



Hedgerows Living Fences for Western WA

Introduction

Hedgerows have been in existence for over a thousand years. As they have become woven into the landscape from England to the Northwest, their form and function have evolved to serve a multitude of issues on the farm as well as in the urban landscape. Some of the more obvious functions that a hedgerow can serve are delineation of boundaries, controlling stock, erosion control, and acting as a wind barrier. On a more subtle level, hedgerows act to improve the health of a watershed by acting as a filter for non-point pollution. As a corridor for wildlife habitat, they also improve the number of beneficial insects and animals in the region of their existence, as well as restore dwindling native plant communities in areas of rapid growth. Hedgerows provide a windbreak during winter months that can significantly reduce stress on animals while lowering their energy requirements. An alternative to fencing, they create an attractive visual boundary in the landscape, and unlike traditional fencing, they rarely need replacing.

These hedgerow functions can help alleviate some of the resource problems which have developed in King County due to land use changes. As forests get converted into pastures or housing developments, valuable wildlife habitat is lost. Hedgerows planted as stream buffers can both exclude livestock from getting into the water and degrading them and will also filter out non-point pollution before it reaches the water.

Getting Started

Judith's Hedge in Great Britain was planted by a niece of William the Conqueror in the latter half of the 11th century. Although you may not be planning for your hedge to be around this long, it is obviously possible for one to become a semi-permanent part of the landscape, so take this into account.

Another factor in deciding where to plant is that adequate space must be allowed to account for the hedge's final mature size. A mature hedge will spread to cover a width of approximately six to ten feet.

Once you have determined where your hedgerow will be located, consider the functions it ultimately serve. Hedgerows grown for restraining livestock, for example, should be planted with 70-95% thorny species. This not only improves the stock-proofing properties of the hedge but also provides safe nesting and resting areas for a variety of beneficial wildlife.

It is important to select the right plants for the right place. Look around the site to see what species are commonly found in your area. Native plants are the best palette to choose from. They are ideally suited to survive the types of adverse conditions your micro-climate may present. They are also adapted to tolerate your soil conditions and are for the most part disease- and pest-resistant.

Designing a Hedgerow

After you have decided to plant a hedge and determined its purposes, make a list of shrub species suitable for the hedge. Consider your soil type(s) and local conditions which may affect growth. Don't forget to include species which are personal favorites.



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A good “backbone” plant, which will constitute 60 to 70 percent of the hedgerow should be among your initial selections. Choose a plant with a good growth rate, resilience to severe pruning, and thorny growth for good stock-proofing capabilities. Once a backbone plant is selected, adding four to six additional shrubs or small trees will add value as wildlife habitat as well as reduce any gaps resulting from a particular species dying out.

Hedgerow styles vary, typically by the types of plants used. This is determined by the purpose they will be used for. In this publication we will review two types of planting plans.

The most common planting plan is the double line. It is important to offset the two rows to give the necessary even distribution of plants along the mature hedge line. There are no hard and fast rules for determining the planting space for hedgerows; this depends on the plant selection. For a tight stock-proof hedge, spacing can be as close as 8 to 12 inches apart.

Fencing must be erected at a distance great enough to prevent stock from browsing the tops off the hedge plants. This protective fencing from livestock must remain in place for a minimum of five years. Research has shown that it is the volume or size of the hedge which is the most significant feature for wildlife. The wider or taller the hedge, the more nesting, shelter, or feeding opportunities there will be.

The “hedge with two faces” is a stockproof hedge with good conservation value. It is planted in two rows, with the inner row of the hedge facing the stock. This inner row is typically planted with hawthorn lined out closely at an 8 to 12 inch spacing to give a good stock-proof hedge that can be trimmed. The outer (second) line of the hedge should be spaced 7 feet away and planted with a variety of other species allowed to grow with less formal training to provide a better habitat for wildlife. This style of hedgerow is good for visual and noise barriers, beside a road, or as a boundary not bordered by another stock or arable field.

Trees for a Hedgerow

Trees in a hedgerow should be spaced a minimum of 20 feet apart. They are beneficial for shade and as a wind barrier for livestock as well as provide great cover for wildlife. Hedgerow trees can be particularly important to Raptors. Hedgerow trees can also be managed for nut production or firewood.

Hedgerow trees provide a useful source of flowers and fruits in an otherwise trimmed and barren hedge. Planting a variety of them will further extend the benefits to wildlife. A good number and a rich variety of native trees should be maintained and, if positioned well (e.g. field corners), will not hinder agricultural operations.

Planting new trees alongside a hedge as opposed to in it will allow at least the top and one side of the hedge to be trimmed without problems. It also facilitates a boundary strip by keeping farm operations back from the hedge.

Planting a mixed habitat of trees, hedges, and field margins (i.e. wildflowers, native grasses, sunflowers, cereal grains, etc.) ensures a wide selection of beneficial animal life that can live and thrive.



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Suggested Hedgerow Plants for Western Washington

Numerous native trees and shrubs can be incorporated into a hedgerow. Your reasons for planting a hedge will help determine the choice of suitable species. Important considerations when selecting plant material for a hedgerow include:

- ◆ produce a stockproof hedge in a reasonable amount of time
- ◆ consider the longevity and the vigor potential of plants.
- ◆ be easily kept in bounds
- ◆ be strong enough to resist the efforts of animals
- ◆ provide small animals with a place to escape, which is made easier if the hedge has thorns
- ◆ produce shoots close to the ground, containing both small and larger animals
- ◆ choose plants which are suited to soil type
- ◆ disease resistance
- ◆ inedible and unattractive to livestock within the field

Listed below are some native plants that have met the criteria as good hedgerow candidates in flood plain and livestock pasture situations. It is important to be familiar with your soils when choosing plant material. Differences in growth along the hedgerow may occur according to plant and soil type. It is suggested that a soil survey be conducted along the entire length of the hedgerow to determine any soil variation.

Name	Moisture	Comments
<u>Conifers</u>		
Douglas Fir	Dry to Moist	grows to 150'
Shore Pine	Dry to Wet	grows to 65'
Hemlock	Moist to Wet	grows to 200'
Red Cedar	Moist to Wet	grows to 200'
Sitka Spruce	Moist to Wet	grows to 200'
<u>Deciduous Trees</u>		
Black Hawthorn	Dry to Moist	grows to 25', a favorite because of thorny branches and tolerance of severe pruning.
Cascara	Moist to Wet	grows to 30', has a strong root system, will tolerate shade.
Oregon Ash	Moist to Wet	grows to 30 to 50', attractive to birds, tough wood.
Pacific Crab Apple	Moist to Wet	grows to 35'
Beaked Hazelnut	Dry to Moist	grows to 20', advantage is it's dense growth habit.
Scoulers Willow	Moist	grows to 30'.



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Shrubs

Hardhack Spirea	Moist to Wet	grows to 10', very aggressive growth habits.
Indian Plum	Dry to Moist	grows to 15', dense growth habit
Myrica Californica	Dry to Moist	grows to 15', semi-evergreen
Nootka Rose	Dry to Moist	grows to 8', thorny habit beneficial to livestock restraint.
Swamp Rose	Moist to Wet	grows to 8', thorny growth habit
Oregon Grape	Dry	evergreen, grows to 6', tolerates shade and is somewhat thorny.
Red Twig Dogwood	Moist to Wet	grows to 15', vigorous root system with multi-stemmed growth.
Snowberry	Dry to Moist	dense shrub grows to 3'

Site Prep

The single most important part of establishing a windbreak that works is protecting the small bare-root seedlings from existing, competitive vegetation. This factor cannot be over-emphasized. Not only do these plants compete for light and water, many grasses produce natural chemicals which suppress tree and shrub growth. If you don't plan to do any site preparation, you should not bother planting a hedgerow. Heavy competition from weeds, grasses, and existing woody cover (e.g. blackberries) will choke out your planting in short order.

You can set back grass competition in a planting site with a heavy sod by rototilling, fall plowing and/or discing in 4 - 6 foot wide strips. By minimizing the amount of soil you disturb, you reduce the threat of water erosion and weed seed invasion. Fall is the recommended time of year for site prep as in spring many hedgerow sites can remain too wet to work until bare root planting season is over.

If residual cover is minimal, a rotary mower, or weed whacker can be used to cut competing vegetation as close to the ground as possible. To further discourage weed competition, a weed mat or thick mulch can be applied to the site.

Weedy or grassy competition can be controlled with selective herbicide use. Effective control depends on four factors: timing of application; herbicide selected; weather conditions; and application rate. Heavy sod can be controlled by a fall application of herbicide in the year prior to planting.

A pre-emergent herbicide can be applied in the spring just after the trees are planted and the existing grass cover hasn't greened up yet. Herbicides should not be allowed to come in contact with the tree roots.

Very dry conditions will limit the effectiveness of most herbicides. Be sure to follow label directions for application rates. Consult your local Conservation District for specific herbicide recommendations.

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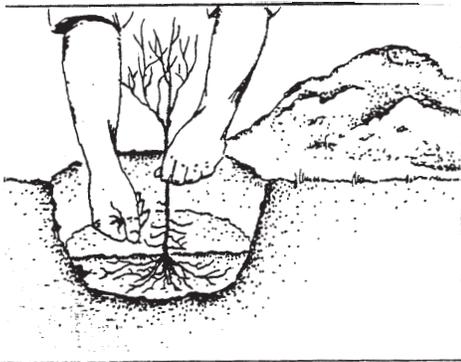
Planting Procedures

Bare root stock is the most cost efficient approach to planting a hedgerow. Bare root season in Western Washington is in early spring, after danger of hard frost but before heavy bud break. Typically, that is time is from late February to early April. If you are planting with container stock, spring or fall are the best time for planting. These seasons allow for significant root establishment without having to be concerned about drought situations.

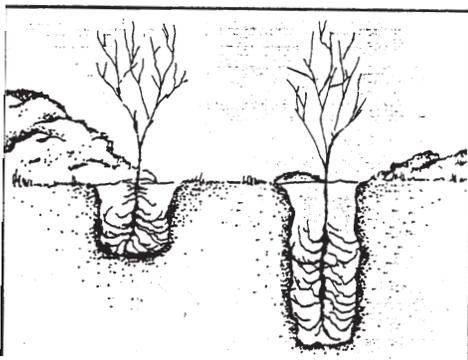
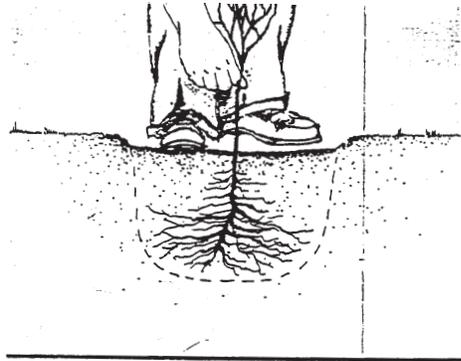
For bareroot planting, the hole should be deep enough to keep the roots from curling and the tree should be planted at the same depth as it was growing in the nursery (see below).

Pack the soil firmly so that there is no air space around the roots.

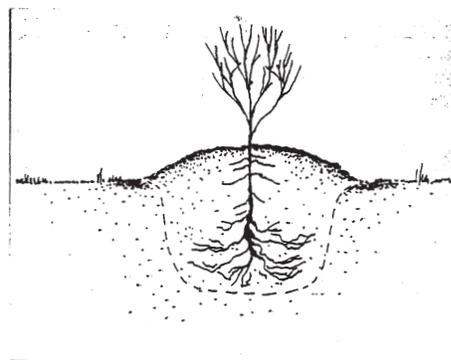
A proper hole insures that roots are well spread.



Soil should be tamped down forming a slight depression.



Planting holes dug too shallow and too deep.
Both are too narrow.



Soil mounded too high.



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Long Term Maintenance

Hedgerows require a little nurturing and maintenance in the early years. The young plants are especially attractive to livestock. Your investment of time and money is worth protecting with a fence, be it permanent or hotwire.

Weed control in the first years after establishment is very important. Within the first year, invading grasses and weeds can threaten a young hedgerow. Weed control can be accomplished with mulches, mowing, herbicides, or hand weeding. All are effective in the right situation. The reduction of heavy grass buildup around the plants reduces habitat for mice and voles.

Replace dead trees and shrubs every spring until you have 100 percent survival. Normally, replacement is made in spring or fall.

For more information of assistance in planning a hedgerow contact Kait or Geoff at 425-226-4867, kait.teachout@kingcd.org, or geoff.reed@kingcd.org.