FORESTRY RESEARCH

Crane Experiment Finally Perches in Washington State

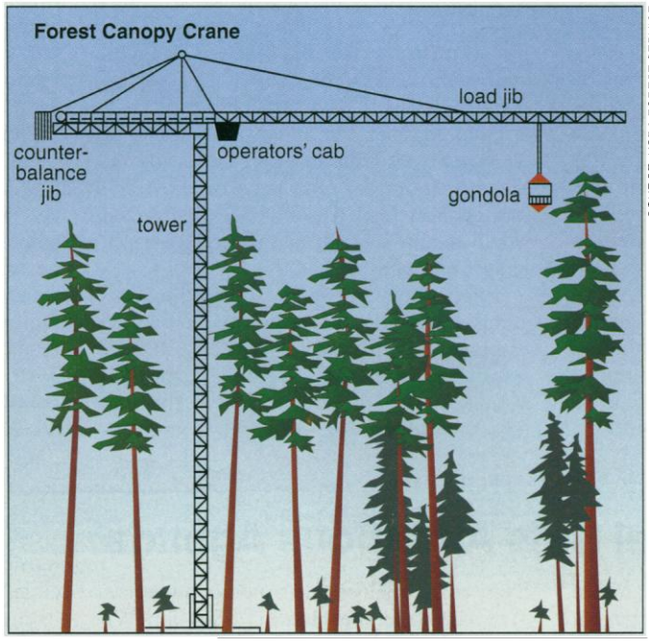
For 3 years, local groups on Washington's Olympic Peninsula, hard hit by logging cutbacks instituted to protect endangered species like the spotted owl, have fought to keep their woods free from another rare bird: a giant crane. The 300-foot-tall steel and concrete crane is designed to let scientists study life in the treetops, but locals fear that further research on old-growth forests might lead to more restrictions on logging.

Last week, however, the crane finally found a roost. Civic leaders in Skamania County, Washington, gave it their blessing, which in turn will give scientists their first in-depth look at a northern old-growth forest canopy—specifically, Washington's Wind River Experimental Forest, part of the larger Gifford Pinchot National Forest. "We're facing reality and looking for new ways to expand our economic base. The crane seems like a winner," says Pat Sweeney, executive director of the Skamania County Economic Development Council. The county hopes the project will attract research money and facilities.

Scientists hope for a research bonanza. Forest canopy studies are one of the hottest topics in ecology, and the crane is expected to "open up whole new areas of research in this new frontier," says Jerry F. Franklin, an ecologist at the University of Washington and the prime mover behind the $1-million canopy crane project. Canopies, almost unexplored until recently, are proving to be a key to forest health and growth. Indeed, the world's first forest canopy crane, which was erected in a park in Panama City 4 years ago, has already produced a wealth of new data about life in the tropical treetops.

Scientists using the new crane will be lowered in a gondola to almost any location in a 2-hectare arc of forest. From the gondola, they can reach out to the uppermost branches of trees to study lichens and fungi or measure volatile gases and the trees' response to pollutants. "We know that these [lichens and mosses] are not just decoration but play many roles, particularly as nitrogen-fixers and as food sources for a variety of organisms, from invertebrates to mammals," says Bruce McCune, a plant ecologist at Oregon State University (OSU) in Corvallis. Scientists also expect to discover a host of new invertebrates in the treetops.

Until last week, however, scientists doubted those treetops would ever host the crane. Franklin and his colleagues, working with United States Forest Service (USFS) officials, had initially planned to place the crane in an old-growth forest on the Olympic Peninsula. But local communities were so vehemently opposed to the idea that in March the Olympic National Forest's district rangers turned down the scientists' proposal, fearing for the crane's safety. More than 200 citizens, angry about massive cutbacks in timber harvests on federal lands, had signed petitions against the project. Some people had even threatened to damage the "metal monster," as one woman denounced the crane at a public meeting. "We were told, 'Forests do burn and trees do fall down, and one of them might hit that crane,'" says Ron Humphrey, the supervisor of the Olympic National Forest, who reluctantly nixed the project. "We couldn't guarantee the crane's security 24 hours a day, 365 days a year."



SOURCE: USDA FOREST SERVICE

View from the top. The controversial crane can probe the old-growth forest canopy in the Pacific Northwest.

Part of the opposition stemmed from the involvement of Franklin, who is not one of the area's most popular figures. Many locals blame his research on the importance of old-growth forests and his testimony to Congress in the early 1990s for the harvesting restrictions that exist today. Skamania County leaders, in fact, suggested he not attend their public meeting. "Inviting Jerry Franklin here would be like inviting the Hell's Angels to our Fourth of July Picnic," says Sweeney. "He is that scary to people."

Sweeney didn't want to trigger a firestorm at the meeting because Skamania County wanted the crane. Although communities in Skamania have endured the same dramatic timber cutbacks and job losses as those on the peninsula, "we decided not to go on hugging that dead corpse," says Sweeney. "We had to look for new ways to survive—and, if we approach this positively, it could lead to all sorts of good things: ecotourism and a high-powered science center." Sweeney hopes that because several hundred scientists from around the world are expected to use the crane annually that in time a research center will be built near the tower.

USFS officials now predict that the crane may be up and operating as early as this fall. Researchers are already salivating at the idea. "All sorts of things can be done with a crane that can be done no other way," says Bill Dennison, professor emeritus of botany at OSU. "I'll be there as soon as it's built." Dennison helped develop rope-climbing techniques that, until the crane, were the best way to explore the canopy. Ropes, however, only provide limited access.

With the canopy crane, no treetop terrain is out of reach. One of the researchers' first tasks will be to map the canopy's structure—the live and dead wood, the distribution of foliage, snags, and canopy gaps. With this map in hand, scientists will be able to return to specific sites for long-term studies—research that will further understanding of the relationship between the forest's overall structure and its biodiversity. "We think that a diverse structure equals greater biodiversity," says David Shaw, an ecologist at the University of Washington and the manager of the canopy project. "But we want to link this conclusively."

Overall, the scientists predict that their research will lead to a better understanding of the elements in a healthy forest—which in turn will lead to better forest management techniques. "Any knowledge [about the forest] can only be helpful," says Franklin, noting that the crane may ultimately prove to be the loggers' friend. "Much of the federal timberlands are now locked up—and until we get better knowledge, they are likely to stay that way. Science," he adds, "can be your problem, but it can also be your solution."

–Virginia Morell