

# Dominion Diamond Corporation

Developer's Assessment  
Report – Technical  
Sessions, April 2015

Wildlife



# Overview

- Review of DAR assessment approach and conclusions
- Common topics from Adequacy Review and Information Requests:
  - Sable Addendum and Diavik A21 Pit
  - Short-eared owl
  - Mitigation of fish-out mortality on loons (and other diving birds)
  - Wildlife Effects Monitoring Program and Wildlife and Wildlife Habitat Protection Plan



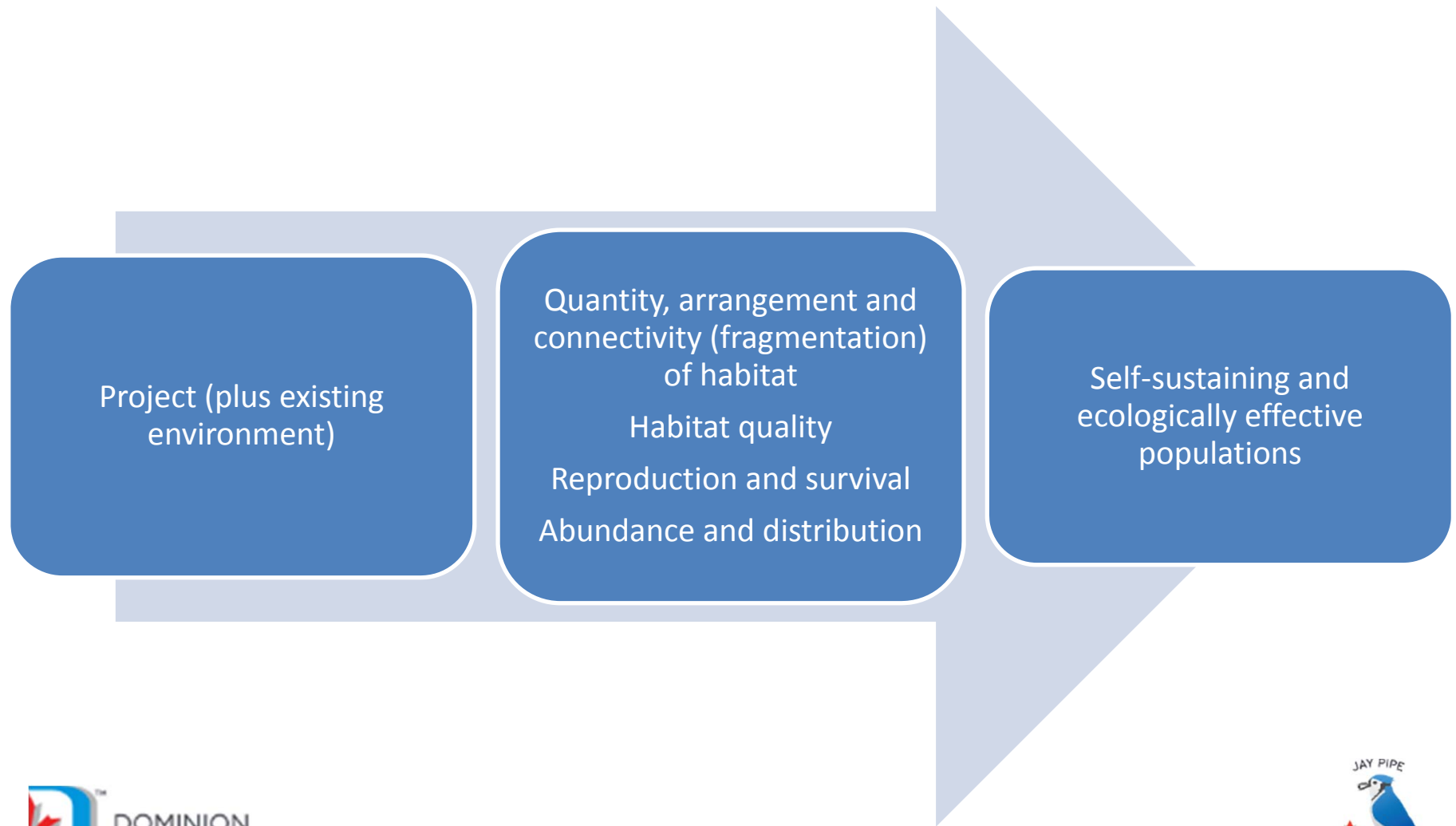
# Assessment Approach

## Terrestrial Valued Components, Assessment Endpoints and Measurement Indicators

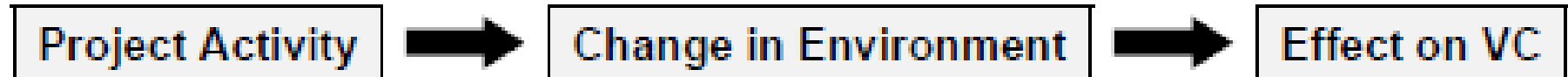
Valued Component	Assessment Endpoint	Measurement Indicator
Upland Birds	<ul style="list-style-type: none"><li>self-sustaining and ecologically effective populations</li></ul>	<ul style="list-style-type: none"><li>habitat quantity</li><li>habitat arrangement and connectivity (fragmentation)</li><li>habitat quality (occupancy, movement and behaviour)</li><li>survival and reproduction</li><li>abundance and distribution of valued components</li></ul>
Waterbirds		
Raptors		
Wolverine		
Grizzly Bear		
Gray Wolf		

- Bird species at risk were assessed with upland birds and raptors

# Assessment Approach



## Subject of Note: Wildlife and Wildlife Habitat – Assessment Methods



- 21 potential pathways were assessed to examine the linkages between Jay Project components and the effects on wildlife and 18 were classified as either no linkage or secondary pathways
- 3 primary pathways were identified:
  - Direct loss and fragmentation of habitat from the Project footprint causes changes in wildlife abundance and distribution.
  - Sensory disturbance (lights, smells, noise, dust, viewscape) causes changes to wildlife distribution and behaviour.
  - Increased traffic on the Misery Road and Jay Road and the above-ground power line along these roads may create barriers to wildlife movement and reduce population connectivity.

## Determination of Significance

DAR used conservative assumptions to predict maximum effects

Measurement Indicator	Significance to Assessment Endpoint
habitat quantity	Not significant
habitat arrangement and connectivity (fragmentation)	
habitat quality (occupancy, movement and behaviour)	
survival and reproduction	
abundance and distribution	

- Considered the ability of VCs to absorb and adapt to cumulative effects given life history traits, and calculated and predicted changes in:
  - existing and future amount of available habitat
  - existing and future landscape connectivity
  - key mortality agents
  - current and future population abundance and distribution of VCs



## Subject of Note: Wildlife and Wildlife Habitat – DAR Updates

Updated results since DAR October 2014 submission

- Inclusion of Sable pit and road, and Diavik's A21 pit in RFD Case

Largest RFD Case effect (including Sable and A21) was for waterbirds:  
<-5.2% (staging) and <-5.6% (breeding)

- Reassessed short-eared owl as upland bird (DAR-GNWT-IR-68)

**RFD Case:** altered 1.3% directly and 4.1% indirectly of upland habitat

**Project changes:** (-0.2% [direct] and -0.3% [indirect])

Does not change the residual impact classification and determination of no significant effects in the DAR.



## Subject of Note: Wildlife and Wildlife Habitat – Fish-out mortality

Concerns expressed during Information Requests (DAR-EC-IR-25, DAR-IEMA-IR-20) about waterbird mortalities during Project fish-out

- Fish-out mortality assessed as secondary pathway (measurable minor change) in DAR
- Common and yellow-billed loons (and other diving birds) detected in Lac du Sauvage/Lac de Gras area during baseline
- Fish-out will occur once during construction and will be included in *Fisheries Act* Authorization for Project
- Diving bird mitigation strategy will be included in the final fish-out plan
- The strategy will be developed with EC and consider lessons learned from previous fish-out programs





## Subject of Note: Wildlife and Wildlife Habitat – Significance

No quantitative ecological thresholds for self-sustaining or ecological effectiveness available for wildlife VCs

- Considered life history traits of VCs (e.g., litter/clutch size, life span, home range) to qualitatively assess VCs' ability to absorb and adapt to calculated and predicted changes in measurement indicators

Grizzly bear example:

RFD cumulative direct habitat loss is <1.5% of seasonal ranges.

RFD cumulative changes to preferred (high and good quality) seasonal habitat  $\leq 10.4\%$ .

Habitat is not limiting, home ranges are large so predicted small increases in habitat fragmentation are unlikely to reduce population connectivity.

Mine-related mortalities 0.07 per year (based on 53 North Slave mine-years of monitoring). Mature females produce 1 to 3 cubs every three years or 5 to 15 over 15 years so unlikely to decrease abundance.

Lines of evidence indicate magnitude of effects are within the resilience limits and adaptive capacity of the grizzly bear population.

## Subject of Note: Wildlife and Wildlife Habitat – Mitigation Planning

### Key Mitigation of Effects Pathways

- Use of existing Ekati Mine infrastructure avoids new direct and indirect disturbance of habitat
- Wildlife right-of-way on roads, deterring wildlife from hazardous areas and visibility and perching deterrents on power line reduce risk of mortality
- Waste Management Plan
- Crossings and managed traffic patterns to avoid and limit barrier effects of roads

Additional mitigation provided in Table 13.3-1 in DAR and DAR-MVEIRB-IR-90





## Follow-up and Monitoring for the Terrestrial Environment

Existing Ekati Mine Wildlife Effects Monitoring Program (WEMP) will be applied to Project, including:

- Extent of direct disturbance to vegetation communities (wildlife habitat)
- Mine-related wildlife mortalities and interactions with site (including roads)
- Pit-wall nesting by raptors
- Mitigation and waste management effectiveness
- Contribution to regional monitoring of cumulative effects

The current WEMP monitors caribou, grizzly bear, wolverine, gray wolf, fox, raptors, waterbirds, and upland birds

- Wildlife and Wildlife Habitat Protection Plan will be provided to meet the requirements of the *NWT Wildlife Act*
- Ekati Wildlife Road Mitigation Plan (which will be applied to Jay Project) forthcoming



# Questions?

