

nited States Department of Agriculture



# Objective

- Investigate methods for analyzing and reporting on the current status and recent trends of forest health using Aerial Detection Survey (ADS) data collected using the Digital Mobile Sketch Mapping (DMSM) system.
- Using data only collected via DMSM across CONUS:
  - Compare estimated acres of damage to acres with damage Identify top pests based on acres of damage and contrast to acres with damage
  - > Examine top pest-host associations in terms of damage

## Background

- DMSM has increased standardization of ADS by offering: > One of five "percent damage" categories for all damage types
- Host coding that is used by Forest Inventory and Analysis
- > Quick keys for common pest-host-damage type combinations
- Srid cells (240, 480, 960, 1920 m<sup>2</sup>), as well as polygons, or points for mapping damage features
- > The percent damage categories enable estimating the acres of damage within damage area features by using the mid-point value of the range.
- > Ranges (midpoints): 1-3% (2), 4-10% (7), 11-29% (20), 30-50% (40), >50% (75)
- Implementation of DMSM has been gradual across USDA Forest Service (FS) Regions (Figure 1)



### Methods

Calculating Damaged Area

- Acres with Damage = sum of damaged area polygons and point estimates
- Acres of Damage = (polygon damaged area \* mid-value of % damage range) + estimated acres of point observations
- Flown Acres = summed area of flight polygons recoded in DMSM (survey effort)
- Acres with Damage = 100\*(Acres with Damage/Flown Acres)
- Acres of Damage = 100\*(Acres of Damage/Flown Acres)







