



Food and Agriculture
Organization of the
United Nations

Global Forest Resources Assessment 2020

Report

United States of America

Rome, 2020



FAO has been monitoring the world's forests at 5 to 10 year intervals since 1946. The Global Forest Resources Assessments (FRA) are now produced every five years in an attempt to provide a consistent approach to describing the world's forests and how they are changing. The FRA is a country-driven process and the assessments are based on reports prepared by officially nominated National Correspondents. If a report is not available, the FRA Secretariat prepares a desk study using earlier reports, existing information and/or remote sensing based analysis.

This document was generated automatically using the report made available as a contribution to the FAO Global Forest Resources Assessment 2020, and submitted to FAO as an official government document. The content and the views expressed in this report are the responsibility of the entity submitting the report to FAO. FAO cannot be held responsible for any use made of the information contained in this document.

TABLE OF CONTENTS

Introduction

1. Forest extent, characteristics and changes
2. Forest growing stock, biomass and carbon
3. Forest designation and management
4. Forest ownership and management rights
5. Forest disturbances
6. Forest policy and legislation
7. Employment, education and NWFP
8. Sustainable Development Goal 15

Introduction

Report preparation and contact persons

The present report was prepared by the following person(s)

Name	Role	Email	Tables
Guy Robertson	Collaborator	grobertson02@fs.fed.us	All
Sonja Oswalt	National correspondent	soswalt@fs.fed.us	All

Introductory text

The national forest inventory of the United States covers the 50 States and all of the nation’s associated islands in the Caribbean and Pacific regions.

The main landmass of the United States, containing 48 of the 50 States, is situated in mid-North America), has a central plain with hills and low mountains to the east and rugged mountains and wide valleys to the west. The State of Alaska, on Canada’s western border, is dominated by Pacific and Arctic mountains, a central plateau, and the Arctic slope.

The U.S. Caribbean Islands are composed of Puerto Rico and the U.S. Virgin Islands. In general, the Caribbean Islands are a 4,000-km arc of islands, tectonically uplifted from the sea floor separating the Atlantic Ocean from the Caribbean Sea. Low-lying islands often are capped with limestone from ancient coral reefs, and other islands exhibit volcanic activity that has pushed up steep peaks that divert the moisture-laden north-easterly trade winds upward, greatly increasing rainfall.

The U.S. Pacific Islands are composed of American Samoa, Guam, the State of Hawaii, the Republic of the Marshall Islands, the Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, and the Republic of Palau. These islands span a vast and diverse area, beginning with Hawaii, 4,000 km west of the U.S. mainland, and extending to Southeast Asia. Land masses vary widely and include small coral atolls, small sand islands, moderate-sized islands of mixed limestone and volcanic substrates, and large, high-elevation, volcanic islands.

This report presents data only for the 50 States. Separate reports will be provided by the United States for Puerto Rico, the U.S. Virgin Islands, American Samoa, Guam, the Republic of the Marshall Islands, the Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, and the Republic of Palau.

Data for this report are derived, in general, from the national forest inventory of the United States, with supplemental data from other sources, as needed.

1 Forest extent, characteristics and changes

1a Extent of forest and other wooded land

National data

Data sources

1990	References	Waddell, Karen L., Oswald, Daniel D., and Powell, Douglas S. 1989. Forest statistics of the United States, 1987. Resour. Bull. PNW-RB-168. Portland, OR: USDA, Pacific Northwest Research Station. 106 p.
	Methods used	National Forest Inventory
	Additional comments	Forest data compiled from inventory data to be used as basis for 1987 U.S. national assessment. Represents FRA data for 1990.
2000	References	Smith, W. Brad; Vissage, John S.; Darr, David R. 2001; Sheffield, Raymond M. Forest Resources of the United States, 199. Gen. Tech. Rep. NC-219. St. Paul, MN:USDA, Forest Service, North Central Research Station. 190 p.
	Methods used	National Forest Inventory
	Additional comments	Forest data compiled from inventory data to be used as basis for 1997 U.S. national assessment. Represents FRA data for 2000.
2005	References	FIADB national database http://fia.fs.fed.us Smith, W. Brad; Miles, Patrick D.; Vissage, John S.; Pugh, Scott A. 2003. Forest Resources of the United States, 2002. Gen. Tech. Rep. NC-241. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Research Station. 137 p.
	Methods used	National Forest Inventory
	Additional comments	Forest data compiled from inventory data to be used as basis for 2002 U.S. national assessment. Represents FRA data for 2005.
2010	References	FIADB national database http://fia.fs.fed.us Smith, W. Brad; Miles, Patrick L.; Perry, C; Pugh, S. 2008. Forest Resources of the United States, 2007. Gen. Tech. Rep. WO-78. Washington, DC: U.S. Department of Agriculture, Forest Service, Washington Office. 336p.
	Methods used	National Forest Inventory
	Additional comments	Forest data compiled from inventory data to be used as basis for 2007 U.S. national assessment. Represents FRA data for 2010.
2015	References	Oswalt, Sonja N.; Smith, W. Brad; Miles, Patrick D.; Pugh, Scott A. 2014. Forest Resources of the United States, 2012: a technical document supporting the Forest Service 2010 update of the RPA Assessment. Gen. Tech. Rep. WO-91. Washington, DC: U.S. Department of Agriculture, Forest Service, Washington Office. 218 p.
	Methods used	National Forest Inventory
	Additional comments	Forest data compiled from inventory data to be used as basis for 2012 U.S. national assessment. Represents FRA data for 2015.

2017	References	Oswalt, Sonja N.; Smith, W. Brad; Miles, Patrick D.; Pugh, Scott A. 2018. Forest Resources of the United States, 2017: a technical document supporting the 2020 RPA Assessment. Gen. Tech. Rep. WO-xx. Washington, DC: U.S. Department of Agriculture, Forest Service, Washington Office. xx p. (In prep)
	Methods used	National Forest Inventory
	Additional comments	Forest data compiled from inventory data to be used as basis for 2017 U.S. national assessment. Represents FRA data for 2017, 2018, 2019, 2020.

Classifications and definitions

1990	National class	Definition
	Forest land	<p>Land that has at least 10% cover, or equivalent stocking, by forest trees of any size, including land that formerly had such tree cover and that will be naturally or artificially regenerated.</p> <p>Forest land includes transition zones, such as areas between heavily forested and nonforested lands that have at least 10% cover with forest trees and forest areas adjacent to urban and built-up lands. Also included are pinyon-juniper and chaparral areas in the West and afforested areas. The minimum area for classification of forest land is 0.4 hectare. Roadside, streamside, and shelterbelt strips of timber must have a crown width of at least 37 meters to qualify as forest land.</p> <p>Unimproved roads and trails, streams, and clearings in forest areas are classified as forest if less than 37 meters wide.</p>
	Other land	<p>Land that has never supported forests and lands formerly forested where use of forest management is precluded by development for other uses. (Note: This includes area used for crops, improved pasture, residential areas, city parks, improved roads of any width and adjoining clearings, powerline clearings of any width, and 0.4- to 1.8-hectare areas of water or streams, sloughs, estuaries, and canals between 37 and 61 meters wide classified by the Bureau of the Census as land. If intermingled in forest areas, unimproved roads and nonforest strips must be more than 37 meters wide, and clearings, etc., more than 0.4 hectare, to qualify as nonforest land.)</p>
	Other wooded land	<p>Partially available. Currently represents lands covered with woody species that can not achieve an average height of 5 meters at maturity. Historic data have been estimated.</p>

2000	National class	Definition
	Forest land	<p>Land that has at least 10% cover, or equivalent stocking, by forest trees of any size, including land that formerly had such tree cover and that will be naturally or artificially regenerated.</p> <p>Forest land includes transition zones, such as areas between heavily forested and nonforested lands that have at least 10% cover with forest trees and forest areas adjacent to urban and built-up lands. Also included are pinyon-juniper and chaparral areas in the West and afforested areas. The minimum area for classification of forest land is 0.4 hectare. Roadside, streamside, and shelterbelt strips of timber must have a crown width of at least 37 meters to qualify as forest land.</p> <p>Unimproved roads and trails, streams, and clearings in forest areas are classified as forest if less than 37 meters wide.</p>
	Other land	

		Land that has never supported forests and lands formerly forested where use of forest management is precluded by development for other uses. (Note: This includes area used for crops, improved pasture, residential areas, city parks, improved roads of any width and adjoining clearings, powerline clearings of any width, and 0.4- to 1.8-hectare areas of water or streams, sloughs, estuaries, and canals between 37 and 61 meters wide classified by the Bureau of the Census as land. If intermingled in forest areas, unimproved roads and nonforest strips must be more than 37 meters wide, and clearings, etc., more than 0.4 hectare, to qualify as nonforest land.)
	Other wooded land	Partially available. Currently represents lands covered with woody species that can not achieve an average height of 5 meters at maturity. Historic data have been estimated.

2005	National class	Definition
	Forest land	Land that has at least 10% cover, or equivalent stocking, by forest trees of any size, including land that formerly had such tree cover and that will be naturally or artificially regenerated. Forest land includes transition zones, such as areas between heavily forested and nonforested lands that have at least 10% cover with forest trees and forest areas adjacent to urban and built-up lands. Also included are pinyon-juniper and chaparral areas in the West and afforested areas. The minimum area for classification of forest land is 0.4 hectare. Roadside, streamside, and shelterbelt strips of timber must have a crown width of at least 37 meters to qualify as forest land. Unimproved roads and trails, streams, and clearings in forest areas are classified as forest if less than 37 meters wide.
	Other wooded land	Partially available. Currently represents lands covered with woody species that can not achieve an average height of 5 meters at maturity. Historic data have been estimated.

2010	National class	Definition
	Other wooded land	Partially available. Currently represents lands covered with woody species that can not achieve an average height of 5 meters at maturity. Historic data have been estimated.
	Forest land	Land that has at least 10% cover, or equivalent stocking, by forest trees of any size, including land that formerly had such tree cover and that will be naturally or artificially regenerated. Forest land includes transition zones, such as areas between heavily forested and nonforested lands that have at least 10% cover with forest trees and forest areas adjacent to urban and built-up lands. Also included are pinyon-juniper and chaparral areas in the West and afforested areas. The minimum area for classification of forest land is 0.4 hectare. Roadside, streamside, and shelterbelt strips of timber must have a crown width of at least 37 meters to qualify as forest land. Unimproved roads and trails, streams, and clearings in forest areas are classified as forest if less than 37 meters wide.

	Other land	Land that has never supported forests and lands formerly forested where use of forest management is precluded by development for other uses. (Note: This includes area used for crops, improved pasture, residential areas, city parks, improved roads of any width and adjoining clearings, powerline clearings of any width, and 0.4- to 1.8-hectare areas of water or streams, sloughs, estuaries, and canals between 37 and 61 meters wide classified by the Bureau of the Census as land. If intermingled in forest areas, unimproved roads and nonforest strips must be more than 37 meters wide, and clearings, etc., more than 0.4 hectare, to qualify as nonforest land.)
--	------------	--

2015	National class	Definition
	Other wooded land	Partially available. Currently represents lands covered with woody species that can not achieve an average height of 5 meters at maturity. Historic data have been estimated.
	Forest land	Land that has at least 10% cover, or equivalent stocking, by forest trees of any size, including land that formerly had such tree cover and that will be naturally or artificially regenerated. Forest land includes transition zones, such as areas between heavily forested and nonforested lands that have at least 10% cover with forest trees and forest areas adjacent to urban and built-up lands. Also included are pinyon-juniper and chaparral areas in the West and afforested areas. The minimum area for classification of forest land is 0.4 hectare. Roadside, streamside, and shelterbelt strips of timber must have a crown width of at least 37 meters to qualify as forest land. Unimproved roads and trails, streams, and clearings in forest areas are classified as forest if less than 37 meters wide.

2017	National class	Definition
	Other wooded land	Partially available. Currently represents lands covered with woody species that can not achieve an average height of 5 meters at maturity. Historic data have been estimated.
	Forest land	Land that has at least 10% cover, or equivalent stocking, by forest trees of any size, including land that formerly had such tree cover and that will be naturally or artificially regenerated. Forest land includes transition zones, such as areas between heavily forested and nonforested lands that have at least 10% cover with forest trees and forest areas adjacent to urban and built-up lands. Also included are pinyon-juniper and chaparral areas in the West and afforested areas. The minimum area for classification of forest land is 0.4 hectare. Roadside, streamside, and shelterbelt strips of timber must have a crown width of at least 37 meters to qualify as forest land. Unimproved roads and trails, streams, and clearings in forest areas are classified as forest if less than 37 meters wide.

Original data and reclassification

1990	Classifications and definitions		FRA classes		
	Class	Area (1000 ha)	Forest	Other wooded land	Other land

	Forest land	302 450.00	100.00 %	%	%
	Other land	0.00	0.00 %	0.00 %	100.00 %
	Other wooded land	15 050.00	%	100.00 %	%
	Total	317 500.00	302 450.00	15 050.00	0.00

2000	Classifications and definitions		FRA classes		
	Class	Area (1000 ha)	Forest	Other wooded land	Other land
	Forest land	303 536.00	100.00 %	%	%
	Other land	0.00	0.00 %	0.00 %	100.00 %
	Other wooded land	15 576.00	%	100.00 %	%
	Total	319 112.00	303 536.00	15 576.00	0.00

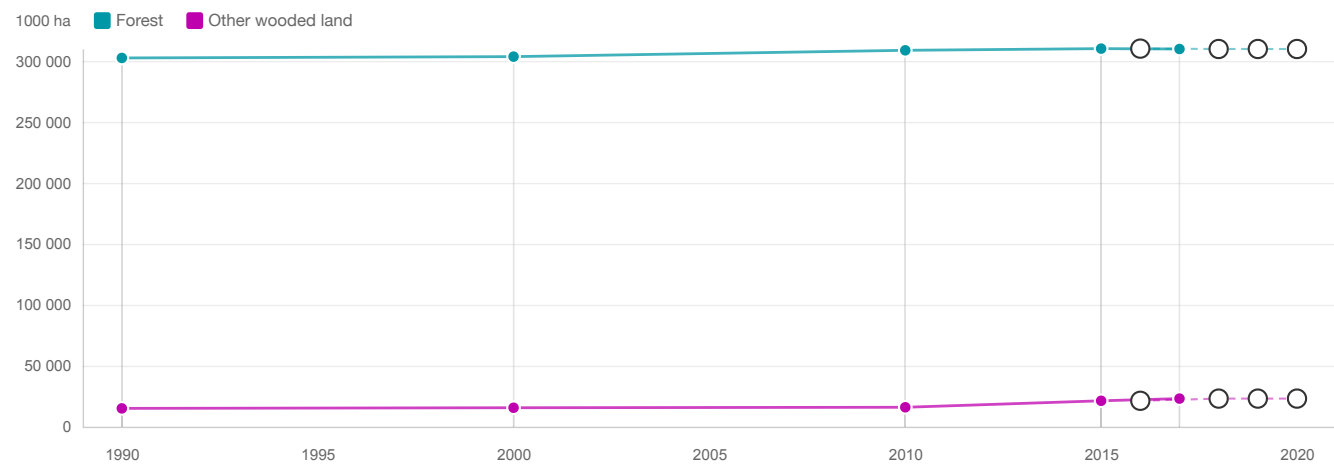
2005	Classifications and definitions		FRA classes		
	Class	Area (1000 ha)	Forest	Other wooded land	Other land
	Forest land	304 757.00	100.00 %	%	%
	Other wooded land	15 452.00	%	100.00 %	%
	Total	320 209.00	304 757.00	15 452.00	0.00

2010	Classifications and definitions		FRA classes		
	Class	Area (1000 ha)	Forest	Other wooded land	Other land
	Other wooded land	15 961.00	%	100.00 %	%
	Forest land	308 720.00	100.00 %	%	%
	Other land	0.00	0.00 %	0.00 %	100.00 %
	Total	324 681.00	308 720.00	15 961.00	0.00

2015	Classifications and definitions		FRA classes		
	Class	Area (1000 ha)	Forest	Other wooded land	Other land
	Other wooded land	21 278.00	%	100.00 %	%

	Forest land	310 095.00	100.00 %	%	%
	Total	331 373.00	310 095.00	21 278.00	0.00

2017	Classifications and definitions		FRA classes		
	Class	Area (1000 ha)	Forest	Other wooded land	Other land
	Other wooded land	23 079.00	%	100.00 %	%
	Forest land	309 795.00	100.00 %	%	%
	Total	332 874.00	309 795.00	23 079.00	0.00



FRA categories	Area (1000 ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Forest (a)	302 450.00	303 536.00	308 720.00	310 095.00	310 095.00	309 795.00	309 795.00	309 795.00	309 795.00
Other wooded land (a)	15 050.00	15 576.00	15 961.00	21 278.00	21 278.00	23 079.00	23 079.00	23 079.00	23 079.00
Other land (c-a-b)	597 242.00	595 630.00	590 061.00	583 369.00	583 369.00	581 868.00	581 868.00	581 868.00	581 868.00
Total land area (c)	914 742.00	914 742.00	914 742.00	914 742.00	914 742.00	914 742.00	914 742.00	914 742.00	914 742.00

The FAOSTAT land area figure for the year 2015 is used for all reference years

Climatic domain	% of forest area 2015	Override value
Boreal	15.00	15.00
Temperate	58.00	59.00
Sub-tropical	26.00	26.00
Tropical	0.00	0.00

Comments

Change from 2015 values is a decline largely due to data collection changes in the western United States and is not considered to represent "real" forest change in its entirety.
Data source: Oswalt, S.N.; Smith, W.B.; Miles, P.D.; Pugh, S.A., coords. 2019. Forest resources of the United States, 2017: a technical document supporting the U.S. Department of Agriculture Forest Service 2020 RPA Assessment. *In Press*.
2017 Data have been carried over to 2018-2020. No forecasting was used.

Increase in "other wooded land" from 2010 to 2015 reflects the inclusion of arid wooded land in the western United States that had not been measured before. Domestically, this wooded area is considered "forest land", but the species do not typically meet the "in situ" height requirement for the International forest land definition. Therefore, it is included here as "other wooded land". Domestically, forest land area is the sum of FRA forest plus FRA other wooded land.

1b Forest characteristics

National Data

Data sources + type of data source eg NFI, etc

1. Data Source: US Forest Service Forest Inventory and Analysis Data used for the federally mandated Forest Resources of the United States, 2017 report. Data are given nominally as 2017, and are used to represent 2020 as in past reporting cycles. Annual domestic data is available through the USFS Forest Inventory and Analysis program, though forest area definitions differ slightly from global forest area definitions and not all FRA categories are available in the domestic database.
2. Published national statistics using International (FRA) forest definitions may be found here: [Oswalt, S.N.; Smith, W.B.; Miles, P.D.; Pugh, S.A., coords. 2017. Forest resources of the United States, 2017: a technical document supporting the U.S. Department of Agriculture Forest Service 2020 RPA Assessment.](#)
3. Data source for plantation plantings, Tree Planter's notes, S&PF, USFS, average annual planting

National classification and definitions

Other naturally regenerated forest	Includes all private natural forest. Difficult to attach area to introduced species.
Introduced species in natrual forest	The U.S. lists 39 major non-native tree species in forests within the continental 48 States. It is difficult to estimate the influence of these species on an area basis as most non-native trees are escaped or naturalizing individuals and relative to the total population of trees in the US are a very small number. According to data, major non-native, non-planted species constitute 0.68% of the total forest trees. The area reported reflects the proportion of the non-native trees relative to the total number of trees on an area basis of 0.2%.
Planted forest	Includes all planted forest, approximately 1.34% of which are non-native species

Original data

Table 1b	Forest area (1000 ha)				
FRA 2020 categories	1990	2000	2010	2015	2020
Naturally regenerating forest (a)	284,512	280,976	283,156	283,731	282,273
Planted forest (b)	17,938	22,560	25,564	26,364	27,522
Plantation forest	6,090	8,722	12,601	13,144	14,029
....of which introduced species	308	388	440	359	268
other planted forest	11,848	13,838	12,963	13,220	13,492
Total Forest Area (a+b)	302,450	303,536	308,720	310,095	309,795

Analysis and processing of national data

Estimation and forecasting

No forecasting was used.

Planted forest	Includes all planted forest, augmented and plantation (row) forest
Plantation forest	Assumed to be a smaller unit of measure than "planted forest." Plantation forest given here is the area of planted forest under corporate ownership. This may represent an underestimate, as some other private forest landholdings are likely managed as plantations, as well. This is NOT synonymous with Production Forest as reported in past FRA reports.
New planting	Estimated area of tree planting on previously nonforest land

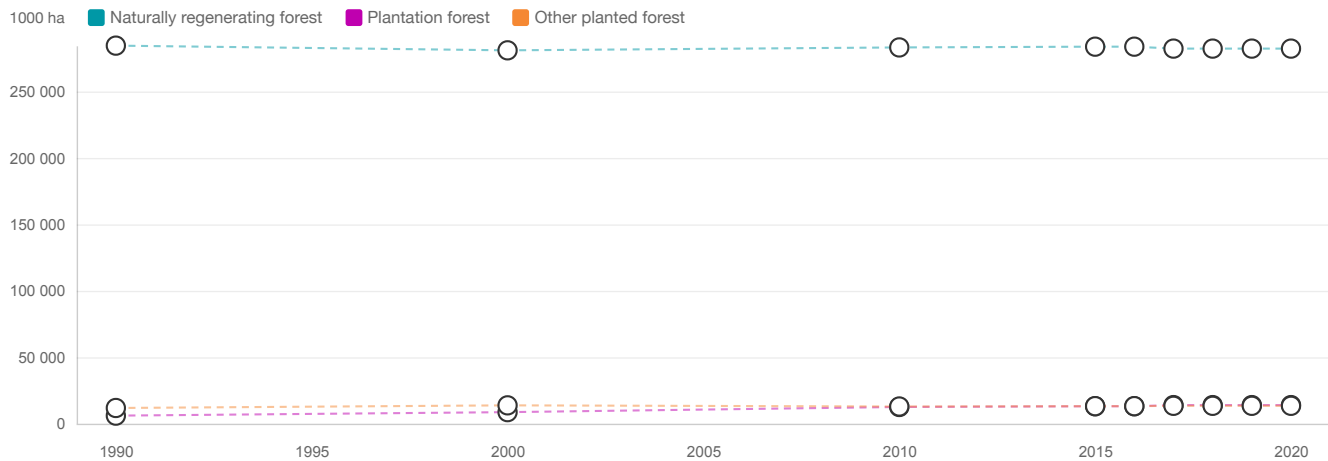
Replanting		Estimated area of tree planting on previously planted land after harvest																		
Conversion		Estimated area of tree planting on previously natural forest land																		
Natural extension of forest		Estimated area of natural regeneration of trees on previously nonforest land																		
Forest area (1000 ac)																				
1990	2000	2010	2015	2020																
703,019	694,283	699,670	701,089	697,488	*Data source for plantation plantings, Tree Planter's notes, S&PF, USFS, average annual planting															
44,324	55,745	63,167	65,145	68,005	*Data source for planted forest (all planted) - RPADB 2017															
15,048	21,551	31,136	32,478	34,666	*Carried over from previous FRA - data not yet verified															
762	959	1,086	886	662	Plantation forest is the sum of private corporate planted land by year (years 1987 to 2007 taken from RPADB table RPA2012, 2017 taken from RPADB RPA2017 and 2015 was taken from the RPA report hard copy.															
29,276	34,194	32,031	32,667	33,339	Non-native planted taken from table T2 from previous FRA for dates prior to 2020. See planted_stdorgspp_own tab for calcs for 2020	Non-native planted taken from table T2 from previous FRA for dates prior to 2020.		Non-native planted taken from table T2 from previous FRA for dates prior to 2020.		Non-native planted taken from table T2 from previous FRA for dates prior to 2020.										
747,343	750,028	762,837	766,234	765,493																

Reclassification into FRA 2020 categories

Data were not forecasted, rather, 2017 data were used for all dates post-2015. Annual data is available for domestic purposes, and would not match "forecast" data once it appears. To avoid confusion, therefore, we did not use forecasting tools.

See definitions, above. Data were converted from acres to hectares using standard conversion of 0.4047

Table 1b	Forest area (1000 ha)					Forest area (1000 ac)				
FRA 2020 categories	1990	2000	2010	2015	2020	1990	2000	2010	2015	2020
Naturally regenerating forest (a)	284,512	280,976	283,156	283,731	282,273.4	703,019	694,283	699,670	701,089	697,488
Planted forest (b)	17,938	22,560	25,564	26,364	27,521.6	44,324	55,745	63,167	65,145	68,005
Plantation forest	6,090	8,722	12,601	13,144	14,029.3	15,048	21,551	31,136	32,478	34,666
....of which introduced species	308	388	440	359	267.9	762	959	1,086	886	662
other planted forest	11,848	13,838	12,963	13,220	13,492.3	29,276	34,194	32,031	32,667	33,339
Total Forest Area (a+b)	302,450	303,536	308,720	310,095	309,795.0	747,343	750,028	762,837	766,234	765,493



FRA categories	Forest area (1000 ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest (a)	284 512.00	280 976.00	283 156.00	283 731.00	283 731.00	282 274.00	282 274.00	282 274.00	282 274.00
Planted forest (b)	17 938.00	22 560.00	25 564.00	26 364.00	26 364.00	27 521.00	27 521.00	27 521.00	27 521.00
Plantation forest	6 090.00	8 722.00	12 601.00	13 144.00	13 144.00	14 029.00	14 029.00	14 029.00	14 029.00
...of which introduced species	308.00	388.00	440.00	359.00	359.00	268.00	268.00	268.00	268.00
Other planted forest	11 848.00	13 838.00	12 963.00	13 220.00	13 220.00	13 492.00	13 492.00	13 492.00	13 492.00
Total (a+b)	302 450.00	303 536.00	308 720.00	310 095.00	310 095.00	309 795.00	309 795.00	309 795.00	309 795.00
Total forest area	302 450.00	303 536.00	308 720.00	310 095.00	310 095.00	309 795.00	309 795.00	309 795.00	309 795.00

Comments

Data for 2016 are 2015 FRA data

1c Primary forest and special forest categories

National Data

Data sources + type of data source eg NFI, etc

National Forest Inventory: Oswalt, S.N.; Smith, W.B.; Miles, P.D.; Pugh, S.A., coords. 2017. Forest resources of the United States, 2017: a technical document supporting the U.S. Department of Agriculture Forest Service 2020 RPA Assessment. *In Press*.

Additional information on mangrove distribution and extent: Giri, C.; Long, J. Is the Geographic Range of Mangrove Forests in the Conterminous United States Really Expanding? *Sensors* **2016**, 16, 2010.

National classification and definitions

Bamboo - The United States doesn't grow bamboo as a tree species for any sort of product or use. We consider this grass to be a grass. We do not inventory Bamboo spp.

Mangroves - the United States has mangroves around the atlantic and gulf coastal states of florida and texas, as well as the island state of Hawaii, and the territories of Puerto Rico and the U.S. Virgin Islands. Mangroves are a linear/patchy feature on the landscape, which renders them difficult to inventory. Data reported here come from both USFS Forest Inventory and Analysis FIADB (using RPA forest definition) and from the U.S. Fish and Wildlife Service, which monitors mangroves in Florida.

Temporarily non-treed/nonstocked: Estimates derived using both area of US forest defined as "nonstocked" and forest-seedlings area.

Primary forest	Includes all roadless and reserved forest, 80% Alaska unreserved natural and all National Land Trust forest.
----------------	--

Original data

FRA 2015								
Mangroves		000 ha						
		1980	1990	2000	2005	2010	2015	
	United States	275	240	236	236	243	243	<--highlighted values have been revised from FRA 2010
Data Source 2010 (carried over to 2015) : Dennis Jacobs 2013, remote sensing analysis of 2008-2010 thematic mapper images of continental United States, USDA Forest Service SRS FIA office								
Data Source 2000 (carried over to 2005) :Giri, C., Ochieng, et al. 2011. Status and distribution of mangrove forests of the world using earth observation satellite data. Global Ecology and Biogeography 20: 154-159								
Data Source for 2010 FRA came from FAO Forestry Paper 153, The world's mangroves 1980-2005 (http://www.fao.org/forestry/49663/en/) which has been determined by landsat imagery to be an underestimate of the actual area.								
Additional Comments: Data in the previous from were from the FAO Forestry Paper 153, which we have found to be an underestimate of continental US forests based on landsat thematic imagery analyses from multiple sources. The historic and current data have been updated to reflect the new findings from those dates and datasets.								

Current estimates of mangroves in the United States range from 150,000 ha to nearly 400,000 ha, depending on the source of information. We know that U.S. Forest Inventory currently underestimates mangrove area because of its linearity, and because sparse mangrove forest may not meet the U.S. Forest definition. I chose to use the U.S. Environmental Proteciton Agency spatial analysis information because it was most consistent with the methodology used in the 2010 and 2015 reporting periods:

"We prepared a wall-to-wall mangrove distribution and change database for CONUS every five years from 1980 to 2015. The total mangrove area in CONUS in 2015 was 251,293 ha with 98.1% of mangrove area in Florida, 0.6% in Louisiana, and 1.3% in Texas. As expected, mangrove occurrence generally decreased with increasing latitude from south to north. For example, approximately 85% of the CONUS mangrove area was found between 24.5° to 26.0° latitude. Spatial distribution percentages of Florida’s mangroves along the east and west coasts for every five years from 1980 to 2015." (Giri et al. 2016).

Data Source 2020: Giri, C.; Long, J. Is the Geographic Range of Mangrove Forests in the Conterminous United States Really Expanding? *Sensors* **2016**, 16, 2010.

NONSTOCKED - from Oswalt et al. In Press. Forest Resources of the United States 2017.

--	--	--	--	--	--	--	--

	1953	1977	1987	1997	2007	2012	2017
North	15068	4404	1799.175	403.114	1242.297	1388.07	1185.173
Pacific Coast	5379	3895	1427.191	2981.97	2281.961	2449.234	2279.535
Rocky Mountain	5258	3068	1426.189	2716.76	3032.297	3736.914	3936.569
South	16405	5240	3404.409	1431.15	2318.682	2331.685	2275.173
Grand Total	42110	16607	8056.964	7532.994	8875.237	9905.903	9676.449

Primary Forest:

Reserved forest (IUCN 1-5)	78415.49			
Roadless forest (FIA derived)	30522.437			
80%AK unreserved, natural	76283.962			
National Land Trust	56,094	<<- 12% presumed to be forest		
12% NLT	6731.2485			
Total of Above	191953.14			
Conversion to HA	77683.435			

Analysis and processing of national data

Estimation and forecasting

No forecasting was used. 2017 domestic RPA data used to fill FRA 2020 values.

Reclassification into FRA 2020 categories

Mangrove estimate total multiplied by 0.4047 to convert to ha. divided by 1,000.

NONSTOCKED (Thous Acres)

	1953	1977	1987 (FRA 1990)	1997 (FRA 2000)	2007 (FRA 2010)	2012 (FRA 2015)	2017 (FRA 2020)
North	15068	4404	1799.175	403.114	1242.297481	1388.070385	1185.173068
Pacific Coast	5379	3895	1427.191	2981.97	2281.961498	2449.234403	2279.534641
Rocky Mountain	5258	3068	1426.189	2716.76	3032.296517	3736.913716	3936.568731
South	16405	5240	3404.409	1431.15	2318.681551	2331.6847	2275.172668
Grand Total	42110	16607	8056.964	7532.994	8875.237047	9905.903204	9676.449108

NONSTOCKED (Thous Hectares)

	1953	1977	1987 (FRA 1990)	1997 (FRA 2000)	2007 (FRA 2010)	2012 (FRA 2015)	2017 (FRA 2020)
North	6,098.0	1,782.3	728.1	163.1	502.8	561.8	479.6
Pacific Coast	2,176.9	1,576.3	577.6	1,206.8	923.5	991.2	922.5
Rocky Mountain	2,127.9	1,241.6	577.2	1,099.5	1,227.2	1,512.3	1,593.1

South	6,639.1	2,120.6	1,377.8	579.2	938.4	943.6	920.8
Grand Total	17,041.9	6,720.9	3,260.7	3,048.6	3,591.8	4,008.9	3,916.1

FRA categories	Area (1000 ha)				
	1990	2000	2010	2015	2020
Primary forest	70 012.00	72 305.00	75 294.00	75 300.00	75 300.00
Temporarily unstocked and/or recently regenerated	3 260.70	3 048.60	3 591.80	4 008.90	3 916.10
Bamboos	0.00	0.00	0.00	0.00	0.00
Mangroves	240.00	236.00	243.00	243.00	251.00
Rubber wood	0.00	0.00	0.00	0.00	0.00

Comments

2020 mangrove data from: Giri, C.; Long, J. Is the Geographic Range of Mangrove Forests in the Conterminous United States Really Expanding? *Sensors* **2016**, 16, 2010. Includes mangroves associated with CONUS only.

1d Annual forest expansion, deforestation and net change

National Data

Data sources + type of data source eg NFI, etc

Data for 2020 from the RPA2017 database, derived from national forest inventory FIADB statistics. [Oswalt, S.N.; Smith, W.B.; Miles, P.D.; Pugh, S.A., coords. 2017. Forest resources of the United States, 2017: a technical document supporting the U.S. Department of Agriculture Forest Service 2020 RPA Assessment.](#)

National classification and definitions

Other naturally regenerated forest	Includes all private natural forest. Difficult to attach area to introduced species.
Introduced species in natrual forest	The U.S. lists 39 major non-native tree species in forests within the continental 48 States. It is difficult to estimate the influence of these species on an area basis as most non-native trees are escaped or naturalizing individuals and relative to the total population of trees in the US are a very small number. According to data, major non-native, non-planted species constitute 0.68% of the total forest trees. The area reported reflects the proportion of the non-native trees relative to the total number of trees on an area basis of 0.2%.
Planted forest	Includes all planted forest, approximately 1.34% of which are non-native species

Original data

Categories	Area (000 hectares)				
	1990-2000	2000-2010	2010-2015	2015-2020	2020
Forest area (000)	302,450	303,536	308,720	310,095	309795.017
Years	10	10	5	5	
Period	1990-2000	2000-2010	2010-2015	2015-2020	
Net change	1,086	5,184	1,375	(300)	
Ext %	45%	50%	90%	90%	
Afforest%	55%	50%	10%	10%	
Annual change					
Extension	49	259	247	1673	
Afforestation	60	259	28	185.77	

Analysis and processing of national data

Estimation and forecasting

1. The approach for estimation follows past FRA correspondent's approaches. Area for each time period is subtracted and then divided by the measurement period to determine averaage annual change (net change, as provided by FAO, as well). If positive, the result is considered expansion. If negative, it is considered deforestation.
2. The United States then applies a percentage factor to determine afforestation vs. deforestation rates. Generally speaking, this percentage is based on expert opinion, except in the most recent case, which is based on the extrapolation of FIA numbers on remeasured plots to all forested plots.
3. The United States clarifies that the negative change shown from 2015 to 2020 is actually the result of sampling protocols rather than real change on the landscape.
4. 4. We did not have the data to appropriately calculate deforestation prior to the most recent data because change has been trending upward until the most recent inventory. Because of this situation coupled with the sampling protocol issue listed in number 3 (above), we have left the reporting table blank. To fill the table would have resulted in a result that creates a false impression of deforestation that has not occurred.

Reclassification into FRA 2020 categories

See the estimation and forecasting as well as the Original data table.

The United States clarifies that the negative change shown in National data from 2015 to 2020 is actually the result of sampling protocols rather than real change on the landscape.

FRA categories	Area (1000 ha/year)			
	1990-2000	2000-2010	2010-2015	2015-2020
Forest expansion (a)	108.60	518.40	275.00	
...of which afforestation	59.73	259.00	247.00	
...of which natural expansion	48.90	259.00	28.00	
Deforestation (b)	0.00	0.00	0.00	
Forest area net change (a-b)	108.60	518.40	275.00	-60.00

Comments

The United States clarifies that the negative change shown from 2015 to 2020 is actually the result of new sampling protocols being fully adopted in the western United States rather than real change on the landscape. Additional information is available in Oswalt et al. 2019. Forest Resources of the United States 2017, This affects the western United States only, which was represented in the last FRA by only a small portion of its total plot sample. This new estimate is presumed to be the more accurate measure, while the previous number was likely inflated.

Area expansion and deforestation 2015-2020 estimates based on remeasured FIA plots are available for just over 60 percent of the forest land in the United States.

Of the 504 million acres of FIA remeasured forest land today 17 million acres (3%) resulted from afforestation over the last (5 to 10 years – depends on the remeasurement period of the state) while over the same periods 10 million acres (2%) went out of forest land. Additional negative changes are the result of field sampling and estimation protocols. Percentages were applied to the total forest area, then divided by measurement period to get a rough estimate.

1e Annual reforestation

National Data

Data sources + type of data source eg NFI, etc

Reforestation -

<http://www.rngr.net/Publications/tpn/> Tree Planters Notes 1958 to 2015 - data reported by US Forest Service State and Private forestry

National classification and definitions

The United States generates data on planted area in two ways; plot data and State and Private forestry tree planters' notes. Reforestation rates are generated using annual planted rates from the Tree Planters notes, and estimates of the proportion of planting that is regeneration. For the period 2010-2020 reforestation was estimated to be 68 percent of planted acres, overall. This percentage was developed by W. Brad Smith, former correspondent for FRA.

****NOTE**** The values in this table differ from previous T5 reforestation (2015 FRA) because the time periods have changed (the range of data dates). Therefore, there is no 1:1 comparison between 2015 FRA values and 2020 FRA values regarding this specific Annual Reforestation table.

National Definition:

Reforestation	Estimated conversion to planted and replanting of previously planted areas minus lost planted forest
---------------	--

Original data

	Avg. national rates 2/				in the United States, 1950-2012						
Conv.	New	Re-plant	Failed- lost 3/	Year	FRA year	Annual forest planted 1/	Estimated conversion planting	Estimated new forest planting	Estimated replace-ment planting	Estimated failed or lost to develop-ment 3/	Total planted forest
								Acres			
0.50	0.40	0.10	0.001	1950							5,927,445
0.49	0.40	0.12	0.001	1951		453,078	222,008	178,966	52,104	(5,927)	6,322,492
0.48	0.39	0.13	0.001	1952		519,622	249,419	202,653	67,551	(6,322)	6,768,240
0.47	0.39	0.15	0.001	1953		710,097	333,746	273,387	102,964	(6,768)	7,368,605
0.46	0.38	0.16	0.001	1954		808,210	371,777	307,120	129,314	(7,369)	8,040,133
0.45	0.38	0.18	0.001	1955		779,304	350,687	292,239	136,378	(8,040)	8,675,018
0.44	0.37	0.19	0.001	1956		886,235	389,943	327,907	168,385	(8,675)	9,384,194
0.43	0.37	0.21	0.001	1957		1,138,356	489,493	415,500	233,363	(9,384)	10,279,803
0.42	0.36	0.22	0.001	1958		1,532,734	643,748	551,784	337,201	(10,280)	11,465,055

0.41	0.36	0.24	0.001	1959		2,116,691	867,843	751,425	497,422	(11,465)	13,072,859
0.40	0.35	0.25	0.001	1960		2,100,019	840,008	735,007	525,005	(13,073)	14,634,800
0.40	0.35	0.26	0.001	1961		1,760,662	695,461	607,428	457,772	(14,635)	15,923,055
0.39	0.34	0.27	0.001	1962		1,365,783	532,655	464,366	368,761	(15,923)	16,904,154
0.39	0.34	0.28	0.001	1963		1,325,334	510,254	443,987	371,094	(16,904)	17,841,490
0.38	0.33	0.29	0.001	1964		1,312,686	498,821	433,186	380,679	(17,841)	18,755,656
0.38	0.33	0.30	0.001	1965		1,285,330	481,999	417,732	385,599	(18,756)	19,636,631
0.37	0.32	0.31	0.001	1966		1,280,826	473,906	409,864	397,056	(19,637)	20,500,764
0.37	0.32	0.32	0.001	1967		1,372,773	501,062	432,423	439,287	(20,501)	21,413,749
0.36	0.31	0.33	0.001	1968		1,438,609	517,899	445,969	474,741	(21,414)	22,356,204
0.36	0.31	0.34	0.001	1969		1,431,311	508,115	436,550	486,646	(22,356)	23,278,513
0.35	0.30	0.35	0.001	1970		1,576,672	551,835	473,002	551,835	(23,279)	24,280,071
0.35	0.29	0.36	0.001	1971		1,667,093	583,483	486,791	596,819	(24,280)	25,326,065
0.35	0.28	0.37	0.001	1972		1,646,325	576,214	467,556	602,555	(25,326)	26,344,509
0.35	0.28	0.37	0.001	1973		1,720,141	602,049	474,759	643,333	(26,345)	27,394,972
0.35	0.27	0.38	0.001	1974		1,575,667	551,483	422,279	601,905	(27,395)	28,341,339
0.35	0.26	0.39	0.001	1975		1,900,003	665,001	494,001	741,001	(28,341)	29,472,000
0.35	0.25	0.40	0.001	1976		1,858,877	650,607	468,437	739,833	(29,472)	30,561,572
0.35	0.24	0.41	0.001	1977		1,942,863	680,002	474,059	788,802	(30,562)	31,685,071
0.35	0.24	0.41	0.001	1978		2,087,889	730,761	492,742	864,386	(31,685)	32,876,889

0.35	0.23	0.42	0.001	1979		2,060,208	721,073	469,727	869,408	(32,877)	34,034,812
0.35	0.22	0.43	0.001	1980		2,262,080	791,728	497,658	972,694	(34,035)	35,290,163
0.34	0.22	0.44	0.001	1981		1,926,122	652,955	423,747	849,420	(35,290)	36,331,575
0.33	0.22	0.45	0.001	1982		2,374,207	778,740	522,326	1,073,142	(36,332)	37,596,309
0.32	0.22	0.46	0.001	1983		2,452,598	777,474	539,572	1,135,553	(37,596)	38,875,758
0.31	0.22	0.47	0.001	1984		2,552,375	781,027	561,523	1,209,826	(38,876)	40,179,431
0.30	0.22	0.49	0.001	1985		2,694,727	794,944	592,840	1,306,943	(40,179)	41,527,036
0.28	0.22	0.50	0.001	1986		2,752,544	781,722	605,560	1,365,262	(41,527)	42,872,791
0.27	0.22	0.51	0.001	1987		3,032,398	827,845	667,128	1,537,426	(42,873)	44,324,891
0.26	0.22	0.52	0.001	1988		3,393,841	889,186	746,645	1,758,010	(44,325)	45,916,397
0.25	0.22	0.53	0.001	1989		3,021,110	758,299	664,644	1,598,167	(45,916)	47,293,424
0.24	0.22	0.54	0.001	1990		2,861,642	686,794	629,561	1,545,287	(47,293)	44,324,000
0.24	0.22	0.55	0.001	1991		2,557,948	603,676	555,075	1,399,198	(44,324)	45,438,426
0.23	0.21	0.55	0.001	1992		2,544,311	590,280	544,483	1,409,548	(45,438)	46,527,751
0.23	0.21	0.56	0.001	1993		2,419,271	551,594	510,466	1,357,211	(46,528)	47,543,283
0.22	0.21	0.57	0.001	1994		2,477,012	554,851	515,218	1,406,943	(47,543)	48,565,809
0.22	0.21	0.58	0.001	1995		2,421,401	532,708	496,387	1,392,306	(48,566)	49,546,338
0.22	0.20	0.58	0.001	1996		2,406,455	519,794	486,104	1,400,557	(49,546)	50,502,690
0.21	0.20	0.59	0.001	1997		2,637,508	559,152	524,864	1,553,492	(50,503)	51,536,203
0.21	0.20	0.60	0.001	1998		2,651,538	551,520	519,701	1,580,317	(51,536)	52,555,889

0.20	0.19	0.60	0.001	1999		2,664,317	543,521	514,213	1,606,583	(52,556)	53,561,067
0.20	0.19	0.61	0.001	2000		2,373,016	474,603	450,873	1,447,540	(53,561)	55,745,000
0.20	0.18	0.62	0.001	2001		2,543,845	497,867	468,794	1,577,184	(55,745)	56,655,916
0.19	0.18	0.63	0.001	2002		2,368,287	453,358	422,908	1,492,020	(56,656)	57,475,526
0.19	0.17	0.64	0.001	2003		1,801,215	337,085	311,353	1,152,778	(57,476)	58,066,488
0.18	0.17	0.65	0.001	2004		1,904,699	348,288	318,357	1,238,054	(58,066)	58,675,066
0.18	0.16	0.66	0.001	2005		1,980,557	353,671	319,719	1,307,168	(58,675)	59,289,781
0.17	0.16	0.67	0.001	2006		1,788,861	311,773	278,551	1,198,537	(59,290)	59,820,815
0.17	0.15	0.68	0.001	2007		1,693,553	287,904	254,033	1,151,616	(59,821)	60,302,931
0.17	0.15	0.68	0.001	2008		2,097,817	356,629	314,673	1,426,515	(60,303)	60,913,930
0.17	0.15	0.68	0.001	2009		2,288,158	388,987	343,224	1,555,947	(60,914)	61,585,226
0.17	0.15	0.68	0.001	2010		2,203,738	374,635	330,561	1,498,542	(61,585)	63,167,000
0.17	0.15	0.68	0.001	2011		2,347,433	399,064	352,115	1,596,254	(63,167)	63,855,012
0.17	0.15	0.68	0.001	2012	2015	2,510,459	426,778	376,569	1,707,112	(63,855)	65,147,000
0.17	0.15	0.68	0.001	2013		2,203,738	374,635	330,561	1,498,542	(65,147)	65,787,049
0.17	0.15	0.68	0.001	2014		2,347,433	399,064	352,115	1,596,254	(65,787)	66,472,441
0.17	0.15	0.68	0.001	2015	2020	2,510,459	426,778	376,569	1,707,112	(66,472)	68,005,000

Calculated to :

In Acres/year	Year	Annual forest planted 1/	Conversion planting	New forest planting	Replace-ment planting	Failed or lost to develop-ment 3/	expansion =Conversion+replacement -lost
1990-2000	1990-1999	2,564	569	530	1,465	(52)	1,982
2000-2010	2000-2009	2,084	381	348	1,355	(61)	1,675

2010-2015	2010-2014	2,323	405	358	1,621	(66)	1,961
2015-2020	2015-2019	2,510	427	377	1,707	(66)	2,067

1/ Forest Service, State and Private Forestry Tree Planters Notes			
2/ Expert opinion: rates to arrive at current area of planted forest based on annual planted acres.			
3/ Expert opinion: to estimate average plantation failure and loss of planted forest to development.			

Analysis and processing of national data

Estimation and forecasting

Data for 2015-2020 assumes that 2015 values will remain the same from 2015 to 2019 for the purposes of averaging over the time period. All other dates are calculated based on annual planted forest rates for the data ranges given.

Reclassification into FRA 2020 categories

	Year	Reforestation ha/ye
1990-2000	1990-1999	592.94
2000-2010	2000-2009	548.26
2010-2015	2010-2014	656.04
2015-2020	2015-2019	690.87

Reforestation planting number multiplied by 0.4047 to convert to hectares

FRA categories	Area (1000 ha/year)			
	1990-2000	2000-2010	2010-2015	2015-2020
Reforestation	592.94	548.26	656.04	690.87

Comments

Data for afforestation and reforestation are not directly measured and are generated on a “must have been” basis incorporating reported annual total area planted, estimated rate of conversion, estimated rate of replanting, estimated rate of new planting and estimated rate of lost planting to arrive at category estimates. Natural extension based on average total forest area change net of new planting and lost planting. As the new U.S. inventory design completes a full remeasure cycle over the next 10-12 years, more direct measures can be provided.

1f Other land with tree cover

National Data

Data sources + type of data source eg NFI, etc

Data for Orchards comes from the [USDA National Agriculture Statistical Service 2002 and 2012 Census](#).

Orchards are a specific category in NASS, includes all fruit and nut trees, bearing and non-bearing, excludes berries (i.e., non-tree fruit). Data for 2012 were used for both 2015 and 2020 as newer data were unavailable.

Agroforestry production includes Christmas tree plantations. Other agroforestry likely exists (e.g., grazing, etc) but we do not have a consistent source of acreage information for this variable because private landowners are able to do as they please with their own property, thus potential agroforestry operations may not be tracked.

National classification and definitions

Orchards includes Tree Fruits and Tree nuts, bearing and nonbearing, from the National Agriculture Statistics Service of the USDA

Agroforestry includes trees planted for the purposes of Christmas trees

Urban Land: All territory, population, and housing units located within Urbanized Areas of 50,000 or more people and urban clusters of at least 2,500 and less than 50,000 people (definition from US Census Bureau 2017).

Other (e) - used other wooded land from table 1a but not sure if that is appropriate?

Original data

Tree Orchards

Acres land	2007	2012
Total Fruits and Tree Nuts	5301229	5489675
Berries (to subtract from total)	261733	289913
Total Tree Fruits and Nuts	5039496	5199762
*Data from USDA NASS 2012 Census of Agriculture, Specialty Crops		

Geographic area	2002				1997			
	Total		Irrigated		Total		Irrigated	
	Farms	Acres	Farms	Acres	Farms	Acres	Farms	Acres
LAND IN ORCHARDS								
United States Total								
United States	113,649	5,330,439	64,907	4,374,125	123,420	5,349,292	70,730	4,220,995
*2002 CENSUS OF AGRICULTURE - STATE DATA USDA, National Agricultural Statistics Service	UNITED STATES 481							

AGROFORESTRY:

USDA, National Agricultural Statistics Service															
Table 35. Cut Christmas Trees: 2012 and 2007															
[For meaning of abbreviations and symbols, see introductory text.]															
Geographic area	2012					2007									

	Acres in production			Trees cut		Acres in production		Trees cut	
	Farms	Acres	Acres irrigated	Farms	Number	Farms	Acres	Farms	Number
United States Total									
United States.....	15,494	309,365	12,982	12,079	17,319,060	17,367	343,374	12,255	17,415,971

Item	United States
Cut Christmas trees (see text) farms, 2002	21,904
1997	(NA)
Acres in production 2002	446,996
1997	(NA)
Number of trees cut 2002	20,808,065
1997	(NA)
Short-rotation woody crops farms, 2002	6,285
1997	(NA)
Acres in production 2002	288,686
1997	(NA)
Acres harvested 2002	31,920
1997	(NA)
Maple syrup (see text) farms, 2002	8,068
1997	6,143
Number of taps 2002	8,230,772
1997	8,188,039
Gallons produced 2002	1,651,552
1997	(NA)

Urban forest: This is based US Census urban land (1990-2010), plus our projections of urban land (2015-2020). It assumes 40.4% tree cover. We know % tree cover has dropped between 2009 and 2014 within established urban areas, but believe % urban tree cover also tends to increase as urban area expands into rural areas, thus we held cover constant. (provided by David Nowak, USFS NFS)

FRA categories	Area (1000 ha)				
	1990	2000	2010	2015	2020
Trees in urban settings (d)	7,633	9,470	11,123	12,456	13,751

Analysis and processing of national data

Estimation and forecasting

No forecasting was used

Reclassification into FRA 2020 categories

Tree Orchards

Hectares land	2007 (FRA 2010)	2012 (FRA 2015 and 2020)
Total Fruits and Tree Nuts	2145407.376	2221671.473
Berries (to subtract from total)	105923.3451	117327.7911
Total Tree Fruits and Nuts	2039484.031	2104343.681
*Data from USDA NASS 2012 Census of Agriculture, Specialty Crops		

Tree Orchards

Hectares land	2007 (FRA 2010)	2012 (FRA 2015 and 2020)
Total Fruits and Tree Nuts	2,145.41	2,221.67
Berries (to subtract from total)	105.92	117.33
Total Tree Fruits and Nuts	2,039.48	2,104.34
*Data from USDA NASS 2012 Census of Agriculture, Specialty Crops	-	-

Fra 2020 categories	Area (1000 ha)				
	1990	2000	2010	2015	2020
Palms					
Tree Orchards	2,165	2,157	2,039	2104	2104

Agroforestry Fra 2020 Area (1000 ha)

	2012 (FRA 2015, FRA 2020)	2007 (FRA 2010)
Thousand Hectares	125.2618885	138.9634578
Christmas tree acres	2002 (FRA 2000)	
Thousand Hectares	180.8993	

FRA categories	Area (1000 ha)				
	1990	2000	2010	2015	2020
Palms (a)					
Tree orchards (b)	2 165.00	2 157.00	2 039.00	2 104.00	2 104.00
Agroforestry (c)		181.00	139.00	125.00	125.00
Trees in urban settings (d)	7 633.00	9 470.00	11 123.00	12 456.00	13 751.00
Other (specify in comments) (e)					
Total (a+b+c+d+e)	9 798.00	11 808.00	13 301.00	14 685.00	15 980.00
Other land area	597 242.00	595 630.00	590 061.00	583 369.00	581 868.00

Comments
Christmas tree farms are not considered forest by the United States, therefore they have been excluded from total forest land and are included here in other land with tree cover.

2 Forest growing stock, biomass and carbon

2a Growing stock

National Data

Data sources + type of data source eg NFI, etc

#	References to sources of information	Variable(s)	Year(s)	Additional comments
1	FIADB national database http://fia.fs.fed.us Forest Resources of the United States, 2017	All live volume (<i>value used for FRA growing stock</i>)	2017	Forest data compiled from most recent inventory data to be used as basis for 2017 U.S. national assessment. Represents FRA data for 2020.
2	FIADB national database http://fia.fs.fed.us Forest Resources of the United States, 2012. (<i>See reference in Table 1.</i>)	All live volume (<i>value used for FRA growing stock</i>)	2012	Forest data compiled from most recent inventory data to be used as basis for 2012 U.S. national assessment. Represents FRA data for 2015.
3	FIADB national database http://fia.fs.fed.us Forest Resources of the United States, 2007. <i>See reference in Table 1.</i>	<i>As above</i>	2007	Forest data compiled from most recent inventory data to be used as basis for 2007 U.S. national assessment. Represents FRA data for 2010.
4	FIADB national database http://fia.fs.fed.us Forest Resources of the United States, 2002. <i>See reference in Table 1.</i>	<i>As above</i>	2002	Forest data compiled from most recent inventory data to be used as basis for 2002 U.S. national assessment. Represents FRA data for 2005.
5	Forest Resources of the United States, 1997. <i>See reference in Table 1.</i>	<i>As above</i>	1997	Forest data compiled from most recent inventory data to be used as basis for 1997 U.S. national assessment. Represents FRA data for 2000.
6	Forest Statistics of the United States, 1987. <i>See reference in Table 1.</i>	<i>As above</i>	1987	Forest data compiled from most recent inventory data to be used as basis for 1987 U.S. national assessment. Represents FRA data for 1990.
7	Miles, Patrick D.; Vissage, John S.; Smith, W. Brad 2004. The 2002 RPA Plot Summary database users manual. Gen. Tech. Rep. NC-251. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Research Station. 80p.	Forest area, volume, ownership, conifer and broadleaf data	1987-2012	User guide for multi-year national summary database of forest inventory data.
8	Little, Elbert L., Jr. 1979. Checklist of United States trees (native and naturalized). Agric. Handb. 541. Washington, DC: U.S.D.A., Forest Service, 375 p.	Tree definition, species list and status	1979	Updated using PLANTS database information to compile current list of tree species in U.S. See next entry.
9	PLANTS database http://plants.usda.gov/	Plant species	2000	Used to update data from Little, 1979.
10	US Environmental Protection Agency. 2008. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2006. EPA 430-R-08-005. United States Environmental Protection Agency, Office of Atmospheric Programs, Washington, D.C. Available at http://epa.gov/climatechange/emissions/usinventoryreport.html (15 August 2008).	Data and methods	All	The Land-Use Change and Forestry chapter and Annex 3.12 provide details of the data and methods.
11	USDA Forest Service. 2008. Forest Inventory and Analysis National Program: Data and Tools. Washington, DC: U.S. Department of Agriculture, Forest Service. [A website: http://fia.fs.fed.us/tools-data/default.asp] (13 March 2013).	Forest inventory data access tools	All	This is the principal source of US Forest Service's Forest Inventory and Analysis data and documentation.
12	Woodall, Christopher W.; Heath, Linda S.; Domke, Grant M.; Nichols, Michael C. 2011. Methods and equations for estimating aboveground volume, biomass, and carbon for trees in the U.S. forest inventory, 2010. Gen. Tech. Rep. NRS-88. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 30 p.	Methods to use of inventory data for compatible estimation of biomass across inventories	All	This publication provides the basic component ration method (CRM) applied to forest inventory data.
13	Penman, J., M. Gytarsky, T. Hiraishi, [et al.], eds. (2003) Good practice guidance for land use, land use change, and forestry. Hayama, Kanagawa, Japan: Institute for Global Environmental Strategies for the Intergovernmental Panel on Climate Change. 502 p.	Reporting guidelines	All	

14	Jenkins, J.C., D.C. Chojnacky, L.S. Heath, R.A. Birdsey (2003) National-scale biomass estimators for United States tree species. Forest Science, 49:12-35.	Live tree component data	All	Provides ratios for the non-bole components of trees to use with the CRM method to calculate tree level biomass estimates for all trees in the inventory database (FIADB)
15	Birdsey, R.A. 1996. Carbon storage for major forest types and regions in the conterminous United States. Pages 1-26 and 261-379 <i>in</i> R. N. Sampson and D. Hair, editors. Forest and Global Change Volume 2: Forest Management Opportunities for Mitigating Carbon Emissions. American Forests, Washington D. C.	Live understory	All	See US EPA (2008) for factors.
16	Domke GM, Woodall CW, Walters BF, Smith JE (2013) From Models to Measurements: Comparing Downed Dead Wood Carbon Stock Estimates in the U.S. Forest Inventory. PLoS ONE 8(3): e59949 doi:10.1371/journal.pone.0059949	Dead wood	All	
17	Domke GM, Woodall CW, Walters BF, Smith JE (2013) From Models to Measurements: Comparing Downed Dead Wood Carbon Stock Estimates in the U.S. Forest Inventory. PLoS ONE 8(3): e59949 doi:10.1371/journal.pone.0059949	Dead wood	All	
18	See Annex 3.12 of US EPA (2008)	Dead wood carbon	All	
19	Smith, J.E., and L.S. Heath. 2002. A model of forest floor carbon mass for United States forest types. Northeastern Research Station Research Paper NE-722, U.S. Department of Agriculture, Forest Service, Newtown Square, PA, 37 p.	Litter carbon	All	
20	Amichev, B. Y. and J. M. Galbraith. 2004. A Revised Methodology for Estimation of Forest Soil Carbon from Spatial Soils and Forest Inventory Data Sets. Environmental Management 33, Supplement 1: S74-S86.	Soil organic carbon	All	See US EPA (2008) for carbon conversion factors.

National classification and definitions

National class	Definition
Growing-stock volume (US definition)	A classification of net volume under bark that includes live trees of commercial species meeting specified standards of quality or vigor on productive forest land. When associated with volume, includes only trees 12.7 cm d.b.h. and larger from stump height of 0.3 m to a top diameter of 10.0 cm. This will be used as the US estimate of volume (after adding 14% for bark) of commercial species.
All live volume (FRA growing stock)	Volume under bark of all living trees more than 12.7 cm in diameter at breast height on all forest land. Includes the stem from stump height of 0.3m to a top diameter of 10.0 cm. Sound cull trees, trees on unproductive forest and protected forest are included. This will be used as the basis for the US estimate of growing stock volume (after adding 14% for bark).
Above-ground biomass	All living biomass above the soil including stem, stump, branches, bark, and seeds,– includes trees and understory vegetation. Does not currently include foliage.
Below-ground biomass	All living biomass of coarse living roots greater than 2 mm diameter – includes trees and understory vegetation.
Dead wood biomass	All non-living woody biomass with a diameter greater than or equal to 7.5 cm at transect intersection either standing, lying on the ground, or in the soil.
Litter biomass	The litter itself, fomic, and humic layers, and all non-living biomass with a diameter less than 7.5 cm at transect intersection, lying on the ground.
Soil biomass	All organic material in soil to a depth of 1 meter but excluding the coarse roots of the above pools.
Above-ground carbon	Carbon in all living biomass above the soil including stem, stump, branches, bark, and seeds – includes trees and understory vegetation. Does not currently include foliage.
Below-ground	Carbon in all living biomass of coarse living roots greater than 2 mm diameter – includes trees and understory vegetation.

carbon	
Dead wood carbon	Carbon in all non-living woody biomass either standing, lying on the ground (but not including litter), or in the soil.
Litter carbon	Carbon in the litter itself, fumic and humic layers, and all non-living biomass, such as small woody debris, with a diameter less than 7.5 cm at transect intersection, lying on the ground.
Soil carbon	Carbon in all organic material in soil to a depth of 1 meter but excluding the coarse roots of the above pools.

Original data

Original data								
Fra 2020 categories	Total Growing stock (ft3 over bark)							
	1,990	2,000	2,010	2,015	2,016	2,017	2,018	2,019
Naturally regenerating forest (a)	1,154,019,904,632	1,212,866,740,037	1,280,935,162,118	1,347,842,508,807	-	-	-	-
Planted forest (b)	20,531,995,456	38,377,838,183	90,265,513,344	104,043,237,190	-	-	-	-
...of which plantation forest	10,327,463,469	21,218,162,097	42,170,160,766	50,707,138,108	-	-	-	-
...of which other planted forest	10,204,531,987	17,159,676,086	48,095,352,578	53,336,099,082	-	-	-	-
Forest (a+b)	1,174,551,900,089	1,251,244,578,219	1,371,200,675,462	1,451,885,745,997	-	-	-	-
other wooded land								
Fra 2020 categories	Total Growing stock (ft3 under bark)							
	1,990	2,000	2,010	2,015	2,016	2,017	2,018	2,019
Naturally regenerating forest (a)	1,012,298,161,958	1,063,918,193,015	1,123,627,335,192	1,182,317,990,182				
Planted forest (b)	18,010,522,330	33,664,770,336	79,180,274,863	91,265,997,535				
...of which plantation forest	9,059,178,482	18,612,422,892	36,991,369,093	44,479,945,709				
...of which other planted forest	8,951,343,848	15,052,347,444	42,188,905,770	46,786,051,826				
Forest (a+b)	1,030,308,684,288	1,097,582,963,350	1,202,807,610,055	1,273,583,987,717				
other wooded land	ID	ID	ID	ID				

Analysis and processing of national data								
Estimation and forecasting								
Item	Value	Complementary information						
Minimum diameter (cm) at breast height[1] of trees included in growing stock (X)	12.7	For FRA, volume of all live trees from U.S. inventories is used for growing stock.						
Minimum diameter (cm) at the top end of stem for calculation of growing stock (Y)	10							
Minimum diameter (cm) of branches included in growing stock (W)	n/a	Not included.						
Volume refers to “above ground” (AG) or “above stump” (AS)	AS							
Reclassification into FRA 2020 categories								
2a Growing Stock								US ALL LIVE
Fra 2020 categories	Total Growing stock (m3 over bark)							
	1990	2000	2010	2015	2016	2017	2018	2019
Naturally regenerating forest (a)	32,678,150,835.49	34,344,504,904.27	36,271,984,798.67	38,166,586,753.39	-	-	-	-
Planted forest (b)	581,400,408.93	1,086,737,568.25	2,556,030,488.26	2,946,171,538.85	-	-	-	-
...of which plantation forest	292,440,717.57	600,830,452.46	1,194,124,008.39	1,435,863,888.37	-	-	-	-
...of which other planted forest	288,959,691.36	485,907,115.78	1,361,906,479.88	1,510,307,650.48	-	-	-	-
Forest (a+b)	33,259,551,244.43	35,431,242,472.52	38,828,015,286.94	41,112,758,292.24	-	-	-	-
other wooded land	-	-	-	-	-	-	-	-
Fra 2020 categories	Total Growing stock (m3 under bark)							
	1990	2000	2010	2015	2016	2017	2018	2019
Naturally regenerating forest (a)	28,665,044,593	30,126,758,688	31,817,530,525	33,479,462,064	-	-	-	-

Planted forest (b)	510,000,359	953,278,569	2,242,132,007	2,584,360,999	-	-	-	-
...of which plantation forest	256,526,945	527,044,257	1,047,477,200	1,259,529,727	-	-	-	-
...of which other planted forest	253,473,413	426,234,312	1,194,654,807	1,324,831,272	-	-	-	-
Forest (a+b)	29,175,044,951	31,080,037,257	34,059,662,532	36,063,823,063	-	-	-	-
other wooded land								
Miles, P.D. Tue Feb 27 18:25:35 UTC 2018. Forest Inventory EVALIDator web-application Version 1.6.0.03. St. Paul, MN: U.S. Department of Agriculture, Forest Service, Northern Research Station. [Available only on internet: http://apps.fs.fed.us/Evalidator/evaluator.jsp]								

Fra 2020 categories	Total Growing stock (ft3 over bark)								
	1,990	2,000	2,010	2,015	2,016	2,017	2,018	2,019	2,020
Naturally regenerating forest (a)	1,154,019,904,632	1,212,866,740,037	1,280,935,162,118	1,347,842,508,807	-	-	-	-	
Planted forest (b)	20,531,995,456	38,377,838,183	90,265,513,344	104,043,237,190	-	-	-	-	
...of which plantation forest	10,327,463,469	21,218,162,097	42,170,160,766	50,707,138,108	-	-	-	-	

...of which other planted forest	10,204,531,987	17,159,676,086	48,095,352,578	53,336,099,082	-	-	-	-	
Forest (a+b)	1,174,551,900,089	1,251,244,578,219	1,371,200,675,462	1,451,885,745,997	-	-	-	-	
other wooded land									
Fra 2020 categories	Total Growing stock (ft3 under bark)								
	1,990	2,000	2,010	2,015	2,016	2,017	2,018	2,019	2,020
Naturally regenerating forest (a)	1,012,298,161,958	1,063,918,193,015	1,123,627,335,192	1,182,317,990,182					
Planted forest (b)	18,010,522,330	33,664,770,336	79,180,274,863	91,265,997,535					
...of which plantation forest	9,059,178,482	18,612,422,892	36,991,369,093	44,479,945,709					
...of which other planted forest	8,951,343,848	15,052,347,444	42,188,905,770	46,786,051,826					
Forest (a+b)	1,030,308,684,288	1,097,582,963,350	1,202,807,610,055	1,273,583,987,717					
other wooded land	ID	ID	ID	ID					

Analysis and processing of national data

Estimation and forecasting

Item	Value	Complementary information
Minimum diameter (cm) at breast height[1] of trees included in growing stock (X)	12.7	For FRA, volume of all live trees from U.S. inventories is used for growing stock.
Minimum diameter (cm) at the top end of stem for calculation of growing stock (Y)	10	
Minimum diameter (cm) of branches included in growing stock (W)	n/a	Not included.
Volume refers to “above ground” (AG) or “above stump” (AS)	AS	

Reclassification into FRA 2020 categories

2a Growing stock									
FRA categories	Growing stock m³/ha (over bark)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest	114.86	122.23	128.1	134.52					133.43
Planted forest	32.41	48.17	99.99	111.75					130.99
...of which plantation forest	48.02	68.89	94.76	109.24					121.59
...of which other planted forest	24.39	35.11	105.06	114.24					140.77
Forest	109.97	116.73	125.77	132.58					133.21

Other wooded land									17.45
FRA categories	Total growing stock (million m³ over bark)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest	32 678.15	34 344.50	36 271.98	38 166.59					37 663.79
Planted forest	581.4	1 086.74	2 556.03	2 946.17					3 605.08
...of which plantation forest	292.44	600.83	1 194.12	1 435.86					1 705.76
...of which other planted forest	288.96	485.91	1 361.91	1 510.31					1 899.31
Forest	33 259.55	35 431.24	38 828.02	41 112.76					41 268.86
Other wooded land									402.64

FRA categories	Growing stock m³/ha (over bark)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest	114.86	122.23	128.10	134.52	134.52	133.43	133.43	133.43	133.43
Planted forest	32.41	48.17	99.99	111.75	111.75	130.99	130.99	130.99	130.99
...of which plantation forest	48.02	68.89	94.76	109.24	109.24	121.59	121.59	121.59	121.59
...of which other planted forest	24.39	35.11	105.06	114.24	114.24	140.77	140.77	140.77	140.77
Forest	109.97	116.73	125.77	132.58	132.58	133.21	133.21	133.21	133.21
Other wooded land						17.45	17.45	17.45	17.45

FRA categories	Total growing stock (million m³ over bark)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest	32 678.15	34 344.50	36 271.98	38 166.59	38 166.59	37 663.79	37 663.79	37 663.79	37 663.79
Planted forest	581.40	1 086.74	2 556.03	2 946.17	2 946.18	3 605.08	3 605.08	3 605.08	3 605.08
...of which plantation forest	292.44	600.83	1 194.12	1 435.86	1 435.85	1 705.76	1 705.76	1 705.76	1 705.76
...of which other planted forest	288.96	485.91	1 361.91	1 510.31	1 510.25	1 899.31	1 899.31	1 899.31	1 899.31
Forest	33 259.55	35 431.24	38 828.02	41 112.76	41 112.40	41 268.86	41 268.86	41 268.86	41 268.86
Other wooded land						402.64	402.64	402.64	402.64

Comments

Insufficient data for other wooded land until most recent.

Data for 2016 is from 2015 FRA. 2017-2020 from US 2018 FIADB Miles, P.D. Tue Feb 27 18:25:35 UTC 2018. Forest Inventory EVALIDator web-application Version 1.6.0.03. St. Paul, MN: U.S. Department of Agriculture, Forest Service, Northern Research Station. [Available only on internet: <http://apps.fs.fed.us/Evalidator/evalidator.jsp>]. Those data have been applied for all years post-FRA 2015.

2b Growing stock composition

National Data

Data sources + type of data source eg NFI, etc

National Forest Inventory data for 2020 from USFS Forest Inventory and Analysis program, FIADB.

Miles, P.D. Tue Feb 27 18:25:35 UTC 2018. Forest Inventory EVALIDator web-application Version 1.6.0.03. St. Paul, MN: U.S. Department of Agriculture, Forest Service, Northern Research Station. [Available only on internet: http://apps.fs.fed.us/Evalidator/evalidator.jsp]				
#	References to sources of information	Variable(s)	Year(s)	Additional comments
1	FIADB national database http://fia.fs.fed.us Forest Resources of the United States, 2017	All live volume (<i>value used for FRA growing stock</i>)	2017	Forest data compiled from most recent inventory data to be used as basis for 2017 U.S. national assessment. Represents FRA data for 2020.
2	FIADB national database http://fia.fs.fed.us Forest Resources of the United States, 2012. (<i>See reference in Table 1.</i>)	All live volume (<i>value used for FRA growing stock</i>)	2012	Forest data compiled from most recent inventory data to be used as basis for 2012 U.S. national assessment. Represents FRA data for 2015.
3	FIADB national database http://fia.fs.fed.us Forest Resources of the United States, 2007. <i>See reference in Table 1.</i>	<i>As above</i>	2007	Forest data compiled from most recent inventory data to be used as basis for 2007 U.S. national assessment. Represents FRA data for 2010.
4	FIADB national database http://fia.fs.fed.us Forest Resources of the United States, 2002. <i>See reference in Table 1.</i>	<i>As above</i>	2002	Forest data compiled from most recent inventory data to be used as basis for 2002 U.S. national assessment. Represents FRA data for 2005.
5	Forest Resources of the United States, 1997. <i>See reference in Table 1.</i>	<i>As above</i>	1997	Forest data compiled from most recent inventory data to be used as basis for 1997 U.S. national assessment. Represents FRA data for 2000.
6	Forest Statistics of the United States, 1987. <i>See reference in Table 1.</i>	<i>As above</i>	1987	Forest data compiled from most recent inventory data to be used as basis for 1987 U.S. national assessment. Represents FRA data for 1990.
7	Miles, Patrick D.; Vissage, John S.; Smith, W. Brad 2004. The 2002 RPA Plot Summary database users manual. Gen. Tech. Rep. NC-251. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Research Station. 80p.	Forest area, volume, ownership, conifer and broadleaf data	1987-2012	User guide for multi-year national summary database of forest inventory data.
8	Little, Elbert L., Jr. 1979. Checklist of United States trees (native and naturalized). Agric. Handb. 541. Washington, DC. U.S.D.A., Forest Service, 375 p.	Tree definition, species list and status	1979	Updated using PLANTS database information to compile current list of tree species in U.S. See next entry.
9	PLANTS database http://plants.usda.gov/	Plant species	2000	Used to update data from Little, 1979.
10	US Environmental Protection Agency. 2008. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2006. EPA 430-R-08-005. United States Environmental Protection Agency, Office of Atmospheric Programs, Washington, D.C. Available at http://epa.gov/climatechange/emissions/usinventoryreport.html (15 August 2008).	Data and methods	All	The Land-Use Change and Forestry chapter and Annex 3.12 provide details of the data and methods.
11	USDA Forest Service. 2008. Forest Inventory and Analysis National Program: Data and Tools. Washington, DC: U.S. Department of Agriculture, Forest Service. [A website: http://fia.fs.fed.us/tools-data/default.asp] (13 March 2013).	Forest inventory data access tools	All	This is the principal source of US Forest Service's Forest Inventory and Analysis data and documentation.
12	Woodall, Christopher W.; Heath, Linda S.; Domke, Grant M.; Nichols, Michael C. 2011. Methods and equations for estimating aboveground volume, biomass, and carbon for trees in the U.S. forest inventory, 2010. Gen. Tech. Rep. NRS-88. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 30 p.	Methods to use of inventory data for compatible estimation of biomass across inventories	All	This publication provides the basic component ration method (CRM) applied to forest inventory data.

13	Penman, J., M. Gytarsky, T. Hiraishi, [et al.], eds. (2003) Good practice guidance for land use, land use change, and forestry. Hayama, Kanagawa, Japan: Institute for Global Environmental Strategies for the Intergovernmental Panel on Climate Change. 502 p.	Reporting guidelines	All	
14	Jenkins, J.C., D.C. Chojnacky, L.S. Heath, R.A. Birdsey (2003) National-scale biomass estimators for United States tree species. Forest Science, 49:12-35.	Live tree component data	All	Provides ratios for the non-bole components of trees to use with the CRM method to calculate tree level biomass estimates for all trees in the inventory database (FIADB)
15	Birdsey, R.A. 1996. Carbon storage for major forest types and regions in the conterminous United States. Pages 1-26 and 261-379 <i>in</i> R. N. Sampson and D. Hair, editors. Forest and Global Change Volume 2: Forest Management Opportunities for Mitigating Carbon Emissions. American Forests, Washington D. C.	Live understory	All	See US EPA (2008) for factors.
16	Domke GM, Woodall CW, Walters BF, Smith JE (2013) From Models to Measurements: Comparing Downed Dead Wood Carbon Stock Estimates in the U.S. Forest Inventory. PLoS ONE 8(3): e59949 doi:10.1371/journal.pone.0059949	Dead wood	All	
17	Domke GM, Woodall CW, Walters BF, Smith JE (2013) From Models to Measurements: Comparing Downed Dead Wood Carbon Stock Estimates in the U.S. Forest Inventory. PLoS ONE 8(3): e59949 doi:10.1371/journal.pone.0059949	Dead wood	All	
18	See Annex 3.12 of US EPA (2008)	Dead wood carbon	All	
19	Smith, J.E., and L.S. Heath. 2002. A model of forest floor carbon mass for United States forest types. Northeastern Research Station Research Paper NE-722, U.S. Department of Agriculture, Forest Service, Newtown Square, PA, 37 p.	Litter carbon	All	
20	Amichev, B. Y. and J. M. Galbraith. 2004. A Revised Methodology for Estimation of Forest Soil Carbon from Spatial Soils and Forest Inventory Data Sets. Environmental Management 33, Supplement 1: S74-S86.	Soil organic carbon	All	See US EPA (2008) for carbon conversion factors.

National classification and definitions

National class	Definition
Growing-stock volume (US definition)	A classification of net volume under bark that includes live trees of commercial species meeting specified standards of quality or vigor on productive forest land. When associated with volume, includes only trees 12.7 cm d.b.h. and larger from stump height of 0.3 m to a top diameter of 10.0 cm. This will be used as the US estimate of volume (after adding 14% for bark) of commercial species.
All live volume (FRA growing stock)	Volume under bark of all living trees more than 12.7 cm in diameter at breast height on all forest land. Includes the stem from stump height of 0.3m to a top diameter of 10.0 cm. Sound cull trees, trees on unproductive forest and protected forest are included. This will be used as the basis for the US estimate of growing stock volume (after adding 14% for bark).

Item	Value	Complementary information
Minimum diameter (cm) at breast height[1] of trees included in growing stock (X)	12.7	For FRA, volume of all live trees from U.S. inventories is used for growing stock.
Minimum diameter (cm) at the top end of stem for calculation of growing stock (Y)	10	
Minimum diameter (cm) of branches included in growing stock (W)	n/a	Not included.
Volume refers to “above ground” (AG) or “above stump” (AS)	AS	

Net cubic-foot volume. For timber species (trees where the diameter is measured at breast height [DBH]), this is the net volume of wood in the central stem of a sample tree >=5.0 inches in diameter, from a 1-foot stump to a minimum 4-inch top diameter, or to where the central stem breaks into limbs all of which are <4.0 inches in diameter. For woodland species (trees where the diameter is measured at root collar [DRC]), this is the net volume of wood and bark from the DRC measurement point(s) to a 1-1/2 inch top diameter; includes branches that are at least 1? inches in diameter along the length of the branch.

Original data

Category / Species name	FRA growing stock in forest (ft3 under bark) Million cubic feet	FRA growing stock in forest (m3 over bark) million cubic meters

Native tree species (ranked by volume)	Scientific name	Common name	1990	2000	2010	2015	2020	1990	2000	2005	2010	2020
1 st	<i>Pseudotsuga menziesii</i>	Douglas-fir	140,114	147,920	164,060	144,253	150,344	4,523	4,775	5,296	4,657	4,856
2 nd	<i>Pinus taeda</i>	Loblolly pine	89,062	88,876	87,265	86,436	103,994	2,875	2,869	2,817	2,790	3,357
3 rd	<i>Pinus ponderosa</i>	Ponderosa pine	57,774	60,996	58,827	42,715	44,744	1,540	1,626	1,564	1,578	1,444
4 th	<i>Acer rubrum</i>	Red maple	34,912	40,643	49,999	48,809	51,543	1,127	1,312	1,614	1,576	1,664
5 th	<i>Tsuga heterophylla</i>	Western hemlock	47,706	50,370	48,450	48,892	44,450	1,865	1,969	1,899	1,379	1,435
6 th	<i>Quercus alba</i>	White oak	32,806	34,633	38,227	34,927	36,303	1,059	1,118	1,234	1,127	1,172
7 th	<i>Liriodendron tulipifera</i> ,	Yellow-poplar	26,362	27,818	32,310	34,202	37,983	851	898	1,043	1,104	1,226
8 th	<i>Acer saccharum</i>	Sugar maple	23,822	25,154	35,532	31,475	32,678	769	812	1,147	1,016	1,055
9 th	<i>Pinus contorta</i>	Lodgepole pine	41,108	43,369	44,392	29,654	28,911	1,327	1,400	1,433	957	933
10 th	<i>Quercus rubra</i>	Northern Red oak	26,269	27,725	27,385	26,891	28,766	848	895	884	868	929
			519,936	547,506	586,446	528,253	559,716	16,784	17,674	18,931	17,052	18,071
Remaining			370,050	411,840	504,015	644,176	713,641	16,476	17,757	19,897	24,060	23,033
TOTAL			889,986	959,347	1,090,461	1,172,429	1,278,420	33,260	35,431	38,828	41,113	41,269
Introduced tree species (ranked by volume)	Scientific name	Common name	1990	2000	2010	2015	2020	1990	2000	2005	2010	2020
1 st	<i>Picea pungens</i>	blue spruce					736					24
2 nd	<i>Picea abies</i>	Norway spruce					762					25
3 rd	<i>Morus rubra</i>	red mulberry					649					21
4 th	<i>Pinus sylvestris</i>	Scotch pine					538					17
5 th	<i>Triadica sebifera</i>	Chinese tallowtree					479					16
							3,164					103
Remaining							1,899					62
TOTAL							5,063					164

Analysis and processing of national data

Estimation and forecasting

Conversion factor applied to ft3 (division by 35.315) to convert to cubic meters. 14% volume factor added to underbark estimates to account for tree bark, generating overbark estimates.

Reclassification into FRA 2020 categories

Category / Species name			FRA growing stock in forest (ft3 under bark) Million cubic feet					FRA growing stock in forest (m3 over bark) million cubic meters				
Native tree species (ranked by volume)	Scientific name	Common name	1990	2000	2010	2015	2020	1990	2000	2005	2010	2020
1 st	<i>Pseudotsuga menziesii</i>	Douglas-fir	140,114	147,920	164,060	144,253	150,344	4,523	4,775	5,296	4,657	4,856

2 nd	<i>Pinus taeda</i>	Loblolly pine	89,062	88,876	87,265	86,436	103,994	2,875	2,869	2,817	2,790	3,357
3 rd	<i>Pinus ponderosa</i>	Ponderosa pine	57,774	60,996	58,827	42,715	44,744	1,540	1,626	1,564	1,578	1,444
4 th	<i>Acer rubrum</i>	Red maple	34,912	40,643	49,999	48,809	51,543	1,127	1,312	1,614	1,576	1,664
5 th	<i>Tsuga heterophylla</i>	Western hemlock	47,706	50,370	48,450	48,892	44,450	1,865	1,969	1,899	1,379	1,435
6 th	<i>Quercus alba</i>	White oak	32,806	34,633	38,227	34,927	36,303	1,059	1,118	1,234	1,127	1,172
7 th	<i>Liriodendron tulipifera</i> ,	Yellow-poplar	26,362	27,818	32,310	34,202	37,983	851	898	1,043	1,104	1,226
8 th	<i>Acer saccharum</i>	Sugar maple	23,822	25,154	35,532	31,475	32,678	769	812	1,147	1,016	1,055
9 th	<i>Pinus contorta</i>	Lodgepole pine	41,108	43,369	44,392	29,654	28,911	1,327	1,400	1,433	957	933
10 th	<i>Quercus rubra</i>	Northern Red oak	26,269	27,725	27,385	26,891	28,766	848	895	884	868	929
			519,936	547,506	586,446	528,253	559,716	16,784	17,674	18,931	17,052	18,071
Remaining			370,050	411,840	504,015	644,176	713,641	16,476	17,757	19,897	24,060	23,033
TOTAL			889,986	959,347	1,090,461	1,172,429	1,278,420	33,260	35,431	38,828	41,113	41,269
Introduced tree species (ranked by volume)	Scientific name	Common name	1990	2000	2010	2015	2020	1990	2000	2005	2010	2020
1 st	<i>Picea pungens</i>	blue spruce					736					24
2 nd	<i>Picea abies</i>	Norway spruce					762					25
3 rd	<i>Morus rubra</i>	red mulberry					649					21
4 th	<i>Pinus sylvestris</i>	Scotch pine					538					17
5 th	<i>Triadica sebifera</i>	Chinese tallowtree					479					16
							3,164					103
Remaining							1,899					62
TOTAL							5,063					164

FRA categories	Scientific name	Common name	Growing stock in forest (million m³ over bark)				
			1990	2000	2010	2015	2020
Native tree species							
#1 Ranked in terms of volume	Pseudotsuga menziesii	Douglas-fir	4 523.00	4 775.00	5 296.00	4 657.00	4 856.00
#2 Ranked in terms of volume	Pinus taeda	Loblolly pine	2 875.00	2 869.00	2 817.00	2 790.00	3 357.00
#3 Ranked in terms of volume	Pinus ponderosa	Ponderosa pine	1 540.00	1 626.00	1 564.00	1 578.00	1 444.00
#4 Ranked in terms of volume	Acer rubrum	Red maple	1 127.00	1 312.00	1 614.00	1 576.00	1 664.00
#5 Ranked in terms of volume	Tsuga heterophylla	Western hemlock	1 865.00	1 969.00	1 899.00	1 379.00	1 435.00
#6 Ranked in terms of volume	Quercus alba	White oak	1 059.00	1 118.00	1 234.00	1 127.00	1 172.00
#7 Ranked in terms of volume	Liriodendron tulipifera,	Yellow-poplar	851.00	898.00	1 043.00	1 104.00	1 226.00
#8 Ranked in terms of volume	Acer saccharum	Sugar maple	769.00	812.00	1 147.00	1 016.00	1 055.00
#9 Ranked in terms of volume	Pinus contorta	Lodgepole pine	1 327.00	1 400.00	1 433.00	957.00	933.00
#10 Ranked in terms of volume	Quercus rubra	Northern Red oak	848.00	895.00	884.00	868.00	929.00
Remaining native tree species			16 476.00	17 757.00	19 897.00	24 060.00	23 033.00
Total volume of native tree species			33 260.00	35 431.00	38 828.00	41 112.00	41 104.00
Introduced tree species							
#1 Ranked in terms of volume	Picea pungens	blue spruce					24.00
#2 Ranked in terms of volume	Picea abies	Norway spruce					25.00

FRA categories	Scientific name	Common name	Growing stock in forest (million m³ over bark)				
			1990	2000	2010	2015	2020
Native tree species							
#3 Ranked in terms of volume	Morus rubra	red mulberry					21.00
#4 Ranked in terms of volume	Pinus sylvestris	Scotch pine					17.00
#5 Ranked in terms of volume	Triadica sebifera	Chinese tallowtree					16.00
Remaining introduced tree species							62.00
Total volume of introduced tree species			–	–	–	–	165.00
Total growing stock			33 260.00	35 431.00	38 828.00	41 112.00	41 269.00

Comments

We do not include volume from "other wooded land" in this, therefore total growing stock does not match 2a when OWL is included. There is also a slight variation between 2a and 2b due to rounding errors, even when OWL is removed from table 2a.

2c Biomass stock

National Data

Data sources + type of data source eg NFI, etc

#	References to sources of information	Variable(s)	Year(s)	Additional comments
	FIADB national database http://fia.fs.fed.us Forest Resources of the United States, 2017. <i>(See reference in Table 1.</i>	All live volume (<i>value used for FRA growing stock</i>)	2017	Forest data compiled from most recent inventory data to be used as basis for 2017 U.S. national assessment. Represents FRA data for 2017-2020
	FIADB national database http://fia.fs.fed.us Forest Resources of the United States, 2012. <i>(See reference in Table 1.</i>	All live volume (<i>value used for FRA growing stock</i>)	2012	Forest data compiled from most recent inventory data to be used as basis for 2012 U.S. national assessment. Represents FRA data for 2015.
	FIADB national database http://fia.fs.fed.us Forest Resources of the United States, 2007. <i>See reference in Table 1.</i>	<i>As above</i>	2007	Forest data compiled from most recent inventory data to be used as basis for 2007 U.S. national assessment. Represents FRA data for 2010.
	FIADB national database http://fia.fs.fed.us Forest Resources of the United States, 2002. <i>See reference in Table 1.</i>	<i>As above</i>	2002	Forest data compiled from most recent inventory data to be used as basis for 2002 U.S. national assessment. Represents FRA data for 2005.
	Forest Resources of the United States, 1997. <i>See reference in Table 1.</i>	<i>As above</i>	1997	Forest data compiled from most recent inventory data to be used as basis for 1997 U.S. national assessment. Represents FRA data for 2000.
	Forest Statistics of the United States, 1987. <i>See reference in Table 1.</i>	<i>As above</i>	1987	Forest data compiled from most recent inventory data to be used as basis for 1987 U.S. national assessment. Represents FRA data for 1990.
	Miles, Patrick D.; Vissage, John S.; Smith, W. Brad 2004. The 2002 RPA Plot Summary database users manual. Gen. Tech. Rep. NC-251. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Research Station. 80p.	Forest area, volume, ownership, conifer and broadleaf data	1987-2012	User guide for multi-year national summary database of forest inventory data.
	Little, Elbert L., Jr. 1979. Checklist of United States trees (native and naturalized). Agric. Handb. 541. Washington, DC. U.S.D.A., Forest Service, 375 p.	Tree definition, species list and status	1979	Updated using PLANTS database information to compile current list of tree species in U.S. See next entry.
	PLANTS database http://plants.usda.gov/	Plant species	2000	Used to update data from Little, 1979.
	US Environmental Protection Agency. 2008. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2006. EPA 430-R-08-005. United States Environmental Protection Agency, Office of Atmospheric Programs, Washington, D.C. Available at http://epa.gov/climatechange/emissions/usinventoryreport.html (15 August 2008).	Data and methods	All	The Land-Use Change and Forestry chapter and Annex 3.12 provide details of the data and methods.
	USDA Forest Service. 2008. Forest Inventory and Analysis National Program: Data and Tools. Washington, DC: U.S. Department of Agriculture, Forest Service. [A website: http://fia.fs.fed.us/tools-data/default.asp] (13 March 2013).	Forest inventory data access tools	All	This is the principal source of US Forest Service's Forest Inventory and Analysis data and documentation.
	Woodall, Christopher W.; Heath, Linda S.; Domke, Grant M.; Nichols, Michael C. 2011. Methods and equations for estimating aboveground volume, biomass, and carbon for trees in the U.S. forest inventory, 2010. Gen. Tech. Rep. NRS-88. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 30 p.	Methods to use of inventory data for compatible estimation of biomass across inventories	All	This publication provides the basic component ration method (CRM) applied to forest inventory data.
	Penman, J., M. Gytarsky, T. Hiraishi, [et al.], eds. (2003) Good practice guidance for land use, land use change, and forestry. Hayama, Kanagawa, Japan: Institute for Global Environmental Strategies for the Intergovernmental Panel on Climate Change. 502 p.	Reporting guidelines	All	
	Jenkins, J.C., D.C. Chojnacky, L.S. Heath, R.A. Birdsey (2003) National-scale biomass estimators for United States tree species. Forest Science, 49:12-35.	Live tree component data	All	Provides ratios for the non-bole components of trees to use with the CRM method to calculate tree level biomass estimates for all trees in the inventory database (FIADB)

Birdsey, R.A. 1996. Carbon storage for major forest types and regions in the conterminous United States. Pages 1-26 and 261-379 <i>in</i> R. N. Sampson and D. Hair, editors. Forest and Global Change Volume 2: Forest Management Opportunities for Mitigating Carbon Emissions. American Forests, Washington D. C.	Live understory	All	See US EPA (2008) for factors.
Domke GM, Woodall CW, Walters BF, Smith JE (2013) From Models to Measurements: Comparing Downed Dead Wood Carbon Stock Estimates in the U.S. Forest Inventory. PLoS ONE 8(3): e59949 doi:10.1371/journal.pone.0059949	Dead wood	All	
Domke GM, Woodall CW, Walters BF, Smith JE (2013) From Models to Measurements: Comparing Downed Dead Wood Carbon Stock Estimates in the U.S. Forest Inventory. PLoS ONE 8(3): e59949 doi:10.1371/journal.pone.0059949	Dead wood	All	
See Annex 3.12 of US EPA (2008)	Dead wood carbon	All	
Smith, J.E., and L.S. Heath. 2002. A model of forest floor carbon mass for United States forest types. Northeastern Research Station Research Paper NE-722, U.S. Department of Agriculture, Forest Service, Newtown Square, PA, 37 p.	Litter carbon	All	
Amichev, B. Y. and J. M. Galbraith. 2004. A Revised Methodology for Estimation of Forest Soil Carbon from Spatial Soils and Forest Inventory Data Sets. Environmental Management 33, Supplement 1: S74-S86.	Soil organic carbon	All	See US EPA (2008) for carbon conversion factors.

Data for 2015-2020 carbon and biomass values from Domke, Grant 2018 data prepared for the NIR and RPA based on Forest inventory database.

National classification and definitions

Growing-stock volume (US definition)	A classification of net volume under bark that includes live trees of commercial species meeting specified standards of quality or vigor on productive forest land. When associated with volume, includes only trees 12.7 cm d.b.h. and larger from stump height of 0.3 m to a top diameter of 10.0 cm. This will be used as the US estimate of volume (after adding 14% for bark) of commercial species.
All live volume (FRA growing stock)	Volume under bark of all living trees more than 12.7 cm in diameter at breast height on all forest land. Includes the stem from stump height of 0.3m to a top diameter of 10.0 cm. Sound cull trees, trees on unproductive forest and protected forest are included. This will be used as the basis for the US estimate of growing stock volume (after adding 14% for bark).
Above-ground biomass	All living biomass above the soil including stem, stump, branches, bark, and seeds,– includes trees and understory vegetation. Does not currently include foliage.
Below-ground biomass	All living biomass of coarse living roots greater than 2 mm diameter – includes trees and understory vegetation.
Dead wood biomass	All non-living woody biomass with a diameter greater than or equal to 7.5 cm at transect intersection either standing, lying on the ground, or in the soil.
Litter biomass	The litter itself, fomic, and humic layers, and all non-living biomass with a diameter less than 7.5 cm at transect intersection, lying on the ground.
Soil biomass	All organic material in soil to a depth of 1 meter but excluding the coarse roots of the above pools.
Above-ground carbon	Carbon in all living biomass above the soil including stem, stump, branches, bark, and seeds – includes trees and understory vegetation. Does not currently include foliage.
Below-ground carbon	Carbon in all living biomass of coarse living roots greater than 2 mm diameter – includes trees and understory vegetation.
Dead wood carbon	Carbon in all non-living woody biomass either standing, lying on the ground (but not including litter), or in the soil.

Litter carbon	Carbon in the litter itself, fomic and humic layers, and all non-living biomass, such as small woody debris, with a diameter less than 7.5 cm at transect intersection, lying on the ground.
Soil carbon	Carbon in all organic material in soil to a depth of 1 meter but excluding the coarse roots of the above pools.

The estimates in the file ONLY include forest land remaining forest land.

Original data

OD Biomass (Tg)

	1990	2000	2005	2010	2015	2016	2017	2018
Above-ground biomass	23740	25763	26714	27711	28724	28930	29133	29328
Below-ground biomass	4755	5240	5468	5704	5943	5992	6039	6085
Dead wood	4305	4725	4927	5142	5356	5401	5446	5488
TOTAL	32801	35727	37109	38557	40023	40323	40617	40900

Analysis and processing of national data

Estimation and forecasting

Estimation:

Woodall, Christopher W.; Heath, Linda S.; Domke, Grant M.; Nichols, Michael C. 2011. Methods and equations for estimating aboveground volume, biomass, and carbon for trees in the U.S. forest inventory, 2010. Gen. Tech. Rep. NRS-88. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 30 p. <https://doi.org/10.2737/NRS-GTR-88>.

No forecasting was used. 2018 data were used for 2019 and 2020.

The methodology is consistent with recommendations of the Intergovernmental Panel on Climate Change (IPCC) Good Practice Guidance for Land Use, Land-Use Change, and Forestry (Penman et al. 2003).

Forest inventory data was downloaded from the Internet and processed according to methods provided with the data (USDA Forest Service 2008). Biomass stocks do not include the litter and soil organic carbon pools, which are included with carbon stock. Additional details, appropriate citations, and any changes since publication of cited methods are available in US EPA (2008).

Thresholds used by the United States are the following:

Specification of country threshold values	Unit	Value	Complementary information
1. Minimum diameter at breast height of trees included in Above-ground Biomass stock	cm	2.54	
2. Minimum diameter of branches included in Above-ground Biomass stock	cm	0	
3. Minimum diameter of roots included in below-ground Biomass stock	cm	2	
4. Minimum diameter of dead wood included in biomass stock	cm	7.5	
5. Foliage not currentlyincluded in biomass stock	Yes/No	No	
6. Have any of the above thresholds (points 1 to 4) changed since 1990	Yes/No	No	Change in forest area base since 1990 will affect comparisons using older reports.
7. If yes, then attach a separate note giving details of the change	Attachment	No	

Reclassification into FRA 2020 categories

Conversion to tonnes/ha

Teragram to Tonne Conversion Table

Teragram [Tg]	Tonne [t]
---------------	-----------

0.01 Tg	10000 t
0.1 Tg	100000 t
1 Tg	1000000 t
2 Tg	2000000 t
3 Tg	3000000 t
5 Tg	5000000 t
10 Tg	10000000 t
20 Tg	20000000 t
50 Tg	50000000 t
100 Tg	100000000 t
1000 Tg	1000000000 t

	Tonnes							
	1990	2000	2005	2010	2015	2016	2017	2018
Above-ground biomass	23740491236	25762954464	26714390320	27711121204	28724291904	28930191812	29132738116	29327522497
Below-ground biomass	4755206906	5239503797	5467925783	5704430778	5943267288	5991592582	6039114271	6084856468
Dead wood	4305158288	4724855449	4926906159	5141565425	5355871782	5400903814	5445560784	5487801511
TOTAL	32800856431	35727313711	37109222262	38557117407	40023430975	40322688207	40617413171	40900180476

Tonnes / forested ha

tonnes/ha							
	1990	2000	2010	2015	2016	2017	2018
Above-ground biomass	78.49393697	84.87610848	89.76134103	92.63061934	93.38495396	94.03876149	94.66751399
Below-ground biomass	15.72229098	17.26155645	18.47768456	19.16595652	19.3405077	19.49390491	19.64155802
Dead wood	14.234281	15.56604636	16.65446173	17.27171281	17.43379917	17.57794924	17.71429982
TOTAL	108.4505089	117.7037113	124.8934873	129.0682887	130.1592608	131.1106156	132.0233718

FRA categories	Forest biomass (tonnes/ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Above-ground biomass	78.49	84.88	89.76	92.63	93.38	94.04	94.67	94.67	94.67
Below-ground biomass	15.72	17.26	18.48	19.17	19.34	19.49	19.64	19.64	19.64
Dead wood	14.23	15.57	16.65	17.27	17.43	17.58	17.71	17.71	17.71

Comments

Data are the most recent data for the United States used in the NIR report, as given by the National Carbon representative. The data are originally Tg, and are calculated for forest land that remained in forest land- not for other categories of transition, thus the use of ALL forest land acres as divisor for tonnes/acre may result in under-estimation on a per-area basis.

2d Carbon stock

National Data

Data sources + type of data source eg NFI, etc

#	References to sources of information	Variable(s)	Year(s)	Additional comments
	FIADB national database http://fia.fs.fed.us Forest Resources of the United States, 2017. <i>(See reference in Table 1.</i>	All live volume (<i>value used for FRA growing stock</i>)	2017	Forest data compiled from most recent inventory data to be used as basis for 2017 U.S. national assessment. Represents FRA data for 2017-2020
	FIADB national database http://fia.fs.fed.us Forest Resources of the United States, 2012. <i>(See reference in Table 1.</i>	All live volume (<i>value used for FRA growing stock</i>)	2012	Forest data compiled from most recent inventory data to be used as basis for 2012 U.S. national assessment. Represents FRA data for 2015.
	FIADB national database http://fia.fs.fed.us Forest Resources of the United States, 2007. <i>See reference in Table 1.</i>	<i>As above</i>	2007	Forest data compiled from most recent inventory data to be used as basis for 2007 U.S. national assessment. Represents FRA data for 2010.
	FIADB national database http://fia.fs.fed.us Forest Resources of the United States, 2002. <i>See reference in Table 1.</i>	<i>As above</i>	2002	Forest data compiled from most recent inventory data to be used as basis for 2002 U.S. national assessment. Represents FRA data for 2005.
	Forest Resources of the United States, 1997. <i>See reference in Table 1.</i>	<i>As above</i>	1997	Forest data compiled from most recent inventory data to be used as basis for 1997 U.S. national assessment. Represents FRA data for 2000.
	Forest Statistics of the United States, 1987. <i>See reference in Table 1.</i>	<i>As above</i>	1987	Forest data compiled from most recent inventory data to be used as basis for 1987 U.S. national assessment. Represents FRA data for 1990.
	Miles, Patrick D.; Vissage, John S.; Smith, W. Brad 2004. The 2002 RPA Plot Summary database users manual. Gen. Tech. Rep. NC-251. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Research Station. 80p.	Forest area, volume, ownership, conifer and broadleaf data	1987-2012	User guide for multi-year national summary database of forest inventory data.
	Little, Elbert L., Jr. 1979. Checklist of United States trees (native and naturalized). Agric. Handb. 541. Washington, DC. U.S.D.A., Forest Service, 375 p.	Tree definition, species list and status	1979	Updated using PLANTS database information to compile current list of tree species in U.S. See next entry.
	PLANTS database http://plants.usda.gov/	Plant species	2000	Used to update data from Little, 1979.
	US Environmental Protection Agency. 2008. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2006. EPA 430-R-08-005. United States Environmental Protection Agency, Office of Atmospheric Programs, Washington, D.C. Available at http://epa.gov/climatechange/emissions/usinventoryreport.html (15 August 2008).	Data and methods	All	The Land-Use Change and Forestry chapter and Annex 3.12 provide details of the data and methods.
	USDA Forest Service. 2008. Forest Inventory and Analysis National Program: Data and Tools. Washington, DC: U.S. Department of Agriculture, Forest Service. [A website: http://fia.fs.fed.us/tools-data/default.asp] (13 March 2013).	Forest inventory data access tools	All	This is the principal source of US Forest Service's Forest Inventory and Analysis data and documentation.
	Woodall, Christopher W.; Heath, Linda S.; Domke, Grant M.; Nichols, Michael C. 2011. Methods and equations for estimating aboveground volume, biomass, and carbon for trees in the U.S. forest inventory, 2010. Gen. Tech. Rep. NRS-88. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 30 p.	Methods to use of inventory data for compatible estimation of biomass across inventories	All	This publication provides the basic component ration method (CRM) applied to forest inventory data.
	Penman, J., M. Gytarsky, T. Hiraishi, [et al.], eds. (2003) Good practice guidance for land use, land use change, and forestry. Hayama, Kanagawa, Japan: Institute for Global Environmental Strategies for the Intergovernmental Panel on Climate Change. 502 p.	Reporting guidelines	All	
	Jenkins, J.C., D.C. Chojnacky, L.S. Heath, R.A. Birdsey (2003) National-scale biomass estimators for United States tree species. Forest Science, 49:12-35.	Live tree component data	All	Provides ratios for the non-bole components of trees to use with the CRM method to calculate tree level biomass estimates for all trees in the inventory database (FIADB)

Birdsey, R.A. 1996. Carbon storage for major forest types and regions in the conterminous United States. Pages 1-26 and 261-379 <i>in</i> R. N. Sampson and D. Hair, editors. Forest and Global Change Volume 2: Forest Management Opportunities for Mitigating Carbon Emissions. American Forests, Washington D. C.	Live understory	All	See US EPA (2008) for factors.
Domke GM, Woodall CW, Walters BF, Smith JE (2013) From Models to Measurements: Comparing Downed Dead Wood Carbon Stock Estimates in the U.S. Forest Inventory. PLoS ONE 8(3): e59949 doi:10.1371/journal.pone.0059949	Dead wood	All	
Domke GM, Woodall CW, Walters BF, Smith JE (2013) From Models to Measurements: Comparing Downed Dead Wood Carbon Stock Estimates in the U.S. Forest Inventory. PLoS ONE 8(3): e59949 doi:10.1371/journal.pone.0059949	Dead wood	All	
See Annex 3.12 of US EPA (2008)	Dead wood carbon	All	
Smith, J.E., and L.S. Heath. 2002. A model of forest floor carbon mass for United States forest types. Northeastern Research Station Research Paper NE-722, U.S. Department of Agriculture, Forest Service, Newtown Square, PA, 37 p.	Litter carbon	All	
Amichev, B. Y. and J. M. Galbraith. 2004. A Revised Methodology for Estimation of Forest Soil Carbon from Spatial Soils and Forest Inventory Data Sets. Environmental Management 33, Supplement 1: S74-S86.	Soil organic carbon	All	See US EPA (2008) for carbon conversion factors.
Domke, G.M., Walters, B.F., Nowak, D.J., Smith, J.E., Ogle, S.M., Coulston, J.W. 2019. Greenhouse gas emissions and removals from forest land and urban trees in the United States, 1990-2017. Resource Update FS-178. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 4 p.	Litter and soil organic carbon	All	

Data for 2015-2020 carbon and biomass values from Domke, Grant 2018 data prepared for the NIR and RPA based on Forest inventory database, and litter and soil carbon from Domke et.al, 2019.

National classification and definitions

Growing-stock volume (US definition)	A classification of net volume under bark that includes live trees of commercial species meeting specified standards of quality or vigor on productive forest land. When associated with volume, includes only trees 12.7 cm d.b.h. and larger from stump height of 0.3 m to a top diameter of 10.0 cm. This will be used as the US estimate of volume (after adding 14% for bark) of commercial species.
All live volume (FRA growing stock)	Volume under bark of all living trees more than 12.7 cm in diameter at breast height on all forest land. Includes the stem from stump height of 0.3m to a top diameter of 10.0 cm. Sound cull trees, trees on unproductive forest and protected forest are included. This will be used as the basis for the US estimate of growing stock volume (after adding 14% for bark).
Above-ground biomass	All living biomass above the soil including stem, stump, branches, bark, and seeds,– includes trees and understory vegetation. Does not currently include foliage.
Below-ground biomass	All living biomass of coarse living roots greater than 2 mm diameter – includes trees and understory vegetation.
Dead wood biomass	All non-living woody biomass with a diameter greater than or equal to 7.5 cm at transect intersection either standing, lying on the ground, or in the soil.
Litter biomass	The litter itself, fomic, and humic layers, and all non-living biomass with a diameter less than 7.5 cm at transect intersection, lying on the ground.
Soil biomass	All organic material in soil to a depth of 1 meter but excluding the coarse roots of the above pools.
Above-ground carbon	Carbon in all living biomass above the soil including stem, stump, branches, bark, and seeds – includes trees and understory vegetation. Does not currently include foliage.
Below-ground	Carbon in all living biomass of coarse living roots greater than 2 mm diameter – includes trees and understory vegetation.

carbon	
Dead wood carbon	Carbon in all non-living woody biomass either standing, lying on the ground (but not including litter), or in the soil.
Litter carbon	Carbon in the litter itself, fumic and humic layers, and all non-living biomass, such as small woody debris, with a diameter less than 7.5 cm at transect intersection, lying on the ground.
Soil carbon	Carbon in all organic material in soil to a depth of 1 meter but excluding the coarse roots of the above pools.

The estimates in the file ONLY include forest land remaining forest land.

carbon stocks are calculated to be consistent with volume estimates provided in this report using a conversion of 50% of the biomass value is the estimated carbon stock value.

Original data

Input data on Forest area from reporting table 1b									
Forest category	1990	2000	2010	2015	2016	2017	2018	2019	2020
	1000 ha	1000 ha	1000 ha	1000 ha	1000 ha	1000 ha	1000 ha	1000 ha	1000 ha
Naturally regenerating forest	284512	280976	283156	283731	283731	282274	282274	282274	282274
Plantation forest	6090	8722	12601	13144	13144	14029	14029	14029	14029
...of which introduced species	308	388	440	359	359	268	268	268	268
Other planted forest	11848	13838	12963	13220	13220	13492	13492	13492	13492
Total	302450	303536	308720	310095	310095	309795	309795	309795	309795

Carbon in biomass and dead wood (million t)

	1990	2000	2005	2010	2015	2016	2017	2018
Above-ground biomass	23740	25763	26714	27711	28724	28930	29133	29328
Below-ground biomass	4755	5240	5468	5704	5943	5992	6039	6085
Dead wood	4305	4725	4927	5142	5356	5401	5446	5488
TOTAL	32801	35727	37109	38557	40023	40323	40617	40900

Litter and soil organic carbon (t/ha)

Carbon Pool	1990	2000	2010	2015	2016	2017	2018
Litter	13.6	13.6	13.5	13.5	13.5	13.5	13.5
Soil organic carbon	124.5	123.8	123.3	122.9	122.9	122.8	122.7

Analysis and processing of national data

Estimation and forecasting

Forecasting is not used and carbon stocks are calculated to be consistent with volume estimates provided in this report using a conversion of 50% of the biomass value is the estimated carbon stock value.

Reclassification into FRA 2020 categories

Estimates of carbon stocks are based on published carbon conversion factors and methods cited in references and applied to publicly available forest inventory data (USDA Forest Service 2008). Values presented for the conterminous United States are based on summaries prepared by the US Forest Service for the US Environmental Protection Agency and published as part of the inventory of US greenhouse gas emissions and sinks (US EPA 2008) and do not include all forest lands.

FRA categories	Forest carbon (tonnes/ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Carbon in above-ground biomass	39.25	42.44	44.88	46.32	46.69	47.02	47.33	47.33	47.33
Carbon in below-ground biomass	7.86	8.63	9.24	9.58	9.67	9.75	9.82	9.82	9.82
Carbon in dead wood	7.12	7.78	8.33	8.64	8.72	8.79	8.86	8.86	8.86
Carbon in litter	13.60	13.60	13.50	13.50	13.50	13.50	13.50	13.50	13.50
Soil carbon	124.50	123.80	123.30	122.90	122.90	122.80	122.70	122.70	122.70

Soil depth (cm) used for soil carbon estimates	100.00
--	--------

Comments

3 Forest designation and management

3a Designated management objective

National Data

Data sources + type of data source eg NFI, etc

Production forest includes:					
	All planted forest, public and private.				
	Approximately 70% of corporate natural forest (much of this was previously forest industry lands that have been divested since 2000 to Timberland Investment Management Organizations (TIMOs) and Real Estate Investment Trusts (REITs) but many areas have timber agreements as condition of sale.)				
	Approximately 22% of forested lands (excluding planted areas) in National forest ownership are deemed suitable for timber management as a primary emphasis. Individual forests range from zero to 60%. Based on National Forest System records.				
	Approximately 22% of private noncorporate natural forest lands have timber as a primary goal based on a recent study of owners of these forests (Butler, 2013).				
Production area excludes: Non-National forest public lands due to lack of data.					
Multiple use forest	Remainder of forest area				
ID= Insufficient data		* Data interpolated.			
NOTES					
Area of permanent forest estate	Includes all public forest				
Forest area within protected areas	Includes all reserved forest (IUCN 1-5 only)				
Forest area under sust. forest mgmt	All public forest plus SFI certified forest (predominantly private) (www.sfiprogram.org)				
Forest area with management plan	Includes all public forest, all planted private forest, 70% of corporate natural forest and 20% of noncorporate private natural forest land.				
1)Under this reporting category all areas designated for protection of soil and water should be reported, regardless whether they are primarily designated or not.					
NOTE: In North America it is difficult to assign soil and water protection as the “primary” function of forests because federal and state/province guidelines dictate that forests are managed to protect soil and water, along with their many other functions. While legislation, regulations and best management practice policies provide guidance on how forest areas must address soil and water conservation, specific areas with protection as a legal designation for their primary function are rare in these regions. A large percentage of the public and private forests in this region falls under either national policy guidelines or have management plans where soil and water protection are an integral component of management. For this reason, all managed forest with a managment plan is included in the "multiple use" category for this table.					
PROTECTION OF SOIL AND WATER					
2020 Bureau of reclamation - primary water provider for western states - owns 7.1 million acres of land and easements: https://www.usbr.gov/main/about/fact.html					
US Army Corps of engineers - owns 1.4 million acres of forest (presumably the primary purpose of which is shoreline protection): https://www.usace.army.mil/Media/Fact-Sheets/Fact-Sheet-Article-View/Article/475480/environmental-stewardship-program-					

statistics/

TVA - 293,000 acres https://www.tva.gov/Environment/Environmental-Stewardship/Land-Management/TVA-Land-Policy						
Acres	Organization/agency	conversion to ha				
7,100,000.00	BRC	2,873,370.00				
1,400,000.00	USACOE	566,580.00				
293,000.00	TVA	118,577.10				
8,793,000.00	Total all three	3,558,527.10	3,558.53			
***Woodland Owner proportion of privately owned land with primary objective of water protection						

Conservation of Biodiversity	Thous acres	thous hectares				
Woodland owners with primary objective of conservation of biodiversity						
IUCN categories 1-5 (protected areas)	78,415.50	31,734.75				
Social services	thous ac	thous ha				
BIA timberland (forest not woodland)	8,124.00	3,287.78	** From Marla Emery, in the RPA 2017			

National classification and definitions

National class	Definition
Roadless area	An area in the National Forest System without any improved roads maintained for travel by standard passenger type vehicles (FSH 1909.12, Section 7.11) Http://www.fs.fed.us/r4/uinta/projects/planning/docs/roadless/draft_roadless.htm . An area that generally appears to have been primarily affected by the forces of nature, with the imprint of human activity substantially unnoticeable.
Conservation of biodiversity	All public forest land is managed to conserve biodiversity under the National Environmental Policy Act (NEPA). NEPA is a United States environmental law that established a U.S. national policy promoting the enhancement of the environment and also established the President's Council on Environmental Quality (CEQ). As one of the most emulated statutes in the world, NEPA has been called the modern-day equivalent of an “environmental Magna Carta”. NEPA's most significant effect was to set up procedural requirements for all federal government agencies to prepare environmental assessments (EAs) and environmental impact statements (EISs). EAs and EISs contain statements of the environmental effects of proposed federal agency actions. NEPA's procedural requirements apply to all federal agencies in the executive branch.
IUCN class	Category I: an area of land and/or sea possessing some outstanding or representative ecosystems, geological or physiological features and/or species, available primarily for scientific research and/or environmental monitoring or a large area of unmodified or slightly modified land, and/or sea, retaining its natural character and influence, without permanent or significant habitation, which is protected and managed so as to preserve its natural condition. Category II: a natural area of land and/or sea, designated to (a) protect the ecological integrity of one or more ecosystems for present and future generations, (b) exclude exploitation or occupation inimical to the purposes of designation of the area, and (c) provide a foundation for spiritual, educational, recreational, and visitor opportunities, all of which must be environmentally and culturally comparable. Category III: an area of land and/or sea containing one or more specific natural or natural/cultural features which are of outstanding or unique value because of their inherent rarity, representative or aesthetic qualities, or cultural significance. Category IV: an area of land and/or sea subject to active intervention for management purposes so as to ensure the maintenance of habitats and/or to meet the requirements of specific species. Category V: an area of land with coast and sea as appropriate, where the interaction of people and nature over time has produced an area of distinct character with significant aesthetic, ecological, and/or cultural value, and often with high biological diversity. Safeguarding the integrity of this traditional interaction is vital to the protection, maintenance, and evolution of such an area. Category VI: an area of land and/or sea containing predominantly unmodified natural systems, managed to ensure long-term protection and maintenance of biological diversity, while providing at the same time a sustainable flow of natural products and services to meet community needs.

Original data

From previous years:

T 6	Designated functions of Forest and Other wooded land								
Original data									

Forest area of the United States by designated function, 1987, 1997, 2002, 2007, 2012										
US forest assigned to designated function	Original data									
	1987	1997	2002*	2007	2012	1987	1997	2002*	2007	2012
Forest			000 acres					000 ha		
Production	145,329	165,710	176,516	187,451	193,023	64,962	74,072	78,903	83,790	86,281
of which :										
All planted forest, public and private	25,527	40,227	42,178	62,888	65,384	11,411	17,982	18,853	28,111	29,227
Corporate natural forest (@70%)	74,267	76,283	86,612	77,272	80,484	33,197	34,099	38,716	34,541	35,976
NFS natural forest (@22%)	25,010	25,230	25,018	24,862	24,943	11,180	11,278	11,183	11,113	11,149
Noncorporate natural forest (@20%)	20,525	23,969	22,708	22,428	22,212	9,174	10,714	10,151	10,025	9,929
Protection of soil and water (see table 5)	457,319	483,493	493,614	516,740	521,921	185,077	195,670	199,766	209,125	211,221
Cons. of biodiversity: All public land	306,810	307,756	308,713	321,162	321,167	124,166	124,549	124,936	129,974	129,976
Protected forest, IUCN 1-5	44,354	51,442	63,064	74,685	73,520	17,950	20,819	25,522	30,225	29,754
Roadless forest, IUCN 6	30,680	30,680	30,680	30,680	30,680	12,416	12,416	12,416	12,416	12,416
Social services	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID
Multiple purpose	295,205	285,219	275,268	261,677	252,044	119,469	115,428	111,401	105,901	102,002

Unknown function										
Total - Forest	747,343	758,685	760,498	770,290	766,234	302,450	307,040	307,773	311,736	310,095
ID=	* Data interpolated.			Conversion factor for hectares is acres x 0.4047						
Insufficient data										
NOTES										
Production area includes:	All planted forest, public and private,									
	Approximately 70% of corporate natural forest (much of this was previously forest industry lands that have been divested since 2000 to TIMOs and REITs but many areas have timber agreements as condition of sale.),									
	Approximately 22% of forested lands (excluding planted areas) in National forest ownership are deemed suitable for timber management as a primary emphasis. Individual forests range from zero to 60%. Based on NFS TRAC system records, and									
	Approximately 20% of private noncorporate natural forest lands have timber as a primary goal based on a recent study of owners of these forests (Butler, 2008).									
	Production area excludes non-National forest public lands due to lack of data.									
Conservation of Biodiversity includes:	All public forest.									
Protection of soil and water:	In North America it is difficult to assign soil and water protection as the “primary” function of forests because federal and state/province guidelines dictate that forests are managed to protect soil and water, along with their many other functions. While legislation, regulations and best management practice policies provide guidance on how forest areas must address soil and water conservation, specific areas with protection as a legal designation for their primary function are rare in these regions. A large percentage of the public and private forests in this region falls under either national policy guidelines or have management plans where soil and water protection are an integral component of management.									

THIS CYCLE FRA 2020

Table 8— Area of forest and woodlands by region, forest-type group, ownership class and stand origin, 2017																
		All owners			National forest			Other public			Private corporate			Private non-corporate		
Forest-type group		Total	Planted	Natural origin	Total	Planted	Natural origin	Total	Planted	Natural origin	Total	Planted	Natural origin	Total	Planted	Natural origin
		Thousand acres														

North:																	
	White-red-jack pine	9,710	3,148	6,562	1,224	583	641	2,448	919	1,529	1,225	441	784	4,812	1,205	3,608	
	Spruce-fir	15,921	745	15,176	1,610	65	1,545	4,698	161	4,537	5,242	219	5,023	4,371	300	4,072	
	Loblolly-shortleaf pine	2,367	393	1,974	199	85	114	664	71	593	337	105	232	1,166	132	1,034	
	Oak-pine	5,635	332	5,303	477	79	399	984	64	920	595	50	545	3,579	140	3,439	
	Oak-hickory	56,536	367	56,169	2,593	17	2,577	9,074	67	9,007	6,615	59	6,556	38,254	224	38,030	
	Oak-gum-cypress	765	9	756	10	-	10	264	5	259	72	2	71	418	2	416	
	Elm-ash-cottonwood	15,984	260	15,723	394	4	390	2,660	29	2,631	1,796	55	1,741	11,133	173	10,960	
	Maple-beech-birch	49,843	486	49,358	3,307	17	3,290	8,670	119	8,551	11,681	87	11,594	26,186	263	25,923	
	Aspen-birch	15,585	189	15,396	1,955	28	1,927	4,711	68	4,642	2,329	32	2,297	6,591	61	6,530	
	Other forest types	2,151	100	2,052	107	3	104	564	28	537	350	26	324	1,131	43	1,088	
	Nonstocked	1,291	56	1,236	50	0	50	307	9	298	177	8	169	757	39	719	
North total:		175,789	6,084	169,705	11,928	880	11,047	35,045	1,540	33,505	30,418	1,083	29,336	98,398	2,581	95,817	
South:																	
	White-red-jack pine	494	86	408	141	5	136	43	0	43	66	9	56	244	71	173	
	Spruce-fir	32	8	24	6	0	6	18	0	18	0	0	0	8	8	0	
	Longleaf-slash pine	12,999	7,200	5,799	1,192	258	934	2,282	650	1,632	5,423	3,891	1,532	4,102	2,401	1,700	
	Loblolly-shortleaf pine	63,904	34,202	29,702	3,309	514	2,795	2,896	708	2,188	26,123	19,674	6,448	31,575	13,305	18,270	
	Oak-pine	22,271	3,397	18,873	1,563	73	1,489	1,723	102	1,621	5,741	1,638	4,102	13,244	1,584	11,661	
	Oak-hickory	84,127	1,641	82,486	5,988	22	5,966	5,366	69	5,297	14,622	762	13,860	58,151	788	57,363	
	Oak-gum-cypress	24,692	796	23,896	505	4	501	4,434	143	4,291	8,259	279	7,979	11,494	368	11,125	
	Elm-ash-cottonwood	15,066	320	14,746	108	0	108	1,633	31	1,602	3,744	110	3,633	9,582	179	9,403	
	Maple-beech-birch	4,378	48	4,330	227	0	227	308	0	308	642	16	627	3,201	32	3,169	
	Aspen-birch	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	
	Other forest types	10,984	72	10,912	54	0	54	892	13	879	2,231	39	2,192	7,807	20	7,788	
	Nonstocked	6,565	467	6,098	36	2	34	537	33	504	2,264	310	1,954	3,728	121	3,607	

South total:		245,513	48,236	197,277		13,130	878	12,251		20,131	1,749	18,382		69,114	26,730	42,384		143,139	18,878	124,261
Rocky Mountain:																				
	Douglas-fir	17,794	82	17,712		11,804	69	11,735		1,984	5	1,979		1,545	8	1,537		2,461	0	2,461
	Ponderosa pine	13,453	207	13,246		6,957	114	6,843		1,459	6	1,453		1,079	33	1,046		3,957	54	3,904
	Western white pine	60	10	50		17	3	15		11	2	9		8	0	8		24	6	18
	Fir-spruce	21,996	84	21,912		18,006	26	17,980		2,054	11	2,043		852	40	813		1,084	7	1,077
	Hemlock-Sitka spruce	1,392	0	1,392		951	0	951		151	0	151		215	0	215		75	0	75
	Larch	1,211	59	1,153		772	20	752		185	11	174		151	21	130		103	6	97
	Lodgepole pine	11,009	41	10,968		8,595	27	8,568		1,640	0	1,640		268	14	254		506	0	506
	Redwood	0	0	0		0				0				0				0		
	Other softwoods	5,359	25	5,334		2,640	0	2,640		1,320	0	1,320		151	0	151		1,247	25	1,222
	Western hardwoods	17,864	118	17,746		8,147	20	8,126		2,243	19	2,225		990	7	984		6,483	72	6,411
	Other forest types	31,076	54	31,022		9,409	6	9,403		11,993	7	11,986		1,070	0	1,070		8,604	41	8,563
	Nonstocked	9,428	29	9,400		4,011	12	3,999		3,020	7	3,013		538	4	534		1,860	6	1,854
		150,661	554	150,108		75,195	238	74,956		75,195	66	37,495		75,195	168	4,903		75,195	82	32,753
Rocky Mountain total:		130,641	708	129,934		71,310	297	71,012		26,060	67	25,993		6,867	127	6,741		26,404	217	26,187
Pacific Coast:																				
	Douglas-fir	21,087	8,130	12,957		7,344	1,304	6,040		4,171	1,425	2,746		6,390	4,630	1,759		3,183	771	2,412
	Ponderosa pine	9,493	1,189	8,304		5,121	664	4,457		683	35	648		1,516	379	1,136		2,172	110	2,062
	Western white pine	204	4	200		191	4	187		13	0	13		0	0	0		0	0	0
	Fir-spruce	52,251	390	51,861		6,027	191	5,837		21,567	24	21,543		22,013	159	21,854		2,643	15	2,628
	Hemlock-Sitka spruce	17,993	760	17,233		12,704	112	12,593		2,374	128	2,247		2,298	439	1,860		616	82	534
	Larch	545	34	511		399	26	373		35	0	35		30	7	24		80	1	79
	Lodgepole pine	4,116	162	3,954		3,025	146	2,879		468	2	466		357	10	347		266	4	262
	Redwood	768	54	714		20	3	17		128	0	128		396	51	345		224	0	224

	Other softwoods	72,933	451	72,482		7,205	174	7,031		52,367	32	52,335		10,936	241	10,696		2,425	4	2,420
	Western hardwoods	26,961	1,328	25,633		4,263	241	4,023		10,666	170	10,496		4,511	639	3,872		7,521	279	7,242
	Other forest types	1,184	0	1,184		603	0	603		453	0	453		32	0	32		96	0	96
	Nonstocked	6,014	475	5,539		1,598	205	1,393		2,981	26	2,955		870	173	697		565	71	494
Pacific Coast total:		213,549	12,977	200,572		48,502	3,070	45,431		95,907	1,841	94,066		49,349	6,727	42,622		19,792	1,339	18,453
United States:		765,493	68,005	697,488		144,868	5,126	139,742		177,143	5,197	171,946		155,748	34,666	121,082		287,733	23,015	264,718
Woodland ^a																				
	North	-	-	-		-	-	-		-	-	-		-	-	-		-	-	-
	South	22,521	0	22,521		0	-	-		1,520	-	1,520		5,268	-	5,268		15,733	-	15,733
	Rocky Mountain	29,019	0	29,019		3,826	-	3,826		15,221	-	15,221		956	-	956		9,015	-	9,015
	Pacific Coast	5,490	2	5,488		160	2	158		1,896	-	1,896		280	-	280		3,154	-	3,154
United States:		57,030	2	57,027		3,987	2	3,985		18,638	0	18,638		6,503	0	6,503		27,902	0	27,902

^a Woodland is a class of land which consists predominantly of stands of sparse woodland species such as juniper, pinyon juniper, mesquite and small stature hardwood species and are found in the arid to semiarid regions of the interior western United States. These areas must span more than 1 acre (0.4 hectares, have sparse trees capable of achieving 16.4 feet (5 meters) in height in situ, and a tree canopy cover of 5 to 10 percent. When combined with shrubs and bushes these areas may achieve overall cover greater than 10 percent woody vegetation. Trees are defined as woody plants having a more or less erect perennial stem(s) capable of achieving at least 3 inches (7.6 cm) in diameter at breast height, or 5 inches (12.7 cm) diameter at root collar, and a height of 16.4 feet (5 meters) at maturity in situ. These areas do not include land that is predominantly under agricultural or urban land use. For some local analysis these lands might be called scrub forest but the preferred terminology is “Forest and Woodland” when adding these areas to forest totals.

Note: Data may not add to totals because of rounding.																			
PROTECTION OF SOIL AND WATER																			
2020 Bureau of reclamation - primary water provider for western states - owns 7.1 million acres of land and easements: https://www.usbr.gov/main/about/fact.html																			
US Army Corps of engineers - owns 1.4 million acres of forest (presumably the primary purpose of which is shoreline protection): https://www.usace.army.mil/Media/Fact-Sheets/Fact-Sheet-Article-View/Article/475480/environmental-stewardship-program-statistics/																			
TVA - 293,000 acres https://www.tva.gov/Environment/Environmental-Stewardship/Land-Management/TVA-Land-Policy																			
Acres																	Organization/agency	conversion to ha	
7,100,000																	BRC	2873370	

1,400,000	USACOE	566580
293,000	TVA	118577.1
8,793,000	Total all three	3558527.1
2013		

Conservation of Biodiversity = all protected forest areas in IUCN categories 1-5

Multiple use = all National Forest System forest land

Analysis and processing of national data

Estimation and forecasting

no forecasting was used

Reclassification into FRA 2020 categories

2020	total forest 000 acres	total planted forest 000ac	corporate natural forest 000 acres	NFS natural	private natural noncorporate 000acres
	765493	68005	121082	139742	264718
percent of category applied		100	70	22	20
percentage applied		68005	84757.4	30743.24	52943.6
Total "production"	236449.24				
Total "production" 000 ha	95691.00743				

Primary designated management objective

FRA 2020 categories	Forest area (1000 ha)				
	1990	2000	2010	2015	2020
Production (a)	71 033.00	81 331.00	89 212.00	91 339.00	95 691.00
Protection of soil and water (b)					3 558.53
Conservation of biodiversity (c)	17 950.00	20 819.00	30 225.00	29 754.00	31 734.00
Social Services (d)					3 287.78
Multiple use (e)	144 868.00	144 868.00	144 868.00	144 868.00	144 868.00
Other (specify in comments) (f)					
None/unknown (g)	68 599.00	56 518.00	44 415.00	44 134.00	30 655.69
Total forest area	302 450.00	303 536.00	308 720.00	310 095.00	309 795.00

Total area with designated management objective

FRA 2020 categories	Forest area (1000 ha)				
	1990	2000	2010	2015	2020
Production	71 033.00	81 331.00	89 212.00	91 339.00	95 691.00
Protection of soil and water	162 818.00	165 687.00	175 093.00	174 622.00	183 448.31
Conservation of biodiversity	162 818.00	165 687.00	175 093.00	174 622.00	183 448.31
Social Services	162 818.00	165 687.00	175 093.00	174 622.00	183 448.31
Other (specify in comments)					

Comments

The total area with designated management objective for each category aside from production was assumed to be the sum of multiple use and all other categories. This is because any primary management plan outside of production in the United States will carry with it the assumption of secondary management of soil and water protection, conservation of biodiversity, and social services to some degree. Additionally, multiple use by definition includes the management of all of those categories. The only excluded category aside from production (which also may include some of the management objectives as secondary - particularly protection of soil and water - but which we chose to exclude) was the "none/unknown" category because we have no way of knowing the intended or actual use of that forest area.

**Special note - "soil and water protection" and "social services" in years prior to 2020 were NOT zero, they were just not recorded in a manner in which those services could be summed to represent a primary management objective.

3b Forest area within protected areas and forest area with long-term management plans

National Data

Data sources + type of data source eg NFI, etc

FIADB national database http://fia.fs.fed.us Forest Resources of the United States, 2017		Forest Area		Forest data compiled from most recent inventory data to be used as basis for 2017 U.S. national assessment. Represents FRA data for 2020.
1	FIADB national database http://fia.fs.fed.us Forest Resources of the United States, 2012. <i>See reference in Table 1.</i>	Forest area	2012	Forest data compiled from inventory data to be used as basis for 2012 U.S. national assessment. Represents FRA data for 2015.
2	FIADB national database http://fia.fs.fed.us Forest Resources of the United States, 2007. <i>See reference in Table 1.</i>	Forest area	2007	Forest data compiled from most recent inventory data to be used as basis for 2007 U.S. national assessment. Represents FRA data for 2010. Adjustments made for other wooded land.
3	FIADB national database http://fia.fs.fed.us Forest Resources of the United States, 2002. <i>See reference in Table 1.</i>	Forest area	2002	Forest data compiled from most recent inventory data to be used as basis for 2002 U.S. national assessment. Represents FRA data for 2005. Adjustments made for other wooded land.
4	Forest Resources of the United States, 1997. <i>See reference in Table 1.</i>	Forest area	1997	Forest data from the referenced U.S. report represents FRA data for 2000. Adjustments made for other wooded land.
5	Forest Statistics of the United States, 1987. <i>See reference in Table 1.</i>	Forest area	1987	Forest data from the referenced U.S. report represents FRA data for 1990. Adjustments made for other wooded land.
6	Butler, Brett J. 2017 Family Forest Owners of the United States	Forest ownership objectives	2017	This report summarizes results from the U.S. Forest Service's National Woodland Owner Survey of the estimated 10 million family forest owners who own 35 percent of forest land in the U.S. Information on forest owner characteristics, ownership histories, ownership objectives, forest uses and forest management practices.
6	Conservation Biology Institute, Protected Areas Database PAD http://www.consbio.org	Protected areas	2010, current	This polygon data set was overlaid on the U.S. forest inventory plot grid to classify plot and area data for IUCN categories 1-5 to verify national inventory data.
8	National Forest Systems Roadless Area Database	NFS Roadless areas	2002, current	This polygon data set was overlaid on the U.S. forest inventory plot grid to classify plot and area data as forest/nonforest for National Forest Systems roadless areas. Considered IUCN class 6.

National classification and definitions

National class	Definition
Roadless area	An area in the National Forest System without any improved roads maintained for travel by standard passenger type vehicles (FSH 1909.12, Section 7.11) http://www.fs.fed.us/r4/uinta/projects/planning/docs/roadless/draft_roadless.htm . An area that generally appears to have been primarily affected by the forces of nature, with the imprint of human activity substantially unnoticeable.
Conservation of biodiversity	All public forest land is managed to conserve biodiversity under the National Environmental Policy Act (NEPA). NEPA is a United States environmental law that established a U.S. national policy promoting the enhancement of the environment and also established the President's Council on Environmental Quality (CEQ). As one of the most emulated statutes in the world, NEPA has been called the modern-day equivalent of an "environmental Magna Carta". NEPA's most significant effect was to set up procedural requirements for all federal government agencies to prepare environmental assessments (EAs) and environmental impact statements (EISs). EAs and EISs contain statements of the environmental effects of proposed federal agency actions. NEPA's procedural requirements apply to all federal agencies in the executive branch.
IUCN class	<p>Category I: an area of land and/or sea possessing some outstanding or representative ecosystems, geological or physiological features and/or species, available primarily for scientific research and/or environmental monitoring or a large area of unmodified or slightly modified land, and/or sea, retaining its natural character and influence, without permanent or significant habitation, which is protected and managed so as to preserve its natural condition.</p> <p>Category II: a natural area of land and/or sea, designated to (a) protect the ecological integrity of one or more ecosystems for present and future generations, (b) exclude exploitation or occupation inimical to the purposes of designation of the area, and (c) provide a foundation for spiritual, educational, recreational, and visitor opportunities, all of which must be environmentally and culturally comparable.</p> <p>Category III: an area of land and/or sea containing one or more specific natural or natural/cultural features which are of outstanding or unique value because of their inherent rarity, representative or aesthetic qualities, or cultural significance.</p> <p>Category IV: an area of land and/or sea subject to active intervention for management purposes so as to ensure the maintenance of habitats and/or to meet the requirements of specific species.</p>

		Category V: an area of land with coast and sea as appropriate, where the interaction of people and nature over time has produced an area of distinct character with significant aesthetic, ecological, and/or cultural value, and often with high biological diversity. Safeguarding the integrity of this traditional interaction is vital to the protection, maintenance, and evolution of such an area. Category VI: an area of land and/or sea containing predominantly unmodified natural systems, managed to ensure long-term protection and maintenance of biological diversity, while providing at the same time a sustainable flow of natural products and services to meet community needs.
National class	Definition	
Corporate land	An ownership class of private lands owned by entities that are legally incorporated. Recent divestitures of industry lands to Timber Investment Management Organizations (TIMOs) and Real Estate Investment Trusts (REITs) have clouded the picture for assessing what was once forest industry lands relative to long-term management. Studies are planned to investigate these changes and their implications. <u>Note:</u> Although other forest lands may have production as a primary purpose, no defining data currently exist.	
Public forest land (as representative of the permanent forest estate)		It is assumed that all public forest land will remain in forest cover to the extent feasible. Some areas may be designated for recreation or spiritual purposes but will generally retain tree cover for these purposes. Rarely, forest cover may be removed on these lands for restoration of historically significant landscapes to a specified state.

Original data

Original data											
Raw data (000 acres)											
Categories	Area (acres)					Area (000 hectares)					
	1987	1997	2002	2007	2012	1987	1997	2002	2007	2012	2017
Area of permanent forest estate	306,810	307,756	308,713	321,162	321,167	124,166	124,549	124,936	129,974	129,976	
Forest area within protected areas	44,354	51,442	63,064	74,685	73,520	17,950	20,819	25,522	30,225	29,754	
Forest area under sustainable forest mgmt	306,810	326,395	354,920	376,837	321,167	124,166	132,092	143,636	152,506	129,976	
All public forest	306,810	307,756	308,713	321,162	321,167	124,166	124,549	124,936	129,974	129,976	
SFI certified forest	ID	18,639	46,207	55,675		ID	7,543	18,700	22,532	-	
Forest area with management plan	457,319	483,493	493,614	516,740	521,921	185,077	195,670	199,766	209,125	211,221	209389.58
of which :											
All public forest	306,810	307,756	308,713	321,162	321,167	124,166	124,549	124,936	129,974	129,976	130318.0476
All private planted forest	25,527	40,227	42,178	62,888	65,384	10,331	16,280	17,069	25,451	26,461	23344
Corporate natural forest	106,095	108,976	123,731	110,389	114,976	42,937	44,102	50,074	44,674	46,531	49001.74038
70% of orporate natural forest	74,267	76,283	86,612	77,272	80,484	30,056	30,872	35,052	31,272	32,572	34301.21827
Noncorporate natural forest	253,578	296,133	280,557	277,091	274,431	102,623	119,845	113,542	112,139	111,062	107131.5707
20% of noncorporate natural forest	50,716	59,227	56,111	55,418	54,886	20,525	23,969	22,708	22,428	22,212	21426.31414
ID= Insufficient data		* Data interpolated.									
NOTES											
Area of permanent forest estate	Includes all public forest										
Forest area within protected areas	Includes all reserved forest (IUCN 1-5 only)										
Forest area under sust. forest mgmt	All public forest plus SFI certified forest (predominantly private) (www.sfiprogram.org)										

Forest area with management plan	Includes all public forest, all planted private forest, 70% of corporate natural forest and 20% of noncorporate private natural forest land.	
----------------------------------	--	--

Analysis and processing of national data

Estimation and forecasting

no forecasting was used

Reclassification into FRA 2020 categories

Area was transformed from acres to ha using a 0.4047 conversion factor. Forest with a management plan was assumed to include all public forest (management plans required by law), all private planted forest (generally, planted private forestland has a production aspect associated with it or some form of wildlife habitat management), 70% of corporate natural forest (nearly all corporate forest will have management plans associated with it as part of their business model); and 20% of noncorporate natural forest (this percent is an educated assessment based on the results of our national woodland owner survey).

FRA categories	Area (1000 ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Forest area within protected areas	17 950.00	20 819.00	30 225.00	29 754.00	31 734.75	31 734.75	31 734.75	31 734.75	31 734.75
Forest area with long-term forest management plan	185 077.00	195 670.00	209 125.00	211 221.00	209 389.58	209 389.58	209 389.58	209 389.58	209 389.58
...of which in protected areas	17 950.00	20 819.00	30 225.00	29 754.00	31 734.75	31 734.75	31 734.75	31 734.75	31 734.75

Comments

Data from 2016 were carried forward to 2020. Future reporting should allow for updating these numbers annually.

4 Forest ownership and management rights

4a Forest ownership

National Data

Data sources + type of data source eg NFI, etc

#	References to sources of information	Variable(s)	Year(s)	Additional comments
1	FIADB national database http://fia.fs.fed.us Forest Resources of the United States, 2017	Forest Area & Ownership	2017	Forest data compiled from most recent inventory data to be used as basis for 2017 U.S. national assessment. Represents FRA data for 2020.
2	FIADB national database http://fia.fs.fed.us Forest Resources of the United States, 2012. <i>(See reference in Table 1.</i>	Forest Area & Ownership	2012	Forest data compiled from most recent inventory data to be used as basis for 2012 U.S. national assessment. Represents FRA data for 2015.
3	FIADB national database http://fia.fs.fed.us Forest Resources of the United States, 2007. <i>See reference in Table 1.</i>	As above	2007	Forest data compiled from most recent inventory data to be used as basis for 2007 U.S. national assessment. Represents FRA data for 2010.
4	FIADB national database http://fia.fs.fed.us Forest Resources of the United States, 2002. <i>See reference in Table 1.</i>	As above	2002	Forest data compiled from most recent inventory data to be used as basis for 2002 U.S. national assessment. Represents FRA data for 2005.
5	Forest Resources of the United States, 1997. <i>See reference in Table 1.</i>	As above	1997	Forest data compiled from most recent inventory data to be used as basis for 1997 U.S. national assessment. Represents FRA data for 2000.
6	Forest Statistics of the United States, 1987. <i>See reference in Table 1.</i>	As above	1987	Forest data compiled from most recent inventory data to be used as basis for 1987 U.S. national assessment. Represents FRA data for 1990.
7	Miles, Patrick D.; Vissage, John S.; Smith, W. Brad 2004. The 2002 RPA Plot Summary database users manual. Gen. Tech. Rep. NC-251. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Research Station. 80p.	Forest area, volume, ownership, conifer and broadleaf data	1987-2012	User guide for multi-year national summary database of forest inventory data.

National classification and definitions

National class	Definition
Public	Includes: Federal--An ownership class of public lands owned by agencies of the U.S. Government. State--An ownership class of public lands owned by States or lands leased by States for more than 50 years. County and municipal--An ownership class of public lands owned by counties or local public agencies, or lands leased by these governmental units for more than 50 years.
Private corporate	An ownership class of forest land that is owned by entities that are legally incorporated. Includes lands previously reported as “forest industry”.
Private noncorporate	An ownership class of private lands that are not owned by corporate interests. Includes Native American lands, unincorporated partnerships, clubs, lands leased by corporate interests, etc.
Native American (Tribal)	(a) Lands held in trust by the United States or individual States for Native American tribes or individual Native Americans; (b) Lands owned in fee by Native American tribes whether subject to Federal or State restrictions against alienation or not. Due to insufficient data, this category included in private noncorporate for this report.

Original data

For 2020: THOUS AC

All ownerships	Total public	Total federal	National forest	Bureau of Land Management	Other	State	County and municipal	Total private	Private corporate	Private noncorporate
765492.9832	322011.484	237860.3237	144868.4006	37559.03184	55432.89121	70464.01882	13687.14153	443481.4992	155748.0438	287733.4554
2015 data										

Categories	Area (acres)					Area (000 hectares)				
	1990	2000	2005	2010	2015	1990	2000	2005	2010	2015
Forest	747,343	750,028	753,045	762,837	766,234	302,450	303,536	304,757	308,720	310,095
Of which:										
Public	306,810	307,756	308,713	321,162	321,167	124,166	124,549	124,936	129,974	129,976
Private										
Individuals	303,334	295,074	282,203	284,132	281,599	122,759	119,417	114,207	114,988	113,963
Corporate	121,200	131,197	146,129	141,543	147,468	49,050	53,095	59,138	57,283	59,680
Community										
Tribal	14,000	14,251	14,500	14,994	16,000	5,666	5,767	5,868	6,068	6,475
Other wooded land	37,189	38,490	38,180	39,442	52,580	15,050	15,577	15,452	15,962	21,279
Other land	1,479,347	1,475,362	1,472,654	1,461,601	1,445,065	598,692	597,079	595,983	591,510	584,818
...of which with tree cover	63,742	64,713	65,698	66,699	67,000	25,796	26,189	26,588	26,993	27,115
Inland water bodies	116,163	116,163	116,163	116,163	116,163	47,011	47,011	47,011	47,011	47,011
TOTAL	2,380,042	2,380,042	2,380,042	2,380,042	2,380,042	963,203	963,203	963,203	963,203	963,203
						Conversion factor for hectares is acres x 0.4047				

From the Multi-year DB with adjustments to 1987 data and estimates of tribal removed from private forest					
Forest by owner					
FRA >	1990	2000	2005	2010	2015
Owner	1987	1997	2002	2007	2012
1_NationalForest	136,834,596	144,408,506	143,921,115	144,814,794	145,228,856
2_BLM	5,244,222	41,964,078	37,724,419	42,331,434	38,104,054
3_OtherFederal	16,559,335	51,919,452	54,299,054	54,201,334	55,136,183
4_State	45,057,092	60,069,933	62,924,781	68,482,689	69,477,076
5_County and municipal	8,114,743	9,394,473	9,844,108	11,331,375	13,220,595
6_Private_Corporate	121,199,777	131,196,707	146,128,937	141,543,326	147,468,129
7_Private_Noncorporate	261,627,979	311,074,465	297,020,941	299,694,351	297,599,349
8_Unknown	152,705,603	-	1,181,738	437,627	-
Grand Total	747,343,347	750,027,615	753,045,093	762,836,930	766,234,243
Forest by owner					
Owner	1987	1997	2002	2007	2012

	thousand acres				
Federal	228,638	238,292	235,945	241,348	238,469
State/county	68,172	69,464	72,769	79,814	82,698
Corporate	129,200	131,197	146,129	141,543	147,468
Private	321,334	311,074	298,203	300,132	297,599
	thousand hectares				
Federal	92,530	96,437	95,487	97,673	96,508
State/county	27,589	28,112	29,450	32,301	33,468
Public	120,119	124,549	124,936	129,974	129,976
Corporate	52,287	53,095	59,138	57,283	59,680
Private	116,044	111,641	106,183	106,469	104,438
Tribal estimate	14,000	14,251	14,500	14,994	16,000
Private	182,331	178,987	179,821	178,746	180,119
Total	302,450	303,536	304,757	308,720	310,095
Tribal estimate	14,000	14,251	14,500	14,994	16,000
Base Private	130,044	125,892	120,683	121,463	120,438
Net private	116,044	111,641	106,183	106,469	104,438

Analysis and processing of national data

Estimation and forecasting

no forecasting

Reclassification into FRA 2020 categories

Forest by owner					
FRA >	1990	2000	2005	2010	2015
Owner	1987	1997	2002	2007	2012
1_NationalForest	136,834,596	144,408,506	143,921,115	144,814,794	145,228,856
2_BLM	5,244,222	41,964,078	37,724,419	42,331,434	38,104,054
3_OtherFederal	16,559,335	51,919,452	54,299,054	54,201,334	55,136,183
4_State	45,057,092	60,069,933	62,924,781	68,482,689	69,477,076
5_County and municipal	8,114,743	9,394,473	9,844,108	11,331,375	13,220,595
6_Private_Corporate	121,199,777	131,196,707	146,128,937	141,543,326	147,468,129

7_Private_Noncorporate	261,627,979	311,074,465	297,020,941	299,694,351	297,599,349
8_Unknown	152,705,603	-	1,181,738	437,627	-
Grand Total	747,343,347	750,027,615	753,045,093	762,836,930	766,234,243
Forest by owner					
Owner	1987	1997	2002	2007	2012
	<i>thousand acres</i>				
Federal	228,638	238,292	235,945	241,348	238,469
State/county	68,172	69,464	72,769	79,814	82,698
Corporate	129,200	131,197	146,129	141,543	147,468
Private	321,334	311,074	298,203	300,132	297,599
	<i>thousand hectares</i>				
Federal	92,530	96,437	95,487	97,673	96,508
State/county	27,589	28,112	29,450	32,301	33,468
Public	120,119	124,549	124,936	129,974	129,976
Corporate	52,287	53,095	59,138	57,283	59,680
Private	116,044	111,641	106,183	106,469	104,438
Tribal estimate	14,000	14,251	14,500	14,994	16,000
Private	182,331	178,987	179,821	178,746	180,119
Total	302,450	303,536	304,757	308,720	310,095
Tribal estimate	14,000	14,251	14,500	14,994	16,000
Base Private	130,044	125,892	120,683	121,463	120,438
Net private	116,044	111,641	106,183	106,469	104,438

FRA categories	Forest area (1000 ha)			
	1990	2000	2010	2015
Private ownership (a)	177 475.00	178 279.00	178 339.00	180 119.00
...of which owned by individuals	122 759.00	119 417.00	114 988.00	113 963.00
...of which owned by private business entities and institutions	49 050.00	53 095.00	57 283.00	59 680.00
...of which owned by local, tribal and indigenous communities	5 666.00	5 767.00	6 068.00	6 475.00
Public ownership (b)	124 166.00	124 549.00	129 974.00	129 976.00
Unknown/other (specify in comments) (c)	809.00	708.00	407.00	0.00
Total forest area	302 450.00	303 536.00	308 720.00	310 095.00

Comments

Unknown were from previous years' data. My best guess is that cruisers were unable to determine the owner from the property records or were unable to locate the landowner on site. Most likely it is privately owned.

4b Holder of management rights of public forests

National Data

Data sources + type of data source eg NFI, etc

#	References to sources of information	Variable(s)	Year(s)	Additional comments
1	FIADB national database http://fia.fs.fed.us Forest Resources of the United States, 2017	Forest Area & Ownership	2017	Forest data compiled from most recent inventory data to be used as basis for 2017 U.S. national assessment. Represents FRA data for 2020.
2	FIADB national database http://fia.fs.fed.us Forest Resources of the United States, 2012. <i>(See reference in Table 1.</i>	Forest Area & Ownership	2012	Forest data compiled from most recent inventory data to be used as basis for 2012 U.S. national assessment. Represents FRA data for 2015.
3	FIADB national database http://fia.fs.fed.us Forest Resources of the United States, 2007. <i>See reference in Table 1.</i>	<i>As above</i>	2007	Forest data compiled from most recent inventory data to be used as basis for 2007 U.S. national assessment. Represents FRA data for 2010.
4	FIADB national database http://fia.fs.fed.us Forest Resources of the United States, 2002. <i>See reference in Table 1.</i>	<i>As above</i>	2002	Forest data compiled from most recent inventory data to be used as basis for 2002 U.S. national assessment. Represents FRA data for 2005.
5	Forest Resources of the United States, 1997. <i>See reference in Table 1.</i>	<i>As above</i>	1997	Forest data compiled from most recent inventory data to be used as basis for 1997 U.S. national assessment. Represents FRA data for 2000.
6	Forest Statistics of the United States, 1987. <i>See reference in Table 1.</i>	<i>As above</i>	1987	Forest data compiled from most recent inventory data to be used as basis for 1987 U.S. national assessment. Represents FRA data for 1990.
7	Miles, Patrick D.; Vissage, John S.; Smith, W. Brad 2004. The 2002 RPA Plot Summary database users manual. Gen. Tech. Rep. NC-251. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Research Station. 80p.	Forest area, volume, ownership, conifer and broadleaf data	1987-2012	User guide for multi-year national summary database of forest inventory data.

National classification and definitions

In general, ownership in the United States confers management rights simultaneously. One exception may be water rights in the western United States, but as that doesn't necessarily restrict forestry applications it is not considered here. Thus, public forest in the United States is managed by public entities

National class	Definition
Public	Includes: Federal--An ownership class of public lands owned by agencies of the U.S. Government. State--An ownership class of public lands owned by States or lands leased by States for more than 50 years. County and municipal--An ownership class of public lands owned by counties or local public agencies, or lands leased by these governmental units for more than 50 years.
Private corporate	An ownership class of forest land that is owned by entities that are legally incorporated. Includes lands previously reported as “forest industry”.
Private noncorporate	An ownership class of private lands that are not owned by corporate interests. Includes Native American lands, unincorporated partnerships, clubs, lands leased by corporate interests, etc.
Native American (Tribal)	(a) Lands held in trust by the United States or individual States for Native American tribes or individual Native Americans; (b) Lands owned in fee by Native American tribes whether subject to Federal or State restrictions against alienation or not. Due to insufficient data, this category included in private noncorporate for this report.

Original data

For 2020: THOUS AC

All ownerships	Total public	Total federal	National forest	Bureau of Land Management	Other	State	County and municipal	Total private	Private corporate	Private noncorporate
765492.9832	322011.484	237860.3237	144868.4006	37559.03184	55432.89121	70464.01882	13687.14153	443481.4992	155748.0438	287733.4554

2015 data										
-----------	--	--	--	--	--	--	--	--	--	--

Categories	Area (acres)					Area (000 hectares)				
	1990	2000	2005	2010	2015	1990	2000	2005	2010	2015
Forest	747,343	750,028	753,045	762,837	766,234	302,450	303,536	304,757	308,720	310,095
<i>Of which:</i>										
<i>Public</i>	306,810	307,756	308,713	321,162	321,167	124,166	124,549	124,936	129,974	129,976
<i>Private</i>										
<i>Individuals</i>	303,334	295,074	282,203	284,132	281,599	122,759	119,417	114,207	114,988	113,963
<i>Corporate</i>	121,200	131,197	146,129	141,543	147,468	49,050	53,095	59,138	57,283	59,680
<i>Community</i>										
<i>Tribal</i>	14,000	14,251	14,500	14,994	16,000	5,666	5,767	5,868	6,068	6,475
<i>Other wooded land</i>	37,189	38,490	38,180	39,442	52,580	15,050	15,577	15,452	15,962	21,279
<i>Other land</i>	1,479,347	1,475,362	1,472,654	1,461,601	1,445,065	598,692	597,079	595,983	591,510	584,818
<i>...of which with tree cover</i>	63,742	64,713	65,698	66,699	67,000	25,796	26,189	26,588	26,993	27,115
Inland water bodies	116,163	116,163	116,163	116,163	116,163	47,011	47,011	47,011	47,011	47,011
TOTAL	2,380,042	2,380,042	2,380,042	2,380,042	2,380,042	963,203	963,203	963,203	963,203	963,203
						<i>Conversion factor for hectares is acres x 0.4047</i>				

From the Multi-year DB with adjustments to 1987 data and estimates of tribal removed from private forest					
Forest by owner					
FRA >	1990	2000	2005	2010	2015
Owner	1987	1997	2002	2007	2012
1_NationalForest	136,834,596	144,408,506	143,921,115	144,814,794	145,228,856
2_BLM	5,244,222	41,964,078	37,724,419	42,331,434	38,104,054
3_OtherFederal	16,559,335	51,919,452	54,299,054	54,201,334	55,136,183
4_State	45,057,092	60,069,933	62,924,781	68,482,689	69,477,076
5_County and municipal	8,114,743	9,394,473	9,844,108	11,331,375	13,220,595
6_Private_Corporate	121,199,777	131,196,707	146,128,937	141,543,326	147,468,129
7_Private_Noncorporate	261,627,979	311,074,465	297,020,941	299,694,351	297,599,349
8_Unknown	152,705,603	-	1,181,738	437,627	-
Grand Total	747,343,347	750,027,615	753,045,093	762,836,930	766,234,243
Forest by owner					

Owner	1987	1997	2002	2007	2012
	thousand acres				
Federal	228,638	238,292	235,945	241,348	238,469
State/county	68,172	69,464	72,769	79,814	82,698
Corporate	129,200	131,197	146,129	141,543	147,468
Private	321,334	311,074	298,203	300,132	297,599
	thousand hectares				
Federal	92,530	96,437	95,487	97,673	96,508
State/county	27,589	28,112	29,450	32,301	33,468
Public	120,119	124,549	124,936	129,974	129,976
Corporate	52,287	53,095	59,138	57,283	59,680
Private	116,044	111,641	106,183	106,469	104,438
Tribal estimate	14,000	14,251	14,500	14,994	16,000
Private	182,331	178,987	179,821	178,746	180,119
Total	302,450	303,536	304,757	308,720	310,095
Tribal estimate	14,000	14,251	14,500	14,994	16,000
Base Private	130,044	125,892	120,683	121,463	120,438
Net private	116,044	111,641	106,183	106,469	104,438

Analysis and processing of national data

Estimation and forecasting

No forecasting was used

Reclassification into FRA 2020 categories

For 2020: THOUS AC

All ownerships	Total public	Total federal	National forest	Bureau of Land Management		Other	State	County and municipal		Total private	Private corporate	Private noncorporate	
765492.9832	322011.484	237860.3237	144868.4006	37559.03184		55432.89121	70464.01882	13687.14153		443481.4992	155748.0438	287733.4554	
2015 data													
Categories		Area (acres)					Area (000 hectares)						
		1990	2000	2005	2010	2015	1990	2000	2005	2010			2015
Forest		747,343	750,028	753,045	762,837	766,234	302,450	303,536	304,757	308,720			310,095
Of which:													

<i>Public</i>	306,810	307,756	308,713	321,162	321,167	124,166	124,549	124,936	129,974	129,976
<i>Private</i>										
<i>Individuals</i>	303,334	295,074	282,203	284,132	281,599	122,759	119,417	114,207	114,988	113,963
<i>Corporate</i>	121,200	131,197	146,129	141,543	147,468	49,050	53,095	59,138	57,283	59,680
<i>Community</i>										
<i>Tribal</i>	14,000	14,251	14,500	14,994	16,000	5,666	5,767	5,868	6,068	6,475
<i>Other wooded land</i>	37,189	38,490	38,180	39,442	52,580	15,050	15,577	15,452	15,962	21,279
<i>Other land</i>	1,479,347	1,475,362	1,472,654	1,461,601	1,445,065	598,692	597,079	595,983	591,510	584,818
<i>...of which with tree cover</i>	63,742	64,713	65,698	66,699	67,000	25,796	26,189	26,588	26,993	27,115
Inland water bodies	116,163	116,163	116,163	116,163	116,163	47,011	47,011	47,011	47,011	47,011
TOTAL	2,380,042	2,380,042	2,380,042	2,380,042	2,380,042	963,203	963,203	963,203	963,203	963,203
					<i>Conversion factor for hectares is acres x 0.4047</i>					

From the Multi-year DB with adjustments to 1987 data and estimates of tribal removed from private forest					
Forest by owner					
FRA >	1990	2000	2005	2010	2015
Owner	1987	1997	2002	2007	2012
1_NationalForest	136,834,596	144,408,506	143,921,115	144,814,794	145,228,856
2_BLM	5,244,222	41,964,078	37,724,419	42,331,434	38,104,054
3_OtherFederal	16,559,335	51,919,452	54,299,054	54,201,334	55,136,183
4_State	45,057,092	60,069,933	62,924,781	68,482,689	69,477,076
5_County and municipal	8,114,743	9,394,473	9,844,108	11,331,375	13,220,595
6_Private_Corporate	121,199,777	131,196,707	146,128,937	141,543,326	147,468,129
7_Private_Noncorporate	261,627,979	311,074,465	297,020,941	299,694,351	297,599,349
8_Unknown	152,705,603	-	1,181,738	437,627	-
Grand Total	747,343,347	750,027,615	753,045,093	762,836,930	766,234,243
Forest by owner					
Owner	1987	1997	2002	2007	2012
	<i>thousand acres</i>				
Federal	228,638	238,292	235,945	241,348	238,469
State/county	68,172	69,464	72,769	79,814	82,698
Corporate	129,200	131,197	146,129	141,543	147,468

Private	321,334	311,074	298,203	300,132	297,599
	<i>thousand hectares</i>				
Federal	92,530	96,437	95,487	97,673	96,508
State/county	27,589	28,112	29,450	32,301	33,468
Public	120,119	124,549	124,936	129,974	129,976
Corporate	52,287	53,095	59,138	57,283	59,680
Private	116,044	111,641	106,183	106,469	104,438
Tribal estimate	14,000	14,251	14,500	14,994	16,000
Private	182,331	178,987	179,821	178,746	180,119
Total	302,450	303,536	304,757	308,720	310,095
Tribal estimate	14,000	14,251	14,500	14,994	16,000
Base Private	130,044	125,892	120,683	121,463	120,438
Net private	116,044	111,641	106,183	106,469	104,438

FRA categories	Forest area (1000 ha)			
	1990	2000	2010	2015
Public Administration (a)	124 166.00	124 549.00	129 974.00	129 976.00
Individuals (b)	0.00	0.00	0.00	0.00
Private business entities and institutions (c)	0.00	0.00	0.00	0.00
Local, tribal and indigenous communities (d)	0.00	0.00	0.00	0.00
Unknown/other (specify in comments) (e)	0.00	0.00	0.00	0.00
Total public ownership	124 166.00	124 549.00	129 974.00	129 976.00

Comments

In the United States, publicly owned land is managed by public agencies, whether State, Federal, or other entities.Tribal land is not public.

5 Forest disturbances

5a Disturbances

National Data

Data sources + type of data source eg NFI, etc

Miles, P.D. Fri Jul 28 09:12:56 CDT 2017. Forest Inventory EVALIDator web-application Version 1.6.0.03. St. Paul, MN: U.S. Department of Agriculture, Forest Service, Northern Research Station. [Available only on internet: <http://apps.fs.fed.us/Evalidator/evalidator.jsp>]

National classification and definitions

Primary disturbance 1 code. A code indicating the kind of disturbance occurring since the last measurement or within the last 5 years for new plots. The area affected by the disturbance must be at least 1 acre in size. A significant level of disturbance (mortality or damage to 25 percent of the trees in the condition) is required. Populated for all forested conditions using the National Field Guide protocols (PLOT.MANUAL >=1.0) and populated by some FIA work units where PLOT.MANUAL <1.0. Codes 11, 12, 21, and 22 are valid where PLOT. MANUAL >=2.0.

Original data

EVALIDator Version 1.7.2.00 - View report

2018 (incomplete)

Estimate:

	Primary disturbance										
RPA Subregion State	Total	None	Insects	Disease	Fire	Animal	Weather	Other	Human	Not available	Other
Total	3,499,674	2,890,485	18,477	27,481	401,826	64,199	66,945	24,171	6,090	-	-
Northeast: Connecticut	-	-	-	-	-	-	-	-	-	-	-
Northeast: Delaware	-	-	-	-	-	-	-	-	-	-	-
Northeast: Maine	-	-	-	-	-	-	-	-	-	-	-
Northeast: Maryland	-	-	-	-	-	-	-	-	-	-	-
Northeast: Massachusetts	-	-	-	-	-	-	-	-	-	-	-
Northeast: New Hampshire	-	-	-	-	-	-	-	-	-	-	-
Northeast: New Jersey	-	-	-	-	-	-	-	-	-	-	-
Northeast: New York	-	-	-	-	-	-	-	-	-	-	-
Northeast: Pennsylvania	-	-	-	-	-	-	-	-	-	-	-
Northeast: Rhode Island	-	-	-	-	-	-	-	-	-	-	-
Northeast: Vermont	-	-	-	-	-	-	-	-	-	-	-
Northeast: West Virginia	-	-	-	-	-	-	-	-	-	-	-
North Central: Illinois	-	-	-	-	-	-	-	-	-	-	-
North Central:Indiana	-	-	-	-	-	-	-	-	-	-	-
North Central: Iowa	-	-	-	-	-	-	-	-	-	-	-
North Central: Michigan	-	-	-	-	-	-	-	-	-	-	-

North Central: Minnesota	-	-	-	-	-	-	-	-	-	-	-
North Central: Missouri	-	-	-	-	-	-	-	-	-	-	-
North Central: Ohio	-	-	-	-	-	-	-	-	-	-	-
North Central: Wisconsin	-	-	-	-	-	-	-	-	-	-	-
Southeast: Florida	-	-	-	-	-	-	-	-	-	-	-
Southeast: Georgia	-	-	-	-	-	-	-	-	-	-	-
Southeast: North Carolina	-	-	-	-	-	-	-	-	-	-	-
Southeast: South Carolina	-	-	-	-	-	-	-	-	-	-	-
Southeast: Virginia	-	-	-	-	-	-	-	-	-	-	-
South Central: Alabama	3,289,282	2,699,017	18,477	15,896	401,826	62,024	61,782	24,171	6,090	-	-
South Central: Arkansas	-	-	-	-	-	-	-	-	-	-	-
South Central: Kentucky	-	-	-	-	-	-	-	-	-	-	-
South Central: Louisiana	-	-	-	-	-	-	-	-	-	-	-
South Central: Mississippi	-	-	-	-	-	-	-	-	-	-	-
South Central: Oklahoma	-	-	-	-	-	-	-	-	-	-	-
South Central: Tennessee	-	-	-	-	-	-	-	-	-	-	-
South Central: Texas	-	-	-	-	-	-	-	-	-	-	-
Great Plains: Kansas	-	-	-	-	-	-	-	-	-	-	-
Great Plains: Nebraska	-	-	-	-	-	-	-	-	-	-	-
Great Plains: North Dakota	-	-	-	-	-	-	-	-	-	-	-
Great Plains: South Dakota	-	-	-	-	-	-	-	-	-	-	-
Intermountain: Arizona	-	-	-	-	-	-	-	-	-	-	-
Intermountain: Colorado	-	-	-	-	-	-	-	-	-	-	-
Intermountain: Idaho	-	-	-	-	-	-	-	-	-	-	-
Intermountain: Montana	-	-	-	-	-	-	-	-	-	-	-
Intermountain: Nevada	-	-	-	-	-	-	-	-	-	-	-
Intermountain: New Mexico	-	-	-	-	-	-	-	-	-	-	-
Intermountain: Utah	-	-	-	-	-	-	-	-	-	-	-
Intermountain: Wyoming	-	-	-	-	-	-	-	-	-	-	-
Alaska: Alaska	-	-	-	-	-	-	-	-	-	-	-
Pacific Northwest: Oregon	-	-	-	-	-	-	-	-	-	-	-
Pacific Northwest: Washington	-	-	-	-	-	-	-	-	-	-	-

Pacific Southwest: California	-	-	-	-	-	-	-	-	-	-	-
Pacific Southwest: Hawaii	210,392	191,469	-	11,585	-	2,175	5,163	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-

2017 (incomplete)

Estimate:

	Primary disturbance										
RPA Subregion State	Total	None	Insects	Disease	Fire	Animal	Weather	Other	Human	Not available	Other
Total	63,405,557	50,068,564	4,062,232	2,565,933	2,349,089	2,161,754	1,105,787	812,732	236,338	-	43,129
Northeast: Connecticut	202,902	165,078	19,261	-	-	-	2,005	16,559	-	-	-
Northeast: Delaware	60,252	53,725	2,957	-	-	-	3,570	-	-	-	-
Northeast: Maine	3,509,520	2,866,327	283,146	261,280	-	72,444	20,562	1,513	4,248	-	-
Northeast: Maryland	367,521	337,253	3,467	-	-	8,468	-	18,334	-	-	-
Northeast: Massachusetts	396,869	326,766	42,836	17,326	-	-	-	9,942	-	-	-
Northeast: New Hampshire	635,136	510,637	8,818	106,468	-	2,775	-	6,438	-	-	-
Northeast: New Jersey	469,778	434,888	15,498	3,460	8,149	-	1,031	6,751	-	-	-
Northeast: New York	2,477,628	1,953,902	99,326	260,444	-	57,343	42,886	46,649	17,079	-	-
Northeast: Pennsylvania	2,368,528	1,839,056	228,895	84,191	-	41,543	-	174,843	-	-	-
Northeast: Rhode Island	59,777	23,833	35,944	-	-	-	-	-	-	-	-
Northeast: Vermont	628,624	467,997	1,831	158,796	-	-	-	-	-	-	-
Northeast: West Virginia	1,746,365	987,934	452,043	48,950	9,070	131,682	15,668	101,019	-	-	-
North Central: Illinois	668,874	587,856	18,913	11,012	3,484	28,660	4,387	13,142	1,421	-	-
North Central:Indiana	652,246	253,704	283,196	19,646	-	15,318	44,824	12,165	23,393	-	-
North Central: Iowa	442,848	331,887	23,286	19,270	-	68,405	-	-	-	-	-
North Central: Michigan	2,887,386	2,231,242	422,548	107,365	1,862	33,825	34,501	45,277	10,765	-	-
North Central: Minnesota	3,663,633	3,001,909	149,393	91,694	23,323	148,540	161,790	57,060	29,923	-	-
North Central: Missouri	2,181,815	1,684,177	20,297	9,927	62,560	332,909	-	21,804	50,141	-	-
North Central: Ohio	1,032,830	271,201	555,637	-	-	36,386	13,017	146,513	10,076	-	-
North Central: Wisconsin	2,370,052	2,099,579	54,544	111,211	-	52,835	43,227	5,693	2,964	-	-
Southeast: Florida	-	-	-	-	-	-	-	-	-	-	-
Southeast: Georgia	-	-	-	-	-	-	-	-	-	-	-
Southeast: North Carolina	3,437,901	3,126,998	44,457	-	106,231	45,351	90,342	12,127	12,395	-	-
Southeast: South Carolina	2,620,363	2,153,204	34,001	55,571	199,909	13,898	126,234	1,642	35,903	-	-

Southeast: Virginia	-	-	-	-	-	-	-	-	-	-	-
South Central: Alabama	6,757,894	5,733,163	75,579	9,258	662,239	132,813	79,554	65,288	-	-	-
South Central: Arkansas	3,794,145	3,680,814	-	4,819	95,624	-	11,378	-	1,510	-	-
South Central: Kentucky	-	-	-	-	-	-	-	-	-	-	-
South Central: Louisiana	-	-	-	-	-	-	-	-	-	-	-
South Central:Mississippi	3,894,641	3,499,654	11,041	-	257,371	79,551	25,970	4,412	16,641	-	-
South Central: Oklahoma	-	-	-	-	-	-	-	-	-	-	-
South Central: Tennessee	-	-	-	-	-	-	-	-	-	-	-
South Central: Texas	2,356,485	2,077,331	11,690	97,526	88,800	7,623	73,515	-	-	-	-
Great Plains: Kansas	376,196	221,214	1,661	7,302	4,862	123,424	-	17,734	-	-	-
Great Plains: Nebraska	221,994	74,825	2,688	-	15,626	128,855	-	-	-	-	-
Great Plains: North Dakota	142,423	64,229	16,355	-	-	52,201	-	9,638	-	-	-
Great Plains: South Dakota	549,351	111,338	70,577	5,944	14,111	319,861	13,278	-	14,241	-	-
Intermountain: Arizona	1,127,174	1,013,448	19,377	52,180	42,169	-	-	-	-	-	-
Intermountain: Colorado	2,040,377	1,267,887	418,637	245,219	49,448	4,686	45,172	-	-	-	9,327
Intermountain: Idaho	2,083,444	1,452,627	185,069	191,778	231,741	16,007	-	3,108	-	-	3,114
Intermountain: Montana	2,149,258	1,598,129	241,933	123,858	133,788	16,061	20,357	-	-	-	15,132
Intermountain: Nevada	636,580	576,220	-	29,750	30,610	-	-	-	-	-	-
Intermountain: New Mexico	-	-	-	-	-	-	-	-	-	-	-
Intermountain: Utah	-	-	-	-	-	-	-	-	-	-	-
Intermountain: Wyoming	1,294,477	855,872	195,512	98,318	66,373	43,406	25,552	9,443	-	-	-
Alaska: Alaska	-	-	-	-	-	-	-	-	-	-	-
Pacific Northwest: Oregon	-	-	-	-	-	-	-	-	-	-	-
Pacific Northwest: Washington	-	-	-	-	-	-	-	-	-	-	-
Pacific Southwest: California	2,990,896	2,023,288	11,818	333,370	241,738	146,885	206,965	5,639	5,639	-	15,554
Pacific Southwest: Hawaii	109,373	109,373	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-

2016 (incomplete)

Estimate:

	Primary disturbance										
RPA Subregion State	Total	None	Insects	Disease	Fire	Animal	Weather	Other	Human	Not available	Other

Total	145,713,096	115,753,596	7,385,994	6,073,740	6,901,500	4,542,496	2,591,119	1,715,218	643,527	-	105,907
Northeast: Connecticut	511,994	433,137	65,655	13,203	-	-	-	-	-	-	-
Northeast: Delaware	115,200	107,611	-	-	-	-	-	-	7,589	-	-
Northeast: Maine	7,004,581	5,434,488	475,113	643,983	-	345,802	50,712	-	54,482	-	-
Northeast: Maryland	567,777	520,920	-	-	-	5,401	30,219	11,238	-	-	-
Northeast: Massachusetts	787,496	601,514	60,735	102,190	-	2,243	-	20,815	-	-	-
Northeast: New Hampshire	1,423,869	1,114,226	11,750	288,683	-	9,211	-	-	-	-	-
Northeast: New Jersey	1,167,047	1,038,803	76,610	6,634	24,546	444	-	20,010	-	-	-
Northeast: New York	5,187,951	3,865,331	189,793	941,725	-	90,983	56,779	26,616	6,255	-	10,471
Northeast: Pennsylvania	4,672,420	3,817,782	316,520	142,420	12,708	87,431	35,722	259,837	-	-	-
Northeast: Rhode Island	111,722	46,262	65,459	-	-	-	-	-	-	-	-
Northeast: Vermont	1,300,101	986,672	-	299,442	-	13,988	-	-	-	-	-
Northeast: West Virginia	3,468,994	2,818,171	157,199	128,937	-	162,223	42,062	144,221	16,181	-	-
North Central: Illinois	1,384,528	1,173,437	58,348	25,784	-	68,091	29,520	27,324	2,024	-	-
North Central:Indiana	1,190,387	695,614	353,782	67,582	4,720	-	43,881	19,831	4,978	-	-
North Central: Iowa	967,458	701,335	32,573	98,056	3,092	117,693	-	-	14,709	-	-
North Central: Michigan	6,131,294	4,719,070	949,393	198,370	33,174	119,222	74,387	32,589	5,090	-	-
North Central: Minnesota	6,873,678	5,746,114	248,778	68,495	55,590	362,159	226,992	118,882	46,668	-	-
North Central: Missouri	4,496,368	3,432,332	-	-	147,406	784,432	10,289	60,640	61,269	-	-
North Central: Ohio	2,401,866	1,157,836	506,248	-	-	120,664	32,687	571,819	12,612	-	-
North Central: Wisconsin	4,667,955	4,196,377	83,344	218,280	-	76,344	69,834	19,251	4,523	-	-
Southeast: Florida	3,487,702	2,360,551	7,381	68,158	583,475	187,508	153,731	50,660	76,237	-	-
Southeast: Georgia	4,787,241	3,934,793	91,349	68,367	494,288	94,806	62,354	-	41,284	-	-
Southeast: North Carolina	5,346,615	4,757,888	131,679	20,166	208,146	53,126	126,760	29,564	19,286	-	-
Southeast: South Carolina	4,953,962	4,179,230	93,389	94,430	307,251	57,804	160,277	18,363	43,218	-	-
Southeast: Virginia	3,029,453	2,841,418	39,960	11,697	35,066	64,676	17,076	3,669	15,892	-	-
South Central: Alabama	9,957,041	8,226,520	63,218	49,939	1,347,047	90,514	120,234	59,569	-	-	-
South Central: Arkansas	7,554,971	7,106,086	29,083	-	206,143	53,304	159,393	-	960	-	-
South Central: Kentucky	-	-	-	-	-	-	-	-	-	-	-
South Central: Louisiana	1,864,137	1,621,964	-	6,399	92,885	23,261	96,452	6,376	16,802	-	-
South Central:Mississippi	7,128,104	6,045,437	68,967	-	689,585	157,577	92,566	8,972	52,564	-	12,438
South Central: Oklahoma	1,950,797	1,672,876	8,256	5,971	138,108	39,949	64,758	-	20,879	-	-

South Central: Tennessee	-	-	-	-	-	-	-	-	-	-	-
South Central: Texas	4,887,706	4,352,280	13,227	33,856	105,014	12,353	332,906	12,353	25,717	-	-
Great Plains: Kansas	731,301	445,096	-	-	2,102	267,607	3,688	3,349	9,459	-	-
Great Plains: Nebraska	310,201	133,366	-	-	16,757	160,077	-	-	-	-	-
Great Plains: North Dakota	168,811	83,438	5,938	11,839	-	48,037	10,233	-	-	-	9,327
Great Plains: South Dakota	483,561	234,930	65,022	-	15,875	128,167	16,865	-	22,701	-	-
Intermountain: Arizona	1,903,877	1,616,180	12,124	96,955	166,443	-	12,174	-	-	-	-
Intermountain: Colorado	3,886,075	2,407,785	1,046,985	338,043	63,244	21,168	8,850	-	-	-	-
Intermountain: Idaho	4,223,823	2,870,665	420,457	325,731	543,392	30,113	21,220	-	12,245	-	-
Intermountain: Montana	4,890,365	3,236,808	1,040,449	189,073	326,045	37,725	11,770	11,799	8,754	-	27,941
Intermountain: Nevada	1,315,223	1,219,148	36,313	-	17,615	6,039	5,997	30,112	-	-	-
Intermountain: New Mexico	1,825,941	1,608,844	63,677	-	81,615	3,053	53,872	-	14,881	-	-
Intermountain: Utah	1,020,960	853,416	73,622	40,504	41,765	6,745	4,907	-	-	-	-
Intermountain: Wyoming	2,827,109	2,319,222	126,785	221,762	118,529	22,765	-	-	-	-	18,046
Alaska: Alaska	1,109,233	844,933	5,523	86,328	5,833	39,514	27,349	99,754	-	-	-
Pacific Northwest: Oregon	2,900,978	2,197,365	85,150	309,370	116,312	146,168	35,718	7,676	-	-	3,220
Pacific Northwest: Washington	2,202,141	1,562,939	118,526	227,436	113,650	14,721	120,752	19,653	-	-	24,465
Pacific Southwest: California	6,335,235	4,282,884	86,129	616,031	779,861	397,429	157,543	15,359	-	-	-
Pacific Southwest: Hawaii	54,598	46,876	-	-	-	7,723	-	-	-	-	-
Other	143,249	83,631	1,487	7,902	4,218	4,235	10,592	4,918	26,266	-	-

2015

Estimate:

	Primary disturbance										
RPA Subregion State	Total	None	Insects	Disease	Fire	Animal	Weather	Other	Human	Not available	Other
Total	234,018,862	188,268,959	10,276,724	9,198,940	10,242,959	7,110,663	5,005,272	2,652,090	1,012,440	-	250,815
Northeast: Connecticut	850,350	713,691	-	76,595	-	19,684	-	40,380	-	-	-
Northeast: Delaware	150,169	105,272	-	-	-	8,925	9,273	26,699	-	-	-
Northeast: Maine	10,549,994	9,171,509	427,473	557,782	-	304,712	61,173	17,439	9,906	-	-
Northeast: Maryland	1,149,018	1,040,020	8,912	-	-	44,452	36,530	19,103	-	-	-
Northeast: Massachusetts	1,447,656	1,121,290	59,103	162,637	-	59,416	22,605	22,605	-	-	-
Northeast: New Hampshire	1,992,547	1,710,958	-	250,688	-	24,317	6,585	-	-	-	-
Northeast: New Jersey	1,836,886	1,589,428	109,800	-	-	18,820	57,237	25,344	36,256	-	-

Northeast: New York	7,756,148	6,388,109	133,877	960,228	-	97,970	96,201	51,795	27,968	-	-
Northeast: Pennsylvania	7,128,628	5,840,343	658,321	129,187	-	37,010	87,361	376,406	-	-	-
Northeast: Rhode Island	154,057	154,057	-	-	-	-	-	-	-	-	-
Northeast: Vermont	2,015,826	1,621,121	-	353,448	-	23,676	-	17,581	-	-	-
Northeast: West Virginia	5,159,027	4,269,465	104,531	102,091	49,326	432,860	45,702	155,051	-	-	-
North Central: Illinois	2,314,986	2,015,000	151,184	-	42,646	85,016	11,944	-	9,196	-	-
North Central:Indiana	1,478,198	887,292	281,226	40,669	-	8,102	156,902	79,987	3,432	-	20,589
North Central: Iowa	1,096,689	795,538	-	87,310	15,722	88,755	101,560	-	7,803	-	-
North Central: Michigan	8,805,222	6,052,532	1,826,434	538,798	6,320	217,666	97,495	65,977	-	-	-
North Central: Minnesota	10,668,871	9,318,813	200,226	144,568	122,405	364,063	294,445	117,800	106,551	-	-
North Central: Missouri	6,400,079	4,975,859	29,706	95,750	231,930	797,134	73,857	68,441	127,403	-	-
North Central: Ohio	3,370,807	1,956,324	258,961	16,648	6,445	187,297	26,765	904,100	14,267	-	-
North Central: Wisconsin	7,163,392	6,562,032	69,887	231,817	19,280	174,106	66,158	18,968	21,144	-	-
Southeast: Florida	6,784,449	4,873,242	21,138	211,288	890,282	477,967	71,499	122,398	116,636	-	-
Southeast: Georgia	9,763,551	8,189,701	126,319	186,531	920,260	190,568	50,359	28,013	71,800	-	-
Southeast: North Carolina	7,275,724	6,381,144	195,010	-	324,830	121,704	168,462	66,444	18,129	-	-
Southeast: South Carolina	7,629,346	6,787,384	15,845	149,866	468,895	57,483	86,118	13,097	50,657	-	-
Southeast: Virginia	6,570,147	6,196,516	25,336	-	57,575	167,042	26,410	44,474	52,794	-	-
South Central: Alabama	13,356,415	11,276,500	76,294	39,027	1,506,642	249,447	154,064	24,279	30,162	-	-
South Central: Arkansas	11,238,611	10,441,893	42,240	17,716	232,857	46,190	412,728	44,987	-	-	-
South Central: Kentucky	1,712,302	1,479,415	119,816	-	12,485	20,532	37,508	42,547	-	-	-
South Central: Louisiana	3,745,432	3,063,456	-	-	200,045	80,952	289,629	-	111,351	-	-
South Central:Mississippi	8,079,860	7,412,629	4,474	4,449	430,613	69,890	140,010	17,795	-	-	-
South Central: Oklahoma	3,965,693	2,968,478	35,298	151,772	434,235	110,355	226,147	-	39,407	-	-
South Central: Tennessee	2,032,292	1,870,272	16,267	-	45,538	60,361	35,727	2,073	2,055	-	-
South Central: Texas	9,662,516	8,447,640	-	52,388	266,648	-	814,699	25,801	55,341	-	-
Great Plains: Kansas	879,561	558,871	-	13,164	9,914	288,803	-	8,809	-	-	-
Great Plains: Nebraska	694,827	184,656	15,244	-	18,183	476,744	-	-	-	-	-
Great Plains: North Dakota	414,948	233,673	37,306	-	-	123,908	-	-	-	-	20,061
Great Plains: South Dakota	863,861	369,845	76,899	-	-	366,162	18,121	4,465	28,370	-	-
Intermountain: Arizona	3,335,548	2,887,229	107,998	72,282	263,503	-	4,536	-	-	-	-
Intermountain: Colorado	5,810,414	3,730,962	1,359,595	524,592	105,073	-	42,956	38,247	8,989	-	-

Intermountain: Idaho	6,401,065	4,613,936	528,992	482,946	707,226	25,644	19,200	18,454	-	-	4,667
Intermountain: Montana	7,632,845	5,078,230	1,259,302	583,424	555,167	59,947	41,760	-	3,326	-	51,687
Intermountain: Nevada	2,413,982	2,025,046	42,878	54,239	253,818	-	19,623	13,115	-	-	5,264
Intermountain: New Mexico	3,083,257	2,293,472	254,289	63,282	152,249	99,845	181,139	-	-	-	38,980
Intermountain: Utah	2,378,486	2,164,682	102,643	34,168	68,749	-	8,244	-	-	-	-
Intermountain: Wyoming	4,648,444	3,388,416	737,884	319,102	147,872	24,528	-	-	-	-	30,643
Alaska: Alaska	2,274,797	1,843,199	28,796	153,765	92,321	36,148	40,355	80,212	-	-	-
Pacific Northwest: Oregon	5,899,713	4,343,570	169,979	820,818	276,895	179,146	71,437	15,604	5,672	-	16,592
Pacific Northwest: Washington	4,206,292	2,768,431	360,550	533,636	211,914	72,452	195,461	2,877	-	-	60,969
Pacific Southwest: California	9,627,481	6,023,501	184,871	963,945	1,093,477	694,901	593,125	22,448	49,851	-	1,363
Pacific Southwest: Hawaii	88,247	64,847	9,974	-	-	9,264	4,163	-	-	-	-
Other	60,207	19,473	1,847	18,325	1,618	6,700	-	8,270	3,973	-	-

2014 (incomplete)

Estimate:

	Primary disturbance										
RPA Subregion State	Total	None	Insects	Disease	Fire	Animal	Weather	Other	Human	Not available	Other
Total	318,279,263	260,524,233	11,552,930	10,928,725	13,424,446	9,428,391	8,004,481	2,573,203	1,723,135	-	119,719
Northeast: Connecticut	926,206	852,904	-	-	-	28,606	-	44,697	-	-	-
Northeast: Delaware	179,888	179,888	-	-	-	-	-	-	-	-	-
Northeast: Maine	14,161,751	13,209,859	223,855	463,126	-	198,949	24,388	-	41,574	-	-
Northeast: Maryland	1,348,172	1,169,838	-	49,588	-	-	47,099	49,508	32,139	-	-
Northeast: Massachusetts	1,597,533	1,436,075	38,653	-	-	17,061	-	93,091	12,654	-	-
Northeast: New Hampshire	2,724,343	2,285,051	-	396,524	-	-	42,768	-	-	-	-
Northeast: New Jersey	811,743	713,820	-	30,628	-	-	46,394	20,901	-	-	-
Northeast: New York	11,060,837	9,238,099	79,056	1,271,258	32,079	82,443	131,193	184,857	41,852	-	-
Northeast: Pennsylvania	9,302,624	7,649,753	806,993	291,051	-	121,694	123,295	306,129	3,711	-	-
Northeast: Rhode Island	206,965	184,177	-	13,012	-	-	-	9,776	-	-	-
Northeast: Vermont	2,440,982	2,001,926	-	419,056	-	20,000	-	-	-	-	-
Northeast: West Virginia	6,525,718	5,429,624	47,784	161,311	65,623	494,658	101,637	194,837	30,244	-	-
North Central: Illinois	2,912,430	2,626,062	50,147	29,375	-	113,005	44,670	-	49,171	-	-
North Central:Indiana	1,892,155	1,446,311	190,970	-	-	75,147	71,404	65,660	42,664	-	-
North Central: Iowa	1,420,804	939,437	-	83,127	24,694	319,670	53,877	-	-	-	-

North Central: Michigan	11,796,972	9,258,122	1,862,854	281,977	22,548	143,606	161,085	47,811	18,970	-	-
North Central: Minnesota	13,674,745	12,055,039	157,339	125,472	125,448	450,217	387,857	82,631	277,206	-	13,537
North Central: Missouri	9,300,651	7,179,554	23,000	109,765	352,307	1,340,841	195,892	28,211	71,081	-	-
North Central: Ohio	4,428,048	3,026,660	333,959	13,148	-	238,825	61,227	754,228	-	-	-
North Central: Wisconsin	10,012,217	9,083,584	134,706	416,092	20,081	229,985	115,792	-	11,976	-	-
Southeast: Florida	9,862,896	7,472,111	10,259	170,317	1,206,295	519,199	45,891	139,550	299,275	-	-
Southeast: Georgia	14,618,940	11,935,461	307,640	365,321	1,466,402	245,873	158,282	-	139,960	-	-
Southeast: North Carolina	10,654,142	9,385,179	323,459	23,367	483,765	213,101	225,271	-	-	-	-
Southeast: South Carolina	10,745,679	9,314,183	8,664	95,726	758,749	36,448	399,952	47,324	84,633	-	-
Southeast: Virginia	9,942,294	9,376,856	102,458	-	124,708	101,679	107,015	96,229	33,349	-	-
South Central: Alabama	16,459,483	13,225,963	64,818	266,888	1,947,835	423,795	444,743	50,061	35,380	-	-
South Central: Arkansas	15,402,623	13,253,294	34,903	74,168	383,672	204,366	1,375,673	47,901	28,647	-	-
South Central: Kentucky	4,900,813	4,399,827	110,855	-	78,787	168,598	81,461	51,758	9,528	-	-
South Central: Louisiana	6,091,805	5,249,759	-	-	383,506	83,273	295,761	34,661	44,844	-	-
South Central:Mississippi	10,834,245	10,386,462	-	12,558	286,913	18,837	68,956	25,249	35,270	-	-
South Central: Oklahoma	5,564,169	3,903,748	37,851	446,769	612,433	236,888	294,009	-	32,471	-	-
South Central: Tennessee	5,461,851	4,969,296	111,191	7,597	99,122	105,356	147,151	-	22,138	-	-
South Central: Texas	16,136,094	13,817,439	57,415	25,652	494,881	54,982	1,570,392	26,393	88,940	-	-
Great Plains: Kansas	1,088,495	563,438	-	-	37,660	437,369	20,619	29,409	-	-	-
Great Plains: Nebraska	878,092	281,276	-	17,816	52,227	505,664	21,108	-	-	-	-
Great Plains: North Dakota	583,329	352,996	-	-	-	170,213	60,120	-	-	-	-
Great Plains: South Dakota	1,059,841	332,878	71,738	-	69,316	565,145	20,765	-	-	-	-
Intermountain: Arizona	4,364,567	3,625,802	121,149	74,834	517,045	25,736	-	-	-	-	-
Intermountain: Colorado	8,237,591	5,359,160	2,035,974	527,269	68,024	117,847	82,012	22,022	-	-	25,282
Intermountain: Idaho	8,842,969	6,357,409	549,409	875,258	776,277	68,025	24,938	-	159,473	-	32,180
Intermountain: Montana	10,168,131	7,363,858	1,414,922	581,135	663,565	58,592	67,730	-	-	-	18,329
Intermountain: Nevada	3,418,271	2,963,824	70,744	86,202	273,665	-	-	-	23,837	-	-
Intermountain: New Mexico	4,869,967	3,534,010	367,804	231,026	365,169	132,077	173,400	31,753	34,729	-	-
Intermountain: Utah	3,516,006	2,951,929	213,351	181,866	150,278	-	18,582	-	-	-	-
Intermountain: Wyoming	7,543,272	6,061,417	849,159	268,151	352,922	11,623	-	-	-	-	-
Alaska: Alaska	-	-	-	-	-	-	-	-	-	-	-
Pacific Northwest: Oregon	6,048,709	4,738,204	203,322	572,531	212,697	195,946	115,549	4,202	4,508	-	1,750

Pacific Northwest: Washington	4,519,378	2,935,366	497,156	560,576	130,244	102,775	220,422	37,000	7,198	-	28,641
Pacific Southwest: California	9,416,107	6,205,358	39,375	1,303,825	777,701	720,155	344,432	23,990	1,271	-	-
Pacific Southwest: Hawaii	141,743	90,871	-	-	-	29,702	-	21,170	-	-	-
Other	182,975	151,078	-	5,363	7,809	419	11,671	2,195	4,442	-	-

2013

Estimate:

	Primary disturbance										
RPA Subregion State	Total	None	Insects	Disease	Fire	Animal	Weather	Other	Human	Not available	Other
Total	439,633,421	366,850,785	13,659,006	11,936,040	16,096,817	12,169,388	11,240,160	4,688,455	2,683,044	-	309,727
Northeast: Connecticut	1,794,042	1,657,754	32,512	-	-	-	86,742	-	17,034	-	-
Northeast: Delaware	380,240	352,312	-	-	-	-	12,524	15,403	-	-	-
Northeast: Maine	17,445,873	16,212,531	142,877	443,413	-	583,975	63,078	-	-	-	-
Northeast: Maryland	2,400,511	2,187,894	21,824	-	-	83,508	-	107,284	-	-	-
Northeast: Massachusetts	2,939,827	2,591,664	35,964	191,698	-	64,592	55,909	-	-	-	-
Northeast: New Hampshire	4,769,957	4,045,409	-	647,569	-	-	76,979	-	-	-	-
Northeast: New Jersey	1,386,635	1,180,784	-	-	6,937	27,831	165,642	-	5,440	-	-
Northeast: New York	19,065,640	17,103,731	130,023	1,151,122	35,798	184,079	348,617	74,410	37,861	-	-
Northeast: Pennsylvania	16,382,149	13,835,279	1,006,982	261,498	-	139,868	237,165	873,936	27,422	-	-
Northeast: Rhode Island	396,399	396,399	-	-	-	-	-	-	-	-	-
Northeast: Vermont	4,560,809	3,972,491	-	514,510	-	11,982	61,827	-	-	-	-
Northeast: West Virginia	12,011,850	10,150,393	80,656	174,461	43,439	614,947	175,266	583,603	189,086	-	-
North Central: Illinois	4,539,934	4,114,493	103,201	45,291	-	147,248	129,702	-	-	-	-
North Central:Indiana	3,131,118	2,468,443	54,612	6,058	15,765	181,750	253,098	91,235	60,159	-	-
North Central: Iowa	2,875,083	2,158,919	-	284,400	26,823	352,124	19,315	20,052	13,450	-	-
North Central: Michigan	18,708,533	15,053,217	2,122,628	695,628	41,952	383,930	247,126	98,219	65,831	-	-
North Central: Minnesota	17,836,763	15,815,172	160,765	98,051	129,678	587,053	591,532	57,071	397,441	-	-
North Central: Missouri	14,851,068	11,479,615	-	188,269	396,356	2,338,983	346,301	35,042	66,504	-	-
North Central: Ohio	8,249,463	5,360,834	595,403	93,497	43,212	290,153	70,365	1,699,884	96,115	-	-
North Central: Wisconsin	16,592,620	15,295,522	113,462	558,819	-	248,901	320,094	11,096	44,727	-	-
Southeast: Florida	13,285,139	10,138,373	61,791	183,906	1,850,905	420,072	130,053	162,109	337,930	-	-
Southeast: Georgia	19,517,438	16,033,297	353,072	430,714	2,147,748	246,016	151,719	23,694	131,177	-	-
Southeast: North Carolina	13,281,241	11,365,998	432,372	187,414	682,236	144,965	232,425	92,374	143,458	-	-

Southeast: South Carolina	12,798,756	11,472,339	-	213,030	934,271	17,236	21,811	-	140,068	-	-
Southeast: Virginia	13,033,317	12,500,847	51,558	22,665	78,284	165,228	185,019	7,051	22,665	-	-
South Central: Alabama	19,220,986	16,650,210	81,335	54,975	2,026,469	87,645	278,205	-	42,147	-	-
South Central: Arkansas	18,881,930	16,034,488	48,618	88,767	847,135	154,427	1,594,226	51,473	62,796	-	-
South Central: Kentucky	7,458,731	6,621,311	81,094	-	4,420	187,839	435,328	87,136	41,602	-	-
South Central: Louisiana	8,565,472	7,064,791	-	18,741	362,580	177,745	889,840	-	51,775	-	-
South Central:Mississippi	13,763,207	13,324,537	12,705	31,492	79,690	141,731	52,740	38,541	81,772	-	-
South Central: Oklahoma	7,171,218	5,273,692	176,687	349,201	689,728	154,465	343,520	23,674	160,249	-	-
South Central: Tennessee	8,360,969	8,011,553	19,226	58,257	76,821	106,243	19,829	-	69,041	-	-
South Central: Texas	22,088,033	18,556,982	-	36,779	678,912	159,705	2,536,012	-	119,642	-	-
Great Plains: Kansas	2,519,864	1,734,980	25,116	-	74,926	596,152	34,406	54,285	-	-	-
Great Plains: Nebraska	1,494,061	440,067	36,171	28,216	7,422	909,783	15,425	-	56,976	-	-
Great Plains: North Dakota	752,124	505,730	-	-	-	175,841	46,288	24,265	-	-	-
Great Plains: South Dakota	1,945,623	601,960	270,598	16,173	141,166	899,546	16,181	-	-	-	-
Intermountain: Arizona	4,972,280	4,307,176	241,785	59,762	356,981	-	6,576	-	-	-	-
Intermountain: Colorado	9,694,102	6,997,475	1,607,515	681,953	327,462	8,175	-	32,016	24,440	-	15,066
Intermountain: Idaho	9,831,264	7,728,571	668,050	662,775	528,616	118,271	32,208	-	-	-	92,774
Intermountain: Montana	12,338,820	8,831,686	1,788,961	278,450	1,084,192	63,665	221,992	-	-	-	69,874
Intermountain: Nevada	3,487,958	3,302,022	-	102,445	32,790	30,068	-	-	-	-	20,633
Intermountain: New Mexico	6,598,667	5,563,976	238,223	127,447	395,180	104,078	146,098	-	23,664	-	-
Intermountain: Utah	4,722,138	3,828,095	304,932	308,983	259,278	-	20,849	-	-	-	-
Intermountain: Wyoming	10,731,653	7,695,320	1,440,235	504,812	858,354	-	65,883	68,286	65,830	-	32,932
Alaska: Alaska	3,556,777	2,871,521	79,391	164,524	-	46,940	99,652	266,990	-	-	27,760
Pacific Northwest: Oregon	5,992,264	4,495,087	376,838	637,404	133,065	156,098	103,445	47,812	27,973	-	14,542
Pacific Northwest: Washington	4,254,865	2,785,335	534,101	610,165	106,570	28,153	130,126	17,408	21,919	-	21,088
Pacific Southwest: California	8,468,611	6,278,840	112,863	712,418	583,974	597,726	158,952	16,974	-	-	6,864
Pacific Southwest: Hawaii	86,906	64,806	-	10,293	-	7,482	-	4,325	-	-	-
Other	440,495	336,867	14,856	-	7,682	23,167	10,072	2,806	36,850	-	8,195

2012

Estimate:

	Primary disturbance										

RPA Subregion State	Total	None	Insects	Disease	Fire	Animal	Weather	Other	Human	Not available	Other
Total	527,790,944	442,658,198	14,883,402	12,072,035	16,780,880	18,157,254	14,187,713	5,131,511	3,293,111	-	626,840
Northeast: Connecticut	2,236,179	1,956,739	-	-	-	-	190,484	49,458	39,499	-	-
Northeast: Delaware	387,997	382,960	-	-	-	-	5,037	-	-	-	-
Northeast: Maine	17,496,415	16,464,626	165,944	399,175	-	369,346	68,738	28,586	-	-	-
Northeast: Maryland	3,052,293	2,874,048	-	-	-	30,361	49,371	98,513	-	-	-
Northeast: Massachusetts	3,767,912	3,346,167	-	81,384	-	36,514	148,212	155,635	-	-	-
Northeast: New Hampshire	6,236,733	5,656,030	-	426,882	-	31,057	85,758	37,005	-	-	-
Northeast: New Jersey	1,729,638	1,618,929	22,539	-	-	-	83,005	-	5,165	-	-
Northeast: New York	22,875,817	19,112,163	360,092	1,933,232	36,129	385,042	754,479	128,408	166,273	-	-
Northeast: Pennsylvania	21,058,822	18,685,795	719,441	154,962	41,405	297,521	292,053	810,062	57,582	-	-
Northeast: Rhode Island	379,912	354,499	25,413	-	-	-	-	-	-	-	-
Northeast: Vermont	5,605,818	4,958,879	-	542,276	-	38,885	24,826	40,952	-	-	-
Northeast: West Virginia	14,486,182	11,729,493	38,623	53,814	59,091	1,346,421	383,065	765,529	110,147	-	-
North Central: Illinois	6,401,737	5,314,596	44,632	130,309	144,784	172,306	396,674	79,447	118,987	-	-
North Central:Indiana	7,522,084	6,573,048	75,291	-	20,600	282,919	334,373	153,938	58,742	-	23,172
North Central: Iowa	3,292,748	2,770,426	-	76,055	-	436,100	10,166	-	-	-	-
North Central: Michigan	24,705,993	20,773,861	1,881,247	736,385	80,026	401,124	386,068	157,318	289,965	-	-
North Central: Minnesota	18,242,120	16,266,867	169,688	61,756	286,577	580,030	678,159	6,516	192,527	-	-
North Central: Missouri	17,965,840	13,375,572	-	-	347,413	3,249,433	806,921	103,252	83,249	-	-
North Central: Ohio	9,403,961	6,108,995	266,742	31,699	-	514,763	419,992	1,641,631	420,138	-	-
North Central: Wisconsin	21,429,540	19,876,917	58,490	544,870	18,399	541,454	297,758	80,880	10,772	-	-
Southeast: Florida	17,502,808	13,928,968	101,607	222,566	2,088,903	447,142	286,190	135,931	291,502	-	-
Southeast: Georgia	25,698,921	21,092,175	296,146	583,539	3,084,094	334,109	163,309	44,300	101,249	-	-
Southeast: North Carolina	14,734,406	13,250,782	613,757	240,218	336,535	104,819	136,484	-	51,812	-	-
Southeast: South Carolina	13,332,038	11,874,888	14,496	310,929	888,845	50,472	82,687	-	109,721	-	-
Southeast: Virginia	15,377,667	14,123,534	106,763	-	101,540	218,257	480,177	71,046	276,350	-	-
South Central: Alabama	20,670,270	18,457,713	60,850	-	1,433,103	194,723	435,093	41,260	47,526	-	-
South Central: Arkansas	19,174,368	16,514,296	102,811	59,843	408,717	166,960	1,892,116	22,015	7,610	-	-
South Central: Kentucky	9,735,483	8,020,417	21,070	-	83,845	338,977	1,088,846	111,051	54,894	-	16,384
South Central: Louisiana	10,549,400	8,993,356	-	-	655,189	117,492	594,427	7,756	181,180	-	-
South Central:Mississippi	14,122,933	13,487,942	-	-	181,704	131,176	237,263	46,896	37,952	-	-

South Central: Oklahoma	11,747,600	8,071,967	101,568	282,283	1,068,086	1,499,359	478,128	-	246,210	-	-
South Central: Tennessee	10,636,055	10,002,565	101,206	-	59,492	356,698	73,458	-	42,635	-	-
South Central: Texas	24,169,794	22,053,728	-	111,519	553,142	75,041	1,311,604	31,227	33,535	-	-
Great Plains: Kansas	3,397,543	1,844,459	121,297	48,791	102,858	1,229,932	32,392	-	17,814	-	-
Great Plains: Nebraska	1,870,952	566,600	-	-	-	1,121,017	165,003	-	18,333	-	-
Great Plains: North Dakota	758,095	268,909	-	-	38,334	372,238	38,446	-	-	-	40,168
Great Plains: South Dakota	2,333,657	1,204,828	128,586	-	-	925,327	57,061	17,856	-	-	-
Intermountain: Arizona	6,678,402	5,134,820	370,351	186,882	908,027	-	26,892	-	51,430	-	-
Intermountain: Colorado	11,277,396	8,973,612	1,468,276	403,756	182,072	81,614	65,364	40,916	-	-	61,785
Intermountain: Idaho	13,630,606	10,417,695	1,183,883	884,768	739,443	118,659	114,164	-	117,092	-	54,901
Intermountain: Montana	15,590,614	11,849,424	2,179,453	542,332	566,546	122,813	110,500	58,621	-	-	160,924
Intermountain: Nevada	4,117,259	3,692,838	103,784	33,168	108,198	78,367	67,269	33,635	-	-	-
Intermountain: New Mexico	6,422,786	5,607,401	224,774	168,700	163,109	159,418	99,384	-	-	-	-
Intermountain: Utah	6,102,962	4,818,135	257,102	429,814	363,690	29,056	126,444	-	-	-	78,721
Intermountain: Wyoming	16,062,380	12,422,615	2,537,172	521,558	511,475	3,677	-	-	-	-	65,883
Alaska: Alaska	3,520,912	2,952,932	92,393	179,015	-	99,502	49,882	99,999	-	-	47,190
Pacific Northwest: Oregon	5,933,197	4,401,560	323,914	634,910	196,104	149,223	195,688	23,996	-	-	7,803
Pacific Northwest: Washington	4,465,812	3,148,436	430,918	440,029	112,033	118,613	118,906	7,876	19,094	-	69,907
Pacific Southwest: California	9,165,327	6,632,308	113,082	610,292	800,927	749,840	239,568	-	19,311	-	-
Pacific Southwest: Hawaii	285,240	220,642	-	4,325	4,987	49,456	5,830	-	-	-	-
Other	448,321	428,042	-	-	5,463	-	-	-	14,815	-	-

2011

Estimate:

	Primary disturbance										
RPA Subregion State	Total	None	Insects	Disease	Fire	Animal	Weather	Other	Human	Not available	Other
Total	569,446,938	476,853,466	13,860,445	12,605,924	19,377,664	19,687,123	16,821,945	5,644,682	3,970,528	-	625,162
Northeast: Connecticut	2,037,184	1,888,165	-	-	-	26,832	24,955	97,231	-	-	-
Northeast: Delaware	415,400	400,588	-	-	-	-	14,812	-	-	-	-
Northeast: Maine	17,624,774	16,530,095	336,241	300,772	-	245,007	106,531	-	106,129	-	-
Northeast: Maryland	2,687,274	2,652,649	-	-	-	12,751	-	21,874	-	-	-
Northeast: Massachusetts	3,521,770	3,098,390	86,290	42,638	-	96,074	155,195	43,182	-	-	-
Northeast: New Hampshire	5,876,910	5,043,433	-	579,365	-	39,740	175,307	39,065	-	-	-

Northeast: New Jersey	2,239,191	1,906,493	63,078	-	113,303	-	24,888	108,308	23,121	-	-
Northeast: New York	22,700,920	19,225,195	138,545	1,899,701	-	231,346	889,799	205,840	84,669	-	25,826
Northeast: Pennsylvania	20,384,931	18,288,202	579,900	145,590	32,896	161,135	231,907	945,302	-	-	-
Northeast: Rhode Island	459,928	451,323	-	-	-	-	-	8,605	-	-	-
Northeast: Vermont	5,620,608	4,771,591	-	749,545	12,140	20,674	27,313	-	39,344	-	-
Northeast: West Virginia	15,373,630	12,610,434	38,283	126,079	100,498	1,435,039	-	749,611	313,686	-	-
North Central: Illinois	5,664,882	4,477,585	-	33,487	23,886	453,259	635,561	41,103	-	-	-
North Central:Indiana	6,507,004	5,775,461	65,498	-	-	336,600	124,603	97,646	107,195	-	-
North Central: Iowa	3,800,825	2,956,739	-	32,906	-	685,137	98,999	-	27,044	-	-
North Central: Michigan	24,376,158	20,860,089	928,613	875,295	96,645	1,131,857	239,180	175,213	69,265	-	-
North Central: Minnesota	16,485,134	14,782,973	110,216	72,383	68,678	656,840	502,340	46,612	245,093	-	-
North Central: Missouri	19,114,955	13,807,679	37,703	73,465	638,120	3,043,305	1,093,266	68,823	352,595	-	-
North Central: Ohio	9,490,989	5,723,541	25,924	-	18,734	1,067,289	265,675	2,037,791	352,036	-	-
North Central: Wisconsin	20,283,130	19,134,757	82,214	366,399	21,613	378,945	236,556	-	62,645	-	-
Southeast: Florida	17,786,208	14,356,173	78,577	174,646	1,893,895	464,871	181,697	104,370	531,980	-	-
Southeast: Georgia	24,340,118	19,565,929	318,186	755,445	2,984,385	344,568	143,359	90,150	138,096	-	-
Southeast: North Carolina	19,089,989	16,946,032	550,754	71,969	1,174,971	49,838	128,095	-	168,329	-	-
Southeast: South Carolina	12,511,521	11,454,459	23,491	88,619	685,798	182,081	30,300	-	46,772	-	-
Southeast: Virginia	16,069,810	14,870,325	194,283	16,766	104,344	184,302	90,257	209,716	399,816	-	-
South Central: Alabama	24,855,557	20,491,882	161,608	207,221	2,626,061	378,453	834,229	71,344	84,758	-	-
South Central: Arkansas	19,121,057	15,989,464	30,964	76,426	407,291	102,610	2,477,596	-	36,706	-	-
South Central: Kentucky	13,021,874	11,159,137	-	-	155,214	299,795	1,263,035	112,873	31,821	-	-
South Central: Louisiana	15,354,076	13,341,346	-	-	762,215	36,721	1,151,417	25,674	36,702	-	-
South Central:Mississippi	17,821,350	17,184,995	46,063	25,876	46,564	151,343	366,510	-	-	-	-
South Central: Oklahoma	13,883,262	9,872,226	22,184	304,377	1,115,271	1,851,746	581,804	-	135,654	-	-
South Central: Tennessee	14,532,894	13,743,652	106,272	-	129,255	326,511	146,861	23,415	56,927	-	-
South Central: Texas	30,373,858	26,040,437	30,550	290,858	619,387	30,009	3,136,064	-	226,552	-	-
Great Plains: Kansas	3,326,450	1,972,465	-	37,946	53,973	1,135,833	82,121	44,112	-	-	-
Great Plains: Nebraska	1,972,793	403,732	-	71,098	82,939	1,116,232	187,432	-	111,359	-	-
Great Plains: North Dakota	918,252	569,712	-	-	-	348,540	-	-	-	-	-
Great Plains: South Dakota	2,252,466	1,428,500	69,260	-	33,620	721,087	-	-	-	-	-
Intermountain: Arizona	7,581,563	6,255,055	126,202	303,891	721,135	-	175,280	-	-	-	-

Intermountain: Colorado	14,391,494	11,290,979	1,820,666	835,350	169,040	98,579	134,870	42,009	-	-	-
Intermountain: Idaho	16,496,508	12,386,703	1,281,926	1,083,089	1,035,622	402,604	46,112	-	133,753	-	126,699
Intermountain: Montana	18,770,914	14,496,907	2,310,976	578,642	1,126,862	11,487	139,157	-	-	-	106,884
Intermountain: Nevada	4,413,549	4,061,169	114,882	39,183	161,574	36,741	-	-	-	-	-
Intermountain: New Mexico	6,998,834	6,080,179	226,857	328,379	118,697	57,997	115,538	25,561	26,550	-	19,076
Intermountain: Utah	7,584,818	6,582,146	476,562	166,194	303,095	18,056	-	-	-	-	38,765
Intermountain: Wyoming	15,684,206	11,854,843	2,706,115	243,903	531,995	50,396	97,214	-	-	-	199,739
Alaska: Alaska	3,375,779	2,979,382	45,028	67,849	17,499	46,482	19,455	164,300	-	-	35,784
Pacific Northwest: Oregon	5,615,754	4,419,940	135,801	468,097	286,520	117,271	118,596	27,044	9,383	-	33,102
Pacific Northwest: Washington	6,663,973	5,266,378	383,041	509,146	114,066	207,679	131,827	-	12,548	-	39,287
Pacific Southwest: California	9,301,694	6,751,997	102,707	563,326	789,861	879,663	196,233	17,907	-	-	-
Pacific Southwest: Hawaii	265,231	246,447	4,987	-	-	13,797	-	-	-	-	-
Other	405,492	405,492	-	-	-	-	-	-	-	-	-

2010 (incomplete)

Estimate:

	Primary disturbance										
RPA Subregion State	Total	None	Insects	Disease	Fire	Animal	Weather	Other	Human	Not available	Other
Total	557,094,829	473,993,194	11,747,458	11,219,061	15,706,267	17,068,192	17,432,914	4,817,667	4,712,816	-	397,261
Northeast: Connecticut	1,944,535	1,857,297	-	-	-	-	87,238	-	-	-	-
Northeast: Delaware	441,310	412,384	-	-	-	5,041	-	-	23,885	-	-
Northeast: Maine	17,774,213	17,001,142	216,628	175,070	-	209,907	136,050	-	35,417	-	-
Northeast: Maryland	2,966,891	2,782,500	-	-	-	9,578	118,151	-	56,662	-	-
Northeast: Massachusetts	3,310,194	2,901,374	-	-	-	8,021	284,861	106,342	9,595	-	-
Northeast: New Hampshire	5,004,637	4,621,817	-	282,631	-	20,884	79,306	-	-	-	-
Northeast: New Jersey	2,376,896	2,248,297	-	-	37,536	-	91,063	-	-	-	-
Northeast: New York	20,433,240	17,303,661	68,160	1,973,466	-	142,625	639,866	99,051	188,191	-	18,219
Northeast: Pennsylvania	19,077,552	16,511,996	1,113,141	99,908	32,869	221,309	172,686	884,552	41,090	-	-
Northeast: Rhode Island	421,552	421,552	-	-	-	-	-	-	-	-	-
Northeast: Vermont	4,964,399	4,605,677	-	288,572	-	28,851	41,298	-	-	-	-
Northeast: West Virginia	12,736,579	10,796,366	38,552	125,436	29,586	735,474	60,603	684,564	265,998	-	-
North Central: Illinois	5,333,740	3,796,565	-	98,429	-	304,095	990,321	91,824	52,506	-	-
North Central:Indiana	6,550,199	6,006,013	-	-	-	192,028	47,221	95,268	209,670	-	-

North Central: Iowa	3,886,833	2,935,412	-	128,970	47,371	610,894	164,186	-	-	-	-
North Central: Michigan	21,259,865	18,387,565	976,829	685,087	75,937	744,114	311,816	26,681	51,837	-	-
North Central: Minnesota	17,352,136	14,983,584	196,875	96,759	173,449	607,644	585,044	60,106	648,675	-	-
North Central: Missouri	17,042,523	11,824,362	42,764	53,542	373,727	2,354,451	2,092,391	111,063	190,224	-	-
North Central: Ohio	9,252,437	6,659,020	70,849	64,475	-	593,676	203,421	1,508,118	152,878	-	-
North Central: Wisconsin	18,639,662	17,490,920	108,873	248,324	32,149	332,695	239,222	84,733	102,747	-	-
Southeast: Florida	17,299,614	14,924,084	29,967	198,368	628,628	148,463	820,331	120,642	429,131	-	-
Southeast: Georgia	24,809,038	20,567,697	323,284	555,545	2,577,773	398,216	200,634	82,774	103,116	-	-
Southeast: North Carolina	18,754,950	17,393,018	590,860	-	438,099	258,197	74,775	-	-	-	-
Southeast: South Carolina	13,042,029	12,132,518	23,642	146,511	535,921	73,716	14,811	35,492	79,417	-	-
Southeast: Virginia	15,799,044	14,672,496	220,655	-	116,978	186,946	144,236	180,382	277,352	-	-
South Central: Alabama	24,130,840	20,803,107	32,647	51,720	2,493,185	262,722	466,802	20,658	-	-	-
South Central: Arkansas	18,234,542	15,907,128	-	-	261,559	121,519	1,937,840	-	6,496	-	-
South Central: Kentucky	13,098,827	10,521,831	31,679	-	182,785	404,739	1,769,809	117,218	62,217	-	8,549
South Central: Louisiana	13,120,541	11,541,921	-	-	791,727	41,422	611,467	42,813	91,191	-	-
South Central:Mississippi	18,753,225	18,556,922	-	35,378	16,617	79,477	45,924	18,907	-	-	-
South Central: Oklahoma	17,530,879	10,718,583	132,952	294,941	1,097,809	2,152,812	2,440,924	108,383	584,476	-	-
South Central: Tennessee	14,678,144	14,089,883	-	-	115,653	382,994	63,886	7,448	18,280	-	-
South Central: Texas	31,654,711	29,416,027	28,424	104,853	474,066	103,641	1,315,945	79,470	132,286	-	-
Great Plains: Kansas	3,061,170	1,404,479	7,407	20,979	80,932	1,372,565	53,303	-	121,504	-	-
Great Plains: Nebraska	1,529,472	481,393	-	27,851	101,987	819,946	89,371	-	8,926	-	-
Great Plains: North Dakota	803,629	277,850	80,863	-	71,000	335,395	38,521	-	-	-	-
Great Plains: South Dakota	2,024,967	621,682	128,862	-	265,193	634,704	61,592	45,004	267,930	-	-
Intermountain: Arizona	8,973,327	7,675,495	289,321	91,349	676,600	-	94,785	-	145,777	-	-
Intermountain: Colorado	16,837,372	14,413,887	1,116,511	781,885	153,620	160,031	51,132	-	-	-	160,305
Intermountain: Idaho	18,335,416	13,752,008	2,063,699	978,641	1,111,552	142,204	57,175	-	175,778	-	54,359
Intermountain: Montana	21,175,209	17,394,225	2,070,407	534,514	922,472	108,020	79,661	-	-	-	65,909
Intermountain: Nevada	4,645,808	4,375,627	-	105,986	108,885	36,879	-	-	18,431	-	-
Intermountain: New Mexico	7,272,021	5,711,280	318,035	413,535	232,032	235,461	184,301	73,674	103,703	-	-
Intermountain: Utah	8,962,262	7,829,600	453,172	238,283	397,590	-	-	-	-	-	43,617
Intermountain: Wyoming	-	-	-	-	-	-	-	-	-	-	-
Alaska: Alaska	3,850,406	3,751,788	-	21,044	56,151	-	-	21,423	-	-	-

Pacific Northwest: Oregon	8,567,998	6,895,486	217,042	759,482	151,193	301,866	139,380	24,023	57,430	-	22,094
Pacific Northwest: Washington	6,605,850	5,257,499	390,029	596,067	151,035	62,107	113,784	18,996	-	-	16,333
Pacific Southwest: California	12,544,696	9,169,518	365,327	931,139	685,982	1,111,726	217,779	63,225	-	-	-
Pacific Southwest: Hawaii	229,451	188,659	-	10,325	6,622	11,137	-	4,832	-	-	7,877
Other	-	-	-	-	-	-	-	-	-	-	-

2009 (incomplete)

Estimate:

	Primary disturbance										
RPA Subregion State	Total	None	Insects	Disease	Fire	Animal	Weather	Other	Human	Not available	Other
Total	577,148,933	495,369,269	12,417,508	9,386,361	15,604,815	16,878,420	18,313,596	3,882,449	5,045,364	-	251,152
Northeast: Connecticut	1,998,539	1,941,932	-	-	-	56,607	-	-	-	-	-
Northeast: Delaware	325,882	315,854	-	-	-	-	-	-	10,027	-	-
Northeast: Maine	17,866,423	17,616,911	28,176	-	-	135,913	-	-	85,423	-	-
Northeast: Maryland	2,816,510	2,624,211	-	50,702	-	60,399	59,798	21,401	-	-	-
Northeast: Massachusetts	3,487,110	3,026,014	33,839	-	-	50,313	345,644	31,300	-	-	-
Northeast: New Hampshire	4,738,739	4,581,149	-	52,852	-	28,288	76,450	-	-	-	-
Northeast: New Jersey	2,019,789	1,818,556	31,107	-	61,583	-	30,090	78,454	-	-	-
Northeast: New York	20,282,643	17,831,281	93,920	988,100	-	290,800	756,492	285,638	36,411	-	-
Northeast: Pennsylvania	18,101,965	16,130,122	805,697	35,345	103,078	180,547	373,776	390,558	82,842	-	-
Northeast: Rhode Island	350,799	339,439	-	-	-	-	-	11,360	-	-	-
Northeast: Vermont	4,424,321	4,150,596	-	89,502	-	51,674	132,549	-	-	-	-
Northeast: West Virginia	12,791,019	10,866,784	117,440	81,243	39,540	807,197	71,287	545,545	261,983	-	-
North Central: Illinois	5,520,653	4,186,053	-	23,608	34,182	257,319	892,973	-	126,519	-	-
North Central:Indiana	5,775,904	4,895,273	-	-	-	228,965	272,864	21,043	357,759	-	-
North Central: Iowa	2,812,428	1,883,992	-	290,116	-	465,359	115,627	27,333	30,000	-	-
North Central: Michigan	16,211,164	14,246,744	432,977	313,079	77,614	426,990	596,748	56,823	60,189	-	-
North Central: Minnesota	16,914,852	15,940,024	100,809	67,164	3,758	310,610	212,976	-	279,511	-	-
North Central: Missouri	17,427,742	11,357,601	-	153,008	330,045	2,653,303	2,581,231	56,463	296,091	-	-
North Central: Ohio	8,918,999	6,591,475	23,585	35,362	15,470	481,101	412,264	1,297,262	62,480	-	-
North Central: Wisconsin	18,472,024	17,354,714	97,526	256,649	25,357	476,926	188,469	12,501	59,882	-	-
Southeast: Florida	17,687,943	15,622,647	-	75,700	749,292	96,363	784,976	14,279	344,686	-	-
Southeast: Georgia	24,276,236	20,233,773	134,847	496,153	2,738,433	190,009	203,054	49,283	230,685	-	-

Southeast: North Carolina	21,414,893	20,372,594	572,470	51,835	253,095	160,773	-	-	4,127	-	-
Southeast: South Carolina	13,282,451	12,506,173	28,903	-	528,211	60,576	82,038	-	76,549	-	-
Southeast: Virginia	29,209,487	26,308,514	752,825	24,411	128,271	700,768	419,872	293,368	557,077	-	24,379
South Central: Alabama	22,550,142	19,719,581	-	297,667	1,676,977	152,478	579,482	67,908	56,050	-	-
South Central: Arkansas	19,518,392	17,355,505	-	60,290	483,765	68,587	1,535,410	-	14,835	-	-
South Central: Kentucky	12,221,213	9,307,527	89,287	48,186	89,871	470,866	2,082,807	-	132,669	-	-
South Central: Louisiana	16,919,018	13,359,940	-	-	1,329,201	168,194	1,817,180	92,062	152,441	-	-
South Central:Mississippi	22,730,160	21,443,048	-	-	620,508	208,358	78,286	57,279	322,682	-	-
South Central: Oklahoma	11,044,306	7,596,830	-	132,610	195,922	1,146,518	1,357,331	98,788	516,307	-	-
South Central: Tennessee	13,905,285	13,245,178	24,205	-	97,551	270,928	181,188	-	86,233	-	-
South Central: Texas	36,444,639	34,187,265	-	95,732	478,474	232,942	923,348	53,159	473,720	-	-
Great Plains: Kansas	2,005,779	1,043,431	-	13,748	45,470	659,455	243,675	-	-	-	-
Great Plains: Nebraska	1,719,480	802,838	22,272	-	-	772,577	8,839	-	112,955	-	-
Great Plains: North Dakota	889,258	322,024	-	-	44,998	449,893	72,343	-	-	-	-
Great Plains: South Dakota	1,967,855	531,327	7,432	-	22,890	1,406,205	-	-	-	-	-
Intermountain: Arizona	9,381,488	7,568,025	502,067	314,819	829,066	55,114	112,396	-	-	-	-
Intermountain: Colorado	19,746,045	15,916,738	2,499,256	687,655	109,030	328,463	-	116,984	59,261	-	28,658
Intermountain: Idaho	22,406,318	17,995,131	1,898,331	497,819	1,787,648	210,331	-	-	-	-	17,058
Intermountain: Montana	24,826,771	20,248,214	2,401,891	916,570	846,617	152,444	139,756	60,015	-	-	61,264
Intermountain: Nevada	5,036,193	4,547,439	73,030	104,508	217,712	64,160	-	-	29,344	-	-
Intermountain: New Mexico	6,628,333	5,596,143	332,364	176,137	198,489	75,961	152,193	-	97,047	-	-
Intermountain: Utah	8,591,672	6,979,290	613,886	563,350	245,962	95,417	48,908	44,858	-	-	-
Intermountain: Wyoming	-	-	-	-	-	-	-	-	-	-	-
Alaska: Alaska	3,513,254	3,217,629	43,847	106,810	22,486	32,620	21,983	56,776	11,103	-	-
Pacific Northwest: Oregon	9,002,033	7,316,569	290,519	671,904	217,486	328,070	161,597	10,604	5,285	-	-
Pacific Northwest: Washington	6,393,293	5,122,120	262,688	475,361	169,441	199,238	93,389	2,732	5,105	-	63,220
Pacific Southwest: California	12,502,299	9,139,686	102,310	1,138,369	784,904	1,157,479	94,305	28,675	-	-	56,572
Pacific Southwest: Hawaii	-	-	-	-	-	-	-	-	-	-	-
Other	77,194	65,367	-	-	2,418	1,320	-	-	8,088	-	-

2008 (incomplete)

Estimate:

	Primary disturbance										
RPA Subregion State	Total	None	Insects	Disease	Fire	Animal	Weather	Other	Human	Not available	Other
Total	488,111,945	419,362,502	9,931,626	9,796,321	14,724,495	12,384,987	13,750,535	3,399,482	4,526,895	-	235,103
Northeast: Connecticut	1,752,843	1,693,333	21,906	-	-	-	7,302	-	30,302	-	-
Northeast: Delaware	337,351	323,993	-	-	-	-	13,359	-	-	-	-
Northeast: Maine	17,370,447	16,542,429	28,094	-	-	57,267	56,037	-	686,620	-	-
Northeast: Maryland	2,272,697	2,178,020	-	-	-	-	56,130	-	38,548	-	-
Northeast: Massachusetts	3,110,696	2,994,138	-	-	-	7,540	109,019	-	-	-	-
Northeast: New Hampshire	4,647,847	4,501,214	-	26,381	-	25,659	94,593	-	-	-	-
Northeast: New Jersey	1,761,147	1,547,529	63,203	-	65,642	41,788	8,490	34,495	-	-	-
Northeast: New York	19,646,865	17,850,429	108,359	559,877	-	191,020	668,197	122,473	146,509	-	-
Northeast: Pennsylvania	15,622,171	14,260,398	508,496	218,310	-	68,940	187,163	361,866	16,998	-	-
Northeast: Rhode Island	416,441	395,253	-	-	-	-	-	-	21,189	-	-
Northeast: Vermont	4,483,759	4,398,569	-	-	-	58,292	26,897	-	-	-	-
Northeast: West Virginia	11,949,828	9,509,884	325,184	163,403	106,379	505,897	277,712	793,769	267,601	-	-
North Central: Illinois	4,562,082	3,426,016	-	75,245	-	341,086	637,707	73,092	8,936	-	-
North Central:Indiana	5,055,607	4,196,009	-	-	2,571	221,961	281,576	16,585	336,905	-	-
North Central: Iowa	3,002,849	2,261,010	-	237,851	-	328,130	140,583	22,832	12,442	-	-
North Central: Michigan	11,157,300	9,946,220	313,778	295,198	-	294,989	79,710	24,602	202,803	-	-
North Central: Minnesota	17,769,631	16,790,630	82,038	95,793	85,494	274,923	197,283	15,435	228,035	-	-
North Central: Missouri	14,675,453	9,917,853	-	120,836	211,137	2,274,422	1,812,807	27,087	311,311	-	-
North Central: Ohio	8,275,282	6,317,472	26,782	33,934	-	349,893	222,381	1,195,426	129,393	-	-
North Central: Wisconsin	16,440,034	15,587,577	23,118	277,351	67,436	242,399	134,689	28,617	78,847	-	-
Southeast: Florida	-	-	-	-	-	-	-	-	-	-	-
Southeast: Georgia	23,309,604	19,693,873	303,516	266,423	2,384,302	182,583	204,728	80,546	193,633	-	-
Southeast: North Carolina	-	-	-	-	-	-	-	-	-	-	-
Southeast: South Carolina	12,542,106	11,919,528	19,760	-	318,238	59,503	44,391	53,441	127,246	-	-
Southeast: Virginia	11,941,933	10,740,310	208,280	-	52,053	228,322	343,400	74,054	295,513	-	-
South Central: Alabama	22,719,557	19,809,521	112,912	166,338	1,590,514	217,428	700,812	40,812	81,220	-	-
South Central: Arkansas	18,564,564	18,240,132	27,767	-	82,555	51,867	147,030	-	15,214	-	-
South Central: Kentucky	12,555,625	9,549,866	31,726	-	155,432	417,184	2,156,108	150,545	94,764	-	-
South Central: Louisiana	2,419,041	2,005,046	-	-	12,198	42,098	359,699	-	-	-	-

South Central:Mississippi	-	-	-	-	-	-	-	-	-	-	-
South Central: Oklahoma	17,309,653	11,996,978	90,943	151,358	2,054,700	215,376	2,499,044	18,774	257,584	-	24,896
South Central: Tennessee	13,512,564	12,867,141	29,112	28,603	123,944	230,721	62,543	45,129	125,372	-	-
South Central: Texas	42,773,056	40,117,474	83,286	366,451	854,338	153,123	593,773	81,239	523,372	-	-
Great Plains: Kansas	2,734,740	1,425,579	-	18,524	197,550	660,558	289,604	-	142,924	-	-
Great Plains: Nebraska	1,579,096	536,492	-	53,260	-	867,472	121,872	-	-	-	-
Great Plains: North Dakota	656,597	281,149	-	20,889	-	294,700	59,859	-	-	-	-
Great Plains: South Dakota	1,892,823	1,219,188	53,610	-	28,853	535,742	-	-	55,431	-	-
Intermountain: Arizona	10,813,465	8,933,100	349,687	325,747	916,599	62,380	225,952	-	-	-	-
Intermountain: Colorado	20,980,444	17,681,733	1,588,895	1,072,478	223,186	414,151	-	-	-	-	-
Intermountain: Idaho	25,102,904	20,581,601	1,606,803	734,208	1,871,203	230,443	78,646	-	-	-	-
Intermountain: Montana	27,794,044	22,480,015	2,104,223	1,433,087	1,546,657	20,472	106,131	-	-	-	103,459
Intermountain: Nevada	4,540,213	4,074,616	66,564	180,553	144,575	36,953	-	-	36,953	-	-
Intermountain: New Mexico	7,084,330	5,929,078	548,872	242,472	193,131	71,332	99,444	-	-	-	-
Intermountain: Utah	10,757,050	9,363,893	529,749	466,823	145,367	171,096	64,099	-	-	-	16,025
Intermountain: Wyoming	-	-	-	-	-	-	-	-	-	-	-
Alaska: Alaska	3,648,982	3,254,447	90,100	84,292	49,313	47,335	62,273	48,750	-	-	12,471
Pacific Northwest: Oregon	8,872,108	7,262,493	211,560	644,918	298,624	296,188	107,802	33,799	16,725	-	-
Pacific Northwest: Washington	6,564,791	5,593,784	175,192	268,312	195,439	100,809	133,656	39,230	13,139	-	45,231
Pacific Southwest: California	12,743,127	8,813,940	198,115	1,167,406	747,066	1,492,946	278,032	16,885	5,421	-	23,317
Pacific Southwest: Hawaii	-	-	-	-	-	-	-	-	-	-	-
Other	389,196	353,550	-	-	-	-	-	-	25,942	-	9,704

2007 (incomplete)

Estimate:

	Primary disturbance										
RPA Subregion State	Total	None	Insects	Disease	Fire	Animal	Weather	Other	Human	Not available	Other
Total	539,673,987	475,049,204	10,213,848	7,497,608	14,132,030	13,014,388	11,364,878	3,411,333	4,524,470	-	466,228
Northeast: Connecticut	2,117,831	1,965,940	-	-	-	-	48,140	40,671	63,081	-	-
Northeast: Delaware	344,755	344,755	-	-	-	-	-	-	-	-	-
Northeast: Maine	17,642,376	17,481,330	65,945	-	-	55,892	39,209	-	-	-	-
Northeast: Maryland	3,134,621	2,990,363	27,171	-	-	-	21,203	95,884	-	-	-
Northeast: Massachusetts	3,895,933	3,680,180	35,684	-	-	47,818	29,230	59,506	43,516	-	-

Northeast: New Hampshire	5,206,059	5,074,943	-	-	-	14,548	116,568	-	-	-	-
Northeast: New Jersey	2,267,070	1,847,257	53,279	-	77,096	25,003	69,114	195,321	-	-	-
Northeast: New York	18,754,989	17,302,605	146,935	231,686	-	177,912	593,915	108,199	186,522	-	7,215
Northeast: Pennsylvania	16,604,454	15,385,003	185,491	22,268	-	249,123	255,838	416,643	90,088	-	-
Northeast: Rhode Island	450,990	450,990	-	-	-	-	-	-	-	-	-
Northeast: Vermont	6,105,914	5,997,689	-	27,133	-	-	18,806	34,155	28,130	-	-
Northeast: West Virginia	15,370,444	12,956,010	184,530	165,583	-	453,988	464,374	701,900	444,059	-	-
North Central: Illinois	4,937,761	4,091,703	-	40,269	53,382	245,268	444,524	22,458	40,158	-	-
North Central:Indiana	6,119,821	5,384,655	-	-	4,831	377,950	125,032	-	227,352	-	-
North Central: Iowa	2,789,314	2,171,915	-	147,485	26,913	322,727	120,274	-	-	-	-
North Central: Michigan	26,255,968	24,709,901	176,834	293,542	33,353	431,242	240,733	18,494	351,869	-	-
North Central: Minnesota	17,981,040	16,828,233	40,703	15,446	150,856	395,203	277,903	-	272,695	-	-
North Central: Missouri	14,675,482	10,712,932	62,755	-	228,111	2,591,303	820,855	-	207,756	-	51,770
North Central: Ohio	7,662,118	5,797,507	-	30,084	-	202,018	410,587	1,026,291	195,631	-	-
North Central: Wisconsin	17,097,698	16,430,475	-	183,823	39,836	299,665	82,343	10,591	50,965	-	-
Southeast: Florida	17,517,748	15,320,220	70,319	162,616	677,464	-	995,652	169,778	121,699	-	-
Southeast: Georgia	25,873,941	22,804,772	316,064	260,872	1,875,735	214,516	66,989	14,726	320,267	-	-
Southeast: North Carolina	21,443,186	19,297,159	605,923	6,313	637,341	92,670	678,840	4,294	120,646	-	-
Southeast: South Carolina	13,938,942	13,108,925	59,380	21,531	452,769	89,008	114,070	-	93,261	-	-
Southeast: Virginia	12,271,358	10,963,206	206,037	-	46,008	328,095	353,643	16,819	357,550	-	-
South Central: Alabama	22,711,474	19,087,500	95,639	212,135	1,231,009	277,840	1,469,005	40,676	297,671	-	-
South Central: Arkansas	18,654,648	18,497,194	74,844	-	-	-	71,631	10,980	-	-	-
South Central: Kentucky	12,258,729	10,097,459	31,419	48,294	244,245	607,058	642,238	221,504	335,099	-	31,412
South Central: Louisiana	-	-	-	-	-	-	-	-	-	-	-
South Central:Mississippi	-	-	-	-	-	-	-	-	-	-	-
South Central: Oklahoma	-	-	-	-	-	-	-	-	-	-	-
South Central: Tennessee	13,801,495	12,935,452	16,959	38,268	58,528	438,231	175,914	61,111	77,031	-	-
South Central: Texas	44,336,376	42,206,118	87,043	194,897	909,011	22,941	776,981	60,747	78,639	-	-
Great Plains: Kansas	2,427,200	1,122,242	-	-	135,789	759,223	147,774	-	262,172	-	-
Great Plains: Nebraska	1,521,527	420,728	-	-	-	910,224	190,575	-	-	-	-
Great Plains: North Dakota	674,944	281,957	-	17,328	-	375,659	-	-	-	-	-
Great Plains: South Dakota	2,054,570	1,906,822	-	-	31,176	86,097	-	-	30,475	-	-

Intermountain: Arizona	12,585,542	9,243,977	793,339	389,990	1,515,245	115,290	474,606	-	53,095	-	-
Intermountain: Colorado	23,656,432	18,551,557	2,690,933	995,825	598,113	283,393	352,719	-	-	-	183,892
Intermountain: Idaho	24,785,219	21,612,378	213,254	153,776	1,635,885	1,152,539	-	-	-	-	17,386
Intermountain: Montana	27,853,237	22,796,587	2,107,323	1,213,806	1,463,853	132,320	65,154	-	-	-	74,194
Intermountain: Nevada	3,553,683	3,327,047	-	53,973	172,663	-	-	-	-	-	-
Intermountain: New Mexico	6,932,758	5,583,856	546,747	304,954	204,848	92,393	93,184	30,784	75,991	-	-
Intermountain: Utah	10,794,394	9,562,892	578,155	296,611	343,123	13,613	-	-	-	-	-
Intermountain: Wyoming	-	-	-	-	-	-	-	-	-	-	-
Alaska: Alaska	3,573,794	3,435,201	25,954	22,188	18,819	47,765	-	9,947	-	-	13,921
Pacific Northwest: Oregon	9,484,004	7,805,214	152,385	790,117	460,871	87,573	104,198	34,437	21,590	-	27,618
Pacific Northwest: Washington	7,004,702	5,522,549	434,916	426,288	290,869	101,687	203,959	-	12,061	-	12,373
Pacific Southwest: California	10,175,991	7,624,574	127,891	730,507	492,187	896,594	203,676	-	54,116	-	46,446
Pacific Southwest: Hawaii	-	-	-	-	-	-	-	-	-	-	-
Other	373,451	329,232	-	-	22,102	-	5,418	5,418	11,282	-	-

2006 (incomplete)

Estimate:

	Primary disturbance										
RPA Subregion State	Total	None	Insects	Disease	Fire	Animal	Weather	Other	Human	Not available	Other
Total	589,074,268	515,408,555	8,609,043	7,027,086	14,410,707	14,737,809	20,298,658	3,712,104	4,578,909	-	291,397
Northeast: Connecticut	2,061,110	1,933,237	29,134	-	-	20,831	33,473	9,021	35,414	-	-
Northeast: Delaware	395,910	361,734	-	-	-	-	16,362	-	17,814	-	-
Northeast: Maine	17,678,694	17,386,617	103,064	-	-	64,419	76,549	-	48,045	-	-
Northeast: Maryland	3,327,643	3,190,220	-	-	-	42,236	88,512	-	6,675	-	-
Northeast: Massachusetts	3,525,429	3,302,917	22,869	-	-	66,643	74,747	50,445	7,806	-	-
Northeast: New Hampshire	4,862,990	4,827,804	-	-	-	-	35,185	-	-	-	-
Northeast: New Jersey	3,006,060	2,943,950	36,849	-	-	-	-	25,261	-	-	-
Northeast: New York	17,340,557	16,189,249	57,317	26,424	-	168,295	644,780	70,241	157,887	-	26,364
Northeast: Pennsylvania	16,544,765	15,353,650	238,222	-	61,776	19,520	247,583	537,960	86,054	-	-
Northeast: Rhode Island	371,349	317,815	-	-	-	-	15,670	22,086	15,777	-	-
Northeast: Vermont	6,497,608	6,242,747	31,852	32,529	-	53,373	137,108	-	-	-	-
Northeast: West Virginia	17,243,572	14,025,767	276,986	313,716	96,874	362,271	836,721	1,115,879	215,357	-	-
North Central: Illinois	4,683,481	4,095,794	7,779	37,960	-	290,941	165,206	18,276	67,524	-	-

North Central: Indiana	3,594,238	3,376,228	-	32,392	-	139,380	16,521	-	29,717	-	-
North Central: Iowa	3,181,019	2,203,928	-	116,943	36,751	670,576	152,821	-	-	-	-
North Central: Michigan	20,071,301	18,887,026	53,991	219,180	24,905	320,677	156,533	33,905	375,083	-	-
North Central: Minnesota	16,327,139	15,778,388	11,207	14,536	-	213,533	121,410	-	170,982	-	17,084
North Central: Missouri	15,483,547	11,705,296	-	7,060	136,161	2,789,789	591,363	24,233	229,645	-	-
North Central: Ohio	10,343,020	8,194,085	-	-	-	520,236	541,243	1,014,679	39,118	-	33,657
North Central: Wisconsin	15,849,037	15,258,587	71,571	110,997	11,196	223,800	59,644	46,615	66,627	-	-
Southeast: Florida	13,608,905	10,726,276	48,150	46,329	1,076,691	74,240	1,577,685	-	59,536	-	-
Southeast: Georgia	25,070,166	22,057,698	166,908	510,101	1,588,919	215,965	116,018	-	414,558	-	-
Southeast: North Carolina	20,792,557	18,574,068	119,066	60,922	704,728	353,344	795,496	14,981	169,951	-	-
Southeast: South Carolina	12,578,641	11,732,775	64,644	24,061	329,299	168,722	204,084	-	55,056	-	-
Southeast: Virginia	12,355,743	11,183,858	210,234	-	117,733	342,720	263,674	24,625	212,900	-	-
South Central: Alabama	23,143,696	20,537,458	119,015	460,051	662,452	109,165	1,123,671	54,360	77,524	-	-
South Central: Arkansas	18,714,414	18,206,536	59,845	-	171,464	133,459	90,160	-	52,951	-	-
South Central: Kentucky	12,794,248	10,904,926	-	-	421,675	551,953	670,470	108,316	105,573	-	31,334
South Central: Louisiana	-	-	-	-	-	-	-	-	-	-	-
South Central: Mississippi	77,607,660	63,732,351	116,206	206,112	2,904,481	917,805	8,806,047	218,573	706,085	-	-
South Central: Oklahoma	-	-	-	-	-	-	-	-	-	-	-
South Central: Tennessee	14,349,432	13,228,519	265,320	-	236,815	210,983	156,616	22,994	228,185	-	-
South Central: Texas	44,962,569	41,432,829	-	203,770	1,024,276	1,067,499	715,057	-	519,139	-	-
Great Plains: Kansas	2,414,686	1,308,357	17,346	-	99,162	889,973	69,996	-	29,852	-	-
Great Plains: Nebraska	1,477,122	614,110	-	14,622	-	824,488	23,901	-	-	-	-
Great Plains: North Dakota	864,106	508,219	-	-	23,251	273,282	59,354	-	-	-	-
Great Plains: South Dakota	1,776,729	1,721,247	-	-	28,747	-	26,735	-	-	-	-
Intermountain: Arizona	12,653,289	9,393,449	1,233,059	260,165	988,265	-	710,086	-	68,266	-	-
Intermountain: Colorado	24,449,451	20,387,302	1,946,253	712,922	478,359	701,202	153,413	-	70,000	-	-
Intermountain: Idaho	22,427,388	19,258,972	546,532	1,033,513	911,653	374,908	-	59,336	119,710	-	122,765
Intermountain: Montana	23,741,056	20,441,205	1,055,372	665,200	1,147,541	287,542	85,444	58,751	-	-	-
Intermountain: Nevada	3,110,852	2,850,605	35,667	37,324	143,881	-	24,801	-	-	-	18,574
Intermountain: New Mexico	5,513,544	4,568,756	261,256	159,111	169,098	184,774	82,573	37,486	50,491	-	-
Intermountain: Utah	10,593,176	8,253,761	911,529	574,402	242,162	338,389	216,040	56,892	-	-	-
Intermountain: Wyoming	-	-	-	-	-	-	-	-	-	-	-

Alaska: Alaska	3,741,929	3,657,924	12,275	-	-	-	41,889	15,456	-	-	14,384
Pacific Northwest: Oregon	5,777,267	4,671,222	204,162	503,918	228,465	94,317	30,691	33,778	7,091	-	3,622
Pacific Northwest: Washington	4,878,034	3,999,062	221,118	355,292	134,988	23,546	101,697	11,045	18,795	-	12,490
Pacific Southwest: California	6,870,612	5,487,421	54,244	287,536	207,587	633,012	136,206	26,906	26,576	-	11,123
Pacific Southwest: Hawaii	-	-	-	-	-	-	-	-	-	-	-
Other	418,528	394,610	-	-	1,354	-	5,418	-	17,146	-	-

2005 (incomplete)

Estimate:

	Primary disturbance										
RPA Subregion State	Total	None	Insects	Disease	Fire	Animal	Weather	Other	Human	Not available	Other
Total	496,317,015	444,756,911	7,350,108	6,104,065	11,361,882	9,075,414	10,107,873	2,329,356	4,880,383	88,699	262,324
Northeast: Connecticut	1,665,586	1,626,619	25,502	-	-	13,465	-	-	-	-	-
Northeast: Delaware	633,944	633,944	-	-	-	-	-	-	-	-	-
Northeast: Maine	17,774,718	17,538,561	58,388	-	31,590	27,869	83,093	-	35,218	-	-
Northeast: Maryland	3,450,331	3,319,369	-	-	-	37,332	61,380	-	32,250	-	-
Northeast: Massachusetts	2,933,352	2,887,115	-	-	-	24,071	22,166	-	-	-	-
Northeast: New Hampshire	4,528,147	4,487,812	-	-	-	-	40,335	-	-	-	-
Northeast: New Jersey	2,809,195	2,647,570	-	-	47,989	-	99,814	13,822	-	-	-
Northeast: New York	12,664,364	11,488,076	283,863	367,538	-	52,175	314,776	60,894	97,042	-	-
Northeast: Pennsylvania	17,323,433	16,331,033	72,720	32,044	-	17,310	451,310	262,716	156,300	-	-
Northeast: Rhode Island	281,598	281,598	-	-	-	-	-	-	-	-	-
Northeast: Vermont	3,998,053	3,764,865	36,966	-	-	60,384	99,321	-	36,517	-	-
Northeast: West Virginia	15,122,466	11,988,279	292,184	312,736	49,764	660,228	933,546	762,130	92,911	-	30,687
North Central: Illinois	4,782,758	3,978,323	40,652	-	24,037	145,278	549,933	28,459	16,075	-	-
North Central:Indiana	4,511,894	4,117,145	-	-	-	111,328	189,181	18,733	75,507	-	-
North Central: Iowa	3,552,051	2,674,044	-	29,895	29,230	635,095	183,785	-	-	-	-
North Central: Michigan	18,938,327	18,118,594	35,556	123,751	22,288	92,340	223,715	16,648	305,436	-	-
North Central: Minnesota	17,242,828	16,641,315	64,350	-	29,356	107,901	139,591	-	260,314	-	-
North Central: Missouri	13,936,563	10,766,860	-	36,287	243,279	2,008,251	533,318	32,905	315,662	-	-
North Central: Ohio	6,046,355	4,867,495	-	77,610	-	124,041	335,919	527,250	114,039	-	-
North Central: Wisconsin	15,414,097	15,001,939	28,541	41,059	13,401	125,439	152,766	-	50,951	-	-
Southeast: Florida	-	-	-	-	-	-	-	-	-	-	-

Southeast: Georgia	26,028,480	22,928,956	167,097	622,141	1,639,654	219,224	147,612	-	303,795	-	-
Southeast: North Carolina	16,266,459	14,028,617	53,503	-	638,024	191,296	476,692	19,030	859,298	-	-
Southeast: South Carolina	12,882,655	12,037,451	85,536	-	403,670	112,486	109,395	21,603	112,514	-	-
Southeast: Virginia	14,142,044	12,790,541	221,807	66,095	127,739	363,429	323,661	46,449	202,324	-	-
South Central: Alabama	28,843,779	25,679,626	229,541	102,074	744,528	234,668	1,428,181	-	425,161	-	-
South Central: Arkansas	17,879,741	17,036,023	118,663	31,184	60,027	81,215	458,835	-	93,795	-	-
South Central: Kentucky	12,215,433	10,806,626	101,769	-	382,113	322,838	295,326	37,409	238,070	-	31,282
South Central: Louisiana	15,644,922	13,340,288	-	5,941	1,252,278	-	892,949	46,754	106,711	-	-
South Central:Mississippi	-	-	-	-	-	-	-	-	-	-	-
South Central: Oklahoma	-	-	-	-	-	-	-	-	-	-	-
South Central: Tennessee	14,426,248	13,235,262	717,649	-	117,541	58,701	108,065	7,360	181,670	-	-
South Central: Texas	43,985,521	41,616,224	-	200,968	726,746	454,787	212,412	106,808	578,875	88,699	-
Great Plains: Kansas	1,857,954	1,110,970	-	-	-	697,485	49,500	-	-	-	-
Great Plains: Nebraska	1,256,596	289,030	-	21,898	-	880,727	64,941	-	-	-	-
Great Plains: North Dakota	569,345	519,879	-	-	26,004	23,462	-	-	-	-	-
Great Plains: South Dakota	1,903,997	1,574,204	-	-	178,010	-	96,316	-	55,467	-	-
Intermountain: Arizona	13,579,861	10,796,378	951,910	355,849	857,385	-	543,241	75,097	-	-	-
Intermountain: Colorado	29,510,765	26,278,990	1,184,302	1,141,018	377,214	157,693	184,111	-	89,430	-	98,007
Intermountain: Idaho	19,689,896	17,383,077	504,179	441,892	1,029,335	171,442	-	145,301	-	-	14,670
Intermountain: Montana	21,836,258	18,267,811	900,918	1,068,010	1,128,503	369,533	37,330	-	-	-	64,153
Intermountain: Nevada	6,183,219	5,055,883	400,259	336,667	285,229	105,181	-	-	-	-	-
Intermountain: New Mexico	3,289,234	2,735,798	170,467	111,726	106,217	74,703	64,562	13,067	12,693	-	-
Intermountain: Utah	8,730,143	7,765,384	260,431	94,794	507,051	10,625	42,091	49,766	-	-	-
Intermountain: Wyoming	-	-	-	-	-	-	-	-	-	-	-
Alaska: Alaska	9,271,268	9,246,073	6,806	-	2,656	-	2,492	-	13,241	-	-
Pacific Northwest: Oregon	3,014,639	2,482,186	126,105	173,767	141,502	54,011	16,173	8,860	12,032	-	-
Pacific Northwest: Washington	2,174,423	1,752,142	68,275	174,257	35,490	41,565	61,481	15,160	2,530	-	23,524
Pacific Southwest: California	3,381,189	2,716,719	142,169	134,861	100,804	207,834	66,207	12,595	-	-	-
Pacific Southwest: Hawaii	-	-	-	-	-	-	-	-	-	-	-
Other	142,886	122,214	-	-	3,226	-	12,351	540	4,553	-	-

2004 (incomplete)

Estimate:

	Primary disturbance										
RPA Subregion State	Total	None	Insects	Disease	Fire	Animal	Weather	Other	Human	Not available	Other
Total	473,729,177	425,476,708	6,611,310	5,207,539	10,592,968	8,851,993	10,303,868	1,458,987	4,937,537	-	288,266
Northeast: Connecticut	1,460,769	1,450,385	-	-	-	10,384	-	-	-	-	-
Northeast: Delaware	893,727	871,145	-	-	-	-	22,581	-	-	-	-
Northeast: Maine	17,874,354	17,657,479	108,773	-	-	26,545	52,285	-	29,271	-	-
Northeast: Maryland	5,051,067	4,944,307	-	-	-	-	-	106,760	-	-	-
Northeast: Massachusetts	2,366,491	2,356,810	-	-	-	9,681	-	-	-	-	-
Northeast: New Hampshire	3,583,242	3,505,746	-	62,945	-	14,551	-	-	-	-	-
Northeast: New Jersey	4,136,502	4,070,412	-	-	-	-	66,089	-	-	-	-
Northeast: New York	11,663,619	10,315,957	181,244	478,007	-	103,625	431,951	-	152,834	-	-
Northeast: Pennsylvania	16,508,258	15,575,438	28,984	-	-	39,015	484,083	290,493	90,245	-	-
Northeast: Rhode Island	310,996	310,996	-	-	-	-	-	-	-	-	-
Northeast: Vermont	3,607,401	3,495,015	34,259	48,824	-	-	29,303	-	-	-	-
Northeast: West Virginia	24,754,246	21,988,933	348,998	97,422	177,717	290,698	818,794	359,854	671,830	-	-
North Central: Illinois	5,507,656	4,471,394	-	-	-	297,597	569,534	-	136,172	-	32,960
North Central: Indiana	4,316,115	3,852,508	-	-	32,831	154,316	276,460	-	-	-	-
North Central: Iowa	2,809,070	2,050,199	-	40,119	7,848	491,894	186,583	-	32,427	-	-
North Central: Michigan	23,678,917	23,111,487	-	46,852	19,909	107,304	191,550	36,505	165,309	-	-
North Central: Minnesota	15,833,772	14,864,204	14,751	45,280	21,934	253,368	216,342	-	417,892	-	-
North Central: Missouri	15,041,561	11,436,749	-	-	262,743	2,043,401	990,153	-	308,514	-	-
North Central: Ohio	7,242,995	6,395,128	24,913	21,468	-	50,670	404,458	346,357	-	-	-
North Central: Wisconsin	15,756,614	15,559,059	-	13,634	38,596	60,741	55,644	-	28,939	-	-
Southeast: Florida	15,519,273	13,137,941	26,604	7,281	1,333,875	40,744	587,152	-	385,674	-	-
Southeast: Georgia	16,082,250	14,841,571	160,709	425,168	417,578	159,846	29,668	-	47,710	-	-
Southeast: North Carolina	22,162,621	19,769,606	83,420	23,275	328,663	232,921	1,310,703	-	414,033	-	-
Southeast: South Carolina	13,111,405	12,378,913	256,358	-	215,366	53,538	141,118	-	66,112	-	-
Southeast: Virginia	-	-	-	-	-	-	-	-	-	-	-
South Central: Alabama	28,413,583	25,463,750	206,303	356,655	1,228,035	343,082	228,975	25,874	560,910	-	-
South Central: Arkansas	10,589,581	9,941,985	86,522	-	36,462	180,717	325,595	-	18,299	-	-
South Central: Kentucky	7,724,943	6,997,464	59,808	-	112,605	213,257	216,170	11,556	114,083	-	-
South Central: Louisiana	14,124,227	12,076,733	28,841	-	1,181,312	28,868	618,987	70,176	119,310	-	-

South Central:Mississippi	-	-	-	-	-	-	-	-	-	-	-
South Central: Oklahoma	-	-	-	-	-	-	-	-	-	-	-
South Central: Tennessee	13,623,093	12,075,855	780,064	-	140,270	110,516	341,761	23,071	151,556	-	-
South Central: Texas	46,996,441	43,484,323	175,788	552,796	499,659	1,018,954	270,370	55,120	939,432	-	-
Great Plains: Kansas	1,822,294	833,344	-	-	31,617	719,852	237,482	-	-	-	-
Great Plains: Nebraska	1,281,839	237,600	23,463	14,044	23,698	911,528	71,505	-	-	-	-
Great Plains: North Dakota	758,281	693,053	-	-	-	65,227	-	-	-	-	-
Great Plains: South Dakota	1,722,728	1,446,934	-	-	180,712	-	29,318	-	65,763	-	-
Intermountain: Arizona	11,421,276	9,435,981	777,252	163,849	619,748	-	373,198	51,248	-	-	-
Intermountain: Colorado	26,382,487	23,826,016	1,149,319	656,605	421,075	174,655	154,818	-	-	-	-
Intermountain: Idaho	18,416,746	16,073,804	398,360	304,133	1,299,431	50,925	163,129	-	-	-	126,964
Intermountain: Montana	18,639,951	15,082,038	1,043,134	1,135,910	1,179,989	81,687	81,015	-	-	-	36,179
Intermountain: Nevada	5,850,047	5,203,195	87,655	75,399	354,003	53,615	76,181	-	-	-	-
Intermountain: New Mexico	-	-	-	-	-	-	-	-	-	-	-
Intermountain: Utah	6,706,685	6,020,799	284,271	77,532	109,801	57,596	37,592	39,122	-	-	79,972
Intermountain: Wyoming	-	-	-	-	-	-	-	-	-	-	-
Alaska: Alaska	1,258,517	1,231,600	5,433	14,328	-	3,179	3,978	-	-	-	-
Pacific Northwest: Oregon	3,044,164	2,511,635	133,055	165,165	124,928	72,453	29,165	2,083	5,681	-	-
Pacific Northwest: Washington	2,289,991	1,723,298	81,184	264,286	36,949	86,266	70,722	15,095	-	-	12,192
Pacific Southwest: California	3,255,500	2,598,174	21,847	116,563	155,617	232,194	95,608	21,546	13,951	-	-
Pacific Southwest: Hawaii	-	-	-	-	-	-	-	-	-	-	-
Other	133,884	107,743	-	-	-	6,582	13,845	4,128	1,585	-	-

2003 (incomplete)

Estimate:

	Primary disturbance										
RPA Subregion State	Total	None	Insects	Disease	Fire	Animal	Weather	Other	Human	Not available	Other
Total	388,251,735	348,302,966	5,381,617	4,011,371	7,563,502	8,172,207	9,791,400	1,045,069	3,737,799	208,623	37,181
Northeast: Connecticut	1,196,117	1,159,261	29,498	-	-	-	7,358	-	-	-	-
Northeast: Delaware	-	-	-	-	-	-	-	-	-	-	-
Northeast: Maine	17,279,740	17,155,252	95,311	-	-	7,487	21,690	-	-	-	-
Northeast: Maryland	-	-	-	-	-	-	-	-	-	-	-
Northeast: Massachusetts	2,388,330	2,331,631	-	-	-	56,700	-	-	-	-	-

Northeast: New Hampshire	3,216,364	3,084,256	-	23,449	-	80,544	28,114	-	-	-	-
Northeast: New Jersey	-	-	-	-	-	-	-	-	-	-	-
Northeast: New York	18,610,359	17,304,878	80,345	232,324	-	202,477	602,002	188,333	-	-	-
Northeast: Pennsylvania	12,963,290	12,552,428	75,362	-	-	76,361	170,847	37,339	50,954	-	-
Northeast: Rhode Island	317,357	307,255	-	-	10,103	-	-	-	-	-	-
Northeast: Vermont	2,990,854	2,908,416	11,627	-	-	30,330	13,871	-	26,609	-	-
Northeast: West Virginia	-	-	-	-	-	-	-	-	-	-	-
North Central: Illinois	5,312,104	4,267,828	8,824	11,635	36,349	285,671	623,659	-	78,140	-	-
North Central:Indiana	4,327,690	3,818,216	-	16,971	-	310,308	97,789	-	84,407	-	-
North Central: Iowa	2,793,480	1,976,829	-	-	-	412,056	404,594	-	-	-	-
North Central: Michigan	23,494,061	23,226,481	21,089	-	11,781	95,161	65,311	-	74,238	-	-
North Central: Minnesota	16,981,236	16,186,243	38,406	-	59,877	104,592	343,400	-	248,718	-	-
North Central: Missouri	16,143,542	13,207,033	95,041	-	210,040	1,757,710	605,179	23,050	245,488	-	-
North Central: Ohio	6,489,074	5,537,612	-	9,784	27,806	80,381	354,106	409,279	70,108	-	-
North Central: Wisconsin	21,645,301	20,958,489	-	75,638	-	289,364	233,461	37,481	50,868	-	-
Southeast: Florida	12,188,216	10,956,668	-	-	1,110,411	16,288	21,576	23,843	59,430	-	-
Southeast: Georgia	15,233,199	14,414,383	227,143	29,066	375,263	70,869	70,380	-	46,095	-	-
Southeast: North Carolina	29,324,670	25,345,935	96,990	-	352,678	257,733	2,229,844	70,052	971,438	-	-
Southeast: South Carolina	13,555,263	12,843,575	60,415	-	222,195	57,070	311,500	-	60,508	-	-
Southeast: Virginia	11,829,286	9,594,463	498,274	50,136	88,665	620,173	554,067	46,837	376,670	-	-
South Central: Alabama	25,212,455	23,285,571	207,413	203,052	704,311	243,492	142,802	36,888	388,927	-	-
South Central: Arkansas	7,162,938	6,689,378	48,545	-	-	51,085	354,040	19,889	-	-	-
South Central: Kentucky	7,312,293	5,915,838	182,223	-	292,423	423,674	281,226	47,666	169,242	-	-
South Central: Louisiana	10,075,592	8,675,870	29,414	5,941	529,002	130,439	372,736	-	332,190	-	-
South Central:Mississippi	-	-	-	-	-	-	-	-	-	-	-
South Central: Oklahoma	-	-	-	-	-	-	-	-	-	-	-
South Central: Tennessee	13,676,163	12,143,836	751,100	65,969	139,915	72,238	222,702	50,039	230,363	-	-
South Central: Texas	16,680,516	15,562,578	106,631	52,877	159,223	98,859	654,720	-	45,627	-	-
Great Plains: Kansas	2,625,582	1,258,694	-	-	305,699	801,899	200,158	-	59,132	-	-
Great Plains: Nebraska	1,194,509	434,221	-	-	26,853	619,256	82,604	-	31,575	-	-
Great Plains: North Dakota	749,048	658,839	-	-	9,115	-	81,094	-	-	-	-
Great Plains: South Dakota	1,805,565	1,610,004	-	-	132,701	-	62,861	-	-	-	-

Intermountain: Arizona	10,310,199	8,752,803	470,281	284,448	682,970	65,645	54,053	-	-	-	-
Intermountain: Colorado	22,754,196	18,999,742	1,486,171	1,112,849	815,556	186,500	153,377	-	-	-	-
Intermountain: Idaho	-	-	-	-	-	-	-	-	-	-	-
Intermountain: Montana	15,424,790	12,725,550	388,096	1,157,255	880,161	172,398	61,610	39,720	-	-	-
Intermountain: Nevada	-	-	-	-	-	-	-	-	-	-	-
Intermountain: New Mexico	-	-	-	-	-	-	-	-	-	-	-
Intermountain: Utah	5,679,706	5,247,319	64,536	179,942	115,974	32,683	39,251	-	-	-	-
Intermountain: Wyoming	-	-	-	-	-	-	-	-	-	-	-
Alaska: Alaska	208,623	-	-	-	-	-	-	-	-	208,623	-
Pacific Northwest: Oregon	3,080,652	2,296,734	206,788	258,740	114,190	129,351	61,005	2,493	11,349	-	-
Pacific Northwest: Washington	2,228,644	1,805,924	52,329	136,225	43,242	84,623	62,221	10,760	10,064	-	23,257
Pacific Southwest: California	3,190,053	2,628,977	49,763	105,069	96,427	210,890	75,722	-	9,280	-	13,924
Pacific Southwest: Hawaii	-	-	-	-	-	-	-	-	-	-	-
Other	600,676	473,954	-	-	10,575	37,901	70,466	1,400	6,380	-	-

2002 (incomplete)

Estimate:

	Primary disturbance										
RPA Subregion State	Total	None	Insects	Disease	Fire	Animal	Weather	Other	Human	Not available	Other
Total	346,845,946	308,172,719	3,979,980	2,166,275	6,292,822	8,529,618	10,792,013	880,715	5,423,242	593,127	15,434
Northeast: Connecticut	-	-	-	-	-	-	-	-	-	-	-
Northeast: Delaware	-	-	-	-	-	-	-	-	-	-	-
Northeast: Maine	13,986,167	13,576,158	42,216	-	-	65,096	276,793	-	25,905	-	-
Northeast: Maryland	-	-	-	-	-	-	-	-	-	-	-
Northeast: Massachusetts	-	-	-	-	-	-	-	-	-	-	-
Northeast: New Hampshire	2,835,269	2,591,628	-	24,381	-	-	219,260	-	-	-	-
Northeast: New Jersey	-	-	-	-	-	-	-	-	-	-	-
Northeast: New York	15,121,853	13,795,759	31,324	73,469	-	151,934	869,076	124,403	75,888	-	-
Northeast: Pennsylvania	10,305,793	9,975,425	31,883	20,290	41,207	58,769	38,385	87,509	52,324	-	-
Northeast: Rhode Island	-	-	-	-	-	-	-	-	-	-	-
Northeast: Vermont	-	-	-	-	-	-	-	-	-	-	-
Northeast: West Virginia	-	-	-	-	-	-	-	-	-	-	-
North Central: Illinois	4,077,292	3,418,186	-	-	-	340,935	253,528	-	64,643	-	-

North Central:Indiana	3,618,411	3,074,983	-	26,218	-	222,834	200,502	18,558	75,316	-	-
North Central: Iowa	2,134,237	1,451,017	-	-	-	415,906	267,314	-	-	-	-
North Central: Michigan	18,464,693	18,175,068	2,317	4,666	32,143	94,974	59,928	18,270	77,327	-	-
North Central: Minnesota	13,537,313	12,772,293	12,671	-	14,822	108,402	383,374	-	245,753	-	-
North Central: Missouri	11,875,937	9,083,116	29,361	25,948	261,136	1,624,619	536,387	-	315,369	-	-
North Central: Ohio	5,790,498	4,938,611	26,070	32,393	-	88,843	314,277	369,433	20,870	-	-
North Central: Wisconsin	12,700,842	12,186,812	40,749	2,592	24,514	131,897	304,428	-	9,849	-	-
Southeast: Florida	8,719,294	7,402,495	43,898	12,063	1,077,198	30,961	47,648	-	105,031	-	-
Southeast: Georgia	16,441,130	15,358,939	246,624	80,706	340,474	137,469	117,120	-	159,798	-	-
Southeast: North Carolina	56,710,244	48,704,368	910,624	227,719	1,245,277	800,442	3,531,211	-	1,290,603	-	-
Southeast: South Carolina	13,182,423	12,804,784	53,357	-	96,422	60,407	49,350	-	118,103	-	-
Southeast: Virginia	18,949,731	16,803,377	662,157	34,506	70,552	415,839	418,277	166,551	378,471	-	-
South Central: Alabama	25,072,134	23,805,111	270,888	159,333	418,568	201,895	33,983	-	182,356	-	-
South Central: Arkansas	3,666,889	3,246,380	38,835	5,982	30,210	13,485	314,461	-	17,537	-	-
South Central: Kentucky	6,965,120	5,397,816	126,555	-	345,076	359,711	298,965	20,888	416,109	-	-
South Central: Louisiana	7,036,891	5,337,115	-	54,389	435,775	40,261	285,249	-	884,103	-	-
South Central:Mississippi	-	-	-	-	-	-	-	-	-	-	-
South Central: Oklahoma	-	-	-	-	-	-	-	-	-	-	-
South Central: Tennessee	13,300,641	11,924,777	643,199	29,065	61,711	204,347	154,184	23,218	260,141	-	-
South Central: Texas	11,847,444	10,095,192	67,043	96,412	216,162	189,130	697,158	-	486,347	-	-
Great Plains: Kansas	2,137,758	942,930	-	-	146,960	802,925	163,748	-	81,195	-	-
Great Plains: Nebraska	1,545,088	597,442	-	-	-	772,997	156,417	-	18,232	-	-
Great Plains: North Dakota	616,246	496,110	-	-	-	95,906	24,230	-	-	-	-
Great Plains: South Dakota	1,690,525	1,572,464	-	-	59,781	-	29,682	-	28,598	-	-
Intermountain: Arizona	10,473,797	9,486,872	52,909	325,531	391,008	112,259	105,218	-	-	-	-
Intermountain: Colorado	19,595,864	17,901,226	274,466	408,923	674,080	154,894	182,275	-	-	-	-
Intermountain: Idaho	-	-	-	-	-	-	-	-	-	-	-
Intermountain: Montana	-	-	-	-	-	-	-	-	-	-	-
Intermountain: Nevada	-	-	-	-	-	-	-	-	-	-	-
Intermountain: New Mexico	-	-	-	-	-	-	-	-	-	-	-
Intermountain: Utah	4,704,026	4,214,783	118,475	99,051	43,196	146,644	53,461	28,416	-	-	-
Intermountain: Wyoming	-	-	-	-	-	-	-	-	-	-	-

Alaska: Alaska	593,127	-	-	-	-	-	-	-	-	593,127	-
Pacific Northwest: Oregon	3,067,738	2,197,412	192,276	254,087	95,889	251,091	65,947	8,980	198	-	1,859
Pacific Northwest: Washington	2,200,365	1,796,444	41,915	127,529	22,187	109,235	76,524	6,326	12,623	-	7,583
Pacific Southwest: California	3,312,108	2,662,942	20,168	41,022	105,919	315,160	141,225	5,518	14,160	-	5,993
Pacific Southwest: Hawaii	-	-	-	-	-	-	-	-	-	-	-
Other	569,059	384,685	-	-	42,554	10,353	122,429	2,644	6,393	-	-

2001 (incomplete)

Estimate:

	Primary disturbance										
RPA Subregion State	Total	None	Insects	Disease	Fire	Animal	Weather	Other	Human	Not available	Other
Total	197,240,753	177,092,601	2,075,850	1,504,719	3,201,978	4,907,790	4,346,497	300,743	2,414,680	1,381,559	14,336
Northeast: Connecticut	-	-	-	-	-	-	-	-	-	-	-
Northeast: Delaware	-	-	-	-	-	-	-	-	-	-	-
Northeast: Maine	10,667,543	10,334,038	22,133	-	-	16,912	266,478	19,103	8,878	-	-
Northeast: Maryland	-	-	-	-	-	-	-	-	-	-	-
Northeast: Massachusetts	-	-	-	-	-	-	-	-	-	-	-
Northeast: New Hampshire	-	-	-	-	-	-	-	-	-	-	-
Northeast: New Jersey	-	-	-	-	-	-	-	-	-	-	-
Northeast: New York	-	-	-	-	-	-	-	-	-	-	-
Northeast: Pennsylvania	6,813,108	6,692,594	28,176	-	-	12,154	37,325	20,651	22,208	-	-
Northeast: Rhode Island	-	-	-	-	-	-	-	-	-	-	-
Northeast: Vermont	-	-	-	-	-	-	-	-	-	-	-
Northeast: West Virginia	-	-	-	-	-	-	-	-	-	-	-
North Central: Illinois	3,414,568	2,753,732	26,241	-	18,503	123,545	419,877	-	72,670	-	-
North Central:Indiana	2,694,297	2,451,742	-	-	13,905	156,250	72,401	-	-	-	-
North Central: Iowa	1,623,226	1,155,409	-	20,393	-	359,173	88,251	-	-	-	-
North Central: Michigan	13,077,927	12,880,051	-	-	34,081	6,885	26,717	18,288	111,905	-	-
North Central: Minnesota	9,689,504	9,018,407	30,797	-	16,261	93,953	345,603	-	184,482	-	-
North Central: Missouri	9,058,328	7,067,790	26,484	39,603	177,427	1,073,704	436,235	28,929	208,155	-	-
North Central: Ohio	4,308,152	3,998,039	-	45,813	22,390	103,864	32,022	94,159	11,864	-	-
North Central: Wisconsin	9,401,453	9,033,182	83,019	13,891	18,786	63,237	177,567	-	11,771	-	-
Southeast: Florida	-	-	-	-	-	-	-	-	-	-	-

Southeast: Georgia	15,452,150	14,199,834	115,635	28,852	427,826	293,139	209,242	15,389	162,233	-	-
Southeast: North Carolina	-	-	-	-	-	-	-	-	-	-	-
Southeast: South Carolina	14,677,248	13,737,809	89,797	-	293,662	122,102	190,235	-	243,644	-	-
Southeast: Virginia	6,771,477	5,517,071	321,574	86,271	73,580	245,861	347,961	-	179,158	-	-
South Central: Alabama	28,334,219	26,892,466	412,153	233,547	334,079	138,855	94,630	51,472	177,016	-	-
South Central: Arkansas	-	-	-	-	-	-	-	-	-	-	-
South Central: Kentucky	6,762,714	5,457,924	-	13,177	158,680	333,490	413,099	11,887	374,457	-	-
South Central: Louisiana	7,377,977	6,676,948	43,713	6,105	331,602	46,747	182,116	-	90,745	-	-
South Central: Mississippi	-	-	-	-	-	-	-	-	-	-	-
South Central: Oklahoma	-	-	-	-	-	-	-	-	-	-	-
South Central: Tennessee	14,114,485	12,775,024	605,833	60,960	29,031	252,615	197,726	-	193,295	-	-
South Central: Texas	7,068,468	5,725,299	97,416	3,174	351,874	119,362	551,451	-	219,892	-	-
Great Plains: Kansas	1,897,839	1,283,925	-	-	154,796	362,161	10,048	-	86,910	-	-
Great Plains: Nebraska	974,670	558,144	-	-	-	343,676	36,433	-	36,416	-	-
Great Plains: North Dakota	737,564	631,492	-	-	-	58,324	37,155	10,593	-	-	-
Great Plains: South Dakota	1,335,409	1,287,500	-	-	47,909	-	-	-	-	-	-
Intermountain: Arizona	9,146,593	8,069,632	-	632,030	442,515	-	2,416	-	-	-	-
Intermountain: Colorado	-	-	-	-	-	-	-	-	-	-	-
Intermountain: Idaho	-	-	-	-	-	-	-	-	-	-	-
Intermountain: Montana	-	-	-	-	-	-	-	-	-	-	-
Intermountain: Nevada	-	-	-	-	-	-	-	-	-	-	-
Intermountain: New Mexico	-	-	-	-	-	-	-	-	-	-	-
Intermountain: Utah	3,905,518	3,605,431	40,417	30,451	64,048	109,765	55,405	-	-	-	-
Intermountain: Wyoming	-	-	-	-	-	-	-	-	-	-	-
Alaska: Alaska	1,381,559	-	-	-	-	-	-	-	-	1,381,559	-
Pacific Northwest: Oregon	3,053,883	2,408,060	112,754	196,719	21,869	222,416	49,395	22,039	18,982	-	1,650
Pacific Northwest: Washington	-	-	-	-	-	-	-	-	-	-	-
Pacific Southwest: California	3,351,245	2,750,028	19,169	93,733	169,154	246,368	53,490	6,617	-	-	12,686
Pacific Southwest: Hawaii	-	-	-	-	-	-	-	-	-	-	-
Other	149,630	131,030	538	-	-	3,229	13,218	1,614	-	-	-

2000 (incomplete)

Estimate:

	Primary disturbance										
RPA Subregion State	Total	None	Insects	Disease	Fire	Animal	Weather	Other	Human	Not available	Other
Total	227,957,521	186,985,749	2,040,698	3,999,826	8,377,929	4,291,319	6,684,286	704,890	2,670,054	12,202,770	-
Northeast: Connecticut	-	-	-	-	-	-	-	-	-	-	-
Northeast: Delaware	-	-	-	-	-	-	-	-	-	-	-
Northeast: Maine	7,232,540	6,594,835	-	11,562	-	26,025	543,925	-	56,193	-	-
Northeast: Maryland	-	-	-	-	-	-	-	-	-	-	-
Northeast: Massachusetts	-	-	-	-	-	-	-	-	-	-	-
Northeast: New Hampshire	-	-	-	-	-	-	-	-	-	-	-
Northeast: New Jersey	-	-	-	-	-	-	-	-	-	-	-
Northeast: New York	-	-	-	-	-	-	-	-	-	-	-
Northeast: Pennsylvania	3,337,745	3,223,233	30,927	5,308	10,931	16,431	27,273	23,641	-	-	-
Northeast: Rhode Island	-	-	-	-	-	-	-	-	-	-	-
Northeast: Vermont	-	-	-	-	-	-	-	-	-	-	-
Northeast: West Virginia	12,005,976	-	-	-	-	-	-	-	-	12,005,976	-
North Central: Illinois	-	-	-	-	-	-	-	-	-	-	-
North Central: Indiana	1,895,897	1,753,023	-	-	20,481	48,605	59,045	-	14,744	-	-
North Central: Iowa	1,127,719	953,964	-	12,231	15,585	110,962	34,976	-	-	-	-
North Central: Michigan	8,949,994	8,721,953	67,797	8,807	-	24,569	37,307	2,934	86,627	-	-
North Central: Minnesota	6,785,705	6,363,314	32,234	14,986	31,067	68,228	136,074	14,986	124,817	-	-
North Central: Missouri	6,302,422	4,540,237	7,434	71,501	247,488	1,027,012	257,464	14,348	136,939	-	-
North Central: Ohio	-	-	-	-	-	-	-	-	-	-	-
North Central: Wisconsin	6,502,042	6,253,174	9,854	15,170	6,320	105,715	64,757	-	47,051	-	-
Southeast: Florida	-	-	-	-	-	-	-	-	-	-	-
Southeast: Georgia	17,621,093	16,583,732	109,826	71,827	459,594	145,774	84,483	-	165,857	-	-
Southeast: North Carolina	-	-	-	-	-	-	-	-	-	-	-
Southeast: South Carolina	16,038,897	14,967,772	69,997	42,933	312,228	203,455	282,621	-	159,891	-	-
Southeast: Virginia	9,106,174	7,607,703	294,197	90,995	185,623	192,859	485,434	-	249,363	-	-
South Central: Alabama	68,707,892	61,156,676	698,887	1,467,313	1,161,250	1,380,122	2,020,715	-	822,930	-	-
South Central: Arkansas	15,684,819	14,167,663	18,118	31,112	206,166	239,709	938,361	-	83,691	-	-
South Central: Kentucky	7,657,687	6,296,973	33,792	32,831	385,435	183,740	359,084	-	365,832	-	-
South Central: Louisiana	-	-	-	-	-	-	-	-	-	-	-

South Central:Mississippi	-	-	-	-	-	-	-	-	-	-	-
South Central: Oklahoma	-	-	-	-	-	-	-	-	-	-	-
South Central: Tennessee	14,643,412	13,902,145	82,519	-	62,899	270,820	232,414	-	92,616	-	-
South Central: Texas	-	-	-	-	-	-	-	-	-	-	-
Great Plains: Kansas	-	-	-	-	-	-	-	-	-	-	-
Great Plains: Nebraska	-	-	-	-	-	-	-	-	-	-	-
Great Plains: North Dakota	-	-	-	-	-	-	-	-	-	-	-
Great Plains: South Dakota	-	-	-	-	-	-	-	-	-	-	-
Intermountain: Arizona	-	-	-	-	-	-	-	-	-	-	-
Intermountain: Colorado	-	-	-	-	-	-	-	-	-	-	-
Intermountain: Idaho	-	-	-	-	-	-	-	-	-	-	-
Intermountain: Montana	-	-	-	-	-	-	-	-	-	-	-
Intermountain: Nevada	-	-	-	-	-	-	-	-	-	-	-
Intermountain: New Mexico	-	-	-	-	-	-	-	-	-	-	-
Intermountain: Utah	2,546,016	2,310,240	-	113,254	77,888	18,259	13,217	-	13,158	-	-
Intermountain: Wyoming	21,614,696	11,589,110	585,117	2,009,995	5,194,975	229,035	1,107,136	648,982	250,348	-	-
Alaska: Alaska	196,794	-	-	-	-	-	-	-	-	196,794	-
Pacific Northwest: Oregon	-	-	-	-	-	-	-	-	-	-	-
Pacific Northwest: Washington	-	-	-	-	-	-	-	-	-	-	-
Pacific Southwest: California	-	-	-	-	-	-	-	-	-	-	-
Pacific Southwest: Hawaii	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-

1999 (incomplete)

Estimate:

	Primary disturbance										
RPA Subregion State	Total	None	Insects	Disease	Fire	Animal	Weather	Other	Human	Not available	Other
Total	159,247,814	124,425,596	1,380,267	3,089,557	11,761,765	2,629,157	4,059,946	1,638,063	3,758,987	6,504,476	-
Northeast: Connecticut	-	-	-	-	-	-	-	-	-	-	-
Northeast: Delaware	382,763	-	-	-	-	-	-	-	-	382,763	-
Northeast: Maine	3,601,528	3,213,118	-	-	-	11,993	272,349	-	104,067	-	-
Northeast: Maryland	2,565,048	-	-	-	-	-	-	-	-	2,565,048	-
Northeast: Massachusetts	-	-	-	-	-	-	-	-	-	-	-

Northeast: New Hampshire	-	-	-	-	-	-	-	-	-	-	-
Northeast: New Jersey	2,132,145	-	-	-	-	-	-	-	-	2,132,145	-
Northeast: New York	-	-	-	-	-	-	-	-	-	-	-
Northeast: Pennsylvania	-	-	-	-	-	-	-	-	-	-	-
Northeast: Rhode Island	-	-	-	-	-	-	-	-	-	-	-
Northeast: Vermont	-	-	-	-	-	-	-	-	-	-	-
Northeast: West Virginia	-	-	-	-	-	-	-	-	-	-	-
North Central: Illinois	-	-	-	-	-	-	-	-	-	-	-
North Central:Indiana	853,853	742,343	-	-	-	17,988	-	79,430	14,091	-	-
North Central: Iowa	474,242	380,064	-	-	-	27,968	-	66,210	-	-	-
North Central: Michigan	-	-	-	-	-	-	-	-	-	-	-
North Central: Minnesota	1,849,729	1,660,214	-	-	-	36,690	-	149,485	3,340	-	-
North Central: Missouri	2,576,393	2,231,396	-	-	-	168,390	-	146,434	30,173	-	-
North Central: Ohio	-	-	-	-	-	-	-	-	-	-	-
North Central: Wisconsin	-	-	-	-	-	-	-	-	-	-	-
Southeast: Florida	-	-	-	-	-	-	-	-	-	-	-
Southeast: Georgia	36,278,791	33,737,585	34,752	469,029	937,823	417,516	186,825	-	495,261	-	-
Southeast: North Carolina	-	-	-	-	-	-	-	-	-	-	-
Southeast: South Carolina	7,372,664	6,931,857	151,035	-	71,129	78,995	32,777	-	106,870	-	-
Southeast: Virginia	21,251,635	18,102,027	562,926	61,188	54,867	508,832	1,355,605	-	606,189	-	-
South Central: Alabama	-	-	-	-	-	-	-	-	-	-	-
South Central: Arkansas	-	-	-	-	-	-	-	-	-	-	-
South Central: Kentucky	-	-	-	-	-	-	-	-	-	-	-
South Central: Louisiana	-	-	-	-	-	-	-	-	-	-	-
South Central:Mississippi	-	-	-	-	-	-	-	-	-	-	-
South Central: Oklahoma	-	-	-	-	-	-	-	-	-	-	-
South Central: Tennessee	40,991,586	36,187,881	111,144	144,692	903,801	1,180,434	1,706,063	-	757,570	-	-
South Central: Texas	-	-	-	-	-	-	-	-	-	-	-
Great Plains: Kansas	-	-	-	-	-	-	-	-	-	-	-
Great Plains: Nebraska	-	-	-	-	-	-	-	-	-	-	-
Great Plains: North Dakota	-	-	-	-	-	-	-	-	-	-	-
Great Plains: South Dakota	-	-	-	-	-	-	-	-	-	-	-

Intermountain: Arizona	10,942,099	6,208,382	29,678	1,069,408	2,566,679	30,370	110,493	234,538	692,549	-	-
Intermountain: Colorado	-	-	-	-	-	-	-	-	-	-	-
Intermountain: Idaho	-	-	-	-	-	-	-	-	-	-	-
Intermountain: Montana	-	-	-	-	-	-	-	-	-	-	-
Intermountain: Nevada	-	-	-	-	-	-	-	-	-	-	-
Intermountain: New Mexico	26,550,820	15,030,727	490,732	1,345,240	7,227,466	149,980	395,834	961,965	948,877	-	-
Intermountain: Utah	-	-	-	-	-	-	-	-	-	-	-
Intermountain: Wyoming	-	-	-	-	-	-	-	-	-	-	-
Alaska: Alaska	1,424,521	-	-	-	-	-	-	-	-	1,424,521	-
Pacific Northwest: Oregon	-	-	-	-	-	-	-	-	-	-	-
Pacific Northwest: Washington	-	-	-	-	-	-	-	-	-	-	-
Pacific Southwest: California	-	-	-	-	-	-	-	-	-	-	-
Pacific Southwest: Hawaii	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-

Other

Estimate:

	Primary disturbance										
RPA Subregion State	Total	None	Insects	Disease	Fire	Animal	Weather	Other	Human	Not available	Other
Total	456,865,961	143,435,364	4,413,539	11,419,171	22,820,034	4,637,932	7,675,535	3,317,806	2,615,905	256,530,675	-
Northeast: Connecticut	3,722,785	-	-	-	-	-	-	-	-	3,722,785	-
Northeast: Delaware	389,606	-	-	-	-	-	-	-	-	389,606	-
Northeast: Maine	17,699,335	-	-	-	-	-	-	-	-	17,699,335	-
Northeast: Maryland	2,700,208	-	-	-	-	-	-	-	-	2,700,208	-
Northeast: Massachusetts	6,390,543	-	-	-	-	-	-	-	-	6,390,543	-
Northeast: New Hampshire	9,691,861	-	-	-	-	-	-	-	-	9,691,861	-
Northeast: New Jersey	1,888,132	-	-	-	-	-	-	-	-	1,888,132	-
Northeast: New York	-	-	-	-	-	-	-	-	-	-	-
Northeast: Pennsylvania	16,906,146	-	-	-	-	-	-	-	-	16,906,146	-
Northeast: Rhode Island	801,886	-	-	-	-	-	-	-	-	801,886	-
Northeast: Vermont	9,052,662	-	-	-	-	-	-	-	-	9,052,662	-
Northeast: West Virginia	12,107,610	-	-	-	-	-	-	-	-	12,107,610	-
North Central: Illinois	8,595,629	-	-	-	-	-	-	-	-	8,595,629	-

North Central:Indiana	8,942,851	-	-	-	-	-	-	-	-	8,942,851	-
North Central: Iowa	2,053,183	-	-	-	-	-	-	-	-	2,053,183	-
North Central: Michigan	37,652,907	-	-	-	-	-	-	-	-	37,652,907	-
North Central: Minnesota	33,217,644	-	-	-	-	-	-	-	-	33,217,644	-
North Central: Missouri	14,000,274	-	-	-	-	-	-	-	-	14,000,274	-
North Central: Ohio	7,855,742	-	-	-	-	-	-	-	-	7,855,742	-
North Central: Wisconsin	31,314,809	-	-	-	-	-	-	-	-	31,314,809	-
Southeast: Florida	-	-	-	-	-	-	-	-	-	-	-
Southeast: Georgia	131,910,946	107,348,614	1,952,175	3,170,054	9,019,271	3,343,513	3,577,063	2,664,567	835,690	-	-
Southeast: North Carolina	-	-	-	-	-	-	-	-	-	-	-
Southeast: South Carolina	-	-	-	-	-	-	-	-	-	-	-
Southeast: Virginia	10,871,952	9,671,008	173,053	22,113	37,996	266,300	650,798	-	50,684	-	-
South Central: Alabama	-	-	-	-	-	-	-	-	-	-	-
South Central: Arkansas	-	-	-	-	-	-	-	-	-	-	-
South Central: Kentucky	-	-	-	-	-	-	-	-	-	-	-
South Central: Louisiana	-	-	-	-	-	-	-	-	-	-	-
South Central:Mississippi	-	-	-	-	-	-	-	-	-	-	-
South Central: Oklahoma	-	-	-	-	-	-	-	-	-	-	-
South Central: Tennessee	-	-	-	-	-	-	-	-	-	-	-
South Central: Texas	-	-	-	-	-	-	-	-	-	-	-
Great Plains: Kansas	2,906,429	-	-	-	-	-	-	-	-	2,906,429	-
Great Plains: Nebraska	1,659,821	-	-	-	-	-	-	-	-	1,659,821	-
Great Plains: North Dakota	1,240,486	-	-	-	-	-	-	-	-	1,240,486	-
Great Plains: South Dakota	1,645,150	705,086	19,299	22,652	-	-	93,946	-	36,482	767,685	-
Intermountain: Arizona	2,559,500	793,877	2,282	49,757	217,653	15,323	8,531	-	264,684	1,207,393	-
Intermountain: Colorado	7,112,113	1,330,858	82,438	603,414	542,419	39,975	80,788	88,848	108,302	4,235,071	-
Intermountain: Idaho	17,521,275	4,175,091	763,002	3,219,403	4,361,407	118,235	861,958	118,807	357,619	3,545,755	-
Intermountain: Montana	22,331,092	5,127,409	744,474	3,380,800	5,103,905	453,069	1,725,150	334,913	393,573	5,067,797	-
Intermountain: Nevada	6,358,815	4,661,356	197,425	141,071	535,625	48,019	164,423	35,293	103,697	471,906	-
Intermountain: New Mexico	4,562,934	1,984,383	27,674	103,013	722,815	-	50,205	-	187,119	1,487,725	-
Intermountain: Utah	9,128,740	5,778,554	316,763	478,886	1,091,861	105,475	226,387	75,377	214,661	840,775	-
Intermountain: Wyoming	5,174,101	1,859,129	134,953	228,011	1,187,082	248,022	236,287	-	63,393	1,217,226	-

Alaska: Alaska	6,898,794	-	-	-	-	-	-	-	-	6,898,794	-
Pacific Northwest: Oregon	-	-	-	-	-	-	-	-	-	-	-
Pacific Northwest: Washington	-	-	-	-	-	-	-	-	-	-	-
Pacific Southwest: California	-	-	-	-	-	-	-	-	-	-	-
Pacific Southwest: Hawaii	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-

Population Estimate Description

Forest land: Land at least 10-percent stocked by trees of any size, including land that formerly had such tree cover and that will be naturally or artificially regenerated. Forest land includes transition zones, such as areas between heavily forested and nonforested lands that are at least 10-percent stocked with trees and forest areas adjacent to urban and builtup lands. Also included are pinyon-juniper and chaparral areas in the West and afforested areas. The minimum area for classification of forest land is 1 acre and 120 feet wide measured stem-to-stem from the outer-most edge. Unimproved roads and trails, streams, and clearings in forest areas are classified as forest if less than 120 feet wide.

Page classification variable description

Inventory year

Row classification variable description

RPA Subregion State:

State	RPA SubregionState
Alabama	South Central: Alabama
Alaska	Alaska: Alaska
Arizona	Intermountain: Arizona
Arkansas	South Central: Arkansas
California	Pacific Southwest:California
Colorado	Intermountain: Colorado
Connecticut	Northeast: Connecticut
Delaware	Northeast: Delaware
Florida	Southeast: Florida
Georgia	Southeast: Georgia
Hawaii	Pacific Southwest:Hawaii
Ida ho	Intermountain: Idaho
Illinois	North Central: Illinois
Indiana	North Central: Indiana
Iowa	North Central: Iowa
Kansas	Great Plains: Kansas
Kentucky	South Central: Kentucky

Louisiana	South Central: Louisiana
Maine	Northeast: Maine
Maryland	Northeast: Maryland
Massachusetts	Northeast: Massachusetts
Michigan	North Central: Michigan
Minnesota	North Central: Minnesota
Mississippi	South Central: Mississippi
Missouri	North Central: Missouri
Montana	Intermountain: Montana
Nebraska	Great Plains: Nebraska
Nevada	Intermountain: Nevada
New Hampshire	Northeast: New Hampshire
New Jersey	Northeast: New Jersey
New Mexico	Intermountain: New Mexico
New York	Northeast: New York
North Carolina	Southeast: North Carolina
North Dakota	Great Plains: North Dakota
Ohio	North Central: Ohio
Oklahoma	South Central: Oklahoma
Oregon	Pacific Northwest: Oregon
Pennsylvania	Northeast: Pennsylvania
Rhode Island	Northeast: Rhode Island
South Carolina	Southeast: South Carolina
South Dakota	Great Plains: South Dakota
Tennessee	South Central: Tennessee
Texas	South Central: Texas
Utah	Intermountain: Utah
Vermont	Northeast: Vermont
Virginia	Southeast: Virginia
Washington	Pacific Northwest: Washington
West Virginia	Northeast: West Virginia
Wisconsin	North Central: Wisconsin

Wyoming	Intermountain: Wyoming
---------	------------------------

Column classification variable description

Primary disturbance 1 code. A code indicating the kind of disturbance occurring since the last measurement or within the last 5 years for new plots. The area affected by the disturbance must be at least 1 acre in size. A significant level of disturbance (mortality or damage to 25 percent of the trees in the condition) is required. Populated for all forested conditions using the National Field Guide protocols (PLOT.MANUAL >=1.0) and populated by some FIA work units where PLOT.MANUAL <1.0. Codes 11, 12, 21, and 22 are valid where PLOT. MANUAL >=2.0.

Code	Description
0	No visible disturbance
10	Insect Damage
11	Insect Damage
12	Insect damage
20	Disease Damage
21	Disease damage
22	Disease damage
30	Fire damage
31	Fire damage
32	Fire damage
40	Animal Damage
41	Animal Damage
42	Animal Damage
43	Animal Damage
44	Animal Damage
45	Animal Damage
46	Animal Damage
50	Weather Damage
51	Weather Damage
52	Weather Damage
53	Weather Damage
54	Weather Damage
60	Other
70	Other
80	Human-caused damage - any significant threshold of human-caused damage not described in the DISTURBANCE codes or in the TREATMENT codes.

90	Other
91	Other
92	Other
93	Other
94	Other
95	Other

Sampling design/estimation method: post-stratification, as described in:

Bechtold, W.A.; Patterson, P.L., eds. 2005. The Enhanced Forest Inventory and Analysis Program - National Sampling Design and Estimation Procedures. Gen. Tech. Rep. SRS - 80. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station. 85 p.

Web citation:

USDA Forest Service, Forest Inventory and Analysis Program, Tue Oct 30 15:31:37 GMT 2018. Forest Inventory EVALIDator web-application Version 1.7.0.01. St. Paul, MN: U.S. Department of Agriculture, Forest Service, Northern Research Station. [Available only on internet: <http://fsxopsx1056.fdc.fs.usda.gov:9001/Evalidator/evaluator.jsp>]
SQL Script

Analysis and processing of national data

Estimation and forecasting

no forecasting

Reclassification into FRA 2020 categories

annual inventory data were used; please note not all inventory years are complete collections of all states. Please see original data to see which states are included by year. Data were converted to hectares from acres. "other" disturbance is a combination of fire, animal, human and "other / unknown" categories from national inventory.

FRA categories	Area (1000 ha)																	
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Insects (a)	826.00	840.00	1 611.00	2 178.00	2 676.00	2 974.00	3 484.00	4 133.00	4 019.00	5 025.00	4 754.00	5 609.00	6 023.00	5 528.00	4 675.00	4 159.00	2 989.00	1 644.00
Diseases (b)	1 619.00	609.00	877.00	1 623.00	2 107.00	2 470.00	2 844.00	3 034.00	3 964.00	3 798.00	4 540.00	5 102.00	4 886.00	4 831.00	4 423.00	3 723.00	2 458.00	1 038.00
Severe weather events (c)	2 705.00	1 759.00	4 367.00	3 962.00	4 170.00	4 091.00	8 215.00	4 599.00	5 565.00	7 411.00	7 055.00	6 808.00	5 742.00	4 549.00	3 239.00	2 026.00	1 048.00	448.00
Other (specify in comments) (d)	3 102.00	3 085.00	6 003.00	5 243.00	6 171.00	6 590.00	9 319.00	8 478.00	8 220.00	10 443.00	10 764.00	11 858.00	10 757.00	7 908.00	5 554.00	4 361.00	2 793.00	1 299.00
Total (a+b+c+d)	8 252.00	6 293.00	12 858.00	13 006.00	15 124.00	16 125.00	23 862.00	20 244.00	21 768.00	26 677.00	27 113.00	29 377.00	27 408.00	22 816.00	17 891.00	14 269.00	9 288.00	4 429.00
Total forest area	303 536.00	—	—	—	—	304 757.00	—	—	—	—	308 720.00	—	—	—	—	310 095.00	310 095.00	309 795.00

Comments

Data are complete for 2011, 2012, 2013, 2015. All other inventory years are incomplete, resulting in underestimates of disturbance for those years. Please see original data to see which states are included by year. Other includes: animal, human and ‘other’ disturbance.

FRA categories	Area (1000 ha)																	
	2000	2001	2002	2003	2004	2005	2006	2007			2010	2011	2012	2013	2014	2015	2016	2017
Insects (a)	826.00	840.00	1 611.00	2 178.00	2 676.00	2 974.00	3 484.00	4 133.00	4 019.00	5 025.00	4 754.00	5 609.00	6 023.00	5 528.00	4 675.00	4 159.00	2 989.00	1 644.00
Diseases (b)	1 619.00	609.00	877.00	1 623.00	2 107.00	2 470.00	2 844.00	3 034.00	3 964.00	3 798.00	4 540.00	5 102.00	4 886.00	4 831.00	4 423.00	3 723.00	2 458.00	1 038.00
Severe weather events (c)	2 705.00	1 759.00	4 367.00	3 962.00	4 170.00	4 091.00	8 215.00	4 599.00	5 565.00	7 411.00	7 055.00	6 808.00	5 742.00	4 549.00	3 239.00	2 026.00	1 048.00	448.00
Other (specify in comments) (d)	3 102.00	3 085.00	6 003.00	5 243.00	6 171.00	6 590.00	9 319.00	8 478.00	8 220.00	10 443.00	10 764.00	11 858.00	10 757.00	7 908.00	5 554.00	4 361.00	2 793.00	1 299.00
Total (a+b+c+d)	8 252.00	6 293.00	12 858.00	13 006.00	15 124.00	16 125.00	23 862.00	20 244.00	21 768.00	26 677.00	27 113.00	29 377.00	27 408.00	22 816.00	17 891.00	14 269.00	9 288.00	4 429.00
Total forest area	303 536.00	—	—	—	—	304 757.00	—	—	—	—	308 720.00	—	—	—	—	310 095.00	310 095.00	309 795.00

Comments

Data prior to 2009 are not complete, resulting in underestimates of disturbance from those years. 2010 is complete except the state of Wyoming, 2011 was complete. Other includes: animal, human and "other" disturbance

** Includes Alaska coast only, not Interior. Includes Hawaii.

5b Area affected by fire

National Data

Data sources + type of data source eg NFI, etc

National Interagency Coordination Center (NICC)

The National Interagency Coordination Center at NIFC compiles annual wildland fire statistics for federal and state agencies. This information is provided through Situation Reports, which have been in use for several decades. Prior to 1983, sources of these figures are not known, or cannot be confirmed, and were not derived from the current situation reporting process. As a result the figures prior to 1983 should not be compared to later data.

National classification and definitions

Wildfires listed here include number of fires and acres burned, but is not indicative of the severity of the wildfire or the impact to forest and other resources.

"Of the more than 1.6 million wildfires that have occurred since 1997, approximately 170 exceeded 100,000 acres, and 12 exceeded 500,000 acres. Only a small fraction of wildfires become catastrophic, and a small percentage of fires accounts for the vast majority of acres burned. For example, only about 1% of wildfires become conflagrations—raging, destructive fires—but predicting which fires will “blow up” into conflagrations is challenging and depends on a multitude of factors, such as weather and geography. In 2017, 2.0% of wildfires were classified as large or significant (1,409) and 51 wildfires exceeded 40,000 acres in size, 12 of which also exceeded 100,000 acres. There were fewer large or significant wildfires in 2016: 1,251 (1.8% of the total fires that year), 19 of which exceeded 40,000 acres in size and 6 of which exceeded 100,000 acres." Text from the Congressional Research Service September 4, 2018. Katie Hoover, khoover@crs.loc.gov, 7-9008

Original data

Total Wildland Fires and Acres (1926-2017)		
The National Interagency Coordination Center at NIFC compiles annual wildland fire statistics for federal and state agencies. This information is provided through Situation Reports, which have been in use for several decades. Prior to 1983, sources of these figures are not known, or cannot be confirmed, and were not derived from the current situation reporting process. As a result the figures prior to 1983 should not be compared to later data.		
Source: National Interagency Coordination Center		
Year	Fires	Acres
1999	92,487	5,626,093
2000	92,250	7,393,493
2001	84,079	3,570,911
2002	73,457	7,184,712
2003	63,629	3,960,842
2004	65,461	*8,097,880
2005	66,753	8,689,389
2006	96,385	9,873,745
2007	85,705	9,328,045
2008	78,979	5,292,468
2009	78,792	5,921,786
2010	71,971	3,422,724
2011	74,126	8,711,367
2012	67,774	9,326,238
2013	47,579	4,319,546

2014	63,312	3,595,613
2015	68,151	10,125,149
2016	67,743	5,509,995
2017	71,499	10,026,086

Analysis and processing of national data

Estimation and forecasting

no forecasting

Reclassification into FRA 2020 categories

conversion from acres to ha.

FRA categories	Area (1000 ha)																	
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Total land area affected by fire	2 992.15	1 445.15	2 907.65	1 602.95	3 277.21	3 516.60	3 995.90	3 775.06	2 141.86	2 396.55	1 385.18	3 525.49	3 774.33	1 748.12	1 455.14	4 097.65	2 229.89	4 057.56
...of which on forest	2 992.15	1 445.15	2 907.65	1 602.95	3 277.21	3 516.60	3 995.90	3 775.06	2 141.86	2 396.55	1 385.18	3 525.49	3 774.33	1 748.12	1 455.14	4 097.65	2 229.89	4 057.56

Comments

Previously Brad used RSAC overlay with MTBS and FIA forest types. I am really not sure why, since NIFC is generally the accepted wildfire statistics source, and is used in all domestic applications.

Total land area affected by fire is undoubtably higher than forest affected by fire, but I was not able to find that information split out for other land use types.

5c Degraded forest

Does your country monitor area of degraded forest		Yes
If "yes"	What is the national definition of "Degraded forest"?	Forest degradation - A direct human-induced long-term loss (persisting for X years or more) of at least Y % of forest carbon stocks (and forest values) since time T and not qualifying as deforestation or an elected activity under Article 3.4 of the Kyoto Protocol (Schoene et al. 2007) and (Mollicone and Souza 2007).
	Describe the monitoring process and results	We do not directly measure degraded forest but we do measure the components necessary to calculate some degradation matrix of the sort described in Lund 2009.

Comments

https://www.researchgate.net/profile/Gyde_Lund/publication/280921178_What_is_a_degraded_forest/links/55cb3b4d08aebc967dfcadb2/What-is-a-degraded-forest

6 Forest policy and legislation

6a Policies, Legislation and national platform for stakeholder participation in forest policy

National Data

Data sources + type of data source eg NFI, etc

1	Clean Water Act (42 U.S.C. 7401–7626) consists of Public Law 159 (July 14, 1955; 69 Stat.322) and the amendments made by subsequent enactments.	Legislation and regulations supporting sustainable forest management	1972-current	Federal Clean Water Act applies to both public and private lands in the United States and encourages best management practices by states to avoid water pollution.
2	Endangered Species Act (7 U.S.C.136; 16 U.S.C.460 et seq.)	Legislation and regulations supporting sustainable forest management	current	Applies to both public and private lands in the United States and requires all public and some private lands to enter into habitat conservation plans to ensure habitat for listed species.
3	National Environmental Policy Act [42 U.S.C. 4321 et seq.]	Policies or strategies that explicitly encourage sustainable forest management.	1970-current	The Act establishes national environmental policy and goals for the protection, maintenance, and enhancement of the environment and provides a process for implementing these goals within the federal agencies
	State-level Best Management Practices	Policies or strategies that explicitly encourage sustainable forest management.	Varies by state	Varies by state, and level of compliance required varies by state. Some state BMPs are required while others are voluntary. Primarily relates to water quality, but also to reforestation and sustainable management.
	Healthy Forests Restoration Act	Policies or strategies that explicitly encourage sustainable forest management.	2003-current	Provisions to speed up restoration planning and projects on at-risk Federal land
	Cooperative Forestry Assistance Act of 1978, as amended through 2008	Policies or strategies that explicitly encourage sustainable forest management.	1978-current	Provides USDA Secretary of Agriculture authorization to provide assistance on non-federal lands for a variety of programs including protection of ecologically valuable and threatened lands, planning, prevention of insects and disease, and other management priorities.
	http://www.archives.gov/federal-register/laws/access.html	Listing of U.S. Public Laws		Access for NFMA, and Related federal laws addressing forest management and conservation
	http://www.stateforesters.org/	State level forest management activities		Website for the National Association of State Foresters. Access to State Forest Action Plans and related documents

Stakeholder participation sources:

1	http://ceq.hss.doe.gov/	Homepage for the National Environmental Policy Act of 1970
2	http://www.fs.fed.us/research/rpa/	Webpage for project information and publications related to the Resource Planning Act (RPA) Assessment
3	http://www.fs.fed.us/research/sustain/	Webpage for project information and publications related to the National Report on Sustainable Forests
4	http://www.sustainableforests.net/	Homepage for the Roundtable on Sustainable Forests

National classification and definitions

Policies supporting sustainable forest management	Generally, the National Environmental Policy Act (NEPA), Public Law 91-190, 42 U.S.C. 4321-4347 can be considered a national policy statement. The Act establishes a national policy for the environment and provides for the establishment of a Council on Environmental Quality.
Policies supporting sustainable forest management	Voluntary State-level Best Management Practices and State Forestry Agency environmental policies may be considered state-level policy statements. Local-level policy may apply to privately owned land and municipality lands. Regionally and sub-regionally, policies may apply to particular features, for example a large watershed or mountain range.
Policies supporting sustainable forest management	Forest management plans are requirements in all programs for private market certification, e.g. Forest Stewardship Council, Sustainable Forestry Initiative, and American Tree Farm System.

Legislation and regulations supporting sustainable forest management	There are over 100 national laws and regulations relating to natural resource management in the United States, and all may be considered to support sustainable management of forests. We have listed several examples, but could not list all applicable laws and regulations.
National stakeholder platform	<p>The National Environmental Policy Act of 1970 (NEPA, Public Law 91-190, 42 U.S.C. 4321-4347) stipulates planning documentation and public participation guidelines for national, regional and local projects with anticipated environmental impacts. This extends to sational level policy initiatives such as revisions to the U.S. Forest Service's forest planning rule. Through public hearings, public comment and review of planning documents (Environmental Impact Statements) and related mechanisms, various and diverse stakeholders can and do provide perspectives and advocate interests in the national policy development process. Policy decisions can be legally challenged on the basis of inadequate public input or failure to adequately address valid perspectives.</p> <p>On a more informal basis, national stakeholder groups, roundtables and similar bodies interact with federal agencies in forest policy formation on a regular basis. Notable among these is the Roundtable on Sustainable Forests.</p>

Original data

FRA 2015 category	Check boxes							
	National		Sub-national					
			Regional		Provincial/ State		Local	
Policies supporting sustainable forest management	X	Yes	X	Yes	X	Yes	X	Yes
		No		No		No		No
... of which, in <u>publicly owned</u> forests	X	Yes	X	Yes	X	Yes	x	Yes
		No		No		No		No
... of which, in <u>privately owned</u> forests	X	Yes	X	Yes	X	Yes	x	Yes
		No		No		No		No
Legislation and regulations supporting sustainable forest management	X	Yes		Yes	X	Yes	x	Yes
		No	x	No		No		No
... of which, in <u>publicly owned</u> forests	x	Yes		Yes	x	Yes	x	Yes
		No	x	No		No		No
... of which, in <u>privately owned</u> forests	x	Yes		Yes	x	Yes	x	Yes
		No	x	No		No		No

Indicate the existence of	Boolean (Yes/No)	
	National	Sub-national
Policies supporting SFM	Yes	Yes
Legislations and regulations supporting SFM	Yes	Yes
Platform that promotes or allows for stakeholder participation in forest policy development	Yes	Yes
Traceability system(s) for wood products	No	Yes

Comments

6b Area of permanent forest estate

National Data

Data sources + type of data source eg NFI, etc

FIADB national database http://fia.fs.fed.us Forest Resources of the United States, 2017		Forest Area	Forest data compiled from most recent inventory data to be used as basis for 2017 U.S. national assessment. Represents FRA data for 2020.	
1	FIADB national database http://fia.fs.fed.us Forest Resources of the United States, 2012. <i>See reference in Table 1.</i>	Forest area	2012	Forest data compiled from inventory data to be used as basis for 2012 U.S. national assessment. Represents FRA data for 2015.
2	FIADB national database http://fia.fs.fed.us Forest Resources of the United States, 2007. <i>See reference in Table 1.</i>	Forest area	2007	Forest data compiled from most recent inventory data to be used as basis for 2007 U.S. national assessment. Represents FRA data for 2010. Adjustments made for other wooded land.
3	FIADB national database http://fia.fs.fed.us Forest Resources of the United States, 2002. <i>See reference in Table 1.</i>	Forest area	2002	Forest data compiled from most recent inventory data to be used as basis for 2002 U.S. national assessment. Represents FRA data for 2005. Adjustments made for other wooded land.
4	Forest Resources of the United States, 1997. <i>See reference in Table 1.</i>	Forest area	1997	Forest data from the referenced U.S. report represents FRA data for 2000. Adjustments made for other wooded land.
5	Forest Statistics of the United States, 1987. <i>See reference in Table 1.</i>	Forest area	1987	Forest data from the referenced U.S. report represents FRA data for 1990. Adjustments made for other wooded land.
6	Butler, Brett J. 2017 Family Forest Owners of the United States	Forest ownership objectives	2017	This report summarizes results from the U.S. Forest Service's National Woodland Owner Survey of the estimated 10 million family forest owners who own 35 percent of forest land in the U.S. Information on forest owner characteristics, ownership histories, ownership objectives, forest uses and forest management practices.
6	Conservation Biology Institute, Protected Areas Database PAD http://www.consbio.org	Protected areas	2010, current	This polygon data set was overlaid on the U.S. forest inventory plot grid to classify plot and area data for IUCN categories 1-5 to verify national inventory data.
8	National Forest Systems Roadless Area Database	NFS Roadless areas	2002, current	This polygon data set was overlaid on the U.S. forest inventory plot grid to classify plot and area data as forest/nonforest for National Forest Systems roadless areas. Considered IUCN class 6.

National classification and definitions

Public forest land (as representative of the permanent forest estate)	It is assumed that all public forest land will remain in forest cover to the extent feasible. Some areas may be designated for recreation or spiritual purposes but will generally retain tree cover for these purposes. Rarely, forest cover may be removed on these lands for restoration of historically significant landscapes to a specified state.
---	--

Original data

2020, thous ac, from RPADB	
All ownerships	Total public
765,492.98	322,011.48
Conversion to thous ha	
309,795.01	130,318.05

Previous data

Categories	Original data
------------	---------------

	1987	1997	2002*	2007	2012	1987	1997	2002*	2007	2012
			000 acres					000 ha		
Area of permanent forest estate	306,810	307,756	308,713	321,162	321,167	124,166	124,549	124,936	129,974	129,976
Forest area within protected areas	44,354	51,442	63,064	74,685	73,520	17,950	20,819	25,522	30,225	29,754
Forest area under sustainable forest mgmt	306,810	307,756	308,713	321,162	321,167	124,166	124,549	124,936	129,974	129,976
<i>All public forest</i>	306,810	307,756	308,713	321,162	321,167	124,166	124,549	124,936	129,974	129,976
<i>SFI certified forest</i>	-	18,369	46,207	55,675	63,435	0	7,434	18,700	22,532	25,672
Forest area with management plan	427,128	448,236	460,211	483,750	489,247	176,869	185,642	190,872	199,991	202,342
<i>of which :</i>										
<i>All public forest</i>	306,810	307,756	308,713	321,162	321,167	124,166	124,549	124,936	129,974	129,976
<i>All private planted forest</i>	25,527	40,227	42,178	62,888	65,384	10,331	16,280	17,069	25,451	26,461
<i>Corporate natural forest (@70%)</i>	74,267	76,283	86,612	77,272	80,484	33,197	34,099	38,716	34,541	35,976
<i>Noncorporate natural forest (@20%)</i>	20,525	23,969	22,708	22,428	22,212	9,174	10,714	10,151	10,025	9,929

FRA 2020 categories	Forest area (1000 ha)					
	Applicable?	1990	2000	2010	2015	2020
Area of permanent forest estate	Yes	124 166.00	124 549.00	129 974.00	129 976.00	130 318.00

Comments

All public forest is assumed to be permanently designated as a forest land use.

7 Employment, education and NWFP

7a Employment in forestry and logging

National Data

Data sources + type of data source eg NFI, etc

Data from the U.S. Bureau of Labor Statistics

- NAICS definitions: https://www.bls.gov/cew/bls_naics/v2/bls_naics_app.htm#tab=search&naics=2017&keyword=&searchType=indexes&filter=6_filter&sort=text_asc&resultIndex=0
- Industry Employment Data: <https://www.bls.gov/cew/data.htm>

U.S. Bureau of Labor Statistics | Postal Square Building, 2 Massachusetts Avenue, NE Washington, DC 20212-0001

Design

QCEW universe of business establishments consists of those establishments which are respondents to the BLS in partnership with the 50 states, the District of Columbia, Puerto Rico, and the U.S. Virgin Islands (a total of 53 entities). The original source of data is the Quarterly Contribution Reports (QCRs) submitted to State Workforce Agencies (SWAs) by employers subject to state and federal unemployment insurance (UI) laws.

For more information about QCEW Design, see the [QCEW Handbook of Methods - Design](#).

Calculation

Data from QCEW are aggregations of various kinds of business establishment data, including geographical, industry, ownership, and establishment size data. QCEW data are not estimates. On occasion, when business establishment data are of poor quality or missing entirely, they may be imputed. Proration is used to handle multiple-establishment employers for whom the top employment and wage levels are known but distribution at the establishment level is unknown.

For more information about QCEW Calculation, see the [QCEW Handbook of Methods - Calculation](#).

Uses and Reliability

Data from the QCEW program serve as an important input to many BLS programs. The QCEW data are used as the benchmark source for employment by the [Current Employment Statistics](#) program and the [Occupational Employment Statistics](#) program. The UI administrative records collected under the QCEW program serve as a sampling frame for BLS establishment surveys.

In addition, data from the QCEW program serve as an input to other Federal and State programs. The [Bureau of Economic Analysis](#) (BEA) of the Department of Commerce uses QCEW data as the base for developing the wage and salary component of personal income. The [Employment and Training Administration](#) (ETA) of the Department of Labor and the State workforce agencies use QCEW data to administer the employment security program. The QCEW data accurately reflect the extent of coverage of the State UI laws and are used to measure UI revenues; national, State and local area employment; and total and UI taxable wage trends.

***** Note: Data for the Codes used come form the NAICS descriptions. Data for Logging is NAICS 1133; Data used for Silviculture and other is 1131; Data used for nonwood forest products is 1132; Data used for support services in forestry is 1153.**

National classification and definitions

Support Activities for Forestry: 115310

Description

This industry comprises establishments primarily engaged in performing particular support activities related to timber production, wood technology, forestry economics and marketing, and forest protection. These establishments may provide support activities for forestry, such as estimating timber, forest firefighting, forest pest control, and consulting on wood attributes and reforestation.

Index Items

1)	Aerial forest mulching or seeding
2)	Cruising timber
3)	Estimating timber
4)	Fire prevention, forest

5)	Firefighting, forest
6)	Forest management plans preparation
7)	Forest thinning
8)	Forestry services
9)	Pest control services, forestry
10)	Reforestation
11)	Timber valuation

Cross-Reference

1)	Establishments primarily engaged in the public administration and conservation of forest lands are classified in Industry 924120, Administration of Conservation Programs.
----	--

Forest Nurseries and Gathering of Forest Products: 113210 [Agriculture, Forestry, Fishing and Hunting Sector: 11]

Description

This industry comprises establishments primarily engaged in (1) growing trees for reforestation and/or (2) gathering forest products, such as gums, barks, balsam needles, rhizomes, fibers, Spanish moss, ginseng, and truffles.

Cross-Reference

Establishments primarily engaged in	
1)	Gathering tea and maple sap--are classified in U.S. Industry 111998, All Other Miscellaneous Crop Farming; and
2)	Processing maple syrup into other products--are classified in Industry 31199, All Other Food Manufacturing.

Index Items

1)	Aromatic wood gathering
2)	Balsam needles gathering
3)	Bark gathering
4)	Cherry gum, gathering
5)	Chestnut gum, gathering
6)	Forest nurseries for reforestation, growing trees
7)	Forest nursery for reforestation, growing trees
8)	Gathering of forest products (e.g., barks, gums, needles, seeds)
9)	Gathering, extracting, and selling tree seeds
10)	Ginseng gathering
11)	Gum (i.e., forest product) gathering
12)	Harvesting berries or nuts from native and non-cultivated plants
13)	Harvesting berry or nuts from native and non-cultivated plants

14)	Hemlock gum gathering
15)	Huckleberry greens, gathering of
16)	Moss gathering
17)	Nurseries for reforestation growing trees
18)	Nursery for reforestation growing trees
19)	Pine gum extracting
20)	Spanish moss gathering
21)	Sphagnum moss gathering
22)	Spruce gum gathering
23)	Teaberries gathering
24)	Teaberry gathering
25)	Tree seed extracting
26)	Tree seed gathering
27)	Tree seed growing for reforestation

Logging: 113310 [Agriculture, Forestry, Fishing and Hunting Sector: 11]

Description

This industry comprises establishments primarily engaged in one or more of the following: (1) cutting timber; (2) cutting and transporting timber; and (3) producing wood chips in the field.

Index Items

1)	Cutting and transporting timber
2)	Cutting timber
3)	Log harvesting
4)	Logging
5)	Pulpwood logging camps
6)	Rails, rough wood, manufacturing
7)	Stump removing in the field
8)	Timber piling
9)	Timber pole cutting
10)	Tree chipping in the field
11)	Wood chipping in the field

Timber Tract Operations: 113110 [Agriculture, Forestry, Fishing and Hunting Sector: 11]

Description

This industry comprises establishments primarily engaged in the operation of timber tracts for the purpose of selling standing timber.

Cross-Reference

Establishments primarily engaged in	
1)	Acting as lessors of land with trees as real estate property--are classified in Industry 531190, Lessors of Other Real Estate Property;
2)	Growing short rotation woody trees (i.e., growing and harvesting cycle is 10 years or less)--are classified in U.S. Industry 111421, Nursery and Tree Production; and
3)	Cutting timber--are classified in Industry 113310, Logging.

Index Items

1)	Timber tract operations
----	-------------------------

Employment, Hours, and Earnings from the Current Employment Statistics survey (National)

Series Id: CES1011330001
Seasonally Adjusted
Super Sector: Mining and logging
Industry: Logging
NAICS Code: 1133
Data Type: ALL EMPLOYEES, THOUSANDS

Series IDs

ENUUS000105113
ENUUS0001051131
ENUUS00010511311
ENUUS000105113110
ENUUS0001051132
ENUUS00010511321
ENUUS000105113210
ENUUS0001051133
ENUUS00010511331
ENUUS000105113310

Original data

Previous FRA reporting cycles included this data:

The information on employment in forestry is useful in identifying trends, especially in the context of public expectations, government policies, industry developments and socio-economic dependence.					
FRA 2010 Category	Employment (1000 years FTE)				
	1990	2000	2005		

Employment in primary production of goods	244.7	221.1	184.4		
...of which paid employment	237.4	214.5	178.9		
...of which self-employment	7.3	6.6	5.5		
Employment in management of protected areas	ID	ID	8.7		
Units and reporting years					
Unit of reporting	1000 person-years of full time employment				
Reporting years	1990 and 2000				
Reporting table template					
FRA 2005 Category	Employment (1000 person-years)				
	1990	2000			
Primary production of goods	244.7	221.1			
Provision of services	54.8	49.6	0.224152		
Unspecified forestry activities	11.1	10.0	0.045183		
TOTAL	310.6	280.7			
aU.S. Department of Labor, Bureau of Labor Statistics.					
Sawmills and Planning Mills (General): 312421 & Logging: 312410					
bU.S. Department of Labor, Bureau of Labor Statistics.					
Fallers: 45-4021 & Logging Equipment Operators: 45-4022 & Log Graders and Scalers: 45-4023					
cU.S. Department of Labor, Bureau of Labor Statistics.					
Forest and Conservation Workers: 45-4011					
ID Insufficient Data					
[1] Diameter at breast height (DBH) refers to diameter over bark measured at a height of 1.30 m above ground level or immediately above buttresses if these are higher than 1.30 m.					
[2] IPCC, Good Practice Guidance for Land Use, Land-Use Change and Forestry (to be published during 2004)					

Data obtained on 4/28/17 at <http://www.bls.gov/iag/tgs/iag113.htm#workforce>

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1947	89.8	89.7	91.2	90.8	96	96	96	93.4	94.1	93.8	90.2	89	92.5
1948	79.5	81.4	78.3	73.6	77	88.3	95.4	97.5	96.2	97.5	92.7	82.6	86.7

1949	72.8	73.2	75.5	73.1	80.2	81.2	80.3	80.7	77.1	83.4	83.5	80.6	78.5
1950	59.4	65.2	78.8	78.8	90.5	99.9	103	106.7	105.6	106.3	105.4	98.6	91.5
1951	91.8	90.6	88.1	97.8	110.1	115.3	112	112.8	118.6	117.9	115.1	106.5	106.4
1952	85.1	90.8	88.8	91	77.5	99.5	118	118.7	112	104.9	101.9	93.7	98.5
1953	80.5	83.3	93.6	96.5	105.3	111.4	104.9	108	102.9	100.2	97.3	79.2	96.9
1954	65.1	73.6	81.7	81.6	97.8	105.6	88.4	89.8	94.2	109.1	108.5	95.6	90.9
1955	79.1	76	72.2	75.5	88.4	104	106.7	109.1	106.7	104.2	98.7	89.5	92.5
1956	87.4	87.9	74	91.4	104.1	115.4	116.6	117.1	111.6	105	97.3	89.5	99.8
1957	79.4	76.5	73.7	76.3	88.8	98.6	97.3	97	91.9	89.5	85.3	80.7	86.3
1958	76.4	74.1	71.4	73.3	84.5	95	97.3	98.9	98.2	96.8	91.5	88.5	87.2
1959	81.6	78.5	78.8	82.9	93.6	104.2	106.3	107.3	104.3	101.5	98.3	95.1	94.4
1960	85.4	83.7	80.9	83.6	92.1	103.9	104.7	101.4	99.1	94	86	77.4	91
1961	74.1	72.1	69.4	74.9	84.3	97	96.9	97.3	93.9	90.7	85.6	78.4	84.6
1962	74	74.5	69.8	74.8	82.3	92.5	94.3	95.2	91.9	88.5	85.5	79.7	83.6
1963	76.1	74	72.7	75.3	84.4	80.2	84.4	91.4	95.8	92.8	90.1	84.7	83.5
1964	78.7	78.6	74.1	78.7	86.4	94.8	97.5	98.8	96.6	93.8	90.4	84.4	87.7
1965	74.3	77.6	77.8	79.9	85.8	90.2	92.3	90.7	88.8	86.7	84.5	81.2	84.2
1966	74.1	74.4	74.3	74.6	79.4	89.3	88.4	88.6	85.5	84.4	82.9	77.2	81.1
1967	76.3	76.1	73.8	73.7	77.8	90	88.8	86.4	85	83.5	82.1	79.7	81.1
1968	76.5	75.7	74.5	71.7	75.2	82.4	85.8	85.1	83.6	82.3	78.3	78	79.1
1969	71.5	72.1	72.5	68.2	75.8	85.4	87.6	87.8	84.3	80.5	78.2	77.2	78.4
1970	72.6	71.3	69.5	66.9	68.4	75.4	74.5	73.3	71.9	70	66.7	62.8	70.3
1971	60.3	60.7	59.5	62.5	67.4	75.1	77.4	77.8	77	74.9	71.1	65.6	69.1
1972	61.8	63.1	62.1	59.4	61.7	75.7	75.6	76.1	75.2	74.5	73.3	69.7	69
1973	68.5	71	70.7	70.5	72.9	78.4	80.2	81	81.3	81.2	79.4	76	75.9
1974	74.2	78.2	76	77	79.4	86.5	88.2	88.4	85	82.3	79.3	74.4	80.7
1975	69.1	68.5	66.2	63.1	69.1	77.8	80	79.3	78.5	79.4	76	75.4	73.5
1976	74.1	75.3	72.3	73.5	77.8	83.9	86	87.4	87.9	87.8	86.1	86.1	81.5
1977	80.2	80.7	78.4	79.3	82.6	88.5	87.8	90.2	89.7	87.4	84.6	81.3	84.2
1978	79	79.3	79.3	79.3	81.4	88.7	90.4	90.2	89.8	88.8	86.6	85.2	84.8
1979	82.6	83.2	82.2	79.7	84.9	92.9	94.7	95.8	93.7	93.8	90.5	88.3	88.5

1980	83.9	84.9	81.6	78.4	82.3	88.5	93.5	95.7	95.2	92.8	89.2	83.9	87.5
1981	78.7	77.8	75.4	76.1	81.4	84.8	87.9	87.1	90.1	86.3	83.1	76.5	82.1
1982	69.5	70.3	67.7	67.1	71	78.1	81.7	82.5	84.1	81	77.8	73.9	75.4
1983	70.3	71	69.8	72.1	77.8	86.8	90	93.7	94.2	94.1	90.6	84.9	82.9
1984	81.4	81.5	79.8	78.5	83.8	92.1	94.6	95.8	96	93.2	88.7	84.8	87.5
1985	81.1	80.6	79.2	75.2	80.8	87.3	89.7	91.6	91	89.9	85.9	81	84.4
1986	79.3	78.1	75.6	73.9	77.9	85.3	86.9	91.5	93.7	92.1	89.6	85	84.1
1987	79.7	80.1	78.3	77.1	82.4	87.4	91.3	91.8	92.2	88.9	90.1	85.9	85.4
1988	87.7	87.7	81.6	80.7	83.8	89.8	91.8	92.3	89	92.3	90.6	88.1	88
1989	84.8	84.3	80.6	79	83.5	89.1	91.8	92.1	91	90.7	89.2	86.5	86.9
1990	84.2	82.3	80.8	80.4	83.5	87.1	89.3	89.6	88.7	87.3	82.1	79.4	84.6
1991	76.8	77.5	73.7	71.4	74.3	79.2	82.7	84	83.7	82.2	80.1	78.3	78.7
1992	76.4	75.5	74.2	72.9	76.1	79.5	82.4	81.8	82.1	82.7	80.8	79.4	78.7
1993	76.8	79.1	75.7	72.8	76.4	81.5	84.9	85.6	86.5	86.3	84.3	82.2	81
1994	80.6	80.8	78.6	75.9	79.3	82.9	85.9	86	85.4	84.2	83.3	81.4	82
1995	81	80.5	77.8	75.2	77.3	82.5	84.5	86.5	86.9	87.7	85.1	84.7	82.5
1996	80.4	80	78.2	75.6	77.3	81.3	82.9	84.5	83.4	82.6	81.4	80.3	80.7
1997	79.6	79	76.9	76.7	78.9	82.8	84.8	86.3	87	86.3	84.4	82.9	82.1
1998	78.4	77.3	74.9	73.8	77.1	80.8	82.7	83.8	83.9	83.8	82.1	81.6	80
1999	78	77.6	75.3	73	77.1	81.5	85.8	86.4	85.1	86.4	83.5	79.9	80.8
2000	78.2	78.2	74.1	71.4	75.5	80.1	83.5	83.3	83.2	83.2	80.6	76.2	79
2001	74.5	70.9	68.7	66.5	70.4	75.4	76.3	78.1	76.7	76.9	75.2	72.1	73.5
2002	69.1	69.3	66.5	65	67.9	71	71.9	73.1	73.5	72.9	72.9	71.5	70.4
2003	68.4	68.5	64.2	62.1	66.2	71.6	71.4	72.3	72.4	73.8	72.8	69.3	69.4
2004	65.4	65	64.3	63.8	66.4	68.1	69.6	70.4	71.4	70.4	68.7	67.4	67.6
2005	65.3	65	63.7	58.8	62.1	64.9	67.3	68.2	68.3	67.9	66.4	65	65.2
2006	63.3	62.9	62.1	60.7	64.4	66.1	67.3	67	66	65.4	64.2	62.9	64.4
2007	60.6	60.2	58.8	56.9	58.3	61.7	61.4	61.7	61.6	60.5	60.3	59.6	60.1
2008	57.8	56.5	55	54.5	55.3	55.2	56.8	57.9	58.4	58.9	57.3	55	56.6
2009	53.3	52.9	47.7	46.1	47.7	49.4	50.6	52	53.8	52.4	50.3	49.1	50.4
2010	47.9	48.1	47.7	47.4	49.2	50.3	51.9	53.1	51.9	51.9	49.6	47.5	49.7

2011	47.5	48.1	48.1	45	46.6	47.7	50.4	50.6	50.7	49.6	50.4	49.3	48.7
2012	49	48.2	47.2	45.4	49.6	51.4	53	53.6	54.4	53.9	52.6	51.8	50.8
2013	48.9	49.5	49	48.7	50.4	52.2	52.4	53.8	54.6	54.2	54.8	52.7	51.76666667
2014	51.5	49.9	50	48	49.4	51.8	53.5	54.4	54.4	54.6	53.9	52.4	51.98333333
2015	51.6	50.9	50.7	49.3	51.1	52.7	54.2	55.3	54	54.3	52.6	52.1	52.4
2016	50.5	51.1	50.4	47.9	49.9	52.1	52.8	52.8	52.2	52.4	51.8	50.3	51.18333333

Quarterly Census of Employment and Wages																		
Years:	2001 to 2018																	
Series ID	Annual 2001	Annual 2002	Annual 2003	Annual 2004	Annual 2005	Annual 2006	Annual 2007	Annual 2008	Annual 2009	Annual 2010	Annual 2011	Annual 2012	Annual 2013	Annual 2014	Annual 2015	Annual 2016	Annual 2017	
ENUUS000105113	77420	75135	72828	72183	71224	68490	65563	61825	55235	56152	55665	55497	56363	56902	57800	56733	54044	
ENUUS0001051131	3925	3699	3675	3568	3748	3758	3666	3857	3633	3571	3630	3649	3747	3736	3644	3268	3063	
ENUUS00010511311	3925	3699	3675	3568	3748	3758	3666	3857	3633	3571	3630	3649	3747	3736	3644	3268	3063	
ENUUS000105113110	3925	3699	3675	3568	3748	3758	3666	3857	3633	3571	3630	3649	3747	3736	3644	3268	3063	
ENUUS0001051132	2432	2732	2509	2572	2607	2472	2437	2486	2914	2949	3078	2974	2406	2195	2391	2114	2209	
ENUUS00010511321	2432	2732	2509	2572	2607	2472	2437	2486	2914	2949	3078	2974	2406	2195	2391	2114	2209	
ENUUS000105113210	2432	2732	2509	2572	2607	2472	2437	2486	2914	2949	3078	2974	2406	2195	2391	2114	2209	
ENUUS0001051133	71063	68704	66644	66044	64870	62260	59461	55482	48687	49632	48957	48874	50210	50971	51765	51352	48771	
ENUUS00010511331	71063	68704	66644	66044	64870	62260	59461	55482	48687	49632	48957	48874	50210	50971	51765	51352	48771	
ENUUS000105113310	71063	68704	66644	66044	64870	62260	59461	55482	48687	49632	48957	48874	50210	50971	51765	51352	48771	

Quarterly Census of Employment and Wages

Series Id: ENUUS0001051153 **Series Title:** All Employees in Private NAICS 1153 Support activities for forestry for All establishment sizes in U.S. TOTAL, NSA **State:** U.S. TOTAL **Area:** U.S. TOTAL **Industry:** NAICS 1153 Support activities for forestry **Owner:** Private **Size:** All establishment sizes **Type:** All Employees

Download:

Year	Annual
2001	16309
2002	16463
2003	16421
2004	15532
2005	15493
2006	15709

Year	Annual
2007	15697
2008	15655
2009	14282
2010	14033
2011	13825
2012	14173
2013	14462
2014	15191
2015	15295
2016	15153
2017	16752

FRA 2020 categories	Full-time equivalents (1000 FTE)											
	1990			2000			2010			2015		
	Total	Female	Male	Total	Female	Male	Total	Female	Male	Total	Female	Male
Employment in forestry and logging				100.30			70.06			72.78		
...of which silviculture and other forestry activities				3.90			3.61			3.48		
...of which logging	83.30			77.70			49.60			51.90		
...of which gathering of non wood forest products				2.40			2.80			2.20		
...of which support services to forestry				16.30			14.05			15.20		

Comments

The numbers reported here differ from (and are substantially lower than) numbers included in previous FRA reports because previously, sawmills and wood preservation (NAICS 313211) were included and here they are excluded as directed in the FAQ provided by UN FAO:

Should we include people working in sawmills in the forest?

Generally, people working in sawmill and woodworking industries should not be included. However, small scale work with portable sawmills is a borderline case and countries may decide to include such employment, but if so, a comment should be provided in the report.

7b Graduation of students in forest-related education

National Data

Data sources + type of data source eg NFI, etc

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS). Extracted September 2018

The primary federal entity for collecting and analyzing data related to education in the U.S. and other nations. The higher education data is housed in the [Integrated Postsecondary Education Data System \(IPEDS\)](#). IPEDS provides data on enrollments, program completions, faculty, staff, and finances. These data come from surveys of all institutions and educational organizations whose primary purpose is to provide postsecondary education. IPEDS is the core postsecondary education data collection program of the [National Center for Education Statistics](#) (NCES). NCES provides summaries of IPEDS data in the [Digest of Education Statistics](#). Please note that some information may not be up to date, as this information is processed and analyzed after schools provide their reports.

National classification and definitions

Degrees included in the analysis are all graduates in the following Natural Resources and Conservation fields, and related agricultural fields:

Natural resources and conservation
Natural resources/conservation, general
Environmental studies
Environmental science
Environmental science/studies
Natural resources conservation and research, other
Natural resources management and policy
Natural resource economics
Water, wetlands, and marine resources management
Land use planning and management/development
Natural resources management and policy, other
Fishing and fisheries sciences and management
Forestry, general
Forest sciences and biology
Forest management/forest resources management
Urban forestry
Wood science and wood products/pulp and paper technology
Forest resources production and management
Forest technology/technician
Forestry, other
Wildlife and wildlands science and management
Natural resources and conservation, other

Original data

Calculations									
Bachelor's degrees requiring Doctor's degrees									
4 or 5 years Master's degrees (Ph.D., Ed.D., etc.)									
Field of study									
Total Men Women Total Men Women Total Men Women									
1 2 3 4 5 6 7 8 9 10									
1990 (ED Stats 1991-1992)									
Conservation and renewable natural resources, total 4,649 3,093 1,556 1,456 911 545 265 215 50									
Natural resources conservation, general 2,005 1,130 875 627 362 265 72 50 22									
Natural resources management and policy 280 186 94 101 67 34 3 3 0									
Fishing and fisheries sciences and management 183 153 30 88 62 26 21 18 3									
Forest harvesting and production technology/technician 191 160 31 21 19 2 20 17 3									
Forestry, general 946 749 197 423 282 141 123 105 18									
Wildlife and wildlands management 808 571 237 127 83 44 15 13 2									
Conservation and renewable natural resources, other 236 144 92 69 36 33 11 9 2									
2000 (ED Stats 00-01)									
Conservation and renewable natural resources, total 9029 5066 3963 2194 1114 1080 371 245 126									
Natural resources conservation, general 5277 2569 2708 1247 574 673 154 95 59									
Natural resources management and policy 486 287 199 162 97 65 4 2 2									
Fishing and fisheries sciences and management 144 101 43 66 38 28 23 19 4									
Forest harvesting and production technology/technician 185 128 57 19 14 5 14 12 2									
Forestry, general 1403 1080 323 505 297 208 137 91 46									
Wildlife and wildlands management 1078 653 425 153 74 79 22 15 7									
Conservation and renewable natural resources, other 456 248 208 42 20 22 17 11 6									
2010									
Natural resources and conservation 12766 6850 5916 3283 1552 1731 554 307 247									
Natural resources/conservation, general 1302 733 569 490 203 287 74 34 40									

Environmental studies							4298	2013	2285	681	293	388	50	25	25
Environmental science							3638	1791	1847	780	341	439	108	45	63
Natural resources conservation and research, other							5	1	4	27	12	15	3	1	2
Natural resources management and policy							494	276	218	410	184	226	46	29	17
Natural resource economics							37	23	14	8	6	2	7	1	6
Water, wetlands, and marine resources management							73	39	34	82	27	55	0	0	0
Land use planning and management/development							50	28	22	68	40	28	10	5	5
Natural resource recreation and tourism							55	39	16	0	0	0	0	0	0
Natural resources law enforcement and protective services							31	29	2	0	0	0	0	0	0
Natural resources management and policy, other							229	122	107	15	7	8	0	0	0
Fishing and fisheries sciences and management							243	162	81	62	33	29	27	15	12
Forestry, general							526	399	127	310	186	124	74	47	27
Forest sciences and biology							157	132	25	89	66	23	41	30	11
Forest management/forest resources management							115	100	15	35	18	17	6	4	2
Urban forestry							26	13	13	12	8	4	1	1	0
Wood science and wood products/pulp and paper technology							86	74	12	25	19	6	11	7	4
Forest resources production and management							5	4	1	12	10	2	9	5	4
Forest technology/technician							9	6	3	0	0	0	18	13	5
Forestry, other							47	40	7	19	13	6	10	8	2
Wildlife and wildlands science and management							1125	692	433	144	79	65	45	31	14
Natural resources and conservation, other							215	134	81	14	7	7	14	6	8
2015															
Natural resources and conservation							17,546	8,766	8,780	3,848	1,736	2,112	662	358	304
Natural resources/conservation, general							1,271	668	603	422	200	222	102	56	46
Environmental studies							6,033	2,598	3,435	1,039	420	619	94	43	51
Environmental science							5,928	2,895	3,033	1,001	408	593	201	96	105
Natural resources conservation and research, other							58	32	26	53	27	26	20	13	7
Natural resources management and policy							653	363	290	515	237	278	31	18	13
Natural resource economics							75	43	32	14	8	6	8	5	3
Water, wetlands, and marine resources management							89	47	42	148	62	86	1	1	0

Land use planning and management/development									49	36	13		46	25	21	1	1	0	
Natural resource recreation and tourism									47	31	16		38	18	20	1	1	0	
Natural resources law enforcement and protective services									40	34	6		0	0	0	0	0	0	
Natural resources management and policy, other									273	156	117		25	11	14	0	0	0	
Fishing and fisheries sciences and management									352	217	135		38	18	20	23	10	13	
Forestry, general									532	416	116		121	74	47	42	26	16	
Forest sciences and biology									196	168	28		137	80	57	64	37	27	
Forest management/forest resources management									155	133	22		43	27	16	9	6	3	
Urban forestry									16	10	6		5	2	3	3	3	0	
Wood science and wood products/pulp and paper technology									69	48	21		11	6	5	10	9	1	
Forest resources production and management									9	9	0		23	18	5	11	7	4	
Forest technology/technician									1	1	0		0	0	0	0	0	0	
Forestry, other									57	42	15		12	5	7	4	3	1	
Wildlife, fish, and wildlands science and management									1,460	735	725		134	80	54	34	21	13	
Natural resources and conservation, other									183	84	99		23	10	13	3	2	1	
ASSOCIATES DEGREES																			
FRA 1990 (89-90)																			

Agriculture and natural resources, total 5,460 5,029 4,725 4,832 4,910 1,768 1,658 1,655 1,600 1,588																	
Agricultural business and production 3,655 3,003 2,884 2,894 2,905 1,182 960 969 930 962																	
Agricultural sciences 808 1,015 963 925 879 436 543 543 507 444																	
Conservation and renewable natural resources . 997 1,011 878 1,013 1,126 150 155 143 163 182																	
FRA 2000 (2000-2001)																	
Less than 1-year awards 1- to less than 4-year awards Associate degrees																	
Field of study																	
Total Men Women Total Men Women Total Men Women																	
1 2 3 4 5 6 7 8 9 10																	
Total 146,404 69,189 77,215 141,897 64,567 77,330 578,865 231,645 347,220																	
Agriculture and natural resources, total 2,751 1,998 753 1,987 1,372 615 6,649 4,282 2,367																	
Agricultural business and production 2,122 1,621 501 1,766 1,224 542 4,221 2,671 1,550																	
Agricultural sciences 414 211 203 88 53 35 979 482 497																	
Conservation and renewable natural resources . 215 166 49 133 95 38 1,449 1,129 320																	
FRA 2010 (09-10)																	

Natural resources and conservation	1,374	1,449	1,369	1,318	1,324	1,267	1,210	1,200		1,184	1,199		1,279		927	352				
FRA 2015 (14-15)																				
Discipline division	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15									
											Total		Males	Females						
1	2	3	4	5	6	7	8	9	10	11	12		13	14						
Total	696,660	713,066	728,114	750,164	787,243	848,856	943,506	1,021,718	#####	1,005,155	1,013,971		396,613	617,358						
Agriculture and natural resources	6,404	6,168	5,838	5,738	5,724	5,852	6,430	7,068	6,826	7,057	7,693		4,902	2,791						
Agriculture, agriculture operations, and	5,137	4,958	4,638	4,554	4,525	4,615	4,925	5,400	5,227	5,420	5,975		3,652	2,323						
related sciences																				
Natural resources and conservation	1,267	1,210	1,200	1,184	1,199	1,237	1,505	1,668	1,599	1,637	1,718		1,250	46						

FRA 2020 categories	Number of graduated students											
	1990			2000			2010			2015		
	Total	Female	Male	Total	Female	Male	Total	Female	Male	Total	Female	Male
Doctoral degree	265.00	50.00	215.00	371.00	126.00	245.00	554.00	247.00	307.00	662.00	304.00	358.00
Master's degree	1 456.00	545.00	911.00	2 194.00	1 080.00	1 114.00	3 283.00	1 731.00	1 552.00	3 848.00	2 112.00	1 736.00
Bachelor's degree	4 649.00	1 556.00	3 093.00	9 029.00	3 963.00	5 066.00	12 766.00	5 916.00	6 850.00	17 546.00	8 780.00	8 766.00
Technician certificate / diploma	1 013.00	163.00	850.00	1 449.00	320.00	1 129.00	1 279.00	352.00	927.00	1 718.00	46.00	1 250.00
Total	7 383.00	2 314.00	5 069.00	13 043.00	5 489.00	7 554.00	17 882.00	8 246.00	9 636.00	23 774.00	11 242.00	12 110.00

Comments

7c Non wood forest products removals and value 2015

National Data

Data sources + type of data source eg NFI, etc

Chamberlain, James; Teets, Aaron; Kruger, Steve. 2018. Nontimber forest products in the United States: an analysis for the 2015 National Sustainable Forest Report. e-Gen. Tech. Rep. SRS-229, Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station. 36p.

National classification and definitions

Medicinal plants, food and forage species, Christmas trees - products of biological origin other than wood, derived from forests

Original data

From previous FRA

Rank	Name of product	Key species	Commercial value of NWFP removals in 2010 (value 1000 local currency	NWFP category
1 st	Christmas Trees	Mixed Softwoods	1,070,000	8
2 nd	*Pecans (shelled or in-shell)	<i>Carya illinoensis</i>	492,714	1
3 rd	Honey	Mixed	257,000	11
4 th	Maple Syrup	<i>Acer saccharum</i>	106,000	1
5 th	*Foliage, moss, lichens, branches or other parts for ornamental purposes	Mixed	118,932	6
6 th	*Blueberries	<i>Vaccinium spp.</i>	79,946	1
7 th	Furbearing Animals	Mixed	40,603	10
8 th	*Ginseng	<i>Panax quinquefolius</i>	35,163	3
9 th	*Gum, wood, turpentine oils	Mixed softwoods	32,863	7
10 th	Cranberries and other fruits from the genus <i>Vaccinium</i> (excluding blueberries)	<i>Vaccinium spp.</i>	21,293	1
TOTAL			2,254,514	

	Name of NWFP product	Key species	Quantity	Unit	Value (1000 local currency)	NWFP category
#1	Arts, Crafts, and Florals	mixed	5 645 532	Pounds	69 000	8 Other plant products
#2	Christmas trees	mixed softwoods	212 744	each	47 700	8 Other plant products
#3	Edible fruits, nuts, and sap	mixed	670 726	pounds*	30 700	1 Food
#4	Grass and forage	mixed	4 120 983	pounds	10 800	2 Fodder
#5	Regeneration and seed	mixed	333 781	pounds	49 000	6 Ornamental plants
#6	Landscaping	mixed	46 499	each	2 800	6 Ornamental plants
#7	Herbs and medicinals	mixed	42 650	pounds	1 700	3 Raw material for medicine and aromatic products
#8						
#9						
#10						
All other plant products						
All other animal products						
Total					211 700	

Name of currency	USD
------------------	-----

Comments

Quantities are listed by the unit that represented the largest volume of a product in a particular category - for example, edible fruits, nuts, and sap quantities are collected as pounds, gallons, and number of taps and I couldn't list the quantities of all three of those, so I used the largest category

These constitute first point-of-sale values, which is why they are so different from prior numbers, which were export dollars.

These are considered to be vast underestimates of Nonwood forest product harvesting in the United States, as much (if not most) is not currently tracked, particularly on privately owned land.

8 Sustainable Development Goal 15

8a Sustainable Development Goal 15

SDG Indicator 15.1.1 Forest area as proportion of total land area 2015

Indicator	Percent							
	2000	2010	2015	2016	2017	2018	2019	2020
Forest area as proportion of total land area 2015	33.18	33.75	33.90	33.90	33.87	33.87	33.87	33.87

Name of agency responsible	
----------------------------	--

SDG Indicator 15.2.1 Progress towards sustainable forest management

Sub-Indicator 1	Percent						
	2000-2010	2010-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
Forest area annual net change rate	0.17	0.09	0.00	-0.10	0.00	0.00	0.00

Name of agency responsible	
----------------------------	--

Sub-Indicator 2	Forest biomass (tonnes/ha)							
	2000	2010	2015	2016	2017	2018	2019	2020
Above-ground biomass stock in forest	84.88	89.76	92.63	93.38	94.04	94.67	94.67	94.67

Name of agency responsible	
----------------------------	--

Sub-Indicator 3	Percent (2015 forest area baseline)							
	2000	2010	2015	2016	2017	2018	2019	2020
Proportion of forest area located within legally established protected areas	6.71	9.75	9.60	10.23	10.23	10.23	10.23	10.23

Name of agency responsible	
----------------------------	--

Sub-Indicator 4	Percent (2015 forest area baseline)							
	2000	2010	2015	2016	2017	2018	2019	2020
Proportion of forest area under long-term forest management plan	63.10	67.44	68.11	67.52	67.52	67.52	67.52	67.52

Name of agency responsible	
----------------------------	--

Sub-Indicator 5	Forest area (1000 ha)							
	2000	2010	2015	2016	2017	2018	2019	2020
Forest area under independently verified forest management certification schemes	2 276.65	35 989.61	37 870.74	38 265.10	38 167.86	38 731.48	—	—