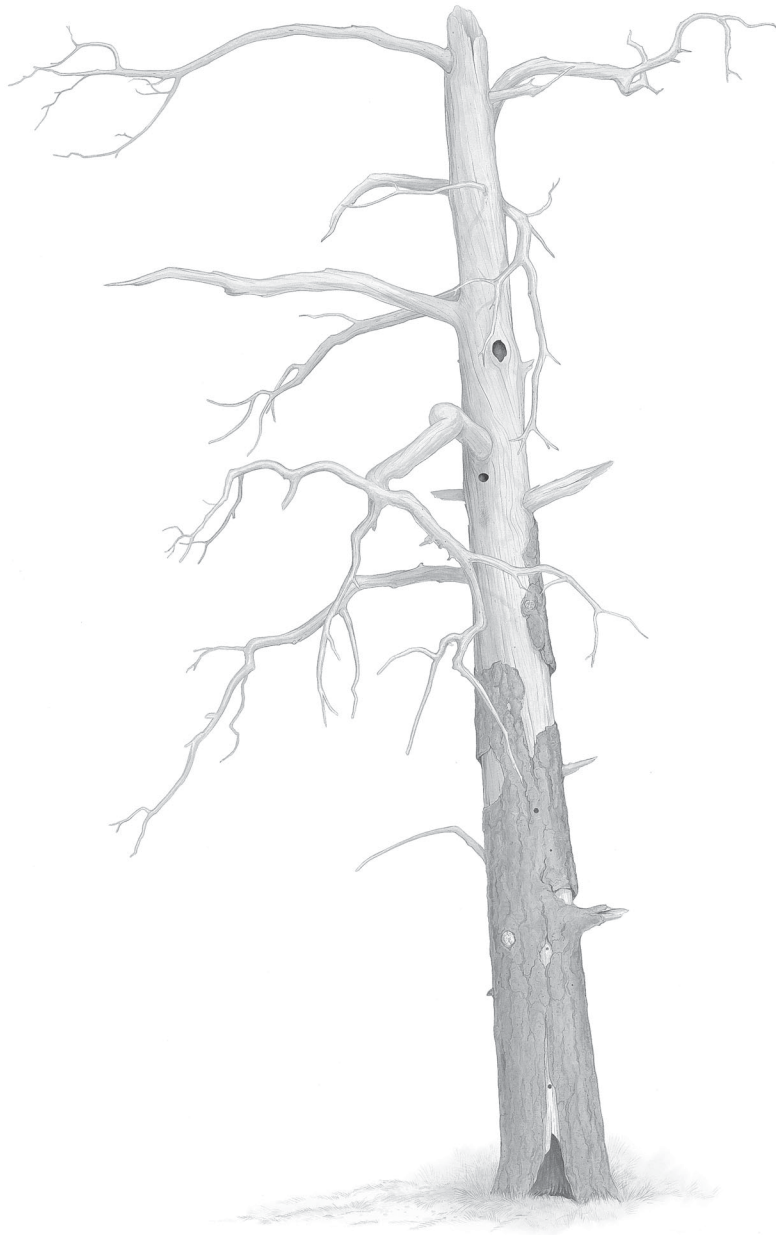


APPENDIX 1 – HABITAT ECOLOGY

WHAT CONSTITUTES GOOD WILDLIFE TREE HABITAT?

When considering the needs of wildlife it is important to recognize that all trees are not equal in value. Given the large number of wildlife tree-dependent species and wide range of wildlife uses of these trees, there can be no simple system for determining which trees provide the best habitat for wildlife. The most significant indicators of wildlife tree quality are height and diameter, decay stage, location, distribution and cause of death.



Wildlife Tree Characteristics:

- greater than 15 m in height preferable
- greater than 30 cm dbh preferable (interior)
- greater than 70 cm dbh preferable (coastal)
- decay classes 2–6 conifers and 2–4 hardwoods most valuable
- windfirm, sound root system
- broken top
- some large branches
- some intact bark with space behind loose bark
- nest cavities, feeding excavations
- some evidence of decay (visible fungal conks or cankers)

Height and diameter

Generally, the larger the diameter of a wildlife tree, the greater the variety of species that benefit from it. Most wildlife tree-dependent species prefer tall, larger diameter trees because they offer greater security. A tree with a large trunk provides the potential for a spacious cavity with strong walls. Thick-walled cavities protect their occupants against predators and inclement weather. Large dead trees usually remain standing for many years, providing wildlife habitat for a much longer time than small trees, which fall soon after they die. Large trees are also important for open nesters such as Bald Eagles, Ospreys, and some hawks and owls.

Decay stage

Each stage in the decay process has particular value to certain wildlife species. The earlier the stage of decay, the harder the wood will be. Strong excavators (woodpeckers) usually nest and roost in “hard” trees, while weak excavators (nuthatches, chickadees) prefer “soft” trees. Soft trees also provide the substrate for the numerous species of invertebrates that comprise the food supply of many wildlife species. “Hard” trees which still have branches provide good hunting perches for predatory birds. They also have great future value since most of them, except for those that are fire hardened, will eventually become soft. Fire hardened wildlife trees are not usually suitable for excavating nest holes, but they are often good feeding sites, especially in the first 1–2 years after the fire.

Location

Animals that require dead trees for nesting, denning or feeding usually need live trees nearby for protective cover and foraging habitat. Nest trees of primary cavity excavators (PCEs) are often found at the edge of cutblocks, roads or natural forest gaps. The species composition and structure of the surrounding plant community also influence wildlife use of trees. Some wildlife species such as kestrels, flycatchers and bluebirds require trees surrounded by low or early-seral vegetation (grass-forb, shrub-seedling, pole-sapling) which can function as hunting perches and harbour prey species. Woodpeckers, owls, Vaux's Swifts and others are dependent on the taller tree communities that develop later (young, mature or old-growth). Wildlife trees adjacent to water bodies are important for cavity-nesting ducks, Great Blue Herons, Ospreys, Bald Eagles and Belted Kingfishers. The preferred topographic location of roost trees may vary from season to season.

Class 2 Trees

Definition

Class 2 trees are live trees with a **visible defect which directly compromises the structural strength of the tree**. This will (or has the potential to) cause whole or partial breakage or uprooting of the tree, or a portion thereof. Consequently, these will be defects which are almost always associated with internal decay or some form of stem or root system damage. The **presence of the following defects on live trees** can be used to differentiate Class 2 trees from Class 1 trees:

- Fungal conks
- Tree cavities (natural or created by wildlife)
- External stem scars (usually will be caused by mechanical or fire damage, or the breakage of large limbs)
- Stem cracks/splits (must have associated decay; not a simple dry check):
 - This condition will include “included bark” (cracking/splitting) at live stem fork unions, and is most common in large deciduous trees.
 - **NOTE:** if you cannot clearly see the crack and therefore are uncertain whether there is associated decay, then categorize this as a defect
- Dead tops (any size — either as a dead spike, dead fork, or dead multiple top)
- Broken tops
- Large dead limbs (> 10 cm diameter)
- Damaged roots (mechanical, fire or disease)
- Excessive lean (>30 %) **AND** damaged/diseased roots or a poor anchoring soil substrate
- Large canker face (>50 % of tree circumference)
- Unusual stem swellings (may indicate hidden decay)

Class 1 trees are live, healthy trees and are free of the above defects. Minor defects such as stem scrapes, bark scorching, small dead limbs, live forks and live multiple tops, will usually have no associated decay or loss of columnar shell thickness, and will therefore NOT reduce the tree's structural strength NOR present a worker safety hazard.

The ability to distinguish between Class 1 and Class 2 trees is most important when working under Level 4 disturbance. At this level (as per the WDTAC guidelines), all Class 1 trees, and Class 2 cedars with low failure potential defects, are rated as safe. In addition, Class 2 trees with ***no structural defects*** are also rated as safe for Level 4. This latter criterion is a bit of an oxymoron — **Class 2 trees should be defined as per the above descriptors**.

ONLY trees which have been recently wind- or snow-snapped (i.e., lost their top, but have no associated decay and still have green foliage), or are partially defoliated or dying back from insect attack, can be described as “Class 2 with no defects”.