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Pictures: Drones Take on Hurricanes, Environment Work

Lake Reconnaissance
Photograph by Erin Clark

The use of drones for environmental research has taken off around the country. While NASA brings in the big guns for its hurricane missions, other federal and state agencies and private companies are using smaller models for everything from estimating sandhill crane populations in Colorado to monitoring volcanic activity in Hawaii.

A USGS scientist launches a Raven drone over Upper Red Rock Lake in Montana in the above picture. A thermal camera on the remote-control glider was used to identify the location of underwater springs that could help fish survive through winter.

With a 4.5-foot (1.2-meter) wingspan and battery-operated motor, the Raven can stay in the air for up to 90 minutes and reach an altitude of 1,000 feet (305 meters).

“These small, inexpensive UASs (unmanned aircraft systems) put the tools in the hands of the land managers at the local level and supplement or replace satellites and manned aircraft,” explained USGS’s Hutt.

“The technology also helps us become more cost effective in doing what we do.”

The sandhill crane project would have cost close to $30,000 with a manned flight; using the Raven lowered the cost to about $3,000, he said.

“We can thank the Department of Defense, which has spent billions of dollars over the past five to ten years developing the technology,” said Hutt. “It has just become available for commercial and civil use in the last three years.”
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Drone Launch
Photo courtesy of USGS

USGS scientists and the Lower Brule Sioux Tribe Environmental Protection Office launch a drone in August over the Missouri River.
Images from this flight, along a seven-mile (11-kilometer) stretch of river, will be compared to data from a flight last year to help the tribe measure erosion. By some estimates, the reservation is losing up to eight feet (2.4 meters) of shoreline a year.
“Results from this effort will be analyzed to investigate the location and severity of erosion, and the lasting impacts of cultural and environmental losses,” said USGS scientist Kathy Neitzert in a press release about the project. “The Lower Brule Sioux Tribe will use the results to gather highly accurate baseline data on the shoreline.”
With more readily available data and less expensive monitoring equipment, land managers, along with weather researchers, say that drones are the future of environmental management.
“This is the way we will do science in the future,” NASA’s Braun told National Geographic News.

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