

Plant Propagation Protocol for *Erythronium grandiflora* (Yellow Avalanche Lily)

ESRM 412 – Native Plant Production

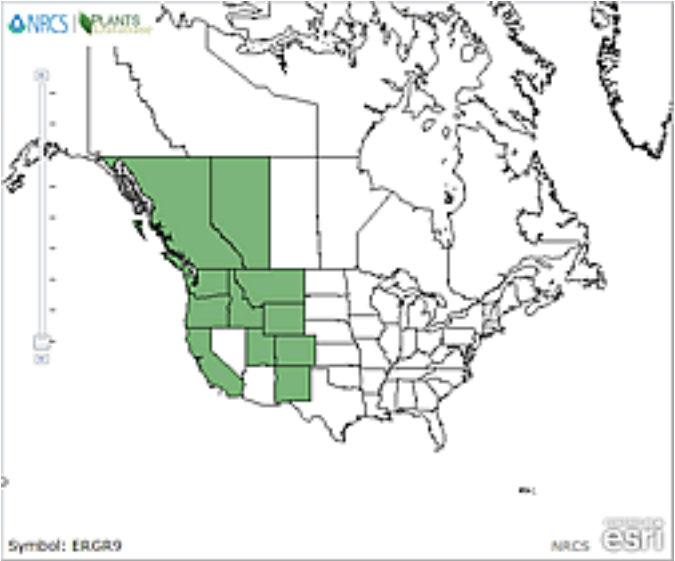
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TAXONOMY	
Plant Family	
Scientific Name	Liliaceae Juss. (1)
Common Name	Lily Family (1)
Species Scientific Name	
Scientific Name	<i>Erythronium grandiflorum</i> Pursh (1)
Varieties	
Sub-species	<i>Erythronium grandiflorum</i> Pursh subsp. <i>Candidum</i> Piper — white glacier lily (3)
Cultivar	

Common Synonym(s)	<p>For <i>Erythronium grandiflorum</i> subsp. <i>candidum</i>: <i>Erythronium grandiflorum</i> Pursh var. <i>candidum</i> (Piper) Abrams <i>Erythronium grandiflorum</i> Pursh var. <i>idahoense</i> (H. St. John & G.N. Jones) (3)</p> <p><i>Erythronium parviflorum</i> (S. Watson) Goodd. (6)</p>
Common Name(s)	Yellow Avalanche-lily, dogtooth violet, Glacier lily, trout lily, snow lily, fawn lily (1)
Species Code (as per USDA Plants database)	ERGR9 (2)

GENERAL INFORMATION

Geographical range	 <p>(1)</p>
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	<p>(2)</p>
<p>Ecological distribution</p>	<p>Found in the northwestern part of North America, Avalanche lily grow along stream sides, montane, alpine, and subalpine meadows and other sites that maintain snow and moisture into the season. Avalanche lily grow in a plethora of soil types. (3)</p>
<p>Climate and elevation range</p>	<p>Sea level to alpine, but positive association to high elevations (0-3675m). High frost tolerance makes it suitable for cold climates. (3)</p>
<p>Local habitat and abundance</p>	<p>Widespread distribution across wood and grass lands where neighbors consist of Ponderosa Pine, Douglas Fir, other conifers, Quaking Aspen, and more. High abundance in wet mountain meadows and parklands but density varies from clusters to solitary. (3)</p>
<p>Plant strategy type / successional stage</p>	<p>Since avalanche lily are found in open sites like meadows and avalanche chutes, it is characterized as a primary successional species. They are also able to colonize a site post-disturbance hence finding them avalanche chutes. However, intense disturbance i.e. trampling, bulldozing is unfavored. They do prefer open and moist systems for more light and water exposure. (3)</p>

Plant characteristics	Forb, highly frost tolerant, ephemeral perennial herb, corm; longevity unknown. (3)
PROPAGATION DETAILS: FROM SEED	
Ecotype	Seeds easily secured from parent plant as most fall or are wind dispersed close by (3). Seeds are also commercially available.
Propagation Goal	Plants (4)
Propagation Method	Seed (4)
Product Type	Container (plug) (4)
Stock Type	172 ml containers (4)
Time to Grow	3 years (4)
Target Specifications	Container seedling with four true leaves and a developed corm with root system. (4)
Propagule Collection Instructions	Hand collect during transition season between August and September as capsules begin to split and seeds are brown. (4)
Propagule Processing/Propagule Characteristics	Open and dry capsules make for easy cleaning
Pre-Planting Propagule Treatments	Complex morpho-physiological dormancy categorizes avalanche lily seeds. Because of this, a five month cold moist stratification period is required. Although seed longevity is unknown, this method worked on 2 year old seeds, unlike fresh seeds where no germination was observed. The “morpho” part suggests a period of after ripening is required. (4)
Growing Area Preparation / Annual Practices for Perennial Crops	In an outdoor nursery growing facility practice direct seeding where light can easily reach the seeds. These seeds should be planted in a medium of 6:1:1 milled sphagnum peat, perlite, and vermiculite with Osmocote controlled release fertilizer and Micromax fertilizer with 1 and .2 grams respectively per 172 ml container. Sow seeds in late fall and water thoroughly, so containers are leached. Do this prior to winter stratification since seedlings germinate in spring with the help of fluctuating outdoor temperatures and sun exposure. Growth occurs from late April to mid October (between snowy season). (4)

Establishment Phase Details	Germination takes place over 15 days in early may with temperatures ranging from 16-21C in the day and 3-11C at night. After forming a developed cotyledon, seeds go dormant about a month after germination. At this point watering should only be done occasionally. (4)
Length of Establishment Phase	4 weeks (4)
Active Growth Phase	About a year later in the next early May, true leaves should have formed as well as a corm that has doubled in diameter to about .5 cm. Plants then follow the same dormancy timeframe. (4)
Length of Active Growth Phase	10 weeks (5)
Hardening Phase	This was not done because plants were dormant by mid-summer following the 4-5 week dormancy timeframe after phase. (4)
Length of Hardening Phase	N/A (4)
Harvesting, Storage and Shipping	3 years minimum time to harvest after allowed storage in overwinter outdoor conditions within insulating foam and snow. (4)
Length of Storage	Five months (4)
Guidelines for Outplanting / Performance on Typical Sites	The plant blooms six backfacing tepals with 1-3 flowers at the end of a stem that can reach up to 12 in. Shallow planting with corms apex just beneath the surface allows for sufficient spacing for roots and annual re-sprouting. Consistent watering without water logging (ensure effective drainage) during post-snow season growth period (spring and summer) is required. After out planting, slightly shaded landscapes are ideal to avoid scorching leaves. (5)
Other Comments	Be cautious of the fact that the bulbs are delicious to grizzlies and foliage is a deer snack. Also, yellow avalanche lily are ectomycorrhizal associated, so planting them with inoculum can enhance growth (add inoculum to growing mix in nursery, maintain symbiosis for out planting, so nutrients and water uptake is boosted). (4) The conservation status of yellow avalanche lily is not of concern. (6)

INFORMATION SOURCES	
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Protocol Author	Elena Rheingans
Date Protocol Created or Updated	4/22/26

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