Plant Propagation Protocol for *[Alnus viridis]*
ESRM 412 – Native Plant Production

TAXONOMY	
Plant Family	
Scientific Name	*Alnus viridis*
Common Name	Green alder
Species Scientific Name	
Scientific Name	Family: *Betulaceae* Genus: *Alnus* Mill. – alder *Alnus viridis* (Chaix) DC. – green alder
Varieties	
Sub-species	*Alnus viridis subsp. crispa* *Alnus viridis subsp. fruticosa* *Alnus viridis subsp. sinuata* *Alnus viridis subsp. suaveolens* *Alnus viridis subsp. viridis*
Cultivar	Shrub, tree.
Common Synonym(s)	Alnus alnobetula Betula alnobetula
Common Name(s)	Green alder
Species Code	ALVI5
GENERAL INFORMATION	
Geographical range	It ranges from sohern alaska south to norther calfornia and into northern Idaho and Montana. (2)
Ecological distribution	Green alder is widely distributed throughout interior, central, and northern Alaska across the Yukon Territory and interior Canada to Labrador, Newfoundland, and Greenland. It extends south through New England and the Great Lakes States, and into the Pacific Northwest. Disjunct populations are documented in south-central Pennsylvania and west-central North Carolina (1)
Climate and elevation range	Grows from sea level up to 1200m (2)
Local habitat and abundance	Most common native habitats are high mountains swamps, and bottom lands along streams.
Plant strategy type / successional stage	A. viridis is a light-demanding, fast-growing shrub that grows well on poorer soils. In many areas, it is a highly characteristic colonist of avalanche chutes in mountains, where potentially competing larger trees are killed by regular avalanche damage.
Plant characteristics	It is a large shrub or small tree 3–12 m tall with smooth grey bark even in old age. The leaves are shiny green with light green undersurfaces, ovoid, 3–8 cm long and 2–6 cm broad. he flowers are catkins, appearing late in

	spring after the leaves emerge (unlike other alders which flower before leafing out); the male catkins are pendulous, 4–8 cm long, the female catkins 1 cm long and 0.7 cm broad when mature in late autumn, in clusters of 3–10 on a branched stem
PROPAGATION DETAILS (Report one type of propagation in section; duplicate section as needed for multiple types of propagation)	
Ecotype	It does require moist soil, and is a colonist of screes and shallow stony slopes. It also commonly grows on subarctic river gravels, particularly in northern Siberia, Alaska and Canada, occupying areas similarly disrupted by ice floes during spring river ice breakup; in this habitat it commonly occurs mixed with shrubby willows.
Propagation Goal	Plant.
Propagation Method	Seed.
Product Type	Container.
Stock Type	Containers.
Time to Grow	6 months.
Target Specifications	About 25 cm
Propagule Collection Instructions	The seed should germinate in the spring as the weather warms up.
Propagule Processing/Propagule Characteristics	Seeds are extracted by tumbling catkins. It is difficult to separate empty seeds from sound seeds. Seed dormancy is classified as non dormant. Seed longevity: 1 year. 1,098,680 seeds per pound.
Pre-Planting Propagule Treatments	24 hour water soak followed by a 60 day cold, moist stratification. A 60 day cold, moist stratification facilitates more uniform germination. Seeds are placed in fine mesh bags and are buried in moist milled peat moss in a well ventilated container in the refrigerator at 3C.
Growing Area Preparation / Annual Practices for Perennial Crops	
Establishment Phase Details	Germination always complete in 3 weeks. Tree leaves appear after 2 weeks.
Length of Establishment Phase	Usually in 3 weeks.
Active Growth Phase	When large enough to handle, prick the seedlings out into individual pots. If growth is sufficient, it is possible to plant them out into their permanent positions in the summer, otherwise keep them in pots outdoors and plant them out in the spring. If you have sufficient quantity of seed, it can be sown thinly in an outdoor seed bed in the spring.
Length of Active Growth Phase	About 18 weeks

Hardening Phase	
Length of Hardening Phase	8 weeks
Harvesting, Storage and Shipping	Sow in moist mineral soil on surface (spring) or barley covered (fall).
Length of Storage	5 months.
Guidelines for Outplanting / Performance on Typical Sites	Out planting date: fall or spring
Other Comments	
INFORMATION SOURCES	
References	
Other Sources Consulted	
Protocol Author	Chao Yang
Date Protocol Created or Updated	04/25/2015

1. Hendrickson, O.; Robinson, J. B.; Chatarpaul, L. 1982. The mocrobiology of forest soils: a literature review. Information Report PI-X-19. Chalk River, ON: Environment Canada, Petawawa National Forestry Institute, Technical Information and Distribution Centre. 75 p. [8506]
2. Elias,T.S. 1980. The complete trees of north america field guide and natural history. New york: Van Nostrand Reinhold Compant. 948P
3. Flora of the Pacific Northwest, Hitchcock and Cronquist, University of Washington Press, 7th printing, 1981.
4. Seeds of the Woody Plants in the United States, Agriculture Handbook No. 450, U.S.F.S., Washington D.C., 1974.
5. Seed Germination Theory and Practice, 2nd Edition, Deno, N., published June,1993.
6. Schofield. J. J. Discovering Wild Plants - Alaska, W. Canada and the Northwest.
7. Sibley, David Allen, The Sibley Guide to Trees, Alfred A. Knopf, 2009, pp. 159-165
8. USDA http://plants.usda.gov/core/profile?symbol=ALVI5