

Post-Wildfire Decision Support with NASA RECOVER

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Abstract

RECOVER is a wildfire decision support system (DSS) that brings together in a single analysis environment the actionable information necessary to support informed decisions. RECOVER is the result of a close collaboration between NASA's Applied Sciences Program, Goddard Space Flight Center, and Idaho State University's GIS Training and Research Center. It uses rapid resource allocation capabilities and server-based workflow automation to collect Earth observation data, derived decision products, and geospatial data so land management partners can more effectively assess the effects of a fire within an online GIS analysis environment customized for each specific wildfire. RECOVER is transforming this information-intensive process by reducing from days to a matter of minutes the time required to assemble and deliver crucial wildfire-related data. This presentation describes the NASA RECOVER project and its applications across the Western US.

What is RECOVER?

- Decision Support System (DSS)
 - Aids decision making processes by providing data
- Customer-driven, customer-centric design
- Rapidly assembles site-specific data in 5-minutes or less
- Delivers 26 layers of GIS data in a ready to use web map
 - From authoritative data sources
- Covers 11 Western States
- Deployed on over 100 wildfires



Figure 1

Who uses RECOVER?

RECOVER was designed to provide the wildland fire community with a robust post-fire capability for analysis and rehabilitation planning. Current partner agencies include the Bureau of Land Management (BLM), National Parks Service (NPS), U.S. Forest Service (USFS), and others (Figure 2). Use of RECOVER has grown rapidly with deployments on over 50 fires in 2018 alone (Figure 3).

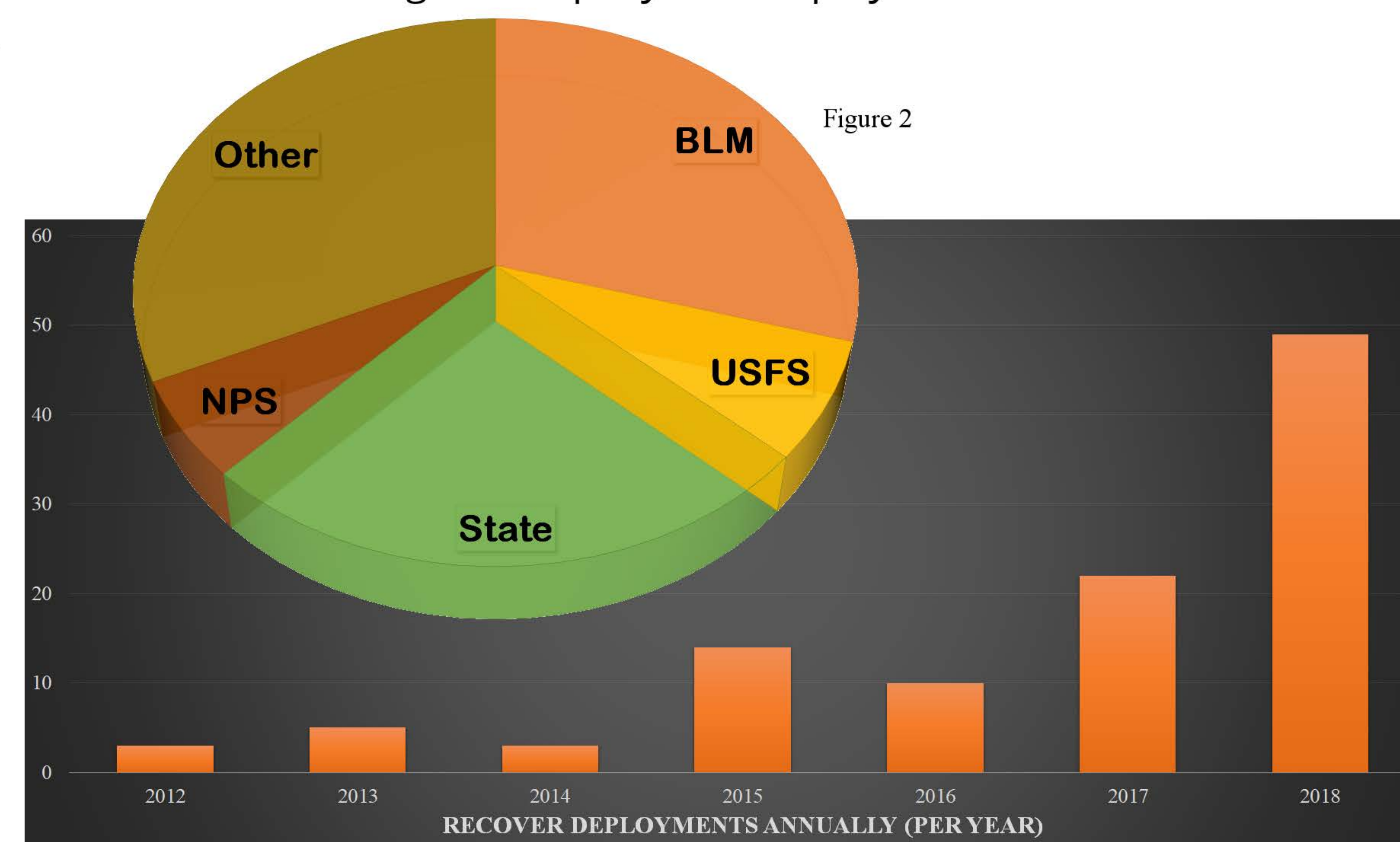
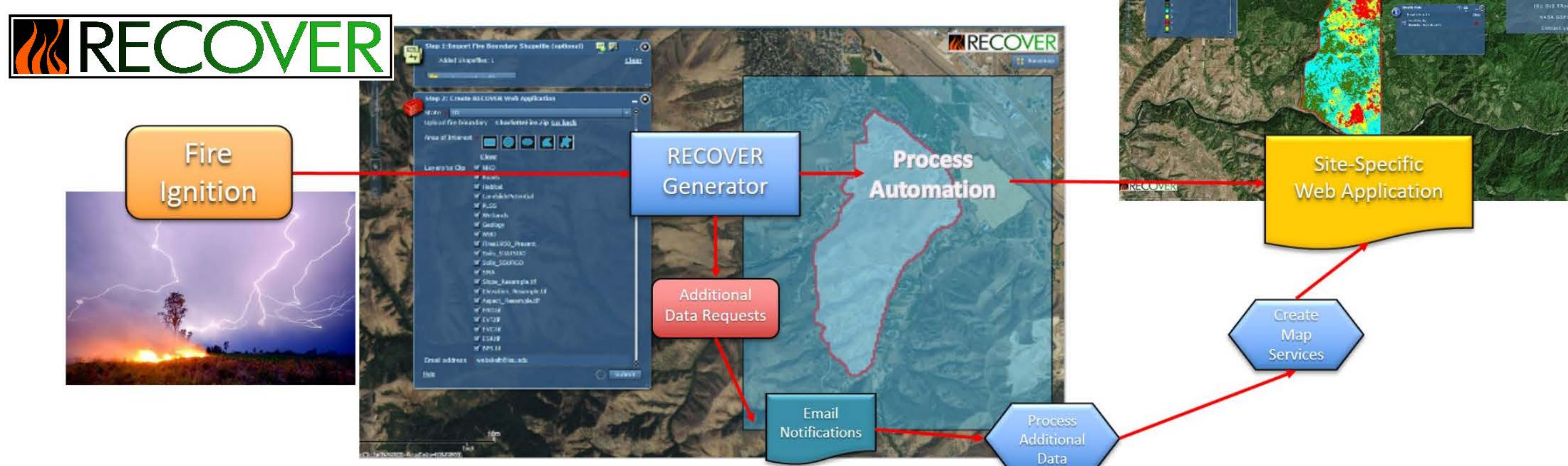


Figure 3

How does RECOVER work?



RECOVER's work begins with fire ignition. Once a fire boundary is established, a RECOVER web map can be created using the secured RECOVER Generator. Powered by ArcGIS Server software and geoprocessing services, users create the DSS specific to their area of concern in about five minutes. Additional layers such as fire-affect vegetation (dNBR), debris-flow probability, and NDVI vegetation trends are added to the web map application as needed. The web maps can be updated as the fire grows while retaining the original web address.

Acknowledgements

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What's next for RECOVER?

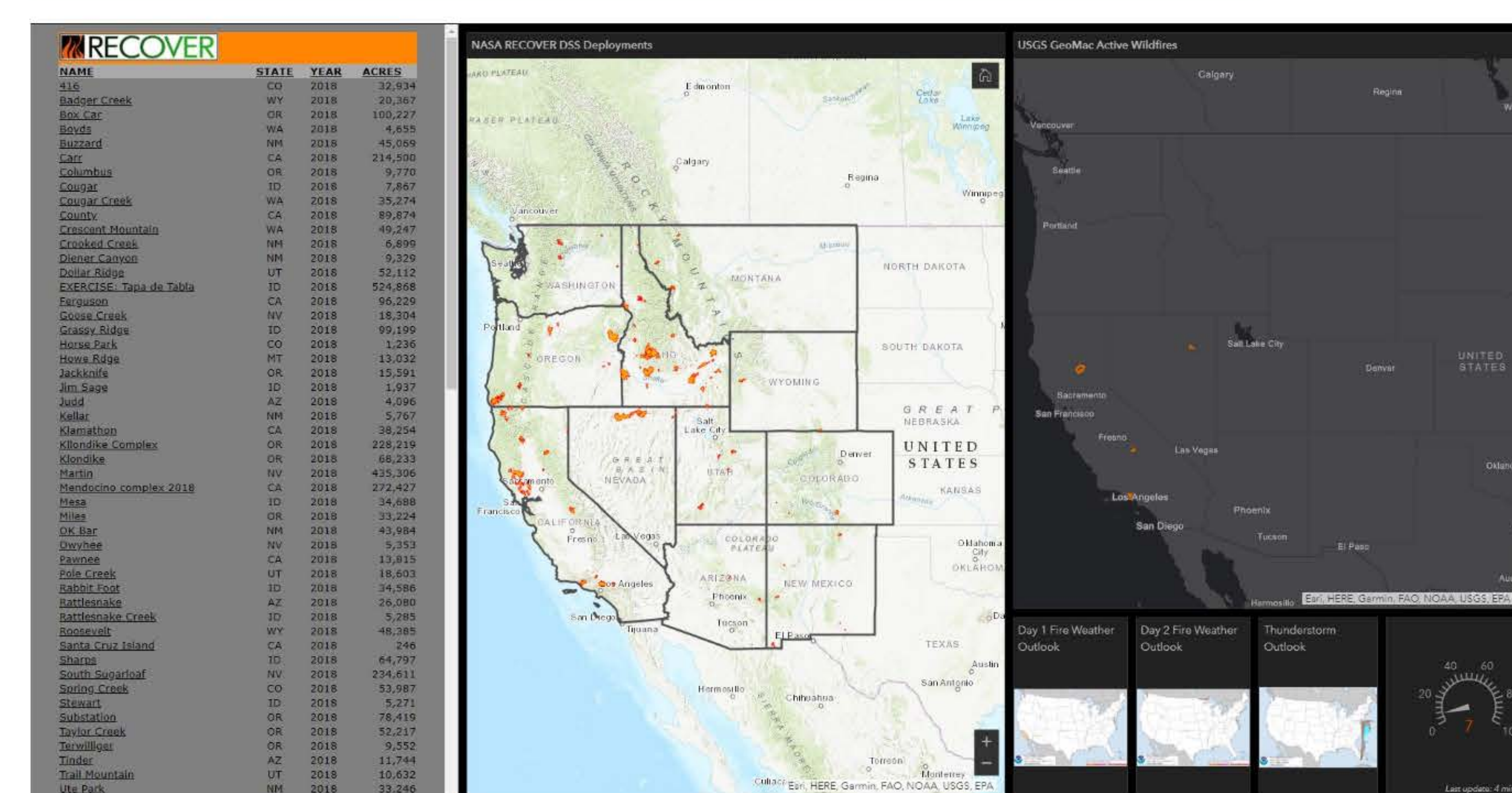


Figure 4

Currently, web applications are requested by agencies using the RECOVER Generator service. To further enhance RECOVER, new automation processes have been developed. The Large Fire Trigger monitors the Geospatial Multi-Agency Coordination (GeoMAC) service and registers new fire events without waiting for a user request. Users will have access to available RECOVER web applications with the implementation of the RECOVER dashboard on the GISTReC website (Figure 4).