

SEASONAL CONCENTRATIONS OF SPECIES

HIGH CONSERVATION VALUE 1, QUESTION 3

Does the forest include critical habitat containing globally, nationally or regionally significant seasonal concentration of species (one or several species, e.g., concentrations of wildlife in breeding sites, wintering sites, migration sites, migration routes or corridors -latitudinal as well as altitudinal)?

BACKGROUND

Species congregate seasonally for a variety of reasons, including to breed, prepare for migration, give birth, and feed on a limited or episodically available resource. Often seasonal concentrations of species coincide with life stages that are critical for the continued survival and/or reproduction of individuals and populations. Breeding and birthing are two obvious examples, however concentrations driven by a limiting resource may also be critical for survival, especially if a resource is uncommon across the landscape and alternative supplies are not available.

The Proximity of one limiting resource to another (e.g. breeding, foraging, and roosting sites) may also be critical in sustaining a wildlife population. For example, stands of mature trees with suitable nesting sites for bald eagles or heron colonies need to be located within range of suitable foraging habitat (i.e. water bodies and wetlands) in order for the trees to be potentially utilized for nesting. If only one of these resources were present, it is unlikely that there would be regional breeding populations of these species.

Determining what constitutes a threshold for seasonal concentration will generally need to be considered on a species by species basis. Seasonal concentrations are tied to the relative distribution and abundance of resources across a regional landscape. The more concentrated and local a limiting resource may be, the greater the likelihood that there will be a corresponding seasonal concentration of species dependent on the resource. Further, given that the distribution and abundance of some resources will vary from region to region, thresholds for what may constitute a concentration for an individual species may also vary across regions.

DATA SOURCES

As thresholds for defining a seasonal concentration will vary by species, wildlife biologists, traditional knowledge and local experts should be consulted to determine areas and landscape features that might qualify as supporting seasonal concentrations of wildlife.

Nationally, important sites for birds can be obtained from Bird Studies Canada and Conservation International. As well, national and local government agencies with responsibility for wildlife conservation should be consulted as they may monitor such features as deer wintering areas, moose feeding areas, fish spawning areas, colonial nesting birds and/or caribou

calving areas among others (e.g. Ontario Ministry of Natural Resources' NRVIS database, Alberta Environmentally Significant Areas studies – <http://www.cd.gov.ab.ca/preserving/parks/anhic/esa.asp>).

At the Global level, some conservation organizations have listed the locations of wildlife hot spots, some of which might represent significant seasonal concentrations. These organizations include Bird Life International (Important Bird Areas), Audubon Society and Conservation International.

DEFINING SIGNIFICANT SEASONAL CONCENTRATIONS

Global concentrations

This term is best applied to concentrations of individuals that represent a significant proportion of individuals or populations constituting the full range of a species distribution. Often, but not always, this can be interpreted in Canada by looking at the overall seasonal distribution of a species within its continental (North American) distribution. Where large numbers of a single species or multiple taxa congregate in a restricted area along a migration route (e.g. staging areas along flyways), a wintering area, or if breeding areas are concentrated or of a colonial nature, these geographic sites could constitute a globally important concentration. Many species of waterfowl and shorebirds exhibit this seasonal pattern, especially when staging during migration and on their wintering grounds. For these species, coastal wetlands in key areas are critical feeding areas that enable birds to store enough fat to fuel the next phase of their migration. Any reduction in the quality or quantity of the resource could have major implications for the global status of the species.

National or Regional Concentrations

Sites that may not qualify as significant global concentrations, but can still be characterized as locations where wildlife habitually congregates may be important for sustaining ecoregional or local populations. As noted earlier, the number of individuals constituting a concentration will depend on the behavioural characteristics of individual species. For example, a gathering of 12 caribou (out of a herd of 100 animals) in habitat suitable for calving may constitute a significant regional concentration, as it would likely represent a high proportion of calving females whereas a flock of 12 Canada geese staging along a flyway would not likely register as a significant

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concentration given the potentially larger numbers of individuals passing through the region during migration.

Regardless of scale (global to regional), practitioners should consider the characteristics of the appropriate life history stage when determining what constitutes a significant seasonal concentration of wildlife. The number of individuals that might constitute a concentration during a migration phase could be different than numbers of individuals forming a concentration during the breeding season. A highly productive wetland complex might support a concentration of breeding pairs of waterfowl numbering in the hundreds, but during migration the same wetlands may support tens of thousands of staging birds. Both of these situations could potentially qualify the wetlands as areas of seasonal concentration for waterfowl, one reflecting the breeding season, the other the migration period.

INTERPRETING THE PRECAUTIONARY PRINCIPLE

To support seasonal concentrations of species, the access to and ecological integrity of the habitat, process or resource that draws the species must be maintained. For example, natural stream flow regimes must be maintained to sustain fish spawning aggregations. This may require that in addition to the spawning area, the forest areas surrounding the stream may also need to receive a HCVF designation if their conservation is central to maintaining the ecological quality of the core site.

ADDITIONAL GUIDANCE

Consideration of scale is relevant to the assessment of seasonal concentration. For example, within a tenure a species may be thought of as a locally abundant breeder, whereas on a continental scale, the local area in which a tenure is located may be seen as a significant concentration of breeding pairs. Hence the local, regional and continental/global scales should each be considered on a case-by-case basis to determine what may constitute a seasonal concentration of a species. Guidance on this issue will be best provided by wildlife experts.

SUMMARY OF RECOMMENDATIONS

Seasonal concentrations of species are linked to the regional availability of limited resources critical to one stage of a species life history. Seasonal concentrations are variously associated with breeding, staging, molting, rutting, calving, feeding or wintering areas; by assessing the distribution of the limiting resources or habitat conditions suitable for these life history stages, a practitioner can begin to define possible geographic locations for HCVFs for seasonal species concentrations within the tenure.