

TECHNICAL MEMO

To Keith Meldrum, ASCT, RTMgr Special Projects Director, Arthon Industries	From Garrett Kerr, BSc, RPBio 2321 / Environmental
Re Response to Third-Party Review of Environmental Assessment / Sandhill Waste Soil Storage	Date March 10, 2022

In February 2020, McElhanney produced an environmental assessment report for a proposed soil storage facility adjacent to the Sandhill quarry site in Kitimat, BC. The proposed expansion was intended to facilitate storage of excess soils associated with Arthon Industries Ltd.'s ongoing operational needs, as well as to accept soils from project sites in the Kitimat region. The environmental assessment was intended to provide an overview of biological values within the vicinity of the proposed soil storage areas, assess potential project interactions for these biological values, determine whether potential impacts could be suitably mitigated, and identify potential for residual risks.

In response to the submission of the environmental assessment document, the District of Kitimat council requested a third-party review by a second environmental consultant to confirm the assessment had been carried out to appropriate standards and to verify that the conclusions of our assessment were defensible. Hatfield Consultants LLP (Hatfield) were retained by the District of Kitimat to conduct the review, providing comment in a July 2021 memo, as well as a subsequent conference call meeting in January 2022. Four specific topics of concern were brought forth as a result of the third-party review:

1. Grizzly Bear Habitat
2. Absence of Identification of Known Owl Species
3. Mitigation Measures, and
4. Cumulative Effects in the Local Area

The following document lays out the description of each stated concern and the mitigations proposed by Hatfield, as well as our response to each item and our recommendations to address remaining uncertainty or concerns.

McElhanney

Grizzly Bear Habitat

HATFIELD COMMENT

Given the potential for high value grizzly bear (Ursus arctos) habitat within the area and the potential for project activities interacting with Goose Lake wildlife corridor, further habitat assessment should be considered given that grizzly bears are a Species of Concern.

HATFIELD RECOMMENDATION

Confirmation of presence of wildlife in the area using wildlife cameras and additional field surveys to determine potential environmental impacts.

RESPONSE

Field findings related to grizzly bears were restricted to high value habitat associated with rich, wet forest sites and sedge wetlands around Goose Lake and Goose Creek, as well as evidence of foraging near the north end of Goose Lake. No wildlife trails were identified during field assessments, and outside of the areas along Goose Creek and Goose Lake, grizzly bear habitat values were low.

In preparation of the environmental assessment report, McElhanney was instructed to evaluate multiple potential phases of construction, some of which are not currently proposed. The project component with the closest proximity to the Goose Creek and Goose Lake areas is a water quality treatment facility comprising a temporary surface water management pond. This feature is not part of the current proposed phase, and as such, the proposed development is not anticipated to present a risk of impacts to this corridor. Should the next phase of the development proceed, the site will be revisited at that time based on the proposed site development. Future consideration to the siting of the feature's footprint will include maintaining a vegetated buffer to the stream and associated movement corridor and avoiding any established wildlife trails, while additional mitigation measures will include timing construction to minimize seasonal impacts and limiting operational traffic in the area to reduce the risk to interruption of movement along the corridor.

Identification of Known Owl Species

HATFIELD COMMENT

There is an absence of an assessment of owl species within the environmental assessment. Specifically, Northern Saw whet Owl (Aegolius acadicus) and Western Screech Owl, kennicottii subspecies (Megascops kennicottii kennicottii). These owls prefer the Bio geoclimatic Ecosystem zone of the proposed



expansion area (Coastal Western Hemlock) and have been documented in the Kitimat area within the last year.

HATFIELD RECOMMENDATION

Confirmation of presence/ absence of Northern Saw whet Owl and Western Screech Owl in the area. Recommendation to conduct a point count night survey or walkthrough of the area, with a focus on Goose Lake. Further mitigations required if presence of owls confirmed.

RESPONSE

The original environmental assessment report was based on the identification of Valued Ecosystem Components, with a focus on Species at Risk that could occur in the area. The determination of Species at Risk was informed through use of the provincial Conservation Data Centre's Species and Ecosystems Explorer (BCSEE) tool. At the time of our desktop assessment in late 2019, using the parameters laid out in the Methodology – Desktop Assessment section of our report, no owl species at risk were identified as potentially occurring in the study area. While changes to the BCSEE tool preclude an exact replication of this search, a comparable search conducted in February 2022 identified three owl species with conservation designations as potentially occurring in the Kitimat region:

- short-eared owl (*Asio flammeus*)
- northern pygmy-owl, *swarthi* subspecies (*Glaucidium gnoma swarthi*)
- western screech-owl, *kennicottii* subspecies (*Megascops kennicottii kennicottii*)

Given that the updated search engine tool broadens the overall search area substantially, additional desktop assessment and literature review was conducted to identify known occurrences of these species in the Kitimat area and further evaluate the likelihood of species occurrence for those which have not been documented near Kitimat. Citizen science records available through the eBird website were reviewed for each species listed in the updated BCSEE results, as were range maps available from the provincial guidelines for raptor conservation (FLNRO 2013).

In addition to those owl species with provincial or federal conservations designations that were identified by the BCSEE, we further reviewed range maps for all BC owl species, regardless of conservation status. An additional four owl species were identified as potentially occurring in the Kitimat area, based on their range maps (FLNRO 2013).

- barred owl (*Strix varia*)
- great horned owl (*Bubo virginianus*)
- long-eared owl (*Asio otus*)
- northern saw-whet owl (*Aegolius acadicus*)

Their preferred habitat characteristics were documented and compared to the site conditions recorded within the study area. Potential for impacts was determined by assessing the following variables:



- species/subspecies conservation status
- habitat preferences relative to ecosystem conditions found within proposed footprint and overall study area
- documented threats and ability to co-exist with human development relative to proposed development.

Short-eared owl (*Asio flammeus*)

The short-eared owl is provincially blue-listed and is designated as Special Concern under the federal *Species at Risk Act* (2012). Furthermore, its federal conservation ranking has been heightened to Threatened under its most recent assessment by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC 2021). A review of eBird records indicates several sightings of short-eared owls around Kitimat over the past 15 years. Of these, 88% were recorded in the months of November and December, indicating that short-eared owl presence in the Kitimat area is associated with migration and overwintering, with nesting very unlikely. Furthermore, preferred nesting and foraging habitat for short-eared owls is primarily associated with open, grassy areas, including agricultural fields, estuaries and large, non-forested wetlands. Given the lack of such habitat in the study area, risks to short-eared owls from the proposed development are assessed as nil.

Northern Pygmy-owl (*Glaucidium gnoma*)

The conservation status of the northern pygmy-owl is dependent on the subspecies of discussion. As a species, the northern pygmy-owl is provincially yellow-listed (not at risk) and has no federal conservation designation. The *swarthi* subspecies that was identified as potentially occurring in the region during the BCSEE search is provincially blue-listed. However, this subspecies is endemic to Vancouver Island and the Gulf Islands (BC CDC 1997b), and as such, is very unlikely to occur as far north as Kitimat. Northern pygmy-owls that are not in the *swarthi* subspecies occur as residents throughout coastal BC in forests, open woodlands and adjacent meadows in mountainous areas and are common in the Kitimat valley. Nests occur in existing cavities (woodpecker holes and natural cavities) in snags and large living trees. Northern pygmy-owls generally do not inhabit dense, unbroken forests (BC CDC 2009), especially those with young forest characteristics as occur throughout the study area.

Given their secure conservation status and the fact that they generally do not occur in unbroken dense young forest, which constitutes the majority of the vegetation type within the proposed project footprint, risks to northern pygmy-owls is assessed as low. Minimizing project footprint within mature or riparian forests will further reduce the risk to northern pygmy-owls.

Western Screech-owl, *kennicottii* subspecies (*Megascops kennicottii kennicottii*)

The *kennicottii* subspecies of the western screech-owl is provincially blue-listed and is designated Threatened under the federal *Species at Risk Act*. The subspecies' most recent assessment by COSEWIC confirmed its federal Threatened status. A review of eBird records indicates three records of western screech-owls around Kitimat, including two in the past two years. Preferred nesting habitat for western screech-owls is typically associated with mixed or deciduous riparian forests, with nests occurring within existing cavities excavated by woodpeckers.



Recent declines in western screech-owl populations in BC may be due to several factors which appear to vary depending on geography. In the southern interior, loss of riparian forests appears to be the primary threat, while elsewhere increases in barred owl populations may be responsible. Western screech-owls are considered susceptible to forest clearing activities and have a modern ability to co-exist with human activity. However, given their preference for mixed and deciduous riparian forests, ecosystems that are avoided by the proposed development footprint, risks to western screech-owls from the development are assessed as low.

Barred Owl (*Strix varia*)

The barred owl is provincially yellow-listed (Not at Risk) and carries no federal conservation designations. Barred owls are well-established throughout BC and are common in the Kitimat valley. Barred owls are known to co-exist with most human activities and are currently expanding their range, with population numbers increasing at the expense of other owl species at risk, including the western screech-owl (FLNRORD 2013). Barred owls occur in a wide variety of ecosystem types but prefer to nest in existing cavities within large dead or dying trees. Given their size, nesting cavities (and thus nest trees) must be relatively large.

Given their secure conservation status and the fact that their nesting habitat preferences are inconsistent with the vegetation conditions within the proposed project footprint, risks to barred owls are assessed as very low.

Great Horned Owl (*Bubo virginianus*)

The great horned owl is provincially yellow-listed (Not at Risk) and carries no federal conservation designations. Great horned owls are well-established throughout BC, are common in the Kitimat valley, and have a high ability to co-exist with human activities (FLNRORD 2013). They occur in a wide variety of ecosystem types, with foraging habitat associated with availability of perches more than other habitat characteristics. Great horned owls do not build their own nests, but will utilize a variety of availability nesting sites, including existing large stick nests, large tree cavities and cliff ledges.

Within the study area, suitable foraging and nesting habitat is likely restricted to riparian forests near Goose Lake and Goose Creek. The project footprint near these areas will avoid forests with large trees that are likely to provide suitable nesting opportunities. Given this avoidance, along with the great horned owl's secure conservation status and its high ability to co-exist with human activities, risks to great horned owls are assessed as low.

Northern Saw-whet Owl (*Aegolius acadicus*)

The conservation status of the northern saw-whet owl is dependent on the subspecies of discussion. As a species, the northern saw-whet owl is provincially yellow-listed (not at risk) and has no federal conservation designation. The *brooksi* subspecies that is provincially blue-listed and designated as Threatened under the *Species at Risk Act* is endemic to Haida Gwaii (BC CDC 1997a), and as such, is very unlikely to occur on the mainland of BC.



A review of eBird records indicated only one record of the northern saw-whet owl in Kitimat, occurring in January 2020. Northern saw-whet owls utilized a wide variety of forested and wetland habitats, especially riparian forests. While they will nest in younger forests than most owl species, including second growth forests, nest sites are nonetheless restricted to tree cavities (usually excavated by woodpeckers) in large dead or dying trees (FLNRORD 2013).

Northern saw-whet owls are considered to have a moderate to high ability to co-exist with human disturbance, though they are susceptible to forest clearing activities. However, given their secure conservation status and the lack of large dead or dying trees identified within the project footprint, risks to northern saw-whet owls are assessed as low.

Long-eared Owl (*Asio otus*)

The long-eared owl is provincially yellow-listed (Not at Risk) and carries no federal conservation designations. Long-eared owls forage over open areas, roost in dense conifer forests (especially western redcedar), and nest in thick riparian forests. Typically, nest sites consist of abandoned stick nests from crows or hawks, typically 3-9 m above the ground (FLNRORD 2013). A review of eBird records indicated at least one record of the long-eared owl in the Kitimat area, though detailed occurrence data are protected for this species. While their conservation status is secure, long-eared owls are nonetheless considered uncommon to rare, particularly in northwest BC.

Given their secure conservation status, a moderate to high ability to co-exist with human activity, and a low likelihood of occurrence in the region, risks to long-eared owls from the proposed development are assessed as low.

CONCLUSION

An updated search of the CDC BCSEE found three owl species at risk that could occur in the region. Of these, only the western screech-owl was considered likely to occur in the study area, with suitable habitat restricted to mixed forests along Goose Creek. Four additional owl species with secure conservation statuses could also occur in the region, though nesting habitat characteristics for each species were absent from the study area or will be avoided by the proposed project footprint.

Assessment of risks from the proposed development to the owl species that could occur in the Kitimat area found low to no risk for all species. As a result, no further assessments or mitigation measures are proposed.

Mitigation Measures

HATFIELD COMMENT

Mitigation measures are not prescriptive within the document for effective implementation to provide certainty of protection to the environment.



HATFIELD RECOMMENDATION

Given the interaction with environmentally sensitive areas, further mitigation measures should be considered such as a 30 m riparian buffer around the proposed haul road sections and any nearby water bodies. Consideration of this buffer should also take into account grizzly bear movement, and other species at risk in the area.

At minimum, a Qualified Environmental Professional should be on-site at time of project construction, and a Construction Environmental Management Plan should be developed to guide construction activities.

RESPONSE

An Environmental Management Plan (EMP) will be developed once finalized design drawings are complete prior to commencement of construction. This EMP will include prescriptive mitigation measures specific to the environmentally valuable resources identified in the assessment and specific scopes of work proposed. The EMP will include provisions for regular environmental monitoring during construction by a Qualified Environmental Professional.

Cumulative Effects

HATFIELD COMMENT

The current level of development in the Kitimat area to the south and east of this site and the added pressure of development in this area near the established wildlife corridor was not fully assessed. Wildlife in the area may potentially find refuge from current construction activity.

HATFIELD RECOMMENDATION

A few suggested studies to ensure mitigation for cumulative impacts are considered include:

- *Complete a wildlife baseline study to determine active environmentally sensitive areas (e.g., grizzly bear impacts, owls, other species at risk).*
- *Complete water quality assessments to consider for downstream resources and potential cumulative impacts to fish and aquatics.*



- *Complete visual quality assessment to mitigate the possible impacts to tourism and local recreation.*

In general there are few mitigation measures proposed in the assessment that account for cumulative impacts. The area is close to water, is within a known wildlife corridor, is within known local recreational areas, and is adjacent to a multitude of large industrial activities.

RESPONSE

Given the environmental context of the proposed development (typically dense, second growth forest with minimal values for wildlife), habitat values for most valued ecosystem components are low. It is possible wildlife will find refuge along Goose Lake and adjacent riparian areas. However, these areas will be avoided by the proposed development footprint, and limited habitat values elsewhere within the study area minimize the value of the site as a wildlife refuge from larger developments elsewhere in the Kitimat Valley. Potential for environmental impacts identified during our assessment was restricted to the values that have been addressed, including:

- tailed frog habitat
- fish habitat
- grizzly bear habitat, and
- water quality

Each of these values has been addressed through preliminary assessments and proposed mitigation measures, or will be addressed in subsequent studies, project phasing and design, and long-term monitoring programs.

Baseline assessment of wildlife habitat values was a component of the Environmental Assessment. Specific surveys were completed for tailed frogs and additional surveys are proposed to assess wildlife corridor values (particularly for grizzly bears) along the Goose Lake topographic corridor. Table 3 in Appendix A of the Environmental Assessment summarizes the risk assessments for all species at risk identified as potentially occurring in the study area.

Baseline water quality assessments were completed in a separate assessment. Water management will be a substantial component of the site's environmental management program. With the exception of watercourses that will necessarily be rerouted to manage site drainage (which will be subject to provincial and federal permitting), other waterbodies of concern, including Goose Creek and Goose Lake, will be protected through siting of the project footprint to retain vegetated buffers as well as water quality treatments and monitoring.

A visual quality assessment was completed in response to a specific request from council. Furthermore, given the restriction of the project footprint to private property, local recreational values should not be impacted by the proposed development.



Given the scope of the project relative to the major projects in the Kitimat Valley that are referenced, along with the limited ecosystem values of the majority of the project footprint, additional assessment of potential cumulative effects is not justified for this project.

Closing

Hatfield Consultants were retained by the District of Kitimat to conduct a third-party review of McElhanney's Environmental Assessment of the Arthon Sandhill Waste Soil Storage proposal. Hatfield's review identified four topics of concern regarding the McElhanney report which were recommended for further consideration, including grizzly bear habitat, owl species, mitigation measures and cumulative effects assessment.

McElhanney's field assessment found that high quality grizzly bear habitat was restricted to low-lying areas and wetlands around Goose Lake and Goose Creek. In preparation of the environmental assessment report, we evaluated multiple potential phases of construction, some of which are not currently proposed. The project component with the closest proximity to the Goose Creek and Goose Lake areas is not part of the currently proposed phase, and as such, the proposed development is not anticipated to present a risk of impacts to this corridor. Should the next phase of the development proceed, the site will be revisited at that time based on the proposed site development.

Assessment of risks from the proposed development to the owl species that could occur in the Kitimat area found low to no risk for all species. As a result, no further assessments or mitigation measures are proposed.

An Environmental Management Plan (EMP) will be developed once finalized design drawings are complete prior to commencement of construction. This EMP will include prescriptive mitigation measures specific to the environmentally valuable resources identified in the assessment and specific scopes of work proposed. The EMP will include provisions for regular environmental monitoring during construction by a Qualified Environmental Professional.

Finally, given the scope of the project relative to the major projects in the Kitimat Valley that are referenced, along with the limited ecosystem values of the majority of the project footprint, additional assessment of potential cumulative effects is not justified for this project.

McElhanney is please to present this response to the comments put forward by Hatfield. We wish to thank the Hatfield team for a thoughtful review of our environmental assessment document and look forward to any additional questions to come.

Sincerely,
Garrett Kerr

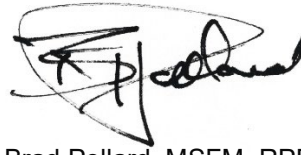


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REFERENCES

- B.C. Conservation Data Centre. 2009. Species Summary: *Glaucidium gnoma*. B.C. Minist. of Environment. Available: <https://a100.gov.bc.ca/pub/eswp/> (accessed Feb 25, 2022).
- B.C. Conservation Data Centre (BC CDC). 1997a. Species Summary: *Aegolius acadicus brooksi*. B.C. Minist. of Environment. Available: <https://a100.gov.bc.ca/pub/eswp/> (accessed Feb 25, 2022).
- B.C. Conservation Data Centre (BC CDC). 1997b. Species Summary: *Glaucidium gnoma swarthi*. B.C. Minist. of Environment. Available: <https://a100.gov.bc.ca/pub/eswp/> (accessed Feb 25, 2022).
- B.C. Conservation Data Centre. 1996. Species Summary: *Asio otus*. B.C. Minist. of Environment. Available: <https://a100.gov.bc.ca/pub/eswp/> (accessed Feb 25, 2022).
- Ministry of Forests, Lands and Natural Resource Operations (FLNRORD). 2013. Guidelines for Raptor Conservation during Urban and Rural Land Development in British Columbia. A companion document to Develop with Care 2012.



APPENDIX A

Statement of Limitations

Statement of Limitations

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