## **Hedgerow Planting Plan Template**

How to use, and how to create your own

#### **Parts of a Template**

#### **Reason & Characteristics**

Each Template aligns with a goal from the Hedgerows How-To Handbook, and each goal comes with recommended plant characteristics to help accomplish that goal. These are shown in the top-right of each Planting Plan Template.

#### **Plants & Recommended Alternatives**

We've pre-selected plants for each template to accomplish a few

- Match the recommended plant characteristics for each Template's goals
- Diversity in color, size, shape, and bloom times throughout the hedgerow
- Ease and success in planting and growth

Each plant has an icon to help locate it within the larger template illustration and give a preview of its colors, as well as a number to note how many we placed in that template.

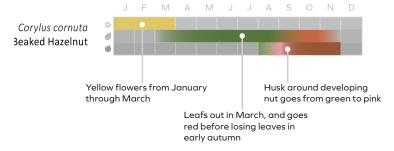




You might prefer to customize based on availability, price, increased variety along your hedgerow, or other personal considerations, so we've included recommended alternatives for swapping in and out.

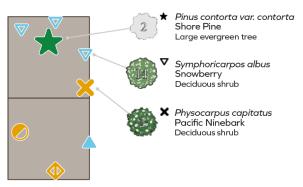
#### Fruit, Flower, and Foliage Diagrams

These show the color changes throughout the year:



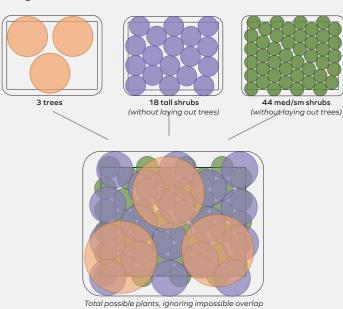
#### **Planting Placement Diagrams**

The large illustrations for each Template best show the overall layout and effect of the planting, but the density of the foliage and canopy are shown years into their growth. We've included these smaller planting plans with symbols for each species to better show where each is actually planted (or the center of each plant).



#### **How to Space Plants**

When designing your hedgerow, start with circles to represent the spacing for each type/size of plant (e.g. small shrubs vs. trees) rather than the size of the plants themselves. Using the recommended spacing, the center of one tree (large, orange circles here) should be 10 feet from the center of another tree. When laying out large shrubs (medium, purple circles) in the same way, those circles should not overlap one another, but can fill in and overlap the trees' spacing.



The spacing recommendations ensure the center of each plant is a certain distance from another—the actual plants you choose might be larger or smaller than their spacing circles.



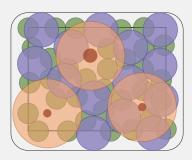


When you drop in the actual widths of your chosen plants (we suggest using the height and width of the plant at at least around 8 years maturity), do so from the largest category to smallest in order to get a sense of what will fit. Remember, two trees spaced 10 feet apart might not require the same amount of space underneath. One could be bushy and wide near the ground, the other could have a narrow trunk and a 20-foot spread in the canopy, which will change the plants you choose to place around and under it.







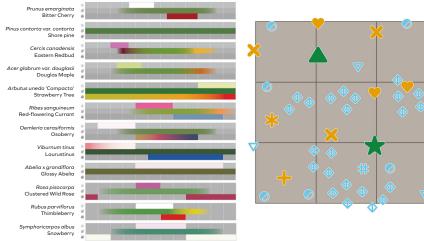


## **Habitat Block Template**

Densely spaced - 20'x15' - 8-10 years

**Reason:** Habitat for wildlife, pollinators, and natural pest enemies **Key Plant Characteristics:** Berries, fruit & nuts, Foliage at lower & ground levels, Larval hosts, Pollinator attracting, Shoulder-season blooming, Thicket-forming / dense woody structure **Spacing / Plant #:** Mixed height, high density





#### Notes:

All hedgerows provide cover and act as corridors for wildlife, linking scattered habitats together. The diversity of hedgerow plant species also supports biodiversity of animals that support healthy crops in numerous ways. More diversity in structure (including height & growth habit) and flower shape, color, and bloom time provides support for a diversity of organisms and makes the hedgerow more resilient.

Native pollinators will appreciate the nearly year-round blooming in this plant selection:

late fall- and winter-blooming Dwarf Strawberry Tree and Laurustinus, early-blooming (Feb) Osoberry, and late-summer/fall-bloomingGlossy Abelia support early and late pollinators.

Native roses provide nesting material for leafcutter bees, and are a host plant for many butterflies. Thimbleberry and Bitter Cherry provide food for birds, mammals, and pollinators such as bumblebees, mason bees, and early-emerging mining bees.

#### **Trees**



Prunus emarginata Bitter Cherry Deciduous tree



♦ Pinus contorta var. contorta
 Shore Pine
 Evergreen tree



Cercis canadensis
Eastern Redbud
Deciduous tree



★ Acer glabrum var. douglasii Douglas maple Deciduous tree

#### Recommended alternatives

Acer macrophyllum - Bigleaf Maple Prunus virginiana - Chokecherry Populus balsamifera ssp. trichocarpa -Black Cottonwood Malus fusca - Pacific Crabapple Frangula purshiana - Cascara Crataegus douglasii - Black Hawthorn Carpinus japonica - Japanese Hornbeam Cercis occidentalis - Western Redbud

#### Large Shrubs



 Arbutus unedo 'Compacta' Dwarf Strawberry Tree Evergreen shrub



★ Ribes sanguineum Red-flowering Currant Deciduous shrub



 Oemleria cerasiformus Osoberry Deciduous shrub



 Viburnum tinus Laurustinus Evergreen shrub

#### Recommended alternatives

Amelanchier alnifolia - Serviceberry Ceanothus sanguineus - Redstem Ceanothus Cornus sericea ssp. occidentalis - Red-osier Dogwood

Holodisus discolor - Oceanspray Sambucus racemosa - Red Elderberry Berberis spp. - Barberries (evergreen species) Pyracantha spp. - Firethorns

#### Medium/low Shrubs



# Abelia x grandiflora Glossy Abelia Semi-evergreen shrub



) Rosa nutkana / R. pisocarpa Nootka or Clustered Wild Rose (Based on soil conditions) Deciduous shrub



Rubus parviflorus Thimbleberry Deciduous shrub



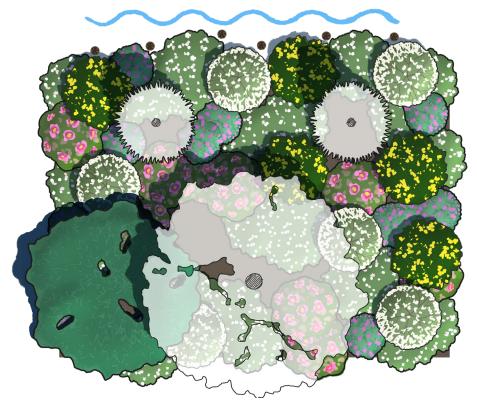
Symphoricarpos albus Snowberry Deciduous shrub

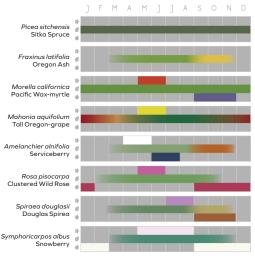
# Riparian Block Template

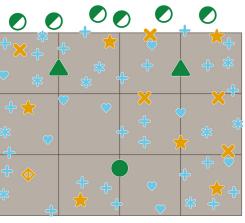
Densely spaced - 20'x15' - 8-10 years

**Reason:** Water-quality protection & riparian buffer **Key Plant Characteristics:** Foliage at lower & ground levels, Shade-providing, Soil-binding/erosion-control properties, Thicket-forming

Spacing / Plant #: Mixed height, high density



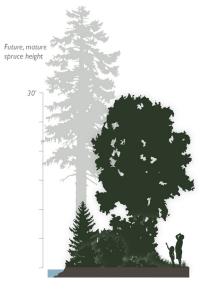




#### Notes:

Planting taller trees on the stream side of your hedgerow won't make a clear difference initially, but the shade those plants will provide to the stream will help regulate the summer water temperature, critical for salmon and other aquatic creatures. Warm water holds less oxygen and increases the metabolic rates of aquatic organisms.

Willow stakes are especially useful for growing quickly to prevent erosion on the slopes & providing shade over the waterway. Dense roots of plants chosen here prevent erosion and provide additional habitat.



#### Trees



Picea sitchensis
 Sitka Spruce
 Evergreen tree



Fraxinus latifolia Oregon Ash Deciduous tree



Salix sitchensis Sitka Willow (Live stakes\*) Deciduous tree

#### Recommended alternatives

Pseudotsuga menziesii - Douglas-fir Abies grandis - Grand Fir Salix spp. - Willow species Crataegus douglasii - Black Hawthorn Frangula purshiana - Cascara Alnus rubra - Red Alder Prunus emarginata - Bitter Cherry Malus fusca - Pacific Crabapple

#### **Large Shrubs**



 Morella californica Pacific Wax-myrtle Evergreen shrub



★ Mahonia aquifolium Tall Oregon-grape Evergreen shrub



Amelanchier alnifolia
 Serviceberry
 Deciduous shrub

#### Recommended alternatives

Cornus sericea ssp. occidentalis - Red-osier Dogwood

Physocarpus capitatus - Pacific Ninebark Lonicera involucrata - Black Twinberry Corylus cornuta - Beaked Hazel

#### Medium/low Shrubs



 Rosa nutkana / R. pisocarpa Nootka or Clustered Wild Rose (Based on soil conditions)
 Deciduous shrub



★ Spiraea douglasii Douglas Spirea Deciduous shrub



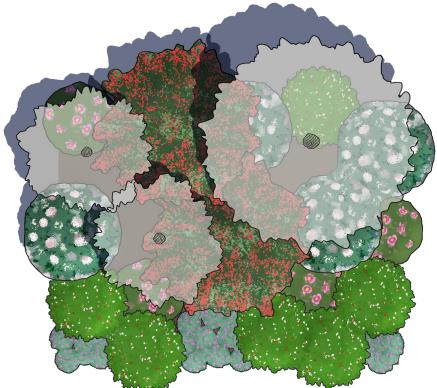
 Symphoricarpos albus Snowberry Deciduous shrub

# Windbreak / Dust / Odor Block Template

Densely spaced - 20'x15' - 8-10 years

**Reason:** Wind protection, management of odor and/or dust, privacy

**Key Plant Characteristics:** Dense foliage, Foliage at lower & ground levels, Short/ground-hugging understory, Tall evergreen plants



### 

#### Trees



Pseudotsuga menziesii
 Douglas-fir
 Evergreen tree



 Abies grandis var. grandis Grand Fir Deciduous tree

#### Recommended alternatives

Picea sitchensis - Sitka Spruce (for wet conditions)
Arbutus unedo - Strawberry Tree (not for wet)
Populus balsamifera ssp. trichocarpa Black Cottonwood

#### **Large Shrubs**



Viburnum tinus Laurustinus Evergreen shrub



Pyracantha coccinea Scarlet Firethorn Evergreen shrub

#### Recommended alternatives

Corylus cornuta - Beaked Hazel Holodiscus discolor - Oceanspray Pyracantha fortuneana 'Graberi' - Graber's

#### Medium/low Shrubs



Rosa nutkana / R. pisocarpa Nootka or Clustered Wild Rose (Based on soil conditions) Deciduous shrub



 Spiraea douglasii Douglas Spirea Deciduous shrub



Rubus parviflorus
Thimbleberry
Deciduous shrub

#### Recommended alternatives

Symphoricarpos albus - Snowberry Rhus trilobata - Skunkbush Sumac

#### Notes:

The focus of this goal is maintaining a diversity of plant species and multiple layers/strata that intercept windblown particles & aerosols. Some designs for odor control use hedgerows on both the upwind and downwind sides. Odor compounds on dust particles attach to leaf surfaces and are broken down by bacteria that naturally live on leaf surfaces. A diversity of leaf types in this template facilitates this process through all the seasons—note the use of tall evergreens with various leaf forms and sizes.

The choices here will result in quick coverage, using mid-sized and

low-growing plants that are equally successful in the full sun when first planted, and then adapt to shade that will be present in some parts of the design once the trees have matured. The Laurustinus offers evergreen foliage from the ground up, and may initially grow faster than the Grand Fir, but will ultimately fit below it; as the fir matures, its lower branches tend to lose foliage, offering more space and light to the Laurustinus.

Increase surface area to trap particles by arranging plants in rows with space between each.

# Pesticide Drift Interception Block Template

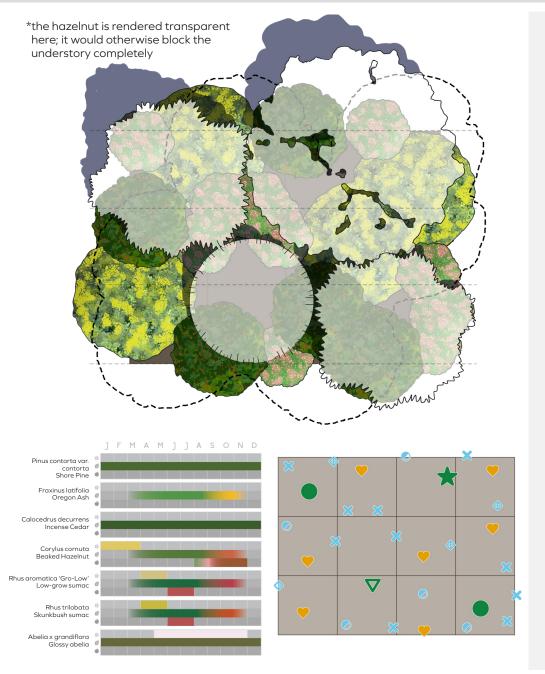
Moderately spaced - 20'x15' - 8-10 years

Reason: Keeping pesticide contained to spray area

Key Plant Characteristics: High overall optical porosity, Tall evergreen

plants

Spacing / Plant #: Mixed height, medium density



#### **Trees**



Pinus contorta var. contorta
 Shore Pine
 Evergreen tree



★ Fraxinus latifolia Oregon Ash Deciduous tree



▼ Calocedrus decurrens Incense Cedar Evergreen tree

#### Recommended alternatives

Pseudotsuga menziesii - Douglas-fir Picea sitchensis - Sitka Spruce Acer glabrum var. douglasii - Douglas Maple

#### Large Shrubs



Corylus cornuta
 Beaked Hazelnut
 Deciduous shrub

#### Medium/low Shrubs



• Rhus aromatica 'Gro-Low' Low-grow Sumac Deciduous shrub



Rhus trilobata Skunkbush Sumac Deciduous shrub



★ Abelia x grandiflora Glossy Abelia Semi-evergreen shrub

#### **Notes:**

Unlike solutions for wind, dust, or odor, keeping pesticide from drifting requires a heavily-planted, but less-foliage-dense hedgerow. More pesticide is caught when aerosols are able to pass through several layers of foliage (rather than hit a solid mass and be sent up and over the hedgerow).

Planting rows are shown on this template; leaving a little space between the trees and larger shrubs when planting increases the surface area exposed to pesticide-laden air until the hedgerow knits together (although you can trim down the rows to keep them distinct).

Plants selected for this template offer foliage coverage from the high

canopy all the way to the ground. The predominance of deciduous trees and tall shrubs, as well as conifers with more open forms when mature, will lead to maximization of each row's interception of drift before it can pass through to be intercepted and filtered by the subsequent row. The trees and large shrubs are not especially attractive to pollinators, limiting beneficial insects' exposure to pesticide drift caught in the foliage.

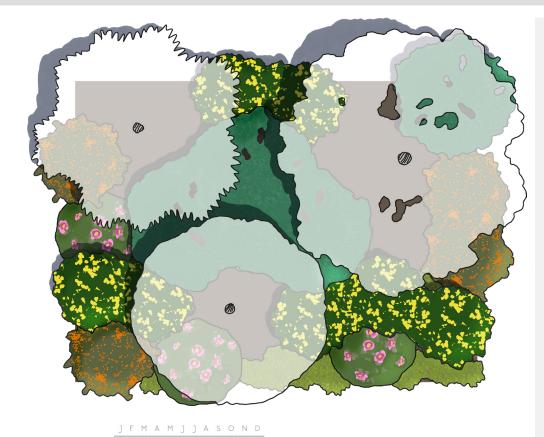
## **Living Fence Block Template**

Densely spaced - 20'x15' - 8-10 years

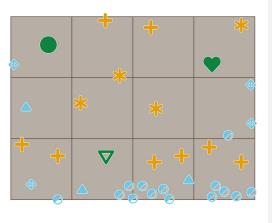
Reason: Livestock exclusion, privacy

**Key Plant Characteristics:** Livestock support & browse, Shade-providing / canopy-forming, Tall evergreen plants, Thicket-forming / dense woody structure, Thorns, prickles/prickly foliage, spurs

Spacing / Plant #: Mixed height, high density



# Pinus contorta var. contorta Shore Pine Salix spp. Willow Species Crataegus dauglasii Black Hawthorn Mahonia aquifolium Tall Oregon-grape Morella c alifornica Pacific Wax-myrtle Berberis darwinii Darwin s barberry Rosa nutkana Nootka Rose Ribes divaricatum Coastal Black Gooseberry



#### **Trees**



 Pinus contorta var. contorta Shore Pine Evergreen tree



Salix spp.
 Willow species
 Deciduous tree



Crataegus suksdorfii Black Hawthorn Deciduous tree

#### Recommended alternatives

Malus fusca - Pacific Crabapple Fraxinus latifolia - Oregon Ash (especially when wet) Alnus rubra - Red Alder Picea sitchensis - Sitka Spruce Populus balsamifera ssp. trichocarpa - Black Cottonwood

#### **Large Shrubs**



+ Mahonia aquifolium Tall Oregon-grape Evergreen shrub



Morella californica Pacific Wax-myrtle Evergreen shrub

#### Recommended alternatives

Physocarpus capitatus - Pacific Ninebark Viburnum tinus - Laurustinus

#### Medium/low Shrubs



Berberis darwinii Darwin's Barberry Deciduous shrub



Rosa nutkana / R. pisocarpa Nootka or Clustered Wild Rose (Based on soil conditions) Deciduous shrub



Ribes divaricatum
 Coastal Black Gooseberry
 Deciduous shrub

#### Recommended alternatives

Rubus parviflorus - Thimbleberry Symphoricarpos albus - Snowberry

#### **Notes:**

A living fence (aka shelterbelt) can provide a few very different benefits for livestock. A core of dense, browse-deterrent, thicket-forming shrubs works as a barrier, while a palatable edge provides forage with needed minerals and nutrients. Willow bark provides selenium, zinc, and salicin (an analgesic); hazel contains copper; many trees contain condensed tannins, which provide protein and parasite control. 64

As the hedgerow matures, lower branches may become sparser as lower branches get shaded from above. Maintain density and ensure the thicket qualities that form a barrier are preserved in the lower levels of the planting over time by planting species recommended on the Sortable Plant Options Table under category 4. "Understory Shrubs/Ferns for Shade."

In addition to inclusion of plants that provide beneficial browse, **exclude** plants that are potentially harmful to livestock. Avoid including both wild

and cultivated cherries & plums (Prunus spp.); apples & crabapples (Malus spp.); and pears (Pyrus spp.). These three genera contain cyanogenic glycosides, chemical compounds that release hydrogen cyanide when chewed or digested (see Appendix C).

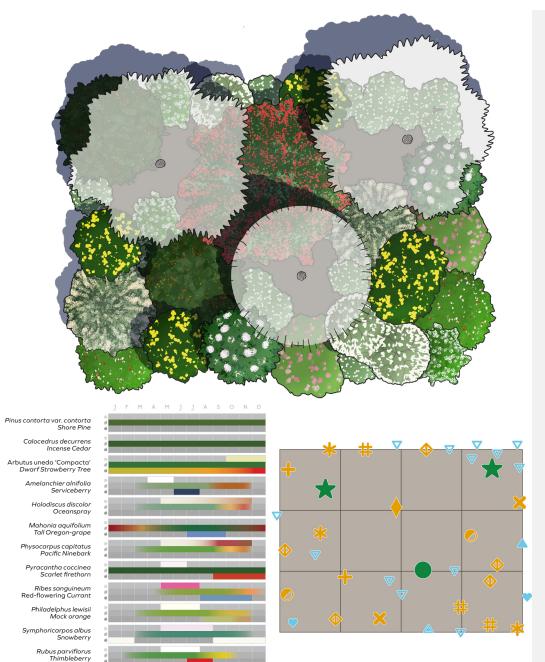
#### Design tips: 68

- Place along paddock divisions & perpendicular to the prevailing winds.
- Living fences designed for shading are best oriented east to west, but for winter protection, north-to-south orientation is best. However, if winter protection is needed but the only possible orientation runs east to west, then favor planting more deciduous shrubs and trees to pre vent frost pockets and allow more sunlight.
- Gaps from underperforming, dead or dying plants undermine the hedgerow's function and must be replanted with fast-growing spe cies immediately.

# Close to Home / "Top Picks"

Densely spaced - 20'x15' - 8-10 years

**Reason:** If you're between "types," aren't sure what suits your needs, or want diversity for viewing wildlife from your home, these are our favorite plants for growth, benefits, beauty, and are widely available for sale.



#### **Notes:**

This template features a collection of favorite "tried-and-true" hedgerow plants that are adaptable for a wide variety of settings. The plant selection would support multiple benefits, including a privacy screen, protection from wind, habitat for pollinators and birds, and year-round color and beauty.

It's a great choice to place near a residence, as an alternative "fence" near a property line or to buffer from a roadway, or near vegetable gardens to support pollinators, beneficial insects, and other pest enemies.

Our food-crop add-on design would further enhance this template, as this hedgerow would provide a backdrop for rows of dwarf fruit trees or berries. Further, this hedgerow could provide structure for a small crop of hops or vines that attract pollinators.

#### **Trees**



★ Pinus contorta var. contorta Shore Pine Large evergreen tree



 Calocedrus decurrens Incense Cedar Large evergreen tree

#### Large Shrubs



+ Arbutus unedo 'Compacta'
Dwarf Strawberry Tree
Evergreen shrub



Amelanchier alnifolia
 Serviceberry
 Deciduous shrub



Holodiscus discolor
 Oceanspray
 Deciduous shrub



Mahonia aquifolium Tall Oregon-grape Evergreen shrub



Physocarpus capitatus Pacific Ninebark Deciduous shrub



Pyracantha coccinea Scarlet firethorn Deciduous shrub



Philadelphus lewisii Mock orange Deciduous shrub



Ribes sanguineum
Red-flowering Currant
Deciduous shrub

#### Medium/low Shrubs



7 Symphoricarpos albus Snowberry Deciduous shrub



Rubus parviflorus
Thimbleberry
Deciduous shrub

#### Recommended alternatives

Rosa nutkana - Nootka Rose Rosa pisocarpa - Clustered Wild Rose Viburnum spp - Deciduous Viburnum Berberis thunbergii - Japanese barberry

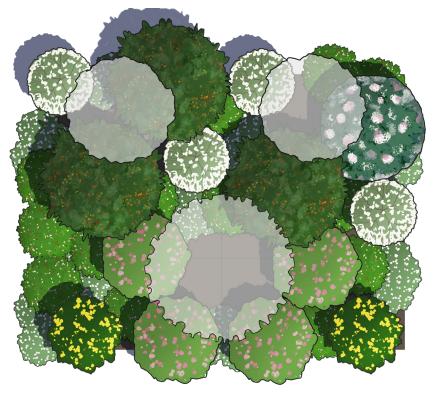
# Helsing Junction Farm Block Type A

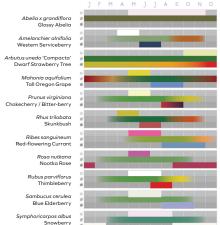
Densely spaced - 20'x15' - 8-10 years

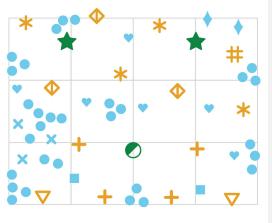
**Reasons:** Habitat for wildlife, pollinators, and natural pest enemies, Windbreak, Shade

**Key Plant Characteristics:** Berries, fruit & nuts, Foliage at lower & ground levels, Larval hosts, Pollinator attracting, Shoulder-season blooming, Thicket-forming / dense woody structure

**Spacing / Plant #:** Mixed height, high density







#### Notes:

This template was designed to provide a windbreak, shade, and habitat for a specific farm site, planted back and forth with the Helsing Junction Farm "Block Type B" to test different densities and, in that other block, herbaceous perennials.

#### **Trees**



 Prunus virginiana Chokecherry / Bitter-berry Deciduous tree



★ Sambucus cerulea Blue Elderberry Deciduous shrub

#### Recommended alternatives

Acer glabrum - Douglas Maple Viburnum x burkwoodii - Burkwood Viburnum

#### **Large Shrubs**



Arbutus unedo 'Compacta' Dwarf Strawberry Tree Evergreen shrub



 Ribes sanguineum Red-flowering Currant Deciduous shrub



Amelanchier alnifolia
 Western Serviceberry
 Deciduous shrub



Viburnum tinus Laurustinus Evergreen shrub



Mahonia aquifolium Tall Oregon Grape Evergreen shrub

#### Recommended alternatives

Osmanthus x burkwoodii - Burkwood Osmanthus Aronia melanocarpa - Black Chokeberry Holodiscus discolor - Ocean Spray

#### Medium/low Shrubs



 Abelia x grandiflora Glossy Abelia Semi-evergreen shrub



Rhus trilobata Skunkbush Deciduous shrub



Rosa nutkana Nootka Rose Deciduous shrub



Rubus parviflorus Thimbleberry Deciduous shrub



Symphoricarpos albus Snowberry Deciduous shrub

# Helsing Junction Farm Block Type B

Moderately spaced - 30'x15' - 8-10 years

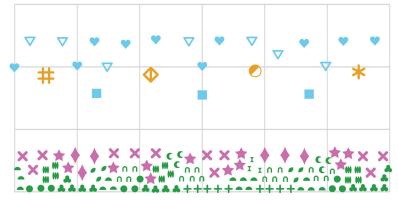
**Reasons:** Habitat for wildlife, pollinators, and natural pest enemies, Windbreak, Shade

**Key Plant Characteristics:** Berries, fruit & nuts, Evergreen plants, Foliage at lower & ground levels, Larval hosts, Pollinator attracting, Shoulder-season blooming, Thicket-forming / dense structure **Spacing / Plant #:** Mid-low height, mid density



#### Notes

This template has a woody strip only 7-8 feet deep to provide a windbreak, shade, and habitat, then a mowable break before an herbaceous strip designed, with help from the Xerces society, specifically for pollinators.



#### **Large Shrubs**



# Philadelphus lewisii
Mock Orange
Deciduous shrub



Ribes sanguineum Red-flowering Currant Deciduous shrub



Amelanchier alnifolia Western Serviceberry Deciduous shrub



Holodiscus discolor
Ocean Spray
Deciduous shrub



Mahonia aquifolium Tall Oregon Grape Evergreen shrub

#### Medium/low Shrubs



**7** Rosa nutkana Nootka Rose Deciduous shrub



 Symphoricarpos albus Snowberry Deciduous shrub

#### Herbaceous



★ Koeleria macrantha Prairie June Grass Grass



Elymus glaucus Blue Wildrye Grass



Festuca roemeri Roemer's Fescue Grass



Armeria maritima
 Sea Thrift
 Evergreen perennial



Eriophyllum lanatum Oregon Sunshine Herbaceous perennial



Potentilla gracilis Slender Cinquefoil Herbaceous perennial



Erigeron speciosus Showy Fleabane Herbaceous perennial



Penstemon serrulatus Cascade Penstemon Semi-evergreen perennial



Achillea millefolium Common Yarrow Herbaceous perennial



Anaphalis margaritacea Pearly Everlasting Herbaceous perennial



I Aquilegia formosa Western Columbine Herbaceous perennial



Solidago lepida Western Goldenrod Herbaceous perennial