

Whitebark and Limber Pine Fact Sheet 5

Planning to grow and plant seedlings

You cannot purchase whitebark or limber pine seedlings in Alberta. **You need to secure seeds for your area** that meet provincial registration criteria (see Fact Sheet 1), have the seedlot registered to allow for planting on Crown land, and arrange to have the seedlings grown in a nursery. In Alberta, the provincial recovery program never has a surplus of seedlings compared to the restoration needs. Plan **to collect your own seed** (Fact Sheet 4). From beginning seed stratification treatment to receiving a plantable seedling, expect a bare minimum of 2 years. You will not likely be able to collecone cones in 1 year and extract the seeds and send them to the nursery the so plan for a year delay.

Here is a suggested timeline, assuming you have a seed supply. **Year 1**, secure a restoration area to plant. **Field check** it to ensure it is suitable for long-term survival. Calculate planting density and how many seedlings you will need. **Year 1 August-September**: order your seeds from the seed bank, adjusting for germination and seed viability estimates. Secure your seedling order with the nursery. Have seeds ship to the nursery. **Register the seedlot** with Alberta for planting on Crown land (Fact Sheet 1). **Year 1 fall**, seed is stratified at nursery. **Year 2 spring**, seeds sown at nursery. **Year 3 fall**, seedlings ready to ship and plant.

To **germinate**, a long stratification period is needed: 5-6 months, at specific temperatures. This cannot be skipped, or germination may only be 1-10% and you have wasted a huge amount of seed. See [Seed Matters report](#) for details. Follow the instructions carefully to avoid mixing up tree identities, avoiding fungal and bacterial contamination that can kill seeds, and to get the most and best seedlings from your expensive seed. You will never get 100% germination from these seeds – some are not viable. **Cut testing** can indicate seed viability but read Fact Sheet 4 about embryo immaturity. Viability varies a lot from year to year, tree to tree, and with handling. Expect roughly **35 to 80%** germination, for planning estimate based on 50% if you have no other information.

There are a couple of **nurseries** that have experience growing limber and whitebark pine in Alberta: Bonnyville Forest Nursery and Grumpy's Greenhouse. Contact them directly for pricing and options. Several BC nurseries have also had success. [The recovery team](#) may have more information.

Because in Alberta the habitat of these species tends to suffer **severe drought during the growing season**, survival and growth have been best using bigger seedlings with more robust roots than stock typically used for reforestation, which emphasizes larger shoots. A 2-year limber or whitebark pine seedling survives and grows much better than a 1-year seedling, and planted seedlings have much success than just planting seeds, which also get eaten by wildlife. We have had good growing and planting **2+0 plugs grown in styroblocks**, or even larger (3-year-old) seedlings. Various stock types have been tried, and 415 or 512 size stock is working well, with 60-77 cavities per styroblock.

Before shipping, the nursery will **wrap the seedlings in bundles** of 5, 10, or 15 depending on the size. These are packed in waxed cardboard boxes that must be kept cool and dark to avoid stressing the seedlings. Seedlings are living breathing organisms. They need air, so do not leave them in closed boxes for long, and keep them out of the hot sun. Silvicool tarps are special forestry tarps designed to reflect sunlight and keep seedlings cool in the field, order from a forestry supplier.

In the Rocky Mountain region, **planting in the later half of September or into October** has worked fairly well, before snow blocks access but ideally just before fall rain and snow starts to provide moisture for establishment. By that time, seedlings have set bud but are not fully cold hardy or dormant.