

# Digital Engagement Products... Today & Tomorrow

An update of the FIA Digital Engagement Portfolio



# Engagement Portfolio

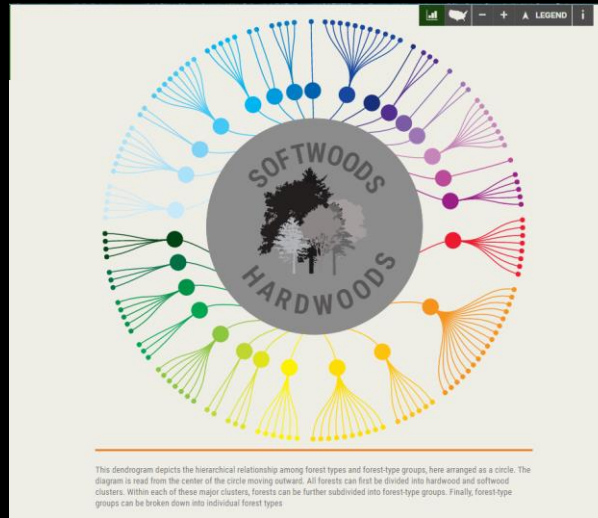
Providing rich, interactive experiences for the public while simultaneously making forestry data available to resource professionals and other users...

USDA  
United States Department of Agriculture  
Forest Service

FOREST ATLAS OF THE UNITED STATES

Where Do Trees Grow and Why?  
What Else Lives in the Forest?  
What Shapes the Forest?  
What Benefits Do Forests Provide?  
What is the Future of Our Forests?

The United States of America has impressive forests — more than 800 million acres of natural and planted forests and woodlands — providing clean water, clean air, wildlife and fish habitat, recreational opportunities, and resources for economic development. This Atlas combines state-of-the-art inventory and monitoring information with tree pollen counts, mill surveys, ownership records, bird observations and more to tell stories about the value of our nation's forests and the challenges they face.



USDA  
United States Department of Agriculture  
Forest Service

FOREST ATLAS OF THE UNITED STATES

with a high-standing forest cover, high values are associated with the western and central United States. Forest cover is highest in the Pacific Northwest and lowest in the Southeast.

The map on the right allows you to compare and contrast forest cover across the United States. This area in south-western Oregon is one of those areas and is still forest land use.

100%  
0%

High  
Low



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**Forest Inventory and Analysis Annual Reporting**

This site contains annual updates from the USDA Forest Service Forest Inventory and Analysis program (FIA). FIA annual updates provide current estimates of the extent and condition of forest resources for each state in the U.S.

**FIA Annual Updates**

FIA reports on status and trends in forest area and location, in the species, size and health of trees, in total tree growth, mortality, and removals by harvest, in wood production and utilization rates by various products, and in forest land ownership. FIA is managed by the Research and Development organization within the USDA Forest Service in cooperation with State and Private Forestry and National Forest Systems. FIA traces its origin back to the McSweeney-McNary Forest Research Act of 1928 (P.L. 70-466). This law initiated the first inventories starting in 1930.

**Forests of Illinois, 2015**

Table 2: Number, volume, and biomass of live trees on forest land by species for the top 12 tree species by net volume, Illinois, 2015. [Click on table entries to see species distribution on map.](#)

Common Name	Latin Name	Number of trees <sup>a</sup>	Net Volume (million ft <sup>3</sup> )	Above Ground Biomass (thousand tons) <sup>b</sup>
White oak	<i>Quercus alba</i>	49.7	914.8	27,590.1
silver maple	<i>Acer saccharinum</i>	58.9	802.3	17,607.8
black oak	<i>Quercus velutina</i>	37.7	631.9	16,187.3
northern red oak	<i>Quercus rubra</i>	21.4	482.4	12,516.7
western cottonwood	<i>Populus deltoides</i>	12.6	401.7	7,411.2
shagbark hickory	<i>Carya ovata</i>	76.9	364.8	11,899.6
green ash	<i>Fraxinus pennsylvanica</i>	84.0	336.3	9,286.6
black walnut	<i>Juglans nigra</i>	49.6	326.3	8,298.4
American sycamore	<i>Platanus occidentalis</i>	11.2	274.1	6,521.0
hackberry	<i>Celtis occidentalis</i>	142.4	268.3	6,488.4
sugar maple	<i>Acer saccharum</i>	123.8	201.4	6,396.5
pinch hickory	<i>Carya galeana</i>	35.7	200.0	4,855.9

<sup>a</sup> Trees > 1 inch d.b.h.  
<sup>b</sup> Trees > 5 inches d.b.h.

Note: Table cells without observations are indicated by --. A value of 0 is due to rounding of a small value.



**Forests of Mississippi, 2015**

Mississippi's forest land contains 923 million dry tons of aboveground live-tree biomass. That equates to 452 million tons of carbon. Eighty-five percent of all aboveground live-tree biomass is owned by private landowners.

**Growth, Removals, and Mortality Trends**

Click on map counties and interact with the layer feature to view growth, removals, and mortality by county.

In 2015, average annual net growth on forest land was 1.9 billion cubic feet. Average annual mortality was 372 million cubic feet. Removals were 970 million cubic feet, for a growth-to-removals rate of 2.0, suggesting that Mississippi is growing more trees than are being removed through conversion or harvest. Mississippi's removals are, on average, about 3 percent of the total standing volume per year. The vast majority of removals (63 percent) are in the loblolly-shortleaf pine forest-type group (Fig. 4).

**Forests of South Dakota, 2015 Volume and Biomass**

Twenty-seven species (including unknowns collected to the genus level) were recorded on South Dakota forest land in 2015. Ponderosa pine, bur oak, white spruce, and green ash are the most numerous species by number of live trees ([click](#) [table](#) [click](#) column headings to sort).

Ponderosa pine continues to rank first for live tree volume on forest land with 1.65 billion cubic feet, a decrease of about 5.4 percent from the 2010 inventory. This species accounts for 74 percent of South Dakota's live tree volume. Bur oak and eastern cottonwood each account for about 5 percent of the live tree volume on forest land.

South Dakota has more than 44.7 million oven-dry tons of biomass on forest land. Ponderosa pine accounts for the vast majority—68 percent—of the total. The 44.7 million dry tons of biomass equates to 22.4 million tons of carbon in South Dakota's forests. About 61 percent of the biomass is on public land and 39 percent on private land, stressing the important roles that both public land management agencies and private landowners have in the management and protection of South Dakota's forest resource.

Switch to map view to display county layers of [Volume](#) and [Biomass](#).

Common name	Latin name	Million trees <sup>a</sup>	Net volume <sup>b</sup> (million ft <sup>3</sup> )	Aboveground biomass <sup>c</sup> (thousand dry tons)	Standing dead net volume <sup>d</sup> (million ft <sup>3</sup> )
Ponderosa pine	<i>Pinus ponderosa</i>	348.92	1646.35	30604.42	197.39
White spruce	<i>Picea glauca</i>	31.52	92.22	1865.71	8.34
Bur oak	<i>Quercus macrocarpa</i>	31.30	113.85	3652.46	4.88
Green ash	<i>Fraxinus pennsylvanica</i>	28.83	82.09	2452.46	3.32
Eastern hophornbeam	<i>Ostrya virginiana</i>	28.73	1.42	208.93	0.09
Rocky Mountain juniper	<i>Juniperus scopulorum</i>	20.76	35.22	552.53	2.18
Eastern redcedar	<i>Juniperus virginiana</i>	18.78	22.52	540.03	--
Quaking aspen	<i>Populus tremuloides</i>	17.99	16.51	379.00	7.90
Paper birch	<i>Betula papyrifera</i>	15.84	2.56	203.34	0.76
Bowlder	<i>Acer negundo</i>	8.12	31.05	717.27	0.74
American elm	<i>Ulmus americana</i>	5.73	35.69	809.85	8.64
Chokecherry	<i>Prunus virginiana</i>	5.45	0.30	60.13	--





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The screenshot shows the 'Forest Inventory and Analysis Annual Reporting' page. It features a search bar at the top left, a grid of state-specific report thumbnails (e.g., Forests of Illinois, 2015; Forests of Washington, 2015), and a 'FIA Annual Updates' section on the right. The USDA logo and 'United States Department of Agriculture Forest Service' are visible at the top.

## Washington FIA data visualization

This page is an interactive forest inventory data visualization. All of the charts are linked and connected with the exception of the map legend. Clicking on the charts will filter the data on all charts and multiple filters can be applied. When a chart is filtered, reset text will appear so that you can clear the filter on that chart. There is also a 'Reset All' option to reset all of the charts. Use the dropdown to select the type of data you would like to explore. Hovering over the different chart items will show the underlying data value.

The source data for this visualization comes from the current PNW-FIADB database that can be found under FIA Topics - Inventory Data.

Select units:

Totals

Units selected:

Area of forest land, thousand acres

Number of Records

785 selected out of 785 records.

Select the data to display:

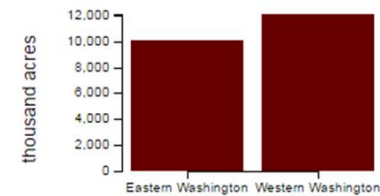
Area

Reset All

Ownership



Half State



Forestland Status



Wood Type

Forest Type Group

Alder maple group

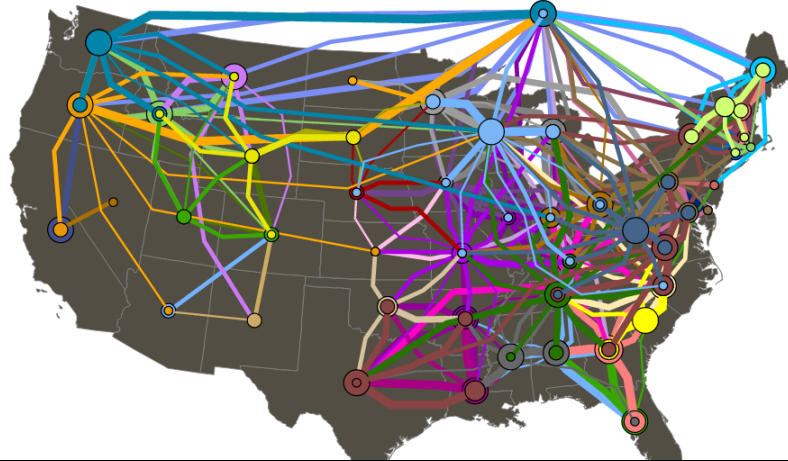


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## Wood Movement in the United States

Timber is often processed and used far from where it was harvested. The depiction of timber flow in the United States illustrates harvest levels and the movement of logs to mills. Clearly, timber is moving all over the country, and some logs are even shipped to international markets. Understanding patterns in wood movement is important. This movement results from the complexity of wood product markets that connect landowners, loggers, mills, and consumers.



**The Southern Forest Products Industry** A guide to the Forest Products Industry of the Southern United States

1 2 3 4 5 6 7

Spanning 13 Southern States from Texas to Virginia, southern forests include a diversity of dynamic landscapes and ecosystems, and play a vital role in the region's culture and economy. The forests are highly productive, providing raw materials that fuel regional, national, and global economies.

Southern forests, known as the "wood basket" of the nation, accounted for 63 percent of the total timber volume harvested in the United States in 2011 (OSMA) and attract 20.6% of primary wood-processing growth in the South, produced 45 percent of the sawing products, 68 percent of veneer products, 74 percent of the pulpwood, and 64 percent of all composite products in the nation in 2011 (OSMA) and others (2014). The Southern forests are so productive that, while they make up only 2 percent of the global forest cover, they produce 12 percent of the world's industrial roundwood and 19 percent of its pulp and paper products—greater production than that of any other nation.

**Southern Forests Products  
An Economic Engine**

Southern forests provide a significant portion of the forest product output of the United States while only having **32%** of the forests of the U.S.

- 55% All roundwood products
- 45% Sawlogs
- 63% Veneer logs
- 74% Pulpwood
- 64% Composite products

**Forest Carbon Accounting**

**A History of U.S. Forest Carbon Inventories**

Monitoring forest carbon has been a process of continuous improvement as data (both field and remotely sensed) have accumulated in the face of emerging research. In the 1990s, periodic forest inventories were used to make carbon assessments based on numerous assumptions about volume to carbon conversions (Birdsey 1992). In the 2000s, carbon reporting focused on comparing the new, nationally consistent annual forest inventory to past periodic inventories to estimate carbon change. In the 2010s, as the FIA collection of data across all forest pools started hitting a critical mass, carbon monitoring has focused on improving estimation of pools beyond standing trees (e.g. litter, downed dead wood, soil). The FIA program will continue to develop and refine forest carbon pool science and the techniques used to compile estimates for UNFCCC reporting as new information becomes available.

Timeline of Key Milestones:

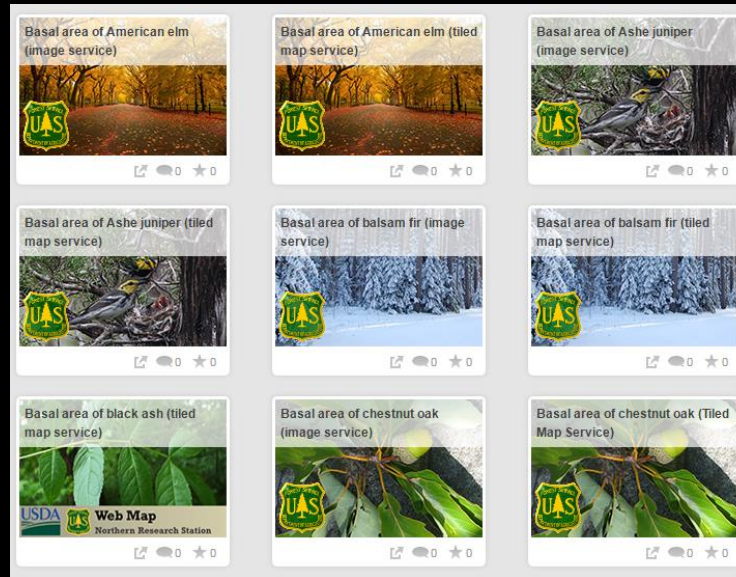
- 1990: Initial carbon storage report
- 1995: Models used to estimate non-live tree carbon pools
- 1998: Farm Bill authorizing annual inventory
- 2000: Standing dead tree sampling
- 2005: Carbon calculation tool
- 2005: Component ratio method for volume/biomass adopted
- 2005: Downed dead wood, soil, litter, and understory sampling
- 2010: Standing dead tree data incorporated
- 2010: Litter data incorporated
- 2015: Modeling approaches to belowground, understory, and foliage

Transition from FORCARB modeled NGHGI estimates to NFI data



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**Geoplatform.gov**  
Document Link by USFS\_FIA. Last Modified Nov 7, 2016.

The GeoPlatform provides shared and trusted geospatial data, services, and applications for use by the public and by government agencies and partners to meet their mission needs.

★★★★☆ (1 rating)

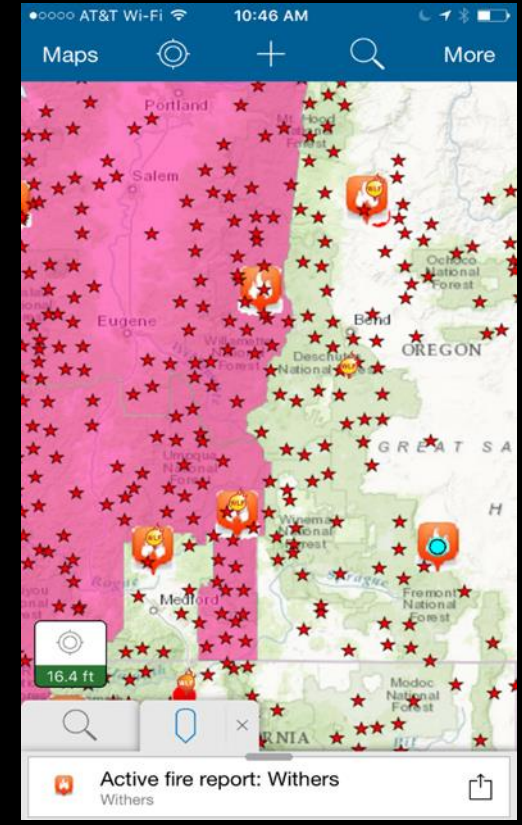
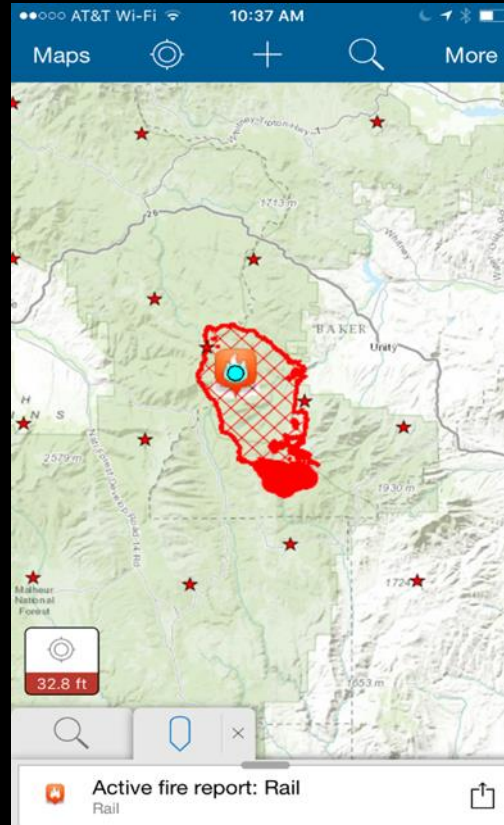
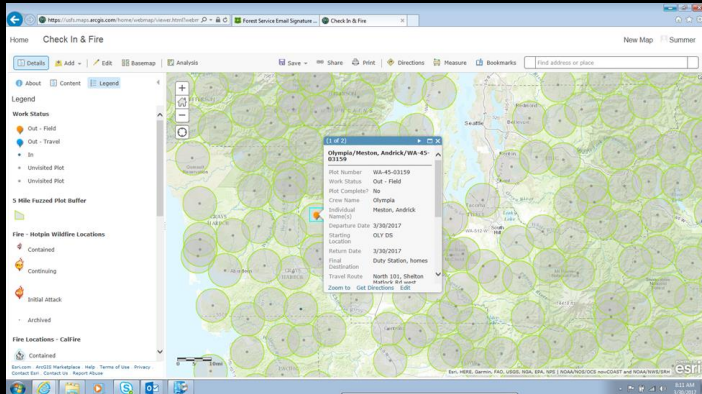
The screenshot shows a web page on Geoplatform.gov for the document "US Forest Service Forest Carbon Stocks Contiguous United States". It includes a UAS logo, a description of the data, and a "Web Map" link.





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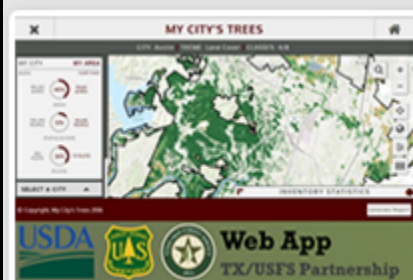


## Timber Supply Analysis Tool by Texas A&M Forest Service

Document Link by USFS\_FIA. Last Modified Nov 7, 2016.

This application built by the Texas A&M Forest Service puts timber supply analyses in the hands of decision-makers and executives.

★★★★☆ (11 ratings) [🔗](#)



## My City's Trees

Document Link by USFS\_FIA. Last Modified Nov 7, 2016.

The My City's Trees application produces custom reports summarizing urban forest benefits and services using the latest Urban Forest Inventory and Analysis (Urban FIA) data.

☆☆☆☆☆ [🔗](#)





## Journalists are paying attention...

### One event – April 2016

- 77 media pickups
  - 12 NRS
  - 65 ESRI
- Outreach to 54,300,00 people  
(assuming standard readership)



GCN Technology, Tools and Tactics for Public Sector

STATE & LOCAL BIG DATA CLOUD CYBERSECURITY DATA CENTERS EMERGING TECH MOBILE RESOURCES

Click here to receive GCN magazine for FREE!

Forest Atlas of the United States

Forest Service creates gallery of maps and apps



MONGABAY RAINFORESTS OCEANS ANIMALS & ENVIRONMENT

Mongabay Series: Global Forest Reporting Network

**A bleak future for the U.S. 'wood basket'? Southern forests under threat**

6 April 2016 / Apoorva Joshi

Despite a drop in lumber mills, logging of southern U.S. forests looks to be on the rise.



ArcNews Winter 2016

ArcGIS Is a System of Engagement...and a System of Record

Applying the Benefits of Geography Everywhere



HOME > MEDIA > BLOG > BLOG ARCHIVES > GETTING A NEW PERSPECTIVE ON THE GREAT LAKES' WATER QUALITY

## Getting a New Perspective on the Great Lakes' Water Quality

Posted by Cody Sullivan, U.S. Forest Service Research and Development Program in [Forestry](#)  
Oct 07, 2016



FEDERAL NEWS RADIO 1500 AM

Statistical agencies looking to C-suite, new digital tools to address biggest challenges

By Meredith Somers | @msomersWFED  
February 14, 2017 5:57 am  
5 min read

7 Shares



**One Result** – Groups are contacted us on a regular basis to PARTNER with FIA on development of future applications...

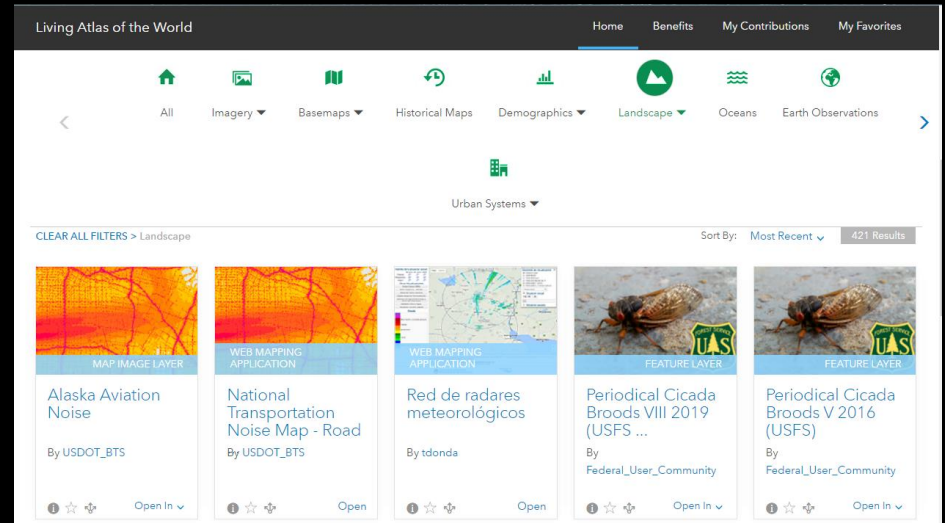
**Some want help building capacity...**



**WO – National Program Lead Training**

**One Result** – Groups are contacted us on a regular basis to PARTNER with FIA on development of future applications...

Some want our data too...



Enterprise Applications Development






**So... What do we want the future to look like?**





**USDA**  
United States Department of Agriculture

**RESOURCE UPDATE FG-02**








# Forests of South Dakota, 2015

This resource update provides an overview of forest resources in South Dakota based on an inventory

## Overview

Forests of South Dakota: X


usfs.maps.arcgis.com/apps/MapJournal/index.html?appid=96abf568df4c4fbbb9626f3ed

Resource Update     

## Forests of South Dakota, 2015

*An interactive forest resource update from the USDA Forest Service, Northern Research Station, Forest Inventory and Analysis program.*

This story map provides an overview of forest resources in South Dakota based on an inventory conducted by the U.S. Forest Service, Forest Inventory and Analysis (FIA) program at the Northern Research Station (NRS) in cooperation with the South Dakota Department of Agriculture, Resource Conservation and Forestry Division. Estimates are based on field data collected using the FIA annualized sample design and are updated yearly. For the 2015 inventory, estimates for



1



From:

3/1/2016

To:

10/5/2016

Update Report →

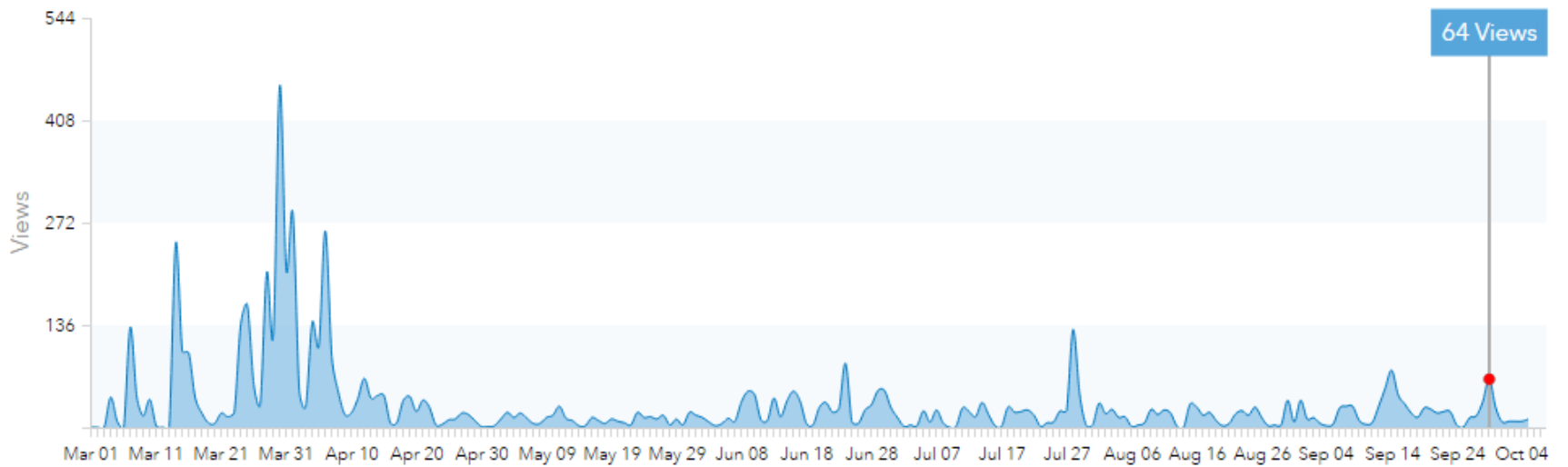
Views this Period

6,580

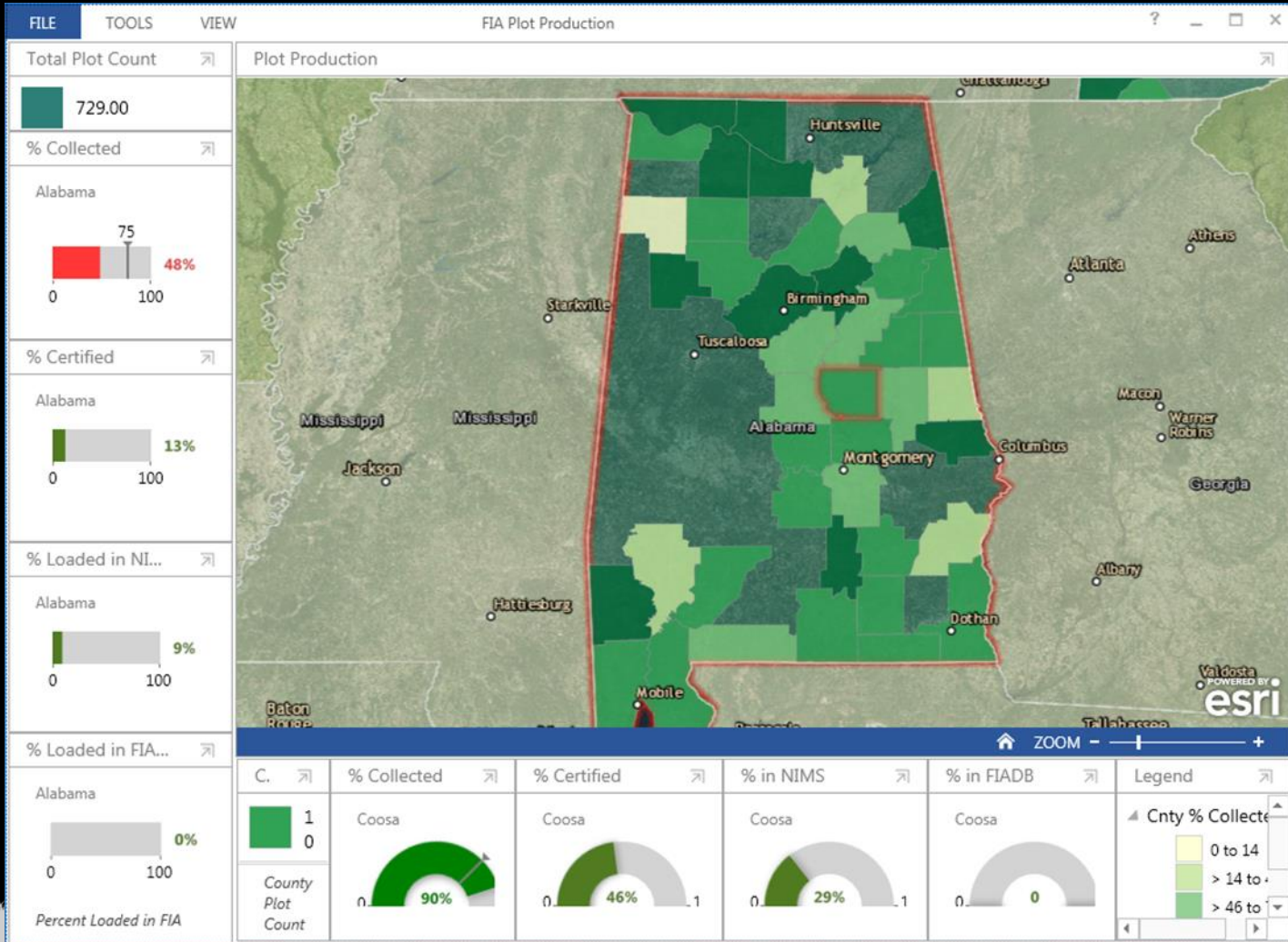
Avg Views Per Day

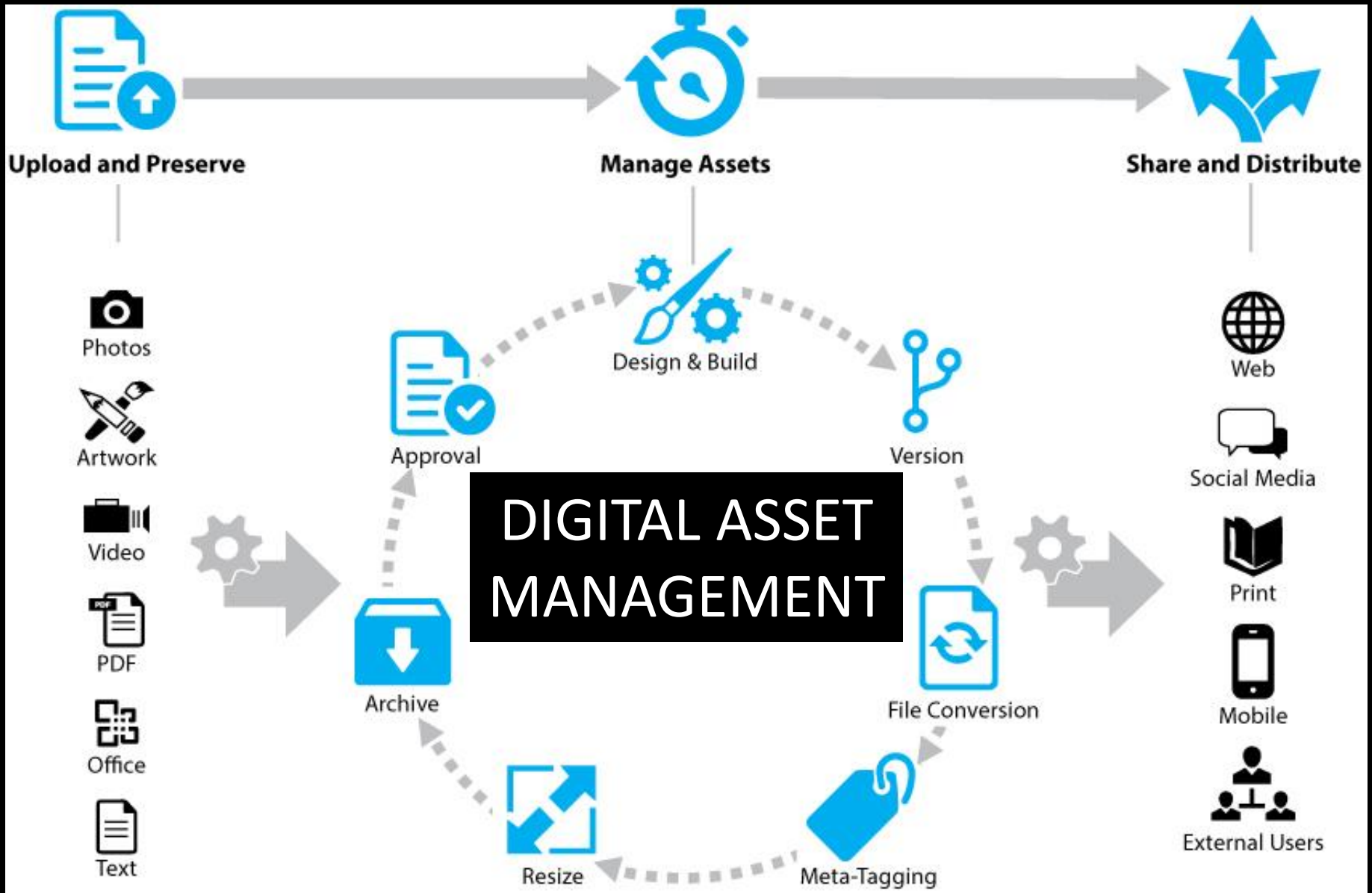
30.18

### Usage Time Series











USDA ERS - Developer

www.ers.usda.gov/developer/

Topics | Data | Publications | Newsroom | Calendar

Site Map | A-Z Index | Advanced Search | Search Tips

You are here: Home / Developer

Stay Connected

### Developer

**Developer**

To spur innovative applications of ERS data in the public and private sectors, this area connects developers, researchers, and digital professionals with machine-readable data, web services, and other related technical resources. Use our Application Programming Interfaces (APIs) to gain programmatic access to website content (including charts and publications) and select data (including GIS)—or grab our widgets already built from the APIs!

**About the APIs**

ERS uses the shared, interagency service [api.data.gov](#) to provide an optimized experience for users. Register once, and gain universal access to any Open Government data using the service. Use of this API is subject to [API Terms of Service](#).

ERS also support REST-formatted requests. Responses are returned in JSON or XML, depending on the content type specified in the request header.

The Charts of Note widget is an example of what a developer can do with the API. It offers a number of options for easily embedding these daily charts.

Data APIs

Access ERS data products in

GIS APIs

Integrate ERS's map layers into the

Widgets

Get started quickly with these

Rich APIs

[\[link\]](#)

Forest Service Region 6

usfs.maps.arcgis.com/apps/MapJournal/index.html?appid=122124d9f9d043baa6dc5ea35172492

### U.S. Forest Service Climate Change Performance Scorecard Results

Results for USFS Regions and National Forests from 2014 (left) and 2015 (right)

HIDE INTRO

Map | Data

provided are averages among the administrative regions.

**Climate Change Scorecard Regional Results**

Percent Criteria Met (7+ elements, w/ 1 per dimension)

- 96 - 100
- 86 - 95
- 76 - 85
- 51 - 75
- 26 - 50
- 25 and lower

Map legend at smaller scales

A user can zoom in to further view the scorecard performance results for National Forest units.

**Forests Meeting Criteria**

7+ elements, w/ 1 per dimension

**Forests by Scorecard Total Score**

Performance reporting

[\[link\]](#)

Forest Pest Conditions

foresthealth.fs.usda.gov/portal/Flex/FPC

USDA United States Department of Agriculture Forest Service

Forest Health Protection FOREST PEST CONDITIONS

Showing National View <Select Region>

Tool Box

Search

Address Search

Enter Address

Area Search

Select Region

Select State

Select County or Equivalent

Highlight damage area by pest

Select Pest

Data Summaries

Gypsy Moth

National Woolly Aedeid

Report Year: 2014

acres mapped 393,695

counties with tree damage 84

Trend | Export

Report | Info

Data visualization

[\[link\]](#)

Unique, Complex, Innovative - Southwestern Region

usfs.maps.arcgis.com/apps/MapSeries/index.html?appid=fc4080f6e2b5488d9a6431d1a6d2687

1 2 3 4 5 6 7 8 9

The Southwestern Region Stakeholder's Report is comprised of stories detailing the projects, initiatives, and challenges that illustrate the complex, unique and innovative nature of the forests and grasslands in Arizona and New Mexico. Centered on partnerships, this publication highlights joint accomplishments, and sets the stage for future collaboration and success.

Use the numbered bullet points above to move through different topic areas and themes. As you move through, scroll to view additional content. Click on any point in a map to view additional content. Click on any point in a map to visit the map at a closer level.

Let these stories be yours to enjoy. They are present in our region, and they are the resiliency and success of the generations to come.

Sharing the message

[\[link\]](#)



Forest Service Research

www.fs.usda.gov/rds/archive/Product/RDS-2013-0013/

USDA United States Department of Agriculture  
Forest Service

Research Data Archive  
Roots of our Research

# 300+ tree species @ 250m

Forest Service Home | About the Agency | Contact the National Office

You are here: [Data Archive Home](#) > [Data Catalog](#) > RDS-2013-0013

## Publication Details

**Title:** Live tree species basal area of the contiguous United States (2000-2009) [GIS](#)

**Author:** Wilson, Barry T. ; Lister, Andrew J. ; Rieman, Rachel I. ; Griffith, Douglas M.

**Publication Year:** 2013

**How to Cite:** These data were created by researchers of the United States Forest Service and can be used without additional permissions or fees. If you use these data in a publication, presentation, or other research product please use the citation below when citing this data product:

**Abstract:** This data correspond over large vegetation environments of tree species in the contiguous United States. The corresponding neighbors utilizes a 30m resolution layer.

**Keywords:** biota; image assessment; species; states

**Data Access:**

**Search Data Catalog**

**Browse by Subject**

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- Data Use Info
- Using our Formats
- Metadata & Tools
- FAQ
- About Us
- Links
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**Contact Information**

Research Data Archive  
US Forest Service  
Attn: Dave Rugg  
1 Gifford Pinchot Drive  
Madison, WI 53726-2366

Forest Inventory and Analysis

usfs.maps.arcgis.com/apps/PublicGallery/index.html?appid=783395df91dd43bb804f0491013ecf6d

USDA United States Department of Agriculture  
Forest Service

## Where Do Trees Grow?

This gallery hosts 24 tree species maps from the Forest Atlas of the United States. We encourage you to explore our collection of species, and we look forward to any feedback you might want to share.

Search maps

Basal area of American elm (image service)

Basal area of American elm (tiled map service)

Basal area of Ashe juniper (image service)

Basal area of Ashe juniper (tiled map service)

Basal area of balsam fir (image service)

Basal area of balsam fir (tiled map service)

# 30m resolution? Canopy change? Other?

### Tree Species Distribution

Tree species differ in responses to their environment and ability to compete with one another for nutrients. These factors strongly influence where individual tree species are found across the landscape.

The Forest Service's Forest Inventory and Analysis (FIA) program recognizes more than 400 different tree species in its survey of the forests of the United States. These are 24 of the most important tree species found across the 19 ecological divisions found in the contiguous United States.

# Earth on AWS

Build planetary-scale applications in the cloud with open geospatial data.

Datasets

Use Cases

Call for Proposals

Updates

## Landsat on AWS

Landsat 8 data is available for anyone to use via Amazon S3. All Landsat 8 scenes from 2015 are available along with a

# Questions...

