Bird's-Eye View

Using a construction crane, researchers now can separate the forest from the trees

By RICHARD L. HILL
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CARSON, Wash. — They soared through the air with the greatest of ease, scientists in awe of their new view of trees.

Forest researchers took turns Tuesday trying out a new, novel observatory that will be used to explore a frontier where few humans have gone before: into and just above the upper canopy of an old-growth forest.

They were suspended in a small gondola from a 260-foot-high construction crane, which took them slowly soaring above and between the 220-foot-high Douglas firs in the Wind River Experiment Forest about 10 miles north of Carson, Wash.

"Look at that," exclaimed Frederick J. Swanson, a veteran researcher with the U.S. Forest Service in Corvallis, as the cage swept slowly over a stand of Douglas firs and western hemlock. "It's a dead Doug fir with a red cedar growing in the top of it at 200 feet. This is the kind of thing that you can't see from the ground or even by climbing up a tree. It's very dangerous in the very tops of the trees, and you also have to stay too close to the tree."

The traditional way of studying a forest canopy requires climbing by rope into a tree or by standing on a platform or tower. But the basic problem with that method is not being able to see the forest for the trees. With the crane, scientists can now see the forest as well as the individual trees.

Appropriately painted forest green and virtually hidden in the 350-year-old forest, the $1 million canopy crane is the result of a 3½-year effort by Jerry F. Franklin, a professor of forest resources management at the University of Washington.

"There's two frontiers in forest science," Franklin said after taking his first ride over the forest. "One is in the ground below us and the other one is in the canopy. Up there is where a lot of the action takes place in a forest, where the productivity is and where the photosynthesis takes place, but we've never been

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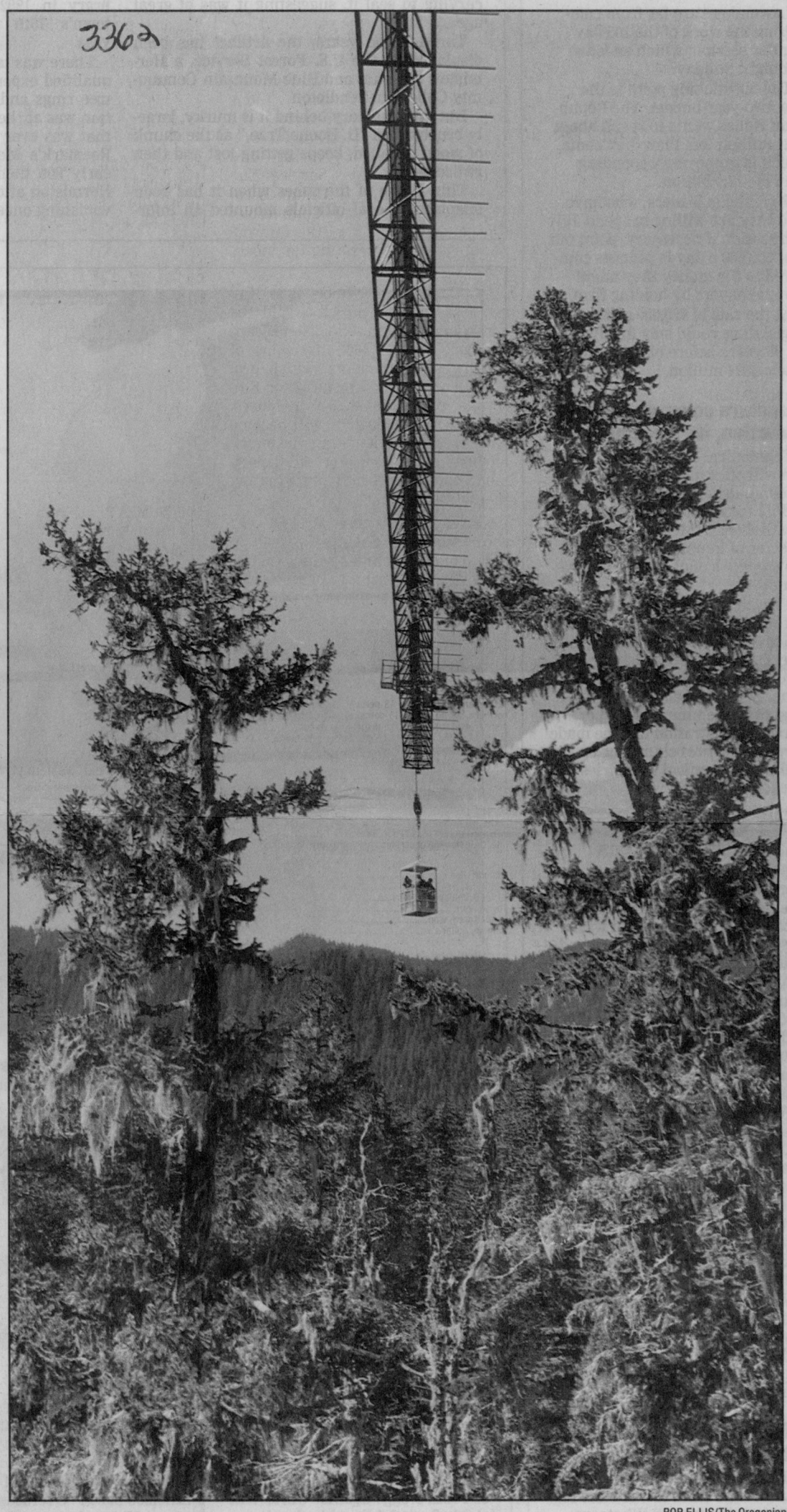
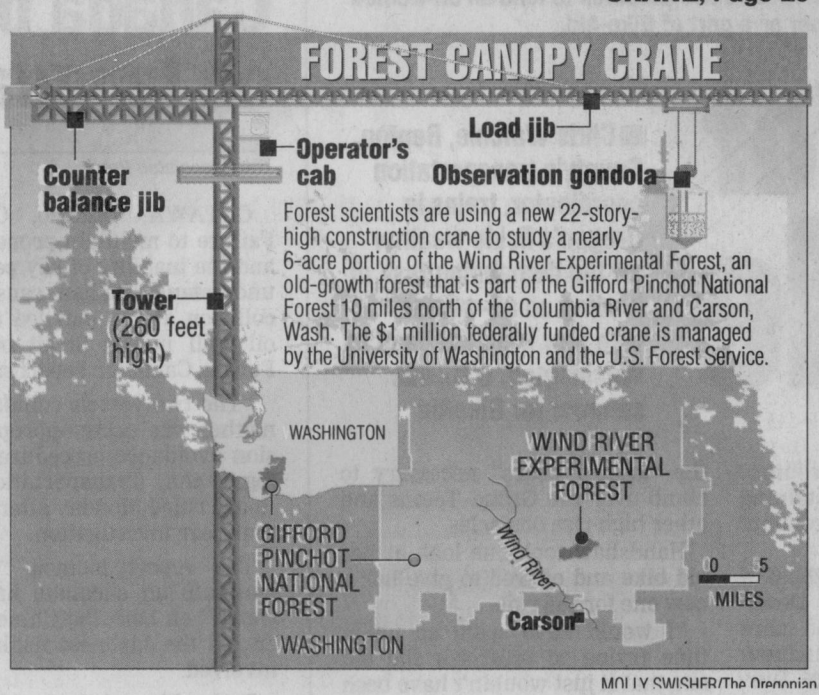
HOW TO SEE IT

■ Escorted walks to see the Wind River canopy crane will begin after mid-May. Anyone interested in the guided walks may call (509) 427-3344 in May.



BOB ELLIS/The Oregonian

The 260-foot-high research crane with its long arm can cover about 6 acres of forest over its 360-degree sweep. Up to four scientists can fit into the gondola to explore the old-growth canopy.



MOLLY SWISHER/The Oregonian

Crane: Forest's canopy is where action takes place

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able to get in there very well and study it."

The Wind River canopy crane is the largest of three cranes operating in the world and the only one being used to study temperate forests. The other two cranes are used to study tropical forests in Panama and Venezuela.

Franklin emphasized that the data harvested from studying the canopy "isn't going to be esoteric information. It's going to tell us how a forest functions best naturally, and it well help us design canopy architecture in managed stands."

Researchers can be lowered in the gondola to virtually any location in a 550-foot-diameter circle, giving them access to nearly 6 acres of old-growth canopy.

They'll be able to examine how the canopy interacts with the atmosphere, and find out how much carbon dioxide — one of the greenhouse gases — is absorbed by the world's forests and how moisture evaporating from the forest helps cool the planet.

In addition, they'll be able to study the birds, animals, insects, lichens, mosses, parasitic plants and a variety of other organisms that inhabit the high ecosystem.

"The canopy of an old-growth forest is a very complex place," Franklin said. "It's not nice and even, but very irregular. We can create a canopy architecture in a managed forest that can mimic a healthy, natural old-growth forest. For example, we can study how bats use this space, then we can design managed forests to meet their needs."

The 22-story-high crane, which was being used a few months ago to build skyscrapers, is managed by the University of Washington, the Forest Service's Northwest Research Station and the Wind River Ranger District of the Gifford Pinchot National Forest. The federally funded scientific instrument was bought for $620,000 from Morrow Equipment Co. of Salem, and it cost $260,000 to install.