Example Forest Inventory/Timber/Wood Products Sections (Resource Category 4)

Forest inventory example 1

Resource assessment

Stand 1

This stand is under-stocked with naturally regenerated red alder, bigleaf maple, black cottonwood and vine maple. The site class is III (50-year site index 108), middle range for productivity. There are, on average, 130 to 180 trees per acre with between 7,000 to 10,000 board feet per acre. The stand is not producing to full site capability due to some areas of small diameter alder; however its value to wildlife is high. This stand includes sloped uplands, headwater and riparian areas. There is a strong component of western redcedar and western hemlock seeding into the understory which will contribute to diversity of structure and improved productivity over time.

Stand 2

This is the most well-stocked stand with the best canopy cover. The Douglas-fir and western hemlock average 10 inches in diameter with an average of 200 trees per acre and 15,000 board feet per acre. This is also site class III. The trees are growing vigorously after thinning. Prior to thinning they were in stem exclusion, gaining in diameter very slowly and were prone to snow break.

Stand 3

The red alder saplings composing the main component of this stand had reached stem exclusion. They have been thinned and pruned. The stand will provide larger diameter clear bole hardwood for harvest at approximately 45 to 50 years of age. Some on-going thinning may occur with removed stems used as firewood. Site class is III and is productive for red alder. The stand has some redcedar coming into the understory.

Stand 4

These areas are under stocked or devoid of trees or seedlings.

Management recommendations

Stand 1

Maintain the mixed hardwood/conifer stand until the young regeneration stand has reached a level of maturity providing structural diversity. Under planting shade tolerant conifer species (such as cedar, spruce and hemlock) in pockets of smaller alder and in larger openings of the stand will better position the site to respond to hardwood mortality. This will improve use of the site's productive capability.

Stand 2

Monitor stand for stem exclusion and thin as necessary. This stand should be ready for a regeneration harvest in about 20 years.

Stand 3

Continue to monitor red alder and thin and prune as necessary to encourage maximum growth and clear bole development. Underplant with western redcedar, hemlock and spruce to contribute to structural diversity and improve hydrologic function.

Stand 4

Plant a mix of western redcedar, Sitka spruce, and grand fir.

Forest inventory example 2

Resource assessment

We sampled three 1/20-acre plots in Stand 1, two in Stand 2, and three in stand 3.

Stand 1

- All samples were red alder. The stand contains scattered mature Douglas-fir and western redcedar on the peripheries.
- Age: Not measured
- Aspect: WSW
- Slope: Not uniform. Roughly 18% from west to east (150 ft. to 225 ft.)
- Tree Height: Sample trees (one per sample plot) = 56 ft., 59 ft., 46 ft.
- Basal Area: Stand average 129 sqft.
- Average trees per acre: 120
- Quality: fair to poor

- Understory vegetation: Native blackberry and nettle almost completely covers the stand, as well as some non-native blackberry, and in areas where the native blackberry is less dense, sword fern. The periphery—primarily on the slopes of and in ravines—includes evergreen huckleberry, red huckleberry, salmonberry, red elderberry. We have found pockets of Oregon grape and salal.
- Operability: Fair to poor. Deep ravines and hummocky terrain limit accessibility. Dense undergrowth in some areas, along with blackberries and nettle, can make walking the stand difficult.

Stand 2

- Species: The dominant species in the sampled area is western redcedar. Other trees in sampled areas include red alder, bigleaf maple, Douglas-fir, western hemlock, bitter cherry, cascara, English holly (invasive).
- Age: Not measured
- Aspect: WNW
- Slope: Not uniform. Roughly 7% slope from northwest to southeast.
- Tree Height: Sample trees (one per sample plot): maple=74 ft.; western redcedar = 93 ft.
- Basal Area: Stand average 72.86 sqft.
- Average trees per acre: 280
- Quality: Fair to good.
- Understory vegetation: Native blackberry and nettle in areas that receive enough light, as well as some non-native blackberry, and in areas where the native blackberry is less dense, sword fern. Less abundant species include evergreen huckleberry, red huckleberry, salmonberry, red elderberry and pockets of Oregon grape and salal. Holly appears to be spreading rapidly.
- Operability: Very poor. Slope and hummocky terrain limit accessibility. Dense undergrowth in some areas, along with blackberries and nettles, can make walking the stand difficult.

Stand 3

- Species: The dominant species in the sampled area is alder. However, a casual visual examination of a stand photo indicates almost equal numbers of evergreen species and deciduous species. I might need to survey additional samples in this stand or divide the stand into two stands to adequately represent species and understory.
- Age: We counted the rings in two recently windthrown Douglas-fir. The age of a 2 ft. DBH tree was 52 years; the age of a 1 ft. DBH tree was 36 years.

- Aspect: WNW
- Slope: Not uniform. Roughly 12% slope from west to east.
- Tree Height: Sample trees (from two sample plots): alder=65 ft.; Douglas-fir=90 ft.
- Basal Area: Stand average 141.83 sqft.
- Average trees per acre: 127
- Quality: Poor to good. Root rot identified among windthrown Douglas-fir and western hemlock at lower elevations, and stem rot of some type among windthrown alder.
- Understory vegetation: Native blackberry and nettle in areas that receive enough light, as well as some non-native blackberry, and in areas where the native blackberry is less dense, sword fern. Evergreen huckleberry, red huckleberry, salmonberry, red elderberry and pockets of Oregon grape and salal were identified. In the third sample, at the east end of the stand, undergrowth of evergreen huckleberry was so dense that it was almost impossible to complete the sample count. English holly appears to be spreading rapidly.
- Operability: Poor. Slope and hummocky terrain limit accessibility. Dense undergrowth in some areas, along with blackberries and nettles, can make walking the stand difficult.

Management recommendations

Due to terrain, property-wide harvest could be difficult. In addition, due to storm-damage, general age-related decline, and poor management in the past, much of the alder might not be worth harvesting.

Although isolated alder and Douglas-fir are probably merchantable, we're uncertain that the cost to us warrants trying to salvage and sell selected trees. In keeping with our objectives, we anticipate that any tree removal will depend on aesthetic and forest-health concerns.

Health/enhancement activities include:

- Underplanting below aging alder in Stand 1. See Resource Category 1.
- Replanting in areas that have seen (or will likely see) tree loss due to disease and weather. See Resource Category 1.
- Controlling non-native vegetation, as specified in Resource Category 1.

Forest Inventory Example 3

Resource assessment

Stand 1:

- The stand is primarily bigleaf maple, on average 9 DBH", height of 36 feet, and 211 trees per acre, with a small number of other species throughout:
    - Western hemlock, average 4 DBH, height of 35 feet and 6 per acre.
    - Bitter cherry, average 6 DBH, height of 38 feet and 34 per acre.
    - Red alder, average 5 DBH, height of 25 feet and 9 per acre; Douglas-fir, average 14 DBH, height of 53 feet and 14 per acre.
    - Western redcedar, average 19 DBH, height of 41 feet and 57 per acre.
    - There are two pockets, making up approximately an acre total, of primarily large western redcedar, 36" DBH and over 50' tall.
- The understory in stand #1 is primarily common native species: ferns, mosses, salmonberry, huckleberry, stinging nettles, and bracken ferns; also piggyback plant, Slough Sedge, and lady ferns in the wetland area. There is an occasional trillium and a few English holly bushes. In areas with more light, the salmonberry has dominated.
- The understory in the two pockets of redcedar is mainly sword fern with some low Oregon grape. This area will be left in forest due to the closeness to the residence.

Stand 2:

- The stand is composed mainly of western redcedar, average 11 DBH, height of 40 feet and 200 per acre, along the ridge and hill side leading north to Smith Road, with a smaller number of other species:
    - Western hemlock, average 4 DBH (though one tree is very large), height of 30 feet and 5 per acre.
    - Red alder, average 14 DBH, height of 56 feet and 30 per acre.
    - Douglas-fir, average 10 DBH, height of 42 feet and 25 per acre.
    - Bigleaf maple, average 9 DBH, height of 50 feet and 25 per acre.
    - Bitter cherry, average 6 DBH, height of 37 feet and less than 1 per acre.
- The understory consists of vine maple, sword fern salmonberry, huckleberry, and some English holly bushes.
- This stand would be difficult to harvest, due to the steepness of the slope. We will keep this stand in forest.

Stand 3:

- The stand is primarily red alder, average 12 DBH, height of 48 feet and 170 per acre; with a smaller number of:
    - Bigleaf maple, average 10 DBH, height of 35 feet and 25 per acre.
    - Western hemlock, average 10 DBH, height of 50 feet and 20 per acre.
    - Western redcedar, average 6 DBH, height of 26 feet and 30 per acre.
    - Douglas-fir, average13 DBH, height of 48 feet and 15 per acre, primarily along the road
    - Black cottonwood, average 36 DBH, height of 80 feet and 15 per acre.
    - Bitter cherry, average 10 DBH, height of 42 and 15 per acre.
- The understory is vine maple, ferns, willows, salmonberry, salal, evergreen and trailing black berry, some English Holly bushes.
- The cottonwoods are very large and could be harvestable if a market could be found.
- The alder may be at, or near, harvestable age and we do not want to let it go in decline.
- We will monitor for the best time to harvest.
- If the stand is cleared, due to its tendency to be wet, red alder, western hemlock, grand fir, or bigleaf maple may be the more appropriate trees to plant.

Management recommendations

Stand 1

Maintain the mixed hardwood/conifer stand at a healthy state. Take out undersize alder and plant shade tolerant conifer species (such as western redcedar, grand fir, western hemlock) in their place.

Stand 2

Monitor the health of this stand.

Stand 3

If we decide to harvest Stand 3, we will re-plant with wet tolerant species: red alder, western hemlock, grand fir, bigleaf maple.