Forest Health Monitoring Collection and Reporting Tools

Status and Future Directions

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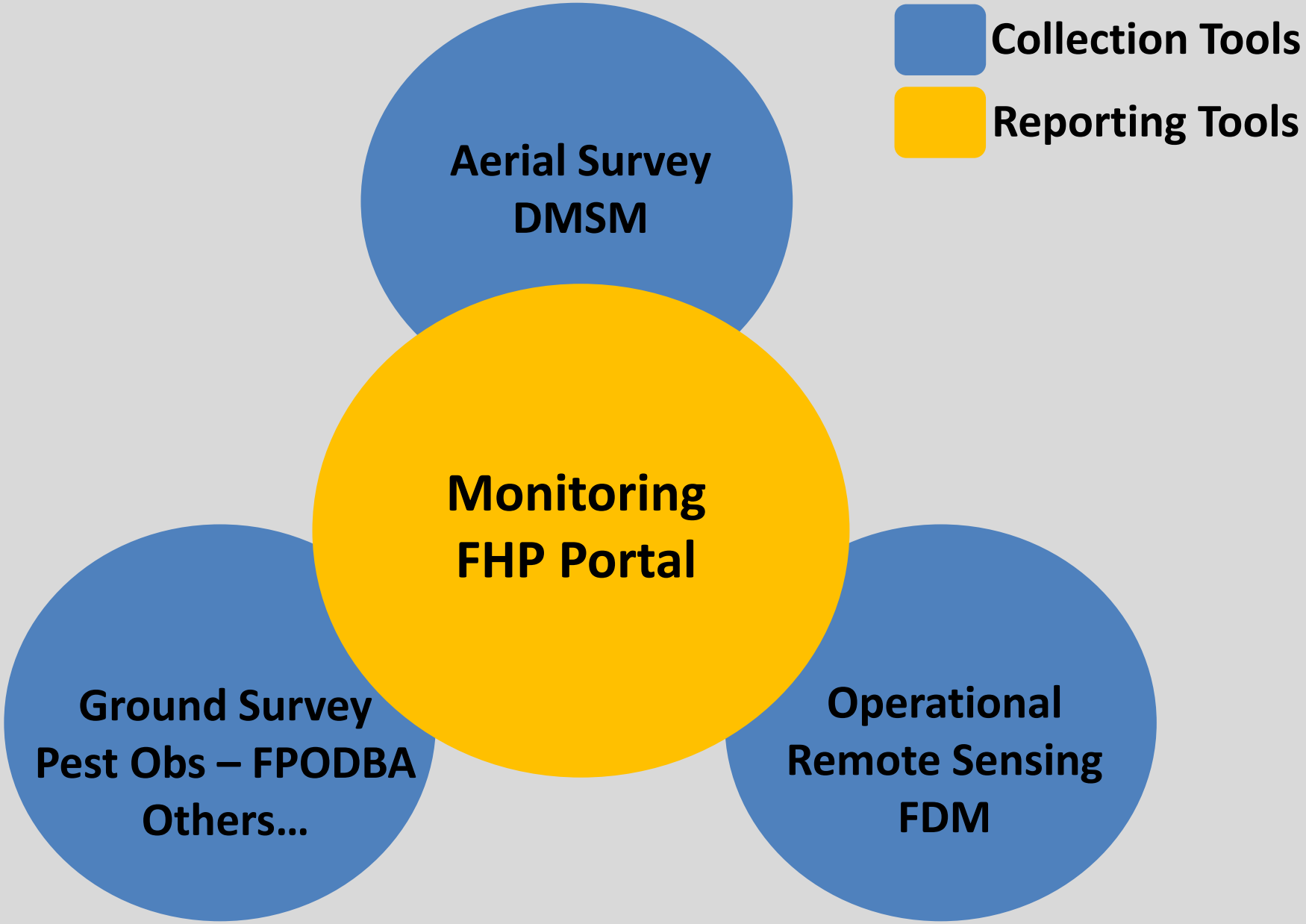
Forest Health Protection (FHP)

Forest Health Technology Enterprise Team (FHTET) - US Forest Service

Agenda

- Latest Survey/Collection Tools
  - Aerial
  - Ground
  - Remote Sensing
- Latest Reporting Tools for Monitoring – Web Demo
  - Forest Health Advisory System (FHAS)

FHTET Supported Survey & Monitoring Tools



DMSM – Digital Mobile Sketch Mapping System

- New hardware/software – Samsung Android Tablets
- Will replace DASM units…
  - Spring 2016 rollout
- Version 2 of DMSM
  - Improved editing
  - Backend data processing
  - Data access

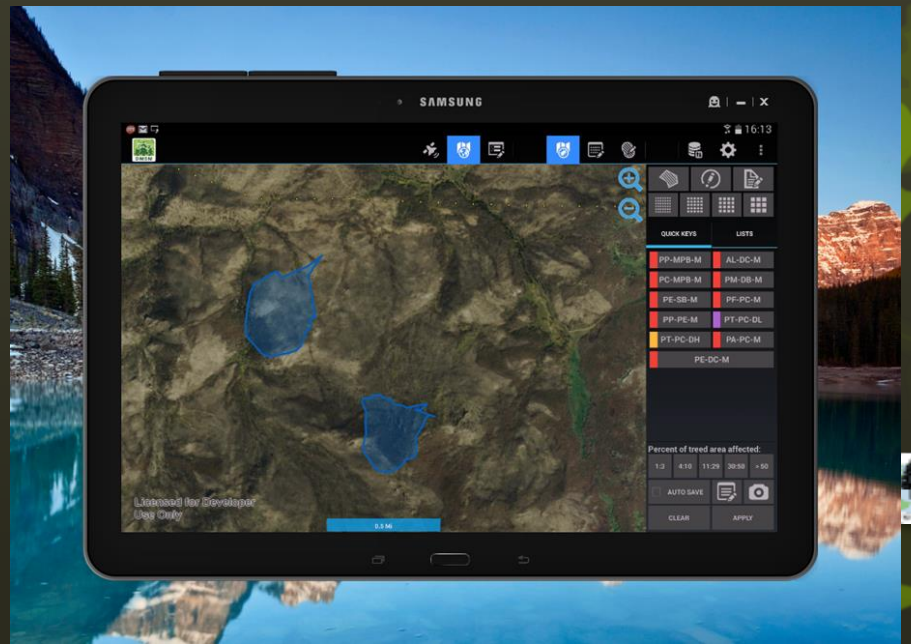
DMSM – Digital Mobile Sketch Mapping System

Improved collection methodology & data access

- Streamlined interface – quick keys

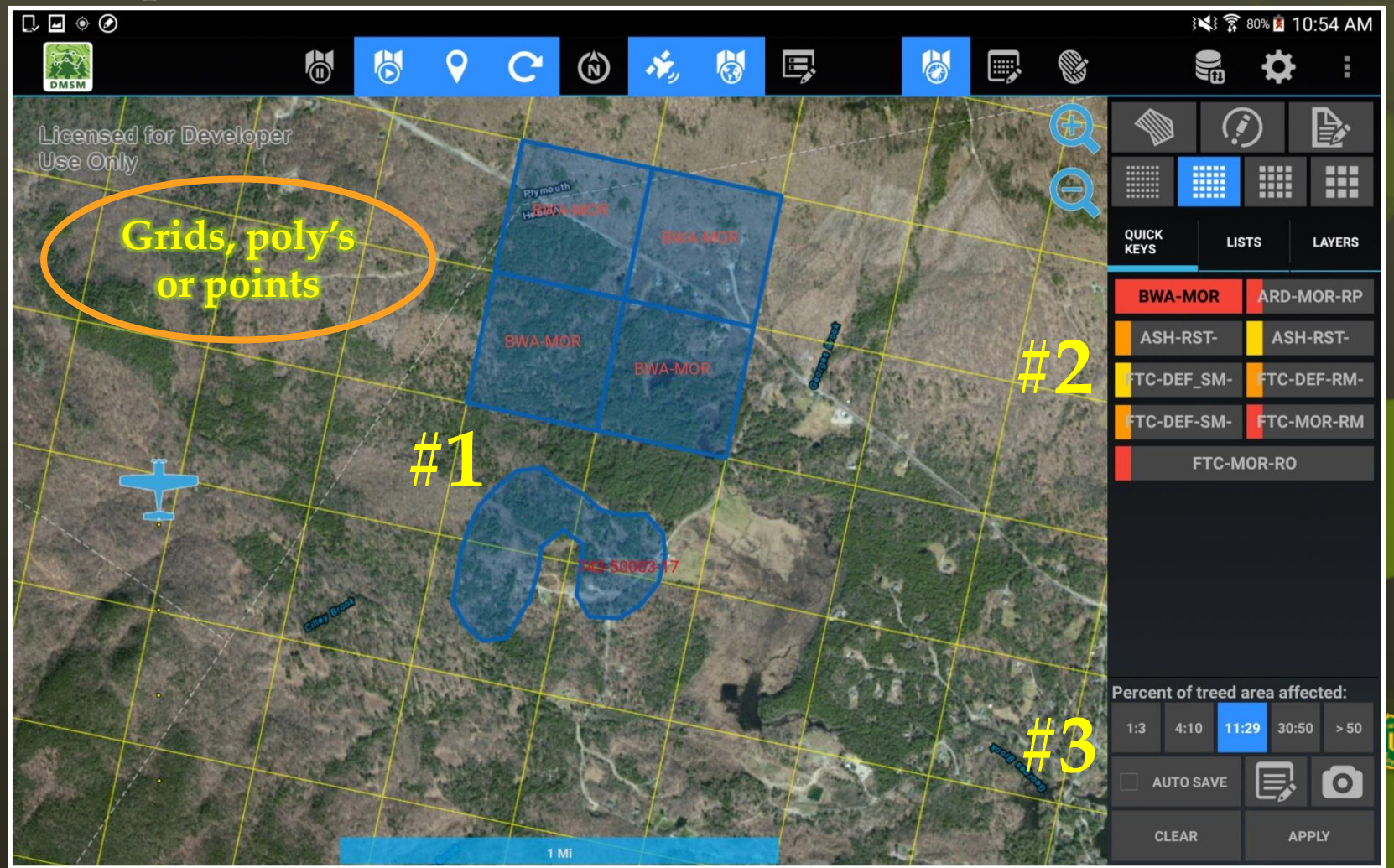
- Better damage measure - *Percent of treed area affected*
  - Allows post calculation of trees per acre, basal area loss etc.
  - Minimizes errors of commission
  - Estimates of live vs. dead

- Standard pest coding
- Single database



DMSM – Digital Mobile Sketch Mapping System

1. **Draw** – polygon, point, or select grid cells
2. **Select quick key** – prebuilt keys containing agent, host, and damage types
3. **Choose percent treed area affected** – one of five classes



Ground Survey – Forest Pest Observations

Forest Pest Observation Data Base Application (FPODBA)

http://foresthealth.fs.usda.gov/caida

Ground Survey – Forest Pest Observations

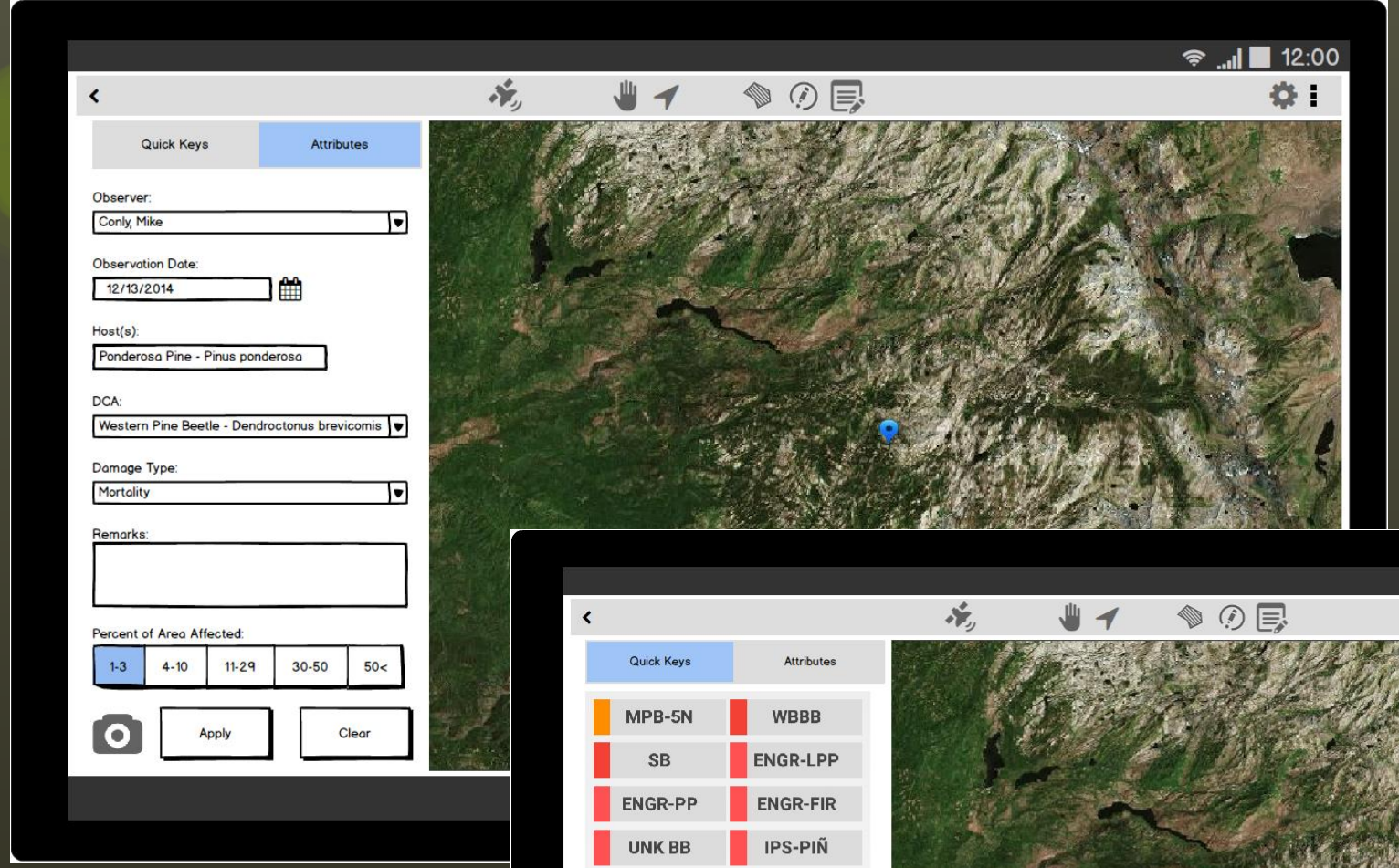
New mobile ground application…

- Android
- Conducting requirements gathering – Fall 2015
- Prototype – Spring 2016

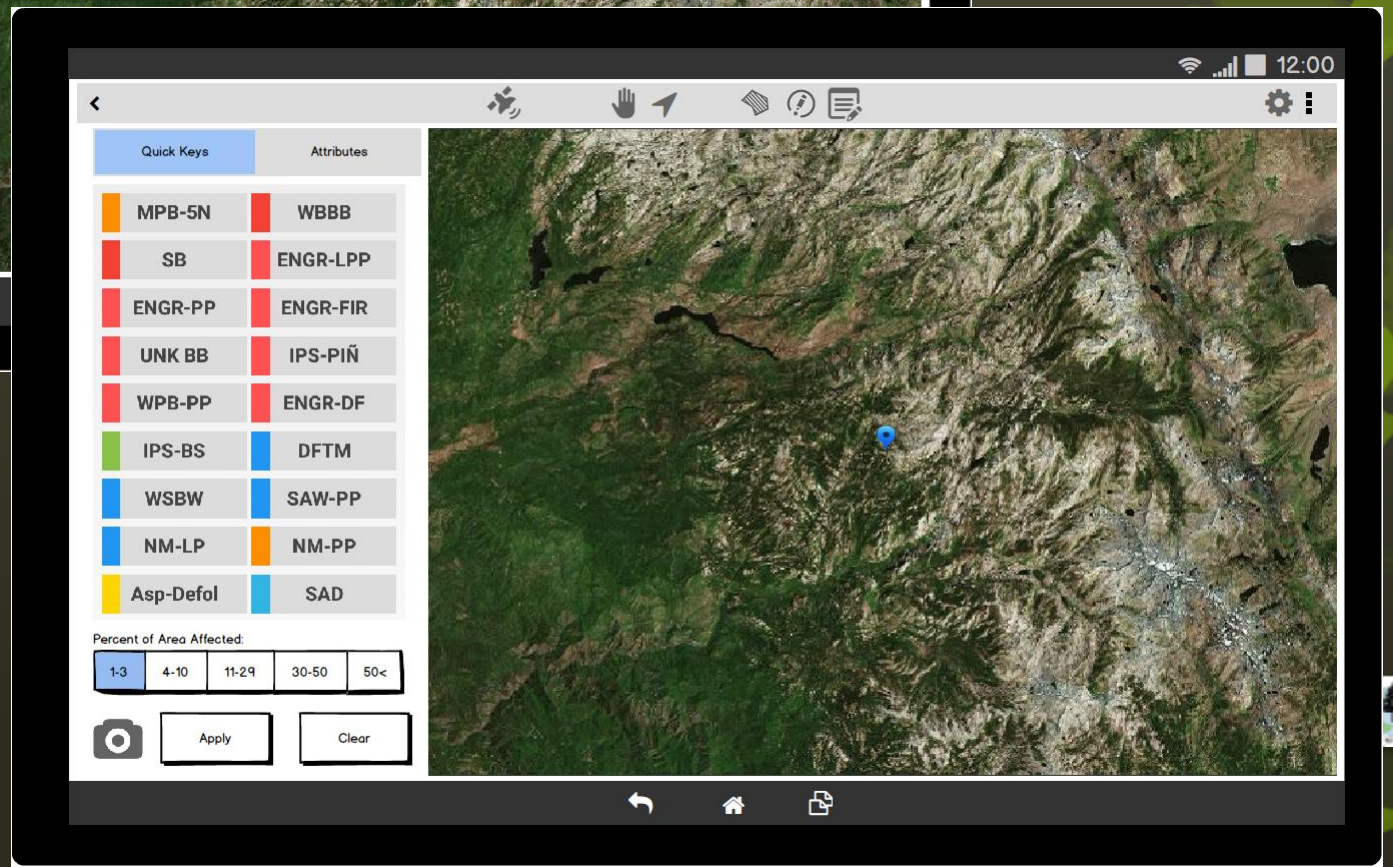
- Builds on CAIDA/Forest Pest Observation Data Base Application

- Single data base for aerial and ground applications

- What ***could*** it look like…


12:00
Quick Keys
Attributes
Observer:
Conly, Mike
Observation Date:
12/13/2014
Host(s):
Ponderosa Pine - Pinus ponderosa
DCA:
Western Pine Beetle - Dendroctonus brevicomis
Damage Type:
Mortality
Remarks:
Percent of Area Affected:
1-3
4-10
11-29
30-50
50<
Apply
Clear

?


12:00
Quick Keys
Attributes
MPB-5N
WBBB
SB
ENGR-LPP
ENGR-PP
ENGR-FIR
UNK BB
IPS-PIÑ
WPB-PP
ENGR-DF
IPS-BS
DFTM
WSBW
SAW-PP
NM-LP
NM-PP
Asp-Defol
SAD
Percent of Area Affected:
1-3
4-10
11-29
30-50
50<
Apply
Clear

?

Operational Remote Sensing - ORS

What can ORS do?

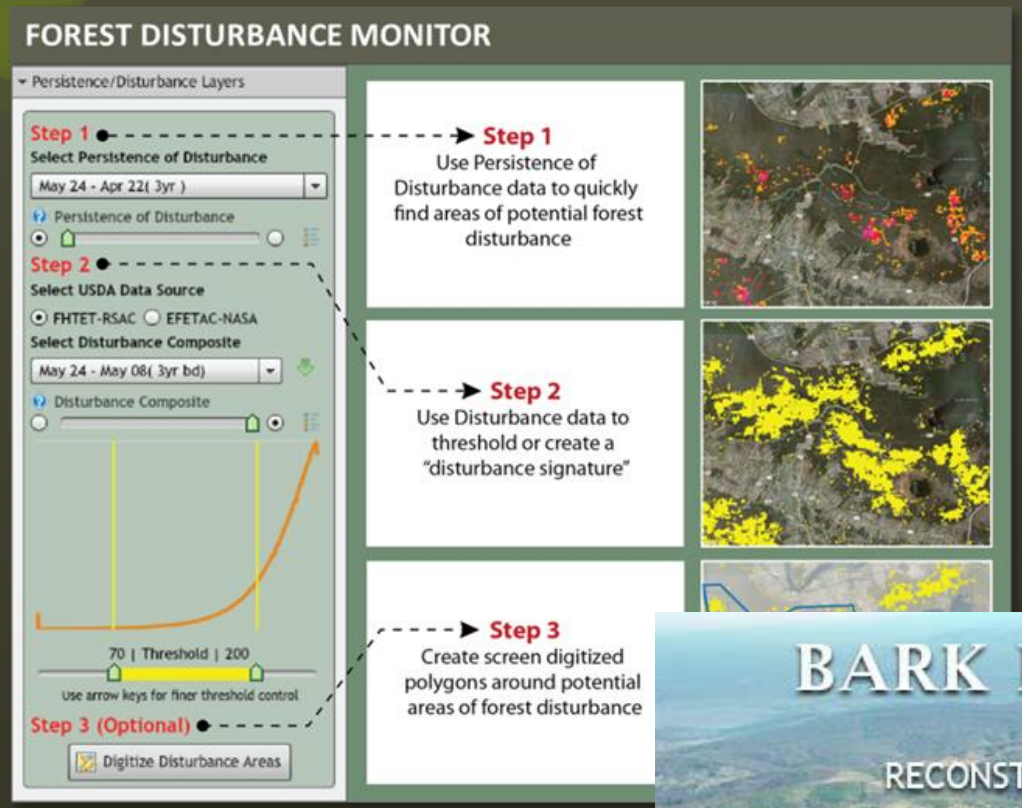
- Identify some areas with disturbances
- Possibly identify disturbance types – mortality vs. defoliation

- Augment & guide aerial surveys
  - Prioritize surveys – FDM
  - Provides data in areas too dangerous to fly – 30,000,000 acres in 2015

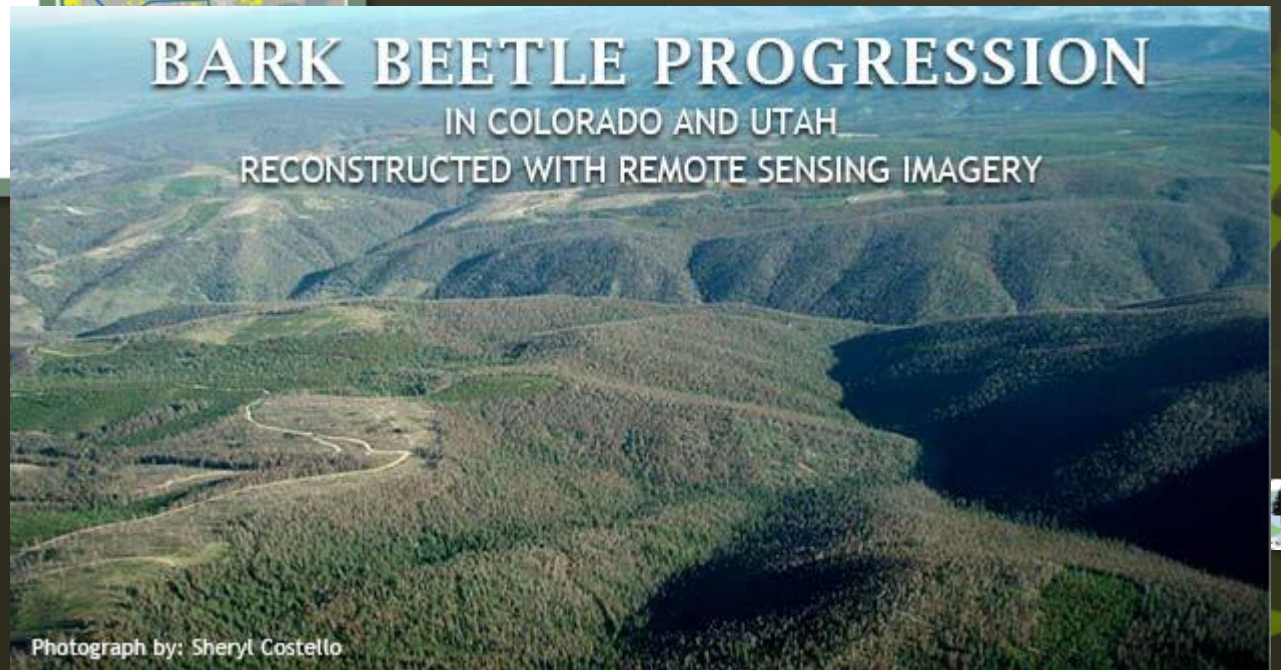
FHP ORS Program

- Partnering with RSAC
- Two contract analysts

ORS – Examples



http://foresthealth.fs.usda.gov



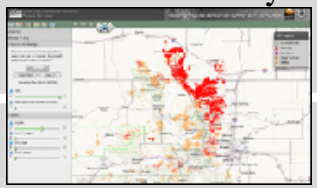
FHP Mapping & Reporting Portal

http://foresthealth.fs.usda.gov

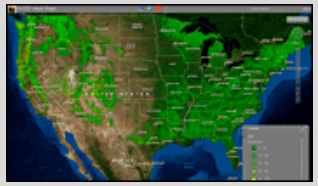
Past Condition | Present Condition | Potential Future Condition

Forest Pest Conditions Viewer

Insect & Disease Survey Explorer



Individual Tree Species Parameters



Forest Disturbance Monitor

Soil Drainage & Productivity Index Viewer

http://foresthealth.fs.usda.gov/fhas

Forest Health Advisory System – NFS, NPS, etc.

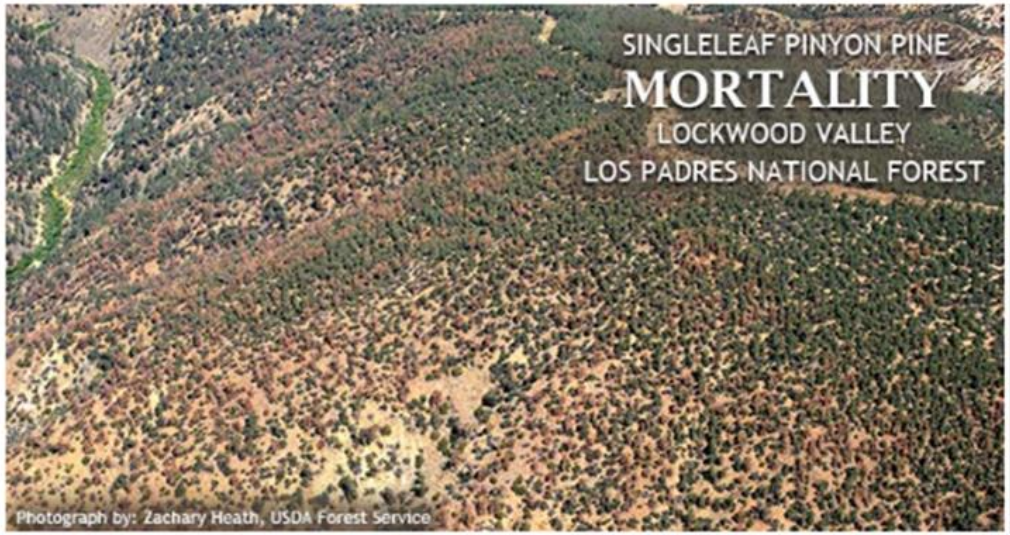
NIDRM Viewer

USDA United States Department of Agriculture
Forest Service

FOREST HEALTH PROTECTION
MAPPING AND REPORTING

FHP Mapping & Reporting Home | FHP Internet | FHTET Internet | Contact Us | Login

Explore Forest Insect and Disease Conditions in the United States using Forest Health Protection Mapping and Reporting Tools.



Headlines

So, what's on this portal?
National Forest Pest Survey Information, updated annually

Ips hunteri Outbreak in Arizona
Aerial detection surveys in eastern Arizona documented a significant increase in Engelmann and blue spruce mortality.

Pinyon Ips in California
In 2014, dead singleleaf pinyon pine were observed during aerial surveys over California and western Nevada.

Six-spined Ips Outbreak
Six-spined *Ips* outbreak on the Northern Cheyenne Indian Reservation

Sudden Oak Death Survey
Sudden oak death survey in California

Applications

Welcome to the US Forest Service, forest insect and disease reporting portal. The applications below access a myriad of state, county and local level forest insect and disease conditions data. In addition we offer a window into near real time forest disturbance information collected from space. Data input applications are restricted to cooperators with specific training and expertise. If you need access to an application not listed below please contact us.

VIEW PEST CONDITIONS

Forest Pest Conditions
Explore county level maps of major forest insect and disease conditions throughout the United States.

VIEW DATA SUMMARIES

Data Summaries
Review, query, and download tables with acre summaries from the Insect and Disease Survey (IDS) database.

EXPLORE INSECT AND DISEASE MAPS

IDS Explorer
Explore and query geospatial data from the Insect and Disease Survey (IDS)

SEARCH REPORTS FOR ALIEN FOREST PESTS

AFPE Database
Track state and county level reports of non-native forest insect and diseases.

VIEW FOREST DISTURBANCE

Forest Disturbance Monitor
View, threshold, and download recent forest disturbance maps for use in targeted

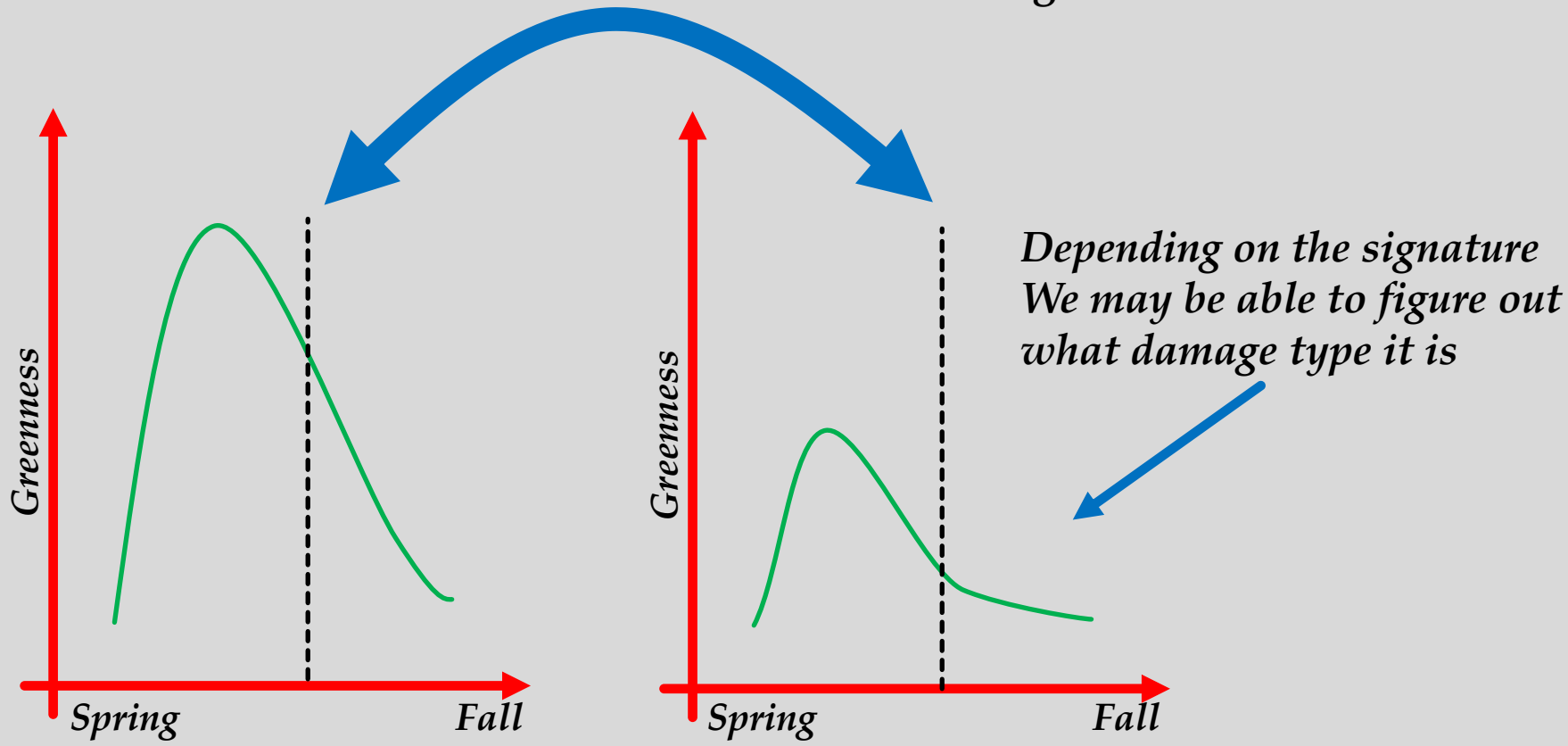
Survey & Monitoring

- **Monitoring** –P*rocess* that involves the collection and analysis of ***repeated observations*** to evaluate or predict changes in forest health conditions

- **Aerial Surveys** – Primary means in FHP of collecting consistent ***repeated observations*** nationally
  - FHP establishes a national baseline of forest pest abundance and distribution through its mapping and reporting portal

How Does ORS Work?

Compare Satellite Images to find changes in Greenness which can often be the result of Pest Damage



Depending on the signature We may be able to figure out what damage type it is

"Normal" Baseline – Past

Current Year with Damage