High-Strand band sawing

Although it is now considered an industry standard, the development of high-strand band sawing is an interesting story in itself, with a significant breakthrough discovered by accident.

By Alan Froome

High-strand band sawing is now considered an industry standard, but that wasn’t always the case, and how the method came about is an interesting story in itself.

High-strand band sawing was developed by a company called Letson & Burpee in Vancouver, BC, in the late 1960s and early 1970s. For 50 or so years before this, bandmill technology had remained static, but then a small group of talented people came together to change things in a dramatic way. And one of their most significant breakthroughs was, in fact, discovered by accident.

Aspen: Prime real estate for nesting birds and mammals

In interior Douglas-fir forest in British Columbia

Sawmill Innovators

Aspen is hot real estate for cavity nesting birds and mammals in Douglas-fir forest in interior British Columbia.

"What we’ve realized over our ten year study period (1995 to 2004) is how incredibly important aspen is in sustaining bird and mammal biodiversity," Sustainable Forest Management Network research team member, Dr. Kathy Martin, says. Martin and her team noted a 95 percent preference for Trembling Aspen among 2455 cavity nests used by 20 species of birds and six species of mammals. Only 15 percent of the trees in the mixed conifer stand were aspen, which is typical of stands in the interior of BC.

"What became particularly clear to us is that there is an interdependence among all the groups with respect to the creation and use of nest-cavity resources," she says. "We call it a nest web. Like a food web, there are producers and consumers of cavities and there is a group that does some of both strategies.

Martin and her research team now recommend that commercial forestry operators retain as much of the aspen and large fir trees as possible, as well as all dead and dying trees.

"While these research results are operationally acceptable to many commercial forestry operations in the Central Interior forest of British Columbia, as their goal has been to primarily harvest spruce and pine, I think we will have to be even more diligent in protecting these aspen stands across the landscape," Martin says.

With this new information, Martin believes forest operators now have additional tools at their disposal to improve their future harvest management planning or tweak those plans now underway. On a more general basis, her research shows just how important aspen stands are across the country in helping to maintain the biodiversity of forest songbirds and certain mammals.

"Species that rely on cavities can be classified into three guilds and represent about 30 percent of the bird and mammal species living in these forests. Woodpeckers are the primary cavity excavators and create holes in trees for nesting and roosting. A second guild, weak cavity excavators, may excavate their own cavities in decayed trees, using naturally occurring holes, or use cavities created by other species. A third category includes songbirds, ducks, birds of prey and small mammals that require cavities for breeding but cannot excavate holes themselves. Instead, they rely on the shelters created by excavators or a limited number of naturally occurring holes. In addition, such mammals as red squirrels, northern flying squirrels, bushy-tailed woodrats, chipmunks, deer mice, and short-tailed weasels nest or roost in tree cavities.

The full range of live and dead aspen trees (95 percent of nests) were used by the various bird and mammal species, but overall, there was a strong preference for live trees with decay (45 percent) and dead trees (45 percent). Of the remaining tree species, 3 percent of the nests were in lodgepole Pine, 1 percent in Douglas-fir, and 0.6 percent in spruce.

Aspen may be the preferred tree for excavators because it is susceptible to heartwood rot, which provides a soft substrate for excavation while retaining a firm sapwood shell that gives stability for the cavity. Aspen bark retains its integrity even when trees are in advanced stages of decay, thus allowing weak excavators to create cavities. Aspen excavators are shorter-lived than conifers, but have sufficient structural integrity to remain standing when dead, dead or decaying trees comprise a considerable proportion of mature forests. On the various research sites, 45 percent of standing aspen was dying or dead compared to 10 to 15 percent of three conifer species.

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