

Frenchtown European Larch Plantations

By David Maass

The summer of 2019 found the Larch Virtual Experiment Station crews examining larch plantations on the east side of Moosehead Lake in central Maine. This year in addition to this author and Ken Laustsen we had the help of Carl Jordan who worked in the Greenville area for many years.

Five plantations were examined in all; four of which were located on the northern slopes of Number 5 Mountain. Without plantation establishment records we estimated the ages of the plantations. Interestingly the four on Number 5 Mountain were all planted on Telos-Chesuncook soils with a 3 to 15% slope. Plantation #3 was located just north of Casey's Road off of the Lily Bay Road. This plantation was planted on an old field. The soils indicate that it was originally an outwash plain for glacier or river, likely flowing into Moosehead Lake. As such it is somewhat excessively well-drained. None of the plantations had been thinned or received any apparent management since establishment.

Data was collected from three random prism points near the middle of each plantation. These were at least two chains apart. The first two plantations were measured using a 10 BAF prism and the topological scale on the clinometer for height. The last three were measured using a 20 BAF prism and the percent scale for height estimation.

All of the plantations (except for #2) had a smattering of other species that showed up on the cruise points. Balsam fir is growing in the understory of some of plantations. Survival of the larch was not uniform across the plantations allowing for holes in the canopy; here quaking aspen and red maple have established themselves in the understory. In the plantation near Moosehead Lake, spruce has grown alongside of the larch in the canopy holes. No noticeable insect, disease, mammalian or ice damage was observed in any of these plantations.

In the table below, the data is presented for European Larch and for whole of the plantations (larch plus other species).

Four charts are presented. Chart 1 shows the mean annual increment of merchantable volume in cords per acre per year and cubic meters per hectare per year. The second chart is the stocking (trees per acre and basal area per acre) plotted on the European Larch Stocking Guide (Gilmore and Briggs 2003). Stocking is for only European larch. This shows that all of the plantations despite their age fall between the self-thinning line and line set at 60% of the self-thinning line.

Charts 2 and 3 show the trees per acre and merchantable volume per acre by diameter class for the average of plantations 1 and 2, plantation 3 and the average plantation 4 and 5. These were separated by apparent age; 32 for plantations 1 and 2 and 27 for plantations 4 and 5. Plantation 3 was separated because of the different soil type. If we can believe the age assumptions, we see that plantations 4 and 5 are growing better than plantations 1 and 2. Plantation 3 is growing comparatively better, despite the somewhat excessively drained soils.

Reference

Gilmore, D. and R. Briggs. 2003. Stocking Guide for European Larch for Eastern North America. NJAF 20 (1) 34-38.

Table 1. Included below is the summary data for the five plantations as well as charts showing diameter distributions. Plantation 3 is the one growing near Moosehead Lake on the well-drained soils.

Plantation	Age	Tpa	BA/ac	QMD (in)	Ht (ft)	Merch vol (ft ³ /ac)	Merch tons/ac	Cords/ac
1 EL only	32	244	97	9.0	67	3077	74	36
1 All species	32	398	117	8.5	64	3670	88	43
2 EL only	32	277	133	7.4	63	3823	92	45
3 EL only	32	209	120	11.0	62	3273	79	39
3 All species	32	516	207	10.9	55	4763	114	56
4 EL only	27	206	107	10.5	64	2973	71	35
4 All species	27	629	147	8.9	59	3883	93	46
5 EL only	27	266	127	10.2	61	3440	177	40
5 All species	27	1114	147	8.9	55	4230	218	50

*"EL" means European larch only; "All" means all species, including European larch.

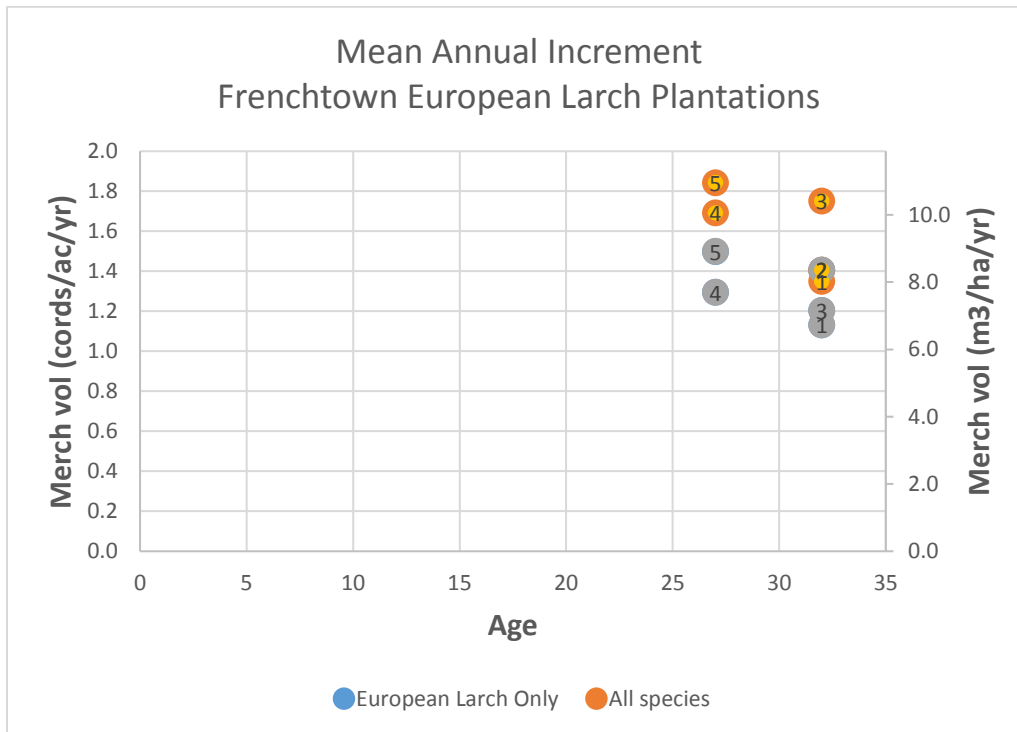


Chart 1. Mean Annual Increment for the Frenchtown Plantations

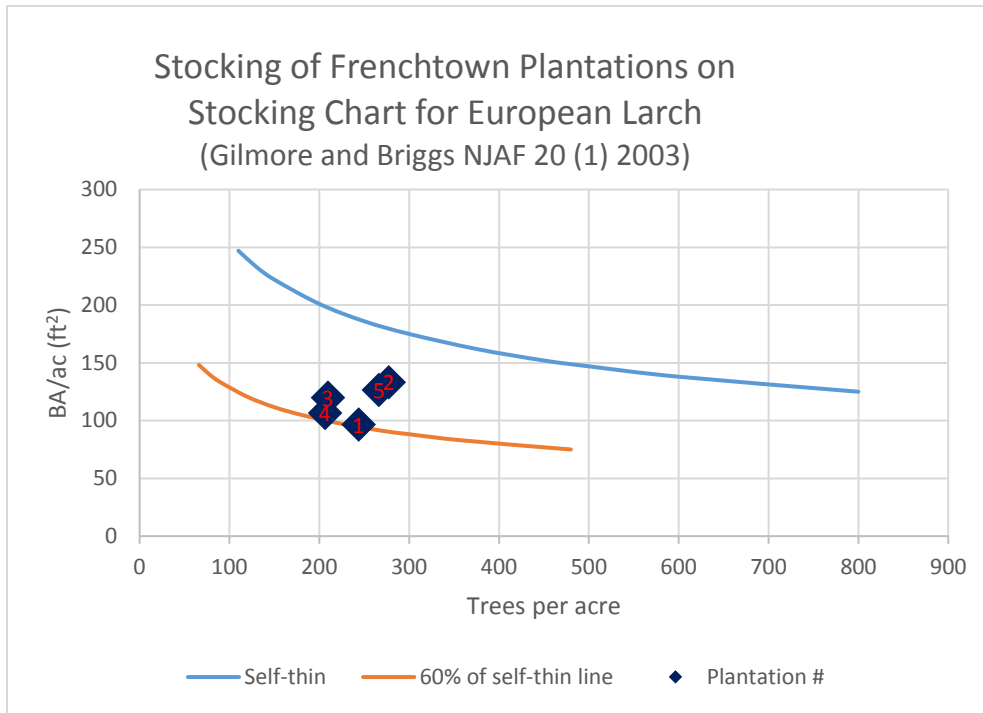


Chart 2. Stocking of Frenchtown European Larch Plantations on European Larch Stocking Guide (Gilmore and Briggs NJAF 20(1) 2003).

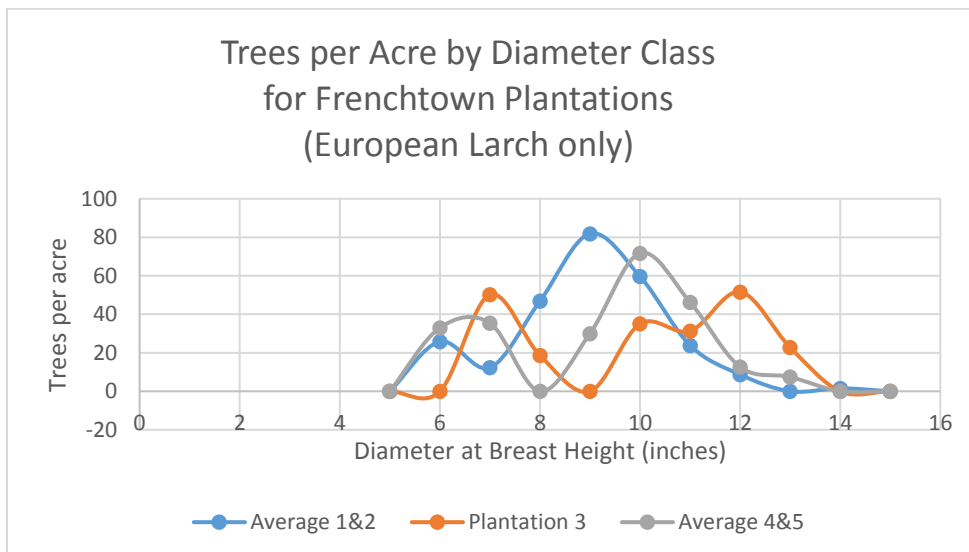


Chart 3. Trees per acre for European larch plotted over diameter class.

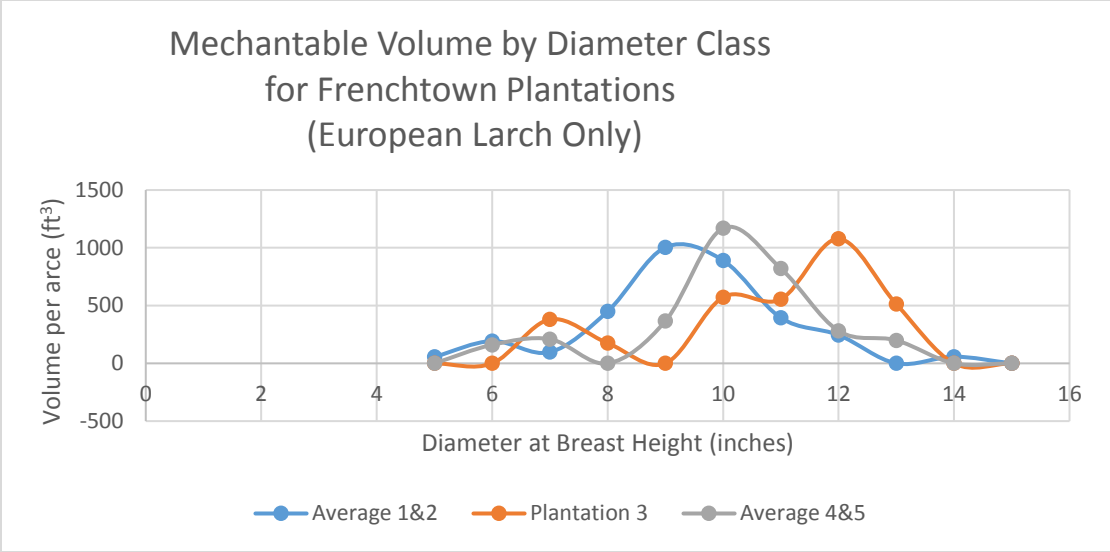


Chart 4. Merchantable volume per acre (ft3) plotted over diameter class.