

## What is Legacy Forest Structure?

Legacy forest structure represents the retained components of an old-growth stand after timber harvest. To be of high value, legacy should be representative of the previous forest stand, and should contain some of the larger and older trees. Legacy trees can be left along the edges of the stand, uniformly distributed throughout the stand (or a portion of it), or in clumps within the stand.

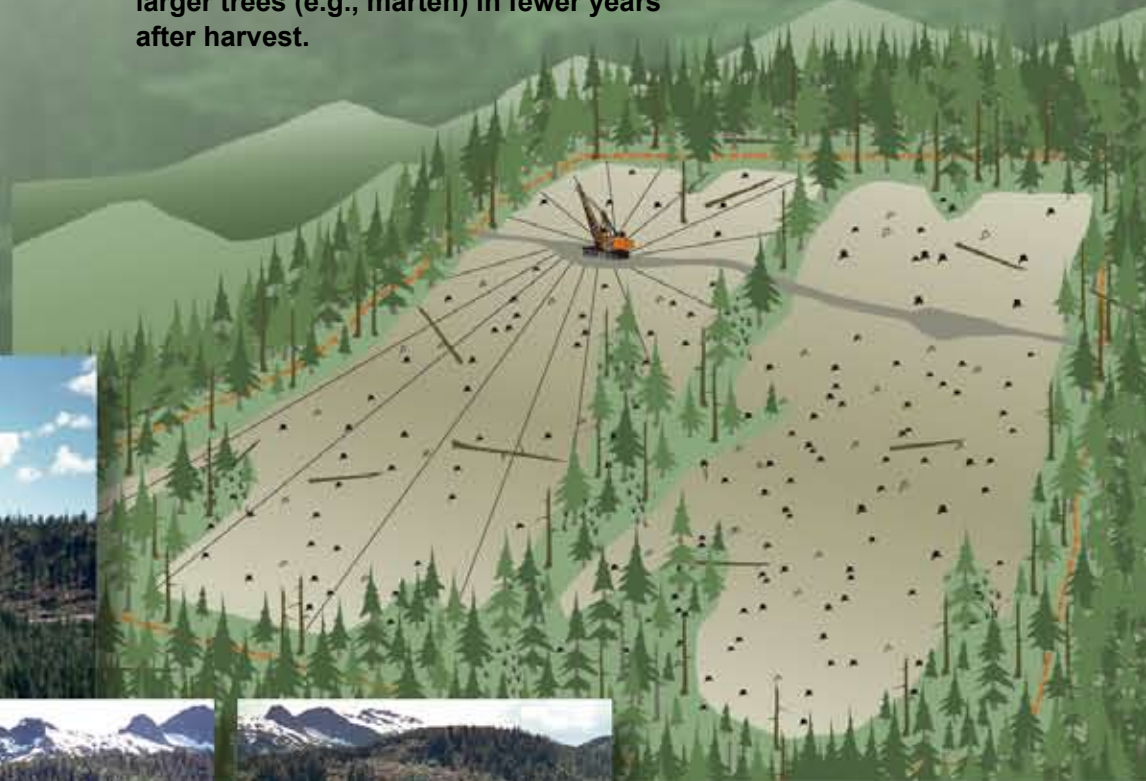
The Forest Plan Old-growth Habitat Conservation Strategy is based on two basic components: a Forest-wide network of Old-growth Reserves and management of the Matrix (or the lands with LUD allocations where commercial timber harvest may occur). Within the Matrix, components of the old-growth ecosystem are to be maintained by standards and guidelines to protect important areas and provide old-growth forest habitat connectivity. Leaving legacy within harvest units is one method of maintaining old-growth components within the Matrix over time.

## Key Benefits of Legacy Forest Structure

- High correlation between legacy tree retention and species richness and diversity (Mazurek & Zielinski 2004), especially for birds.
- In Southeast Alaska, 13 bird species that use large trees for foraging or nesting were more abundant in managed stands with higher tree retention (Johnson et al. 2005).
- Leave tree elements with a basal hollow may provide the greatest habitat value for many species (Mazurek & Zielinski 2004).
- Higher flying squirrel abundance documented in managed stands with legacy retention compared with stands under intensive timber management, in Pacific Northwest (Carey 2000).
- Increases structural complexity in harvested stands (Mazurek & Zielinski 2004, Franklin et al. 2000).
- Provides “lifeboats” for some plants and animals to re-establish in regenerating stands (Franklin et al. 2000).
- Makes it possible for some species to breed in forest types where they may not otherwise be able to breed.
- Provides a greater number of refuges from climatic extremes.
- Can provide some measure of habitat connectivity (“stepping stones”) to larger, more contiguous tracts of old-growth forests (Tittler and Hannon 2000; Noss et al. 2000).
- May produce habitat for species associated with larger trees (e.g., marten) in fewer years after harvest.

## Forest Plan Legacy Options

- Current Forest Plan provides for legacy along the edges of harvest units and sometimes within, as a result of riparian, soils, karst, and other standards and guidelines.
- Current Forest Plan also includes Goshawk and Marten standards and guidelines, which provide for extensive legacy, but only within certain areas having relatively high past harvest.
- Proposed Legacy standards and guidelines would provide for legacy more extensively across the landscape in Matrix areas, but especially within areas having relatively high past harvest or relatively high future harvest, and in areas with larger created openings.



## Scientific Considerations Relative to Legacy Amounts

- Legacy can be tied to the range of sizes of natural openings.
- Watershed-specific considerations are:
  - How much past harvest is there with relatively low legacy amounts?
  - How much total harvest will occur in the future?

## Challenges

- Determine how much legacy to leave within managed stand areas.
- Tradeoff is that the more that is left, the more widely distributed timber management may need to be.
- Achieving economical timber harvest depends on the logging system (e.g., shovel, cable, helicopter) and how legacy is distributed (e.g., along edges, uniform, in clumps).

