

Drones plot upriver elk herd's size

Researchers on the ground use eyes in the sky to track animals

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By Kimberly Cauvel | [1 comment](#)



Mark Bauer of the U.S. Geological Survey describes how the 4-pound, battery-powered aircraft used to locate the elk operates. Scott Terrell / Skagit Valley Herald

Looking out over the town of Hamilton in the upper Skagit River valley from a hillside on state Department of Natural Resources land, a team of federal unmanned aircraft operators and local researchers scouted for elk.

They couldn't see elk themselves from that high up, but they knew they were there. Using radio monitors, they noted the general location of collared animals before sending a former military drone over the landscape to capture video footage.

The three-day survey over a section of public land was a [first-time trial run](#) using the technology to survey elk in dense, forested areas. Surveyors will compare the number of radio-tagged elk in the area at the time of the survey with the number of tagged animals observed in the video footage to estimate the herd's population.

The U.S. Geological Survey's Unmanned Aircraft Systems Project Office and U.S. Bureau of Land Management, both based in Denver, provided and operated the 4-pound, battery-powered aircraft. The U.S. Army previously used the planes in Afghanistan and Iraq, operator Mark Bauer said.

The USGS office is evaluating how well the technology works for research purposes. Wildlife and habitat surveys account for 70 percent of research requests, but this was the first one focused on elk.



Stillaguamish Tribe wildlife biologist Jen Sevigny locates a radio signal from elk that have been collared with transmitters. Scott Terrell / Skagit Valley Herald

Western Washington University environmental science professor David Wallin leads the local project, and plans to compare the results to helicopter surveys of the North Cascades elk herd, also known as the Nooksack herd.

Sauk-Suiattle Indian Tribe natural resource technician Ramo Misanes, Stillaguamish Tribe of Indians wildlife biologist Jen Sevigny and other tribal members helped locate collared elk.



Mark Feller of the U.S. Geological Survey launches the small drone plane from a ridge north of Hamilton. Scott Terrell / Skagit Valley Herald

“The tribe has been involved in trying to restore this herd since 2000,” Sevigny said. The tribes want to make sure their Point Elliott Treaty rights are met in order to maintain their cultural hunting traditions, she said.

The state Department of Fish and Wildlife has worked closely with the tribes and other agencies to monitor the herd and mitigate conflicts with landowners in upriver communities.

But it kept its distance from this survey because of the use of unmanned aircraft, which the governor’s office barred executive-branch agencies and staff from purchasing and using for the next 15 months.

The week before the start of the survey, Gov. Jay Inslee vetoed a bill that created privacy rules for government and regulatory use of unmanned aircraft.

“We thought that applied to us, and participating in Wallin’s project would be contrary to the instructions in that order,” Olympia-based Fish and Wildlife research scientist Cliff Rice said.



Mark Bauer (standing), Lance Bradley (left) and Mark Feller of the U.S. Geological Survey operate the the 4-pound, battery-powered aircraft that from a ridge above the Skagit Valley near Hamilton. Scott Terrell / Skagit Valley Herald

In his April 4 letter on the decision, Inslee said he vetoed Engrossed House Bill 2789 because he did not think it required enough government transparency. He plans to organize a task force to re-evaluate the issue for the 2015 legislative session.

Also because of public privacy concerns associated with the use of the military technology, the permitting process for the research project took six months, Wallin said. Not only did the project have to be cleared with the Federal Aviation Administration, but also with U.S. and Canadian military because of the radio frequencies the equipment was set up to use.

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