

The Future of Oregon's Forest Economy

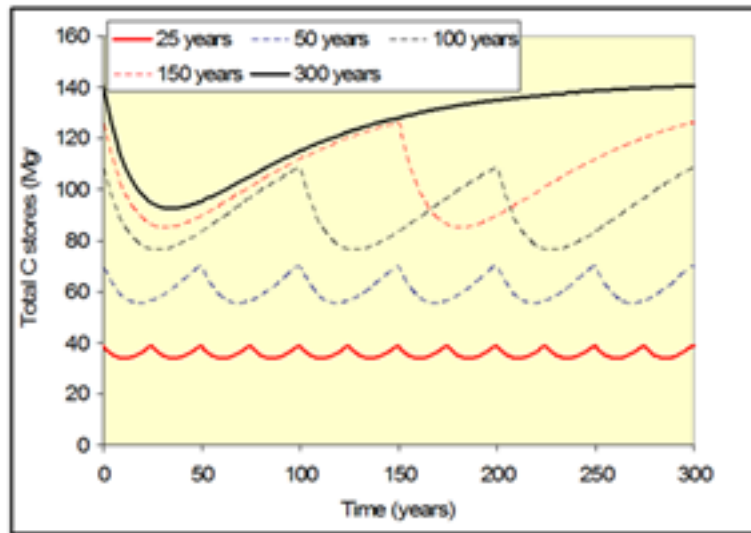
A Guided Walking Tour

Wednesday, August 23, 2017
Shady Creek Forest

Carbon Storage Considerations

Difference in carbon storage between old growth stands and plantation stands: A 100 year rotation stores only 50% as much carbon as an old growth forest. 50 year rotation stores only about 38% as much as old-growth. [Harmon, M., Ferrell, W., and J. Franklin. 1990. *Effects on Carbon Storage of Conversion of Old-Growth to Young Forests*. *Science*. 9 February 1990.]

As the interval of disturbance increases the amount of C stored increases



Native plant species that you may see on this hike:

- Trees: Douglas fir, big leaf maple, alder, red cedar, hemlock, cascara, chinquapin.
- Small trees/shrubs: vine maple, red elderberry, beaked hazel nut, dogwood, red huckleberry, evergreen huckleberry, salmon berry, Oregon grape, salal, thimble berry, ocean spray, Indian plum, rose.
- Herbaceous plants/ferns/mosses/lichens: hedge nettles, wild ginger, oxalis, false solomon seal, trailing blackberry, twin flower, star flowered lily, bleeding heart, minor lettuce, skunk cabbage, sword fern, bracken fern, deer fern, trillium, various mosses and lichens, shelf fungi.



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Light snacks will be provided

SHADY CREEK BIO-DIVERSE FOREST HIKE (Upper Hike)

Diversity within stands and across landscapes.

Across Oregon's landscapes there would normally be a mosaic of forest types changing over time. Forest disturbance creates an unlimited range of opportunities for plant species to recolonize an area. The vagaries of wind, fire, seed sources, moisture levels, temperature, soil conditions, etc. yield forest stands that can be dense, single species or diverse, mixed stands. Each stand type supports distinctive plant/animal communities.

STOP #1 CELEBRATE THE HARDWOODS

After historical logging, this stand now has 60-80 year old hardwoods, remnant older cedar and a 200+ yr old seed tree.

Stop #2 SURVIVOR GENES OF RESILIENT TREES

Old growth 200+ Douglas fir remnant of an older forest has interior damage marked by the long-term carpenter ant colony. This tree holds survivor genes as it has lived through fires, droughts, wind storms, and diseases.

Stop #3 BIO-DIVERSITY IN THE FOREST

This 5 acre area was clear cut several times over the last 30 years and has regrown into a red alder/cascara thicket with scattered hemlock, cedar, maple, salmon berry and thimble berry.

Stop#4 THE MICROSCOPIC WORLD OF FUNGI, BACTERIA & MYCELLIUM

Enter a naturally reseeded fir/hemlock/cedar stand first cut in 1927, now 60 to 80+ yrs old. Note the "large downed wood" harboring fungi, bacteria, mycellium, a myriad of small life forms from single cell microscopic invertebrates to small vertebrates. They are all reducing dead materials to become the rich "litter" on the forest floor.

Stop#5 NATURAL MECHANISMS FOR SPECIES VARIABILITY

Young old growth. This stand may have started in a wind throw location where a massive old growth tree(s) fell leaving an opening for fir seedlings. Another natural mechanism for species and age diversity is native fungi, which slowly spreads from one fir tree to another, creating forest openings over decades. As old growth stands mature, biodiversity increases in the large branched upper canopy and in the soils.

Stop #6 CONIFER DEAD-END

Post-disturbance reseeded with alder, maple, hazelnut, salmon berry. This can be a dead-end (climax) as alder and maple die off after 60-120 years leaving impenetrable brushy vegetation that excludes conifer seedlings, until the next disturbance.

Stop#7 COMMERCIAL THINNING

The mill site hill slope, 60 year old stand with remnant 80-100+ year old fir, has been commercially thinned 3 times (1996, 2006, 2012). Under-story is naturally generated brush species and planted cedar/hemlock.

Stop #8 ONE-ACRE CONTROL STAND

Abandoned hay field naturally reseeded into extremely dense Douglas fir stand. Thinned areas have allowed maple, alder, elderberry, hazelnut, vine maple, cascara, wild cherry to intermix the stand.

Beverage Break at the Mill. Board the shuttle vans to explore the plantation stand.

Stop #9 SINGLE SPECIES PLANTATION STAND

80+ year-old trees clear-cut (1991); the area was broadcast burned, planted in Douglas fir on 8' centers, aerially sprayed (1992 & 1993), aerial broadcast fertilized with ammonium nitrate pellets (2001). What diversity is missing here? The 30 years of dark under story does not support diverse plant and animal life or soil health. If left uncut this simplified ecology would begin to self-generate diversity around 40 years of age.