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NEWS RELEASE

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Contact: Steve Running, director, Numerical Terradynamic Simulation Group, (406) 243-6311.

EXPERIMENTAL RESEARCH HELICOPTER BUZZES UM'S LUBRECHT FOREST MISSOULA —

A remote-controlled research helicopter was sent hovering over The University of Montana's Lubrecht Experimental Forest June 20-23. The high-tech device – about a quarter the size of a normal helicopter – used a sensor on its belly to scan the forest vegetation below.

Operated by a team of Japanese scientists, the minicopter is being used to check global vegetation data obtained from NASA's Terra environmental satellite, which was launched into orbit Dec. 18. UM's Numerical Terradynamic Simulation Group wrote software for one of the satellite's instruments – the Moderate Resolution Imaging Spectroradiometer – which can measure productivity of all vegetation on the Earth every few days.

"We chose this area of Lubrecht for the test because it contains an amazingly diverse landscape," NTSG Director Steve Running said. "We have four basic biome types here: grasslands, evergreens, sagebrush and even a patch of aspen – a deciduous forest."

The Japanese team is led by Yoshiaki Honda of the Center for Environmental Remote Sensing at Japan's Chiba University. Working in conjunction with the Japanese space agency, he developed the radio-controlled helicopter sensor package being used to validate the satellite data at various sites around the globe. Last year his crew flew the helicopter over Mongolia and Japan, and this summer they are sampling areas in the United States and Canada. Honda

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hopes to do future tests in Australia and Southeast Asia.

The researchers hope the on-site measurements will provide a "ground truth" of actual vegetation, soil and land cover conditions, providing independent performance estimates of how well satellites can measure land surfaces and their seasonal and long-term changes.

To conduct the test, controllers need nearly windless conditions without cloud cover. The helicopter must be able to hover at the same point to take accurate measurements. Montana's weather, of course, only cooperated in spurts. Controllers flew the helicopter about 200 feet above the vegetation it viewed.

Running said the ideal time to conduct the test is when the Terra satellite actually passes over Montana in its polar orbit – an event that takes place every day about 10:30 a.m.

Though it appears to be every child's dream toy, the small helicopter, its sensor and support equipment cost about \$500,000. The copter can carry a 66-pound payload at sea level and can be guided by the Global Positioning System. Honda said similar helicopters are being used as crop dusters in Japan.

Operators on the ground steered the helicopter with controllers similar to those used by radio-controlled plane enthusiasts. One man, however, also wore high-tech goggles that allow the controller to "see" what the helicopter is seeing.

Honda said the ground truth data obtained by his team may help NASA calibrate information obtained from Terra. He said results of how close the satellite and helicopter data are won't be known for several months.

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