

# ARCTIC Science Journeys

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Interior Alaska's boreal forests, like this one along the Tanana River near Fairbanks, offer a mix of spruce, willow, aspen and birch tree species. Boreal forests cover some 21 million acres of land in the Fairbanks area. (Courtesy Trish Wurtz, USDA.)

## More Than Trees

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**INTRO:** For most of the past century, the mantra of American foresters was to produce as much timber as possible. But as timberlands were harvested and then replanted with fast-growing trees, the natural diversity of the forests was lost. As Doug Schneider reports in this week's Arctic Science Journeys Radio, one ecologist is helping Alaska's foresters to see its forests as more than just trees.

**STORY:** I'm surrounded by trees. In every direction from my vantage on the University of Alaska campus in Fairbanks are trees. Paper birch, aspen and willows cover the sunny south-facing slopes. In the mosquito-infested valley bogs are thick stands of black spruce—stunted, scraggly things that resemble pipe cleaners more than trees.

But growing along the well-drained river banks are the black spruce's exact opposite—the white spruce. Towering monuments of wood, stands of 100-foot-tall white spruce prove that life can flourish amid winters of forty below zero. Researchers call this mix of



Many of the best stands of white spruce grow on river floodplains, where nutrients and

trees a boreal forest.

water abound. (Courtesy Trish Wurtz, USDA.)

But while big in size, white spruce trees aren't plentiful in number. Of the 21 million acres of trees covering the Tanana River basin around Fairbanks, just 1.4 million acres are stands of white spruce. The stands grow in small pockets spread out across the basin. Trish Wurtz is a research ecologist with the U.S. Forest Service. She says the difficulty of getting to these sometimes remote pockets of timber makes large-scale harvesting all but impossible.



Seen from the air, Interior Alaska's white spruce forests show up as patches of dark vegetation growing along the edges of major rivers, such as the Tanana River seen here. (Courtesy Trish Wurtz, USDA.)

WURTZ: "Because of the close relationship of topography and variable permafrost distribution, white spruce here just occurs in little patches, all separated by black spruce bogs, or north-facing slopes where there's just black spruce growing. Add this discontinuous permafrost into the mix and it makes getting to stands of white spruce very difficult. So access is probably the biggest reason."

One solution to the problem of too few white spruce trees is to intensively manage these forests to produce more white spruce. That means encouraging spruce to grow to the exclusion of other tree species. Although much research has gone into this idea, some of it by Wurtz herself, she says single-species forest management hasn't worked in the rest of the United States, and it shouldn't be tried here.

WURTZ: "You're basically trying to grow the forest like corn, doing it in the most productive, efficient way you can. Well, that's the old model. And man, the whole national forest system is back-pedaling wildly. Now the new watchwords down there are forest restoration. They've had so many lawsuits filed against them for not maintaining habitat for the spotted owl. Every national forest is moving away from that

old approach and trying to maintain a natural ecosystem in forest management."



Forest ecologists say leaving the forest to regrow naturally results in a variety of tree species that moose and other wildlife prefer. (Courtesy Trish Wurtz, USDA.)

Wurtz says Alaska's foresters are broadening their view of what constitutes a forest product. In Alaska, she says, one of those other forest products isn't a tree at all.

WURTZ: "Another way to look at it is that moose production is another forest product. There are lots of people in Alaska who care very much about being able to take home their moose. So I'm trying to get foresters to drop the saw-log orientation, and recognize other products that our forests produce very well."



Scientists say Alaska's forests should be managed as much for the production of wildlife, like moose, as for commercial timber. (Courtesy Trish Wurtz, USDA.)

Statewide, Alaska hunters harvest some 7,000 moose each year. If the same amount of meat had instead been bought in a store at, say, \$3.50 a pound, Alaska's moose harvest would be worth some 12 million dollars a year. Wurtz says that's more than the value of the trees logged from the state's boreal forests.

Wurtz contends that Alaska's forest managers shouldn't try to regrow stands of white spruce following logging, but rather allow nature to take its course. White spruce take as many as 100 years to mature in the best of situations, so why not manage the area for moose in the meantime.

WURTZ: "It's not a situation where you either get white spruce or moose. In fact, after you harvest white spruce logs, the natural assemblage that comes back is the best moose

browse on earth."

Wurtz's call for a broader view of forest management seems to have taken hold on her colleagues. State and federal researchers are now conducting a variety of experiments aimed at learning how to promote the growth—not just of white spruce for timber, but of other species like willows—favored by moose.

**OUTRO:** This is Arctic Science Journeys Radio, a production of the Alaska Sea Grant Program and the University of Alaska Fairbanks. I'm Doug Schneider.

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Thanks to the following individual for help preparing this script:

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