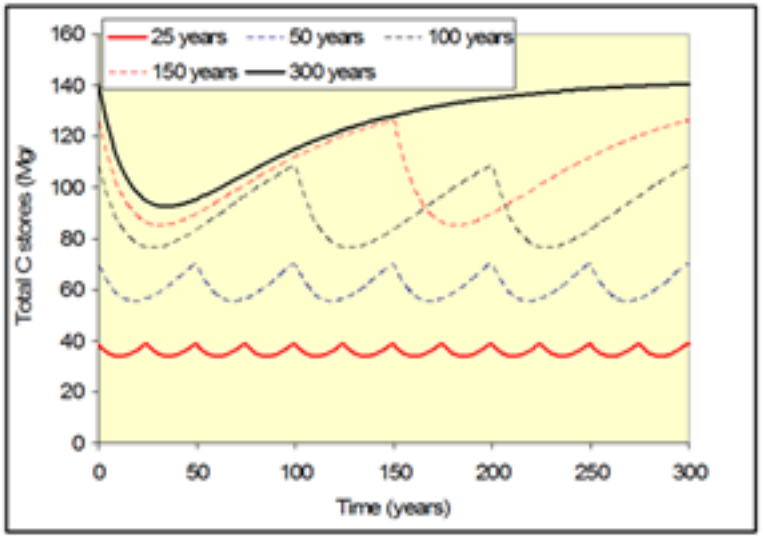
Carbon Storage Considerations

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:

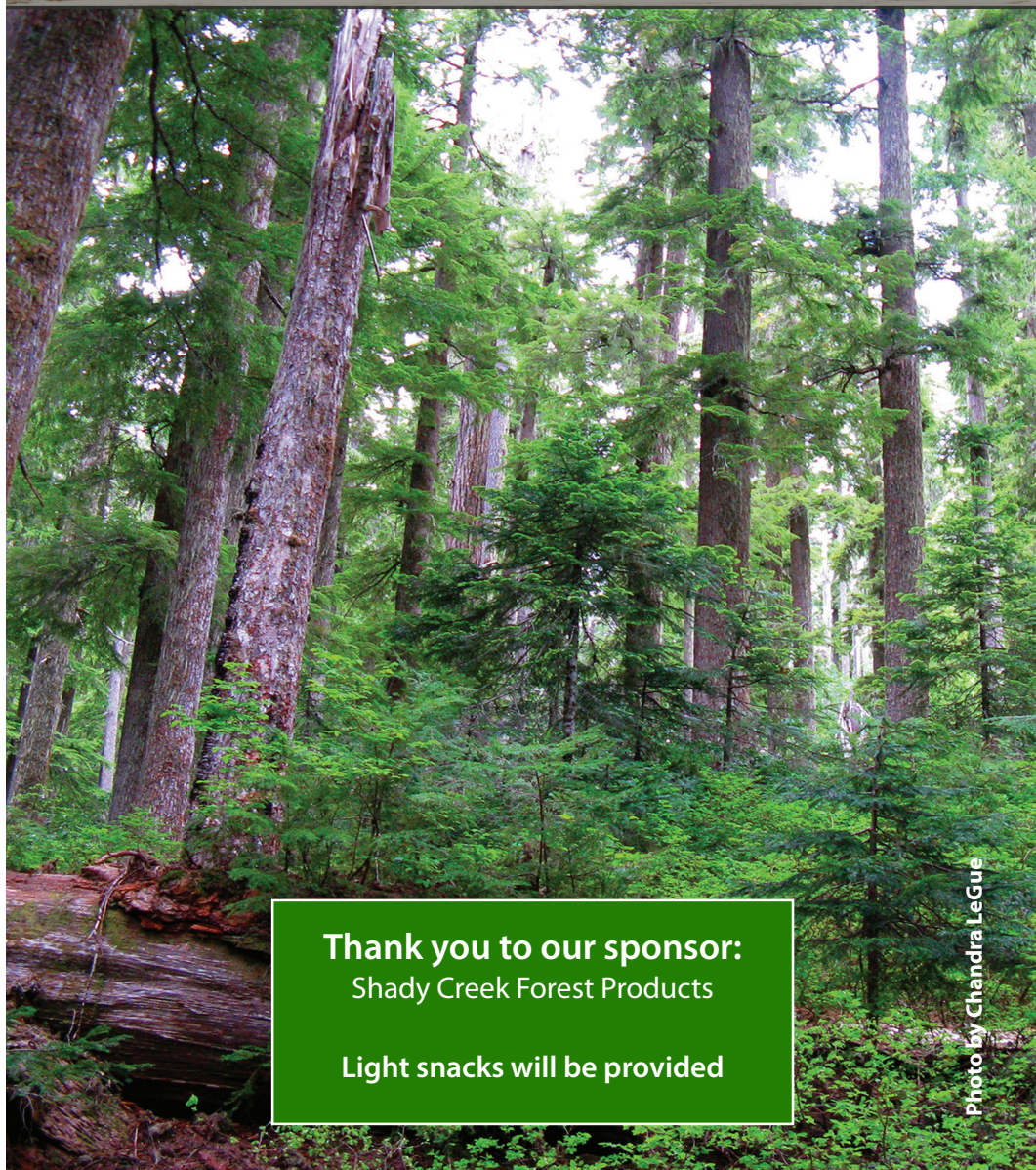
- Trees: Douglas fir, big leaf maple, alder, red cedar, hemlock, cascara, chinquapin.
- Small trees/shrubs: vine maple, red elderberry, beaked hazel nut, dogwood, red huckleberry, evergreen huckleberry, salmon berry, Oregon grape, salal, thimble berry, ocean spray, Indian plum, rose.
- Herbaceous plants/ferns/mosses/lichens: hedge nettles, wild ginger, oaxalis, 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.

The Future of Oregon's Forest Economy

A Guided Walking Tour

Wednesday, August 23, 2017

Shady Creek Forest



Thank you to our sponsor:
Shady Creek Forest Products

Light snacks will be provided

Photo by Chandra LeGue

SHADY CREEK BIO-DIVERSE FOREST HIKE (Riverside 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 GIANT HARDWOODS
After historical logging, this stand now has 60-80 year old hardwoods, remnant older cedar and seed trees. Learn about canopy "bio-domes."

Stop #2 SURVIVOR GENES OF RESILIENT TREES
Old growth maple stump with fungus. Trees such as these hold survivor genes. Stronger trees survive through fires, droughts, wind storms, and diseases. Note understory of salmon berry and huckle berry.

Stop #3 THE MICROSCOPIC WORLD OF FUNGI, BACTERIA & MYCELLIUM
Large downed wood or standing stumps harbor fungi, bacteria, mycellium, a myriad of small life forms from single cell microscopic invertebrates to small vertebrates. They are all are reducing dead materials to become nurse trees and rich "litter" on the forest floor.

Stop#4 ECO-TYPES: HARD WOODS, INVASIVES … AND SKUNK CABBAGE
Wet soils, sunlight, slope, natural re-seeding all contribute to sections of a forest with different eco-types.

Stop#5 LOGS IN STREAMS–CREATING FISH HABITAT & CHANGING STREAM COURSE
Placing downed logs in streams creates good fish habitat but also tinkers with nature's waterways.

Stop #6 SURVIVOR TREES PROVIDE RESILIENT SEED BANK (Lower tour turn-around)
A 200+ year-old growth tree holds a reservoir of survivor genes in its seeds. As conifer stands exceed 100 years, biodiversity increases in the upper branched canopy and in the soils.

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.