

The Seedling



Washington Association of Conservation Districts
Plant Materials Center

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The Target Seedling Concept

The **Target Seedling Concept** is a framework to help guide foresters in identifying the optimal seedling for their reforestation projects, and working with the nursery to produce it. While it was developed specifically for the forestry industry, there are parts of this concept that can be used in conservation and restoration.

The Target Seedling Concept is composed of 6 categories:

1. Objective of Outplanting: This is the most fundamental component. It will dictate the list of species to consider.

2. Type of Plant Material: This usually refers to what **stock-type** to use. The following are the most common stock types:

- ♦ **1-0:** A 1-0 is a plant that was grown from seed for 1 year. It is usually a hardwood species.
 - ♦ **2-0:** A 2-0 is a plant grown from seed for 2 years.
 - ♦ **Plug-1:** A plug-1 is a plant that was grown for 1 year in a small container called a plug, then transplanted into a transplant bed for 1 year. They have a fuller, more fibrous root system and can be more survivable in harsh sites.
 - ♦ **Containerized:** A plant grown in a container of various sizes. It has a longer planting season than bare root.
- 3. Genetic Considerations:** Foresters have fairly well defined seed transfer zones for the species they use. That means that the seeds used in propagating seedlings need to come from trees within a certain geographic range and elevation. Survivability and vigor are

increased by adhering to the proper seed transfer zones. These zones are much less understood for non-forestry species and are in general, much larger geographically for non-conifer species.

4. Limiting Factors of Outplanting Site: Species selection should be based upon a thorough understanding of the environmental conditions of the site.

5. Timing of Outplanting Window: The decision of whether to use bare root or containerized can be based upon when the plants will be planted, since containerized plants have a longer planting window.

6. Outplanting Tools: If one will be using smaller planting tools, then smaller stock-types should be considered.

These are all important considerations and it is obvious why they should be considered when selecting plants for a project. The one part of this concept that is usually not possible for restorationists, is that foresters typically need to contract the production of their specific plants 3 years out. Conservation nurseries will often have a variety of plants available speculatively however, so with planning and research, it is still possible to acquire stock that will be suitable, survivable, and vigorous. The important thing is to communicate these requirements as much as possible with the nursery in a manner as timely as possible.



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Who We Are

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Planting for the Future

Nestled in the foothills of Skagit Valley is a small tree farm managed by Wally Hoback. "I turned 85 last Monday" he said as he beamed around at his beautiful trees. When asked why he wanted to do a tree farm he said with a matter of fact tone, "because I love trees." After three wars, Wally retired from the Air Force as a Colonel and in his words, "needed to do something". He and his wife bought a 540 acre cattle farm in Eastern Washington. When his two boys grew up and went off to college, he couldn't manage the farm on his own and decided to sell. He and his wife now have a home west of the Cascades in Mount Vernon Washington. The 20 acre tree farm is conveniently located in Sedro Woolley just 20 minutes from their home. Wally purchased the property in 1995 and since that time he estimates he has planted about 10,000 trees.

The property was previously logged in 1988 and about 2,000 marketable Cedars remain today. Every year, Wally purchases



500-1,000 trees from the PMC and plants in stages creating a stair stepped canopy of various aged trees. Wally has planted a wide range of stock types over the years including plugs, 1-1's, 2-0's and P-1's. He mentioned that not every nurseries' idea of each stock type is the same. Some nurseries put more into their trees than others.

"This is the first year I've had help planting," he explains. Local loggers are low on work and he hired a young

man to help him plant Douglas Fir and Western Red Cedar. Cedar was growing well under an older canopy layer and Douglas Fir has been planted in the few open areas with sunlight. Other conifers onsite include Grand Fir and Western Hemlock. A variety of native vegetation also flourishes among the trees creating habitat for the wildlife. Wally enjoys the deer and elk that roam the property. "It's their property too, they can stay". He does nothing to discourage them from browsing the trees and mentions that he's only lost a handful of trees over the years, which is a statistic well below the normal mortality rate for plantings. He has been purchasing trees from the PMC for at least the past 10 years. He mentioned

he's driven miles to pick up trees in the past and the quality of the trees from the PMC proves to be the most successful.

Another reason for the success of a tree farm is the maintenance and management. Al Craney, Skagit Conservation District's forester has been advising Wally on his tree farm. Conservation district foresters provide landowners with a



wide range of forest management issues. Land owners can receive assistance in development and implementation of conservation plans and qualify for cost share programs. Foresters can help with best management practices for water quality, forest health issues, insect and disease problems, reforestation, erosion control and wildlife habitat enhancement. One important

aspect after planting is watering. There isn't a well on Wally's land so he doesn't do the recommended watering the first year. He joked that if he would water them he'd have to jump back real quick to make sure they didn't knock him over when they grew! Another critical task for any planting is maintaining the surrounding vegetation to ensure the plantings survive. Armed with nothing but a pruning saw he works away at freeing the trees from the gripping arms of unwanted vegetation, such as Himalayan blackberry. Lawn chairs are strategically placed in pockets of the plantings so he can take a break.

Thinning the stand of trees may be in the near future, but Wally cannot bring himself to chop down any of his trees. He rarely misses a day maintaining his trees and is already planning



on where to plant trees for the upcoming spring. He contemplates which species will do the best in the locations he has mapped out for the future plantings. The peacefulness and working up in the woods keep Wally going. "I won't see these trees get big, but I have two boys that enjoy this kinda stuff too."

Teddy Says..... "The nation behaves well if it treats the natural resources as assets which it must turn over to the next generation increased, and not impaired in value."

President Theodore Roosevelt.
Speech before Colorado Livestock Association, Denver, Colorado, 29 Aug 1910



Native Plants That Merit Attention – Plants for Bioengineering

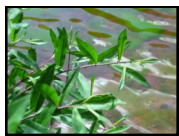
Bioengineering is the practice of using live plants to produce living, functioning systems to prevent erosion, control sedimentation or provide habitat. It can be adopted in many soil stabilization and erosion control situations, from stream bank and lakeshore protection to upland gully restoration and slope stabilization. The advantages of bioengineering include lower cost and less long term maintenance over traditional methods, environmental benefits of improved wildlife habitat, water quality improvements and aesthetics. Bioengineering treatments also tend to become stronger over time, whereas traditional methods can deteriorate. Bioengineering treatments include **wattling**, where bundles of branches are laid into the stream bank parallel to the stream, **brush matting**, where branches are woven together and anchored to the stream bank, and **live stakes**, where stems are driven into the ground.



More detail on installing these practices are available on the PMC website on the publications link, where there is a publication titled 'Live Stakes'. Some of the more common species used in bioengineering are listed below. There are other species that can be used.



Coyote Willow (*Salix exigua*) - Coyote Willow is found most commonly east of the Cascades, where it is very distinctive. Its thin, grayish-green lanceolate leaves stand out from the other Willows. It spreads via roots and creates thickets that provide browse and shelter for wildlife and stabilization for riparian soils. It grows to 15' tall with an indeterminate spread. It is not a good choice if it needs to be contained in a small area. It will spread.



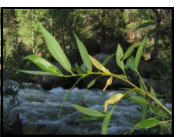
Drummond Willow (*Salix drummondiana*) - Drummond Willow occurs east of the Cascades in our region. It is also a distinctive Willow species. The greenish leaves are approximately 4" long with a pointed tip. The leaf margins curl inwards and the underside of the leaves are covered with a dense, white hairy indumentum. They grow to 10' tall and 15' spread, making one of the shorter Willows. It is a good soil stabilizer and wildlife species.



Hooker Willow (*Salix hookeriana*) - Hooker Willow is again another distinctive Willow Species. Its most unique attribute would be its distribution. It is a west-side species, very west-side. It is usually found within 5 miles of salt water. Other traits include its tolerance of salt spray, a broadly oval dark-green leathery leaf and stout hairy stems. It can rapidly grow over to 20' tall with a similar spread. It is a good soil stabilizer and wildlife species.



Mackenzie Willow (*Salix prolixa*) - Mackenzie Willow is found east of the Cascades. They have a finely toothed glossy green lanceolate leaf that is subtended by stipules. It has an upright growth habit that can grow from 10 to 20 feet tall. It is a pioneer species that occurs on rocky stream banks to moist alluvial terraces. It is most vigorous on finer textured soils with moderate to high levels of soil moisture. It is a good soil stabilizer and wildlife species.



Pacific Willow (*Salix lucida lasiandra*) - Pacific Willow occurs on both sides of the Cascades throughout our region. It is the region's most upright and tallest Willow, occasionally reaching 45' tall, with a relatively narrow canopy. The leaves are long, thin, glossy green, with a pointed tip. It grows anywhere there is ample moisture, but prefers damp heavy soils. It is a good soil stabilizer and wildlife species.



Sitka Willow (*Salix sitchensis*) - Sitka Willow is found primarily west of the Cascades. It is a multi-stemmed shrub that can grow from 10 to 20' tall with a similar spread. Its leaves are 2 to 5" long with a rounded tip. They are easily identified by their satiny sheen on the lower surface. Sitka Willow grows best on damp, heavy soils, but will grow anywhere there is ample soil moisture. It prefers sun, but will tolerate some shade as well as any Willow species. It is an important wildlife species, and an exceptional soil stabilizer and builder.



Black Cottonwood (*Populus trichocarpa*) - Black Cottonwood is the black sheep of bio-engineering. It is a vigorous tall growing tree with a long, straight trunk. It grows over 80' tall with a canopy that can spread to 40' wide. It is found throughout our region in areas with ample soil moisture. It is commonly used in riparian restoration where its height is useful for shading streams and lowering water temperatures. It is also used in shelter belts and wind breaks. Its wood has an economic value and is used for pulp, veneer and occasionally dimensional lumber.



Red Osier Dogwood (*Cornus sericea*) - Bioengineering is not limited to Willows and Cottonwoods. Red Osier Dogwood is one of several alternate species that provide diversity of form and function. It can grow from 6 to 20' tall, although more slowly than Willows. Its attractive white flowers give rise to white berries that attract birds. It is most easily identified in winter when its distinctive red stems are evident. It prefers moist soils, but is not as tolerant of saturated soils as Willows. Its dense, matting root system is a good soil stabilizer.

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Helping to put conservation on the ground.

New Board Member for PMC's Administrative Board

The PMC has a new member on its Administrative Board. Duane Weston has agreed to replace Monte Marti, who resigned upon accepting the position of Manager of Snohomish County Conservation District. We wish Monte great success, he takes with him tremendous gratitude for all that he has done for the PMC through the years.

Duane brings a full and varied background to the PMC's Administrative Board. He has spent most of his career as chief forester of the Pilchuck Tree Farm, north of Arlington. Although he retired in 2001, he considers himself "semi-retired" and serves as Director of External Affairs for Pilchuck Tree Farm. He is on the Board of Trustees for the Washington Forest Protection Association and was named Washington State's 1992-93 Outstanding Tree Farmer of the Year. He also represents private forest landowners who belong to the Washington Farm Forest Association

and the Washington Forest Protection Association in the Stillaguamish Watershed on the Stillaguamish Watershed Council.

Duane and his wife, Anna Marie, own and manage a 45-acre tree farm overlooking the Stillaguamish Valley. He has served on the Snohomish Conservation District since 1995 and currently serves as an Associate Board Member. He is also on the Advisory



Duane Weston

Committee to WSU forester Kevin Zobrist, for the WSU Small Forest Stewardship Program. Duane has been actively involved with the Arlington Food Bank for 29 years, serving as Chairman of the Board of Directors for 25 years. He received the Phil and Laura Zalesky Lifetime Achievement Award from the Cascade Land Conservancy in 2007.

The staff at the PMC look forward to working with Duane in the years to come and welcome the expertise he brings. He will join the other 4 members on the Board who are listed on the front page of this newsletter. Board members are appointed by the President of the Washington Association of Conservation Districts. The Board meets quarterly to provide administrative oversight of activities at the PMC. Together they bring an extensive range of expertise that covers decades of commitment to conservation in this state.