

Western Wildland Environmental Threat Assessment Program (WWETAC)

**One of two research, development, and
applications programs (eastern and western centers)**
Funding: FR, S&P, NFS



Nancy Grulke, Ph.D.
Director
ngrulke@fs.fed.us
wwetac@gmail.com

WWETAC

- **Mission:** To develop and communicate information, risk assessment tools, and expertise of environmental threats to human and ecological values for the purpose of informed land and resource management decisions



USDA Forest Service
Pacific Northwest Research Station

WWETAC

FOCUS AREA 1: Understanding and Managing Threats

Human Perceptions of Risk



Insects



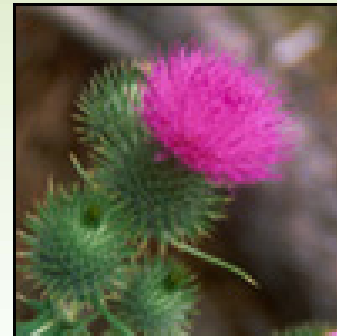
Mortality



Land Use Changes



Wildland Fire



Invasive species

Climate Change



Disease



Examples of funded workshops

<http://www.fs.fed.us/wwetac/workshops/index.html>

- **Assessment of Threats to Forest Health, Boulder, CO (2006)**
- **Managing CC Risk through forest silviculture and genetics**
- **Quantitative approaches for vegetation management and forest planning with CC**
- **CC and dynamic vegetation modeling**
- **Dynamic global vegetation and biogeochemical models**
- **Forests, insects, pathogens, and CC**
- **Strategic Placement of Treatments (SPOT; fuel reduction)**

- **ArcFuels Training courses**
- **Applied resistance breeding for forest trees (Frankel/Sniezko)**

- **Suggestions? wwetac@gmail.com**



Examples of webinars

<http://www.fs.fed.us/wwetac/workshops/index.html>

- Integrating Climate Change with Forest Vegetation Models for Adaptation Planning (Littell & Cushman)
- Predicting Behavior of Forest Diseases as Climate Changes – December 2, 2010

Planned:

- Timing of risk of wildfire and bark-beetle tree mortality in the west: panel discussion
- Suggestions? wwetac@gmail.com



Examples of funded projects:

- Insects:
 - 1000 cankers (Seybold/STDP)
 - GSOB (Coleman/Seybold/Grulke)
 - Pathways for EAB into western US (Jacobi)
- Pathogens:
 - Swiss needle cast (Stone)
- Insect/pathogen interactions:
 - Chinese Boomerang (Gillette/Owen)
- Invasives:
 - Tamarisk (Kerns)
 - GMO incursion into grasslands (Cronn)
- Risk of wildfire:
 - WWETAC Threat Mapper (Ager/Vaillant/Schrader)
 - Effects of insect-caused tree mortality and fire (Turner; Hicke; Bentz)
- Human perception of wildfire risk:
 - (NEW) Rural communities and Wildland interface
 - (NEW) Agriculture and Wildland interface



Examples of funded projects, con't:

- Land use/change/threat detection
 - Early detection of change (Hargrove)
 - Change in habitat for TES (Ager)
 - Landscape level fuel treatments and wildfire risk (Vaillant)
- Climate Change:
 - Climate change toolkit for land managers (Millar)
 - CC and pathogens (Frankel)
 - Pathogens, Pests and CC (BioMap: Neilson/Kim/Wells)
 - CC and MPB dynamics (Hicke)
 - CC and *Armillaria* root disease (Klopfenstein)
 - ...



WWETAC Threat Mapper

WWETAC has developed a scalable risk analysis framework and tool to embed risk assessment into land management planning.

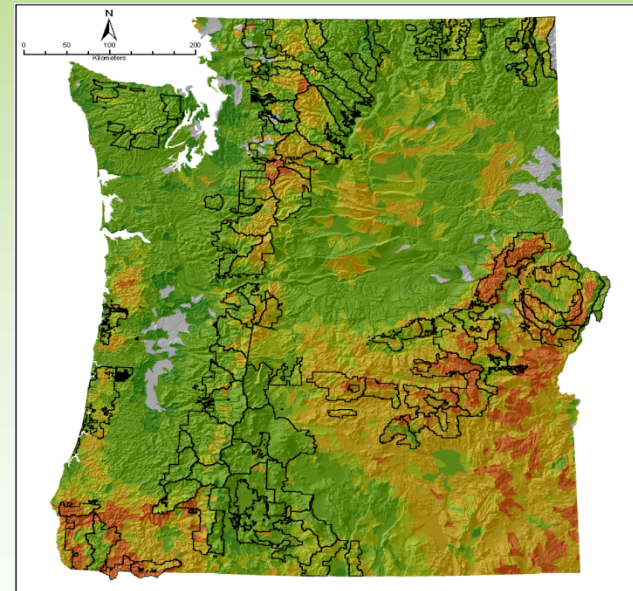
Types of risk: wildfire, major insect and pathogen attack, land use change, drought, habitat integrity for threatened species, invasives along roadways and rivers...

>>>Linkage to MODIS data

Human
and
ecological
values

Risk
probability
(frequency,
duration,
intensity)

Response
functions



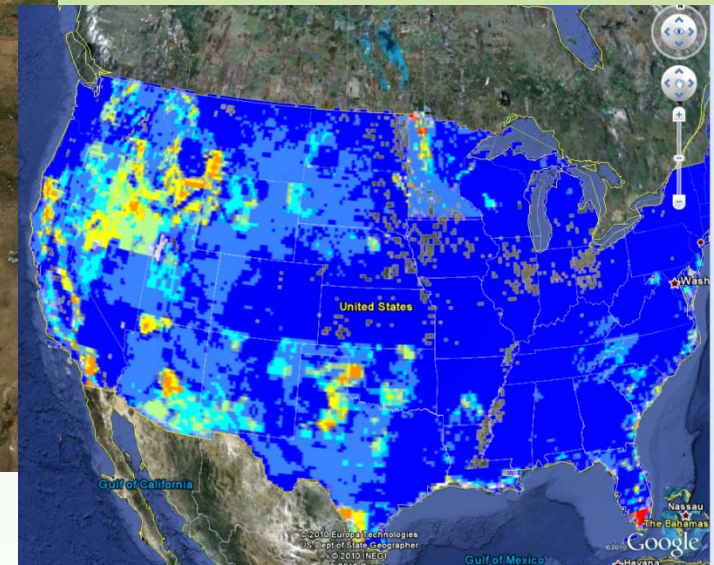
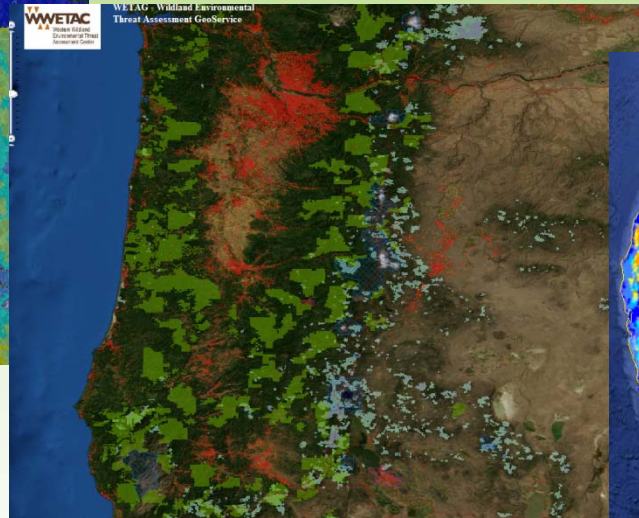
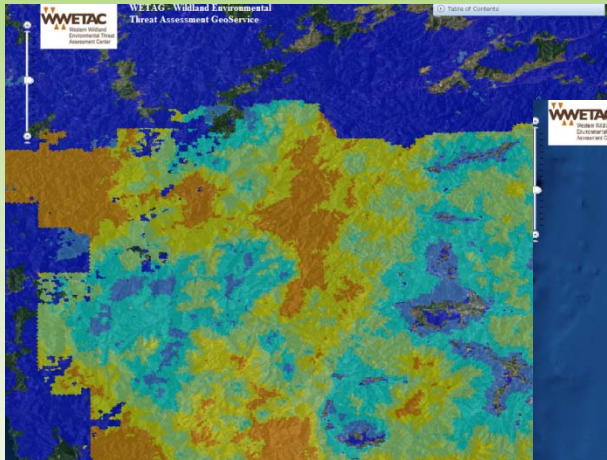
USDA Forest Service
Pacific Northwest Research Station

Research, Development, and Applications



WWETAC Threat Mapper

Interagency data mining and multi-threat environmental threat assessments:
Forest to CONUS scaling



USDA Forest Service
Pacific Northwest Research Station

Research, Development, and Applications



Future



- National and regional technical users advisors
- Student interns for land and resource managers and researchers
- 3 RFPs (threat interactions [abiotic-biotic; biotic-biotic; abiotic-biotic-biotic]; drought)
WATCH: <http://www.fs.fed.us/wwetac/>
- Open to suggestions: webinars, workshops, gaps in knowledge, novel threats, detection and application tools...

wwetac@gmail.com