

Example Soil Sections (Resource Category 2)

Soils Example 1

A. Current resource conditions, issues, needs, and opportunities

Our property has a 12% slope, increasing in elevation from 230 feet to 400 feet; it lies east-west on the western slope of a north-south ridge that is the remnant of a glacial moraine. Glacial soils are young, generally undeveloped and shallow, poorly drained, and relatively infertile.

The soil is composed of 90% Indianola-Uselessbay complex (5%-30% slopes) and 10% Uselessbay-Utsalady complex (0-10% slopes). The overall composition is approximately 88% sand, 10% silt, and less than 1% clay. Our soil log, obtained when the well was drilled, indicates 0-5" brown sandy loam, 5"-40" loamy sand, 40"-65" fine/medium sand.

Drainage is predominantly "somewhat excessively drained." The depth to the water table is greater than 200 inches, which is consistent with our well depth. Flooding is not an issue. A restrictive layer is not an issue.

Road/trail erosion hazard is rated moderate. The slope contributes to a slight to moderate off-road/trail erosion hazard, indicating that some erosion is likely and control measures may be needed. The road and trail erosion hazard is rated moderate to severe, indicating that significant erosion may be expected; roads or trails may require frequent maintenance.

The Douglas-fir 50-year site index ratings are 108 and 111, which correspond to Site Class III (moderate productivity). Suitability for hand planting is "well suited." Potential for seedling mortality is high with available water being the limiting factor. Rutting hazard and compaction resistance is moderate

Overall, the soil meets our objectives for use as woodland, gardening, and wildlife habitat. (See Appendix, for detailed soil information)

B. Management practices to protect and/or enhance these resources

Erosion is our major soil concern, particularly following clearing to establish a home site. Native grasses will be sown to help hold down the soil in those areas designated for the septic system and drain field. We will have our builder keep any excavated topsoil and organic matter piled onsite for the duration of construction rather than being removed, so that we can redistribute it around our home upon completion.

Appropriate measures will also be taken to reduce or prevent soil loss near any trails and roads on the property. During thinning and other activities, we will operate in the dry season and use low ground pressure equipment to minimize the potential for compaction, rutting, or erosion.

When planting, we will need to plant extra to compensate for expected seedling mortality and favor drought-tolerant species in dry areas.

Soils Example 2

A. Current resource conditions, issues, needs, opportunities

The soil type on the property is Chuckanut gravelly ashy sandy loam, with varying percent sloping, with parent material of volcanic ash mixed with colluvium derived from sandstone over dense glacial till. The soil resources report indicated that the property has a 50-year Douglas-fir site index (King 1966) of 130 (upper end of site class II) which indicates good productivity for Douglas-fir, but these should not be planted in lower wetter areas of stand 1 and 3. The following issues were noted in the soil resources report that are likely with this type of soil:

- Potential for damage by fire is high due to sloping, texture, surface depth and rock fragments
- Potential for seeding mortality is moderate due to available water capacity
- Suitability for hand planting is moderate to well suited, based on slope.
- Suitability for use of harvesting equipment and mechanical planting is poorly suited or unsuited due to rock fragments and sloping
- Suitability for construction of haul roads is moderate to severe based on slope
- Suitability of log landings: poorly suited, due to slope and rock fragments
- Soil rutting hazard is severe
- Compaction Hazard is medium according to the Soil Resources report, but it may be more severe in the wetter pieces of the stands
- Erosion Hazard for off road/off trail is moderate to severe depending on slope degree
- Erosion for road and trail is severe
- Depth to any restrictive layer is 142"
- Depth to water table is listed in the soils report as over 200", but walking the property we have found a wetland in Stand 1 and Stand 3 has soggy areas in the winter season
- The ponding frequency in the soil resource report indicates none but field data indicates it is frequent
- Forest productivity potential indicates that it is good for Douglas-fir, but from field data it also appears very good for red alder, bigleaf maple, western redcedar, and western hemlock, all comfortable growing in wetter soils.

B. Any management practices which the owner plans to protect, enhance, or restore these resources

Areas of Stands 1 and 3 can be wet, but the soils are very compatible with the objectives of this plan. Ground-based equipment operations should avoid the rainy season to avoid causing compaction (which can then lead to surface erosion and ponding). Our property can all be operated on from the existing road and yard area. A road maintenance plan and schedule addresses surface drainage. Competing vegetation can be severe so monitor for signs of stress to regeneration trees caused by other vegetation or invasive species. Monitoring for signs of stress due to this competition will require removing vegetation where needed. Species for future planting should be a mix of dry tolerant and wet tolerant trees, based on the height of the slope that they are planted.

Soils Example 3

***Considerations:** Soil types, parent materials, horizons, site index, slope stability, erosion, compaction, structure, operability, seedling mortality potential, windthrow hazard, restrictive layer, water table, use restrictions, etc.*

A. Current resource conditions, issues, needs, and opportunities

Our property is located on one of the glaciated foothills of the Cascade Range. It is at 1,000 feet in elevation with an annual average precipitation range of 80 inches. It has one soil type, Alderwood/Kitsap sandy loam, with parent material derived from glacial till and glacial drift. The slope averages 7 to 10 %. Alderwood soils consist of very dark grayish brown gravelly sandy loam 20 to 40 inches deep underlain by compacted till. They are moderately well drained with moderately rapid permeability down to the till layer and then very slow permeability. This can lead to the soils becoming saturated in the substratum during the rainy season. Available water capacity is low which creates draught potential in the dry months. Alderwood is relatively stable with low to moderate surface erosion potential. The main considerations for this soil type are its medium to high compaction and ponding potential and the tendency for severe plant competition. Wind throw of exposed trees has some potential due to the rooting depth restricted by the till layer. Alderwood soils are site class III (50-year site index of 108), which is moderately productive.

B. Any management practices which the owner plans to protect, enhance, or restore these resources

The soils are very compatible with the objectives of this plan. Alderwood is a productive forest soil that remains stable under appropriate forest management practices. Ground based equipment operations should avoid the rainy season to avoid causing compaction (which can then lead to surface erosion and ponding). Our property can all be operated on from the existing gravel road and yard area. A road maintenance plan and schedule addresses surface drainage. Competing vegetation can be severe so monitor for signs of stress to regeneration trees caused by other vegetation or invasive species.