A Global Early Warning System for Wildland Fire

Disasters Task DI-09-3b

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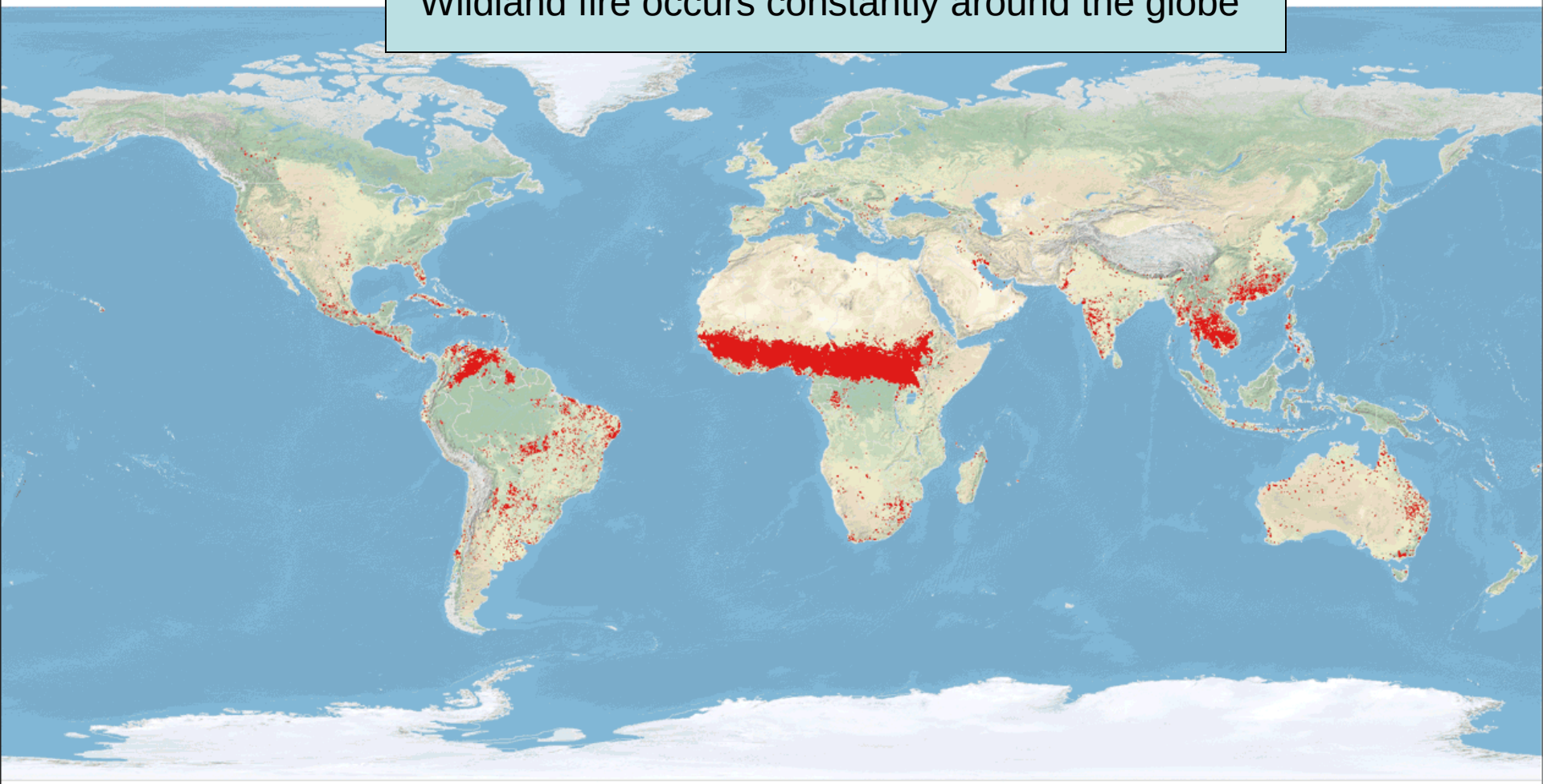
GOFC-GOLD GLOBAL OBSERVATION OF FOREST AND LAND COVER DYNAMICS

MODIS Rapid Response Active Fire Detections for 2007

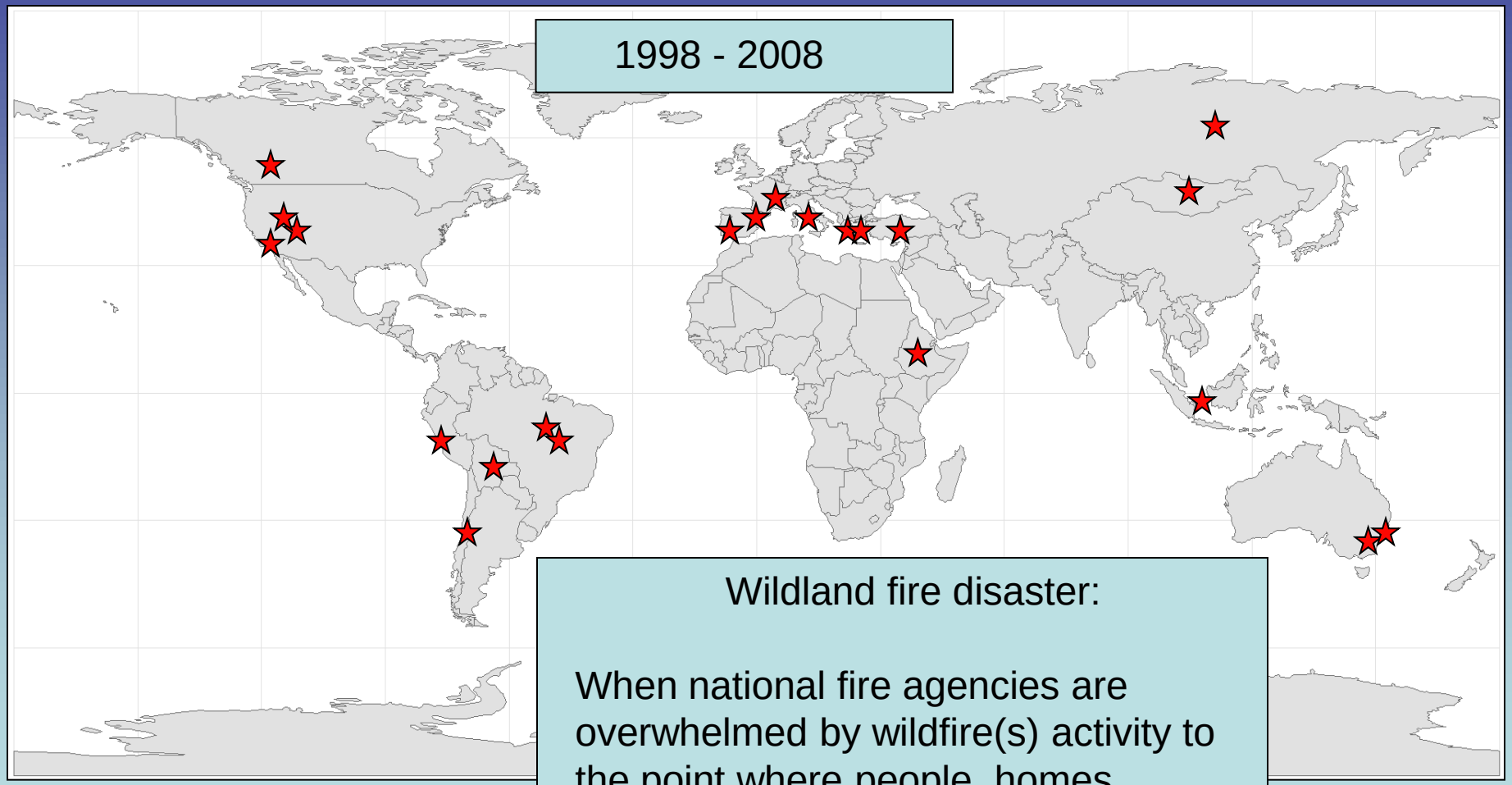
Wildland fire occurs constantly around the globe



January February March April May June July August September October November December

Active fires, shown in red, are detected using MODIS data from the Terra Satellite.
Source: MODIS Rapid Response http://rapidfire.sci.gsfc.nasa.gov/
Fire Information for Resource Management System (FIRMS)
http://maps.geog.umd.edu

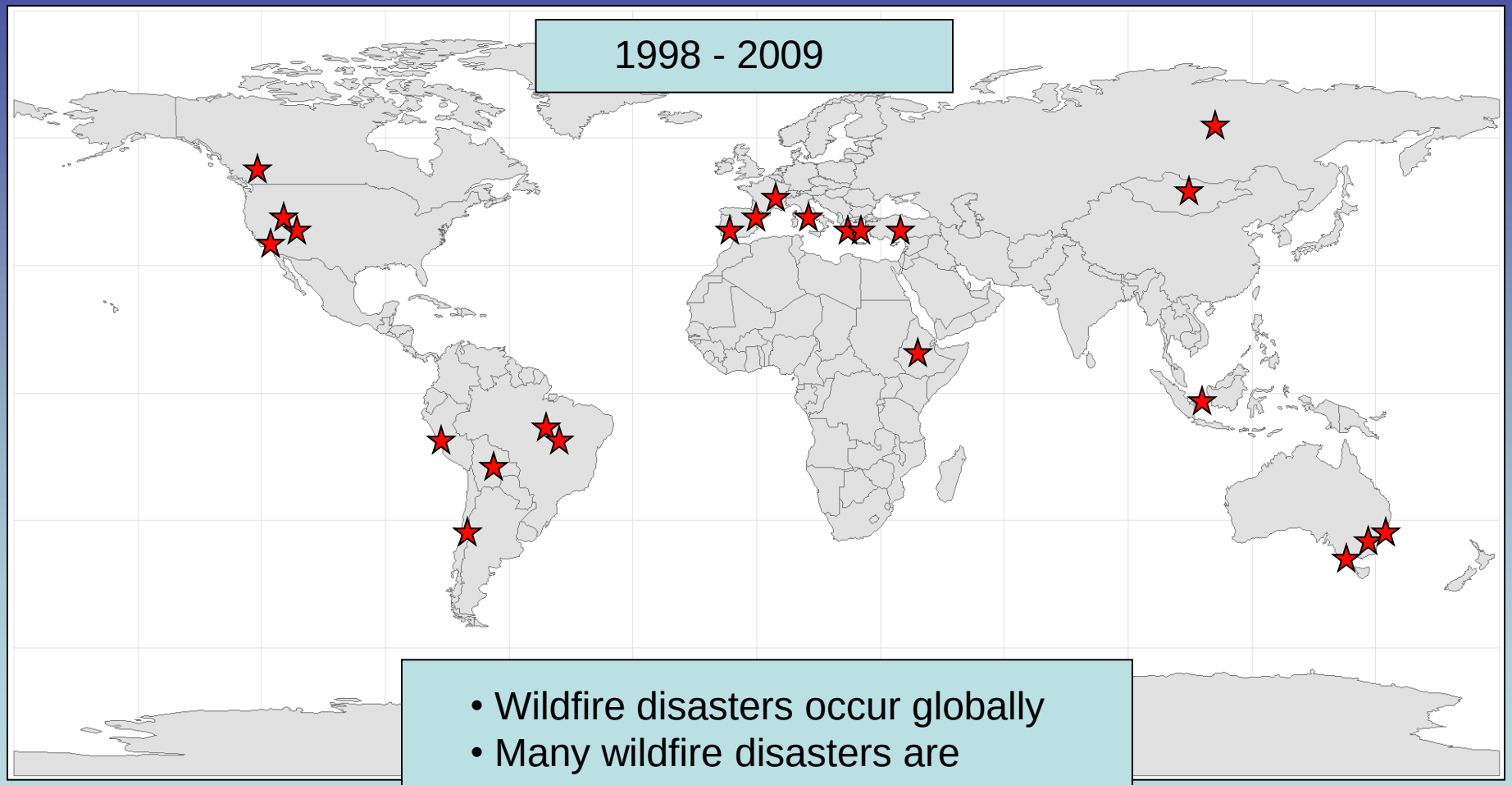
Examples of Recent Wildfire Disasters



Wildland fire disaster:

When national fire agencies are overwhelmed by wildfire(s) activity to the point where people, homes, property, and resource-based industries can not be protected

Examples of Recent (Documented) Wildfire Disasters



- Wildfire disasters occur globally
- Many wildfire disasters are undocumented

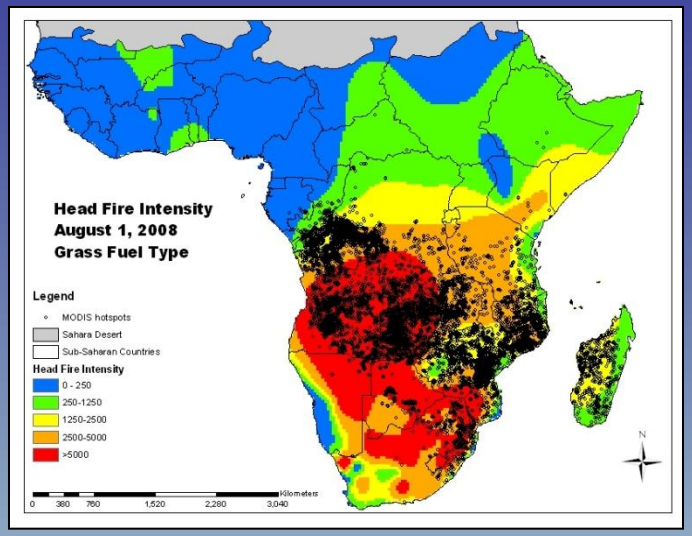
There are many negative economic, social, and environmental impacts of uncontrolled wildland fire.

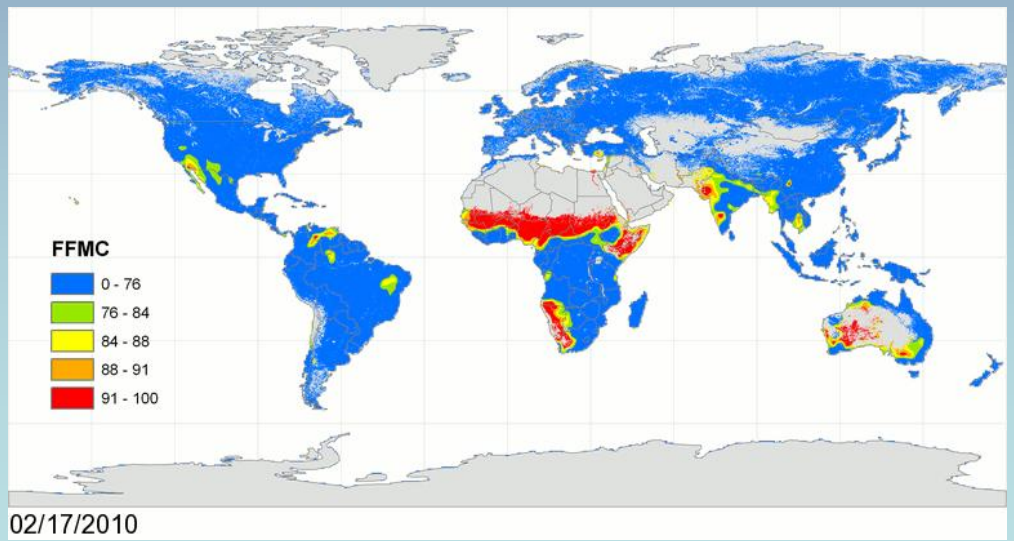
Many of these impacts can be mitigated, and sometimes prevented, through early warning of wildfire disaster conditions.

Early warning allows implementation of:

- fire prevention
- fire detection
- resource mobilization

before wildfire disasters occur.





Global Wildland Fire Early Warning System

EWS Modeling

RS Products
Active fire monitoring, veg/fuels/biomass, spatial rainfall, fire radiative energy

Ground-based Wx Products
current and forecast fire weather using ensemble models

Fire Danger
Integrated mapping of weather, fuels, fire behaviour, active fire locations

Fire Mgt Tools
Early warning action plans: prevention, resource-sharing, detection, mobilization

CFS, U Maryland, NOAA/NESDIS, FIRMS, JRC, WMO

EWS Information and Data Coordination

- Global compilation of current national FDRS's
- Forecast global FDR, weather data and EWS products

GFMC

Sub-national and/or Local
Capable of operating FDRS locally, or as part of larger Network

National Fire Organizations
Nations with FDRS
Nations w/out FDRS

Regional Wildland Fire Networks
13 Regional Networks

UN/ISDR, FAO, UNEP, WHO
Early Warning of Fire Disaster - safety;
Resource-Sharing coordination;
Fire emission health warnings

Early warning system products
Current fire danger - data inputs
Local/regional information links

Expected Impacts

The Global EWS for Wildland Fire will provide:

- daily fire danger rating information to countries without operational fire danger rating systems
- a common system with which to implement international resource-sharing agreements during times of wildfire disaster