Whitebark and Limber Pine Fact Sheet 6
Planting seedlings in Alberta

Review the other Fact Sheets first) You have a registered seedlot of seedlings that a nursery has grown for you. They are ready to be planted in a site that you have field checked that is suitable for long term restoration, and that is in the right species-specific seed zone for the seedlot. Planters with tree planting equipment are available and it is late September or after. You have already estimated the density and number of seedlings for your planting area.

Timing: 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. Seedlings have set bud but are not fully cold hardy or dormant.

Delivery of seedlings: All suitable planting sites are fairly remote. There may be no cell signal. Shipping companies may have difficulty finding and accessing out-of-the-way sites without a regular address. You may need to meet a shipper and transfer the seedlings, escort the driver to the delivery site, or pick up the seedlings yourself and deliver them to the site. The recovery team also may have some additional information.

Planting density: Ecosystems containing 5NP have highly variable density. Consider **250 mature stems/ha** as a minimum target, with **400 mature stems/ha** a median target, and 500 stems/ha as an upper target, but denser stands are not common and most sites should support between 250-400 stems/ha as a target. Because these sites are harsh, up to 50% mortality may be expected before seedlings reach reproductive maturity in 50 to 80 years. So plant at double this target. One hectare is 100m x 100m, or 10,000 m^2. For 250 stems/ha, plant 500 stems/ha, average 4.5 x 4.5 m spacing. For a target of 400 stems/ha, plant 800 stems/ha or 3.5 x 3.5 m spacing. For 500 stems/ha, plant 1000 stems/ha, 3.2 x 3.2 m spacing. Spacing does not need to be exact, but average – picking a good microsite is much more critical than having exact spacing (see below).

Planting technique: These sites are rocky and tough, there is not a lot of soil. If the shovel won't go deep enough in the ground to get the full root plug in straight, find a new site. Jump on the shovel and wiggle to get it in the ground. Crack the soil open, reach in your planting bag for a seedling, guide the plug in along the shovel blade, remove the shovel, and stomp the gap shut. Tug a bit to ensure it is snug. The entire root plug, up to, and even over the root collar, must **be fully in the ground**. There should be no air between the roots and the soil so make sure the crack is firmly tamped down after the tree is inserted. There is no need to dig a hole. Roots must be straight all the way in **– no "J" roots**. If roots are not fully in the ground up to the root collar, frost heaving will pop them out and kill them through desiccation, or deer and elk can easily pull them out.

Planting microsite: For survival of properly planted seedlings for these species, nothing is more critical than picking the right microsite. Within 50 cm of the planting spot, there should be some **protection** from sunscald and this should be provided by an object that will not easily move when kicked. E.g. a hummock, stump, boulder, or depression. A rock or piece of wood is no good, and will move. The microsite should provide some **shade**. This also protects from drought for up to 2-3 weeks in spring as snowpack melts later in the shade.

Competition: These species are too slow-growing to compete with other species like lodgepole pine or subalpine fir. Do not plant them close to another tree species, except a mature whitebark or limber pine. Otherwise they will become too shaded and die. Leave 3-5 m spacing from another tree or sapling, or even remove the other sapling.