REGIONALLY SIGNIFICANT SPECIES

HIGH CONSERVATION VALUE 1, QUESTION 4

Does the forest contain critical habitat for regionally significant species (e.g., species representative of habitat type naturally occurring in the management unit, focal species, species declining regionally)?

BACKGROUND

Most definitions of 'critical habitat' include the habitat that is necessary for the survival or recovery of a species and on which are found those physical or biological features essential to its conservation. These include habitats that are critical for one or more life stages

Determining what qualifies as a 'regionally significant species' can be a challenging question. Unlike some of the previous HCVF indicators where strict definitions apply to species classifications (*e.g.* COSEWIC definitions), regionally, there is often more variation in the interpretation of what constitutes significance. In addition, it can be difficult to determine if habitat types that naturally occur within a management unit constitute critical habitat for regionally significant species in part because the naturally occurring habitat types may have been altered in structure and/or distribution.

In most cases, consultation with qualified ecologists (specialists) will be required to complete this section.

DATA SOURCES

Possible sources of data to be used in selecting regionally significant species include:

- Conservation data centres (especially S1-S3 species and communities)
- Species representative of habitat types naturally occurring in the management unit
- WWF-Canada Nature Audit information on estimated levels of species disruption from historical baseline (circa 1600).
- Species for which federal, provincial or regional harvesting or management guidelines exist

INTERPRETING REGIONAL SIGNIFICANCE

Identifying a species as 'regionally significant' can result from a number of different considerations, including:

- Species that are considered to be an important (co-dominant or dominant) component of the natural communities in the region
- Top carnivore or dominant ungulate species that if removed from the system or elevated to high population levels would create significant disruption to the system (*e.g.*, explosions in small herbivore populations if carnivores removed; over browsing of tree regeneration by elevated populations of deer or moose)
- Species that are resource limited (*e.g.* cavity nesters)
- Species that are process limited (*e.g.* dependent on natural disturbances such as fire)
- Species that are dispersal limited (*e.g.* plants, amphibians, reptiles, some invertebrates)
- Species that are area limited (*e.g.* wide-ranging species, those requiring large blocks of continuous forest cover)

INTERPRETING THE PRECAUTIONARY PRINCIPLE

A precautionary approach to addressing this question will include consideration of species that may have significantly declined in population or distribution. It will also include an evaluation of the current and past status of the critical habitats for these species. In many areas, reliable historical data on species populations and ranges may be difficult to locate, interpret or simply doesn't exist for a given license area. Where human disturbance has been minimal across the landscape the current state may be appropriate for establishing a baseline. However, where habitat modification has occurred more extensively and/or intensively, it may be much more difficult to determine if critical habitats exist.

ADDITIONAL GUIDANCE

This indicator addresses the habitat needs of regionally significant species representing the range of coarse-scale habitats in the region that are important for sustaining meta-population viability. The challenge is to select species that are truly regionally significant and that can be considered collectively as effective indicators of the naturally occurring landscape, which in some areas has been significantly altered by human disturbances. Their continued viability in a working landscape would therefore be a strong indicator of ecologically sustainable practices across the licence area. As well, sustaining these species would indicate a higher probability that the ecological requirements of a broad spectrum of the region's biodiversity are also being met.

Two key components that help classify critical habitats in the boreal are vegetation structure and composition. Table 4.1 proposes a coarse scale template for selecting regionally significant species that when considered together, would represent a majority of habitat types and seral stages within the license area.

HCV1 Q4 – REGIONALLY SIGNIFICANT SPECIES

Significantly upward or downward population trends/increased or reduced range areas from predicted baseline status

Species which have shown major shifts in population size or range area within the region due directly or indirectly to past and/or continuing human activities should receive priority consideration as regionally significant species under this indicator. Species that may have declined regionally to the extent that they are in danger of becoming locally at risk may be at or close to their current range edge. In these cases, identifying critical habitat as a HCV could help restore the species to its baseline status.

While assessments need to consider species that have declined significantly there is also a need to address those that have undergone a range expansion or increased population levels significantly (*e.g.* ungulates such as moose or white-tailed deer; early successional species such as aspen). These species often have more information available on their abundance and range and can act as a surrogate to estimate potential declines among other species (as a result of inter-specific competition) within the boreal community.

Dispersal limited species

While many species in the boreal system have evolved to a shifting mosaic of habitat types following fire and insect outbreaks, other species are more conservative in their dispersal abilities. In particular, many plants and invertebrates are unable to easily disperse rapidly or across large distances. This has implications for defining what constitutes critical habitat. For example, many species of wetland flora (*e.g.* orchids) are sensitive to water level fluctuations and this critical habitat parameter is linked to the natural hydrological regime of the watershed. Identifying these critical habitat elements may be critical to preventing the decline of these species locally.

Habitat connectivity is also important for some species, allowing them to effectively disperse from one habitat block to another within the shifting mosaic of the boreal system. Riparian forest corridors may be important in this regard.

Process limited Species

The critical habitat elements for some species are linked to the frequency and intensity of natural disturbance processes such as fire and insect outbreaks. For example, the populations of insect eating songbirds fluctuate in response to the timing and size of insect outbreaks. Widespread suppression of disturbance processes or truncation of mature forest stages (through harvest rotations that are shorter than natural disturbance frequencies) could impact process dependent species by eliminating periodic opportunities to build up local populations. Therefore it is important to consider and identify the full suite of elements that constitute critical habitats during the HCVF assessment.

Resource limited

The key resources that are required for critical stages of a species' life history need to be continuously supplied within a regional landscape in order for meta-populations to be maintained. Examples of limited forest resources important to wildlife species include nesting or roosting cavities for birds, small mammals

Table 4.1 Preliminary example of regionally significant species for terrestrial ecoregion 94. This species list is not complete and ideally should include a greater diversity of taxa, especially among invertebrates and vascular plants, and be informed by experts with local knowledge.

	FOREST HABITAT			**INTERSPERSED NON-FORESTED HABITAT**		
	Conifer dominated	*Mixed-wood*	*Deciduous dominated*	*Grasslands*	*Wetlands*	*Aquatic*
Mature/ Old-growth	Marten[1] Caribou[1,2] Barred owl[2]	Caribou[1,2] Hairy woodpecker[2]	Hairy woodpecker[2] Blue-spotted salamander[3] Black Ash	Elk[1]	**(Bog)** Caribou[1,2]	**(River)** Lake Sturgeon[5]
Mid-Successional	Marten[1]	Great-crested flycatcher[2] Hairy woodpecker[2]	Hairy woodpecker[2] Blue-spotted salamander[3] Black ash		**(Marsh)** Goldeneye[2] Bufflehead[2] Hooded Merganser[2]	**(Lake)** Lake Sturgeon[5]
Early Successional	Black-backed woodpecker[4]	Black-backed woodpecker[4]	Black-backed woodpecker[4]		**(Fen)** Orchids, Sedges[3]	

[1]Area limited [2]Resource limited [3]Dispersal limited [4]Process limited [5]Species in decline

and some invertebrates, large trees for platform nesters (*e.g.* bald eagles, osprey) and abundant late-summer seasonal foods (*e.g.* berry crops) needed to create fat reserves for migration or over-wintering. Diminishing the supply of a species' key resources may lead to regional abandonment of ranges or significant regional population decline. Again, it is important to consider and identify the full suite of elements that constitute critical habitats during the HCVF assessment.

Area limited.

The configuration and size of habitat blocks in the boreal mosaic is an important element that contributes to the suitability of conditions for species populations to be maintained. Area limited species may include those that require unfragmented forest interior habitat (*e.g.* barred owl) or large blocks of contiguous forest cover (*e.g.* woodland caribou). Recognizing these habitat blocks as critical habitat and therefore HCVFs may be necessary to sustain meta-populations of area-limited regionally significant species.

SUMMARY OF RECOMMENDATIONS

For the region in which a licence area occurs a set of ecological criteria should be developed to help identify regionally significant species.

Attributes of the collective list of species in the table should reflect:

- All major habitat and forest seral stages occurring in the region, and

A sample of species:

- Whose populations have declined or increased significantly from estimated baseline conditions
- That are resource limited (*e.g.* cavity nesters)
- That are process limited (*e.g.* dependent on natural disturbances such as fire)
- That are dispersal limited (*e.g.* plants, amphibians, reptiles, some invertebrates)
- That are area limited (*e.g.* wide-ranging species, those requiring large blocks of continuous forest cover).

Next, the forest licence area should be assessed for the current or past existence of critical habitat for each regionally significant species.