Pictorial Guide of Important Fisher Habitat Structures in British Columbia

For more information on fishers and fisher habitat visit:
www.BCfisherhabitat.ca

Why care about fishers?

Fishers are rare, wide-ranging predators that are sensitive to human activities and need special management attention in British Columbia. With less than 10-minutes of your time, you will walk away with a basic understanding of the important habitat structures (trees and logs) fishers need for denning and resting.

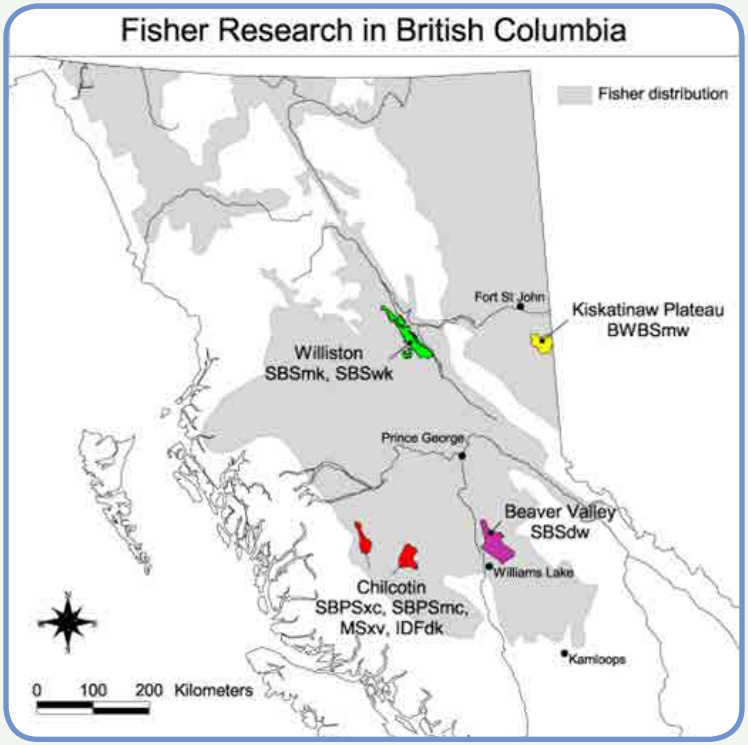
*The guidance in this document is intended to inform fisher habitat managers in B.C., and is not to be interpreted as direction nor is it legally binding.

Although the site plan may determine the number of trees to leave during timber harvest, it is up to operations crews to make the final selection.

In reviewing these photos, you will quickly notice that good fisher trees are generally not also good for the mill, and so would likely end up on the cull pile if cut down. This guide will help you select individual trees or groups of trees for retention, show the benefits of selecting certain trees over others, and lead to a better habitat condition on the landscape for future generations of fishers.

Quick Facts: The Fisher

- Scientific Name: *Pekania pennanti*
- Family group: weasel; closely related to wolverine and marten
- Fewer than 3800 in British Columbia
- Vulnerable to habitat loss and trapping
- Legally trapped in Central & Northern B.C.; closed to trapping in Southern B.C.



Project veterinarian Malcolm McAdie with a sedated fisher ready for a radio transmitter.

Fisher Fun Facts:

- There are fewer fishers in B.C. (<3,800) than grizzly bears (~15,000).
- Fishers don't eat fish. Their main prey consist of snowshoe hares, red squirrels, small rodents, and grouse.
- Fishers are one of the few predators that regularly pursues and kills porcupines.

Denning Habitat: Fisher are the largest animal in B.C. that requires a tree cavity for keeping babies safe. This is why den trees are often the largest examples of each tree species they use.

Fisher have 2-3 kits born in late March to early April in cavities found in large diameter trees.

Some of What We Learned:

- Fishers need forests that provide habitat for 4 different life activities: **denning**, **resting**, **foraging**, and **traveling**.
- Below we focus on the structures used for denning and resting because they are rare and do not quickly grow in the forest.
- Avoidance or retention during harvest are the best strategies to protect this type of habitat.

Ninety species of wildlife in B.C. use tree cavities for denning, nesting, and roosting. By retaining trees for fishers, you will also be saving trees for many other wildlife species in B.C.

Denning Habitat: Female fishers are very selective about the trees they choose for denning.

Denning Habitat: A den must provide a cavity with an opening just large enough for a mother to enter (Photo 1), but be too small for animals that may harm kits (Photo 2). The internal cavity must also be large enough to fit a mother and two or three kits inside (Photo 3) and be in a location where mom can safely travel about to capture food for kits (Photo 4).

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Denning Habitat: The shape may vary, but den openings are just slightly larger than the size of a female fishers head. Den tree cavities always have an entrance hole that is 5–10 cm wide by 7–15 cm tall and 1.5 m to 17 m from ground.

Denning Habitat: Den trees also need to be large enough to provide cavities that are large enough for adults and their kits (>30 cm inside diameter). This usually means that den trees are larger than 40 cm diameter where the cavity occurs.

Heart rot is needed for cavities to develop in trees. It makes the wood soft and allows cavities to easily be excavated. Heart rot is more common in older, large diameter trees.

Conks are sure-fire indicators of rot inside a tree. Trees with conks are ideal for retaining.

Big, ugly, rotten trees are the best kind for fishers. Hardwoods such as aspen and cottonwods make for good den trees, because they get rot more often than conifers. Cracks, scars, rotten branches or any defect plus a large diameter increase the chance of use by fishers and other wildlife

Females usually need more than one den tree to raise a litter of kits. They move the kits as they grow in size. Therefore, having many suitable trees on the landscape is needed for fishers to successfully raise offspring.

Females moving their young kits to new dens (those are not squirrels in their mouths!).

In B.C., fishers use many species of trees for rearing their young.

Black Cottonwood (Act)

Cottonwood trees used as dens are generally greater than 90 cm dbh.

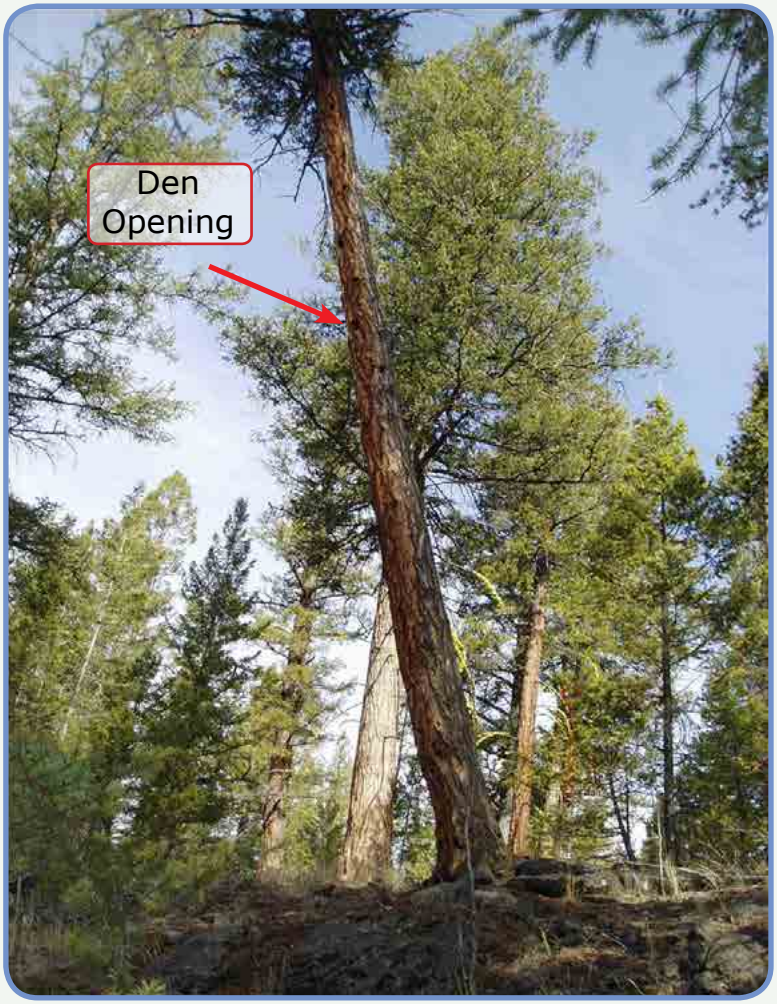
Balsam Poplar (Acb)

Balsam Poplar den trees are usually greater than 52 cm dbh.

Trembling Aspen (At)

Trembling aspen den trees are usually greater than 40 cm dbh.

Douglas-fir (Fd)



Douglas-firs used as den trees are usually greater than 65 cm dbh.

Lodgepole Pine (Pl)

Lodgepole pines used as den trees are usually greater than 35 cm dbh.

Resting habitat: Another important habitat type is resting habitat. These are sites that provide fishers with protection from poor weather and predators.

Rust brooms >40 cm in diameter can provide a platform for fishers to rest on.

Resting Habitat: Single large pieces of Coarse Woody Debris (CWD) can provide cover and rest sites for fishers and their prey, especially in winter.

Resting Habitat: Piles of Coarse Woody Debris (CWD) also provide important habitat for fishers to hide in during periods of extreme cold. The piles or windrows can also help fishers cross cutblocks where there is no other cover.

Fishers can have a hard time keeping warm because of their long and thin body shape.

Together, CWD and snow provide **fishers with nice "warm" rest** sites during winter.

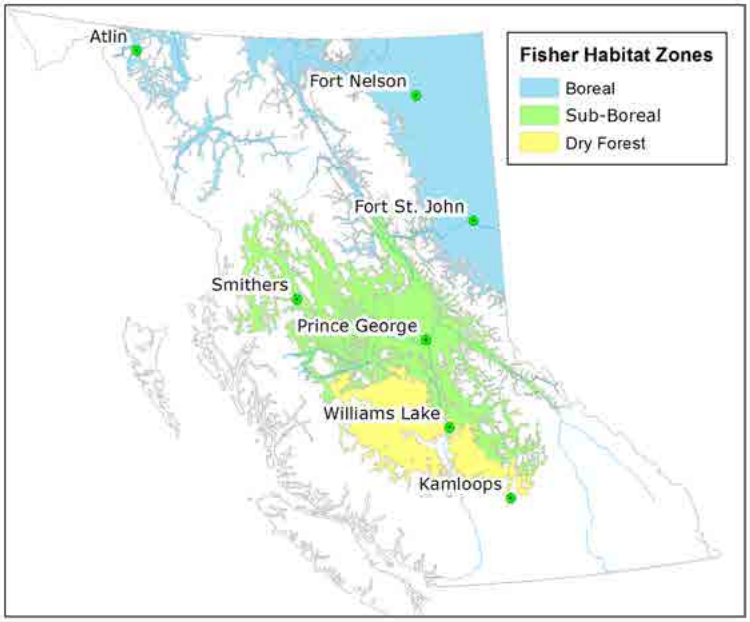
Resting Habitat: Cavities are not just used for denning. Fishers also use them to sleep, get out of cold weather, or safely eat prey.

Can you find the deer hoof sticking out of a cavity?

Operational Consider-ations
Which Trees Should You Pick To Keep?
Size matters. Trees used for rearing and resting are typically among the *largest* and *oldest* nearby.

Single Tree Retention: Retaining trees can help provide denning and resting opportunities after harvest. When selecting trees to keep within a cutblock, a general *rule of thumb* is "**Big and Ugly**". That is, select large diameter trees with some type of defect.

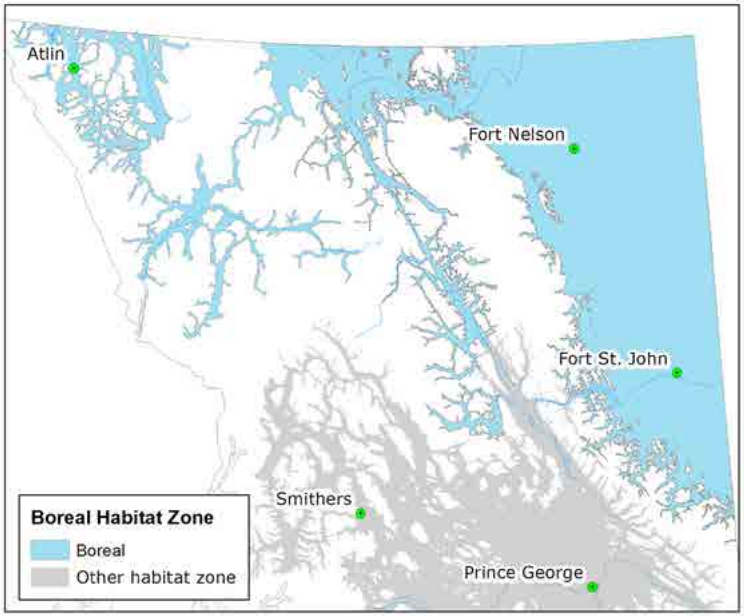
Many of the trees and structures that fishers need are quite different than what is wanted at the mill.



Retention Targets:

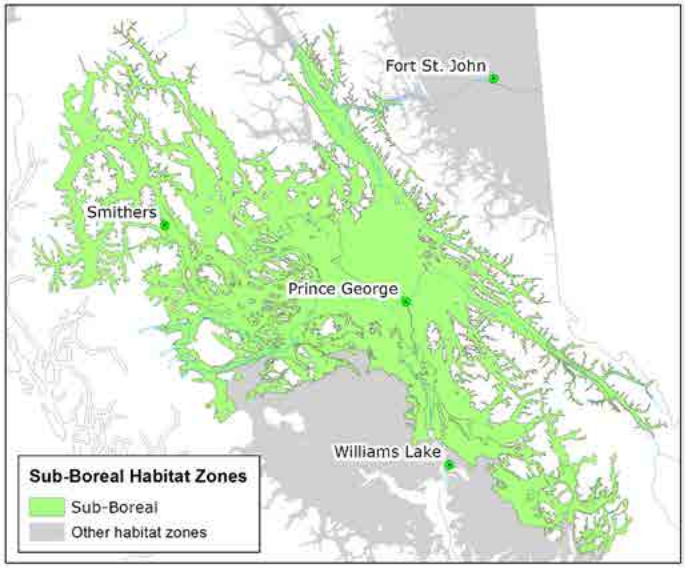
- Fishers use different sized trees in different parts of the province.
- The Boreal, Sub-Boreal, and Dry Forest Habitat Zones reflect broad differences in ecosystem composition, structural attributes, and climate.
- Each zone require different management approaches.

Boreal Habitat Zone: Retention Diameters



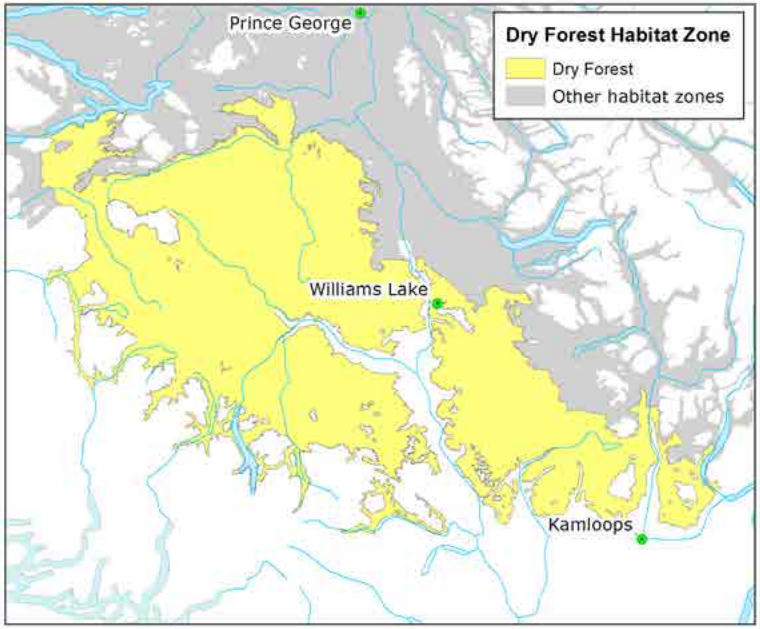
Best Trees to Retain for **Denning**	**Poplar** ≥52 cm dbh **Aspen** ≥40 cm dbh • Entrance hole 5–10 cm wide by 7–15 cm tall • Trees with cavities where bole diameter >~40
Best Trees to Retain for **Resting**	**White spruce** ≥31 cm dbh **Black spruce** ≥17 cm dbh • Trees have rust brooms >~40 cm diameter to provide a platform for fishers
Single Piece **CWD**	• ≥30 cm diameter by ≥11 m in length • Elevated 25-50 cm above ground

Sub-Boreal Habitat Zone: Retention Diameters



Best Trees to Retain for **Denning**	**Cottonwood** ≥90 cm dbh • Entrance hole 5–10 cm wide by 7–15 cm tall • Trees with cavities where bole diameter >~40 cm at entrance hole
Best Trees to Retain for **Resting**	**Cottonwood** ≥77 cm dbh **Aspen** ≥59 cm dbh **Douglas-fir** ≥97 cm dbh Hybrid spruce ≥39 cm dbh • Trees with cavities where bole diameter >~40 cm at entrance hole, or • Trees with rust brooms >~40 cm diameter to provide a platform for fishers
Single Piece **CWD**	• ≥35 cm diameter by ≥7 m in length • Elevated 25-50 cm above ground

Dry Forest Habitat Zone: Retention Diameters



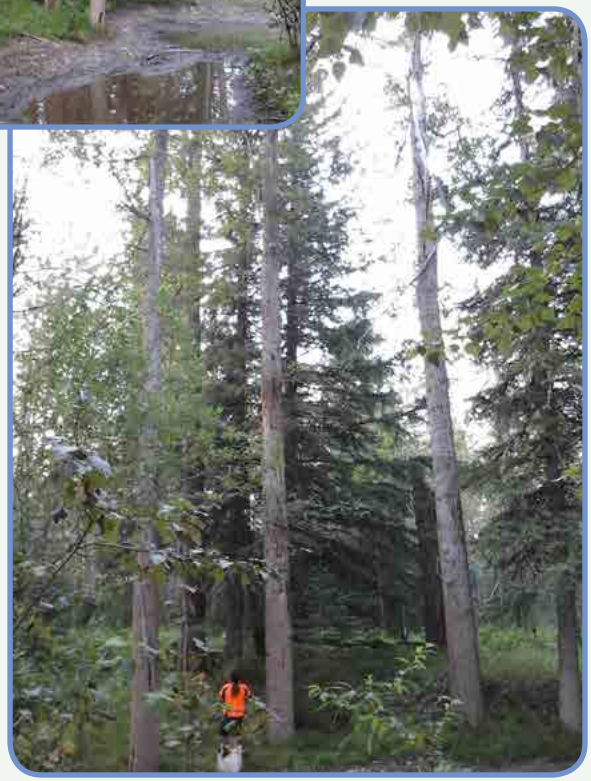
Best Trees to Retain for **Denning**	**Cottonwood**: ≥90 cm dbh **Aspen**: ≥44 cm dbh **Douglas-fir**: ≥65 cm dbh **Lodgepole pine**: ≥35 cm dbh, Non-merchantable • Entrance hole 5–10 cm wide by 7–15 cm tall • Trees with cavities where bole diameter >~40 cm at entrance hole
Best Trees to Retain for **Resting**	Hybrid spruce ≥27 cm dbh with rust brooms >~40 cm diameter to provide a platform for fishers
Single Piece **CWD**	• ≥20 cm diameter by ≥10 m in length • Elevated 25-50 cm above ground

Retention: Ideally, retention would connect to intact forest, but fishers will occasionally den in sparse leave groups. The value of this habitat will improve as the surrounding forest regenerates.

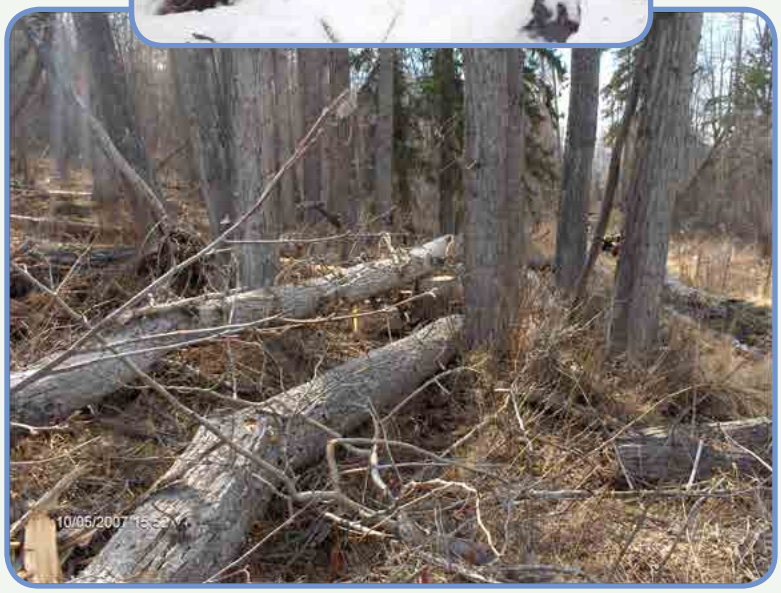
Circles indicate retained trees used by denning fishers.

How Can You Increase the Habitat Value of Retained Trees? Single trees are good, but they can be made more useful if they are combined with other large trees and CWD in windfirm patches, close to a cutblock edge, and with security cover connecting to residual forest.

Leave Group Characteristics: Fishers often select areas with larger trees, and a greater density of large trees than are typically available on the landscape. Target these dense clumps for retention.



Down logs and snags are good to keep in leave groups as well. Having them in leave groups helps ensure they will remain after harvest and site prep activities.



Can You Create Fisher-Friendly CWD Piles? By creating piles or windrows of Coarse Woody Debris (CWD) throughout the cutblock, you can help fishers cross new cut-blocks, maintain foraging areas, and provide cold-weather rest sites in regenerating stands.

- Piles should be >3 m wide by 5 m long by 2 m high and should have >30% pieces >20 cm diameter and >3 m long.
- Pieces should not be stacked neatly, but be in a jumbled pile to create spaces for fishers.

Good stacking

Better stacking

The fishers thank you for keeping an eye out for those cavities!

Thank you for taking the time to look through this photo guide!
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Contact Information
Richard D. Weir, R.P.Bio. | Carnivore Conservation Specialist
Ecosystems Branch, Ministry of Environment
Email: Rich.Weir@gov.bc.ca | 250.356.8186