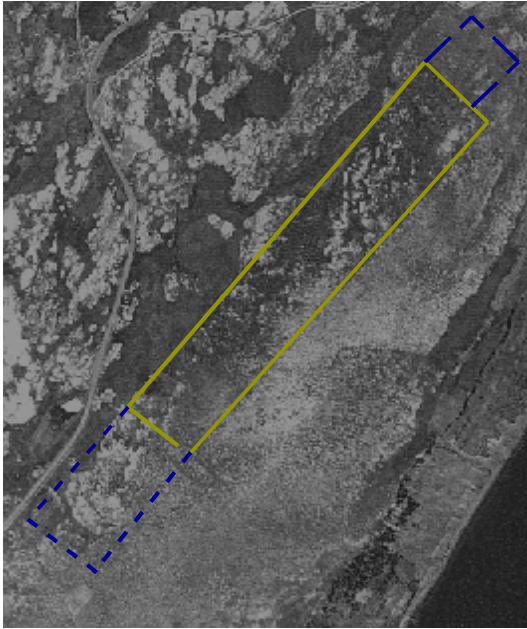
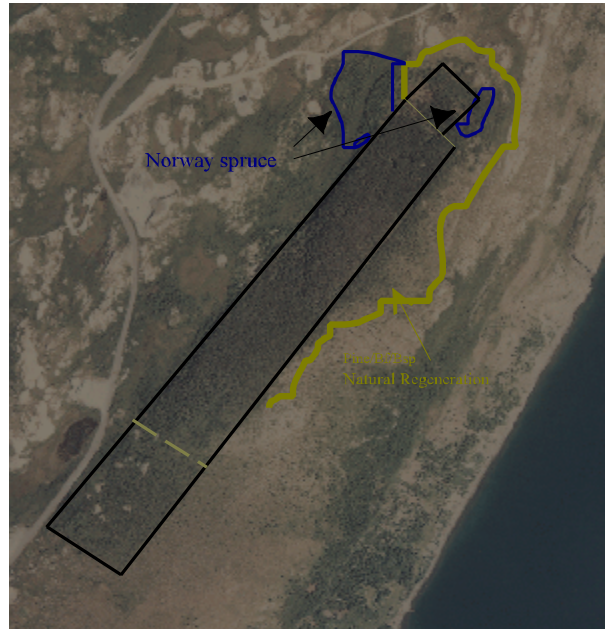


## MARYSVALE (English Cove Road)

The original plantation of Jack pine and Scots pine dates back to the Commission Government era in the 1940's. The bare-root planting stock was produced at the National Tree Nursery at Salmonier. The site was more or less a blueberry barren, probably of fire origin.



This 1948 aerial photo shows the extent and success of the original Marysville Plantation (also called Collier's Ridge) established in 1945. The fence line (blue) indicates an extension to the plantation in 1948



This 1982 aerial photo shows some noteworthy changes in the plantation.. The most obvious is complete canopy closure due to the high survival rate of bare-root stock. Also, natural regeneration of pine has been exceptionally vigorous almost from the first 10 years since planting. Norway spruce was added to the plantation in 1950.

There is much doubt about the suitability of pine in this climate. At face value, the deformities and sporadic dieback from soil diseases, which is more obvious in a pine plantation, than say a natural spruce and balsam fir forest, tend to reinforce the notion that pine is ill-suited to our climate.



A pine plantation that was planted in 1948, in a barren windswept valley on English Cove Road, Marysville. The plantation was thinned and brashed in 1995.

However, deformity in pine is most often a genetic trait. For example, Jack pine growing in the best of its natural range still doesn't have a particularly good form or great quality compared to say white pine. The same can be said of some provenances of Scots pine. Scots pine from Swedish and German provenances are typically straight trees much sought after for high quality lumber. By contrast, the rugged form of Caledonian pine (a distinct race of Scots pine) from the Highlands of Scotland is valued much more for its aesthetic qualities than its lumber. A prime example of the aesthetic attributes of Caledonian pine in an urban setting can be seen on Pine Bud Avenue in St. John's and in the Sir Robert Bond Historical Park in Whitbourne.



55 year-old thinned and culled stand of Scots pine acting as a nurse crop for naturally regenerated balsam fir and white spruce (note the moose browsing).

Regardless of the tree-form, most of the pine plantations on the Avalon can be considered successful for several reasons. First of all, they have succeeded in terms of growth and yield in areas where there is no natural regeneration of native trees or, if there is, it has very low productivity. And while pine obviously suffers climatic stresses, so do the native species - it is just that stress in native species is less obvious to the untrained eye.

One advantage the pine plantation has over a natural spruce/fir forest, is that prior to harvesting, or blow down, or after thinning, it can serve as an interim nurse crop by providing a suitable microclimate that will enable native species and perhaps more valuable exotic species to thrive in the understorey.



Part of the pine plantation on English Cove Road located near the top of the ridge. The small trees and poor form reflect a harsher climate than lower down on the hillside. Nevertheless, pine serves as a nurse crop for a naturally regenerated balsam fir and white spruce understorey. By contrast, outside the plantation there has been little natural regeneration of fir and spruce even before the plantation was established.

The most remarkable aspect of the Marysvale plantation is the extent to which the area of pine has at least been doubled in size by natural regeneration. Actually, it is a mixture of pines and native spruce and fir. A 1948 aerial photo shows that much of the top of the ridge had very little vegetation. Frost heaving is the main obstacle to colonization by native vegetation. However, mainly over the last 10-15 years, pine has not only colonized and is thriving on this harsh site but also, by trapping organic debris, has provided niches for additional colonization by mats of native flora, including trees and shrubs. The fact that some pine become diseased and die is a moot point, because they have fulfilled a valuable role by initiating the forest restoration process of a harsh site which native flora could not.



1995 aerial photo showing the spread of naturally-regenerating pine (yellow line)



A well-developed mosaic of many age-classes (1-25 years-old) of natural regeneration exotic pine and native species.



Natural regeneration of frost heaved site on an exposed ridge by pine and native species



The native species of spruce, fir and indigenous shrubs and herbs take advantage of shelter provided by older naturally regenerating pine.



The extent of frost-heaved, barren rocks (centre) has gradually been colonized by pioneering natural regeneration by pine and later in-fill of spruce/ fir and native flora.

Of slightly younger vintage (1950) a couple of hectares of Norway spruce was planted at the bottom of the ridge and a smaller stand at the top of the ridge. From a purely timber standpoint, which is what the plantation was established to test, the bole form of Norway is exceptionally good and tree size distribution sufficiently uneven to allow for selective cutting of marketable logs over a very long period of time. Actually, the Norway spruce, is only now coming into its prime - putting on remarkable growth rates within the last 5-6 years. Compared to plantations of Norway spruce elsewhere, the productivity is not spectacular. However, at the time of planting, the valley was described as barren, harsh and windswept. Considering the area still is for the most part, and compared to the growth and yield of native woodlands, the Norway spruce plantations, like the pine, should be considered a resounding success and well worth upscaling it to a commercial plantation.

Much more significant, is the extent of natural regeneration of Norway spruce which is a good sign of its adaptability to the local environment. Unfortunately, too many red squirrels, combined with a poor seed year (1999), are responsible for the conspicuous absence of any new cones on the Norway spruce. Of course, one should encourage a greater degree of biodiversity of flora and fauna within the pine plantations - including attracting Pine Marten as a natural control for red squirrels.



Norway spruce planted in 1950 plus naturally regenerated Norway spruce in the foreground.

A more serious problem endangering the Norway spruce stands in particular is urban encroachment. On one hand, mining interests have first call on the tract of land that includes the plantation. On the other hand, building lots are being sold along the roadside on the fringe of the plantation - resulting in removal of some of the Norway spruce. These activities serve as a reminder of the conflicts that arise from a general view of municipalities which promote rapid urban expansions and the fragility of trying to maintain a long-term forestry plantation programs close to or within municipal boundaries.



Natural regeneration of Norway spruce