Forest Stewardship

AICPA

Government Performance
and Accountability Committee

25Sep17

Tempe, AZ

What is Silvaculture?

Silviculture

Silvics: The branch of forestry that provides the scientific basis for the cultural treatment of forest stands.

Silviculture: The art of producing and tending forest stands, or the application of the knowledge of silvics; bringing together biological and economic concepts to prescribe and apply treatments to help us reach our land management objectives.

What is Fire Ecology?

Fire ecology is a scientific discipline concerned with natural processes involving fire in an ecosystem and the ecological effects, the interactions between fire and the abiotic and biotic components of an ecosystem, and the role of fire as an ecosystem process.

What is Stewardship?

- An ethic that embodies the responsible planning and management of resources.
- The careful and responsible management of something entrusted to one's care.
- Natural Resource Stewardship is the scientifically and economically based management to meet current and future needs of Multiple-Use, coordinating consumptive and "non-consumptive" uses for most beneficial use.


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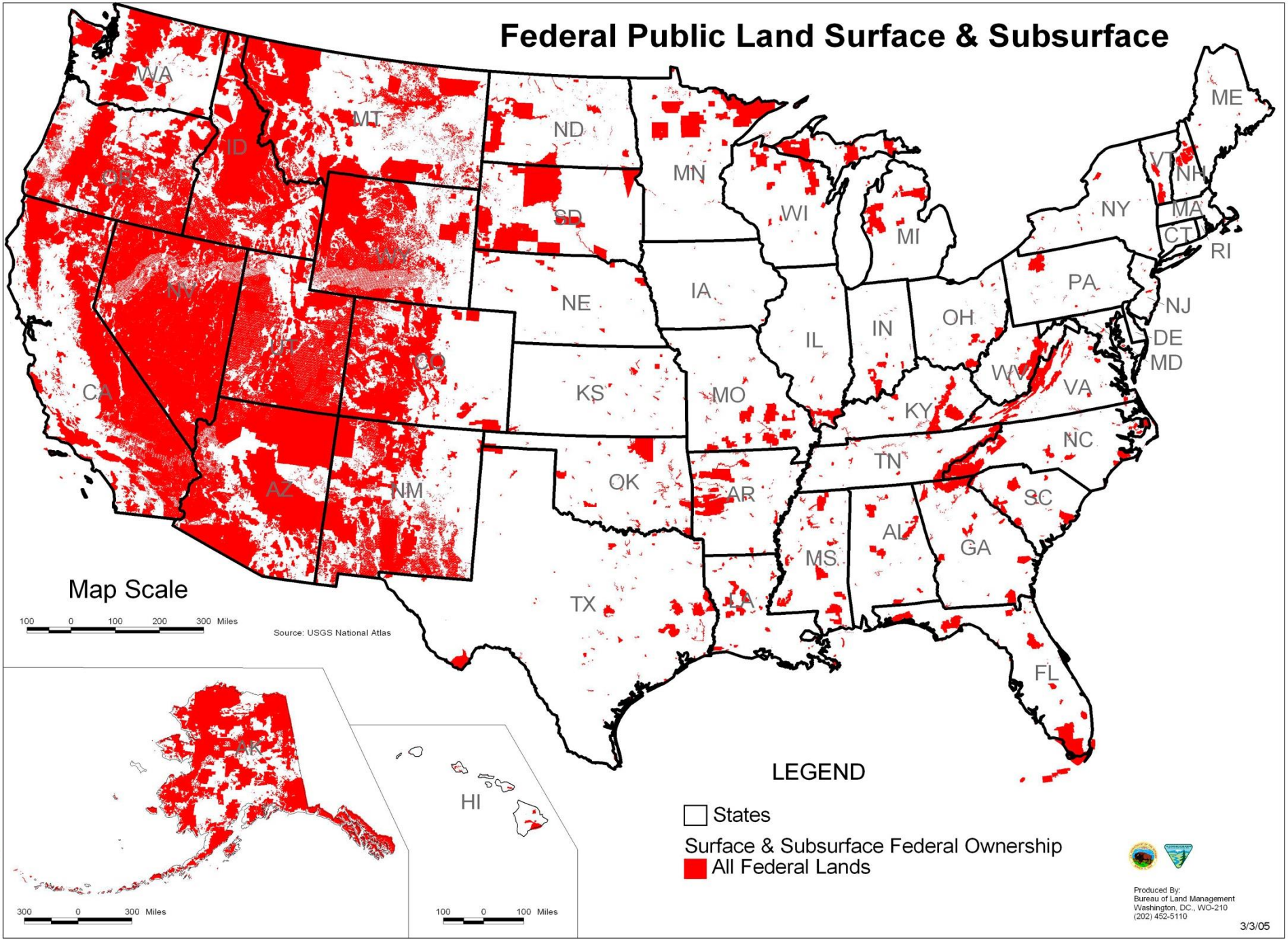
PACIFIC
NORTHERN
NORTHWEST
INTERMOUNTAIN
ROCKY MOUNTAIN
PACIFIC SOUTHWEST
SOUTHWEST
SOUTHWESTERN
EASTERN
SOUTHERN
PORTLAND
MISSOULA
OGDEN
DENVER
VALLEJO
ALBUQUERQUE
MILWAUKEE
ATLANTA
WASHINGTON D.C.
MONTANA
NORTH DAKOTA
SOUTH DAKOTA
MINNESOTA
WISCONSIN
MICHIGAN
NEW YORK
MAINE
IDAHO
WYOMING
NEBRASKA
IOWA
ILLINOIS
INDIANA
OHIO
PENNSYLVANIA
NEVADA
UTAH
COLORADO
KANSAS
MISSOURI
KENTUCKY
WEST VIRGINIA
VIRGINIA
NORTH CAROLINA
SOUTH CAROLINA
TENNESSEE
OKLAHOMA
ARKANSAS
MISSISSIPPI
ALABAMA
GEORGIA
FLORIDA
CALIFORNIA
ARIZONA
NEW MEXICO
TEXAS
LOUISIANA
CANADA
MEXICO
PACIFIC OCEAN
ATLANTIC OCEAN
GULF OF MEXICO
BAHAMAS
CUBA
ALASKA
HAWAII
JUNEAU
CHUGACH
TONGASS
PACIFIC SOUTHWEST REGION
SOUTHERN REGION
INTERNATIONAL INSTITUTE OF TROPICAL FORESTRY
PUERTO RICO AND U.S. VIRGIN ISLANDS
CARIBBEAN
LEGEND
NATIONAL FOREST
NATIONAL GRASSLAND
REGIONAL BOUNDARY
REGIONAL HEADQUARTERS
NATIONAL HEADQUARTERS
FOREST PRODUCTS LABORATORY
FOREST AND RANGE EXPERIMENT STATION HEADQUARTERS
GREY TOWERS NATIONAL HISTORIC LANDMARK
STATE AND PRIVATE FORESTRY AREA HEADQUARTERS
CAPITAL CITY
OTHER U.S. CITY
Size varies by population
FREEWAY
TOLL HIGHWAY
PRINCIPAL HIGHWAY
INTERSTATE HIGHWAY
U.S. HIGHWAY
STATE HIGHWAY
GUIDE TO YOUR NATIONAL FORESTS AND GRASSLANDS
AND OTHER LANDS ADMINISTERED BY THE FOREST SERVICE
2006
Prepared by the USDA Forest Service, Geospatial Service and Technology Center
Salt Lake City, Utah
Albers Equal Area Projection

Federal Public Land Surface & Subsurface



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Bureau of Land Management
Washington, DC., WO-210
(202) 452-5110

3/3/05

Water

The large tracts us federally managed lands are responsible for 2/3 of our fresh water supply and are suffering to a great extent due to mismanagement. This lack of management directly impacts our water supply through evapotranspiration, massive changes in timing of snowpack melt and runoff, massive post-fire sediment runoff, pollutant injection into watersheds and massive changes in surface water trends.

Water

- Evapotranspiration – Vegetation moves water from the soil to the atmosphere, or traps higher than normal amounts in the upper tiers or the canopy, reducing surface flow and downstream yield.
- In the winter period, a portion of the snow caught in the branches evaporates or sublimates and reenters the atmosphere without ever melting
- Open tree stands and reduced understory vegetation protect snowpack from solar radiation, versus entrapment in the branches.

Water

- An active management system by the states can significantly improve our stressed and strained fresh water supply.

- Studies have show that if active management were to occur, which is best done at a more manageable state-level of landscape, that water demands and needs can be met.

Water

- Forest treatments to reduce forest cover by 40% can yield an increase in water yields by 9%.
- A treatment area of just 4100 acres wherein a 24% reduction of vegetation occurred showed a significant water yield increase of 3 inches.
- Sustained, ongoing treatments in our overly dense forests can increase yield by 16%.
- Forest management which has a well-established link to water can be altered to meet water resource goals and priorities.

Water

- Regional water planning and budgets have show that as much as 70% of total precipitation is evapotranspired by native vegetation (overly dense tree stands, ladder-fuel buildup, abnormally high undergrowth and vegetation loads).

- Delays in peak snowpack runoff can move from days into weeks, better distributing and utilizing the water afforded from winter storage.

Wildfire

- According to the National Institute of Standards and Technologies (NIST), wildfires in the 1970's destroyed about 400 homes nationwide.

- Since 2000, wildfires have destroyed about 3000 homes per year.

Wildfire

- Insurance claims due to wildfires on federally mismanaged lands have resulted in insurance claims in the billions of dollars.
- For instance, in 2012-2013, insurance claims in just Colorado have exceeded $1 Billion dollars.
- 1000’s of properties and 100,000’s of acres of land have become underinsured or uninsurable due to necessary policy changes of insurance carriers due to mismanagement of adjacent property.

Wildfire – Social impact

- “During the handling of your fire claim on the above property it has come to State Farm’s attention that your property is at a high risk for sustaining another fire claim due to the remaining stand of charred trees that were burned during the major fire last year on the lot adjoining yours. While we understand that you do not have any control over these trees, they are an increased hazard to your home and potentially other homes in the area and should be removed. If the charred trees are not removed it may result in your policy not being renewed. Obtaining a new policy with another carrier may be difficult at the least if not substantially more costly due to the existing increased fire hazard”

Wildfire

- Loss of resources due to catastrophic events, stemming from federal mismanagement have resulted in billions of dollars of lost revenue.
- One event alone caused the destruction of enough timber in 3 weeks to run a full-scale mill of 300 workers, 24/7 for 21 years.
- Loss of habitat, wildlife, soil, increased sedimentation, water supplies and quality, air quality, property tax available to local governments.

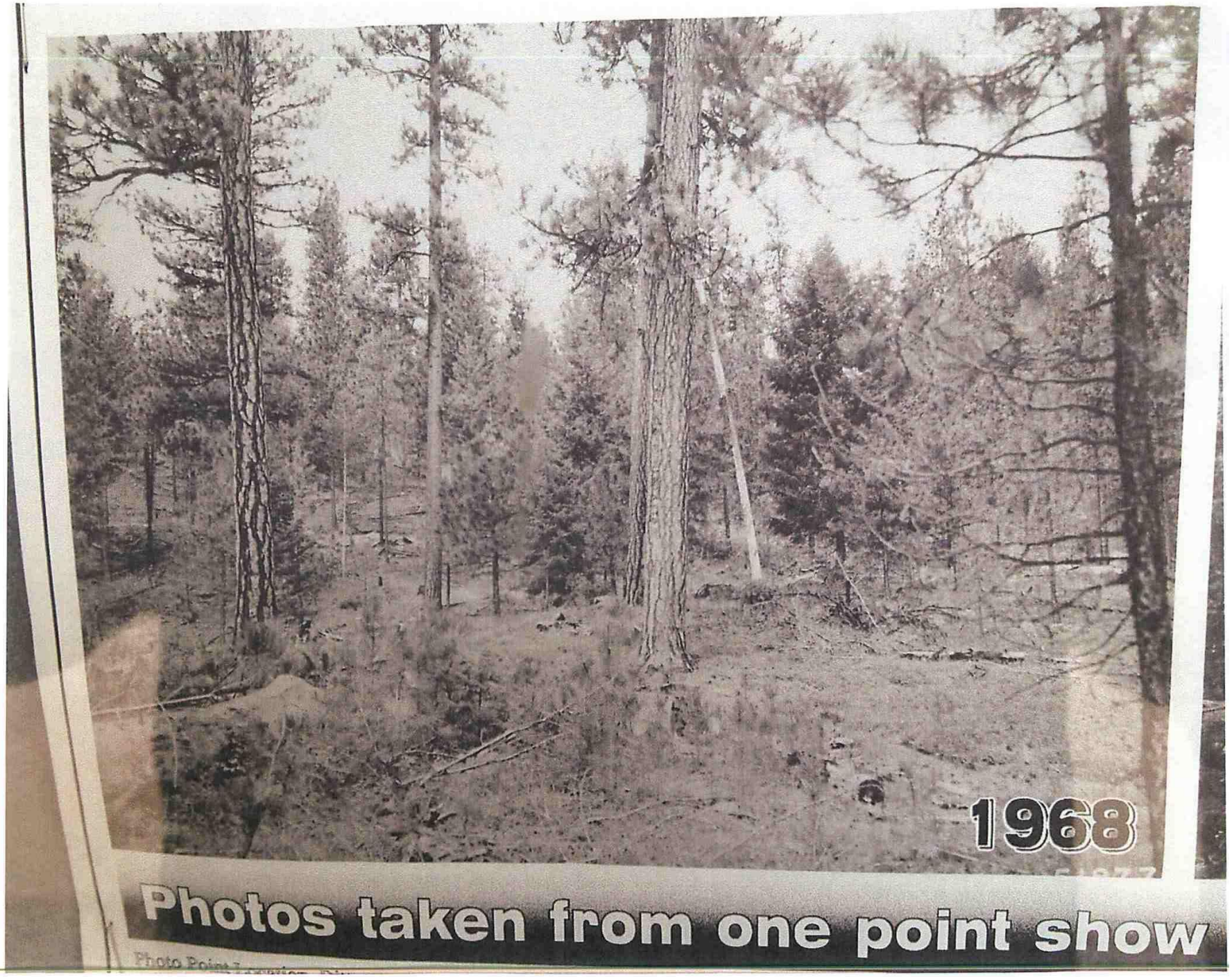
Wildfire

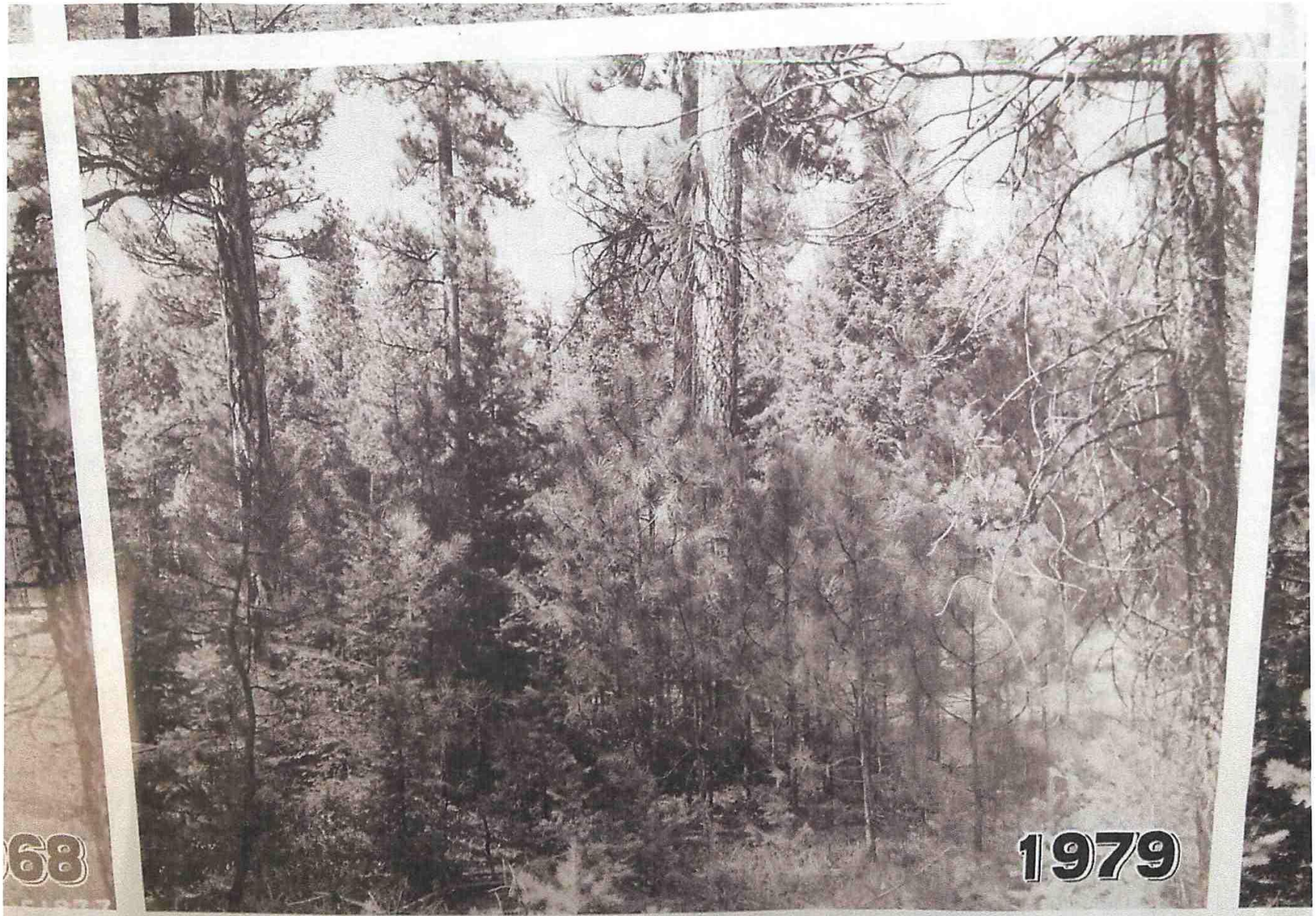
- In a well documented study in AZ, a single wildfire incident, the Rodeo-Chediski, resulted in over $1 billion in losses due to cost of restoration, opportunity costs of values lost and rebuilding of infrastructure for tourism.
- Analysis showed this incident caused a long-term asset value loss in timber of over $1 trillion.


1909


1948


Large pine cut ~ 1952
1958


1968
Photos taken from one point show



show changes resulting from fire exclusi

, Intermountain Fire Sciences Laboratory, P.O. 8089, Missoula, MT 59807 (406-329-4800) Produced by U.S Department of Agriculture, Forest


1989

Wildfire and Timber

- In the west, it was found that the benefits of treating medium and high risk stands exceeded costs by $1000 - $2000 per acre.
- A treatment area in Apache County with a cost of $41,000 was estimated by fire management teams and state forestry to have avoided suppression costs of $250,000…if suppression could even have occurred due to the extreme danger the landscape offered.

Wildfire and Timber

- The tree density rates in the average western forest are 10-30 fold a naturally healthy and sustainable level.
- Growth rates exceed extraction rates by 400%.
- The most recent studies and reports on forest areas show that the U.S. forests are adding 938,600 acres of growth per year. In other words, 19,019,000 acres in the last measurable decade. ***Yet…***

Wildfire and Timber

- “it (the U.S.) still contributes to deforestation as an importer of forest products”.

Wildfire and Timber

- In just the Southwestern forests, the annual growth is equal to the quantity necessary to build a 1,900 square foot hom,e for 90,000 families. Remember, that is the *per year* new fiber in just the forests of AZ and NM.

Wildfire and Timber

- Treatments - Although federal policies stipulate that significant resources should be invested in the WUI, it has been found that only 3% of the area treated was within the WUI.
- Often Wildfire Hazardous Fuels Reduction is cited by federal agencies as a positive aspect of their “management” ability…yet on average only 14% of total appropriated funds actually goes towards these efforts.

Wildfire and Timber

- Southwestern forests can have an average value of $176.66 per thousand board feet (mbf).
- A minimum operable acre of 2 mbf in the southwest would equate to $353.32
- Wallow Fire burned 540,000 acres.
- Direct Timber Loss - $192,792,800.00
- Opportunity Costs and restoration will exceed $2 Billion
- Long-term Asset Value Loss to exceed $1.5 Trillion

Air

- Carbon, uranium, “greenhouse gas” emissions, particulate matter, heavy metals, etc. are released at alarming rates due to federal mismanagement of the lands via wildfires.

- For an overcrowded, higher than healthy tree density, which is the norm today in the western forests the figures are alarming.

Air

- Using Forest Carbon Emission Models, it has been discovered that an acre of land consumed in wildfire can emit 126 tons of “greenhouse gas”. This is based on an acre stand of 700 trees, where much of the western forests contain substantially higher stand densities.
- In a more understandable form, **4 wildfires in CA emitted the equivalent of 7,000,000 cars ran for 24/7 for an entire year**.

Some other economic factors

- The USFS spends on average **5 times the amount as the comparative state agency on management**.
- The BLM spends on average **2 times the amount as the comparative state agency on management**.
- Often federal agencies indicate poor quality assets as the reasoning for differentials, while most often it is a **fact of overly high management costs and lack of any incentive towards a profitable or at least cost-effective operation.**

Some other economic factors

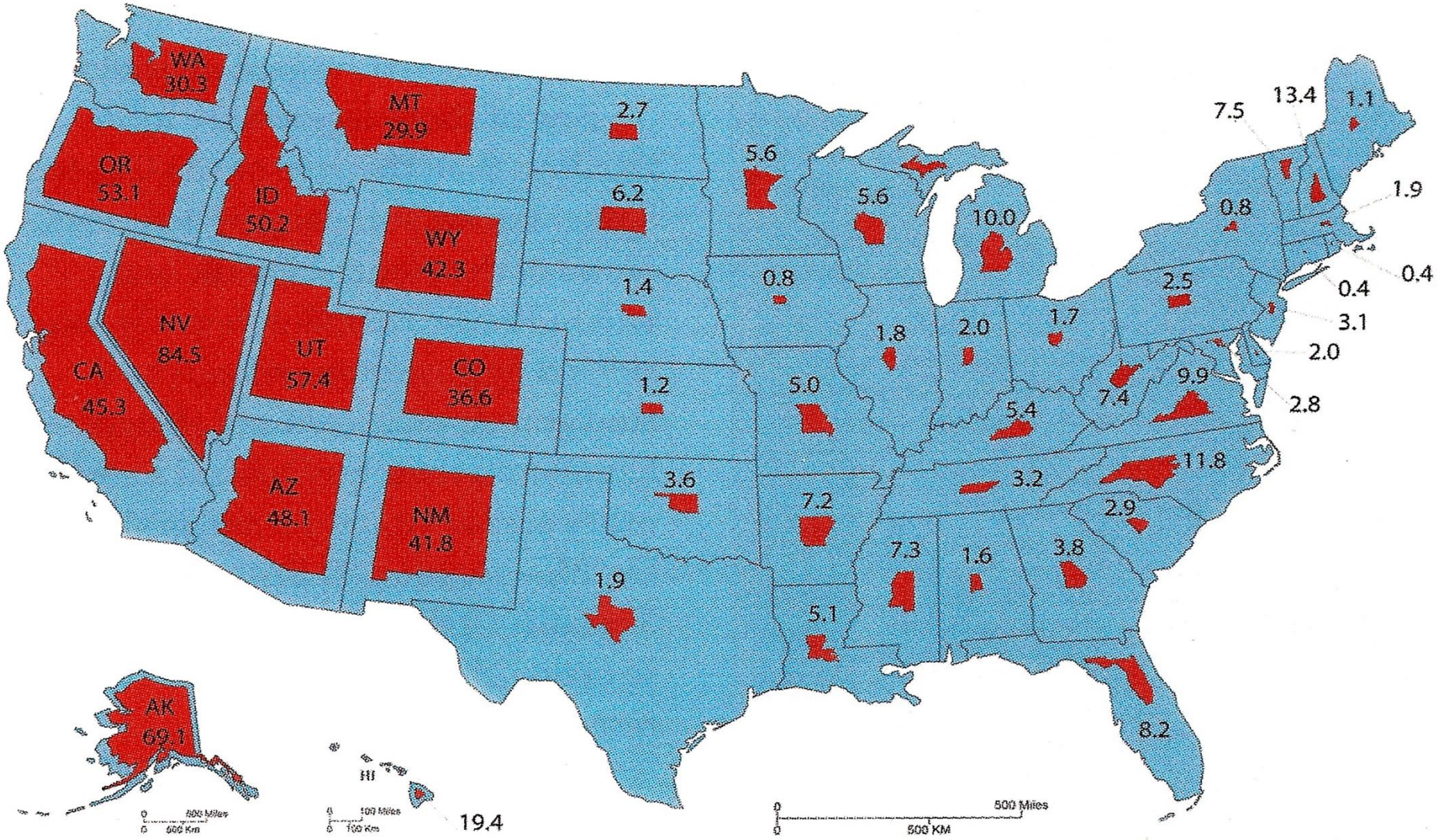
- Number of agency personnel per acre is one of the major contributors to these losses.
- The States average 36 employees per million acres.
- The BLM averages 45 employees per million acres.
- The USFS averages 210 employees per million acres.

Some other economic factors

- States earn average annual revenues from land management of about $425,000 per full-time employee.
- The BLM earns close to $110,000 per full-time employee.
- The USFS earns less than $24,000- per full-time employee.

WHO OWNS THE WEST?

Federal Land as a Percentage of Total State Land Area



Data source: U.S. General Services Administrataion, *Federal Real Property Profile 2004,* excludes trust properties.

Acres Burned

Year-to-date statistics		
2017 (1/1/17 - 9/22/17)	Fires: 48,612	Acres: 8,552,286
2016 (1/1/16 - 9/22/16)	Fires: 44,205	Acres: 4,859,568
2015 (1/1/15 - 9/22/15)	Fires: 47,246	Acres: 8,941,322
2014 (1/1/14 - 9/22/14)	Fires: 40,115	Acres: 3,027,795
2013 (1/1/13 - 9/22/13)	Fires: 38,529	Acres: 4,011,552
2012 (1/1/12 - 9/22/12)	Fires: 47,287	Acres: 8,623,360
2011 (1/1/11 - 9/22/11)	Fires: 58,957	Acres: 7,679,323
2010 (1/1/10 - 9/22/10)	Fires: 48,302	Acres: 2,742,471
2009 (1/1/09 - 9/22/09)	Fires: 70,189	Acres: 5,569,298
2008 (1/1/08 - 9/22/08)	Fires: 67,981	Acres: 4,718,774
2007 (1/1/07 - 9/22/07)	Fires: 71,053	Acres: 8,090,146

Suppression Costs of Wildfire

Federal Firefighting Costs (Suppression Only)					
Year	Fires	Acres	Forest Service	DOI Agencies	Total
2007	85,705	9,328,045	$1,149,654,000	$470,491,000	$1,620,145,000
2008	78,979	5,292,468	$1,193,073,000	$392,783,000	$1,585,856,000
2009	78,792	5,921,786	$702,111,000	$218,418,000	$920,529,000
2010	71,971	3,422,724	$578,285,000	$231,214,000	$809,499,000
2011	74,126	8,711,367	$1,055,736,000	$318,789,000	$1,374,525,000
2012	67,774	9,326,238	$1,436,614,000	$465,832,000	$1,902,446,000
2013	47,579	4,319,546	$1,341,735,000	$399,199,000	$1,740,934,000
2014	63,312	3,595,613	$1,195,955,000	$326,194,000	$1,522,149,000
2015	68,151	10,125,149	$1,713,000,000	$417,543,000	$2,130,543,000
2016	67,743	5,509,995	$1,603,806,000	$371,739,000	$1,975,545,000

- The Department of Interior agencies include: Bureau of Indian Affairs, Bureau of Land Management; National Park Service; and U.S. Fish and Wildlife Service.
- The U.S. Forest Service is an agency of the Department of Agriculture.
- Annual fires and total acres include all private, state and federal lands.
- Costs are not adjusted for inflation.

Federal Firefighting Costs (Suppression Only)					
Year	**Fires**	**Acres**	**Forest Service**	**DOI Agencies**	**Total**
1985	82,591	2,896,147	$161,505,000	$78,438,000	$239,943,000
1986	85,907	2,719,162	$111,625,000	$91,153,000	$202,778,000
1987	71,300	2,447,296	$253,657,000	$81,452,000	$335,109,000
1988	72,750	5,009,290	$429,609,000	$149,317,000	$578,926,000
1989	48,949	1,827,310	$331,672,000	$168,115,000	$499,787,000
1990	66,481	4,621,621	$253,700,000	$144,252,000	$397,952,000
1991	75,754	2,953,578	$132,300,000	$73,820,000	$206,120,000
1992	87,394	2,069,929	$290,300,000	$87,166,000	$377,466,000
1993	58,810	1,797,574	$184,000,000	$56,436,000	$240,436,000
1994	79,107	4,073,579	$757,200,000	$161,135,000	$918,335,000
1995	82,234	1,840,546	$367,000,000	$110,126,000	$477,126,000
1996	96,363	6,065,998	$547,500,000	$153,683,000	$701,183,000
1997	66,196	2,856,959	$179,100,000	$105,048,000	$284,148,000
1998	81,043	1,329,704	$306,800,000	$109,904,000	$416,704,000
1999	92,487	5,626,093	$361,100,000	$154,416,000	$515,516,000
2000	92,250	7,383,493	$1,076,000,000	$334,802,000	$1,410,802,000
2001	84,079	3,570,911	$683,122,000	$269,574,000	$952,696,000
2002	73,457	7,184,712	$1,279,000,000	$395,040,000	$1,674,040,000
2003	63,629	3,960,842	$1,023,500,000	$303,638,000	$1,327,138,000
2004	65,461	8,097,880	$726,000,000	$281,244,000	$1,007,244,000
2005	66,753	8,689,389	$524,900,000	$294,054,000	$818,954,000
2006	96,385	9,873,745	$1,280,419,000	$424,058,000	$1,704,477,000
2007	85,705	9,328,045	$1,149,654,000	$470,491,000	$1,620,145,000
2008	78,979	5,292,468	$1,193,073,000	$392,783,000	$1,585,856,000
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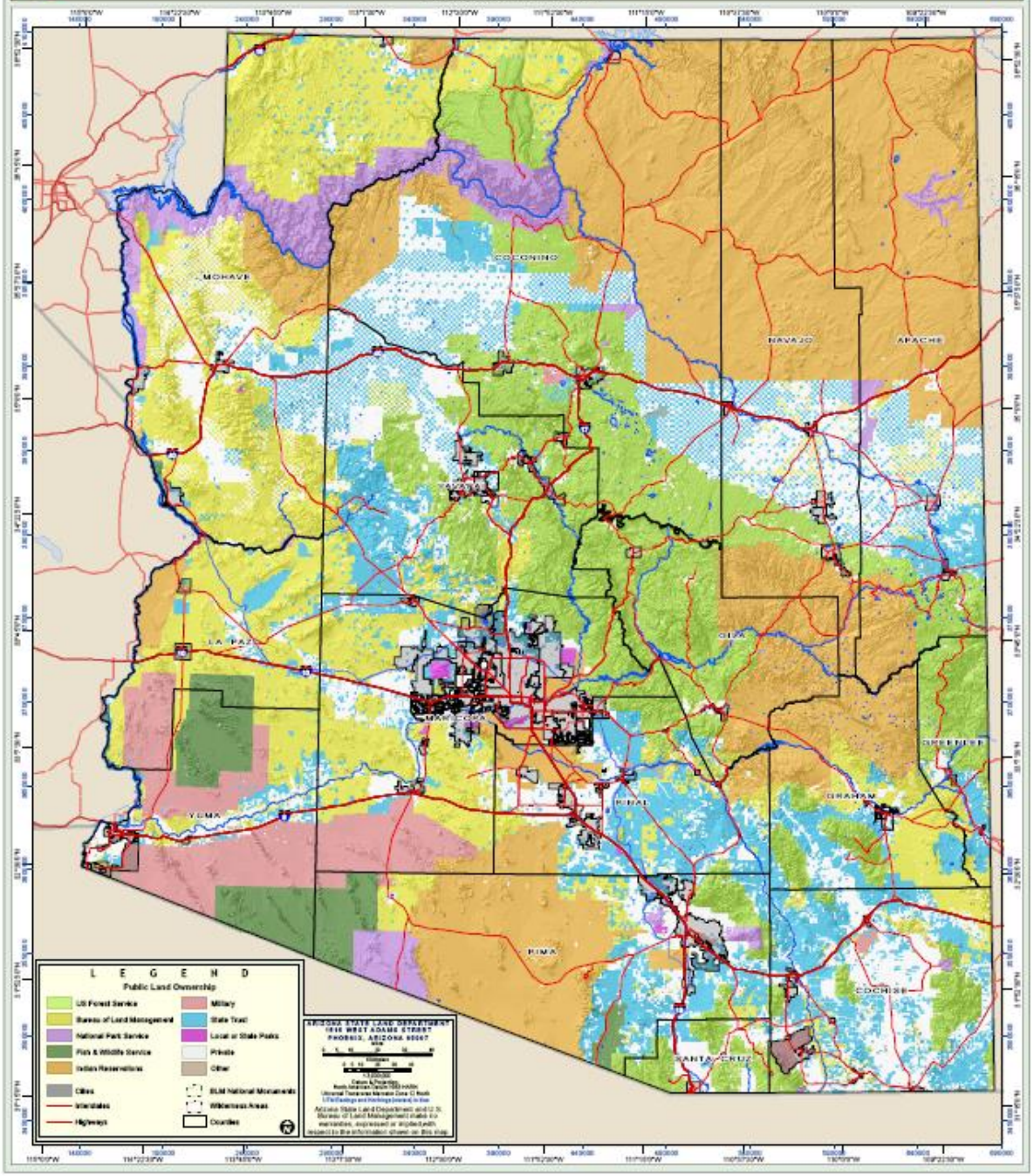
ARIZONA SURFACE MANAGEMENT RESPONSIBILITY

Arizona State Land Department / U.S. Bureau of Land Management

State and Federal Government Working Together



Prefatory comments on Natural Resource Data:

Data involving natural resources are based largely on sample plots, predictive modeling and statistical averages with variances accounted during equations. As one can readily imagine, actually counting the number of trees, by species, vitality, basal area, age class along with stand-size would be a near impossibility and therefore is nonexistent. Hence, it is appropriate to inform the reader in advance of these variances and alert them to methodologies where applicable.

Data is arrived at from hundreds of test point/plots on any given management unit/division of land, culminating in thousands of points/plots across the state when looked at on that scale and across multiple agencies tasked with land management activities.

Maps, and related map-based products, refer to modeled cell values on the map – i.e., all the area between the data and test points. So, the model is predicting what will be there; not in a future sense, but in the sense that it's predicting what you'd find if you were to sample a given point (or area) on the map. The models were trained using data from measured points on the ground, but there's not any guarantee that even the cell located over a given plot will necessarily reflect the values on that plot.

We never predict (or, more accurately stated, project) values that would come from the plots themselves, although there is interest in doing this at some point in the future. Even those wouldn't be singe-value projections, but rather a range of likely scenarios based on recent and anticipated growth and disturbance (e.g., insects or fire) trends. Projections, done correctly, are very time-consuming and require the consideration of a lot of data other than what comes from the plots. Then, after all that, a large fire or bark beetle outbreak can blow the whole project apart.

An example the reader may be familiar with is the Pinyon IPS outbreak of 2003-05; around 15% of the live biomass was killed off in 2-3 years. The last time that occured was in the 1950s, but studies weren't done to determine the triggering conditions. As a result, there was no way to predict in 2002 what would happen in 2003-5. Likewise, no data existed that would allow us to predict when it would end, but most of it was over by 2006. Figuring out the thresholds is one of the many goals of research.

What you get from the plot data are estimates with associated statistical uncertainty.

Apache County, Arizona Land Mass Overview:

Total:	11,218 square miles	7,179,520 acres
Land:	11,198 square miles	7,166,720 acres
Water:	21 square miles	13,440 acres

By Disposition (percentages vary due to rounding)

Private:	11%	841,674 acres
State:	9%	661,739 acres
BIA:	67%	4,902,465 acres
BLM:	2%	121,633 acres
DOI:	2%	164,101 acres
USFS:	9%	487,908 acres

** Graphic source: Joseph Crouse, Sr. Applications Systems Analyst, ERI*

Economic Factors

There is a need to examine many of the current economic factors for a variety of reasons.

Many economic sectors are under increased burden and threat of catastrophic curtailment again often due to the primary land dispositions and locations where said activities occur.

Legislative, judicial and policy impacts are one of the largest threats to Arizona economies and the citizens' health, safety and welfare. A great many of these curtailments are not seen outside of federally managed areas.

Of the prominent sectors of growth in the U.S. economy, outdoor recreation was one of the strongest since the recession of 2008. This sector could contribute much more to the Arizona economy if multiplier effects were allowed to prevail, or stay in the local economies for a longer period. This is often affected by current management policies and the agencies involved, when one considers the location of activities and agencies currently responsible for their management.

Overview of General Outdoor Recreation

While many sectors of the economy contracted since the recession of 2008, the outdoor recreation economy has grown by approximately 5 percent annually. This however often involves activities that are conducted on land areas, which are not under the management of Arizona, pulling valuable assets from the state. Many of these activities, due to changes in policies and litigation, are facing severe economic impacts when considering the current land disposition.

In Arizona the outdoor recreation economy generates $10.6 billion in consumer spending, 104,000 direct Arizona jobs and $787 million in state and local tax revenue. Much of this hinges on avoiding interruptions via access, catastrophic landscape changes due to occurrences like large-scale wildfire and restrictions to water via litigation and federal agency policy changes.

Hunting and Fishing

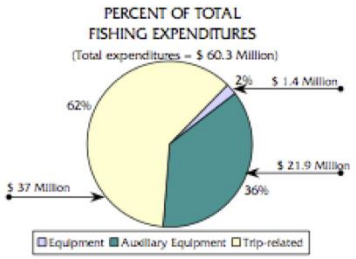
Hunting and fishing activities in Apache County are another significant economic sector. This sector, as in others, is under a greatly amplified threat of curtailment due to management policies and litigation on the non-state lands where much of the activities take place.

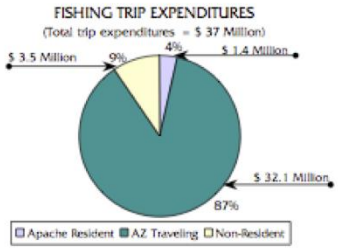
In Apache County hunting and fishing accounts for the following: 1,010 full-time and part-time jobs, $62.7 million in expenditures ($72 million with multiplier effect), $8.9 million in salaries and wages along with a state tax revenue effect of $3.4 million.

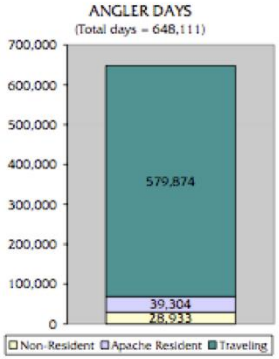
APACHE COUNTY

Economic Impacts	
Fishing and Hunting Expenditures	$ 62.8 Million
Total Multiplier Effect	$ 72.0 Million
Salaries and Wages	$ 8.9 Million
Full-Time and Part-Time Jobs	1,010
State Tax Revenues	$ 3.4 Million

Fishing: Direct Economic Impacts	
Angler Days	
Total Angler Days	648,111
Apache County Resident	39,304
AZ Resident Traveling to Apache County	579,874
Non-Resident	28,933
Expenditures	
Total Fishing Expenditures	$60.3 Million
Total Trip Related	$37.0 Million
Food, Restaurant	$8.7 Million
Lodging	$8.9 Million
Transportation	$7.6 Million
Other	$11.8 Million
Total Equipment Expenditures	$23.3 Million
Fishing Equipment	$1.4 Million
Auxiliary Equipment	$21.9 Million

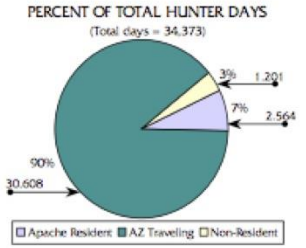


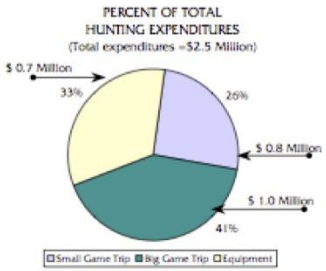




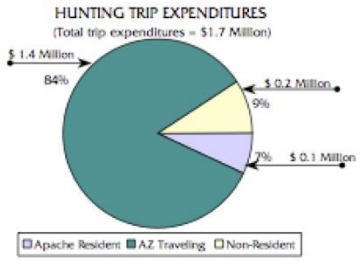
** Graphic source: Jonathan Silberman, PhD.*

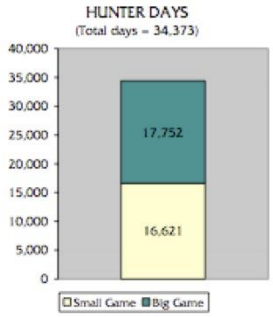
APACHE COUNTY





HUNTING: DIRECT ECONOMIC IMPACTS
HUNTER DAYS
TOTAL HUNTER DAYS
34,373
TOTAL SMALL GAME
16,621
Apache County Resident
915
AZ Resident Traveling to Apache County
14,944
Non-Resident
762
TOTAL BIG GAME
17,752
Apache County Resident
1,649
AZ Resident Traveling to Apache County
15,664
Non-Resident
439
EXPENDITURES
TOTAL HUNTING EXPENDITURES
$2.5 Million
Small Game Trip Expenditures
$0.7 Million
Big Game Trip Expenditures
$1.0 Million
Equipment Expenditures
$0.8 Million





** Graphic source: Jonathan Silberman, PhD.*

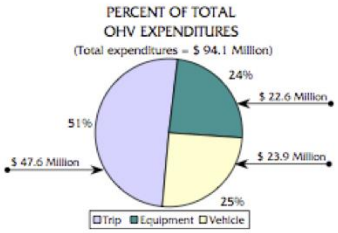
Off-Highway Vehicle Recreation

Off-Highway Vehicle Recreation is a large economic sector in Apache County, contributing: 842 full-time and part-time jobs, $94.1 million in direct expenditures ($101.9 million with multiplier effect), $12.8 million in salaries and wages along with $2.9 million in state tax revenues.

This activity, like most outdoor activities, once again faces massive curtailment due to the current disposition of lands. Sweeping policy changes and litigation towards the agencies predominately responsible for the land wherein much of these activities occur is the prevailing factor.

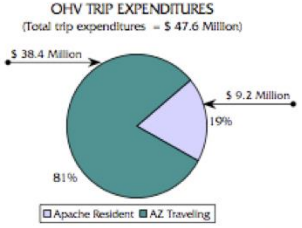
Apache County

Economic Importance	
OHV EXPENDITURES	$ 94.1 Million
TOTAL MULTIPLIER EFFECT	$ 101.9 Million
SALARIES AND WAGES	$ 12.8 Million
FULL-TIME AND PART-TIME JOBS	842
STATE TAX REVENUES	$ 2.9 Million



OHV Activity Days	
TOTAL OHV DAYS	
896,479	
Apache County Resident	
153,125	
AZ Resident Traveling to Apache	
743,353	

Expenditures	
TOTAL OHV EXPENDITURES	
$94.1 Million	
TOTAL TRIP RELATED	
$47.6 Million	
Fuel	
$11.8 Million	
Lodging	
$8.6 Million	
Restaurant/ bars	
$8.1 Million	
Groceries/ liquor	
$9.4 Million	
Other	
$9.7 Million	
TOTAL EQUIPMENT EXPENDITURES	
$22.6 Million	
TOTAL VEHICLE EXPENDITURES	
$23.9 Million	



Major OHV Recreation Trip Activities	
Driving back roads	73.6%
Sightseeing	54.2%
Camping	40.3%
Picnicking	38.9%
Hiking/ Walking	34.7%

OHV Household Demographics	
Married	83.8%
Income greater than $75000	22.7%
Income less than $25000	9.1%
Average age	49
Average years lived in AZ	31
College degree	24.6%

** Graphic source: Jonathan Silberman, PhD.*

Forestry and Forestry Related Economies

Alongside the livestock and ecological production industry, this industry has had the greatest disruption due to litigation, policy and management changes towards the agencies currently charged with the bulk of land management activities.

Some graphics, background and current data are necessary to realize the full economic potential of this sector and its potential to positively contribute to the county's infrastructure, tax-base, and economic well-being.

Predicted area, in acres, by forest-type group

Pinyon / Juniper group	1,842,725
Douglas-fir group	91,647
Ponderosa Pine group	592,563
Fir / Spruce / Mountain Hemlock group	109,856
Aspen / Birch group	83,757
Woodland Hardwood group	116,795

Predicted net volume of live trees (at least 5" diameter at breast height-d.b.h.), by stand-size class

Cubic Feet = cu ft Board Feet = bd ft

Large diameter	3,160,020,492 cu ft	37,920,245,904 bd ft
Medium diameter	107,334,120 cu ft	1,288,009,440 bd ft
Small diameter	25,495,112 cu ft	305,941,344 bd ft

Predicted annual net growth (growth after mortality)

36,600,000 cu ft 439,200,000 bd ft

Predicted annual mortality of growing-stock trees (at least 5 inches d.b.h.)

Douglas-fir group	3,430,273 cu ft	41,163,276 bd ft
Ponderosa and Jeffry Pine group	8,891,124 cu ft	106,693,488 bd ft
True Fir group	5,009,255 cu ft	60,111,060 bd ft
Engelmann and other Spruces group	3,673,078 cu ft	44,076,936 bd ft
Other western softwoods group	230,267 cu ft	2,763,204 bd ft
Cottonwood and Aspen group	2,991,399 cu ft	35,896,788 bd ft

(This is an under-discussed category, despite having some unique attributes. This category's annually contributes to the fuel-load, which exceeds a natural level by an average of 600%. As well, local industries pay $35 per dry ton to generate electricity and are in short supply due to land management constraints. Other value added industries for woody biomass are MDF Board, Pulp and Heating Pellets that can easily be expanded in Apache County due to locality of supply and railhead infrastructure, if land and agency changes were made. Current worldwide demand for many of these products far exceeds the current available production rates.)

**Data derived from the 2012 and 2013 plot sampling of the USDA-RMRS*

2014 vs. 2015 Payments for Roads and Schools

Payment comparison by state, 2014 and 2015

State	*2015 Payment (1908 Act)	2014 SRS Payments (Titles I, II, and III)	
Alabama		$589,058	$1,787,311
Alaska		$535,167	$14,244,726
Arizona		$1,341,927	$14,920,201
Arkansas		$2,964,271	$7,629,409
California		$8,684,643	$35,619,493
Colorado		$5,056,051	$13,399,187
Florida		$725,574	$2,451,630
Georgia		$169,987	$1,454,308
Idaho		$2,031,639	$28,312,943
Illinois		$230,525	$263,427
Indiana		$35,424	$252,237
Kentucky		$112,419	$1,764,442
Louisiana		$1,202,521	$1,915,439
Maine		$30,619	$67,166
Michigan		$2,285,472	$3,847,718
Minnesota		$1,119,816	$2,429,801
Mississippi		$1,125,125	$5,713,570
Missouri		$859,966	$3,332,479
Montana		$2,067,371	$21,342,884
Nebraska		$21,282	$193,089
Nevada		$404,852	$4,015,098
New Hampshire		$369,659	$500,716
New Mexico		$662,826	$10,449,928
New York		$1,951	$17,776
North Carolina		$482,093	$1,800,539
North Dakota		$58	$381
Ohio		$62,906	$258,815
Oklahoma		$452,470	$1,076,358
Oregon		$5,890,065	$67,871,382
Pennsylvania		$1,806,957	$2,953,063
Puerto Rico		$41,778	$141,185
South Carolina		$1,149,326	$1,807,757
South Dakota		$893,054	$1,776,734
Tennessee		$149,207	$1,157,176
Texas		$599,439	$2,485,335
Utah		$953,670	$10,935,246
Vermont		$173,343	$317,063
Virginia		$282,272	$1,576,594
Washington		$2,137,181	$21,549,496
West Virginia		$282,712	$1,967,440
Wisconsin		$1,145,747	$1,920,670
Wyoming		$1,258,190	$4,528,376
Total		**$50,388,613**	**$300,048,590**

*Note: The FY 2015 payments do not include Special Act payments to Arkansas ($6,124),

Minnesota ($5,701,050), and Washington ($2,470).

Predicted economic value of existing growing stock, excluding annual growth and value-added industry enhancements

$989,296,000

Every 10,000 acres of treatment has a predicted job creation of 150 jobs.

**Note: Current sales volumes from land management agencies are 2.5% of annual growth.*

Solutions

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Apache County forest program cited as cure for 'disease' of growing wildfires

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Friday, July 20, 2012
By Samantha Bare
Cronkite News

WASHINGTON – Apache County's forest-stewardship agreement with the U.S. Forest Service was held up at a congressional hearing Friday as a model for other governments trying to tame the growing problem of wildfires.

Rep. Paul Gosar, R-Flagstaff, said programs like Apache County's contract to help thin the Apache-Sitgreaves National Forest should be part of a national strategy of forest management – not merely fire suppression – to combat catastrophic wildfires.

"Our forests have been mismanaged for a long time and it is way past due to change our strategy," Gosar told the House Natural Resources Committee (http://naturalresources.house.gov/Calendar/EventSingle.aspx?EventID=302930). "Although the need to suppress fires is never going to go away, we must shift priority towards proactive management."

He was testifying in support of his bill (http://thomas.loc.gov/home/gpoxmlc112/h5744_ih.xml) that would encourage federal officials to enter into timber-harvesting and grazing projects to reduce the amount of potential wildfire fuel on federal lands.

"When you have a drought, all the trees compete for that same drop of water," said David Cook, a member of the Arizona Cattlemen's Association (http://www.azcattlemensassoc.org/), who testified Friday. "That's why the forest needs to be thinned."

See related story:

Feds, Apache County launch first-ever partnership to thin forests, tame wildfires (http://cronkitenewsonline.com/2012/06/forest-service-apache-county-launch-first-ever-partnership-to-thin-forests-tame-fires/)

Solutions

Apache County's forest-stewardship agreement with the U.S. Forest Service was held up at a congressional hearing Friday as a model for other governments trying to tame the growing problem of wildfires.

Rep. Paul Gosar, R-Flagstaff, said programs like Apache County's contract to help thin the Apache-Sitgreaves National Forest should be part of a national strategy of forest management – not merely fire suppression – to combat catastrophic wildfires.

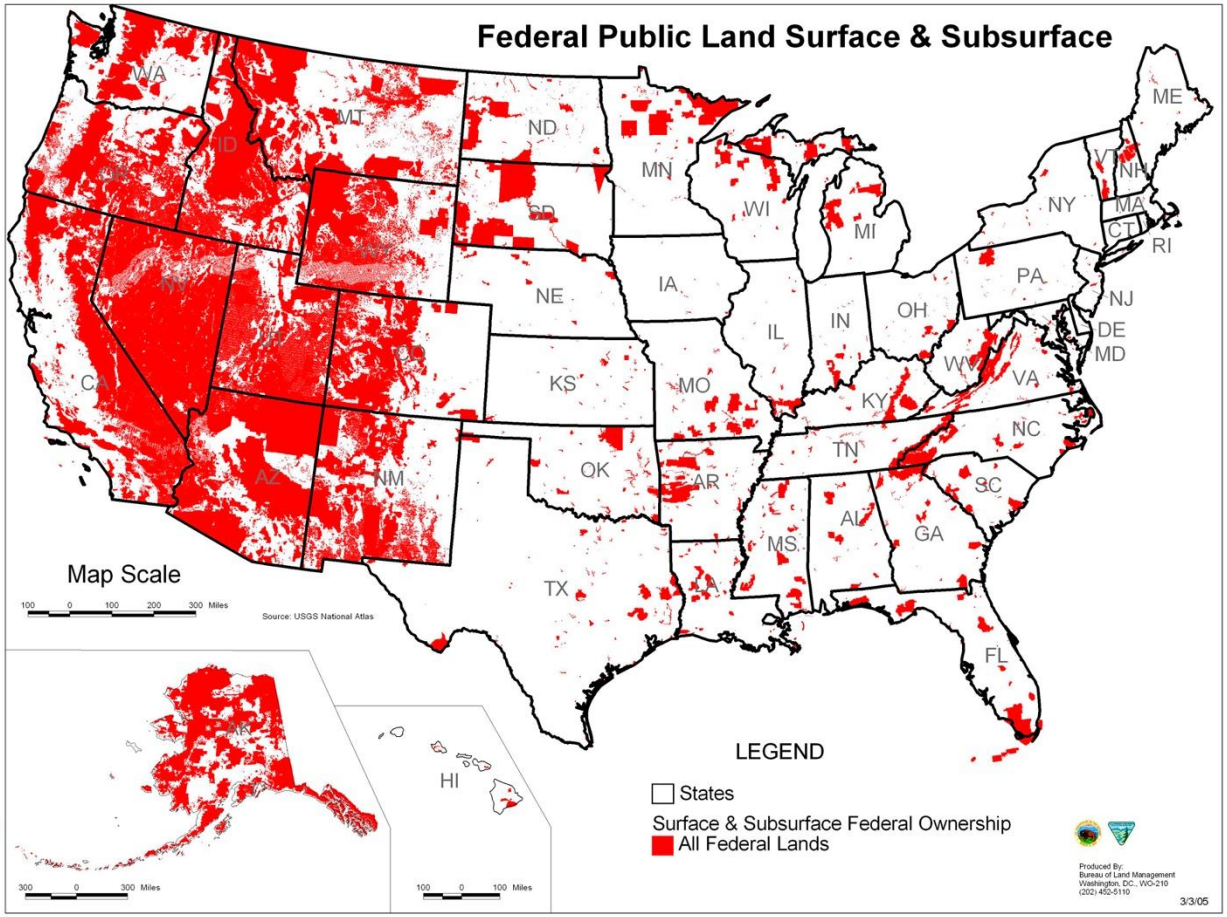
- Through the Congressional Western Caucus, continue to seek comprehensive reform of the Endangered Species Act (ESA), National Environmental Policy Act (NEPA) and a realignment of agencies duties under their Congressional Charters and Organic Documents.

Solutions

- Divestiture, Disposal or “realignment” of federally managed lands to the states and their respective state management agencies.

- AZDFFM, AZGFD, AZDA, AZDWR, etc.

Solutions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Untreated vs. Treated

Untreated vs. Treated

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