



Fire and Forest Monitoring & Forecasting System

Karyn Tabor

Director of ecosystem modeling and early
warning systems

Betty and Gordon Moore Center for Science and
Oceans

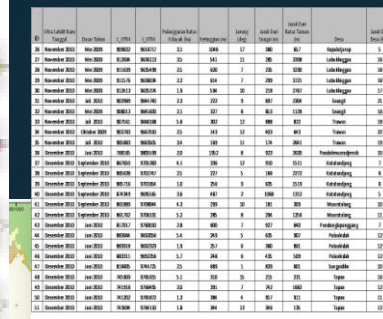
Conservation International

CI-US, CI-Bolivia, CI-Peru, CI-Madagascar, NASA Ames,
NASA Goddard, Esri

CONSERVATION
INTERNATIONAL



<http://firecast.conservation.org>





Designed to address challenges to reducing wildland fire effects

- lack of timely and accurate information
- limited resources and capacity
- lack of evidence
- not prepared to prevent fire disaster



System requirements

1) *multi-functional platform*

2) *multiple languages*

3) *customized alerts*

4) *variety of products*

5) *reports and maps*

4) *user input*

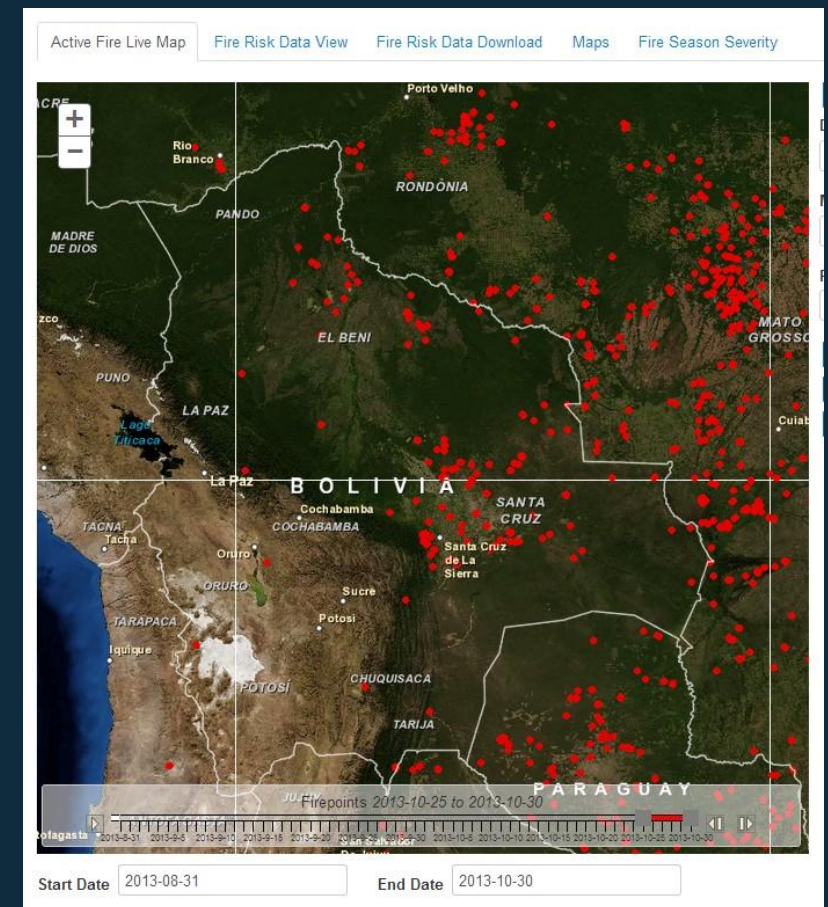
1. *Active Fire Alerts*

Email alerts of MODIS and VIIRS active fires

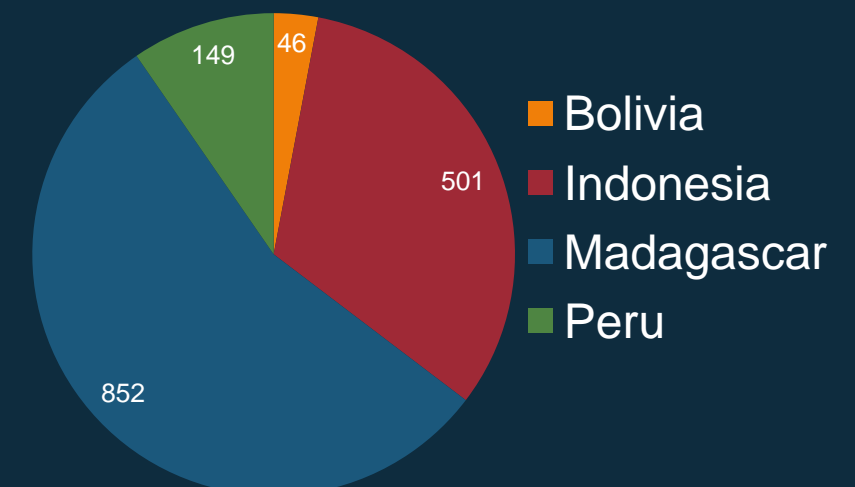
Customized for individual users needs

Interactive web map

Website in Spanish, French, Bahasa, & English



1538 active users



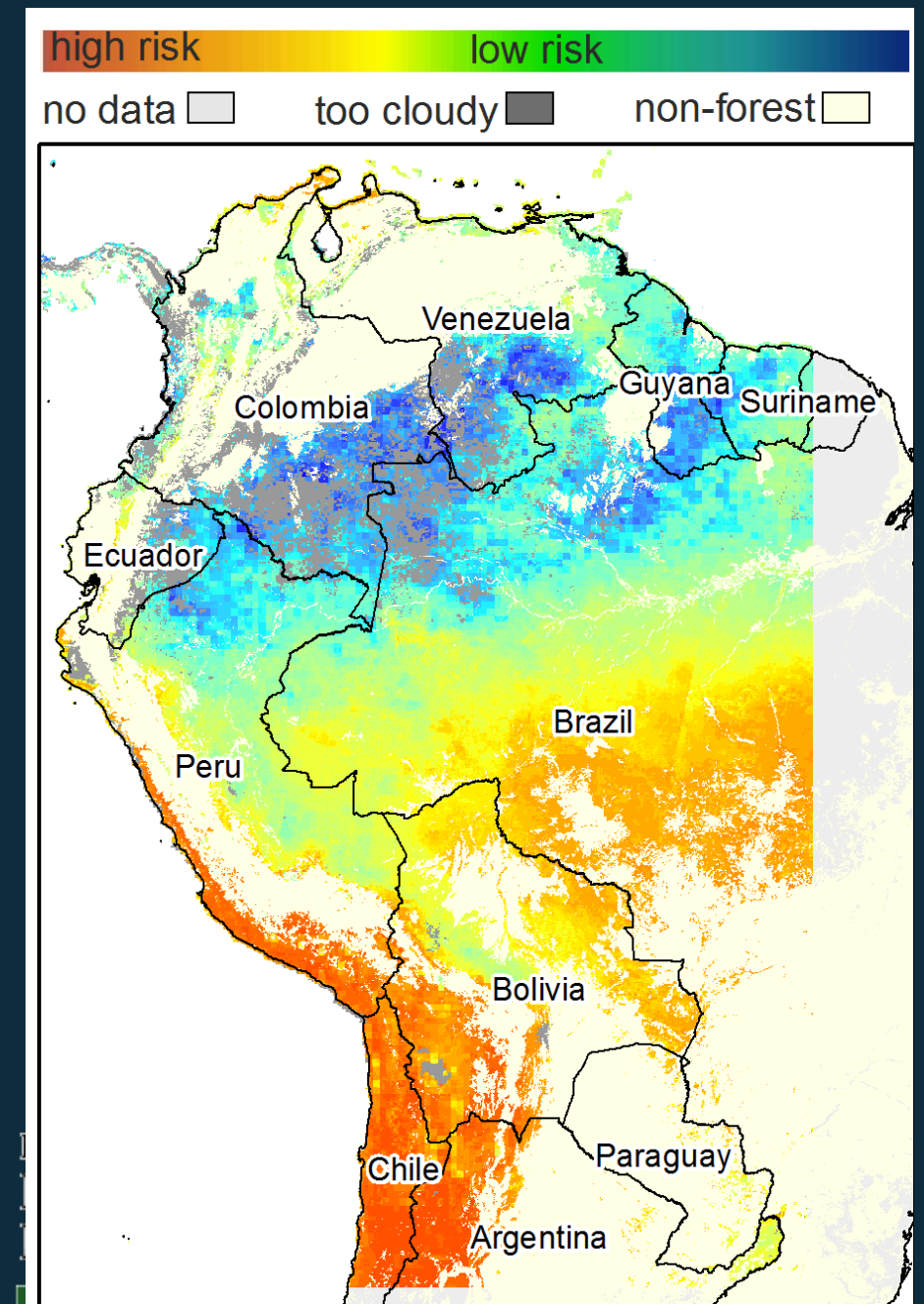
2. *Fire risk forecasting*

Near real-time index of fire risk in the Amazon
derived from satellite observations

Automated daily drought/forest
flammability index
-based on US forest services NFDRS
equations



Education and
outreach for
fire
management
strategies and
timing of
controlled
fires



3. Fire Season Severity Forecasts

In June 2013, we delivered the 2013 fire season severity alerts to 90 users of the current FAS system in Bolivia and Peru.

The fire season severity forecasts are modeled from the empirical relationship between of SST's in the Atlantic and Pacific and fire incidences across South America (Chen et al. 2011).



MEDIA

El pronóstico para Santa Cruz, Bolivia en el 2013 es superior al promedio y considerablemente más alto que las condiciones en 2011 y 2012. El modelo para calcular el pronóstico de intensidad de la estación seca utiliza una relación empírica entre las temperaturas superficiales del Atlántico y el Pacífico, así como también la incidencia de incendios en toda América del Sur (Chen et al. 2011). Más información sobre los métodos de previsión, publicaciones científicas asociadas y alertas para las diferentes regiones pueden obtenerse en: <https://webfiles.uci.edu/ychen17/data/SAMFSS2013.html>

Chen, Y., J. T. Randerson, D. C. Morton, R. S. DeFries, G. J. Collatz, P. S. Kasibhatla, L. Giglio, Y. Jin, and M. E. Marlier. Forecasting Fire Season Severity in South America Using Sea Surface Temperature Anomalies. *Science* 334, no. 6057 (November 10, 2011): 787-791. <http://www.sciencemag.org/cgi/doi/10.1126/science.1209472>.

Usted ha recibido este mensaje porque está suscrito al Sistema de Alertas de Incendio (FAS) (<https://firealerts.conservation.org>) o ha solicitado recibir un pronóstico de la gravedad de temporada de incendios para el 2013. Si usted ya no desea recibir comunicaciones de FAS puede editar la información de su cuenta a través de la página de suscripción, y desactiva la opción para recibir correos electrónicos. También puede responder a este correo electrónico e indicarnos que ya no desea recibir mas correspondencia. Estas alertas se envían una vez al año antes de la temporada de incendios en la región de interés.

CONSERVATION
INTERNATIONAL



Decision Support

Engaging key decision makers, in-country partners, and securing long term support

- Conducted needs assessments of new and existing counterpart institutions
- Engaged key institutions are responsible for in-country monitoring and managing national parks
- Engaged private sector actors





Future Directions

- Expand to new geographies
- Validation through mobile devices
- Provide disturbance (QUICC) and illegal logging and encroachment alerts
- New alerts and forecasts based on available near real-time data (air quality, burn scar, agricultural droughts)
- Continue outreach and engagement to new and current users



Thank You!