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Selecting Suitable Tree Species

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I can not speak for all people, but I actually like planting trees. I like being out in the fresh air, the smell of the soil, the satisfying labor. Most of all I like the feeling of a job well done, and the thought that maybe I just made the world a little better. I also like the fact that the trees that I have just planted will grow and thrive, and probably be here long after I am gone, a legacy of my short stay here on earth.

There are many reasons to plant trees, including conservation, riparian stabilization, windbreaks, shelterbelts and living snowfences, investment, and aesthetics. Planting trees does not begin and end with sticking the seedling into the soil. A good amount of planning is involved in preparation for tree plantings of any size. Maintenance is required to help the seedlings reach maturity. One of the most important factors in the success of any tree planting is species selection. To ensure that your trees grow and thrive, and perhaps last longer than you do, you must plant tree species suitable to your site and to your needs.

There are two factors to consider when choosing tree species for your planting: 1) site characteristics and limitations, and 2) use.

Site Characteristics/limitations. Your planting site has unchangeable characteristics that can limit your choice of species.

- *Soils*: The soil will greatly impact the species you are able to grow successfully. General soil characteristics are available from published soil surveys available in most county Cooperative Extension and Natural Resource Conservation Service offices.
- *Hardiness zone*: Most references give a hardiness zone for each species of plant, and use the current USDA hardiness zone map. The zones are determined by the average annual minimum temperatures for each area. Some references will provide their own hardiness zone maps and use them to rate all species of plants in the reference. Certain species of trees leaf out earlier in the spring, some can handle frost better than others, so it is important to know the dates of the first and last frost for your area.
- *Site aspect*. The aspect (or direction the slope of the land faces) plays an important role in site conditions. North or east aspects are cooler, moister, and shadier than south or west aspects. Certain tree species tolerate more shade than others, while others require full sun for growth.
- *Annual precipitation and occurrence*: Annual precipitation and occurrence can be supplemented by irrigation, but not replaced. If you have a wet site, plan on using wet site species. The same hold true for a dry site, where species adapted to drought have a much greater chance for survival.
- *Frost pockets*: Frost pockets are low lying areas where cold air pools during the growing season, with night-time temperatures much lower than the surrounding areas. Choose plant species that tolerate growing season frost.
- *Animal depredation*: Deer, elk, moose, pocket gophers, mice, and porcupines all love to eat trees. Certain types of trees and shrubs are less palatable than others, but all will be eaten if there is a shortage of available food. Determining which animal problems you may encounter (if any), will help you choose the plants and methods of protection most suited to your situation. Animal browse controls

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include barriers (fences, tree shelters), repellents, toxicants, trapping/shooting, and cultural methods.

- *Insect and disease problems:* Tree vigor and species diversity are effective deterrents to most insect and disease problems. Chronic problems, such as soil-borne root decays, usually require a change of species. A good example would be an area of fir that has succumbed to root-rot. If you plant more fir, they will also die, whereas another species, such as pine, might not. Genetic resistance to insects and diseases is another way to limit loss. If you want to plant western white pine, purchase seedlings resistant to white pine blister rust. Call your local extension educator or Idaho Department of Lands office for specific insect and disease problems you encounter.
- *Poor soil*: Poor soil conditions can result from past human activities or natural events. Some poor soil conditions, such as mild soil compaction, erosion problems, and nutrient deficiencies can be re-paired. Others are beyond human intervention and simply preclude tree growth.
- *Buildings, power lines, underground utilities*: When choosing a tree or shrub species for planting around structures, note the location of overhead power and phone lines, foundations, and under-ground utilities, and match the mature tree size to the growing space.

Intended Uses. The intended use of the tree planting is a very important consideration. If you plant a windbreak, you want different species than if planning a reforestation project or a high-value hardwood plantation. Most tree and shrub species have more than one use. For example, black cherry (*Prunus serotina*), is suitable for plantation plantings, used in windbreaks or shelterbelts, and has high timber, wildlife, and medicinal values.

Once you have the above information, you have established specific criteria to choose the species you will plant. Then it is time to begin your homework. Read, ask your neighbors what does well at their place, look around the area and see what has been planted and where. If you do not see a particular species, it may mean that it has been tried and failed. If a certain un-tested species of tree seems to fit your site criterion, order a few and try them. By using the above selection criteria to determine which species are most suitable for your particular planting site and needs, you will increase your success in growing healthy, vigorous, and useful trees for the future.

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