Industrial Operations and Breeding Birds: Best Practice Considerations for Avian Risk Assessment Programs

CanNorth

SASKATCHEWAN MINING ASSOCIATION ENVIRONMENTAL FORUM

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Presentation Format

- **Issues facing migratory birds**

  What is incidental take?

- **Legislation – protects birds**

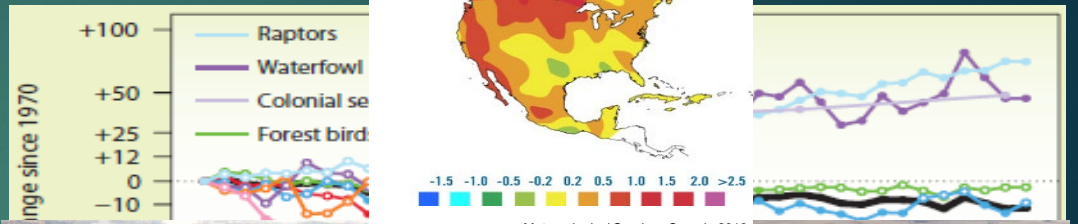
- **Industrial operations and areas of concern**
  - Best Management Practices

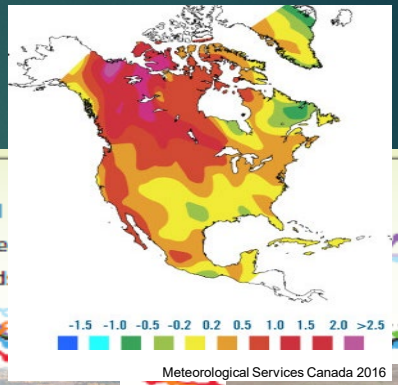
- **Developing an Avian Risk Assessment Program**
  - Important components

- **Future needs**

Migratory Bird Population Trends

- Bird populations have displayed ubiquitous declines (12%)
- Insectivores and grassland birds have displayed decreases of 30 to 60%
- Main reasons: climate change, habitat loss, and pollution (act collectively)
- Incidental take





Meteorological Services Canada 2016

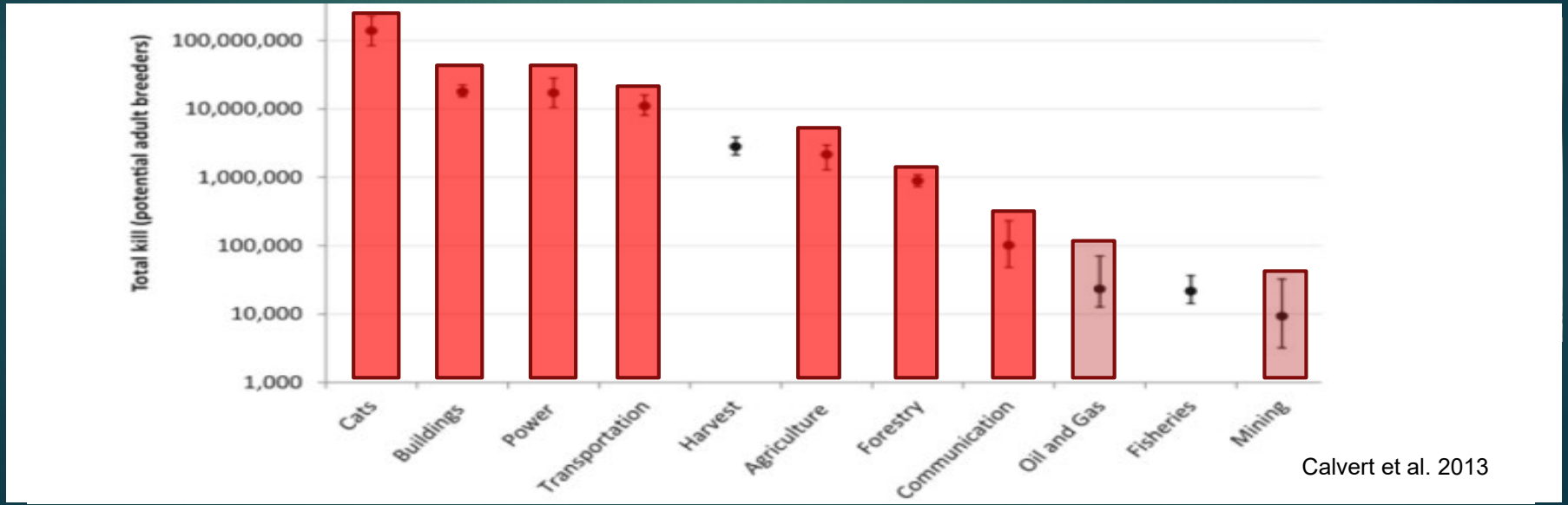

DUC 2016


Norwex Movement 2016

Incidental Take

- Bird mortality caused directly or indirectly from humans
  - Inadvertent harming, killing, disturbance, destruction of migratory birds, nests, or eggs

- Calvert et al. (2013) estimated that 269 million birds, and 2 million nests are destroyed by incidental take in Canada *each year*
- > 95% of all mortality is caused by cat predation and collisions with windows, vehicles, and transmission lines



Calvert et al. 2013

Legislation Protecting Birds

- Federal
  - Migratory Bird Convention Act (MBCA; 1994) and Regulations
    - 1916 between Canada and the United States; seasonal hunting.
    - Prohibits the harm, harassment, killing of migratory birds, their nests, eggs, and offspring.
  - Species at Risk Act
- Provincial
  - Wildlife Acts
- Provincial and Federal activity restriction guidelines

Incidental Take and Industry

- **Proponents must understand their legal obligations**
- *A person or vessel that establishes that they exercised **due diligence** to prevent the commission of an offence under this Act…shall not be found guilty of the offence (MBCA 2004)*
- **Fines, list of infractions, public image**
- **Industrial Work Must Go On…**
  - **Clearing vegetation**
  - **Draining or flooding of wetlands**
  - **Noise/activity from nearby construction**

Preventing Incidental Take

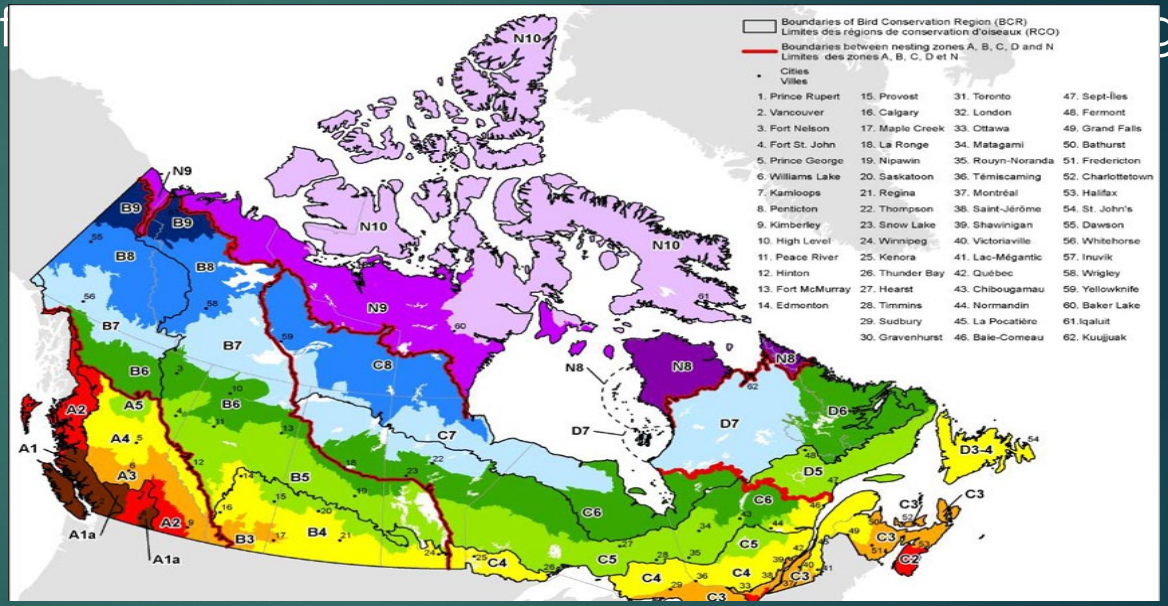
General ECCC recommendations:

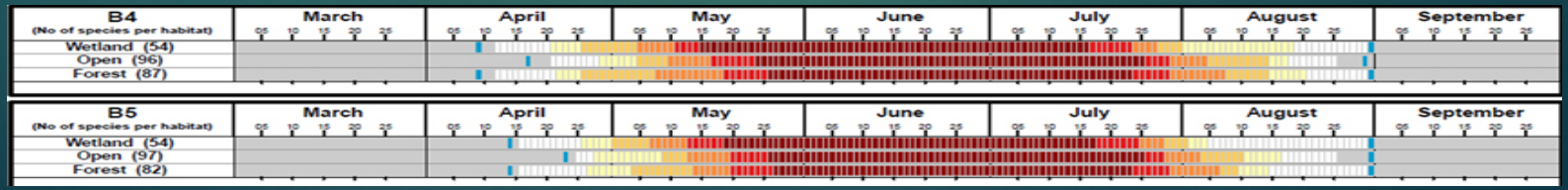
1. Know your legal obligations;
2. Avoid engaging in potentially destructive or disruptive activities in key sensitive periods and locations, in order to reduce the risk of affecting birds, their nests or eggs;
    1. Avoidance
    2. Pre-clearance nest surveys
3. Develop and implement appropriate preventive and mitigation measures to minimize the risk of incidental take and to help maintain sustainable populations of migratory birds.

Risk Avoidance: Sensitive Timing Periods

- Avoid engaging in potentially disruptive activities in key sensitive periods and locations
- A large proportion of … of project timing

General Nesting Periods of Migratory Birds in Canada, available through the Environment Canada Website





Risk Avoidance: Timing of Events

Pre-Clearance Surveys

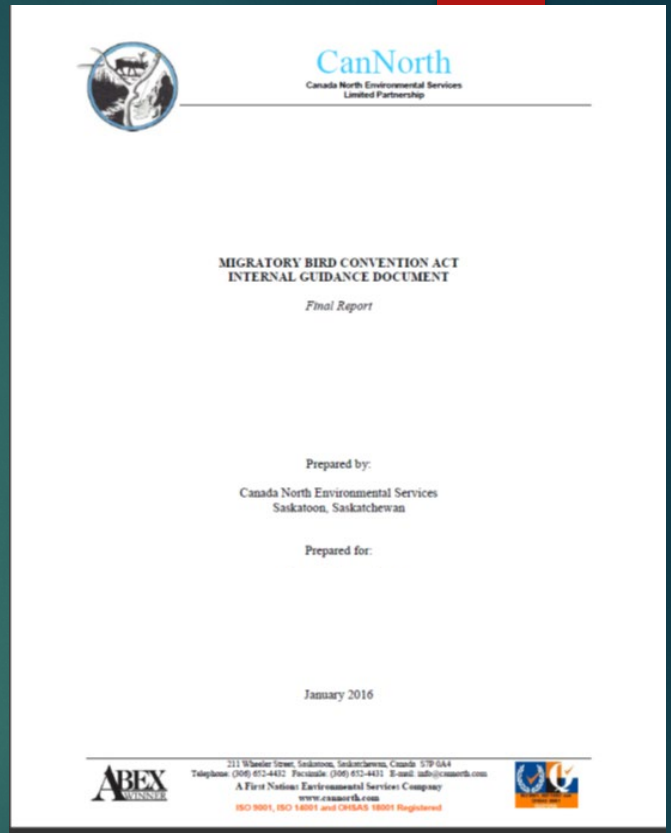
- Historically, nests located through a combination of systematic searches and behavioural cues
- Legislation has changed: EC and MOE no longer endorse nest searches (low detection, especially in complex habitat); there has not yet been any measure proposed to replace them
- Currently, breeding birds (singing, territorial behaviour) are indicative of nesting (or nests that are easily located)

Best Practices

- Risk Avoidance
  - Restrictive to planned summer operations
- Pre-clearance Nest Survey
  - Disturbed/small footprint
  - Undisturbed/large footprint
- Develop and implement appropriate preventive and mitigation measures to minimize the risk of incidental take and to help maintain sustainable populations of migratory birds
  - **Avian Risk Assessment Program Development**

Development of a Guidance Document

- Guide process
- Background
  - Legislation education
  - Enforcement and fines
- Compliance best practices
- Detecting breeding birds
- Habitat mapping
- Reporting – risk evaluation
- Mitigations
  - Setbacks
  - Nest monitoring
- Adaptive – updated regularly



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MIGRATORY BIRD CONVENTION ACT
INTERNAL GUIDANCE DOCUMENT

Final Report

Prepared by:

Canada North Environmental Services
Saskatoon, Saskatchewan

Prepared for:

January 2016

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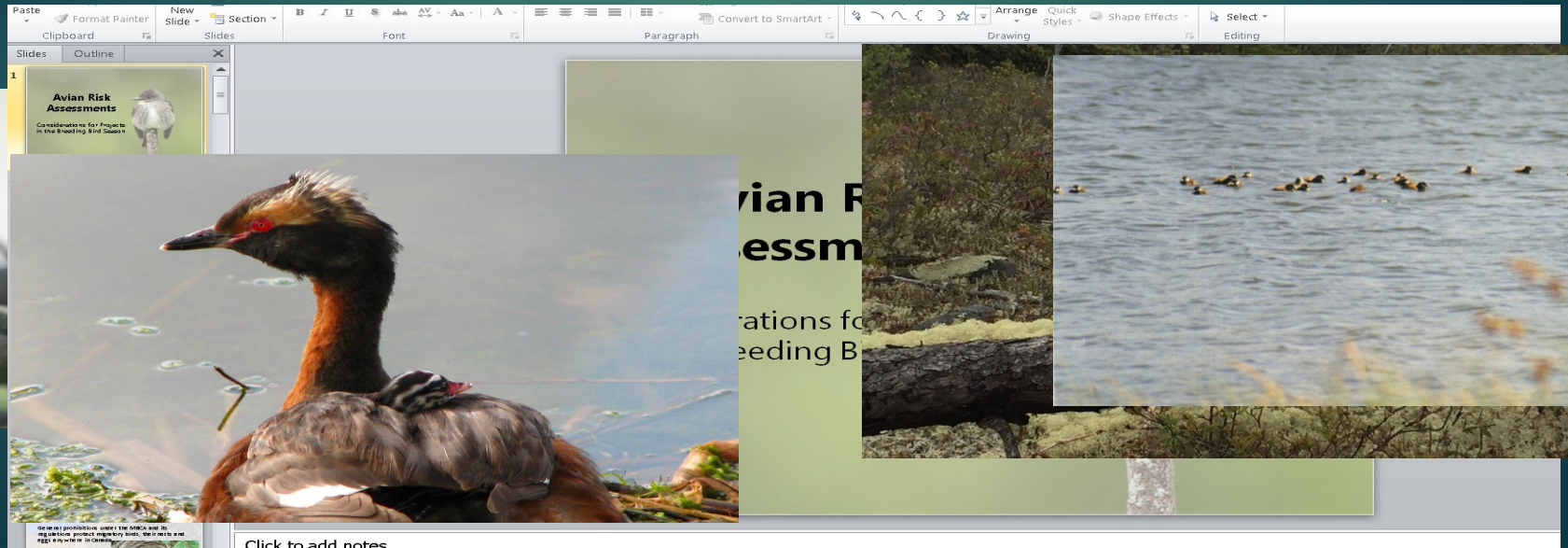
Awareness Seminar Training

- **Inform staff/ primary contractors**
  - Legislation
    - Legal requirements
  - BMP's
    - Process of Avian Risk Assessment



Project Specific SOP's

- Guide summer activities for staff and contractors
  - Focused on work in
    - Forest – clearing drill pads, roads
    - Gravel pits – material removal
    - Wetlands - dewatering
- Tailboards
  - Information binders
    - Areas of concern (Habitat mapping)
    - Supplemental nest sweeps (limited)
    - What to do when….
      - Bird cues/nest id
      - Species of concern fact sheets

Species at Risk Fact Sheet

Olive-sided Flycatcher

CNSOP-75 Version: 6.0 May 22, 2018	CanNorth SOP – Avian Risk Assessment	Page 1 of 11

Purpose:

This SOP outlines the methodology for assessing risk to birds in areas of Saskatchewan's boreal and grassland regions where construction activities are planned to occur during the active breeding and nesting season (between April 1st and August 31st). The Saskatchewan Ministry of Environment and Environment Canada do not generally recommend active nest searches because they have a low probability of detecting all nests, and are likely to cause disturbance to nesting birds. Instead, habitat identification, breeding bird observations, and passive nest searching will be used in combination to provide the client with the best possible assessment of project risks to nesting and breeding migratory birds. Risk assessment results will be used to strategically plan construction activities to mitigate the risk of incidental take of migratory birds. Applicability of this SOP to project type and timing should be discussed with the project manager.

Applicable To

Staff from Canada North Environmental Services and designated sub-contractors

Table of Contents:

Canada North Environmental Services Limited Partnership
A First Nation Environmental Services Company

STEPS TO TAKE IF YOU FIND A BIRD NEST ON SITE

Bank swallow colony

Songbird nest

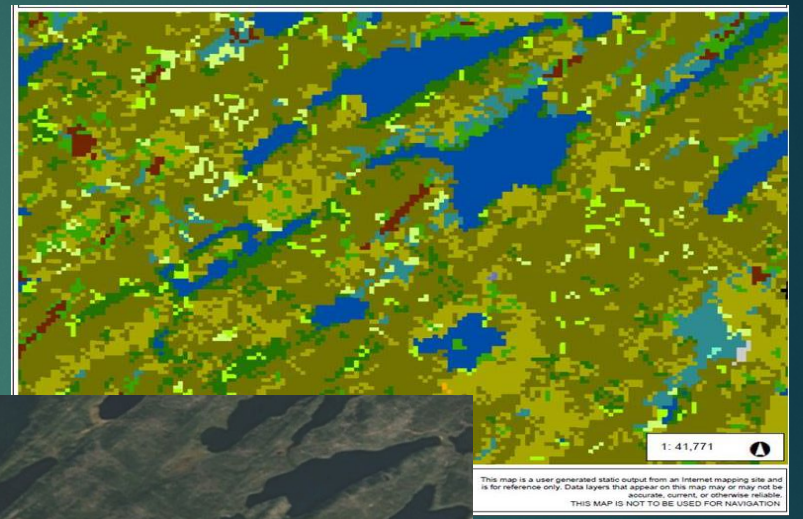
1. Stay away from the nest
2. Report the location to your supervisor

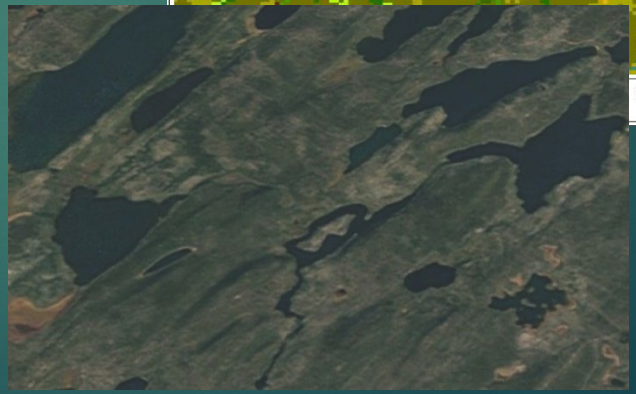
Risk Evaluation

- If work activities occur during the breeding season, it is recommended that a **qualified biologist** complete an assessment in the project area to determine risk to breeding birds

Study Design

- Habitat delineation and desktop screening
- Survey density relative to habitat types in project area
- Focus efforts if/when project locations/infrastructure are known





Risk Evaluation: Species Detection

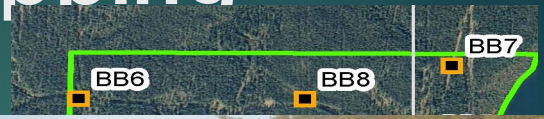
- **Species Detection Surveys**
  - Before/during construction
  - Determine species distribution
  - Detect presence of sensitive species or species at risk
  - Behavioural observations (breeding vs. non-breeding behaviours)
  - Not all species are easily detected (nocturnal species, marsh birds)

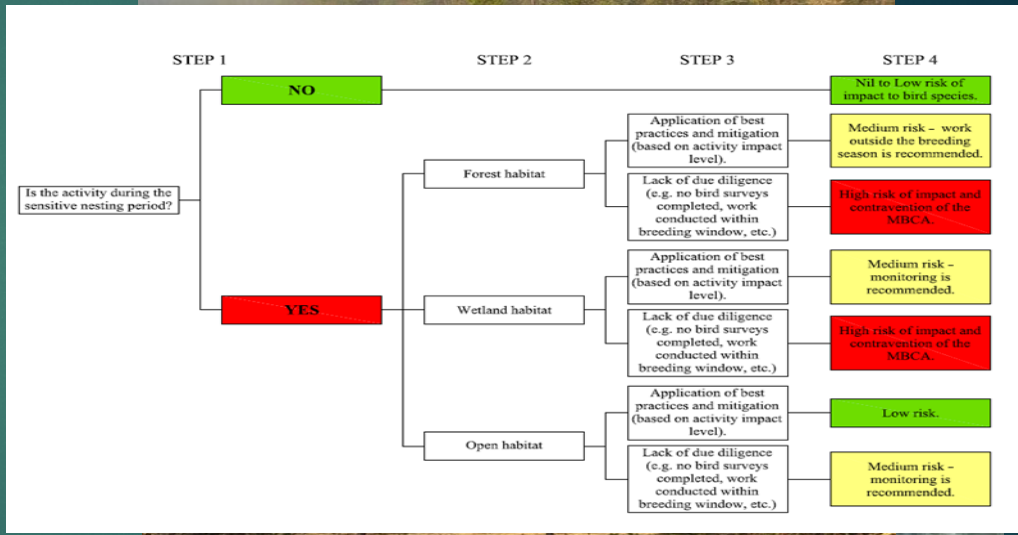
- **Risk is higher in areas of high habitat potential (e.g. forest or wetland areas)**
  - **Habitat assessment**

- **Nests are often present in virtually every habitat type**

Scaling it up: Habitat Mapping

- Risk is higher in areas of high habitat potential (e.g. forest, riparian areas)





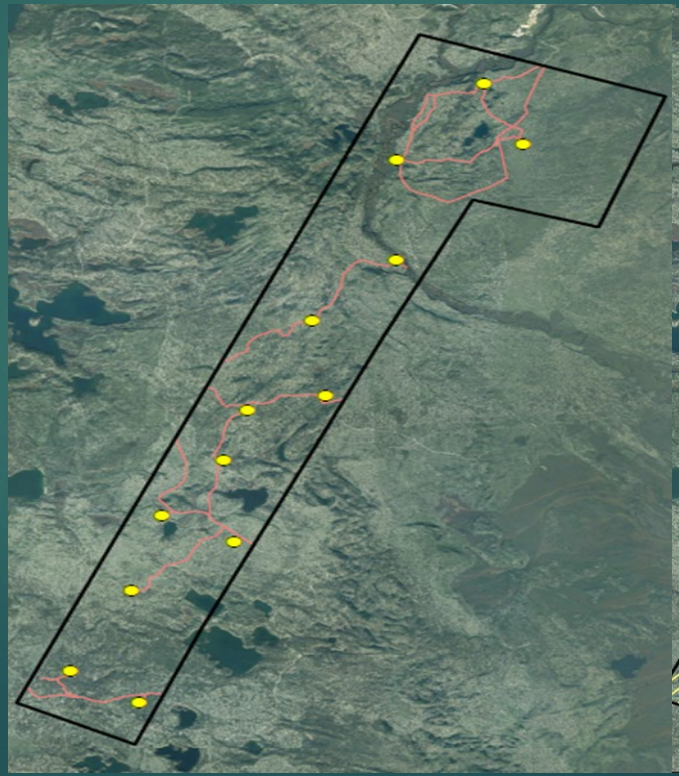
- Risk assessment
  - Point count data
    - Species richness
    - SARA species
    - Known nests
  - Areas of high structural diversity
    - Study areas – quiet?
  - Time of year

- Decision tree – risk considerations
  - Project specific
  - Guide to create risk levels

Habitat Mapping

- Broad scale risk map for project areas

- Differ between project areas
  - Habitat
  - Survey time
  - Access
  - Size



Autonomous Recording Units

- Portable
- Programmable
- Train staff in deployment
  - Site selection (done in-house)
  - Habitat documentation
- Collect more data – detection?

Additional Mitigation Measures

- Route selection
  - Use existing areas
- Supplemental search efforts
- Deterrents
  - Proactive use
- Hand clearing
  - Limit clearing area
  - Clearing of non-compatible vegetation
- Nest set back restrictions
  - Biological relevance
- Communication
  - Use of qualified monitor/biologist

Avian Risk and Project Planning

- Proponents should ensure that their project is not inherently dangerous to birds, or be willing to fulfill sufficient mitigation requirements (due diligence)
  - Include Avian Risk Program Components in design
  - Program /Mitigation measures – dewatering, clearing, mowing, operations

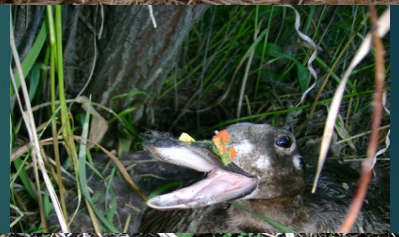


Future Needs

- **What constitutes a nest?**
  - **Inactive nests inside/outside of the breeding season?**
    - Logistical constraint
    - Need for consistent message
  - Case by case basis

- **Setback requirements (Guidelines)**
  - *It is the responsibility of the individual or company undertaking the activities to determine set-back distances (EC 2015)*
  - *Biological relevance - differences*

- **What is the effectiveness of recommended mitigation measures?**
  - *Need for scientific evaluation of effectiveness*



Questions?