COMMERCIAL THINNING

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LOOKING BEYOND THE NUMBERS: COMMERCIAL THINNING AS A TOOL FOR THE NEW FORESTRY

Introduction:

Thank you for allowing me this opportunity to share my experiences around the subject of commercial thinning with you.

I have been involved in the business of forestry and logging for thirty-five years. Other than a few years in overseas locations, most of my operational experience has been in British Columbia, about half on the coast and half in the BC Interior. At various times I have worked on the management and forestry side of the business and, at others, in logging, either as an employee involved in production logging or as a logging contractor. During the last ten years I have had two contracting businesses, one of which I still operate on Vancouver Island.

Now I suppose I can say I have two rather meager claims to fame as far as things forestry go. First I have, over the last twenty years been involved in commercial thinning projects, at times on a fairly significant scale. This is uncommon in BC. Secondly, and particularly over the past decade, I have been involved with and done a lot of logging and thinning in potentially contentious locations and managed to do so successfully.

The essential thought behind my presentation today is that times are changing rather dramatically in forestry and sometimes in a rather scary way. Because of pressure from the environmental industry, our previously loyal customers are beginning to demand changes in the way we manage forests. What that means in practical terms to a forest manager is that customers are starting to influence the silvicultural systems that we have lived with for decades.

I haven’t had occasion to look inside a silvicultural textbook lately. The old ones I’m familiar with had very excellent descriptions of the relative merits of the classic silviculture treatments and how and where these could be applied. What they lacked, what they have no evaluation of, and what we need today, is silviculture that not only produces cubic meters, but what we could call a social dividend... in simple terms, forestry that looks good. It is really that simple... forestry that looks good.

Commercial thinning is one of those silviculture treatments that does have this important social value. Done professionally a thinned stand, to Mr. John Public, looks much better than an unthinned stand. Sometimes, as I show later they almost look too good!!! If that was the only value to doing commercial thinning, I suppose that would be enough, at least in some places. What I can’t understand is how forestry managers, at least in this province, can’t see the other values, downstream values that thinning can produce. The prime objective of all industrial forestry is to produce logs. Large, clean straight logs. The prime motivation to doing commercial thinning is to do that. Produce large logs. It is not; repeat not, a volume treatment. Commercial thinning is about quality and value production. Particularly value.

There is more. In the years ahead, we as forestry managers are almost certainly going to find ourselves doing more selection logging. And I’m not referring to clearcuts with tree retention. Any of the more classic treatments mean more frequent stand entry and lower volume removals. Does it not seem likely that these types of treatment are going to be more financially favourable if the logs removed are large? Commercial thinning which aims to produce large logs, then, as a first entry, even if financially marginal, can considerably improve results in later entries, whether that is another selection method or regular clearcut.

To summarize those points then, and to refer again to my title. When considering commercial thinning as one of your management tools, look beyond the numbers, particularly that volume number. Be aware of all the benefits. As I will endeavour to demonstrate there are many.

My experience with commercial thinning dates to 1980. I will break my presentation here down to two or three basic components. First my personal experiences with the nuts and bolts side, i.e., equipment and techniques of thinning and, secondly, how I have been involved in projects, and how we used thinning as both a silvicultural tool and, more importantly, I think, how we used it to achieve what I describe as “public goals or social goals”.

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COFE-CWF Conference
A) Technical

I don’t want to spend a lot of time on the systems and equipment side of commercial thinning. There are other presenters here that are a lot more knowledgeable than I on particular systems. Rather I will share my experiences and viewpoints as a contractor on the relative merits and drawbacks of systems.

(1) Cable:

I started out in thinning with cable systems. Two skidder mounted mini Alps, which originated in Scotland. These machines were primitive to say the least, but they worked after a fashion and they were pretty cheap. Since that time 20 years ago, small cable yarders have improved dramatically. Skylead and Koller both make excellent small thinning yarders, and there are now several very good carriages available.

These small yarders are good, but the main drawback with yarding is the relatively high labour cost. Particularly hand falling and processing. This in my view somewhat limits the use of cable to steep or wet or rough areas, and to times when log values can support the higher cost. Yarding tree length and machine processing is another option that can help in some cases.

Here is an interesting demonstration of a yarder processor combination. I have seen these working a few times. This machine, made by Mayr Melnhof group, is thinning in Austria. In has a loader boom and Steyr processor. The one operator does all. This is a very advanced yarding concept. The other unseen part of this system is the self-loading truck that backs up to the yarder and, via a rear-mounted loader, loads out sorts. Falling is done concurrently with yarding. Four men total including the truck driver.

Another cable system I’ve had some experience with is the excavator yarder. This is one I help design and build for a large contracting company in Germany. I spend some months over there, in Bavaria, working with this machine. Primarily it was purchased to do strip selection corridor logging, all uphill, but we did some corridor thinning as well and it worked very well. It was equipped with one of those little Christy carriages, which are just excellent considering how basic they are. This machine was also very versatile. Here I’m using it for hoe-checking on Vancouver Island before sending it to Germany.

Now if you’re from Sweden this system will probably bring a smile to your face. Radio control-bunching winches were probably the main method of thinning in Scandinavia and a lot of Europe well into the eighties. Now you’ll never see one of these systems in Europe. However, I feel they still have a significant part to play here, for any method of selection logging. A system like this mounted on a small excavator, is excellent for rough areas, and corners, and for working from a trail system. It works particularly well if pulling tree lengths as shown here, which are later processed by a harvester and hauled away with a forwarder. I still own one of these winches.

Another version, small, of an excavator yarder. The advantage of this system is it can also be a ground based, baby hoe chucker. Which I’ll now show...

(2) Ground Based:

Same basic machine without the tower and winches. Here it is hoe chucking hand felled, full-length trees up to a trail. These we later processed with a harvester/forwarder.

For a while, about 1995, I owned one of these little machines. I was still more or less experimenting with some ideas I had of augmenting my harvester daily throughput during thinning. Unfortunately the bottom fell out of the small log market about then and all our thinning was pretty much shut down. So my results were inconclusive. I still see a lot of potential in this type of equipment though, particularly where capital cost is a major factor. I think a baby track harvester and one of these little chucker would work real well, but only for short chucks.

Skidders, farm tractors. These can work just fine in a lot of situations. Perfect for woodlots and small scale efforts. Very low capital cost and a reasonable job with the right operator. My experience is that hot fall and skid is the way to go. As in this slide taken in Austria. Faller and operator work together.

Cut-to-Length. Tim White probably told you all you need to know on these. CTL has completely taken over all thinning work in Europe and a lot of other places. And for good reason. These systems work incredibly well, as long as ground/terrain conditions permit. There aren’t too many places where you can’t work them, although I’ve found a couple. For several years I had three of these systems going, all doing thinning.

If you are into large, long-term project thinning, then CTL is the way to go. The main drawback is the prohibitive capital cost. Many, many zeros. Another factor, at least in thinning, is that these are primarily a short log system, and a lot of places just seem to balk at having anything to do with short logs. I know because for several years, I tried to get Vancouver Island interested. Even though we were able to completely eliminate dry
land sort costs, storage and insurance and offer a form of just-in-time delivery to the very inside of the mill, it still didn’t take off. Go figure...

B) Commercial Thinning: Downstream integration with other selection or harvest methods

In my introduction, I alluded to the fact that CT can improve the viability of later treatments, basically by improving recovered log size and value. It also can create other options to final harvest method.

I’m going to show a few slides of old thinning I was involved in and the more or less recent same areas.

This is a cable-thinning job we did in Campbell River in 1980. Excellent harvester ground by the way, but they didn’t exist then. These pictures show or attempt to show the same general spots a few years ago. Post thinning about 16 years. As you can see pretty dramatic change. Lots of understory hemlock and some fir. Big crop trees. Now I happen to know that this patch, which is Crown land, is not scheduled for harvest until 2025. Twenty-five more years. But as you can see, things have tightened up again and, ideally; I think this stand could use another entry. What options are there, short of clear-cutting? Remember now, that this is about a new, customer driven approach to forestry. Well, using the thinning developed access, now considerably brushed in, we could begin to do some group selection entry, say \( \frac{1}{2} \) hectare groups, replant with fir. Carry on every five years or so to eventually completely replace the stand.

Or maybe we could do some single stem removal, say large limb overstory, broomstick material, to release smaller fir and the emergent hemlock regen. By 2025 that hemlock regen that started post thinning, should have some significant volume. (Ignore that volume though – the experts say thinning does not add to volume).

Another similar example 1980 and recent. This time northern Vancouver Island hemlock. Again lots of hemlock regen. This time though the desired replacement specie is probably hemlock. Possibly remove the overstory in a couple of passes.

So the thinning helped develop some other options. But even if you didn’t need to resort to selection methods, the thinning is still going to be benefit even if you clear-cut.

This is log production out of a small clear-cut on private land at Horne Lake, Vancouver Island. About 10 years post thinning. This was logged early to deal with a root rot situation. But not the premium logs. In this case I think we bucked for peeler, and got a very high percentage as you can see.

A last thought around the downstream integration idea. The key to multiple entry management is access. Without easy and regular access trails throughout the stand, some of the above methods are difficult at best. With regular, permanent or semi-permanent trails, anything is possible. Good access make small volume entries both possible and viable. In fact this is one of the key drawbacks to cable systems, they just do not work well with small scattered volumes. CTL on the other hand, with high mobility is perfect for this work.

C) The public side of things: Or how to sell lumber to Home Depot

Commercial thinning and the public viewpoint.

I mentioned back at the start that I’ve spent some time working in some pretty contentious areas. You may have heard of Saltspring Island, down there between Victoria, Vancouver and Seattle. Highest concentration of millionaires and Tilley hat owners in Canada. Greenpeace literally ties up the boat there. Try running a logging truck through downtown Ganges on a warm August afternoon. So hopefully established the setting for this forestry saga.

By the way you may have seen the TV news about the on-going anti-logging war on Saltspring. Or check out www.savesaltspring.com. We logged very quietly and successfully on Saltspring on the 6000 acre private holding that is now the center of the uproar. The owners we worked for sold out after 30 years and we were out of a job. The new guys, however, were not going to do any of that fuddy duddy logging.

Now as I’ll attempt to show, the fuddy duddy logging, the Home Depot and the Tilley hats crowd is all connected.

We did a lot of commercial thinning on Saltspring, we did a lot of selection logging, and we even did some small clearcuts, maximum 3-4 hectares. In more than a decade of logging there, every year, I cannot recall even a single complaint. Not One.

How were we able to do this? One word. Trust. Because we took the time, and took the care and did a lot of Thinning. Because of the thinning, that looks good, remember, and the other fuddy duddy stuff we were quite able to operate happily year after year. They trusted us to do a nice job. Home Depot would love it.
And that really is why we have all the bureaucratic bumf, the forest practices codes, laws and lawyers running the forest in BC now. Isn’t all that really about a lack of trust?

And what can you do when you have built that trust. This picture shows some thinning on the above-mentioned Saltspring. Okay. It is next to a road up to a provincial park. It is in the town of Ganges watershed. It is within 100 metres of the town reservoir lake. Not a word... How many of you log in town watersheds... Heard of a town called Walkerton?

Expect watersheds to be a very hot item soon...

A nice public trail through the woods. This is that trail in 1989. One of those permanent access trails I mentioned for continuous forest management. Remember I said some thinning could look too good. We’re thinning here with our first, very primitive short log system. This is the parking lot to the provincial park. The thinning area is directly across the road. Under the forest practices code on public land we couldn’t even hang a ribbon within a kilometre of this place. And that is wrong, fundamentally the wrong approach.

So what would be next for this area and nature trail? (Theoretical since this property sold too). Some very small and careful group selection. Using the trail. A key thing to remember is that once you’ve established the trust, you cannot thereafter not maintain it. This in such a sensitive area are clear-cuts are absolutely out. What you want to do is achieve an uneven aged structure, group structure completely replacing the original stand over time.

I don’t want to create impression here that all logging we did was this tight. Hardly. We did, often do small clear-cuts, up to about 4 hectares. The key thing is we adapted the silviculture system fit the social environment.

One last example about that trust thing. Back to Saltspring. Now even I had qualms about this one... This particular property has the largest remaining Garry Oak meadows in the world... A very rare ecosystem in Canada. In my opinion there is, as well some of the most beautiful spots you’ll find on earth, quite literally. So we decided to do some logging. Not before some real hard thinking and a fair amount of planning though. And then only on the area adjacent. Basically the science behind it was that the area had been logging before in the usual ruthless manner of about 1950 and it had clearly benefited the Oaks by removing overtopping Douglas-fir. The ecology of this situation is really unique, but the essence is that this ecosystem at least in this particular area, has been influenced by man (fire) for thousands of years. To the general benefit of the Oaks.

To make a long story short, in we went to do a combination thinning and group selection using a permanent trail system on slopes. We also removed some fir that were overtopping and killing out Garry Oaks right in the stand.

Not a peep.

Summary

Well maybe I rambled off a big here and there, but hopefully I’ve shown that commercial thinning can do a lot more for you than just the raw silviculture result.

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