



Food and Agriculture  
Organization of the  
United Nations

# Global Forest Resources Assessment 2020

Report

**Japan**

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.

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# Introduction

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## Introductory text

This report presents data based on “the Survey on the State of Forest Resources”, “the third stage of the National Forest Inventory of Japan” and other statistics relevant to forest and forestry, including “National Forest Management Statistics”.

The Survey on the State of Forest Resources is carried out every five years aiming to gather basic information to establish the “Nation-wide Forest Plan”. The latest survey was conducted in 2017. Data was collected by the Forestry Agency, Ministry of Agriculture, Forestry and Fisheries on national forests and by prefectures on private forest covering all the forests including privately owned forests. The data was aggregated by the Forestry Agency.

The National Forest Inventory of Japan was first conducted in 1999 by the Forestry Agency with the aim of supplementing conventional forest data as well as providing data for the Montreal Process reporting. A wide range of information, including vegetation and endangered species, is collected in the survey in every five years on approximately 13,000 sites at all grid points of 4 km intervals. The third stage of NFI was conducted from 2009-2013.

# 1 Forest extent, characteristics and changes

## 1a Extent of forest and other wooded land

### National Data

#### Data sources + type of data source eg NFI, etc

#	References to sources of information	Variable(s)	Year(s)	Additional comments
1	Forestry Agency “Survey on the State of the Forest Resources”	Forest,	1990 1995 2002 2007 2012 2017	As of 31 March of each year. Data do not include figures for the Northern Territories (Habomai Islands, Shikotan Island, Kunashiri Island and Etorofu Island).
2	FAOSTAT	Total area of the country		
3	The third stage of the National Forest Inventory of Japan		2009-2013	

#### National classification and definitions

National class	Definition
Forest	<p>Land on which trees and/or bamboo grow collectively, together with those trees and bamboo, or any other land that are provided for collective growth of trees and/or bamboo. Lands that are utilized mainly for agriculture, residential use, or other similar purposes, are not included.</p> <p>Forests are classified into the following two categories:</p> <ol style="list-style-type: none"> <li>1. National forest: Forest where land is owned by the national government, or where land is owned by other party but the national government implements silviculture under a contract which defines the share of profit between the national government and landowner(s).</li> <li>2. Private forest: Forest other than national forest, including forests that are owned publicly such as by local/prefectural governments but not by the national government.</li> </ol> <p>Lands with trees and/or bamboo are not included in forests if:</p> <p>a) Owned and managed by national government agencies other than the Forestry Agency (since the land is not provided mainly for growing trees and/or bamboo); or</p> <p>b) Spanning not more than 0.3 hectares and isolated from adjacent forests</p>

#### Original data

Area (1000ha)						
	1990	1995	2002	2007	2012	2017
Forest	24,950	24,898	24,868	24,979	24,958	24,935
Other Wooded Land	0	0	0	0	0	0

## Analysis and processing of national data

### Estimation and forecasting

#### Forest area

(1) Forest area for 2000 was estimated by a simple proportional interpolation of data for 1995 and 2002, i.e.,

$$E_{2000} = D_{1995} \times 2 / 7 + D_{2002} \times 5 / 7$$

where

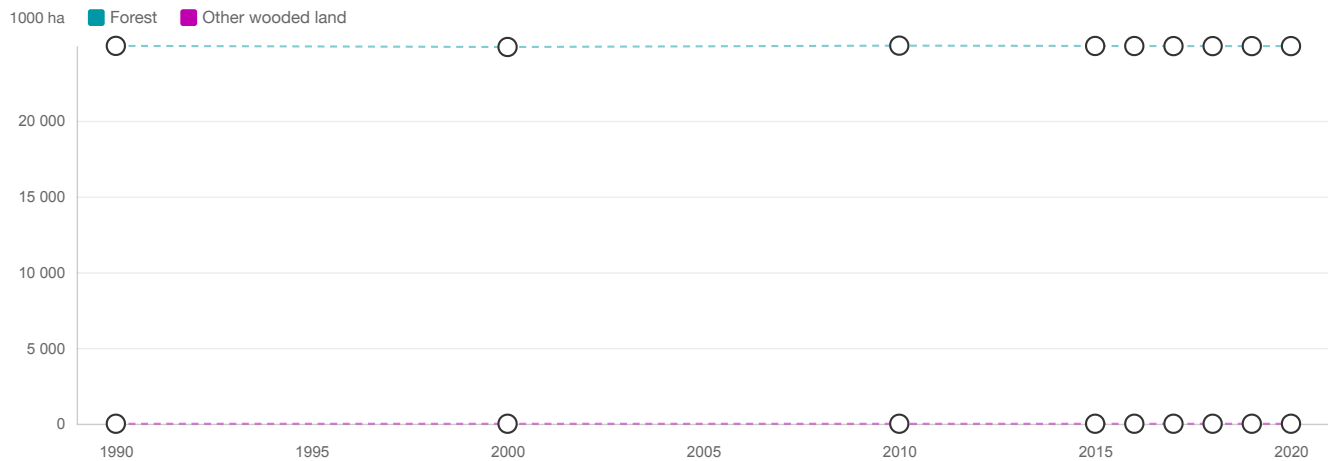
E<sub>2000</sub> = Estimation for year 2000

D<sub>1995</sub>, D<sub>2002</sub> = Data for years 1995 and 2002

- (2) Forest area for 2010, 2015 and 2016 was estimated by a same simple proportional interpolation of data for 2007, 2012, and 2017.
- (3) Forest area in the latest year is inserted to for 2018-2020, since the Forest and Forestry Basic Plan (formulated in 2016) stipulates that the forest area of Japan is maintained at certain level for the foreseeable future.

**Reclassification into FRA 2020 categories**

FRA 2020 Categories	National Reporting Classes
Forest	“Forest” as per Japan’s definition
Other wooded land	No figures are presented because of the lack of data
Other land	“TOTAL” minus “Forest”



FRA categories	Area (1000 ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Forest (a)	24 950.00	24 876.00	24 966.00	24 944.00	24 940.00	24 935.00	24 935.00	24 935.00	24 935.00
Other wooded land (a)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other land (c-a-b)	11 506.00	11 580.00	11 490.00	11 512.00	11 516.00	11 521.00	11 521.00	11 521.00	11 521.00
Total land area (c)	36 456.00	36 456.00	36 456.00	36 456.00	36 456.00	36 456.00	36 456.00	36 456.00	36 456.00

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

Climatic domain	% of forest area 2015	Override value
Boreal	0.00	
Temperate	50.00	
Sub-tropical	50.00	
Tropical	0.00	

Comments

Category	Comments related to data, definitions, etc.
Forest	Forest does not include those in the Northern Territories.
Other wooded land	Available data do not allow for estimating the area of other wooded land. Any areas of other wooded land are included either under forest or under other land.

- Data in FAOSTAT does not specify whether the figure of country area includes the Northern Territories or not. Presumably it does since the figure is close to that of Japan’s national statistics including the Northern Territories. In addition, figures for Other land would include those of Forest in the Northern Territories. For this reason, the rate of forest cover in Japan would not be correct if calculated by dividing Forest area by TOTAL area in this table.
- According to the third stage of the National Forest Inventory of Japan (from 2009 to 2013), the types of forest ecosystems in Japan were as follows: 50% of forests where coniferous tree species are dominant, 44% of forests where broad-leaved tree species are dominant, and 6% of other forests. Among them, coniferous forests are composed of 20% Japanese cedar (Cryptomeria japonica) and 10% Japanese cypress (Chamaecyparis obtuse); broad-leave forests are composed of 10% Japanese oaks (Quercus spp.) and 4% beech (Fagus crenata) and evergreen tree species among Japanese chinquapin and oak (Castanopsis Quercus).



# 1b Forest characteristics

## National Data

Data sources + type of data source eg NFI, etc

References to sources of information	Variable(s)	Year(s)	Additional comments
Forestry Agency “Survey on the State of Forest Resources”	Planted forest, Natural forest, Bamboo forest, Forest without standing tress	1990 1995 2002 2007 2012 2017	As of 31 March of each year. Data do not include figures for the Northern Territories (Habomai Islands, Shikotan Island, Kunashiri Island and Etorofu Island)
The third stage of the National Forest Inventory of Japan		2009-2013	

## National classification and definitions

National class	Definition
Planted forest	Forest with standing trees established through planting or seeding, with the proportion of standing trees of target species for such planting/seeding consisting 50 percent or higher.
Natural forest	Forest with standing trees other than planted forest
Bamboo forest	Forest that does not fall under “forest with standing tree” and is dominated by bamboo (excluding bamboo grass).
Forest without standing trees	Forest that does not fall under “forest with standing tree” or “bamboo forest”. This category includes areas that are temporarily under-stocked and are expected to regenerate.
Forest with standing trees	Forest that has canopy cover of 30 percent or higher. Young stands with the degree of stocking of 0.3 or higher are included.

## Original data

	Area (1000 hectares)					
	1990	1995	2002	2007	2012	2017
Planted forest	10,287	10,356	10,321	10,326	10,270	10,184
Natural forest of 81 years or older	3,764	3,517	4,269	4,568	4,905	5,346
Natural forest of 80 years or younger	9,591	9,704	8,916	8,744	8,443	8,055
Bamboo forest	149	150	154	156	159	164
Forest without standing trees	1,159	1,171	1,208	1,185	1,181	1,185
Total	24,950	24,898	24,868	24,979	24,958	24,935

Total may not coincide with the aggregate of indivisual figures because of the rounding.

## Analysis and processing of national data

### Estimation and forecasting

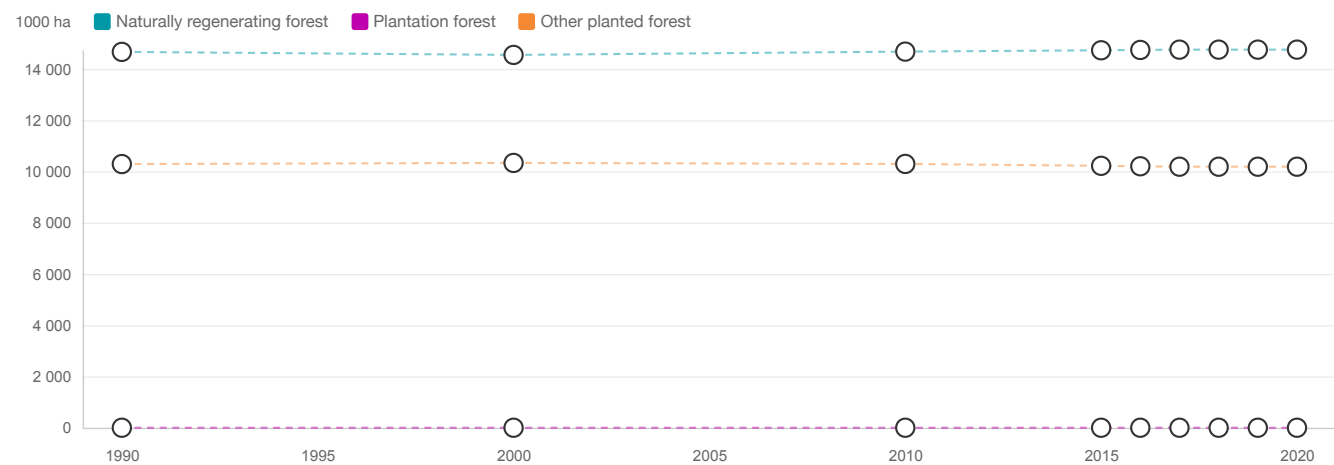
Estimation for 2000, 2010, and 2015 was done with the same method used for 1a.

The data for 2018-2020 was refferd the data of 2017.

### Reclassification into FRA 2020 categories

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FRA 2020 Categories	National Reporting Classes
Naturally regenerating forest	Forest area other than “Planted forest” as per Japan’s definition
Other Planted forest	“Planted forest” as per Japan’s definition



FRA categories	Forest area (1000 ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest (a)	14 663.00	14 545.00	14 674.00	14 726.00	14 739.00	14 751.00	14 751.00	14 751.00	14 751.00
<b>Planted forest (b)</b>	<b>10 287.00</b>	<b>10 331.00</b>	<b>10 292.00</b>	<b>10 218.00</b>	<b>10 201.00</b>	<b>10 184.00</b>	<b>10 184.00</b>	<b>10 184.00</b>	<b>10 184.00</b>
Plantation forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
...of which introduced species	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other planted forest	10 287.00	10 331.00	10 292.00	10 218.00	10 201.00	10 184.00	10 184.00	10 184.00	10 184.00
<b>Total (a+b)</b>	<b>24 950.00</b>	<b>24 876.00</b>	<b>24 966.00</b>	<b>24 944.00</b>	<b>24 940.00</b>	<b>24 935.00</b>	<b>24 935.00</b>	<b>24 935.00</b>	<b>24 935.00</b>
<b>Total forest area</b>	<b>24 950.00</b>	<b>24 876.00</b>	<b>24 966.00</b>	<b>24 944.00</b>	<b>24 940.00</b>	<b>24 935.00</b>	<b>24 935.00</b>	<b>24 935.00</b>	<b>24 935.00</b>

## Comments

Category	Comments related to data, definitions, etc.
Naturally regenerating forest	Include area of Bamboo and Forest without standing trees
Planted forest	No data are available for Plantation forest. Japan's planted forests consist mostly of native species.

- The third stage of the National Forest Inventory of Japan identified 2,970 native and 301 exotic vascular plants, 3,271 species in total. About 40% of about 8,800 vascular plant species growing in Japan are thought to be forest-associated. They are classified into 1,200 woody, 2,065 grass, and 6 unclassifiable plants. In planted forests alone, 932 woody, 1,568 grass, and two unclassifiable plants have been identified. In Japan, planted forests also play an important role as the storehouse of many species for conservation of biological diversity.
- The third stage of the National Forest Inventory of Japan identified 230 vascular plants listed in the Red List, including endangered and near-threatened species. One or more endangered or near-threatened species were found in 726 (5.4%) of the 13,380 survey plots.

# 1c Primary forest and special forest categories

## National Data

Data sources + type of data source eg NFI, etc

References to sources of information	Variable(s)	Year(s)	Additional comments
Forestry Agency “Survey on the State of the Forest Resources”	Planted forest, Natural forest, Bamboo forest, Forest without standing tress	1990 1995 2002 2007 2012 2017	As of 31 March of each year. Data do not include figures for the Northern Territories (Habomai Islands, Shikotan Island, Kunashiri Island and Etorofu Island).
The third stage of the National Forest Inventory of Japan		2009-2013	

### National classification and definitions

National class	Definition
Bamboo Forest	Forest that does not fall under “forest with standing tree” and is dominated by bamboo (excluding bamboo grass).
Primary Forest	Natural forest of 81 years or older (definision of “Natural forest” is described in table 1b)

### Original data

Refer to the original data in 1b.

## Analysis and processing of national data

### Estimation and forecasting

Estimation for 2000, 2010, and 2015 was done with the same method used for 1a.

The Data for 2020 was reffered the data of 2017.

### Reclassification into FRA 2020 categories

FRA 2020 Categories	National Reporting Classes
Bamboos	“Bamboo forest” as per Japan’s definition
Temporarily unstocked and/or recently regenerated forest	“Forest without standing trees” as per Japan’s definition described in 1.b.
Primary Forest	“Primary forest” as per Japan’s definition

FRA categories	Area (1000 ha)				
	1990	2000	2010	2015	2020
Primary forest	3 764.00	4 054.00	4 770.00	5 170.00	5 346.00
Temporarily unstocked and/or recently regenerated	1 159.00	1 197.00	1 183.00	1 183.00	1 185.00
Bamboos	149.00	153.00	158.00	162.00	164.00
Mangroves					
Rubber wood					

### Comments

- As stated in the “National classification and definitions”, Japan defines natural forest of 81 years or older (definition of “Natural forest” is described in table 1b) as Primary forest. Since Japanese forest has been maturing, the area of natural forest of 81 years or older is increasing.
- There are three typical bamboo species in Japan: Moso bamboo (Phyllostachys Heterocycla F. Pubescens), Madake (Phyllostachys bambusoides), Henon bamboo (Phyllostachys nigra var. henonis). Each species was found in 338, 322, and 82 plots of 13,380 total survey plots, according to The third stage of the National Forest Inventory of Japan.

# 1d Annual forest expansion, deforestation and net change

## National Data

Data sources + type of data source eg NFI, etc

N/A

National classification and definitions

N/A

Original data

N/A

## Analysis and processing of national data

Estimation and forecasting

N/A

Reclassification into FRA 2020 categories

N/A

FRA categories	Area (1000 ha/year)			
	1990-2000	2000-2010	2010-2015	2015-2020
Forest expansion (a)				
...of which afforestation				
...of which natural expansion				
Deforestation (b)				
Forest area net change (a-b)	-7.40	9.00	-4.40	-1.80

Comments



# 1e Annual reforestation

## National Data

### Data sources + type of data source eg NFI, etc

References to sources of information	Variable(s)	Year(s)
Forestry Agency “Handbook of Forestry Statistics”	Area of reforestation (of which on previously planted forest, of which on previously natural forest)	1990-2016

### National classification and definitions

National class	Definition
Reforestation	Same as Reforestation as per FAO’s definition.
... of which on previously planted forest	Establishment of planted forest after harvesting planted forest, including planting after thinning.
... of which on previously natural forest etc	Establishment of planted forest after harvesting natural forest or on wilderness

### Original data

(ha)	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
Reforetation on previously planted forest	24,196	22,150	22,235	27,281	27,438	29,238	22,632	21,955	22,832	20,057	19,384	18,036	16,218	
Reforestation on previously natural forest	42,943	36,106	31,771	31,666	25,370	26,331	23,386	20,641	21,986	18,425	16,524	14,421	13,871	
Total	67,139	58,256	54,006	58,947	52,808	55,569	46,018	42,596	44,818	38,482	35,908	32,457	30,089	
(ha)	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Reforetation on previously planted forest	16,570	16,984	18,701	19,993	25,093	23,792	20,641	18,023	17,714	19,816	20,162	19,172	20,618	22,421
Reforestation on previously natural forest	12,328	11,482	9,875	8,522	8,691	8,125	9,413	6,105	5,822	5,543	7,181	5,581	4,555	4,629
Total	28,898	28,466	28,576	28,515	33,784	31,917	30,054	24,128	23,536	25,360	27,343	24,753	25,173	27,050

## Analysis and processing of national data

### Estimation and forecasting

For figures for 2015-2020, the average of 2015 and 2016 data was calculated.

### Reclassification into FRA 2020 categories

None

FRA categories	Area (1000 ha/year)			
	1990-2000	2000-2010	2010-2015	2015-2020
Reforestation	50.41	30.25	25.05	26.11

Comments

# 1f Other land with tree cover

## National Data

Data sources + type of data source eg NFI, etc

#	References to sources of information	Variable(s)	Year(s)
1	“Statistics on Cultivated Land and Planted Area” Ministry Agriculture, Forestry and Fisheries	Cultivated area of fruit trees	1990-
2	“Survey on Promotion of Greenhouse Gas Sinks Measures by Urban Planting (in Japanese) 2018”, Parks, Green Spaces and Landscape Division of the Ministry of Land, Infrastructure, Transport and Tourism	Trees in urban settings	1990-

## National classification and definitions

National class	Definition
Cultivated area of fruit trees	Cultivated land farea of fruit trees such as oranges and apples. It includes scattered fruite trees.
Trees in urban settings	Trees in urban settings are divided into two categories; urban green facilities established as urban parks and others, and special greenery conservation zones designated by Urban Green Space Act etc. Each site of Trees in urban settings covers 0.05ha or more.

## Original data

Cultivated area of fruit trees (ha)																									
Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Area	346,300	340,300	334,600	328,900	321,700	314,900	307,800	301,200	295,300	290,700	286,200	280,400	275,500	271,600	267,900	265,400	261,800	258,400	254,700	250,700	246,900	243,500	240,300	237,000	233,800
Trees in urban settings (ha)																									
Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Area	145,193	150,813	157,968	163,655	169,388	175,012	180,859	186,560	192,923	198,560	204,188	209,932	215,745	221,427	227,098	232,945	236,323	238,426	241,048	244,941	246,401	248,229	250,403	252,474	253,835

## Analysis and processing of national data

### Estimation and forecasting

The data of 2020 is referred the data of 2016.

### Reclassification into FRA 2020 categories

FRA 2020 Categories	National Reporting Classes
Tree orchards	“Cultivated area of fruit trees” as per Japan’s definition
Trees in urban setting	“Trees in urban setting” as per Japan’s definition

FRA categories	Area (1000 ha)				
	1990	2000	2010	2015	2020
Palms (a)					
Tree orchards (b)	346.00	286.00	247.00	230.00	227.00
Agroforestry (c)					
Trees in urban settings (d)	145.00	204.00	246.00	256.00	257.00
Other (specify in comments) (e)					
Total (a+b+c+d+e)	491.00	490.00	493.00	486.00	484.00
Other land area	11 506.00	11 580.00	11 490.00	11 512.00	11 521.00

Comments

## 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
Forestry Agency “Survey on the State of Forest Resources ”	Growing stock	1990 1995 2002 2007 2012 2017	As of 31 March of each year Data do not include figures for the Northern Territories (Habomai Islands, Shikotan Island, Kunashiri Island and Etorofu Island)

##### National classification and definitions

National class	Definition
Growing stock	Volume of stems, over bark, of all standing trees more than 3 cm in diameter at breast height, above ground up to the end of the stem, but not to include branches. Volume of bamboo stand is not included.

##### Original data

Total Growing stock (million m3 over bark)						
	1990	1995	2002	2007	2012	2017
Naturally regenerating forest	N/A	N/A	1,682	1,773	1,850	1,926
Planted forest	N/A	N/A	2,331	2,646	3,038	3,305
Forest	3,113	3,458	4,013	4,419	4,888	5,231

### Analysis and processing of national data

#### Estimation and forecasting

Estimation for 2010, 2015 and 2016 was done with the same method used for 1a.

#### Reclassification into FRA 2020 categories

FRA 2020 Categories	National Reporting Classes
Growing stock	“Growing stock” as per Japan’s definition
Naturally regenerating forest	Forest area other than “Planted forest” as per Japan’s definition in table 1b.
Other Planted forest	“Planted forest” as per Japan’s definition in table 1b.

FRA categories	Growing stock m³/ha (over bark)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest			123.96	128.75	129.66	130.57			
Planted forest			279.93	312.98	318.79	324.53			
...of which plantation forest			0.00	0.00	0.00	0.00			
...of which other planted forest			279.93	312.98	318.79	324.53			
Forest	124.77	154.93	188.26	204.22	207.02	209.79			
Other wooded land									

FRA categories	Total growing stock (million m³ over bark)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest			1 819.00	1 896.00	1 911.00	1 926.00			
Planted forest			2 881.00	3 198.00	3 252.00	3 305.00			
...of which plantation forest			0.00	0.00	0.00	0.00			
...of which other planted forest			2 881.00	3 198.00	3 252.00	3 305.00			
Forest	3 113.00	3 854.00	4 700.00	5 094.00	5 163.00	5 231.00			
Other wooded land									

## Comments

Include the Growing stock of the “Forest without standing trees” as per Japan’s definition in table 1b. Total may not coincide with the aggregate of individual figures because of the rounding.

Japan cannot provide estimated growing stock in 2018-2020, as well as biomass stock and carbon stock.

## 2b Growing stock composition

### National Data

Data sources + type of data source eg NFI, etc

References to sources of information	Variable(s)	Year(s)	Additional comments
Forestry Agency “Survey on the State of Forest Resources ”	Growing stock	1990 1995 2002 2007 2012 2017	As of 31 March of each year Data do not include figures for the Northern Territories (Habomai Islands, Shikotan Island, Kunashiri Island and Etorofu Island)

### National classification and definitions

Refer to table 2a

### Original data

	Scientific name	Common name	Growing stock in forest (million m3 over bark)					
			1990	1995	2002	2007	2012	2017
No.1 intermas of volume	Cryptomeria japonica	Japanese Cedar	n.a	n.a	1,343	1,518	1,758	1,914
No.2 intermas of volume	Chamaecyparis obtusa	Hinoki Cypress	n.a	n.a	500	579	676	748
No.3 intermas of volume	Pinus spp.	Pine (Japanese Red Pine, Japanese Black Pine, etc)	n.a	n.a	367	400	406	402
No.4 intermas of volume	Larix kaempferi	Japanese Larch	n.a	n.a	201	213	223	226
No.5 intermas of volume	Abies sachalinensis	Sakhalin Fir	n.a	n.a	161	180	207	225
No.6 intermas of volume	Quercus dentata, Q.mongolica, Q. serrata, etc.	Konara Oak, Mongolian Oak, Daimyo Oak, etc	n.a	n.a	89	74	58	80
No.7 intermas of volume	Picea jezoensis	Hondo Spruce, Yezo Spruce	n.a	n.a	56	43	47	48
No.8 intermas of volume	Quercus acutissima	Japanese Chestnut Oak	n.a	n.a	16	17	19	19
No.9 intermas of volume			n.a	n.a	n.a	n.a	n.a	n.a
No.10 intermas of volume			n.a	n.a	n.a	n.a	n.a	n.a
Total volume of native tree species			3,113	3,458	4,013	4,419	4,888	5,231

### Analysis and processing of national data

#### Estimation and forecasting

Estimation for 2010 and 2015 was done with the same method used for 1a.

#### Reclassification into FRA 2020 categories

Refer to table 2a

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	Cryptomeria japonica	Japanese Cedar			1 662.00	1 852.00	
#2 Ranked in terms of volume	Chamaecyparis obtusa	Hinoki Cypress			637.00	719.00	
#3 Ranked in terms of volume	Pinus spp.	Pine (Japanese Red Pine, Japanese Black Pine, etc)			404.00	404.00	
#4 Ranked in terms of volume	Larix kaempferi	Japanese Larch			219.00	225.00	
#5 Ranked in terms of volume	Abies sachalinensis	Sakhalin Fir			196.00	218.00	
#6 Ranked in terms of volume	Quercus dentata, Q.mongolica, Q. serrata, etc.	Konara Oak, Mongolian Oak, Daimyo Oak, etc			64.00	71.00	
#7 Ranked in terms of volume	Picea jezoensis	Hondo Spruce, Yezo Spruce			45.00	48.00	
#8 Ranked in terms of volume	Quercus acutissima	Japanese Chestnut Oak			18.00	19.00	
#9 Ranked in terms of volume							
#10 Ranked in terms of volume							



FRA categories	Scientific name	Common name	Growing stock in forest (million m³ over bark)				
			1990	2000	2010	2015	2020
Native tree species							
Remaining native tree species					1 454.00	1 539.00	
Total volume of native tree species			–	–	4 699.00	5 095.00	–
Introduced tree species							
#1 Ranked in terms of volume							
#2 Ranked in terms of volume							
#3 Ranked in terms of volume							
#4 Ranked in terms of volume							
#5 Ranked in terms of volume							
Remaining introduced tree species							
Total volume of introduced tree species			–	–	–	–	–
Total growing stock			–	–	4 699.00	5 095.00	–

Comments

Japan’s planted forests consist mostly of native species. Although there are some forests with introduced species, data is not available, therefore, remaining frowing stocks in forest for 2010 and 2015 are reported in the item "Remainig native species". Total may not coincide with the aggregate of indivisual figures because of the rounting.

## 2c Biomass stock

### National Data

#### Data sources + type of data source eg NFI, etc

References to sources of information	Variable(s)	Year(s)
National Greenhouse Gas Inventory Report of Japan	BEF, Ratio of below-ground parts against above-ground parts, Wood density	2018

#### National classification and definitions

N/AtioN/Al class	Definition
Biomass stock of forest	Biomass stock of trunk, branches and roots of standing trees in the forest (in metric ton), which can be estimated as: Growing stock of forest (planted and N/Atural) (m <sup>3</sup> ) x Biomass expansion factor x (1 + ratio of below-ground parts against above-ground parts) x Wood density (t / m <sup>3</sup> dry matter) Biomass expansion factor is a ratio of the total volume of trunk, branches and leaves against trunk volume. Wood density is the weight of biomass in 1 cubic meter of wood in dry material.

#### Original data

	Forest Biomass (million metric tonnes over-dray weight)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Above-ground Biomass	1,848	2,202	2,617	2,768	2,793	2,816	N/A	N/A	N/A
Below-ground Biomass	470	560	679	717	723	729	N/A	N/A	N/A
Dead wood	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

#### Biomass expansion factor, root-to-shoot ratio, and wood density for tree species

		BEF [-]		R [-]	D [t-d.m./m <sup>3</sup> ]	Note
		≤20	>20			
Conifer trees	Japanese cedar	1.57	1.23	0.25	0.314	
	Hinoki cypress	1.55	1.24	0.26	0.407	
	Sawara cypress	1.55	1.24	0.26	0.287	
	Japanese red pine	1.63	1.23	0.26	0.451	
	Japanese black pine	1.39	1.36	0.34	0.464	
	Hiba arborvitae	2.38	1.41	0.20	0.412	
	Japanese larch	1.50	1.15	0.29	0.404	
	Momi fir	1.40	1.40	0.40	0.423	
	Sakhaline fir	1.88	1.38	0.21	0.318	
	Japanese hemlock	1.40	1.40	0.40	0.464	
	Yezo spruce	2.18	1.48	0.23	0.357	
	Sakhaline spruce	2.17	1.67	0.21	0.362	
	Japanese umbrella pine	1.39	1.23	0.20	0.455	

	Japanese yew	1.39	1.23	0.02	0.454	
	Ginkgo	1.50	1.15	0.20	0.450	
	Exotic conifer trees	1.41	1.41	0.17	0.320	
	Other conifer trees	2.55	1.32	0.34	0.352	Applied to Hokkaido, Aomori, Iwate, Miyagi, Akita, Yamagata, Fukushima, Tochigi, Gunma, Saitama, Niigata, Toyama, Yamanashi, Nagano, Gifu and Shizuoka prefectures
		1.39	1.36	0.34	0.464	Applied to Okinawa pref.
		1.40	1.40	0.40	0.423	Applied to prefectures other than above
Broad leaf trees	Japanese beech	1.58	1.32	0.26	0.573	
	Oak (evergreen tree)	1.52	1.33	0.26	0.646	
	Japanese chestnut	1.33	1.18	0.26	0.419	
	Japanese chestnut oak	1.36	1.32	0.26	0.668	
	Oak (deciduous tree)	1.40	1.26	0.26	0.624	
	Japanese popular	1.33	1.18	0.26	0.291	
	Alder	1.33	1.25	0.26	0.454	
	Japanese elm	1.33	1.18	0.26	0.494	
	Japanese zelkova	1.58	1.28	0.26	0.611	
	Cercidiphyllum	1.33	1.18	0.26	0.454	
	Japanese big-leaf	1.33	1.18	0.26	0.386	
	Maple tree	1.33	1.18	0.26	0.519	
	Amur cork	1.33	1.18	0.26	0.344	
	Linden	1.33	1.18	0.26	0.369	
	Kalopanax	1.33	1.18	0.26	0.398	
	Paulownia	1.33	1.18	0.26	0.234	
	Exotic broadleaf trees	1.41	1.41	0.16	0.660	
	Japanese birch	1.31	1.20	0.26	0.468	
	Other broad leaf trees	1.37	1.37	0.26	0.469	Applied to Chiba, Tokyo, Kochi, Fukuoka, Nagasaki, Kagoshima and Okinawa prefectures
		1.52	1.33	0.26	0.646	Applied to Mie, Wakayama, Oita, Kumamoto, Miyazaki and Saga pref.
		1.40	1.26	0.26	0.624	Applied to prefectures other than above

BEF: Biomass expansion factor (20= age class)

R: Root-to-shoot ratio (Ratio of below-ground parts against above-ground parts)

D: Wood density

## Analysis and processing of national data

### **Estimation and forecasting**

(1) Biomass stock is not directly measured and thus such data do not exist. Biomass stock can be estimated by multiplying the growing stock of forest with standing trees by biomass expansion factor by a ratio of below-ground parts against above-ground parts by wood density. Biomass stock in undergrowth, dead wood, litter, and soil is not estimated.

(2) Biomass expansion factor and wood density used for estimating biomass stock are based on “National Greenhouse Gas Inventory Report of Japan (April, 2018)” which was compiled by National Institute for Environmental Studies Greenhouse Gas Inventory Office (GIO) under the supervision of Ministry of the Environment.

### **Reclassification into FRA 2020 categories**

Biomass stock: as per Japan’s definition

FRA categories	Forest biomass (tonnes/ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Above-ground biomass	74.00	89.00	105.00	111.00	112.00	113.00			
Below-ground biomass	19.00	23.00	27.00	29.00	29.00	29.00			
Dead wood									

Comments

Forest Biomass (Tonnes/ha) is rounded decimal point to the nearest whole number.

## 2d Carbon stock

### National Data

Data sources + type of data source eg NFI, etc

References to sources of information	Variable(s)	Year(s)
National Greenhouse Gas Inventory Report of Japan	Carbon Fraction	2018

National classification and definitions

National class	Definition
Carbon stock of forest	Estimated as: Biomass stock of forest (t) x Carbon Fraction of dry matter

Original data

	Forest Carbon (million metric tonnes)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Carbon in above-ground biomass	924	1,101	1,303	1,378	1,390	1,402	N/A	N/A	N/A
Carbon in below-ground biomass	235	280	338	357	360	363	N/A	N/A.	N/A
Carbon in dead wood	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A.	N/A
Carbon in litter	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Soil Carbon	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

### Analysis and processing of national data

Estimation and forecasting

- Carbon stock of above-and below-ground is estimated by multiplying the biomass stock in table 2c by the carbon content of dry matter. Yealy carbon stocks of dead wood, litter and soil in forest sector are not calculated in Japan.
- Carbon content of dry matter used for estimating carbon stock is based on “National Greenhouse Gas Inventory Report of Japan (April, 2018)” which was compiled by National Institute for Environmental Studies Greenhouse Gas Inventory Office (GIO) under the supervision of Ministry of the Environment.

Reclassification into FRA 2020 categories

“Carbon stock of forest” as per Japan’s definition

FRA categories	Forest carbon (tonnes/ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Carbon in above-ground biomass	37.00	44.00	52.00	55.00	56.00	56.00			
Carbon in below-ground biomass	9.00	11.00	14.00	14.00	14.00	15.00			
Carbon in dead wood									
Carbon in litter									
Soil carbon									

Soil depth (cm) used for soil carbon estimates	
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Comments

Forest Carbon (Tonnes/ha) is rounded decimal point to the nearest whole number.

### 3 Forest designation and management

#### 3a Designated management objective

##### National Data

Data sources + type of data source eg NFI, etc

#	References to sources of information	Variable(s)	Year(s)
1	Forestry Agency (based on the local forest plan)	Private forest area by multipte functions designated in Local forest plan	2012-2016
2	Forest Register (Forestry Agency)	National forest area by public functions	2010-2018

##### National classification and definitions

National class	Definition
Forest where timber production function is maintained and increased	Forest where forest management practices should be promoted to maintain and increase the function of timber production, i.e. forest that is suitable for forest management practices with other forests in terms of natural conditions, in addition to that is suitable for tree growth, enables to efficient forest management practices considering its conditions such as existence of forest roads, or has high potential of timber production function.
Forest where headwater conservation function is maintained and increased	Forest where forest mangement practices should be promoted to maintain and increase the function of water resource conservation, i.e. Protection forest for headwaters conservation and Protection forest for drought prevention, forest in water catchment of dam and surrounding headwater stream of major rivers, forest surrounding reservoir, spring water and mountain stream etc., and forest that has high water resource conservation function.
Forest where mountain disaster prevention function is maintained and increased	Protection forest for landslide prevention, Protection forest for soil run-off prevention, Protection forest for avalanche prevention, Protection forest for rock-fall prevention, forest surrounding sand erosion control designated land, forest in mountainous hazard areas, forest that is expected to damages human life and facilities including houses when mountain disaster occurs, and forest that has high mountain disaster prevention and soil preservation fuctions, etc.
Forest where health and culture function is maintained and increased	Protection forest for public health, Protection forest for scenic site conservation, Greenery Conservation Zone and Special Greenery Conservation Zone designated by Urban Green Space Act, Scenic designated by City Planning Act, forest related to historic sites, places for scenic beauty and natural monuments designated by Act on Protection of Cultural Properties, forest suitable for public health and educational use including forest with facilities such as camping grounds and forest parks, forest that creates with historic landmark that provides outstanding natural landscape with historic sites etc., forest where biodiversity conseravation is specifically required, and forest that has high health and recreation, culture and biodiversity conservation functuions, etc.
Forest where forming comfortable environment function is maintained and increased	Protection forest for sand shifting prevention, Protection forest for windbreaks, Protection forest for tidal wave and salty wind prevention, Protection forest for snow drift prevention, protection forest for fog inflow prevention, Protection forest for fire prevention, forest that interacts people’s daily life and mitigates the influence of dusts etc., forest that is effective for preventing meteorological disasters such as wind and fog damages, and forest that formes comfortable environment.

##### Original data

(1000ha)	2010	2012	2013	2014	2015	2016	2017	2018
Forest where timber production function is maintained and increased	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Forest where headwater conservation function is maintained and increased	N/A	N/A	16,329	16,562	16,371	16,473	N/A	N/A
Forest where mountain disaster prevention function is maintained and increased	N/A	N/A	4,728	4,799	4,802	4,812	N/A	N/A
Forest where health and culture function is maintained and increased	N/A	N/A	3,144	3,137	3,206	3,169	N/A	N/A
Forest where forming comfortable environment function is maintained and increased	N/A	N/A	541	487	523	614	N/A	N/A



Others	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
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Analysis and processing of national data

Estimation and forecasting

None

Reclassification into FRA 2020 categories

FRA2020 Category	National class
Production	“Forest where timber production function is maintained and increased” as per Japan’s definition
Protection of soil and water	“Forest where headwater conservation function is maintained and increased” and “Forest where mountain disaster prevention function is maintained and increased” as per Japan’s definition
Conservation of biodiversity	No data is available.
Social Service	“Forest where health and culture function is maintained and increased” and “Forest where forming comfortable environment function is maintained and increased” as per Japan’s definition

Primary designated management objective

FRA 2020 categories	Forest area (1000 ha)				
	1990	2000	2010	2015	2020
Production (a)	0.00	0.00	0.00	0.00	0.00
Protection of soil and water (b)	0.00	0.00	0.00	0.00	0.00
Conservation of biodiversity (c)	0.00	0.00	0.00	0.00	0.00
Social Services (d)	0.00	0.00	0.00	0.00	0.00
Multiple use (e)	0.00	0.00	0.00	0.00	0.00
Other (specify in comments) (f)	24 950.00	24 876.00	24 966.00	24 944.00	24 935.00
None/unknown (g)	0.00	0.00	0.00	0.00	0.00
Total forest area	24 950.00	24 876.00	24 966.00	24 944.00	24 935.00

Total area with designated management objective

FRA 2020 categories	Forest area (1000 ha)				
	1990	2000	2010	2015	2020
Production					
Protection of soil and water				21 173.00	
Conservation of biodiversity					
Social Services				3 729.00	
Other (specify in comments)					

Comments

There is double counting among items in the original data, therefore, total forest area is inserted to the item “Others” in the table “Primary designated 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

#	References to sources of information	Variable(s)	Year(s)	Additional comments
1	Forestry Agency data	Forest area within legally established protected areas	2011 2015 2016 2017	
2	Survey on the State of Forest Resources” Forestry Agency	Forest area	1990 1995 2002 2007 2012 2017	As of 31 March of each year. Data do not include figures for the Northern Territories (Habomai Islands, Shikotan Island, Kunashiri Island and Etorofu Island).

National classification and definitions

National class	Definition
Protected Areas (Land and Inland)	Clearly identified areas where managed / administrated by laws or other effective measures for the purpose of biodiversity conservation and sustainable use of ecosystem services. Specifically, National Park, Quasi-National Park and Prefectural Natural Park under National Park Law, Wildness Conservation Area and Nature Conservation Area under Nature Conservation Law, Natural Habitat Protection Area under Law on Conservation of Endangered Species of Wild Fauna and Flora ,and National Forest Reserve and Green Corridor under Law Concerning Utilization of National Forest Land, Natural Seashore Conservation Area under Law Concerning Special Measures for Conservation of the Environment of the Seto Inland Sea, Suburban Green Conservation Area under Law for the Conservation of Suburban Green Zones in the National Capital Region and Law for the Development of Conservation Area in Kinki Region, Green Conservation Area under Urban Green Space Conservation Law, Natural Monument under Law for Protection of Cultural Properties, and other protected area designated by bylaw of prefecture government.
Forest area with long-term forest management plan	Area under the Regional Forest plan and Forest management plan for National forest, same as reported forest area in table 1a.

Original data

-

Analysis and processing of national data

Estimation and forecasting

None

Reclassification into FRA 2020 categories

FRA 2020 Categories	National Reporting Classes
Forest area within legally established protected areas	Amount of forest areas as following (Overlapped areas are depleted): National Park, Quasi-National Park and Prefectural Natural Park under National Park Law, Wildness Conservation Area and Nature Conservation Area under Nature Conservation Law, and National Forest Reserve and Green Coridor under Law Concerning Utilization of National Forest Land
Forest area with long-term forest management plan	as per Japan's definition

FRA categories	Area (1000 ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Forest area within protected areas			4 421.00	4 472.00	4 539.00	4 533.00			
Forest area with long-term forest management plan	24 950.00	24 876.00	24 966.00	24 944.00	24 940.00	24 935.00	24 935.00	24 935.00	24 935.00
...of which in protected areas									

## Comments

According to the 5<sup>th</sup> county report on Convention on Biological Diversity, with regard to the Aichi Target 11 it is reported that areas, which contributes to biodiversity conservation, have been designated by laws and regulations and 20.3 % (76,800km<sup>2</sup>) of land and inland areas have been designated /conserved as protected areas as of April 2011, This figure is calculated using GIS with depletion of overlapped areas from the available data among the definition on “*Forest area within legally established protected areas*” as following; National Park, Quasi-National Park and Prefectural Natural Park (National Park Law), Wildlife Protection Area (Wildlife Protection and Hunting Law),Wildness Conservation Area and Nature Conservation Area(Nature Conservation Law), Natural Habitat Protection Area (Law on Conservation of Endangered Species of Wild Fauna and Flora), National Forest Reserve and Green Corridor (Law Concerning Utilization of National Forest Land ), however; it's not reported that how many forest areas are included among the proted areas.

Considaring the data availability and deninition of Japan's CBD country report, the protected areas whithin forest are calculated from thefollwoing data in Forestry Agency; National Park, Quasi-National Park, Prefectural Natural Park, part of Wildlife Protection Area, Wildness Conservation Area, Nature Conservation Area, National Forest Reserve and Green Coridor (Overlapped areas are excluded).

## 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
Forestry Agency“Survey on the State of Forest Resources”		1990 1995 2002 2007 2012 2017	As of 31 March of each year Data do not include figures for the Northern Territories (Habomai Islands, Shikotan Island, Kunashiri Island and Etorofu Island)

##### National classification and definitions

National class	Definition
National Forest (managed by the Forestry Agency)	Forest managed by the Forestry Agency, where: (i) land is owned by the national government, and (ii) land is owned by other party but the national government implements silviculture under a contract which defines the share of profit between the national government and landowner(s).
Publicly-owned forest	Forest owned or possessed by local/regional public body as defined under the article 1-3 of the Local Autonomy Law, including prefectural government, municipal government, special district, communal district, etc., and can be managed by the sole discretion of such public body. This includes land owned by other party (excluding the national government) but any of the above-mentioned public body implements silviculture under a contract which defines the share of profit between the said public body and landowner(s).
Forest owned by communal districts	Communal districts stipulated in the article 294 of the Local Autonomy Act (1947, No.67). In the case of municipal merger, communal districts are formed for forest used to be owned by community and/or old municipalities that are used and gotten earnings by local community.
Privately-owned forest	Forest that does not fall under “National forest” and “Publicly-owned forest”.

##### Original data

	Area (1000 hectares)					
	1990	1995	2002	2007	2012	2017
National forest (managed by the Forestry Agency)	7,654	7,647	7,631	7,614	7,602	7,593
Publicly-owned forest	2,700	2,729	2,796	2,830	2,919	2,995
...of which owned by communal districts	N/A	N/A	290	299	338	302
Privately-owned forest	14,597	14,521	14,440	14,535	14,437	14,347
<b>Total</b>	<b>24,950</b>	<b>24,898</b>	<b>24,868</b>	<b>24,979</b>	<b>24,958</b>	<b>24,935</b>

Total may not coincide with the aggregate of individual figures because of the rounding.

### Analysis and processing of national data

#### Estimation and forecasting

Estimation for 2000, 2010 and 2015 was done with the same method used for 1a.

Reclassification into FRA 2020 categories

FRA2020 Categories	National Reporting Classes	
Private ownership	Sum of the “privately-owned forest”and “Forest owned by communal districts” as per Japan’s definition	
..of which owned by local, tribal and indigenous communities	“Forest owned by communal districts” as per Japan’s definition	
Public ownership	Sum of the “National forest” and “Publicly-owned forest”, and minus “Forest owned by communal districts”, as per Japan’s definition	

FRA categories	Forest area (1000 ha)			
	1990	2000	2010	2015
Private ownership (a)	14 597.00	14 463.00	14 799.00	14 699.00
...of which owned by individuals				
...of which owned by private business entities and institutions				
...of which owned by local, tribal and indigenous communities			322.00	316.00
Public ownership (b)	10 354.00	10 412.00	10 168.00	10 245.00
Unknown/other (specify in comments) (c)	-1.00	1.00	-1.00	0.00
Total forest area	24 950.00	24 876.00	24 966.00	24 944.00

## Comments

- Reported data for local, tribal and indigenous communities only refer to forest owned by local communities as no information was available for indigenous/tribal communities.
- In Japan, ownership of trees generally coincides with ownership of the land on which they grow, except for the following:

1) National forest managed by the Forestry Agency, where the land is owned by other party but the national government implements silviculture under a contract which defines the share of profit between the national government and landowner(s).

2) Publicly-owned forest where land is owned by other party (excluding the national government) but any of the local/regional public body as defined under the article 1-3 of the Local Autonomy Law, including prefectural government, municipal government, special district, etc., implements silviculture under a contract which defines the share of profit between the said public body and landowner(s).

- Total may not coincide with the aggregate of individual figures because of the rounding. The values in the category "Unknown/other" are filled-in by FAO to adjust " Total forest area" while category "Unknown/other" is not included in original data.

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	Forestry Agency“Survey on the State of Forest Resources”	National forest (managed by the Forestry Agency), Publicly-owned forest, Privately-owned forest	1990 1995 2002 2007 2012 2017	As of 31 March of each year Data do not include figures for the Northern Territories (Habomai Islands, Shikotan Island, Kunashiri Island and Etorofu Island)
2	Forestry Agency “National Forest Management Statistics”	National forest permit for use by local people	1990 2000 2005 2010	As of 31 March of each year

National classification and definitions

National class	Definition
“National forest permit for use by local people”	Area of national forest permitted for use by local people, including harvest of fuelwood/non-wood forest products and grazing.

Original data

National forest permit for use by local people (1,000 ha)												
Year	1990	1995	2000	2002	2007	2010	2012	2013	2014	2015	2016	2017
Area	1,743	1,662	1,533	1,493	1,426	1,321	1,275	1,262	1,211	1,150	1,182	1,176

Analysis and processing of national data

Estimation and forecasting

Estimation for 2000, 2010 and 2015 was done with the same method used for 1a.

Reclassification into FRA 2020 categories

FRA2020 Categories	National Reporting Classes	
Public Administration	“Public ownership” as per FAO’s definition (refer to 4a) minus “National forest permit for use by local people” as per Japan’s definition	
Local, tribal and indigenous communities	“National forest permit for use by local people” as per Japan’s definition	



FRA categories	Forest area (1000 ha)			
	1990	2000	2010	2015
Public Administration (a)	8 611.00	8 879.00	8 847.00	9 095.00
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)	1 743.00	1 533.00	1 321.00	1 150.00
Unknown/other (specify in comments) (e)	0.00	0.00	0.00	0.00
Total public ownership	10 354.00	10 412.00	10 168.00	10 245.00

Comments

Category	Comments related to data, definitions, etc.
Private ownership	Reported data for local, tribal and indigenous communities only refer to forest owned by local communities as no information was available for indigenous/tribal communities.
Other general comments to the table	In Japan, ownership of trees generally coincides with ownership of the land on which they grow, except for the following: 1) National forest managed by the Forestry Agency, where the land is owned by other party but the national government implements silviculture under a contract which defines the share of profit between the national government and landowner(s). 2) Publicly-owned forest where land is owned by other party (excluding the national government) but any of the local/regional public body as defined under the article 1-3 of the Local Autonomy Law, including prefectural government, municipal government, special district, etc., implements silviculture under a contract which defines the share of profit between the said public body and landowner(s).

## 5 Forest disturbances

### 5a Disturbances

#### National Data

Data sources + type of data source eg NFI, etc

#	References to sources of information	Variable(s)	Year(s)
1	Forestry Agency “Handbook of Forestry Statistics”	Damage caused by designated biological causes such as forest diseases, insect and extreme weather events	2000-2016
2	Forestry Agency “National forest management Statistics”	Damage caused by extreme weather events	2000-2016
3	The third stage of the National Forest Inventory of Japan		2009-2013

National classification and definitions

National class	Definition
Damage caused by designated biological causes	Area of forest in which trees and/or seedlings are damaged by designated biological causes (as listed below) in accordance with the article 2 of the Forest Disease and Insect Control Law. For pine nematode and Oak platypodid beetle, data are provided in the volume of standing trees damaged. a. Pine nematode (Bursaphelenchus xylophilus) carried by the pine sawyer beetle (Monochamus alternatus) b. Wood-boring beetle such as ambrosia beetle c. Pine moth (Dendrolimus spectabilis) d. Pine needle gall midge (Thecodiplosis japonensis) e. Cryptomeria needle gall midge (Contarinia inouye) f. Gypsy moth (Lymantria dispar praeetelea) g. Cryptomeria spider mite (Acarina sp.) h. Chestnut gall wasp (Dryocosmus kuriphilus) i. Shoot blight of larch (Botryosphaeria laricina) j. Oak platypodid beetle (Platypus quercivorus)
Damage caused by extreme weather events	Area of forest damaged by extreme weather events: sum of the area of private forest damaged by wind, water, snow, drought, frost, and saline wind and the area of national forest damaged by wind, water and earthquake.

Original data

Damage caused by designated biological causes																		
(Unit: 1,000 m <sup>3</sup> for Pine nematode & Oak platypodid beetle, 1,000 hectares for others)																		
Categories		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Damage caused by designated biological causes																		
	(1) Pine nematode	837	912	915	797	733	689	644	619	626	594	582	645	643	627	561	481	440
	(2) Wood-boring beetle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	(3) Pine moth	0	0	0	0	0.1	0	0	0.5	0	0	0	0	0	-	0	0	0
	(4) Pine needle gall midge	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	(5) Cryptomeria needle gall midge	-	-	-	-	0	-	-	-	0	-	-	-	-	-	-	-	-
	(6) Gypsy moth	0	0	-	0.6	-	-	0	-	15	0	-	-	-	0	0	0	-

(7) Cryptomeria spider mite			0.1	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	
			(8) Chestnut gall wasp			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			(9) Shoot blight of larch			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			(10) Oak platypodid beetle			32	19	78	51	71	92	59	116	133	230	325	157	83	52	41
Extreme weather events (ha)																				
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016			
National Forest	469	168	108	90	14,578	526	581	10,555	1,325	400	591	1,023	49	57	260	330	1,261			
Private Forest	14,600	5,000	32,300	3,200	48,100	2,500	17,600	6,400	1,800	4,400	2,100	2,600	1,200	7,000	4,800	5,700	14,600			
Total	15,069	5,168	32,408	3,290	62,678	3,026	18,181	16,955	3,125	4,800	2,691	3,623	1,249	7,057	5,060	6,030	15,861			

Analysis and processing of national data

Estimation and forecasting

None

Reclassification into FRA 2020 categories

FRA2015 Category	National Reporting Classes
Insects	Sum of the area of b,c,d,e,f,g,and h listed in the Japan’ definition
Diseases	Sum of the volume of a, i and j listed in the Japan’ definition

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)	0.10	0.00	0.00	0.60	0.10	0.00	0.00	0.50	15.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Diseases (b)																		
Severe weather events (c)	15.00	5.00	32.00	3.00	63.00	3.00	18.00	17.00	3.00	5.00	3.00	4.00	1.00	7.00	5.00	6.00	16.00	
Other (specify in comments) (d)																		
Total (a+b+c+d)	15.10	5.00	32.00	3.60	63.10	3.00	18.00	17.50	18.00	5.00	3.00	4.00	1.00	7.00	5.00	6.00	16.00	–
Total forest area	24 876.00	–	–	–	–	–	–	–	–	–	24 966.00	–	–	–	–	24 944.00	24 940.00	24 935.00

Comments

Category	Comments related to data, definitions, etc.
Diseases	Unit of "Pine nematode" and "Oak platypodid beetle" is repoted by thousand cubic meter.
	The situation of forest soil erosion was assessed based on the results of the third stage of the National Forest Inventory of Japan. Specifically, incidences of a soil column, rill, or gulley are considered as soil erosion, and are checked in the vegetation survey area set up in plots. Soil erosion was found in 16% of the plots: in the breakdown, soil columns account for 11%, rills for 3% and gullies for 2%.

## 5b Area affected by fire

### National Data

Data sources + type of data source eg NFI, etc

References to sources of information	Variable(s)	Year(s)
Forestry Agency “Handbook of Forestry Statistics”	Damage caused by forest fires	1988-2016

National classification and definitions

National class	Definition
Damaged forest by fires	Burned area and number of forest fires

Original data

(Area: 1,000 ha)																								
Categories	1988	1989	1990	1991	1992	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Area of forest fires	3.2	2.1	1.3	2.7	2.3	0.8	1	1.5	1.8	2.6	0.7	1.6	1.1	0.8	0.7	0.8	1.1	0.8	2.1	0.4	1	1.1	0.5	0.4
Number of forest fires	3,589	2,894	2,858	2,535	2,262	1,913	2,661	2,805	3,007	3,343	1,810	2,592	2,215	1,576	2157	1891	2084	1392	2,093	1,178	2,020	1,494	1,106	1,027

### Analysis and processing of national data

Estimation and forecasting

None

Reclassification into FRA 2020 categories

FRA2020 Category	National Reporting Classes
Total land area affected by fire	Data is not available
...of which on forest	Burned area as per Japan's definition

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																		
...of which on forest	1.50	1.80	2.60	0.70	1.60	1.10	0.80	0.70	0.80	1.10	0.80	2.10	0.40	1.00	1.10	0.50	0.40	

Comments

5c Degraded forest

Does your country monitor area of degraded forest		No
If "yes"	What is the national definition of "Degraded forest"?	
	Describe the monitoring process and results	

Comments

The answer "no" means that Japan does not have definition of 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

References to sources of information	Variable(s)	Year(s)	Additional comments
Annual Report on Forest and Forestry in Japan	Policy, Strategy, Legislation and Regulation	2017	Annually Published

National classification and definitions

Variable / category	Comments
Policies supporting SFM	Forest and Forestry Basic Act., Forest and Forestry Basic Plan, Local Foretry Improvement Plan formulated by prefecture
Legislations and/or regulations supporting SFM	Forest Act.

Original data

None



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

Comments

Category	Comments
Platform that promotes or allows for stakeholder participation in forest policy development	Public comment procedure is implemented based on the Administrative Procedures Act

# 6b Area of permanent forest estate

## National Data

### Data sources + type of data source eg NFI, etc

Annual Report on Protection Forest (Forestry Agency)	Total Protection Forest area designated for protection of certain purposes in accordance with the Law	Each fiscal year (2017 fiscal Year is Latest)
Forest Register (Forestry Agency)	Protected Forest Wildness Conservation Area	2010-2018

### National classification and definitions

National class	Definition
Protection Forest	Forest that has public interst is designated as Protection Forest, in accordance with the Forest Law of Japan. Once designated, delisiting of the designation by either Minister of Agriculture, Forestry and Fisheries or prefectural governor is needed for forest conversion to other land use.
Protected Forest	Protected Forest is a forest such as one with primeval forest ecosystems, or core of biodiversity conservation with habitat of endangered wild species, designated in national forest.
Wildness Conservation Area	Wilderness Conservation Area is the designated area to be preserved under the Wilderness Conservation Act for its well maintained original natural environment without any human disturbances. Logging operations are totally prohibited within the area.

### Original data

(1,000 ha)			
Year	Protected Forest	Wildness Conservation Area	Protection Forest
1990	-	-	8,224
2000	-	-	8,867
2010	782	6	11,964
2013	965	6	12,091
2014	966	6	12,122
2015	967	6	12,143
2016	970	6	12,170
2017	976	6	12,184
2018	974	6	12,197

FRA 2020 categories	Forest area (1000 ha)					
	Applicable?	1990	2000	2010	2015	2020
Area of permanent forest estate	Yes			12 006.00	12 184.00	12 234.00

Comments

Data of 2018 was inserted as that of 2020.

Area of permanent forest estate: Forest area of Protection Forest, Protected Forest and Wildness Conservation Area. The areas are exclusive.

## 7 Employment, education and NWFP

### 7a Employment in forestry and logging

#### National Data

Data sources + type of data source eg NFI, etc

References to sources of information	Variable(s)	Year(s)	Additional comments
Ministry of Internal Affairs and Communications “Population Census”	Number of employed person (“employees”, “self-employed workers”, and “family workers”) within the industry classification “forestry”	1990 2000 2005 2010 2015	The census is conducted every five years. It covers employed persons among permanent population over 15 years old at the census date in Japan and it refers to those who did any work during the week before the census date for pay or profit, i.e., 30 September of each year.

#### National classification and definitions

National class	Definition
“Forestry”	“Forestry” as defined in the Standard Industrial Classification for Japan.
“Employees”	Those employed by a person, a company, a corporation or a government office, etc. This includes executives and directors of a company or a corporation including managing directors.
“Self-employed workers”	Persons who run a business including those doing home handicraft work.
“Family workers”	Persons who work in a business operated by a member of the household in which they lived.

#### Original data

Categories	Unit: persons				
	1990	2000	2005	2010	2015
Employees	77,182	47,176	31,382	56,846	52,220
Self-employed workers	21,195	14,151	11,135	8,783	8,410
Family workers	9,109	5,815	4,094	2,906	2,773
Total*	107,500	67,153	46,618	68,553	63,663

\* Total includes persons whose employment status is unknown

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	107.50			67.15			68.55			63.66		
...of which silviculture and other forestry activities												
...of which logging												
...of which gathering of non wood forest products												
...of which support services to forestry												

Comments

Population Census is conducted every five years, therefore, three years average is not available and the actual values for the reference year are reported. Also, full time and half-time employee are not identified in the census. Total includes persons whose employment status is unknown.

# 7b Graduation of students in forest-related education

## National Data

Data sources + type of data source eg NFI, etc

References to sources of information	Variable(s)	Year(s)	Additional comments
School Basic Survey	Number of graduates	1989-2017	Annually published

### National classification and definitions

National class	Definition
Number of graduates ...of which Forestry	Number of graduates from “Forestry” categorozed in the School Basic Survey
Number of graduates ...of which Forest Products Study	Number of graduates from “Forest Products” categorozed in the School Basic Survey

### Original data

1. Doctor's degree													
	Year	1989	1990	1991	1999	2000	2001	2009	2010	2011	2014	2015	2016
Male	Forestry	21	8	9	26	26	18	19	16	20	19	6	13
	Forest Products	8	13	13	15	11	3	—	—	—	—	—	—
	Total	29	21	22	41	37	21	19	16	20	19	6	13
Female	Forestry	1	-	1	5	7	5	10	8	11	8	7	6
	Forest Products	-	2	1	1	—	3	—	—	—	—	—	—
	Total	1	2	2	6	7	8	10	8	11	8	7	6
Total	Forestry	22	8	10	31	33	23	29	24	31	27	13	19
	Forest Products	8	15	14	16	11	6	—	—	—	—	—	—
	Total	30	23	24	47	44	29	29	24	31	27	13	19
2. Master's degree													
	Year	1989	1990	1991	1999	2000	2001	2009	2010	2011	2014	2015	2016
Male	Forestry	86	85	66	101	87	90	74	77	68	64	59	50
	Forest Products	44	54	64	28	21	10	—	—	—	—	—	—
	Total	130	139	130	129	108	100	74	77	68	64	59	50
Female	Forestry	8	11	8	30	53	38	41	28	37	27	37	31
	Forest Products	8	3	5	10	7	7	—	—	—	—	—	—
	Total	16	14	13	40	60	45	41	28	37	27	37	31

Total	Forestry	94	96	74	131	140	128	115	105	105	91	96	81
	Forest Products	52	57	69	38	28	17	—	—	—	—	—	—
	Total	146	153	143	169	168	145	115	105	105	91	96	81
3. Bachelor's degree													
	Year	1989	1990	1991	1999	2000	2001	2009	2010	2011	2014	2015	2016
Male	Forestry	897	915	844	396	308	282	275	299	258	310	287	329
	Forest Products	179	174	176	26	23	18	—	—	—	—	—	—
	Total	1076	1089	1020	422	331	300	275	299	258	310	287	329
Female	Forestry	73	86	112	215	148	160	155	135	150	178	184	146
	Forest Products	33	32	49	13	12	7	—	—	—	—	—	—
	Total	106	118	161	228	160	167	155	135	150	178	184	146
Total	Forestry	970	1,001	956	611	456	442	430	434	408	488	471	475
	Forest Products	212	206	225	39	35	25	—	—	—	—	—	—
	Total	1182	1207	1181	650	491	467	430	434	408	488	471	475

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	26.00	2.00	24.00	40.00	7.00	33.00	28.00	10.00	18.00	20.00	7.00	13.00
Master's degree	147.00	14.00	133.00	161.00	48.00	112.00	108.00	35.00	73.00	89.00	32.00	58.00
Bachelor's degree	1 190.00	128.00	1 062.00	536.00	185.00	351.00	424.00	147.00	277.00	478.00	169.00	309.00
Technician certificate / diploma												
Total												

Comments

Some totals may not correspond with the sum of the separate figures due to rounding.



7c Non wood forest products removals and value 2015

National Data

Data sources + type of data source eg NFI, etc

References to sources of information	Variable(s)	Year(s)
Forestry Agency “Basic information on Special Forest Product”	Production of Wild vegetables, Chestnut, Bamboo shoots, Matsutake mushrooms, Illicium anisatum L , Cleyera japonica, Bamboo, Camellia oil, Raw lacquer, Wax	2015

National classification and definitions

National class	Definition
Special forest products collected from wild, bamboo and bamboo shoots	Special forest products (i.e., products derived from forests other than industrial wood and fuelwood) collected from wild, not including those produced on agricultural land and greenhouse cultivation.

Original data

	Name of NWFP product	Key species	Quantity	Unit	Value (1000 currency)	NWFP category
1th	Chestnuts	<i>Castanea crenata</i>	16,300	ton	8,524,900	1
2th	Wild plants and grasses	<i>Petasites japonicus</i>	16,628.1	ton	8,007,444	1
		<i>Pteridium aquilinum</i>				
		<i>Osmunda japonica</i>				
		<i>Aralia elata</i>				
3th	Bamboo shoots	<i>Phyllostachys edulis</i>	28,980	ton	5,535,180	1
		<i>Phyllostachys reticulate</i>				
4th	Matsutake mushrooms	<i>Tricholoma matsutake</i>	70.9	ton	1,860,629	1
5th	<i>Cleyera japonica</i>	<i>Cleyera japonica</i>	1,015.6	ton	1,397,466	6
6th	<i>Illicium anisatum</i>	<i>Illicium anisatum</i>	1,891.6	ton	826,629	6
7th	Bamboo	<i>Phyllostachys edulis</i>	37,059	ton	780,847	5
		<i>Phyllostachys reticulate</i>				
		<i>Pleioblastus simonii</i>				
		<i>Phyllostachys nigra</i>				
8th	Camellia oil	<i>Camellia japonica</i>	47	kilo liter	203,698	8 (+1 and 3)
9th	Raw lacquer	<i>Toxicodendron vernicifluum</i>	1,181.5	ton	56,145	5
10th	Wax	<i>Toxicodendron succedaneum</i>	19	ton	53,200	8 (+5)

	Name of NWFP product	Key species	Quantity	Unit	Value (1000 local currency)	NWFP category
#1	Chestnuts	Castanea crenata	16 300	ton	8 524 900	1 Food
#2	Wild plants and grasses	Petasites japonicus ぶき Pteridium aquilinum, Osmunda japonica, Aralia elata	16 628	ton	8 007 444	1 Food
#3	Bamboo shoots	Phyllostachys edulis, Phyllostachys reticulate	28 980	ton	5 535 180	1 Food
#4	Matsutake mushrooms	Tricholoma matsutake	71	ton	1 860 629	1 Food
#5	Sakaki	Cleyera japonica	1 016	ton	1 397 466	6 Ornamental plants
#6	Anise-tree	Illicium anisatum	1 892	ton	826 629	6 Ornamental plants
#7	Bamboo	Phyllostachys edulis, Phyllostachys reticulate, Pleioblastus simonii, Phyllostachys nigra	37 059	ton	780 847	5 Raw material for utensils handicrafts construction
#8	Camellia oil	Camellia japonica	47	kilo liter	203 698	8 Other plant products
#9	Raw lacquer	Toxicodendron vernicifluum	1 182	ton	56 145	5 Raw material for utensils handicrafts construction
#10	Wax	Toxicodendron succedaneum	19	ton	53 200	8 Other plant products
All other plant products						
All other animal products						
Total					27 246 138	

Name of currency	Japanese Yen
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Comments

Currency is Japanese yen.

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	68.24	68.48	68.42	68.41	68.40	68.40	68.40	68.40

Name of agency responsible	
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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	0.04	-0.02	-0.02	-0.02	0.00	0.00	0.00

Name of agency responsible	
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Sub-Indicator 2	Forest biomass (tonnes/ha)							
	2000	2010	2015	2016	2017	2018	2019	2020
Above-ground biomass stock in forest	89.00	105.00	111.00	112.00	113.00	—	—	—

Name of agency responsible	
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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	–	17.72	17.93	18.20	18.17	–	–	–

Name of agency responsible	
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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	99.73	100.00	100.00	99.98	99.96	99.96	99.96	99.96

Name of agency responsible	
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Sub-Indicator 5	Forest area (1000 ha)							
	2000	2010	2015	2016	2017	2018	2019	2020
Forest area under independently verified forest management certification schemes	12.44	1 233.93	1 655.35	1 955.22	2 019.46	2 019.46	–	–