

Determine site index

Site index is a measure of the productivity of a site based on how tall trees will grow over a specified period of time. It is called an index because values are indexed to a given number of years (the **base age**), usually 50 or 100. For example, a 50-year site index of 120 means that at age 50, the dominant trees (of the given species) would be expected to be 120 feet tall. The higher the site index, the more productive a site is for growing a given species. Adding site index to your use of LMS allows the growth models to be more accurate for your forest.

Site indexes are usually expressed as a series of concentric curves. *Figure 7-3* shows an example of site index curves for Douglas-fir (King, 1966²). Any measured height and age could be plotted to see which site index curve it falls on. Another term to be familiar with is **site class**, which is a range of site indexes. In *Figure 7-3*, Douglas-fir site class II refers to the site index range between 115 and 135.

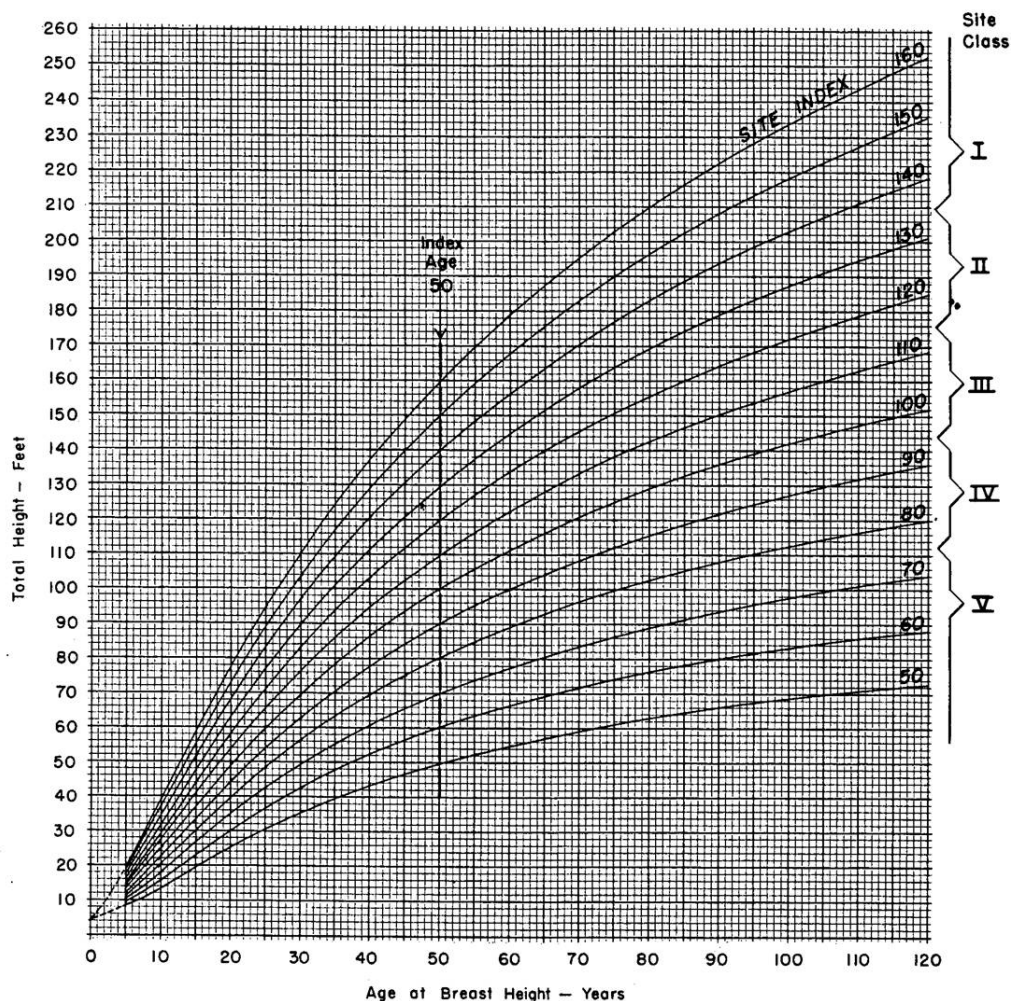


Figure 7-3: Example site index curves for Douglas-fir (From: King, J.E. 1966. Site index curves for Douglas-fir in the Pacific Northwest. Weyerhaeuser Forestry Paper, No. 8, Weyerhaeuser Co., Forestry Research Center, Centralia, WA). Site indexes are expressed as a series of concentric curves. Site index can be determined by plotting the total height of a dominant tree against its breast height age and seeing which curve it falls on.

Determine site index from soil maps (recommended method)

One of the easiest ways to determine average site index is to look it up on a soil map. Customized soil maps can be created using the Web Soil Survey (<http://websoilsurvey.nrcs.usda.gov/>), a free website provided by the USDA Natural Resource Conservation Service (NRCS). Here are some quick steps to get site index data from the Web Soil Survey:

1. Start the Web Soil Survey by clicking the green button (*Figure 7-4*).

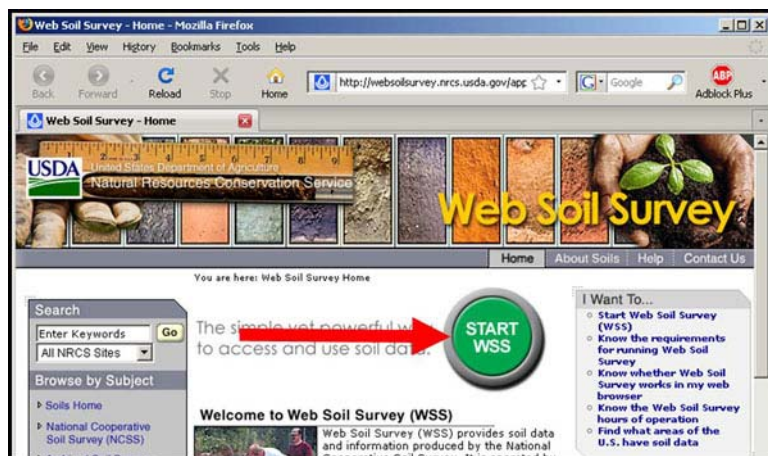


Figure 7-4: The Web Soil Survey is located at <http://websoilsurvey.nrcs.usda.gov/>. Start by clicking the green button.

2. Make sure you are on the Area of Interest Tab. On the Quick Navigation menu on the left, you can search for your property by several criteria, such as by the property address. When you have entered your property information, press View (*Figure 7-5*).

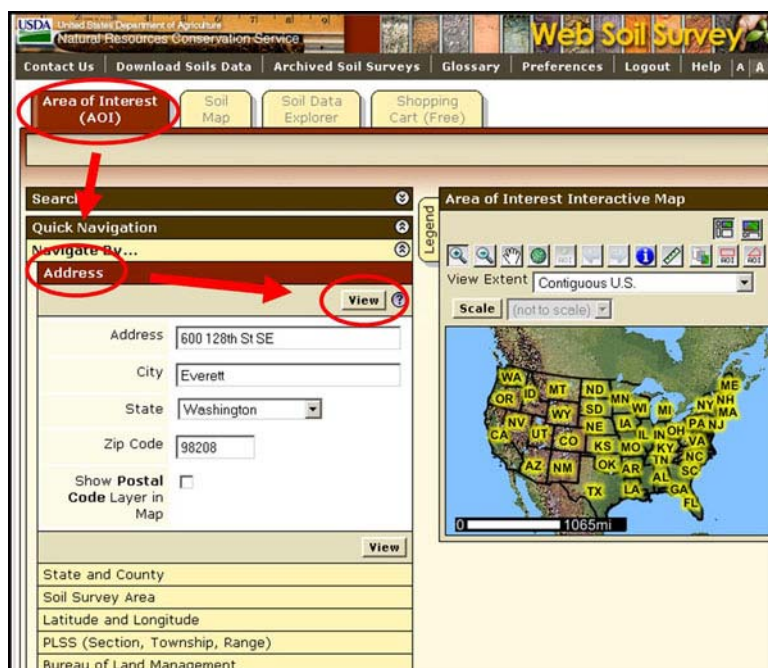


Figure 7-5: You can search for your property by address or other attributes.

3. You should then get an aerial image of your property vicinity. Click the red rectangle button that says AOI and use your mouse to draw a rectangle around your property (*Figure 7-6*). Your Area of Interest should now appear as a blue hatched area.

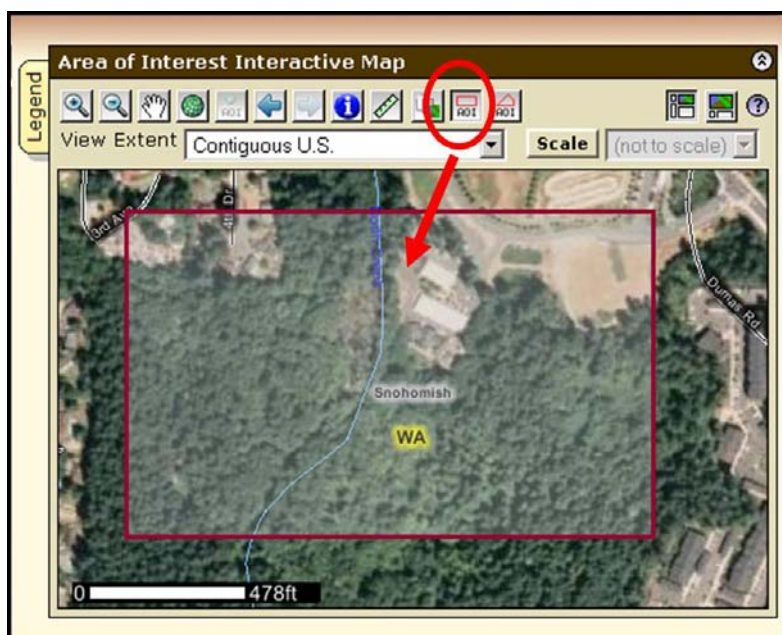


Figure 7-6: To define your Area of Interest, click the button with the red rectangle that says AOI and then use your mouse to draw a rectangle around your property.

4. Switch to the Soil Data Explorer tab. Notice that the aerial image of your property now has numbered polygons – these are the soil types on your property. Click on the Soil Reports sub-tab. From the menu on the left, select Vegetative Productivity and below that Forestland Productivity with Site Index Base. Click View Soil Report (*Figure 7-7*).

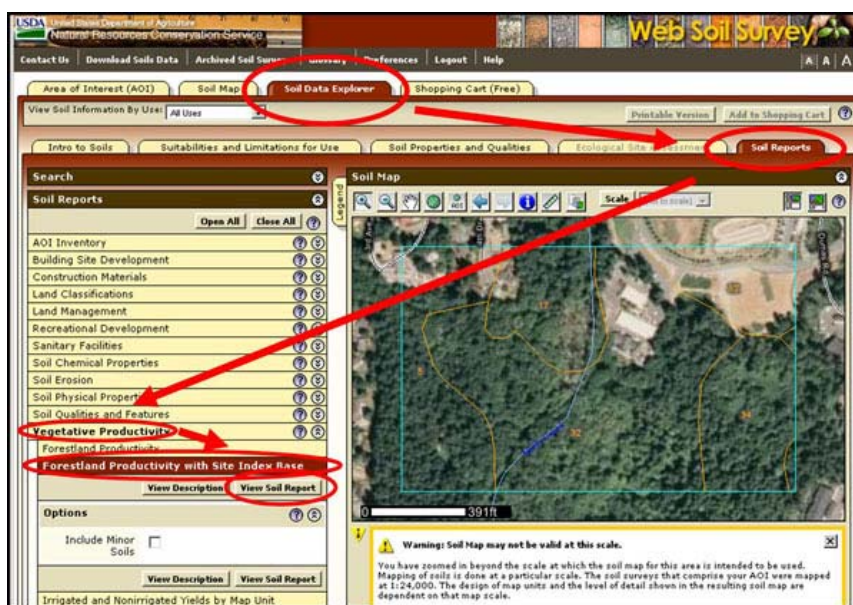


Figure 7-7: Navigating to the Forestland Productivity report.

- You will now get a list of site indexes by species with base ages for each soil type on your property (*Figure 7-8*).

Report — Forestland Productivity with Site Index Base					
Snohomish County Area, Washington					
Map unit symbol and soil name	Common trees	Site Index	Base Age	Site Index Curve Number	Volume Growth Rate (CMAI)
		ft	yrs		cu ft/ac/yr
5—Alderwood-Urban land complex, 2 to 8 percent slopes					
Alderwood	Douglas-fir	111	50	King 1966 (795)	157
	Pacific madrone	—	—	—	—
	Red alder	—	—	—	—
	Western hemlock	—	—	—	—
	Western redcedar	—	—	—	—
Urban land	—	—	—	—	—
17—Everett gravelly sandy loam, 0 to 8 percent slopes					
Everett	Bigleaf maple	—	—	—	—
	Douglas-fir	106	50	King 1966 (795)	143
	Red alder	—	—	—	—
	Western hemlock	—	—	—	—
	Western redcedar	—	—	—	—
32—McKenna gravelly silt loam, 0 to 8 percent slopes					
McKenna	Red alder	90	50	Worthington, Johnson, Staebler, Lloyd 1960 (100)	100
	Western hemlock	—	—	—	—
	Western redcedar	—	—	—	—

Figure 7-8: Forestland Productivity report showing site indexes by species and soil type.