

# USDA Forest Service Research to Assist the National Forest System

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Southern Research Station  
Forest Operations

# Outline

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- USDA Forest Service Organization, R&D
- Forest Operations Research Unit
- National Forest Timber Program
- Role of Research in National Forest Management
- Summary

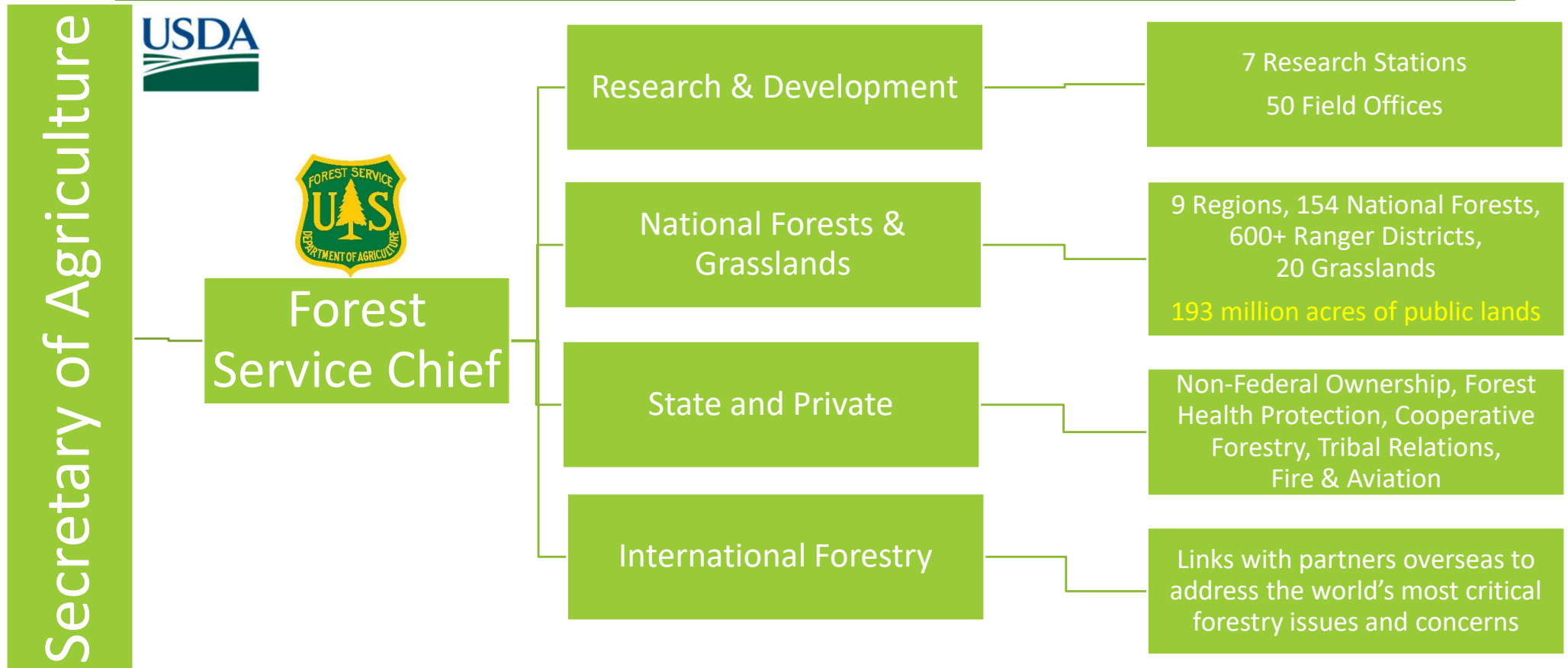


# USDA Forest Service Organization, R&D

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# US Forest Service Organization



# Research and Development Southern Research Station

15 Research Work Units  
19 Experimental Forests  
104 Research Scientists  
337 Employees



# Forest Operations Research Unit

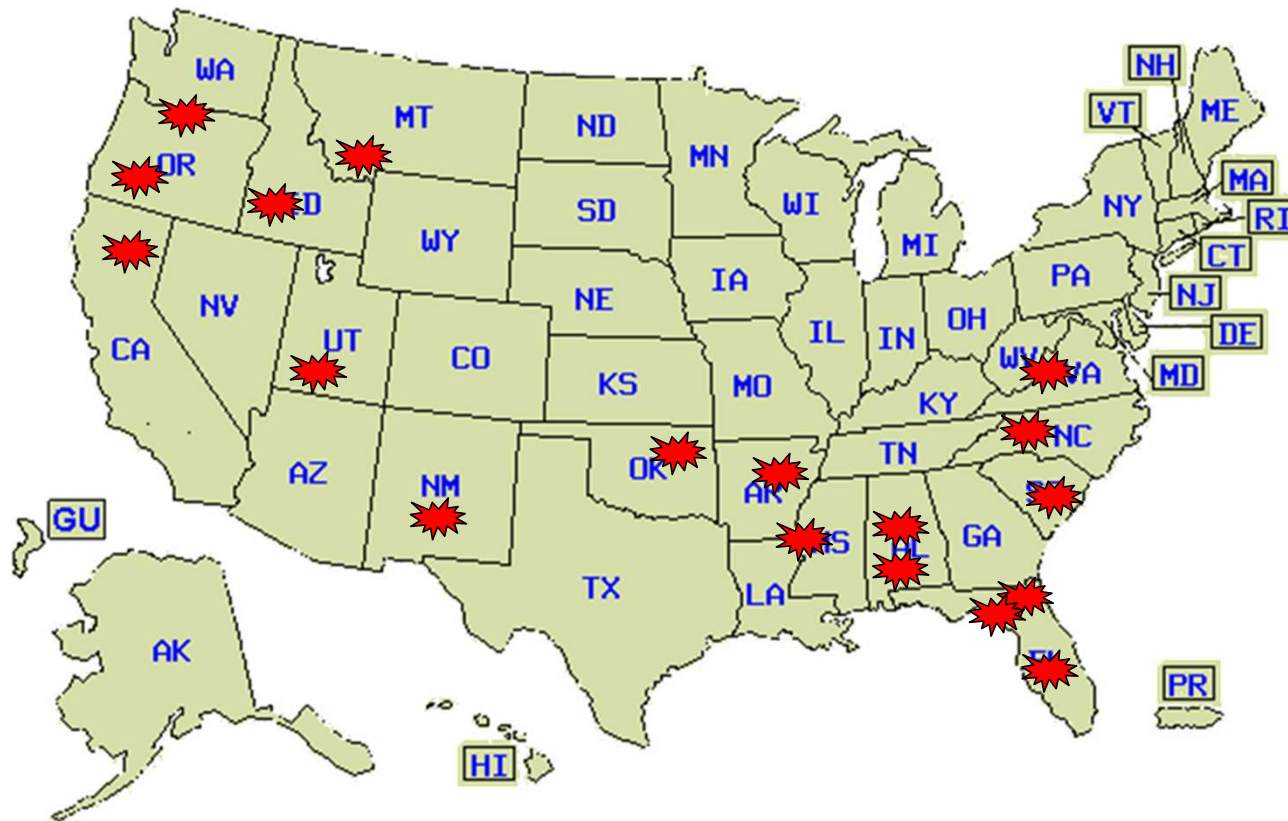
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# Forest Operations Research

## National Program





# Forest Operations Research



“Develop basic knowledge to help managers better match tools to resource management jobs”





# Forest Operations Research

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## Problem Areas

### 1. Forest Operations Technologies

- System performance and costs
- Evaluate physical workloads, identify safety issues

### 2. Ecological Effects of Forest Operations

- Soil and machine interactions
- Erosion and water quality

### 3. Forest Operations Management Systems

- Information technology - models
- Business considerations, policy considerations



# National Forest Timber Program

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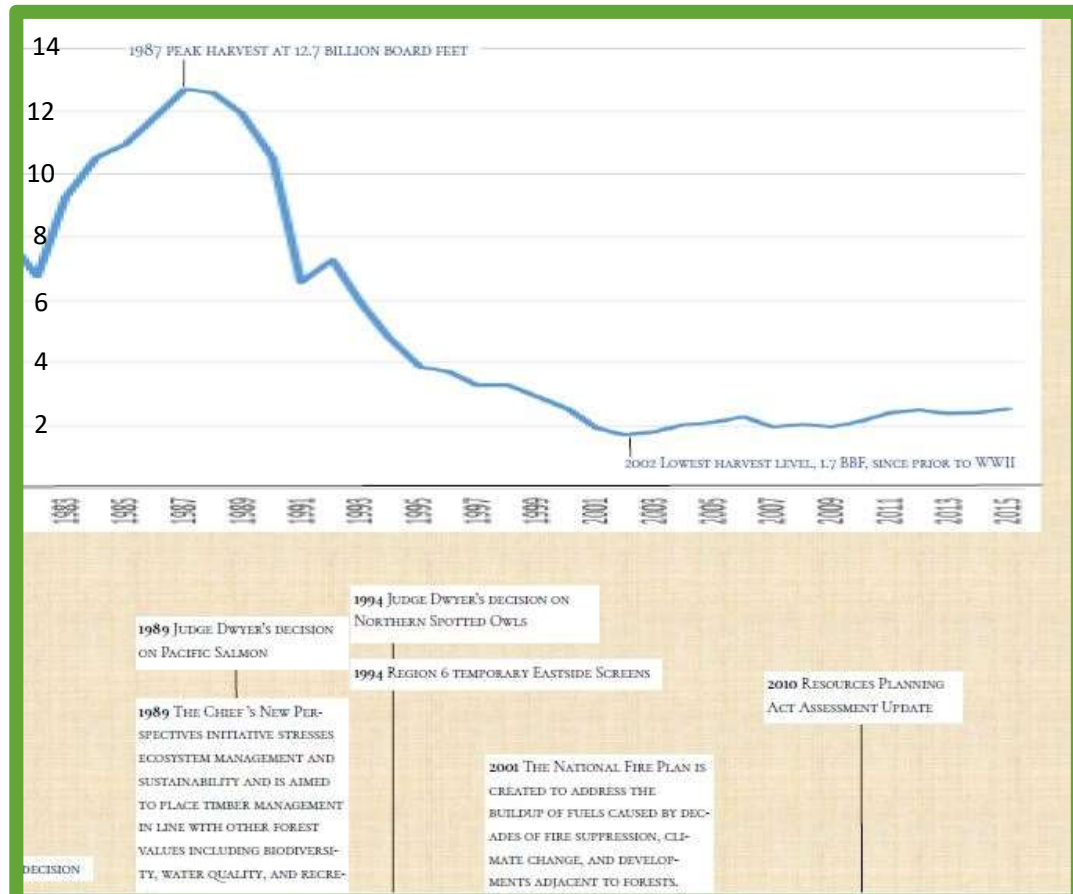
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# National Forest Timber Program

## HISTORIC TIMELINE

- ▶ Late 1980's: Salmon in Pacific NW, Chief's New Perspectives and ecosystem management 1989. Timber volume starts to decline.
- ▶ 1994: Spotted owls
- ▶ Late 1990s – 2000's: Office of Inspector General and timber theft on national forests leading to an increased scrutiny of standards, etc.; building a framework for prosecution for stealing forest timber.
- ▶ 2001 Roadless Area rule
- ▶ 2008 & 2014 Farm Bill - Good Neighbor Authority and new authorities

Source: USFS



# National Forest Timber Program

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## 5 NATIONAL PRIORITIES

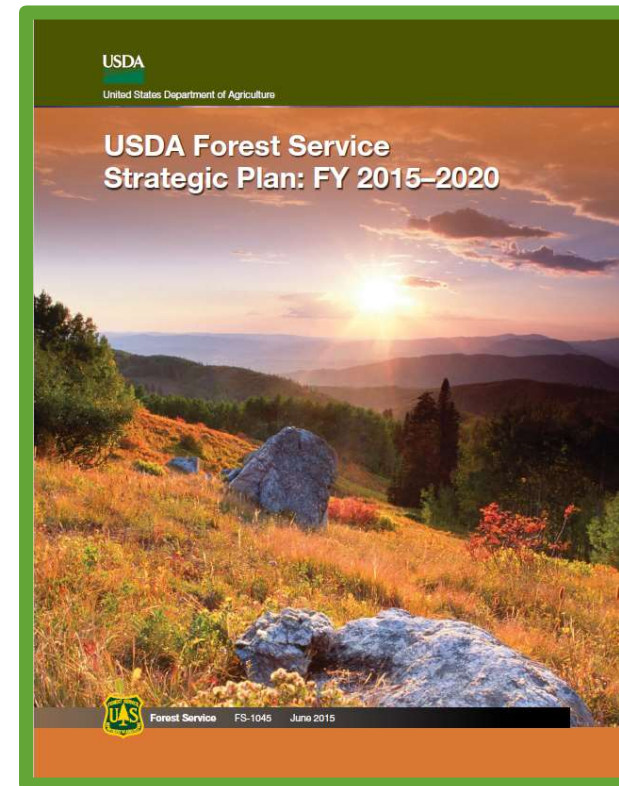
Uplifting and empowering our employees through a respectful, safe working environment.

Being good neighbors and providing excellent customer service

Promoting shared stewardship by increasing partnerships and volunteerism

Improving the condition of forests and grasslands.

Enhancing recreation opportunities, improving access and sustaining infrastructure.



# National Forest Timber Program

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## FOREST PRODUCTS MODERNIZATION

**Sale Layout:** Determine which sale layout policies and procedures (cruise standards/design, paint, unit and sale boundary delineation

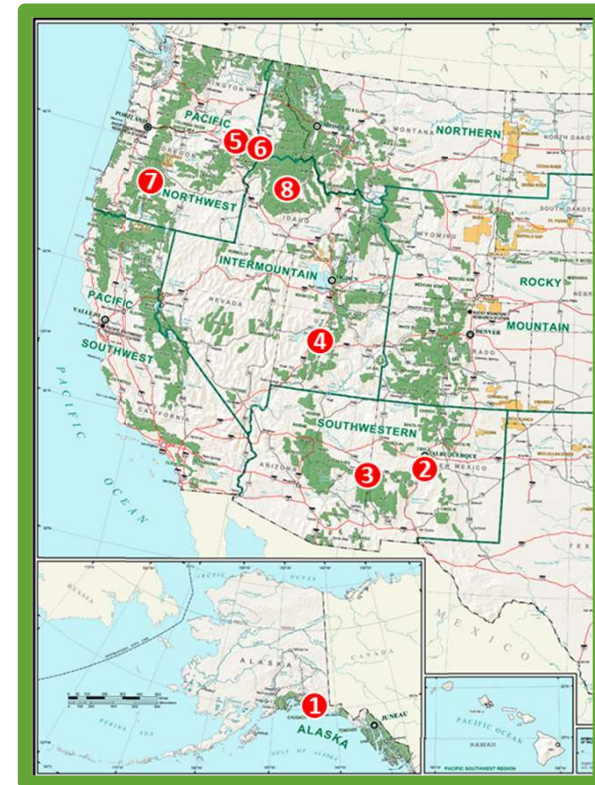
**Timber Sale Accounting, Scaling and Accountability:** Increase flexibility and efficiency in the financial system...and timber weight scaling policies and procedures. This includes sale inspections, haul routes, sales at base rates, measurements.....



# National Forest Timber Program

## UNMANNED AIRCRAFT SYSTEM (UAS)

1. Placer River Trail Bridge Inspection / Chugach NF
2. North Fire Support / Cibola NF
3. FHP/FM Aerial Survey / Apache-Sitgreaves NF
4. Eurasian Milfoil Mapping / Fishlake NF
5. Blackjack/Bluebird Mine Aerial Survey / Umatilla NF
6. Riparian Monitoring Survey / Wallowa-Whitman NF
7. Champion Mine Aerial Survey / Umpqua NF
8. Pioneer Post-Fire Aerial Survey / Boise NF



Source: <https://ems-team.usda.gov/sites/fs-fm-fpm/SitePages/Home.aspx>



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## DESIGNATION OF TIMBER

## Cost to designate small diameter and biomass (low valued material)



Source: USFS





# Role of Forest Operations Research in National Forest Management

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# Role of Forest Operations Research in National Forest Management

## PRODUCTION STUDIES





# Role of Forest Operations Research in National Forest Management

## TRANSPORTATION

High Capacity Chip Trailers  
(transpirationally dried chips)



Routing Options



High Capacity Plantation Trailers



Trailer Loading - Indexing



# Role of Forest Operations Research in National Forest Management

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## SALVAGE OPERATIONS

Camp Branch Fire

November 23, 2016

3,422 acres

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Production study

Classify burn scars

Relate scars to utilization

Viewshed from fire tower



Source: Nantahala National Forest

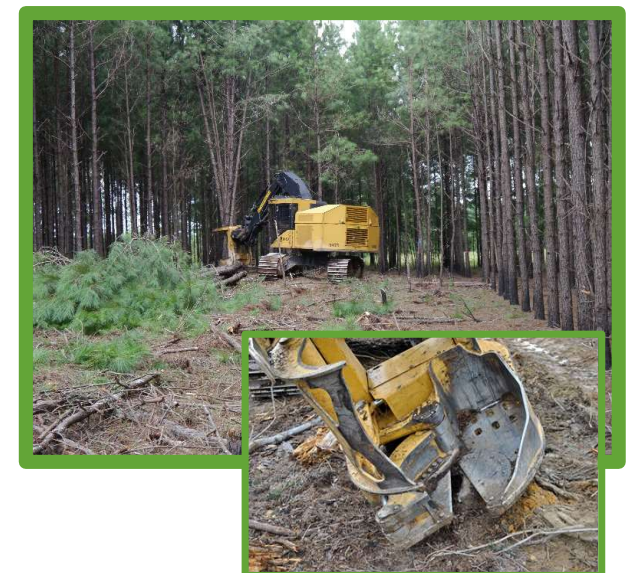


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# Role of Forest Operations Research in National Forest Management

NEW TECHNOLOGIES, NEW  
MARKETS, NEW APPLICATIONS



# Role of Forest Operations Research in National Forest Management

## OTHER OPERATIONS



# Summary

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# Summary

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## RESEARCH PROJECTS

Sale Layout: Examine the impact of the new procedures/new technologies on production rates and costs.

Timber Sale Accounting, Scaling and Accountability: Perform technology transfer and install new studies to address logging costs as they relate to timber sale appraisals. Understand the impact of damage to the value of end products.

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