES:
- Background topographic map extracted from Toporama, Geogratis, NRCan 1:50k DRG

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RAINY RIVER GOLD PROJECT

2013 Aerial Survey Results
Mammals - Snowshoe Hare

Datum: NAD83
Projection: UTM Zone 15N

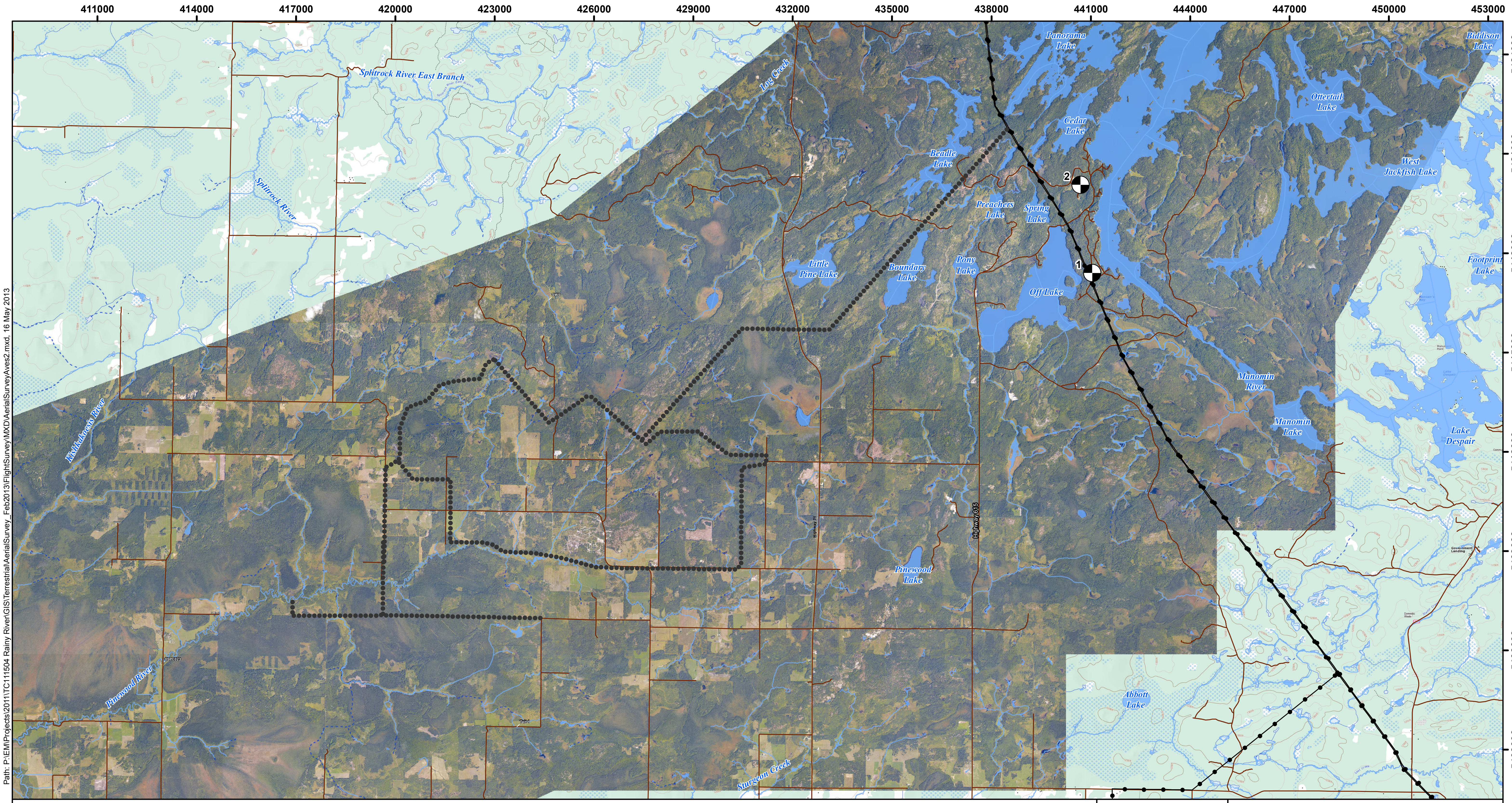
PROJECT N°: TC111504

FIGURE: 4

SCALE: 1:110,000

DATE: May 2013

0 3 6 12 18 24 Kilometres



LEGEND

- Approximate Project Boundary
- Existing Transmission Line
- Roads
- Permanent Watercourse
- Intermittent (Intermittent Watercourse)
- Waterbody

Species Name

- Bald Eagle Sighting (Number labelled on map)

NOTES:
- Background topographic map extracted from Toporama, Geogratis, NRCan 1:50k DRG

Datum: NAD83
Projection: UTM Zone 15N

0 3 6 12 18 24 Kilometres

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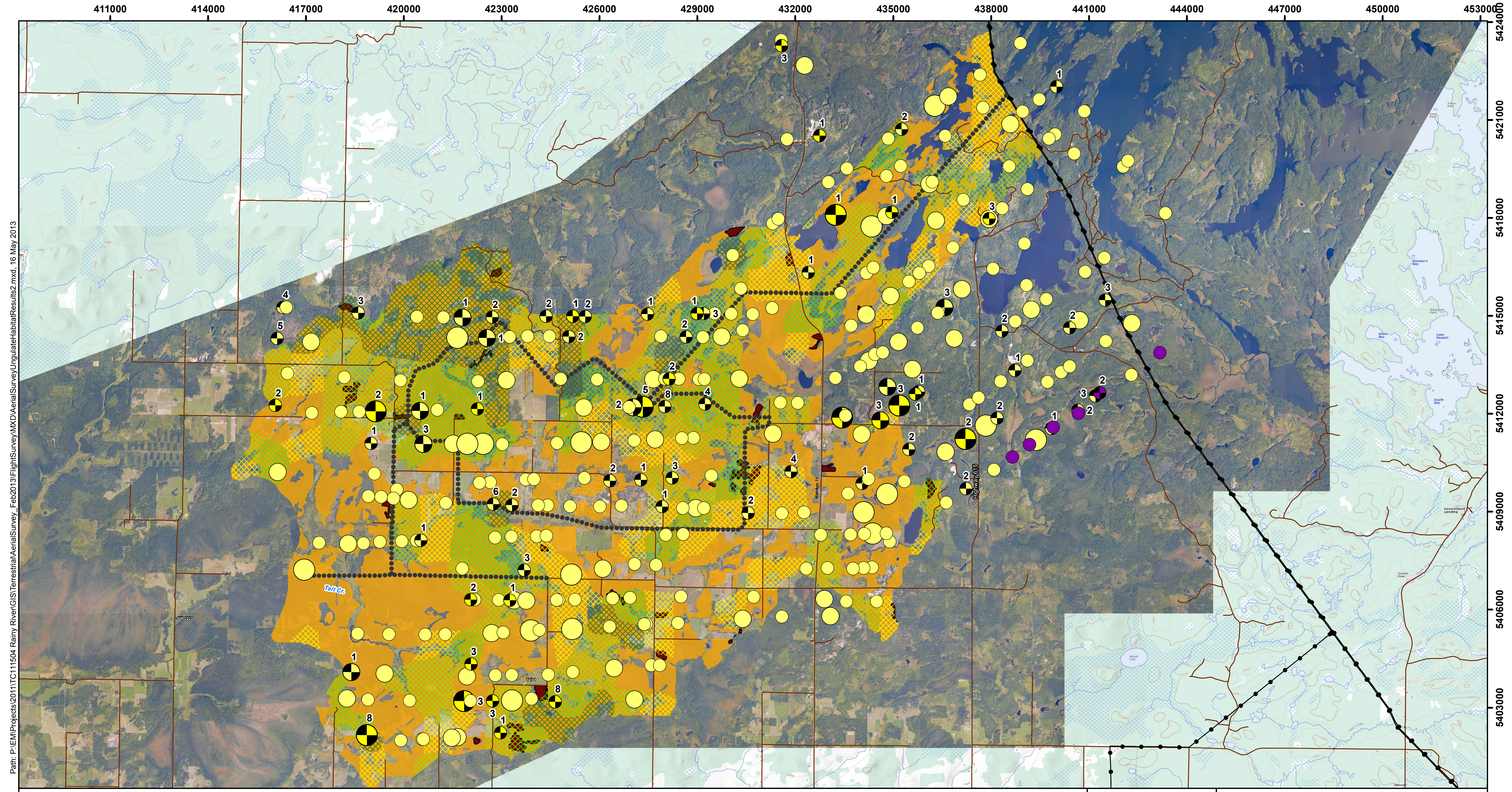
2013 Aerial Survey Results
Bald Eagle

PROJECT N°: TC111504	FIGURE: 5
SCALE: 1:110,000	DATE: May 2013



LEGEND

- Approximate Project Boundary
- Existing Transmission Line
- Roads

Species Name

- Moose
- White-tailed Deer
- Sighting (Number labelled on map)

Density

- High
- Medium
- Low

- Potential Moose Late Winter Cover Areas, based on Boreal ELC Communities
- Potential Deer Wintering Areas, based on Boreal ELC Communities

Deer Wintering Areas by Habitat Quality Rank (MNR)

- Very High
- High
- Moderate
- Low

0 3 6 12 18 24 Kilometres

NOTES:
- Background topographic map extracted from Toporama, Geogratis, NRCan 1:50k DRG
- Habitats derived from MNR FRI data, MNR Ecosite data and conversion into Provincial ELC classes
- Deer wintering data with habitat quality rank is provided by the MNR, information access branch

Datum: NAD83
Projection: UTM Zone 15N

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2013 Aerial Survey Results
Ungulate Habitat Areas

PROJECT Nº: TC111504	FIGURE: 6
SCALE: 1:110,000	DATE: May 2013