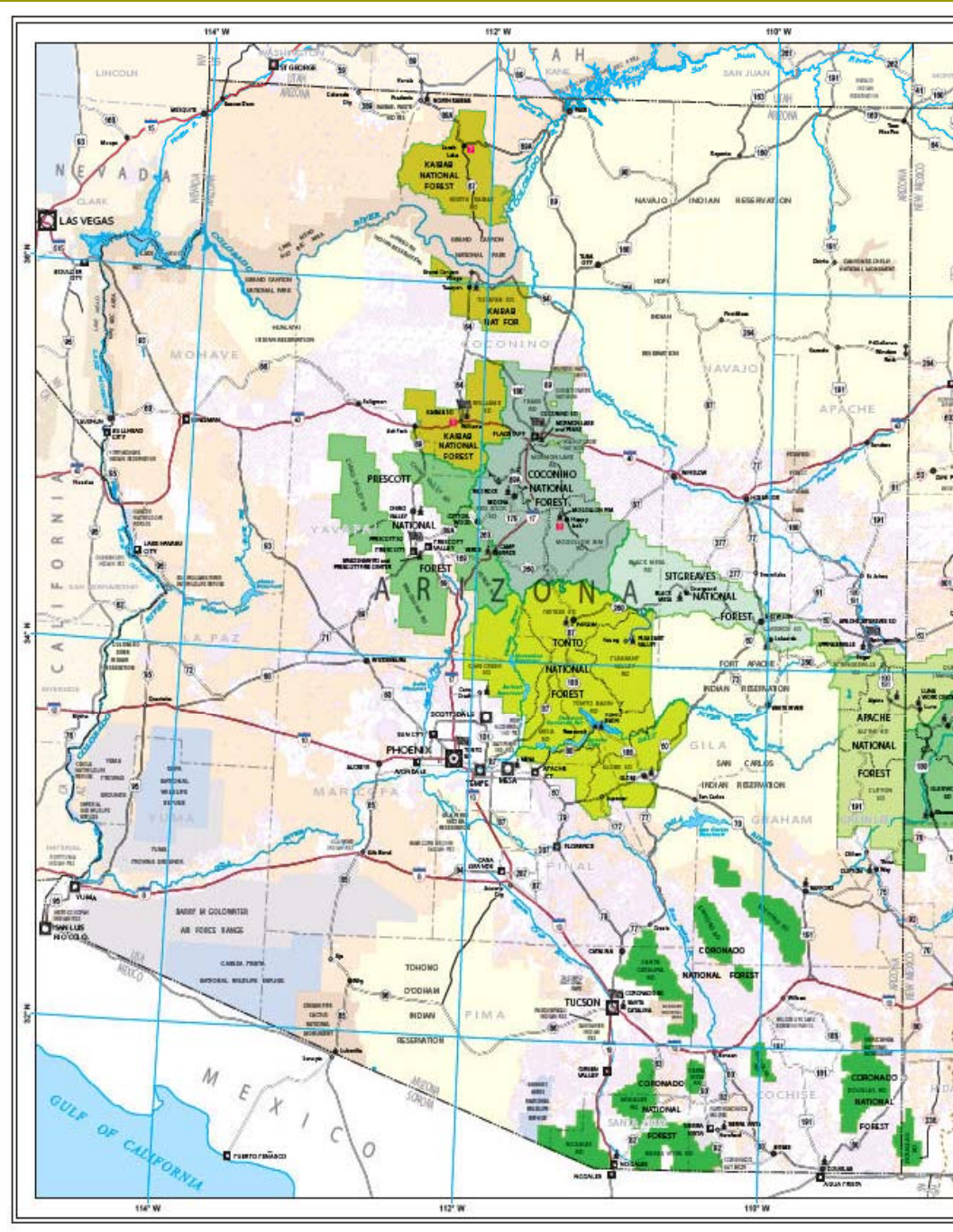
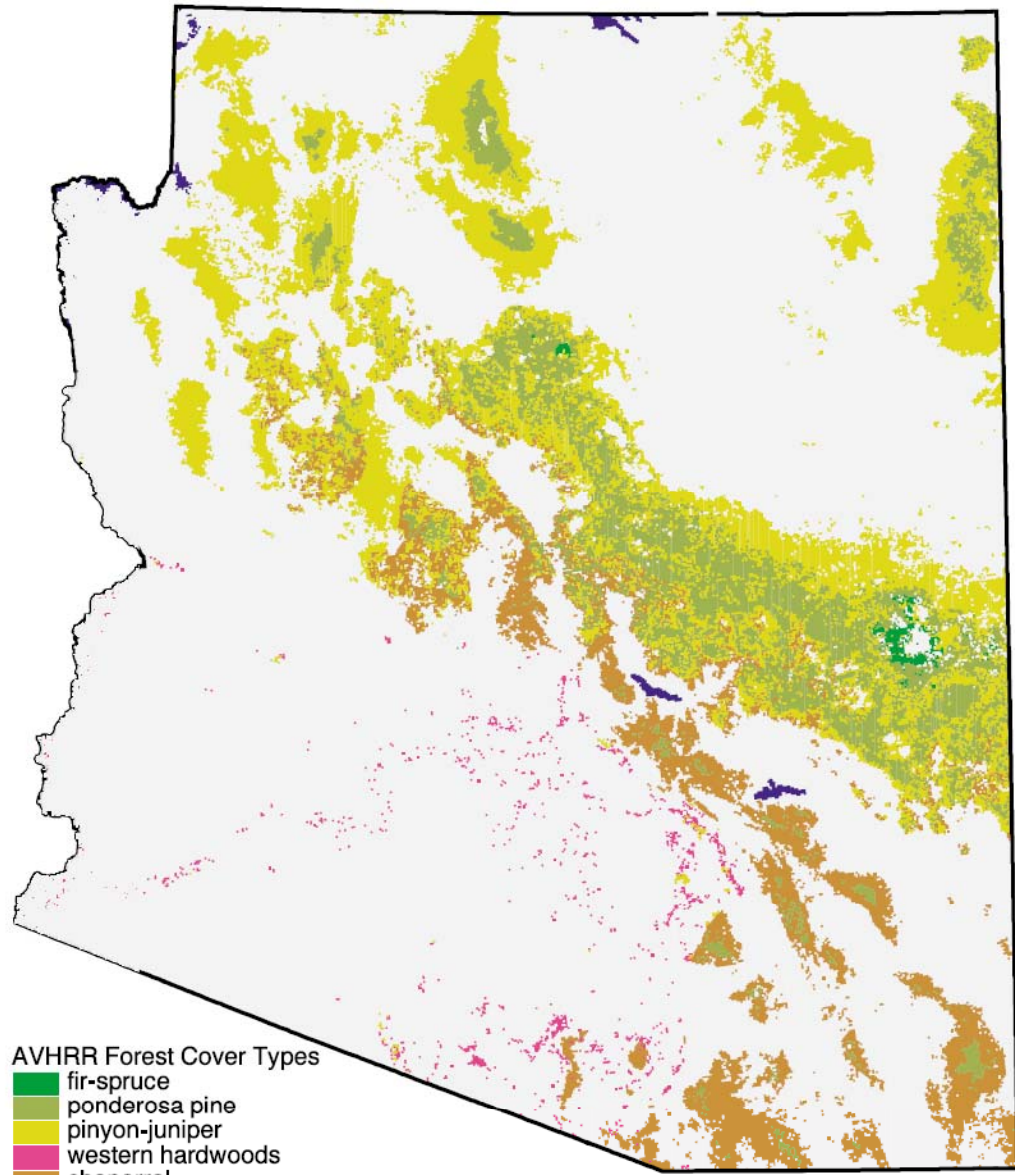


# Implementation of fire hazard reduction treatments: *A tale of two forests*

Gary Snider and Alex Finkral  
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AVHRR Forest Cover Types

- fir-spruce
- ponderosa pine
- pinyon-juniper
- western hardwoods
- chaparral
- nonforest
- water
- background

# Conditions

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- Unprecedented tree densities
- Heavy fuel loadings
- Anomalous fire regimes

# Solution

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- **LARGE-SCALE** restoration-based thinning to:
- Reduce tree densities
- Improve the cover, composition and production of the herbaceous understory
- Reintroduce fire to its normal disturbance regime

# Obstacles

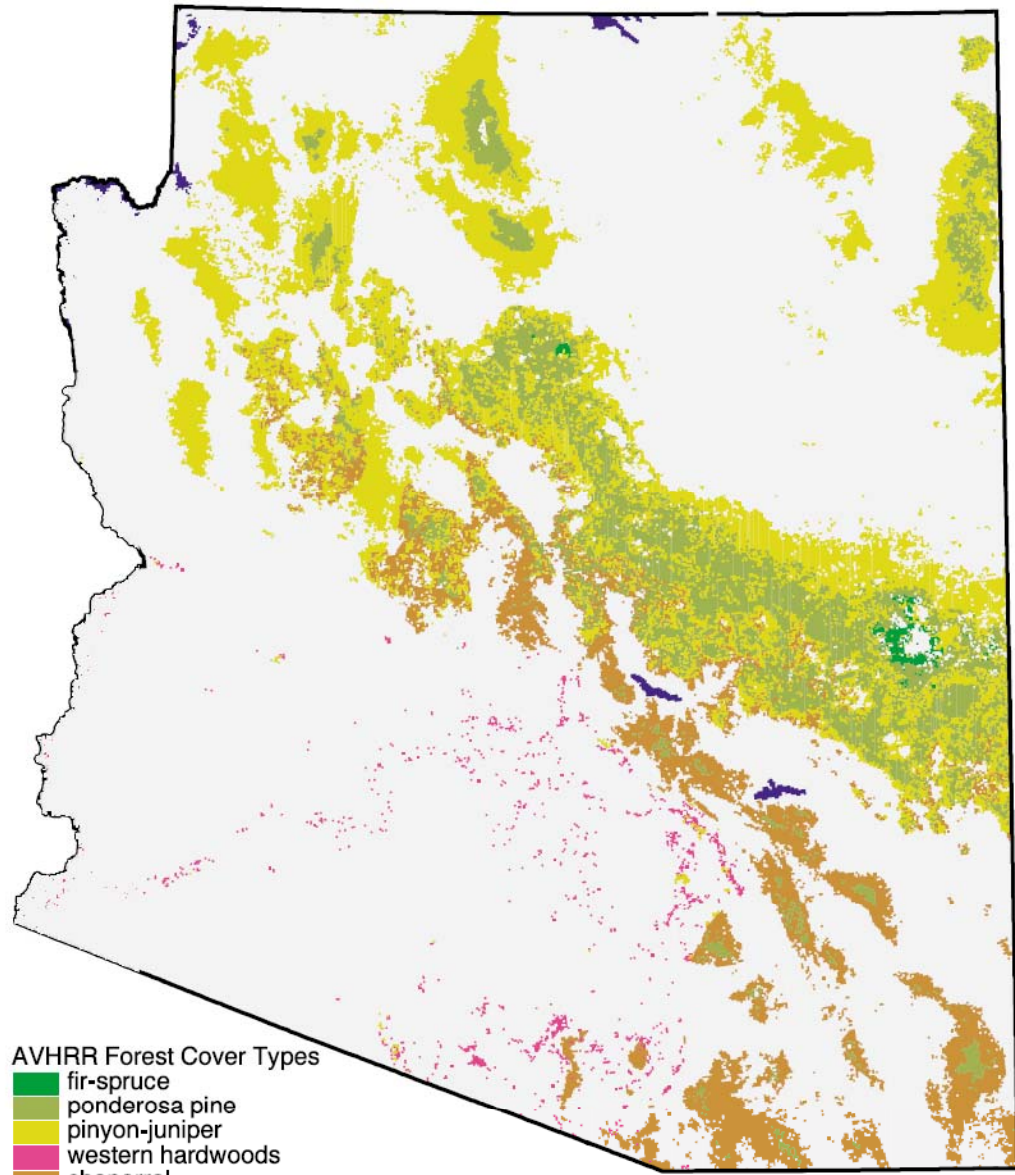
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- Concern about profit-driven enterprises
- Fear of boom and bust
- Demise of wood products industry
- Steady (“guaranteed”) wood supply
- \$\$\$\$\$\$\$

# 2 Forests

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- Apache-Sitgreaves
- Coconino

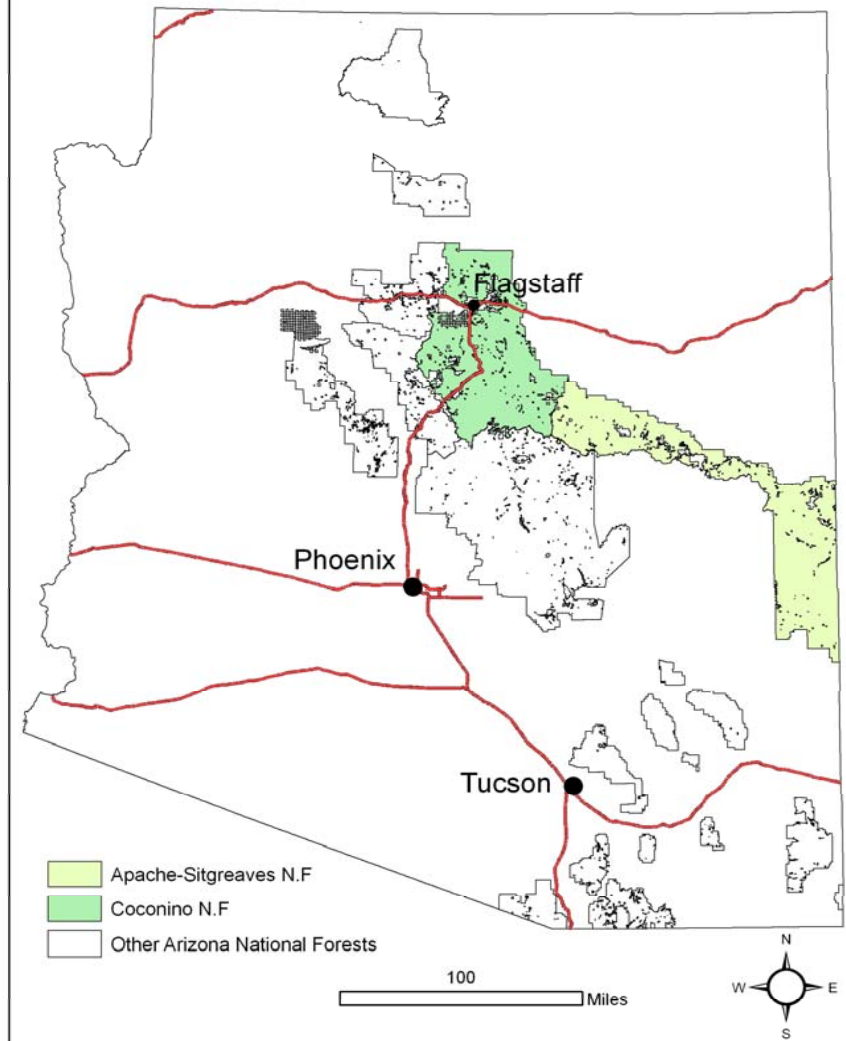


AVHRR Forest Cover Types

- fir-spruce
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### National Forests of Arizona's Mogollon Rim



# Apache-Sitgreaves NF

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- White Mountain Stewardship Project
  - *Multi-year contract ( 10-years)*
    - *150,000 acres*
  - *Exchange of goods for services*
  - *Best value contracting*
  - *Less than full competition*

## WMSP (con't.)

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- Collaboration w/ state & local agencies & citizen groups and conservation orgs.
- 70,500 acres NEPA complete
  - Only 1 objection filed
- Six \$250K FPL grants
- Multi-party monitoring (ecological, social, economic)

## WMSP (con't.)

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- Minimum contract guarantee 5,000 ac/yr
- Total acres thinned, 2005-06, 13K
- Average cost paid by Forest, \$550/ac
- Annual funding remains a chronic problem

**Table 1.** White Mountain Area (Apache-Sitgreaves NF)  
Harvesting Contractors, 2006.

<u>Harvesting Contractors</u>	<u>Green Tons</u>	<u>CCF</u>	<u>% of Total Volume</u>
	(thousand)	(thousand)	
<i>Walker Brothers</i>	110.8	31.7	<b>63.6</b>
<i>Tri Star Logging</i>	44.6	12.7	25.6
<i>Nutrioso Logging</i>	12.3	3.5	7.1
<i>Renegy</i>	6.5	1.9	3.7
	174.2	49.8	100.0

**Table 2.** White Mountain Area (Apache-Sitgreaves NF)  
Mills and Manufacturers, 2006.

<u>Mills and Manufacturers</u>	<u>Green Tons</u>	<u>CCF</u>	<u>% of Total Volume</u>
	(thousand)	(thousand)	
<i>Forest Energy</i>	95.9	27.4	<b>55.1</b>
<i>Reidhead (Round Valley &amp; Nutrioso)</i>	24.4	7.0	14.0
<i>Renegy</i>	9.8	2.8	5.6
<i>Western Renewables</i> **	14.1	4.0	8.1
<i>SW Forest Products</i> ***	13.3	3.8	7.6
<i>Other</i>	16.7	4.8	9.6
	174.2	49.8	100

# Coconino NF

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- No large stewardship contract
- Mix of small stewardship projects and standard timber sales
- Total acres thinned, 2005-06, **11K**
- Average cost (net) *paid to Forest*, **\$37/ac**

**Table 3.** Western Mogollon Area (Coconino NF)  
Harvesting Contractors, 2006.

<u>Harvesting Contractors</u>	<u>Green Tons</u>	<u>CCF</u>	<u>% of Total Vol</u>
	(thousand)	(thousand)	
<i>SW Forest Products</i>	91.0	28.4	<b>57.4</b>
<i>Hurd Brother's Logging</i>	24.1	7.5	15.2
<i>Perkins Timber</i>	15.2	4.8	9.6
<i>Colorado Wood Co.</i>	2.8	.9	1.8
<i>High Desert Inv. Co.</i>	25.0	7.8	15.8
<i>Other</i>	.4	.1	.2
<b>Total</b>	158.5	49.5	100.0



**Table 4.** Western Mogollon Area (Coconino NF)  
Mills & Manufacturers, 2006.

<u>Mills and Manufacturers</u>	<u>Green Tons</u>	<u>CCF</u>	<u>% of Total Vol</u>
	(thousand)	(thousand)	
<i>SW Forest Products</i>	133.5	41.7	<b>84.2</b>
<i>Canyon Fuels (Zellner's Firewood)</i>	25.0	7.8	15.8
	158.5	49.5	100

**Table 5.** Comparison of 2 Forests, 2005-06

	<b>White Mountain (A-S)</b>	<b>Western Mogollon (Coconino)</b>
<b>Stewardship Contract</b>	<b>Yes Large-scale &amp; long-term</b>	<b>Yes/No Small-scale &amp; short-term</b>
<b>Paid TO the Govt.</b>	<b>\$197,947</b>	<b>\$677,931</b>
<b>Paid OUT BY the Govt.</b>	<b>\$7,022,606</b>	<b>\$260,381</b>
<b>Acres thinned</b>	<b>12,977</b>	<b>11,295</b>
<b>Avg vol/ac removed</b>	<b>5.5-6 ccf/ac 16.5-18 tons/ac</b>	<b>7-9 ccf/ac 21-27 tons/ac</b>
<b>Diameter cap</b>	<b>Yes</b>	<b>No</b>
<b>Monitoring Program/ Ecosystem services</b>	<b>Yes</b>	<b>No</b>
<b>Socioeconomic sustainability</b>	<b>??</b>	<b>??</b>

# Monitoring/Ecosystem Services

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- Economic, social, environmental monitoring required by WMSP
  - Wood-related businesses, employment, local expenditures
  - Public opinion surveys
  - Vegetation (trees & understory)
  - Squirrels, bears, birds
- Ecosystem Services????

# Monitoring/Ecosystem Services

(con't)

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- Monitoring on the Coconino is “statutory”
  - Programmatic, process, role of local communities and external stakeholders (FSH 2409.19-68.1,2)
  - Project-level environmental monitoring “may be conducted”, as appropriate, subject to priority and \$\$\$\$”
- Ecosystem Services????

# Socioeconomic Sustainability

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- A-S/WMSP totally dependent of the vagaries of the congressional budgeting process and availability of FS \$\$\$
- Coconino heavily dependent on the vagaries of a volatile wood products market
  - Housing/construction precipitous decline

# Restoring PP Ecosystem along the Mogollon Rim, AZ

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- Requires *BOTH* public and private investment
- Leopold 1934
  - Prevention, whatever the cost, cheaper than the cure
  - Abuse creates a cash liability against the taxpayer.
  - Advanced deterioration usually precludes profits
  - No balanced program can be built on profit alone. Public intervention necessary.

# The End?

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- 12,000 acres/yr ??
- \$\$\$ and personnel to complete NEPA??
- Monitoring??
- Adaptive Management??
- Restoring the capacity of these frequent-fire adapted systems to produce ecological goods and services??