



RECOVER

Five minutes. That's how long it takes to produce a custom web map that gives the Bureau of Land Management (BLM) and other agency wildfire managers the information needed to fight an active wildfire and plan post-fire recovery.

In the past, the information collected on everything from burn severity, to slope, vegetation, and soil type may have taken as long as a week to collect and distribute. Now the distribution of that same information takes just minutes using the NASA Rehabilitation Capability Convergence for Ecosystem Recovery (RECOVER) decision support system.

RECOVER is available across 11 Western states and is the result of a collaboration between NASA's Applied Sciences Program, NASA Goddard Space Flight Center, and the Idaho State University GIS Training and Research Center (GIS TReC).

RECOVER uses NASA earth observing system imagery and Geographic Information System (GIS) technologies to allow managers rapid access to

actionable information. ISU and NASA worked in partnership with the BLM and Idaho Department of Lands on the pilot project and now have many new partners across the fire community.

RECOVER was first tested in 2012 on several Idaho wildfires, and has been used on numerous mega-fires such as 2015's Soda fire, 2016 Pioneer fire, and the 2017 California fires. By the close of 2017, RECOVER had been used on over 60 wildfires across the Western US.

"The RECOVER project is an important contribution by the NASA Applied Sciences Program to the nation's wildfire management efforts," said John Schnase, senior computer scientist at the NASA Goddard Space Flight Center. "We're using a variety of advanced computing, web services, and data grid technologies to dramatically improve the decision-making activities associated with wildfires. We're also setting the stage to use new types of observation data that will be produced by upcoming NASA missions."

NASAfacts



Charlotte fire outside Pocatello, Idaho (photo courtesy Idaho State Journal)

RECOVER uses cloud and server-based data management technologies developed by NASA Goddard Space Flight Center and ISU's GIS TReC to improve performance, reduce cost, and provide site-specific flexibility for each fire. This same technology is also being used in the NASA Center for Climate Simulation (NCCS), which sets the stage for using climate data products in future versions of RECOVER.

Those accomplishments are gaining notice: wildfire managers at the state, regional, and national level are working with ISU's GIS TReC expressing their excitement about the application.

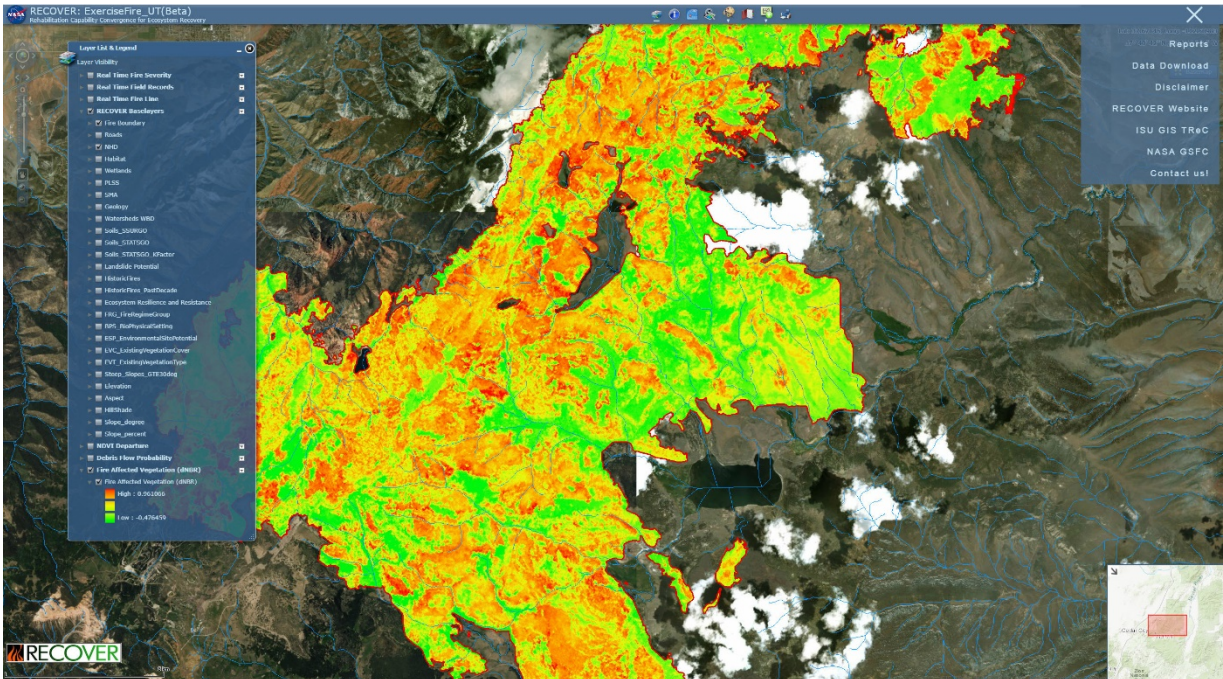
The socioeconomic benefits of RECOVER are significant for the individual user and adopting agency. RECOVER routinely reduces uncertainty in the post-fire decision-making environment by providing near instantaneous, actionable, and reliable information. To date, RECOVER has provided information to land managers valued at over \$1.2 million (USD) and saved nearly 800 hours of staff time by streamlining data collection and improving communication with local stakeholders and partnering agencies.

"We realized as we developed RECOVER that it has many applications beyond wildfire," said Keith Weber, Director of the ISU GIS TReC. "The system can be easily applied to aid with response and recovery in any natural disaster, from landslides and earthquakes, to hurricanes and floods. RECOVER could become the framework to support decision-making in all these events and provide both short-and long-term monitoring after the event."

Overview

The RECOVER project has been a remarkable success. Began in 2012, RECOVER has become a critical resource to a wide range of NASA constituents, including the NASA Applied Sciences Program itself, the partner government agencies NASA supports, the state of Idaho, Idaho State University, DEVELOP participants, ARSET students, and many more individual scientists and land managers. In just a few years, RECOVER has been used on over 60 major wildfires across the western United States, helping federal and state agencies manage over three million acres of burned lands.

In many cases, RECOVER's service has gone far beyond what was originally expected or intended — fortunate testimony to the importance and value of RECOVER and NASA's investment in this effort.



The RECOVER decision support system web map client

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