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Unmanned Aircraft Map Northern Wildfires

ScienceDaily (Aug. 11, 2009) — Staff from Poker Flat Research Range have traveled north to assist fire personnel in mapping the Crazy Mountain Complex fires with unmanned aircraft. The team is stationed at Mile 145 of the Steese Highway, between Circle and Central. They have been deploying the aircraft since Aug. 5.

Launch of one of the aircraft that have collected data that has allowed fire personnel to track the progression of fires and current hot spots in Alaska.

The mapping operation is using 40-pound Insitu ScanEagles equipped with infrared cameras. The aircraft have collected data that has allowed fire personnel to track the progression of fires and current hot spots. This work has proven difficult with manned aircraft. Dense and widespread smoke has grounded or severely limited logistical support from the air in recent days.

“With the infrared sensors aboard our unmanned aircraft, they’re identifying where the edge of the fire is,” said Ro Bailey, special projects manager at Poker Flat Research Range. “Anything the aircrafts get will be used to improve the accuracy of the current fire maps.”

The infrared cameras are performing exceptionally well. The equipment has the ability to peer through dense smoke as the unmanned aircraft fly above active fires. A ground-based pilot controls the aircraft during its flight.

When the university’s unmanned aircraft is in flight, no other aircraft is permitted in the airspace. The University of Alaska is the first entity, other than NASA or the Department of Defense, to receive an emergency certificate of authority from the Federal Aviation Administration to fly in civil airspace with an unmanned aircraft beyond line-of-sight.

Poker Flat Research Range manager Greg Walker and optical science manager Don Hampton are piloting the aircraft, while Kathe Rich, the team’s operations controller, is monitoring safety and providing logistical support.

Poker Flat staff have partnered with the FAA, the Bureau of Land Management and the Alaska Fire Service on this project. The mission allows the University of Alaska’s Unmanned Aircraft Program the ability to gain additional flight opportunities, while providing a needed service to the agencies working to protect Alaskans from fire danger.

"This is a chance for us to take what we're doing in research and give it back to the community," Bailey said. "We're learning valuable things as we're going along, too, so this is a great opportunity for everyone involved."

The University of Alaska's Unmanned Aircraft Program is based at Poker Flat Research Range, located at Mile 30 on the Steese Highway. The program was established in 2006 and has a total of four aircraft.

Lightning strikes caused the Crazy Mountain Complex fires. There are currently 311 personnel assigned to the fires that have burned more than 440,000 acres, according to the Alaska Interagency Coordination Center. The Crazy Mountain Complex consists of four fires: the Bluff Creek Fire, the Jagged Ridge Fire, the Little Black One Fire and Puzzle Gulch Fire.