Plant Propagation Protocol for Fraxinus latifolia
ESRM 412 – Native Plant Production

TAXONOMY	
Family Names	
Family Scientific Name:	*Oleaceae*
Family Common Name:	olive family
Scientific Names	
Genus:	*Fraxinus*
Species:	*latifolia*
Species Authority:	George Bentham
Variety:	No varieties are currently recognized.
Sub-species:	NA
Cultivar:	NA
Authority for Variety/Sub-species:	NA
Common Synonym(s):	NA
Common Name:	Oregon Ash
Species Code (as per USDA Plants database):	FRLA
GENERAL INFORMATION	
Geographical range	Vancouver, B.C. through western regions of Washington and Oregon and western and central parts of central California.
Ecological distribution:	Mostly riparian or coastal habitats.
Climate and elevation range:	Moist, moderate climate. Low elevation (usually ~910 m or lower).
Local habitat and abundance; may include commonly associated species:	Prefers poorly drained, moist soils rich in humus. In Oregon, mostly found in areas with silty clay loams and clays. Associated with slough sedge (*Carex obnupta*), red alder (*Alnus rubra)*, red osier dogwood (*Cornus sericea*), willows (*Salix* spp.), black cottonwood (*Populus balsamifera* spp. *trichocarpa*), pacific ninebark (*Physocarpus capitatus*), bigleaf maple (*Acer macrophyllum*), and Oregon white oak (*Quercus garryana*).
Plant strategy type / successional stage:	Intermediate shade tolerance. Can grow in both open areas and in stands with other *Fraxinus* or other species, listed above, changing its growth form phenotype. Tolerates stress (shade, flooding) well.
Plant characteristics:	Grows in tree form. Presence of surrounding trees leads to long, narrow growth form. Growth in open areas leads to short trunks and wider limbs and crowns. Most live 200-250 years under ideal conditions. Dioecious. Flowers in April-May.

PROPAGATION DETAILS	
Ecotype (this is meant primarily for experimentally derived protocols, and is a description of where the seed that was tested came from):	Ash.
Propagation Goal:	Plants.
Propagation Method:	Seed.
Product Type:	Container, bareroot.
Stock Type:	Not found.
Time to Grow:	1-2 years.
Target Specifications:	Seedlings 4+ feet tall.
Propagule Collection (how, when, etc):	Collect seeds August-October. Seeds are in panicular clusters of seed pods; pods may be collected by hand. Seeds are 3-5 cm long and light brown when mature.
Propagule Processing/Propagule Characteristics:	~8100 cleaned seeds per pound seed material. Seeds should be planted as soon as possible.
Pre-Planting Propagule Treatments:	Three months' cold-stratification in moist conditions.
Growing Area Preparation / Annual Practices for Perennial Crops:	Seeds should be germinated in soil with relatively high water-holding capacity. Annual mulching. Soil pH 4.8-7.0.
Establishment Phase:	Germination best in moist conditions with humus-rich soils over drier conditions. Medium to high germination and high survival.
Length of Establishment Phase:	2-6 weeks.
Active Growth Phase (from germination until plants are no longer actively growing):	Keep soil moist. Drought stunts growth. Grows in height rapidly in rich soils.
Length of Active Growth Phase:	20-25 weeks.
Hardening Phase:	Minimum temperature: -8˚C. Instructions for hardening for propagation not found.
Length of Hardening Phase:	Not found.
Harvesting, Storage and Shipping (of seedlings):	Harvest after 1-2 years, or when seedlings reach 4 feet in height.
Length of Seedling Storage:	Not found.
Guidelines for Outplanting / Performance on Typical Sites (eg, percent survival, height or diameter growth, elapsed time before flowering):	Seedlings under four feet tall by late winter should be saved for following spring outplanting. Cover roots and keep seedlings moist until outplanting. Seedlings should planted immediately after uprooting.
Other Comments:	None.
INFORMATION SOURCES	
References:	Frenkel RE and Heinitz EF (1987) Composition and Structure of Oregon Ash (*Fraxinus latifolia*) Forest in William L. Finley National Wildlife Refuge, Oregon. *Northwest Science* 61:4 203-212.

	Fraxinus latifolia Benth. United States Department of Agriculture Forest Service Agriculture Handbook 654. http://www.na.fs.fed.us/spfo/pubs/silvics_manual/volume_2/fraxinus/latifolia.htm PLANTS Profile: *Fraxinus latifolia* Benth. United States Department of Agriculture Natural Resources Conservation Service. http://plants.usda.gov/java/profile?symbol=FRLA Guard, B. Jennifer. Wetland Plants of Oregon and Washington. Lone Pine Publishing. Vancouver, B.C. 1995. Pojar, J. and A. MacKinnon. Plants of the Pacific Northwest Coast-Washington, Oregon, British Columbia and Alaska. B.C. Ministry of Forest and Lone Pine Publishing. 1994. Leigh M (1999) *Grow Your Own Native Landscape: A guide to identification, propagation, and landscaping with western Washington native plants.* Washington State University Cooperative Extension. Stevens M and Vanbianchi R (1993) *Restoring Wetlands in Washington: A Guidebook for Wetland Restoration, Planning and Implementation*. Washington State Department of Ecology Publication 93:17 110.
Other Sources Consulted (but that contained no pertinent information) (full citations):	
Protocol Author (First and last name):	Zachary McCauley
Date Protocol Created or Updated (MM/DD/YY):	20-April 2011

Oregon ash, *Fraxinus latifolia*

Range

- Western regions of Washington, Oregon, and California (5)

Climate, elevation

- Moist, moderate climate; low elevations (3)

Local occurrence (where, how common)

- Often on the edges of streams, lakes, or in other areas that are occasionally flooded (1)

Habitat preferences

- Moist to wet soils (1)
- Full sun to partial shade (2)

Plant strategy type/successional stage (stress-tolerator, competitor, weedy/colonizer, seral, late successional)

- Stress-tolerator: Oregon ash can tolerate a significant amount of inundation and fluctuating water levels (most tolerant early in the growing season) (4)
- Can form monotypic stands or mixed stands with black cottonwood and red alder (2)

Associated species

- Slough sedge (*Carex obnupta*), red alder (*Alnus rubra)*, red osier dogwood (*Cornus sericea*), willows (*Salix spp.*), black cottonwood (*Populus balsamifera* spp. *trichocarpa*), pacific ninebark (*Physocarpus capitatus*) (1)

May be collected as: (seed, layered, divisions, etc.)

- Seed
- Salvaged seedlings

Collection restrictions or guidelines

- Collect seed from August to October (2)
- Salvage seedlings under four feet tall in late winter or early spring before bud break (keep roots covered and moist until re-planting) (2)

Seed germination (needs dormancy breaking?)

- Three months cold stratification (2)

Seed life (can be stored, short shelf-life, long shelf-life)

- Best if planted immediately after collection
- Can be stored if necessary

Recommended seed storage conditions

- Best if planted immediately after collection
- Seeds can be stored by air-drying them thoroughly (2)

Propagation recommendations (plant seeds, vegetative parts, cuttings, etc.)

- Sow seeds as soon as possible after collection into garden beds or trays (2)
- Mulch in the fall, and remove carefully in the spring (2)
- Seedlings should be installed immediately on site after uprooting (4)

Soil or medium requirements (inoculum necessary?)

- Soil with relatively high water holding capacity

Installation form (form, potential for successful outcomes, cost)

- From seed: outplant seedlings after 1-2 years (2)
- Salvaged seedlings: plant immediately, make sure to keep roots moist and covered in transplanting process (4)

Care requirements after installed (water weekly, water once etc.)

- Soil should be kept moist

Sources cited

1. Guard, B. Jennifer. Wetland Plants of Oregon and Washington. Lone Pine Publishing. Vancouver, B.C. 1995.

2. Leigh, M. 1999. Grow Your Own Native Landscape: A guide to identification, propagation, and landscaping with western Washington native plants. Washington State University Cooperative Extension.

3. Pojar, J. and A. MacKinnon. Plants of the Pacific Northwest Coast-Washington, Oregon, British Columbia and Alaska. B.C. Ministry of Forest and Lone Pine Publishing. 1994.

4. Stevens, M. and R. Vanbianchi. 1993. Restoring Wetlands in Washington: A Guidebook for Wetland Restoration, Planning and Implementation. Washington State Department of Ecology Publication 93-17, 110 p.

5. USDA, NRCS. 2002. The PLANTS Database, Version 3.5 **(http://plants.usda.gov)**. **National Plant Data Center**, Baton Rouge, LA 70874-4490 USA.

Data compiled by:

Crystal Elliot, 4/22/03