Alaska Department of NATURAL RESOURCES

Fact Sheet:
Frequently asked questions about reforestation with non-native trees in southcentral Alaska

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DEPARTMENT OF NATURAL RESOURCES -- DIVISION OF FORESTRY

What is the concern over non-native trees? In the last fifteen years, spruce bark beetles have killed native spruce on more than a million acres in southcentral Alaska. Landowners want to regrow forests on their land, but many are concerned that native spruce will die. Some landowners want trees that grow faster than spruce, and others want more variety on their land. However, planting non-native trees could change the forest over big areas, and there are many questions about the impacts and risks from these changes.

What non-native trees are planted in southcentral Alaska? Lodgepole pine and Siberian larch are the most common non-native trees that have been used for reforestation. Many other species have been planted as ornamental trees, including Scots pine, blue spruce, and Norway spruce, and ornamental hardwoods.

Do pine and larch survive here? Lodgepole pine and Siberian larch have been planted in Alaska since the 1960s. The young trees often grow rapidly, and there are examples of mature trees 30-40 years old with cones. However, native spruce grows faster and produces more timber as the trees mature.

Are these species susceptible to insects, diseases, and other damage? All tree species are susceptible to forest pests, including lodgepole pine and Siberian larch. Larch sawfly has caused major damage to native larch of all ages across Alaska, and Siberian larch is also susceptible to this pest. In Canada and the Lower 48, mountain pine beetle is a widespread pest that kills lodgepole pine. There are no studies of the susceptibility of these species to other tree diseases in Alaska, so we don't know how they will react. Lodgepole pine and larch seedlings suffer much more browse damage than native spruce. Moose and hare browse these species heavily.

Native spruce are susceptible to spruce bark beetle and other insects and diseases. However, these pests are not widespread problems for the first 100 years or so after planting, and you can design spruce plantings to reduce the long-term risk of beetle infestation (see reference attached).

How do these species affect wildfire risk? Because young pine and larch grow quickly, they increase shade and decrease grass cover. This reduces the risk of grass fires that spread rapidly. However, as the trees mature, fire spreads more quickly in lodgepole pine than native spruce. Larch is less flammable than other conifers. However, native hardwoods (birch, aspen, and cottonwood) are less susceptible to fire than any of the

evergreen trees and often slow or even stop the spread of wildfire in Alaska. For more information on fire resistant vegetation, see the reference attached.

Can non-native trees spread to other areas? We do not yet know whether non-native trees will become invasive in Alaska, and it may be a long time before there is a certain answer. We do know that these species reproduce in southcentral Alaska where disturbance leaves bare soil. Because wildfire and other disturbances do create bare soil in this region, there is a risk that non-native trees will spread unintentionally. The chance of wildfire disturbance is particularly high in areas of southcentral Alaska which have beetle-killed trees.

How do non-native trees affect wildlife habitat? We don't know. Native wildlife species are adapted to native forest types, and some wildlife species depend on particular types or sizes of forest cover. Because larch loses its needles in winter, it doesn't offer the same winter cover as spruce. However, there are no local studies on the wildlife impacts of widespread planting of non-native trees, so specific impacts are unknown. Planting non-native trees may change the value of a site for wildlife.

Are non-native trees usable for wood? Lodgepole pine, Siberian larch, and native spruce and hardwoods all produce wood that can be milled and used for a variety of products. The economic value of the individual species will depend on markets at the time of harvest, and the productivity of the trees. While these trees have rapid juvenile growth, there is little information comparing their wood production over time with that of native spruce.

Should non-native trees be used for reforestation in Alaska? Because of the fire risk for pine, susceptibility of pine and larch to browsing, uncertainties about impacts of non-native species on wildlife, and the possibility of unwanted spread, the Division of Forestry recommends against planting non-native trees for reforestation. This factors are especially important on the Kenai Peninsula where there is severe risk of fire in wildland-urban interface areas, and where wildlife is highly valuable to local residents and tourism businesses. In other areas of the U.S. and other countries, some non-native species have led to severe problems. Native spruce and hardwoods provide suitable reforestation choices without these risks. We do not reforest with non-native trees on state land, and we do not order non-native seedlings for reforestation on private land. The state does conduct limited experimental plantings to evaluate growth under local conditions. Any plantings of non-native trees should be carefully monitored to assess spread of non-native trees and impacts on wildlife habitat, and to control unwanted spread.

Can cost-share funding be used for planting non-native trees? Federal cost-share funds managed by the Division of Forestry may be used for planting native conifers and hardwoods (e.g., native spruce, birch, aspen, and cottonwood), and for site preparation prior to planting or seeding. While the Division of Forestry recommends against the practice, these funds may be used for reforestation with up to 50% non-native trees in mixed stands with native species. By planting in mixed stands, the potential for

unwanted spread of non-native trees and possible impact on wildlife habitat should be reduced.

For more information:

- On planting spruce to avoid bark beetle problems, the U.S. Forest Service has published the following report:

  Managing White and Lutz Spruce Stands in South-Central Alaska for Increased Resistance to Spruce Beetle, by John S. Hard and Edward H. Holsten. USDA Forest Service Pacific Northwest Forest and Range Experiment Station General Technical Report PNW-188. December, 1985. 21 pp.

- On fire resistant vegetation and landscaping, including native species:

  Protect Your Home from Wildfire – Fire Resistant Vegetation and Landscaping. Alaska Department of Natural Resources/Division of Forestry/Community Forestry Program. August, 2002. 2 pp.

- For more information on the Forest Stewardship Program in Alaska:

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