

Health of Interior West Region Forests

The ongoing saga of
drought...
bugs...and fire

Bugs.....



Ips infesting piñon pine in New Mexico - 2003

Piñon Pine Mortality Assessment

- Cooperative Effort by Forest Health Protection. Principals include:
 - Region 5 – California
 - Region 3 – Arizona and New Mexico
 - Region 4 – Nevada and Utah
 - Region 2 – Colorado
 - Forest Health Technology Enterprise Team
 - Interior West FIA

Discussions begin – March

- **Quantify the extent and severity of mortality**
- **Describe stand conditions**
- **Foster cooperation**
- **Assess tools to do the job**
- **Lotts questions:**
 - **Given that we have millions of acres infested, of an unfamiliar forest type, involving 6 states and 4 Forest Service Regions - how do we do this?**
 - **More specifically, where do we do what?**
 - **At what cost?**

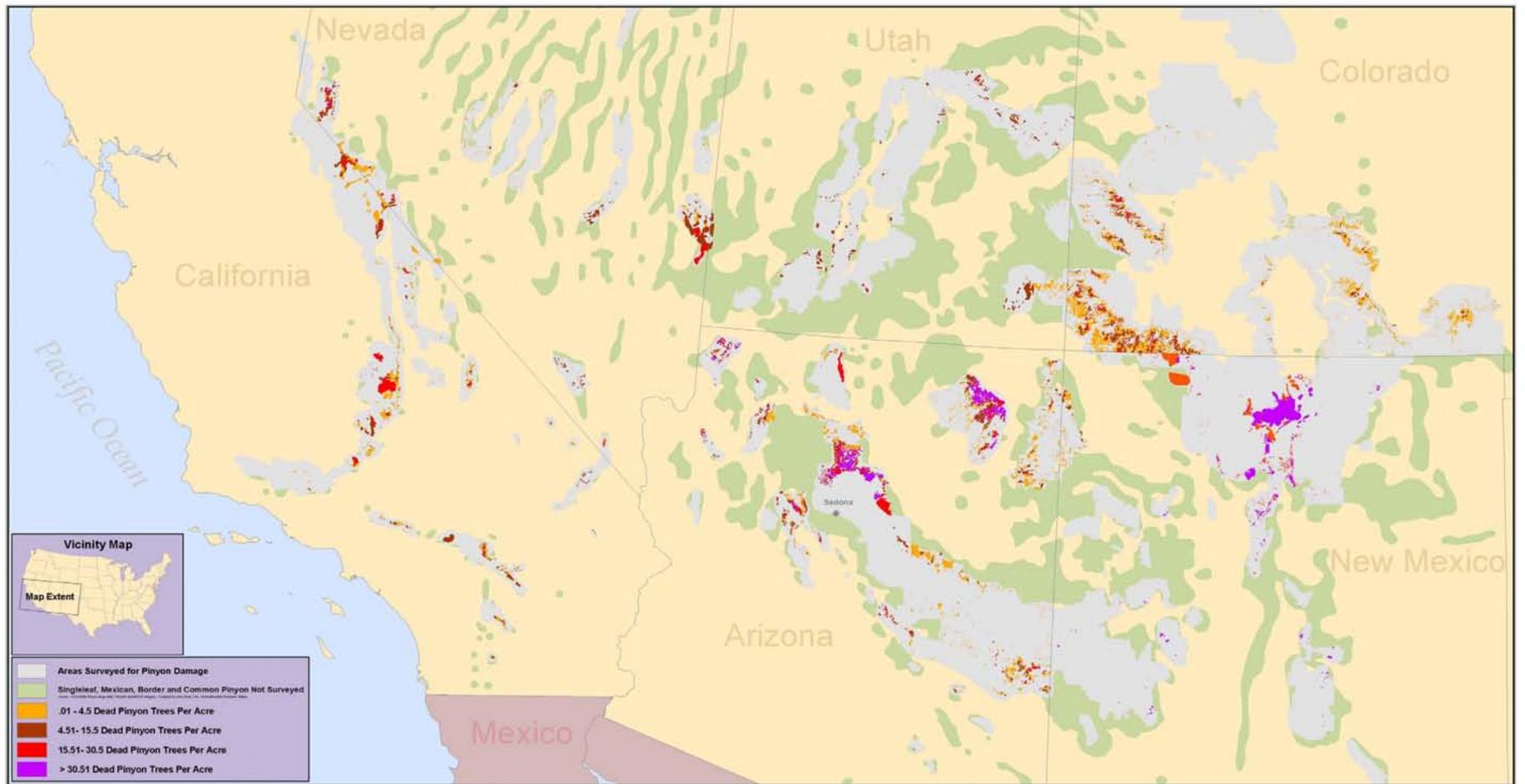
Mid May...

- Project working with \$100K
- Aerial survey will be the tool to determine extent of mortality
- “Standardized” ground survey being developed – impact & trend
- No special efforts to inventory FIA plots beyond that which is planned - costly
- No special effort to acquire photos/images – costly

Aerial Survey

- Seventeen sketchmappers from FHP, national forest system & state cooperators survey from July – Oct.
- 1) trees counted 2) tree counts estimated 3) trees/ac estimated 4) mortality categorized – L, M, H
- Paper and digital sketchmap system
- Data processed & compiled by FHTET

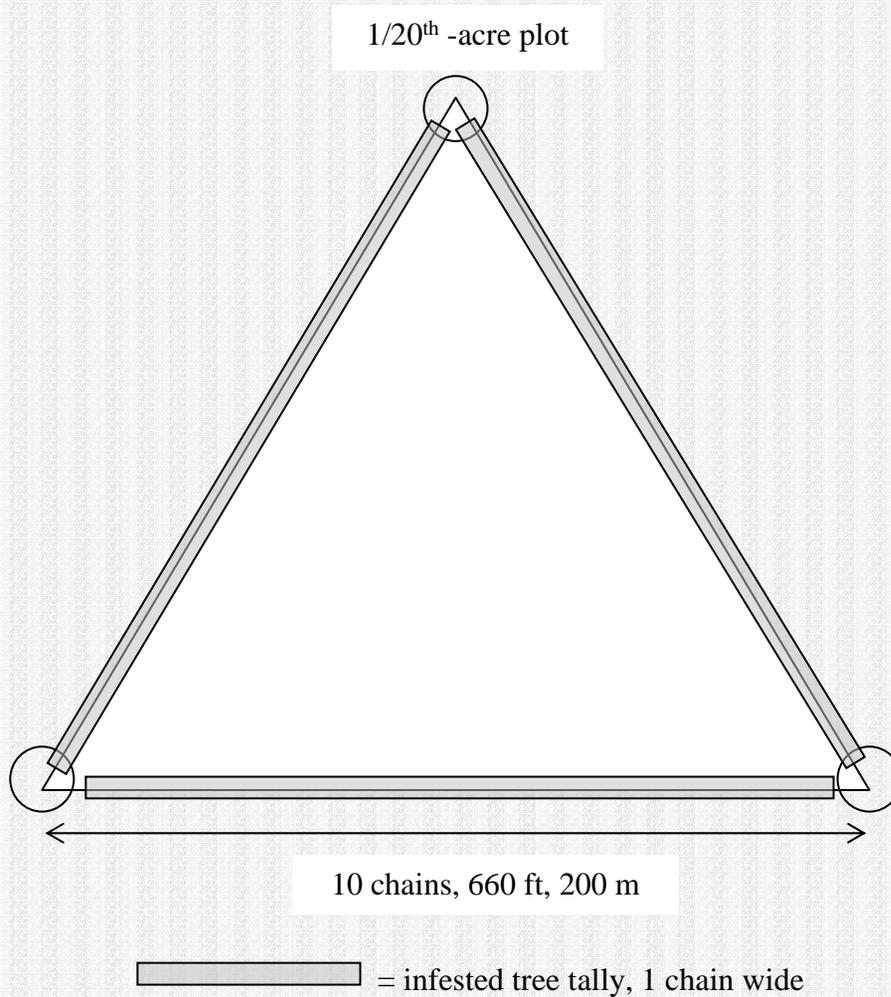
Piñon Pine Aerial Survey - 2003



Ground Survey

- Using a GIS map that displayed piñon type, administrative boundaries and roads, select sampling locations using a 3-mile grid
- Criteria: $< \frac{1}{4}$ mile from road, at least 3 piñon trees on the plot
- Plot center recorded and marked

Ground Survey Plot



Incomplete Results - states

	COLORADO	NEW MEXICO	CALIFORNIA
# Plots	60	34	75
Total Trees/acre	179.8	255.8	114.6
Piñon/ac total	102.4	152.7	77.8
Piñon/ac dead	27.9	22.9	10.6
% of Piñon dead	27	15	14

Incomplete Results – Calif.

	San Bernardino NF	Inyo NF	Toiyabe NF
# Plots	30	21	24
Total Trees/acre	87.8	143.5	122.8
Piñon/ac total	51.3	102.2	89.4
Piñon/ac dead	6.0	1.3	24.4
% of Piñon dead	12	1	27

Incomplete Results – AZ

	Coconino NF	Prescott NF
# Plots	71	46
Total Trees/acre	224.9	141.3
Piñon/ac total	7.2	6.4
Piñon/ac dead	2.5	0.6
% of Piñon dead	35	9

Incomplete Results – NM

	NW	NE	SW	SE
# Plots	12	6	8	8
Total Trees/ac	540.6	486.7	376.7	621.7
Piñon/ac total	365.6	308.9	211.7	306.7
Piñon/ac dead	72.2	42.2	6.7	48.3
% of Piñon dead	20	14	3	16

Mortality by Size Class

