

Portland International Airport 2009 Landscaping Standards

Excerpts from the PDX Wildlife Hazard Management Plan



PORT OF PORTLAND

Vegetation Management

Landscaping at PDX can affect tourism, business, and the overall feeling of the Portland vicinity to visitors. With this in mind, landscaping needs to be aesthetically pleasing. However, it must also coincide with the airport's greater responsibility for aviation safety. The goals of PDX landscape management are to reduce the attractiveness of airport landscaping to wildlife species of concern and to eliminate the vertical intrusion of vegetation into aircraft operating airspace while retaining an aesthetically pleasing landscape. The plant species found within the PDX Landscaping Standards apply only to management of vegetation in the built environment. Composition of plant species within the context of natural site conversions and stormwater infrastructure is not addressed within these standards.

Because landscaping at an airport has the potential to create wildlife attractant issues the FAA has issued multiple Advisory Circulars that address a variety of landscaping concerns. An FAA Advisory Circular (AC) is guidance that must be adhered to by all FAA Part 139 certificated airports, of which PDX is one.

FAA AC #150/5230-14 issues guidance for airport planners and operators on the use of tree and vegetation screens around airports and aircraft operating areas for noise control purposes. While landscaping at PDX is not currently being utilized for noise control, the discussion in this guidance is relevant as this AC explains the advantages and disadvantages of the use of screens and addresses bird hazard potentials due to vegetation. Section 14 of this AC states:

“Prior to any decision to utilize tree or vegetation screens for noise control, their potential for creating a bird hazard to aircraft must be carefully weighed against the anticipated noise benefits. Wooded areas and vegetation often attract birds by providing feeding, nesting and/or roosting areas. This is particularly true at junctions of wooded areas and grasslands and where two distinctly different vegetative communities join. Hedgerows are also highly attractive as shelters for birds and small mammals and should be avoided. For the same reason, the planting of trees and shrubs is not recommended closer than 600 feet (180m) to the centerline of active runways and taxiways. In considering the use of tree vegetation belts as noise screens, the following factors should be considered: the type, size, feeding, and migratory habits of the area bird population; the geometric relationship and proximity between local feeding and nesting grounds, the proposed noise screen, and the aircraft operating areas; and the affinity of the trees and vegetation to attract birds.”

In addition, as stated in FAA AC 150/5200-33 section 2-8:

“There may be circumstances where two (or more) different land uses that would not, by themselves, be considered hazardous wildlife attractants....are in such an alignment with the airport as to create a wildlife corridor directly through the airport and/or surrounding airspace....therefore, airport operators and the wildlife damage management biologist must consider the entire surrounding landscape and community....”

Additionally, the *2005 Wildlife Hazard Management at Airports Manual*, written jointly by the FAA and USDA specifically states:

“Do not use trees and other landscaping plants for the street side of airports that produce fruits or seeds attractive to birds. Avoid plants that produce fruits and seeds desired by birds. Also avoid the creation of areas of dense cover for roosting, especially by European starlings and blackbirds. Thinning the canopy of trees, or selectively removing trees to increase their spacing, can help eliminate bird roosts that form in trees on airports.”

In support of this guidance the Port has developed a set of landscaping design standards for use at PDX within the Primary and Intermediate Zones (see figure 1) that address plant species and planting standards for spacing and arrangement of trees and shrubs. The PDX Landscaping Standards list of trees, shrubs, and groundcover vegetation is comprised of species screened by PDX Wildlife staff for general wildlife attractant features such as fruit, berries, height, density, branching structure, crown shape, planting density and arrangement, location relative to the Primary Zone and other significant habitat features (see attached Approved Plant List for PDX). This landscaping list is a refinement of the list developed for the 2004 WHMP. This list is subject to revision whenever new candidate plants are submitted for variance granted they meet the screening criteria and are accepted by all members of the Port Landscaping Committee. The PDX Plant List Variance Request Form and instructions for completing a variance request can be found on page 13 of this packet. Please be aware that variances to the PDX Approved Plant List will only be granted in instances where it can be proven that circumstances prohibit use of species currently found on the PDX Approved Plant List.

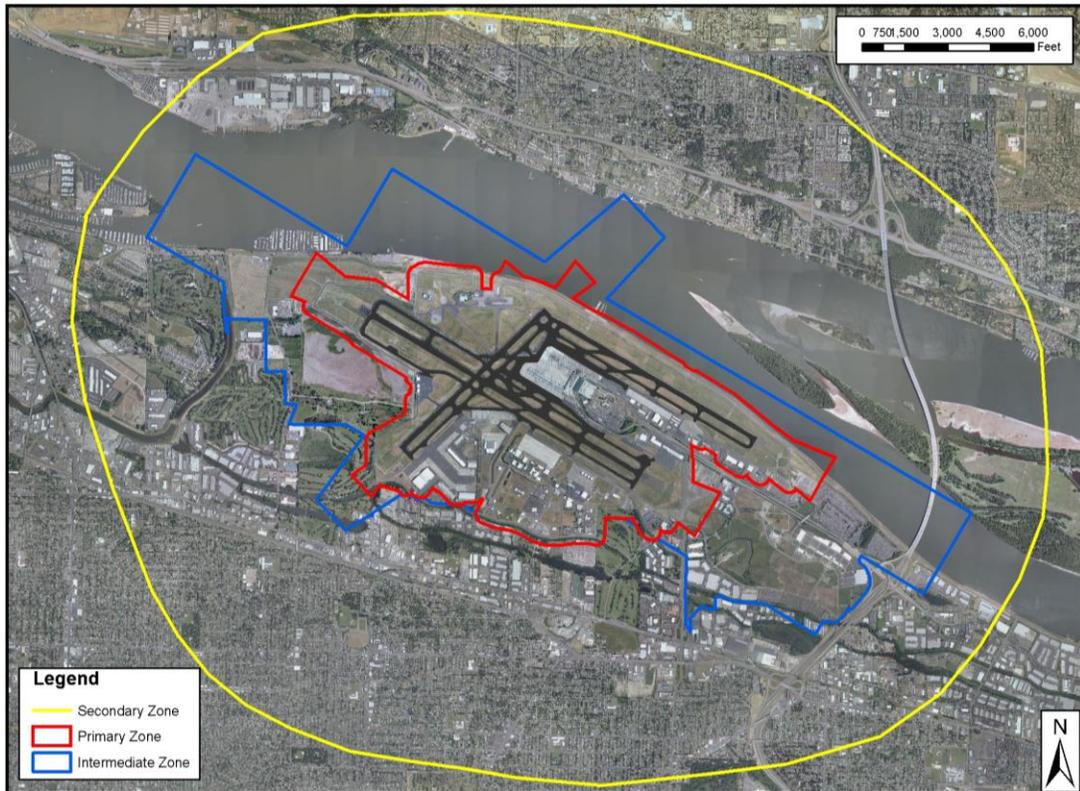


Figure 1. PDX Zones for Wildlife Management

The PDX landscaping standards within each zone are described below. For the purpose of these guidelines please reference the following definitions of trees and shrubs taken from the Utah State University Agricultural Extension Office. A plant will be defined as a tree based on the characteristics of being a woody plant having one erect perennial stem (trunk) at least 3 inches in diameter at a height of 4 ½ feet above the ground, a definitely formed crown of foliage, and a mature height of at least 13 feet. A plant will be considered a shrub if it is a woody plant with several perennial stems that may be erect or may lay close to the ground, usually having a mature height less than 13 feet and stems no more than around 3 inches in diameter.

Primary Zone

The Primary Zone is defined as the area within the airfield security fence, and a 300-foot buffer around the outside of the fence. The Primary zone is currently exempt from City of Portland landscaping requirements and no City of Portland Environmental Zones exist within this Zone. All landscape management within the Primary Zone will be driven by the operational and safety needs of the Airport. PDX landscaping standards for the Primary Zone are as follows:

Existing Landscaping

- Existing trees, shrubs, and other landscaping will be assessed. Any landscaping that is documented to pose a significant wildlife hazard to safe aircraft operations will be immediately removed.

New Landscaping

1. Each new landscaping project within the Primary Zone will be reviewed by the PDX Wildlife Manager and other Port stakeholders before landscaping designs are finalized.
2. Landscaped areas within the Primary Zone, including tenant landscaping, will only include shrubs and groundcover. No new trees will be allowed. Species of vegetation must be represented on the Primary Zone PDX Approved Plant List, or be demonstrated to meet the wildlife attractant screening criteria and accepted through the variance process prior to planting. Landscape designs must also comply with the standards outlined in this document.
3. Trees that penetrate 14 CFR Part 77 Transitional Surfaces, and/or are demonstrated as contributing to hazardous wildlife conditions, will be removed rather than topped. Topping of trees creates an attractive platform for raptor nests, exacerbating bird strike potential. Topping trees is also inconsistent with the City's Urban Forestry accepted practices.
4. No shrubs will be allowed within ten (10) feet of the airfield perimeter fence. This requirement addresses security concerns as well as vertical structure and wildlife hazards.
5. Landscaping will be a combination of evergreen and deciduous species of shrubs, with no greater than 50 percent of evergreen species. No unbroken rows or clumps of evergreen shrubs will be allowed due to the shelter and insulation that is provided by contiguous cover.

Intermediate Zone

The Intermediate Zone is the zone between the Primary and Secondary Zones (see [figure 1](#)). It is defined as the Port owned aviation property outside of the Primary Zone and the land that falls under the FAA designated approach or transitional surfaces of the three runways. Landscaping in the Intermediate Zone should not create habitats attractive for wildlife species of concern at PDX. Therefore, the goal of landscaping in this zone is to provide a visually pleasing landscaped environment that does not constitute an unacceptable wildlife risk to aircraft operations. All landscape management within the Intermediate Zone will consider the operational and safety needs of the airport. There may be potential modifications to these standards resulting from ongoing risk analysis. Additionally, all plants allowable in the Primary Zone may be used in addition to those plants listed for use in the Intermediate zone. Currently the PDX Landscaping Standards for all lands in the Intermediate Zone are as follows:

Existing Landscaping

- Existing trees, shrubs, and other landscaping will be assessed. If any landscaping is documented to pose a significant wildlife hazard to safe aircraft operations, a proposal for vegetation modification will be presented to the appropriate Port department manager to address the issue.

New Landscaping

1. Because of the potential for landscaping to support wildlife species of concern that could pose an unacceptable risk to aircraft operations, aviation wildlife concerns need to be incorporated into landscape project planning in the Intermediate Zone.
2. Species of vegetation must be represented on the PDX Intermediate and/or Primary Zone Plant Species list, or be demonstrated to meet the wildlife attractant screening criteria and be accepted through the variance process prior to planting. Design and installation of landscaping should comply with the spacing and arrangement guidelines outlined below.
3. Tree species should be selected and planted so that, at maturity, overlapping crown structures, that are attractive to European starlings or other wildlife species of concern, will be minimized (see Figure 2). In an effort to ensure that there are no areas within the landscaped environment with contiguous canopy cover the Port has developed tree spacing guidelines. These guidelines were developed by looking at the documented maximum spread at maturity of each species on the PDX Approved Plant List as noted on the list. In order to maintain a minimum of 15ft spacing between mature crowns the tree species on the PDX list were grouped into three categories. The first group includes columnar species with a maximum spread at maturity between 10 and 15ft. To maintain 15ft spacing between the crowns of these species the trees are required to be planted at a distance of 25ft on center. The next group includes species with a maximum spread at maturity between 20 and 30ft. To maintain 15ft spacing between the crowns of the species in this group these trees are required to be planted at a distance of 40ft on center. The last group includes a few of the

largest tree species on the PDX list. The maximum spread at maturity for these trees is between 40 and 75ft. To maintain 15ft spacing between the crowns of these species during their foreseeable life in a landscaped environment these trees are required to be planted at a distance of 60ft on center. If a contractor wishes to intermix species from the 25 and 40ft categories they may do so at a distance of 35ft on center. Species from the 25 and 60ft categories may be planted at a distance of 45ft on center and species from the 40 and 60ft categories may be planted at a distance of 50ft on center. Please make sure these situations are clearly called out in landscape design plans.



Figure 2. Overlapping crown structures that allow birds to move safely from tree to tree without exposure to predators or weather.

4. Trees approved for planting should have varied canopy types and varied heights, both at time of planting and at maturity. This will discourage homogeneity, which attracts starlings (a wildlife species of concern) due to its increased thermal cover and protection from predation. No uniform, even, or continuous canopies will be allowed. In addition, trees will be planted in a manner such that there are no more than 20% evergreen trees per project.
5. Selection of shrubs should be a mix of deciduous and coniferous species with no more than 50 percent evergreen species, planted to avoid continuous blocks of evergreen cover. Selection will be based on species that do not exceed a height of thirteen (13) feet at maturity¹. Shrubs will be planted 10 feet away from all trees². (See Figure 3)

¹ This standard does not include plantings for the Columbia South Shore Marine Drive Standards. The shrubs on this list may not be higher than five (5) feet at maturity.

² These on-center planting criteria apply specifically to interior and perimeter landscaping standards for parking lots, and do not necessarily apply universally in the Intermediate Zone.

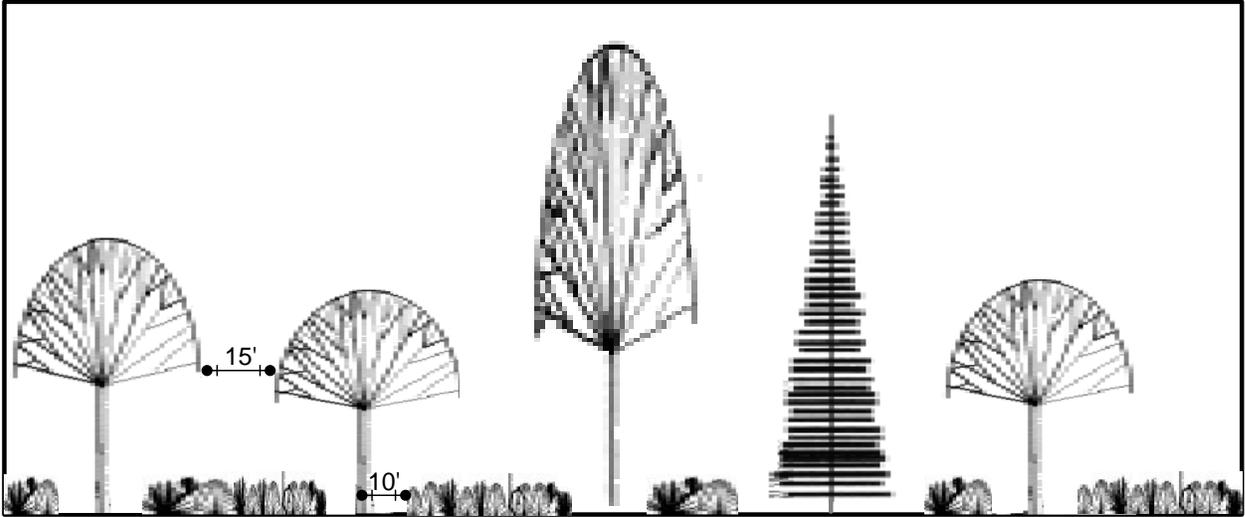


Figure 3. Conceptual landscaping design for the Secondary Zone that demonstrates discontinuous crown closure at both a vertical and horizontal scale.

6. Tree species selected should tend toward columnar shapes, which have a vertical branching structure that minimizes perching and nesting opportunities for birds. (See Figures 4 and 5).



Figure 4. An example of a tree species that is attractive to birds because of its horizontal branching structure.



Figure 5. An example of an ideal tree type for landscaping at PDX because it has minimal opportunities for perching and nesting due to its vertical branching structure.

7. Sterile (non-fruiting) varieties of trees will be maintained and utilized.
8. If, despite following the above guidelines, any landscaped area is documented by the Port to be a safety, security or wildlife hazard, it will be managed using appropriate wildlife hazard minimization techniques such as pruning, thinning, or selective harvesting. No planting of new trees will be permitted in areas with documented hazards. Trees removed as documented hazards may be replaced with approved shrub species at densities meeting the PDX Landscape Standards.

Grass Management

Grass is the primary ground cover currently used in undeveloped areas inside the Primary Zone and as erosion control on disturbed sites within the Intermediate Zone. If the Port's future risk evaluation efforts indicate that grass cover represents an unacceptable risk to safe aircraft operations by providing habitat to wildlife species of concern, other cover options will be considered (e.g., alternate ground cover mixes, paving, grass-crete, artificial turf). Unnecessary and unwanted weeds and brush (e.g., Himalayan blackberry) are managed and discouraged in the Intermediate Zone. Noxious vegetation found on the Intermediate Zone may be sprayed with an herbicide type agent, and/or physically removed.

Grass Type

The type of grass currently planted and maintained in the Primary Zone, and over much of the Port-owned land in the Intermediate Zone, is a low-maintenance tall fescue seed mix. This grass mix grows very well under the normal climatic conditions of the region and on the sandy well-drained soils found around PDX. Any future changes to this seed mix shall be reviewed for its palatability to wildlife species of concern and/or their prey before being used.

Seed mix shall be a three-way blend of the following dwarf turf type tall fescue:

<u>Seed</u>	<u>% by Weight</u>	<u>% Minimum Seed Purity</u>	<u>% Minimum Germination</u>
Crossfire II	33	98	90
Mini Mustang	33	98	90
Shortstop II	33	98	90
Inert Matter	1		

The following three-way blend of dwarf type tall fescue from Frontier Seed may also be used:

<u>Seed</u>	<u>% by Weight</u>	<u>% Minimum Seed Purity</u>	<u>% Minimum Germination</u>
Second Millenium	33	98	90
Focus	33	98	90
Bonsai 3000	33	98	90
Inert Matter	1		

After October 15th an additional 30% of Annual Rye by weigh may be used as an erosion control BMP. Perennial Rye grass is not approved for use at PDX.

Approved Plant List for PDX

		Scientific Name	Common Name	Type	Max. Height at Maturity (ft)	Max. Spread at Maturity (ft)	On The Web
Primary Zone	Shrubs	<i>Berberis verruculosa</i>	Warty Barberry	Evergreen	3-5	3-5	http://oregonstate.edu/dept/ldplants/beve.htm
		<i>Cornus sericea 'Kelsey'</i>	Kelsey Dogwood	Deciduous	3	3	http://pnwplants.wsu.edu/PlantDisplay.aspx?PlantID=100
		<i>Ilex crenata 'Helleri'</i>	Heller Japanese Holly	Evergreen	4	4	http://oregonstate.edu/dept/ldplants/ilcrh.htm
		<i>Lavandula angustifolia</i>	English Lavender	Evergreen	2-3	2-4	http://plants.usda.gov/java/profile?symbol=LAAN81
		<i>Rhododendron x 'Girard's Purple'</i>	Girard's Purple Azalea	Evergreen	3-4	2-4	http://oregonstate.edu/dept/ldplants/rhgpur.htm
		<i>Rosa meidiland var.</i>	Meidiland Rose Varieties	Evergreen	2.5-3		http://www.ces.ncsu.edu/depts/hort/consumer/factsheets/roses/redmeidiland.htm
		<i>Rosa 'Red Flower Carpet'</i>	Red Flower Carpet	Evergreen	2.5		http://www.ces.ncsu.edu/depts/hort/consumer/factsheets/roses/flowercarpetred.htm
		<i>Rosa 'Radtko'</i>	Double Knock Out Rose	Evergreen	3-4	3-4	http://www.conard-pyle.com/index.cfm/fuseaction/koplants.splash
	<i>Spiraea betulifolia</i>	Birchleaf Spiraea	Deciduous	3	3	http://oregonstate.edu/dept/ldplants/spbet.htm	
	Groundcovers	<i>Ajuga reptans 'Burgundy Glow'</i>	Carpet Bugle	Evergreen	.5		http://oregonstate.edu/dept/ldplants/ajre-i.htm
		<i>Calluna vulgaris</i>	Scotch Heather	Evergreen	.5-2	2+	http://oregonstate.edu/dept/ldplants/cavu.htm
		<i>Ceanothus prostratus</i>	Mahala Mat	Evergreen	.5		http://plants.usda.gov/java/profile?symbol=CEPR
		<i>Dicentra formosa</i>	Pacific Bleeding Heart	N/A	2	2	http://pnwplants.wsu.edu/PlantDisplay.aspx?PlantID=42
		<i>Echinacea purpurea</i>	Purple Coneflower	N/A	5	2	http://pnwplants.wsu.edu/PlantDisplay.aspx?PlantID=162
		<i>Juniperus horizontalis</i>	Creeping Juniper	Evergreen	1-1.5	10	http://oregonstate.edu/dept/ldplants/juho.htm
		<i>Phlox spp.</i>	Native Phlox	N/A	.5-2		http://plants.usda.gov/java/nameSearch
		<i>Phyllodoce spp.</i>	Mountain Heather	Evergreen	.5-1.5	.5-1.5	http://plants.usda.gov/java/profile?symbol=PHYLL3
		<i>Polystichum munitum</i>	Sword Fern	Evergreen	4	7	http://pnwplants.wsu.edu/PlantDisplay.aspx?PlantID=337
		<i>Walsteinia fragaroides</i>	Barren Strawberry	Evergreen	.5		http://oregonstate.edu/dept/ldplants/wafr.htm
	Ornamental Grasses	<i>Calamagrostis x acutiflora 'Overdam'</i>	Feather Reed Grass		2.5-3	1.5-2	http://www.mobot.org/gardeninghelp/plantfinder/plant.asp?code=N750
<i>Festuca glauca</i>		Blue Fescue		1	1	http://pnwplants.wsu.edu/PlantDisplay.aspx?PlantID=52	
<i>Ophiopogon japonicus 'Nana'</i>		Dwarf Mondo Grass				http://plants.usda.gov/java/profile?symbol=OPJA	
<i>Ophiopogon planiscapus 'Nigrescens'</i>		Black Mondo Grass		.75-1	.75-1	http://www.mobot.org/gardeninghelp/plantfinder/plant.asp?code=E400	
<i>Pennisetum alopecuroides 'Hameln'</i>		Hameln Fountain Grass		1.5-2.5	1.5-2.5	http://www.mobot.org/gardeninghelp/plantfinder/plant.asp?code=A680	

*Indicates measurements are not taken from the related website.

Approved Plant List for PDX

	Scientific Name	Common Name	Type	Max. Height at Maturity (ft)	Max. Spread at Maturity (ft)	On The Web	
Intermediate Zone	Plant at 25 ft on Center	<i>Acer freemanii</i> 'Armstrong'	Armstrong Red Maple	Deciduous	50-70	15	http://oregonstate.edu/dept/ldplants/acfreea.htm
		<i>Calocedrus decurrens</i>	Incense Cedar	Evergreen	75	15	http://pnwplants.wsu.edu/PlantDisplay.aspx?PlantID=30
		<i>Cedrus deodara</i> 'Aurea'	Aurea Deodar Cedar	Evergreen	10-25	6-10*	http://oregonstate.edu/dept/ldplants/cedaur.htm
		<i>Chamaecyparis obtusa</i> 'Gracilis'	Slender Hinoki Falsecypress	Evergreen	20	6*	http://oregonstate.edu/dept/ldplants/chobg.htm
		<i>Cryptomeria japonica</i> 'Elegans'	Japanese Plume Cedar	Evergreen	30	10	http://pnwplants.wsu.edu/PlantDisplay.aspx?PlantID=196
		<i>Cryptomeria japonica</i> 'Sekkan Sugi'	Golden Japanese Cedar	Evergreen	25	10*	http://oregonstate.edu/dept/ldplants/crjass.htm
		<i>Cupressocyparis leylandii</i> 'Golconda'	Gold Leyland Cypress	Evergreen	20	6	http://pnwplants.wsu.edu/PlantDisplay.aspx?PlantID=115
		<i>Prunus sargentii</i> 'Columnaris'	Columnar Sargent Cherry	Deciduous	35	15	http://oregonstate.edu/dept/ldplants/prsac.htm
		<i>Zelkova serrata</i> 'Musashino'	Musashino Zelkova	Deciduous	45	15	http://www.jfschmidt.com/pdfs/musashinozelkova.pdf
	Plant at 40 ft on Center	<i>Acer buergeranum</i>	Trident Maple	Deciduous	25-35	20-30	http://www.ces.ncsu.edu/depts/hort/consumer/factsheets/trees-new/acer_buergeranum.html
		<i>Acer circinatum</i>	Vine Maple	Deciduous	10-20	20*	http://oregonstate.edu/dept/ldplants/acci.htm
		<i>Acer ginnala</i>	Amur Maple	Deciduous	10-20	20*	http://oregonstate.edu/dept/ldplants/acgi.htm
		<i>Acer griseum</i>	Paperbark Maple	Deciduous	20-30	25*	http://oregonstate.edu/dept/ldplants/acgr.htm
		<i>Acer palmatum</i>	Japanese Maple	Deciduous	15-25	10-25*	http://oregonstate.edu/dept/ldplants/acpa.htm
		<i>Fagus sylvatica</i> 'Tricolor'	Tricolor European Beech	Deciduous	20-30*	10-20*	http://oregonstate.edu/dept/ldplants/fasytri.htm
		<i>Ginkgo biloba</i>	Ginkgo (males only)	Deciduous	50+	30	http://oregonstate.edu/dept/ldplants/gibi.htm
		<i>Liquidambar styraciflua</i> 'Rotundiloba'	Rotundiloba Sweetgum	Deciduous	60-70*	20-30*	http://oregonstate.edu/dept/ldplants/listr.htm
		<i>Magnolia x soulangiana</i>	Saucer Magnolia	Deciduous	15-20	15-25*	http://oregonstate.edu/dept/ldplants/maso.htm
		<i>Malus x 'Spring Snow'</i>	Spring Snow Crabapple	Deciduous	25-30	15-20	http://hort.ufl.edu/trees/MALXE.pdf
		<i>Metasequoia glyptostroboides</i>	Dawn Redwood (height restricted)	Deciduous	70-100	15-25*	http://oregonstate.edu/dept/ldplants/megl.htm
		<i>Oxydendrum arboreum</i>	Sourwood	Deciduous	25-60	10-25	http://oregonstate.edu/dept/ldplants/oxar.htm
		<i>Parrotia persica</i>	Persian Parrotia	Deciduous	40	25	http://pnwplants.wsu.edu/PlantDisplay.aspx?PlantID=326
		<i>Pinus ponderosa</i>	Ponderosa Pine (height restricted)	Evergreen	60-100	25-30*	http://oregonstate.edu/dept/ldplants/pipo.htm
		<i>Prunus serrulata</i> 'Shirotae'	Mt Fuji Cherry	Deciduous	12-15	20	http://oregonstate.edu/dept/ldplants/prsem.htm
	<i>Pyrus calleryana</i> 'Cleveland Select'	Cleveland Select Flowering Pear	Deciduous	30-35*	15-20*	http://www.advancedtree.com/tree_clevelandpear.htm	
	Plant at 60 ft on Center	<i>Acer rubrum</i> var.	Red Maple	Deciduous	60-75	30-50*	http://oregonstate.edu/dept/ldplants/acru.htm
		<i>Carpinus betulus</i>	European Hornbeam	Deciduous	40-60	30-40*	http://oregonstate.edu/dept/ldplants/cabe.htm
		<i>Fraxinus americana</i> 'Autumn Purple'	Autumn Purple Ash	Deciduous	45-60*	35-50*	http://oregonstate.edu/dept/ldplants/framap.htm
		<i>Fraxinus pennsylvanica</i>	Green Ash (seedless varieties only)	Deciduous	50	40	http://oregonstate.edu/dept/ldplants/frpem.htm
		<i>Gleditsia tricanthos</i> var. <i>inermis</i>	Thornless Honeylocust	Deciduous	30-70	30-40*	http://oregonstate.edu/dept/ldplants/gltri.htm
		<i>Platanus x acerifolia</i>	London Planetree (height restricted)	Deciduous	70-100	60-75*	http://oregonstate.edu/dept/ldplants/plac.htm
		<i>Quercus coccinea</i>	Scarlet Oak	Deciduous	75	45	http://pnwplants.wsu.edu/PlantDisplay.aspx?PlantID=138
		<i>Tillia americana</i>	American Linden	Deciduous	60-80	30-50*	http://oregonstate.edu/dept/ldplants/tiame.htm
<i>Tillia chordata</i>		Littleleaf Linden	Deciduous	60-70	25-40*	http://oregonstate.edu/dept/ldplants/tico.htm	
Shrubs	<i>Abelia x grandiflora</i> 'Prostrata'	Prostrate Glossy Abelia	Evergreen	1.5-2	4-5	http://www.ces.ncsu.edu/depts/hort/consumer/factsheets/groundcover/abelia_grandi-prostrata.html	
	<i>Berberis thunbergii</i> var. <i>atropurpurea</i> 'Crimson Pygmy'	Crimson Pygmy Japanese Barberry	Deciduous	2	3	http://oregonstate.edu/dept/ldplants/bethacp.htm	
	<i>Berberis thunbergii</i> 'Kobold'	Kobold Japanese Barberry	Deciduous	2-2.5*	2-2.5*	http://oregonstate.edu/dept/ldplants/bethk.htm	
	<i>Buxus sempervirens</i> 'Suffruticosa'	English Boxwood	Evergreen	4-5	2-4*	http://oregonstate.edu/dept/ldplants/buses.htm	
	<i>Ceanothus thyrsiflorus</i>	Blue Blossom	Evergreen	4-12	Variable	http://oregonstate.edu/dept/ldplants/ceth-i.htm	
	<i>Chamaecyparis obtusa</i> 'Nana Lutea'	Nana Lutea Hinoki Falsecypress	Evergreen	6	4	http://pnwplants.wsu.edu/PlantDisplay.aspx?PlantID=164	
	<i>Cistus</i> spp.	Rockrose species	Evergreen	Variable	Variable	http://oregonstate.edu/dept/ldplants/1plants.htm#ciannp	
	<i>Clematis armandii</i>	Evergreen Clematis	Evergreen	20	Variable	http://pnwplants.wsu.edu/PlantDisplay.aspx?PlantID=261	
	<i>Corylopsis glabrescens</i>	Fragrant Winterhazel	Deciduous	8-15	8-15	http://oregonstate.edu/dept/ldplants/cospp.htm	
	<i>Cotinus coggygria</i>	Common Smoketree	Deciduous	10-15	10-15	http://oregonstate.edu/dept/ldplants/cocog.htm	
	<i>Daphne</i> spp.	Daphne	Evergreen	3-4	2-3*	http://oregonstate.edu/dept/ldplants/1plants.htm#daphne	
	<i>Enkianthus campanulatus</i>	Redvien Enkianthus	Deciduous	6-8	4-6*	http://oregonstate.edu/dept/ldplants/enca-i.htm	
	<i>Erica</i> spp.	Heath	Evergreen	1-2	1-2*	http://oregonstate.edu/dept/ldplants/1plants.htm#erca	
	<i>Euonymus alatus</i> 'Compactus'	Compact Winged Burning Bush	Deciduous	8-10	9-11*	http://oregonstate.edu/dept/ldplants/eualc.htm	
	<i>Euonymus fortunei</i>	Wintercreeper Euonymus	Evergreen	1-3	2-4	http://oregonstate.edu/dept/ldplants/eufo.htm	
<i>Forsythia</i> spp.	Forsythia	Deciduous	8-10	10-12	http://oregonstate.edu/dept/ldplants/foin.htm		

Approved Plant List for PDX

		Scientific Name	Common Name	Type	Max. Height at Maturity (ft)	Max. Spread at Maturity (ft)	On The Web
Intermediate Zone	Shrubs	<i>Hamamelis x intermedia</i> 'Diane'	Diane Witchhazel	Deciduous	8-12*	10-15*	http://oregonstate.edu/dept/ldplants/haind.htm
		<i>Hydrangea macrophylla</i>	Bigleaf Hydrangea var.	Deciduous	4-6	4-6	http://www.mobot.org/gardeninghelp/plantfinder/plant.asp?code=K550
		<i>Kerria japonica</i>	Japanese Kerria	Deciduous	4-8	6-9*	http://oregonstate.edu/dept/ldplants/keja.htm
		<i>Leucothoe fontanesiana</i>	Drooping leucothoe	Evergreen	3-6	3-6	http://oregonstate.edu/dept/ldplants/lefo-i.htm
		<i>Nandina domestica</i> 'Gulf Stream'	Gulf Stream False Bamboo	Evergreen	2.5-3.5	3*	http://www.ces.ncsu.edu/depts/hort/consumer/factsheets/shrubs/nandina_domes-gulfstream.html
		<i>Potentilla frutcosa</i>	Bush Cinquefoil	Deciduous	2-4	2-4	http://oregonstate.edu/dept/ldplants/pofr-i.htm
		<i>Rhododendron griffithianum</i> 'Jean Marie'	Honorable Jean Marie Rhododendron	Evergreen	5-6	5-6*	http://oregonstate.edu/dept/ldplants/rhthei.htm
		<i>Rhododendron macrophyllum</i>	Western Rhododendron	Evergreen	6-12		http://oregonstate.edu/dept/ldplants/rhmac.htm
		<i>Rhododendron</i> spp. P.J.M.	P.J.M. Rhododendron	Evergreen	3-6	6*	http://oregonstate.edu/dept/ldplants/rhpjm.htm
		<i>Rhus typhina</i> 'Laciniata'	Laceleaf Staghorn Sumac	Deciduous	10-20	10-20*	http://oregonstate.edu/dept/ldplants/rhtyl-i.htm
		<i>Rosa gymnocarpa</i>	Little Wood Rose	Deciduous	6	2-4*	http://oregonstate.edu/dept/ldplants/rogym.htm
		<i>Rosa nutkana</i>	Nootka Rose	Deciduous	3-6	6*	http://oregonstate.edu/dept/ldplants/ronut.htm
		<i>Salix purpurea</i> 'Nana'	Dwarf Alaskan Blue Willow	Deciduous	5	3-5*	http://oregonstate.edu/dept/ldplants/sapun.htm
		<i>Spiraea douglasii</i>	Douglas Spiraea	Deciduous	3-7	3-7	http://oregonstate.edu/dept/ldplants/spdoug.htm
		<i>Taxus baccata</i> 'Repandens'	Spreading English Yew	Evergreen	2-4	12-15	http://oregonstate.edu/dept/ldplants/tabar.htm
	<i>Taxus baccata</i> 'Standishii'	Standishii Yew	Evergreen	7*	3*	http://oregonstate.edu/dept/ldplants/tabas.htm	
	Groundcovers	<i>Arctostaphylos uva-ursi</i> (cultivars)	Kinnikinnick	Evergreen	.5-1.5	3-6*	http://oregonstate.edu/dept/ldplants/aruv.htm
		<i>Genista pilosa</i>	Silkyleaf Broom	Deciduous	1-1.5	2-3*	http://oregonstate.edu/dept/ldplants/gepi.htm
		<i>Hemerocallis hybrid</i>	Day Lily	Deciduous	1-3		http://www.ces.ncsu.edu/depts/hort/consumer/factsheets/bulbs-summer/hemerocallis.html
		<i>Iberis sempervirens</i>	Evergreen Candytuft	Evergreen	1-2	3-4*	http://oregonstate.edu/dept/ldplants/ibse-i.htm
		<i>Liriope muscari</i>	Lily Turf	Evergreen	1-2	.5-1	http://www.ces.ncsu.edu/depts/hort/consumer/factsheets/groundcover/liriope_muscaria.html
		<i>Mahonia nervosa</i>	Dwarf Oregon Grape	Evergreen	2		http://oregonstate.edu/dept/ldplants/mane.htm
		<i>Mahonia repens</i>	Creeping Mahonia	Evergreen	2	3	http://pnwplants.wsu.edu/PlantDisplay.aspx?PlantID=122
		<i>Pachysandra terminalis</i>	Japanese Spurge	Evergreen	1	2	http://pnwplants.wsu.edu/PlantDisplay.aspx?PlantID=128
		<i>Paxistima canbyi</i>	Canby Paxistima	Evergreen	1-1.5		http://oregonstate.edu/dept/ldplants/pacas.htm
		<i>Sedum</i> spp.	Sedum	Deciduous			http://biology.burke.washington.edu/herbarium/imagecollection.php?Genus=Sedum
	Grasses and Sedges	<i>Bromus vulgaris</i>	Columbia Brome				http://www.calflora.org/cgi-bin/species_query.cgi?where-calrecnum=1220
		<i>Calamagrostis x acutifolia</i> 'Overdam'	Overdam Feather Reed Grass		2.5-3	1.5-2	http://www.mobot.org/gardeninghelp/plantfinder/plant.asp?code=N750
		<i>Carex morrowii</i> 'Evergold'	Evergold Japanese Sedge				http://www.ces.ncsu.edu/depts/hort/consumer/factsheets/ornamental_grass/carex_morrowii.html
		<i>Carex tumulicola</i>	Splitawn Sedge				http://plants.usda.gov/java/profile?symbol=CATU3
		<i>Danthonia californica</i>	California Oatgrass		2		http://plants.usda.gov/java/profile?symbol=DACA3

*Indicates measurements are not taken from the related website.

(height restricted) refers to specific species being limited in usage to areas outside of height restricted zones.

PDX Plant List Variance Form

Page 1: Instructions for Submittal

In project specific situations a variance may be granted to supplement the List of Approved Plants found in the Portland International Airport (PDX) Wildlife Hazard Management Plan (WHMP) Landscaping Standards. Due to the excess amount of time and effort involved with receiving a variance, it is strongly recommended that contractors use only plants from the Approved Plants List for landscaping within the Primary and Intermediate Zones at PDX. The species on these lists have been selected to meet criteria for maintenance, wildlife, and security issues, as well as for City of Portland requirements. However, if a contractor wishes to use plant material that is not included in the list, they can obtain approval through the following process:

Instructions for Consultants:

1. Fill out the top portion of one "Plant List Variance Form – Signature Form" and completed "Plant Information Form" for **each plant being requested**.
 2. Forward these forms to the Port Project Manager via email. The Port Project Manager will disseminate the information to the PDX Natural Resources Technician and PDX Wildlife Manager for review.
 3. When all appropriate Port of Portland staff (designated review committee) has reviewed the proposed plant material, you will be notified within **10 business days** that the plant will be accepted/rejected for addition to the list for the specific project requested.
-

Instructions for Review Committee:

1. Please review the completed Plant Variance Form for each plant being requested. Based on your individual area of expertise, please accept or reject each plant. Comments are only necessary for rejections.
2. Forward your signed response to the PDX Wildlife Manager within **10 business days** of receipt of the forms.
3. Responses from any member of the committee that are not received by the PDX Wildlife Manager within **10 business days** will be assumed to be an acceptance of plant material.

PDX Plant List Variance Form
Page 2 – Signature Form

Date:

Consultant Name:

Project Name:

Project Location (including zone designation):

Plant Name (botanical and common):

PDX WILDLIFE MANAGER	DATE	APPROVE	REJECT	COMMENTS

PDX NATURAL RESOURCES	DATE	APPROVE	REJECT	COMMENTS

PDX LANDSCAPE MAINTENANCE	DATE	APPROVE	REJECT	COMMENTS

PDX Plant List Variance Form
Page 3 – Contact Information

NAME	GROUP/ ORGANIZATION	ADDRESS	PHONE	FAX
Nick Atwell	Airport Wildlife Manager	Port of Portland Aviation Wildlife Dept 7000 NE Airport Way Portland, OR 97218	503-460-4179	503-548-5888
Noel Jinings	Airport Natural Resources	Port of Portland Aviation Nat Res Dept 7000 NE Airport Way Portland, OR 97218	503-460-4690	503-548-5830
Greg Croteau	Airport Landscaping Lead	Port of Portland Aviation Maint Dept 7111 NE Alderwood Portland, OR 97218	503-460-4097	503-460-4110

PDX Plant List Variance Form
Page 4 – Plant Information Form

Botanical Name: _____ Common Name: _____

Native Origin of Plant: _____

Circle One: Deciduous Tree Evergreen Tree Annual Ground Cover
 Deciduous Shrub Evergreen Shrub Perennial Ground Cover

Height and Spread at Maturity: _____

Average Growth Rate: _____

Describe Branching Pattern (i.e. horizontal, vertical): _____

Describe Crown Shape (i.e. columnar, round): _____

Wildlife Attractant Characteristics:

- Flowering? If yes, what time of year and for how long? _____

- Fruit, Berries, or Nuts? If yes, what time of year and for how long? _____

- What type of wildlife and insects does the research indicate that this plant may attract? _____

If this plant is found on a City of Portland Plant list or Plant Materials and Suggested Plant lists please indicate the appropriate list:

Native Nuisance Prohibited Suggested

Please provide photographs of the plant for each phase (with and without leaves, flowers, fruit, etc.)

Cite the sources you used to obtain this information (Note: Must be an agricultural extension or University web site. No gardening or horticultural websites, please.):

Describe circumstances prohibiting use of PDX Approved Plant List species:

