

Software aids wildfire recovery plans

Keith Weber uses satellite photos to help planners develop strategies

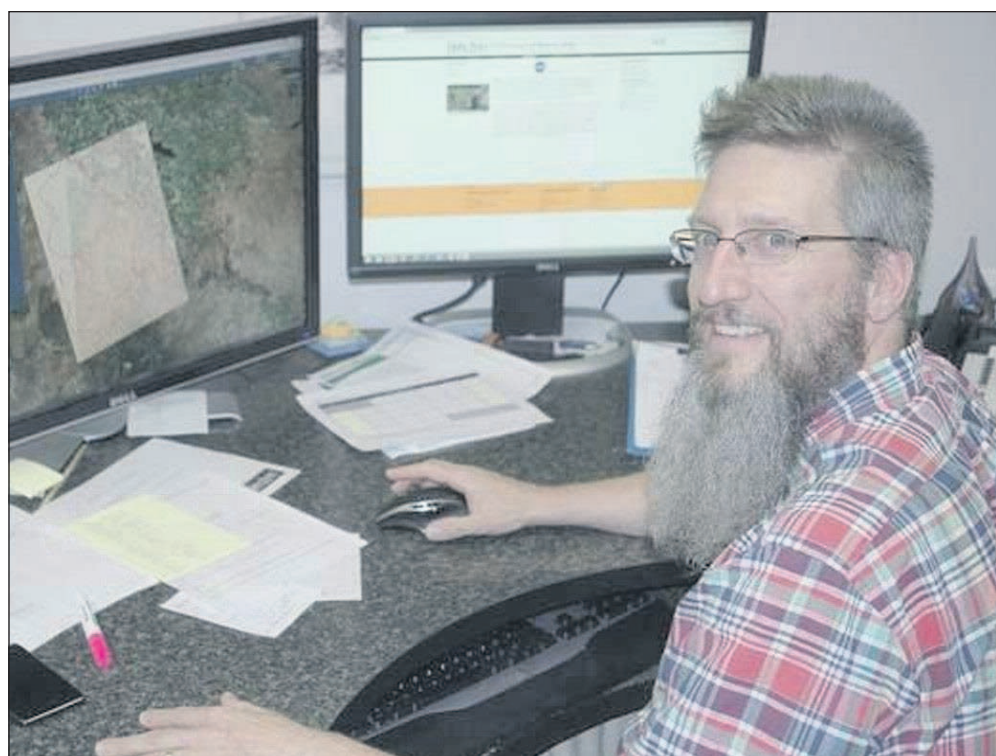
By JOHN O'CONNELL
Capital Press

POCATELLO, Idaho — Thanks to an advanced mapping system called RECOVER, fire recovery specialists were already developing rehabilitation plans for Idaho's massive Soda wildfire while it was still burning.

Keith Weber, director of Idaho State University's Geographic Information System Training and Research Center, was the lead investigator in developing the cloud-based software, which quickly assembles satellite imagery and informational "layers" from several sources to overlay on a fire map.

RECOVER's 21 existing datasets cover critical topics for fire restoration such as soil type, wildlife habitat, vegetation and topography.

Weber started work on RECOVER in 2012 with a grant from NASA's applied sciences program, which seeks to find practical uses for its satellite and computer technology to benefit the public. Working closely with the Bureau of Land Management and the Idaho De-



John O'Connell/Capital Press

Keith Weber, Idaho State University's Geographic Information System director, shows maps of the Soda wildfire using RECOVER computer mapping technology he developed for use by agencies such as the Bureau of Land Management in more quickly developing fire recovery plans. The technology was funded by a NASA grant.

partment of Lands, he tested RECOVER on six Idaho fires in 2013. Last summer, in the first season of a three-year NASA grant to further refine RECOVER, Weber's system was used on its first large wildfire, the 283,000-acre Soda fire in Western Idaho.

"What we've learned is even with a fire of that size, RECOVER can easily handle that," Weber said.

On such large fires, he estimates RECOVER can save land managers up to four days of work assembling data and maps from a host of different sources, making certain all of the information is up-to-date and in a common format.

Michael Kuyper, a BLM supervisory natural resource specialist in southeast Idaho, said his agency has three weeks to submit a rehabilita-

tion plan and make funding requests after a fire is extinguished. Kuyper, who has worked closely with Weber on fine-tuning RECOVER, said the technology stands to help the agency meet report deadlines more easily and more quickly get seed and straw on the ground in priority areas.

Kuyper hopes Weber will add additional RECOVER

Keith Weber

Age: 49

Family: Wife, Soo, and son, Dustin

Hometown: Chubbuck, Idaho

Occupation: Director of Idaho State University's GIS Training and Research Center

Education: Bachelor's degree in environmental science, field biology and ecology from the University of Wisconsin and a master's degree in wildlife biology from the University of Montana

Innovation: The RECOVER mapping system, used by the Bureau of Land Management and other agencies to more quickly assess wildfire damage so rehabilitation plans can be developed

be uploaded.

Kuyper said RECOVER maps upload much faster than the current system, can be used by employees who aren't experts in GIS software and can be accessed from the "cloud" — the term computer experts use to describe applications and data kept on large computer servers linked to the Internet — by devices without downloading software.

Weber said RECOVER will also be used to evaluate fuel loads in burn areas during the months preceding fires and for long-term monitoring of rehabilitated areas.

John L. Schnase, Weber's co-investigator at the NASA Goddard Space Flight Center, said RECOVER was developed for fire rehabilitation, but agencies have recognized it has applications before, during and after fires.

"Right now, we've been focusing on Idaho, but over the next three years we want to use this in other Western states," Schnase said.

Schnase emphasized RECOVER fills a niche and will likely be among many data systems used by fire managers.

Schnase also hopes to use climate model data in RECOVER to predict precipitation, temperature and soil moisture over time.

This story first appeared Sept. 18, 2015.

Plant materials center shifts focus to sage grouse

Derek Tilley and his staff look for ways to help sage grouse thrive across West

By JOHN O'CONNELL
Capital Press

ABEDEEN, Idaho — Derek Tilley and his staff at the USDA's Aberdeen Plant Materials Center have an overriding goal in their efforts to select hardy wildflower seed and improve practices for cultivating native plants.

In 2014, they shifted their research focus toward improving sage grouse habitat to help avert an endangered species listing for the native bird.

A listing of the sage grouse

under the federal Endangered Species Act would lead to significant restrictions on many industries, including livestock grazing.

Tilley, who joined the center's staff in 2004 as a range conservationist and was promoted to manager in October, said he and his staff spend a couple of weeks each summer in the mountains seeking sources of native plant seeds. At the center's farms and greenhouses, they select for the plants that establish easily and withstand

Derek Tilley

Age: 42

Job: Manager of the USDA Natural Resources Conservation Service's Aberdeen Plant Materials Center

Family: Wife, Amber, and children, Nathaniel, 13, Logan, 11, Andelin, 7.

Hometown: Aberdeen, Idaho

Education: Bachelor's degree in botany, master's degree in plant taxonomy from Brigham Young University.

the elements, giving small amounts of their improved seed to the University of Idaho's Foundation Seed



John O'Connell/Capital Press

Derek Tilley, manager of the USDA's Plant Materials Center in Aberdeen, Idaho, holds a tray of sulfur buckwheat, which his facility is propagating for Grand Teton National Park. His center recently switched its focus to improving sage grouse habitat.

Program for propagation.

Commercial growers acquire public seed from UI to increase for Conservation Reserve Program mixes, public land restoration, private grazing land improvement and other uses.

The Aberdeen facility, established in 1939, is one of 27 U.S. plant materials centers. A secondary priority in Aberdeen is developing cover crops, which are plants cultivated on agricultural land solely for soil health benefits. The center also increases seed collected from national parks for park restoration projects.

In the past, each center strove to address general regional resource concerns, but that spread their efforts too thin, Tilley said.

"Each region now has just a few areas of focus," Tilley said. "Even though we've only been focused on sage

grouse for this past year, a lot of our work in the past is directly applicable."

A few years ago, Tilley's program released Maple Grove Lewis flax, a native flower to replace European-derived flax in seed mixes. This fall, the program released seed of hoary tansyaster, a native purple aster. The center is building a supply of a native grass, world buckwheat. The plants support insects consumed by sage grouse chicks, which also feed on some of the vegetation.

Chris Colt, a U.S. Forest Service wildlife biologist, said protecting and restoring habitat is among the best ways to help sage grouse.

"One of the biggest issues for sage grouse is loss of habitat from wildfires," Colt said. "Wildfire is really spurred by exotic grasses — mostly cheatgrass and Medu-

sahead."

In Eastern Idaho's Curlew National Grassland, Colt said the center has planted test plots for the past five years, seeking plants that benefit sage grouse and compete well with invasive species.

Tilley has also applied for a Forest Service grant to investigate ways to effectively plant wildflowers and forbs in the field for the benefit of sage grouse. He hopes to experiment with snow fencing, which could trap snow and bolster growth of plants that like cool, moist conditions, and fabric, which would trap heat and moisture and stimulate growth much like in a greenhouse.

Tilley said pollinators and sage grouse benefit most from "islands" of native forbs, shrubs and grasses.

This story first appeared March 3, 2015.

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