

# Annual Report on Trends in Forests and Forestry

Fiscal Year 2007  
(Summary)



Forestry Agency

The Ministry of Agriculture, Forestry and Fisheries of Japan



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## Chapter I New challenges for forestry

### —Supporting steady supply of domestic wood and sustaining healthy forests for the future—

#### 1. Nation's growing expectations for forests and the role of forestry

##### (1) Growing expectations for the mitigation of global warming

- ◇ According to the Public Opinion Poll on Forests and Lifestyle conducted by the Cabinet Office in May 2007, respondents ranked “contribution to mitigate global warming” as their highest expectation for forests.
- ◇ As the nation's expectations for forests diversify, there is a growing need —now more than ever—to take adequate measures to enhance the multifunctional roles of forests, in particular of planted ones.
- ◇ 58% of forests in Japan are privately owned, while 31% are national forests and 11% are public forests owned by local authorities. Planted forests share 31% in national forests and 46% in private ones, which means that forestry practices are required more in private forests.
- ◇ Forest owners have the discretion to undertake forestry practices in their forests in accordance with Forest Plans including the Local Forest Improvement Plan. However, forestry practices are often outsourced to forestry contractors given the ageing of forest owners.
- ◇ While there is a need to accelerate forest carbon-sink measures, it is vital to promote forest management in an efficient and sustainable manner by fostering dedicated forestry contractors to which forest owners can entrust their forestry practices.

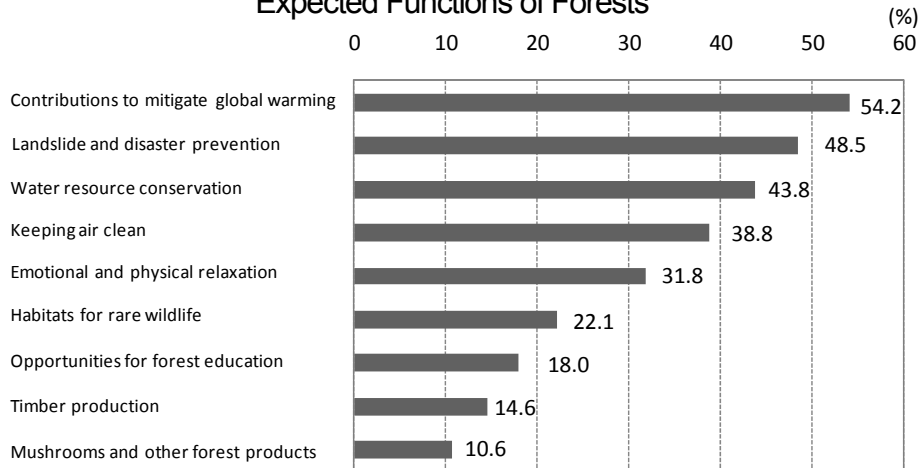
##### (2) Expectations for domestic wood as readily available resource

- ◇ With increased wood demand from China and the Middle East and rising oil prices, the outlook for world wood trade is unclear.
- ◇ On the other hand, as the availability of wood from planted forests has been increasing, the use of domestic wood has risen six times in plywood and doubled in laminated wood for the past five years.
- ◇ Amidst this backdrop, the expectation for steady supply of domestic wood is rising. An urgent response, including the collection of forestry practices and the efficient implementation of thinning, is required.

##### (3) Importance of forestry

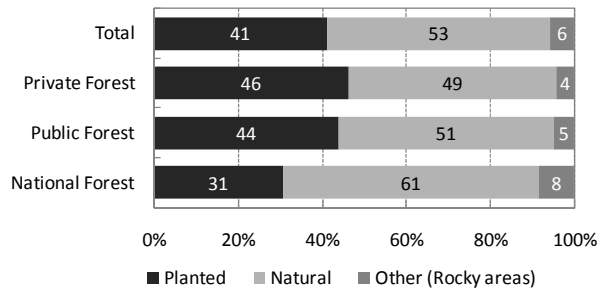
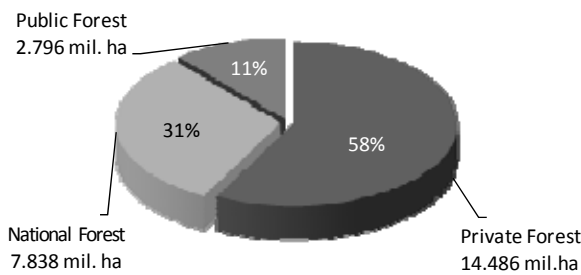
- ◇ In developing healthy forests fulfilling public interest functions such as mitigation of global warming and in providing steady supply of wood to wood industry, it is essential to foster dedicated forestry contractors and create forestry industry that both provides for the steady supply of wood and supports forest management and conservation well into the future.
- ◇ Japan's forestry industry has overcome many obstacles and now finds itself in an upturn. Now more than ever, it is crucial for the forestry industry to establish its stability and sustainability and develop the nation's forests to meet the needs of the people.

### Expected Functions of Forests



Source: Cabinet Office "Public Opinion Poll on Forests and Lifestyles" (2007)

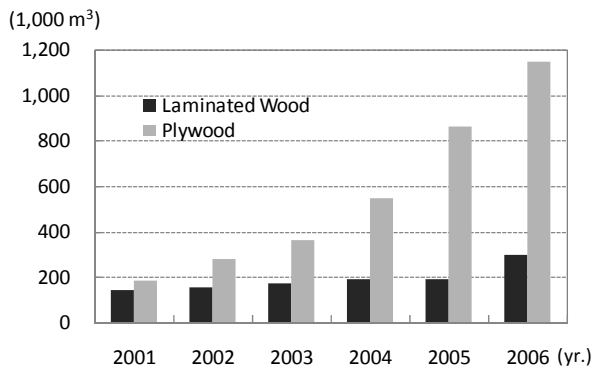
### Area and Planted-to-Natural Ratio by Forest Ownership Type



Source: Forestry Agency

Note: National Forests include those forests under the jurisdictions of agencies other than the Forestry Agency. Forests not subject to the Improvement Plan are included in Private Forest.

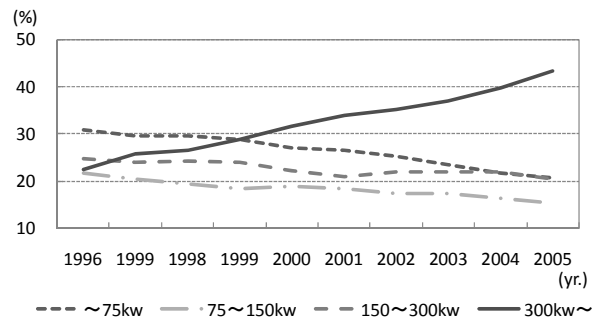
### Changes in the Amount of Domestic Wood Used for Plywood and Laminated Wood



Sources: Plywood: MAFF "Wood Demand and Supply Report", "Timber Statistics", Laminated wood: Forestry Agency

Note: Laminated wood = amount of product, Plywood = amount of materials.

### Ratio of Materials Received by Output Volume in Sawmills Specializing in Domestic Wood



Source: MAFF "Wood Demand and Supply Report"

## 2. Development of forestry and current condition of mountain villages

### (1) Current condition of forestry industry

- ◇ According to the 2005 Census of Agriculture and Forestry, there are 920,000 forest owners that own forestlands of more than 1 ha. The ownership structure is characterized by small ownership in that 57% of forest owners own less than 3 ha.
- ◇ Forest areas where forestry practices are entrusted to forest owners' cooperatives or forestry contractors such as log producers are on the rise. For example, areas where thinning is entrusted almost doubled.
- ◇ Profitability of forestry industry is in dire straits. It is necessary for the industry players to reduce both production and distribution cost through collecting forestry practices to achieve economies of scale, building efficient and low-cost forestry practices and simplifying distribution at every level.

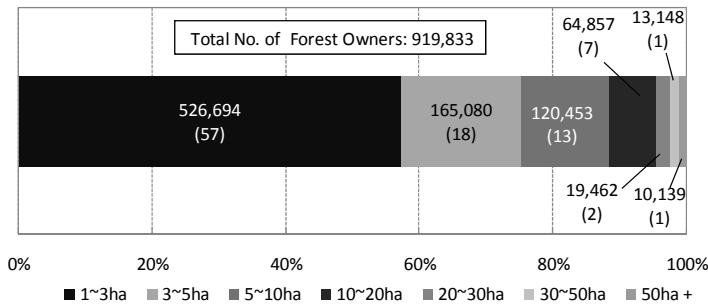
### (2) Securing and training forestry workforce

- ◇ The number of forestry workforce continues to fall over the long term to approximately 50,000 in 2005.
- ◇ "Forestry new Employment Training Project" was launched in FY 2003 to provide new employees for forestry technical training in an effort to secure forestry workforce. Over the past 4 years, 6,000 employees have completed a one-year training program.
- ◇ Forestry contractors accepting new employees need to make efforts to improve working conditions by enhancing social security and by securing enough projects to keep full-time employment.

### (3) Condition of rural mountain areas

- ◇ Rural communities in mountain areas are especially at risk for becoming non-viable due to declining population. Forest management, which is traditionally sustained by the rural communities, is becoming more and more difficult due to wildlife damages, pests and diseases and illegal dumping.
- ◇ To revitalize the rural communities in mountain areas, it is essential to promote forestry—the core industry—and to make the best use of regional resources to create new business opportunities. For example, it is useful to create opportunities for employment and settlement through long-term and experience-based interregional exchange with urban residents.

## Number of Forest Owners by Area of Forest Owned



Units: Top: Households, Bottom: %

Source: MAFF "2005 Agriculture and Forestry Census"

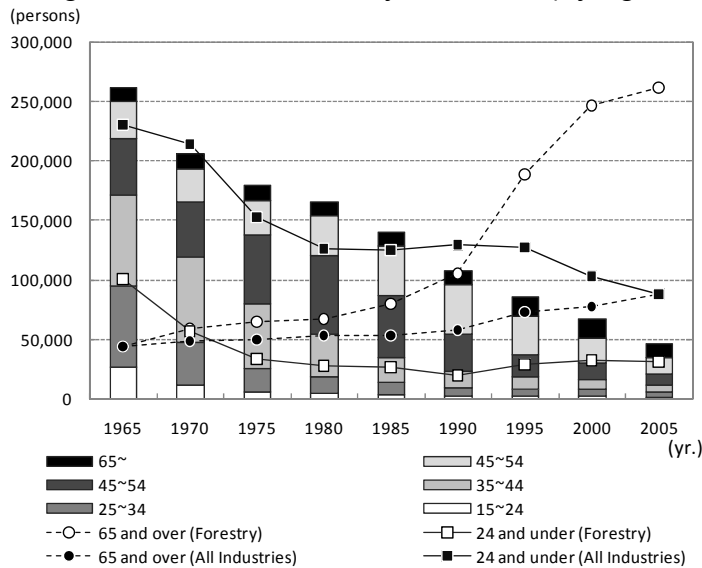
## Forest Area where Forestry Practices are Entrusted in the Past Year



Source: MAFF

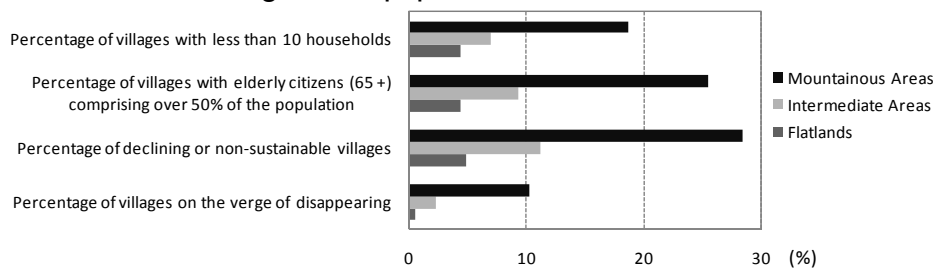
"2000 World Agriculture and Forestry Census",  
"2005 Agriculture and Forestry Census"

## Changes in Number of Forestry Workforce (By Age Bracket)



Source: Ministry of Internal Affairs and Communications "Population Census"

## State of Villages in Depopulation Zones



Source: Ministry of Internal Affairs and Communications and Ministry of Land, Infrastructure, Transport and Tourism

"Survey of Current Village Conditions for the National Land Sustainability Plan" (Released August 2007)

Note: "Mountainous Areas": Villages with 80% or more forested land,

"Intermediate Areas": Villages located between mountains and flatlands,

"Flatlands": Villages with less than 50% forested areas and at least 20% cultivated land.

### 3. Movement toward new forestry industry

#### (1) Securing dedicated forestry industry players to support multifunctional roles of forests and realize steady supply of wood

- ◇ In order to overcome the inefficiency of forestry practices due to small-scale forestlands tenure, forest management and its associated forestry practices must not be left to the forest owners alone but should be entrusted to dedicated, regionally-based industry players.
- ◇ To further advance the entrustment of forestry practices, it is important to promote proposal-based forestry practices with clear description of revenues and cost and seek out an understanding with forest owners on the proposals.
- ◇ As forestry practices are collected and the efficiency of forestry practices improves, domestic wood will be steadily supplied to the industry, thus boosting profitability and increasing returns to forest owners.
- ◇ It is important that these initiatives are effectively implemented in consideration of the human resources, machinery, information technology and financial resources of forestry contractors including Forest Owners' Cooperatives, log producers and sawmills all while ensuring adequate competition and collaboration among them. Official support should be provided for these initiatives.
- ◇ In the future, it is expected that, as a number of forestry contractors that can efficiently conduct thinning and other forestry practices gain a foothold in certain regions, forest owners will have more choices of forestry contractors and various forestry practices including low-cost ones or long-term forest management are pursued.

#### (Promoting the proposal-based forestry practices)

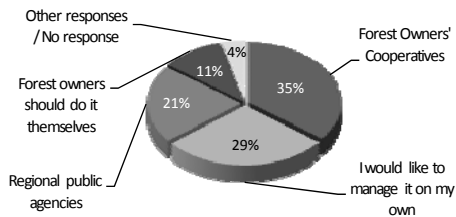
- ◇ In order to promote proposal-based forestry practices in the earliest stages, training programs have been organized for “Forestry Practice Planners” who encourage forest owners to entrust their forestry practices to forestry contractors.
- ◇ In addition, training sessions and on-site excursions have been organized by local authorities, universities and regional forest offices of the National Forests for the introduction of innovative forestry practices based on the combination of forest road networks and high-performance forestry machinery.
- ◇ It is expected that participants in these training sessions play central roles in proposal-based efficient forestry practices in each region.

#### (Increasing profitability of forestry)

- ◇ For increasing profitability of forestry, it is necessary to reduce both production and distribution cost through collecting forestry practices to achieve economies of scale and building efficient and low-cost forestry practices based on the combination of forest road networks and high-performance forestry machinery.
- ◇ The forest road networks must be simply and long-lastingly developed in consideration of actual forestry practices, types of high-performance forestry machinery, topography of the site.
- ◇ Introducing high-performance forestry machinery requires the collection of forestry practices that allows for year-round operations along with the measures to boost the utilization rates of the machinery.

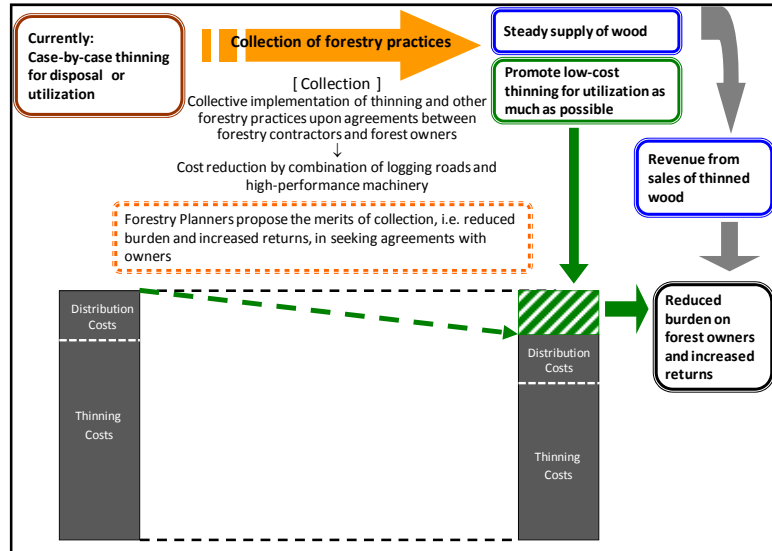


## Log Producers Responses to “Who Should Collect Forestry Practices?”



Source: MAFF “Survey of Forestry Contractors on Forestry Practices” (Released January 2008)

### An Illustration of Proposal-Based Forestry Practice Collection



## Proposal-Based Forestry Practices and Anticipated Forestry Contractors

Type	Forestry Practice Proposers and Implementers		Example
	Forestry Practice Proposals to Forest Owners	Implementation of Proposed Forestry Practices	
I Forest Owners' Cooperative Independent Type	Forest Owners' Cooperatives (FOC)		FOC owns work groups for logging and high-performance machinery
II FOC + Log Producers Type 1	FOC	FOC Log Producers	FOC contracts a part of logging to regional materials producers
III FOC + Log Producers Type 2	FOC	Log Producers	· FOC does not have work group for logging · Contracting thinning to regional log producers is more efficient
IV Log Producers and Large-Scale Forest Owner-Operated Type	Log Producers or Large-Scale Forest Owners		· Dedicated log producers are expanding their scope of management · Large-scale individual or corporate forest owners manage surrounding forests in addition to their own
Other Types Wood Industry Collaborative Type	Wood industry is actively involved in one of the types mentioned above		Wood industry which aims for stable resource procurement collaborates with FOC and Log Producers in proposed work
Other (Combination of the above)			



(Collection of forestry practices by forestry contractors)

- ◇ Forestry contractors require information on owners and boundaries of forests in order to collect forestry practices. There is a need to create the necessary databases on this information.
- ◇ To increase domestic wood use in wood industry, forestry industry must provide the wood industry with information on the amounts and species of logs and their location.
- ◇ This information sharing between forestry industry and wood industry will lead to increased business opportunities and contribute to steady trade, more efficient distribution, transparency in the pricing system and improved price bargaining power for vendors.

(2) For sustainable forest management

- ◇ It is crucial to train dedicated forestry workforce with a sense for management and to efficiently carry out forest practices in order to maximize multifunctional roles including mitigation of global warming. Providing steady supply of wood is the first step in developing stable, long-term relationships between the forestry industry and wood industries.
- ◇ Under this process, forestry management will stabilize and forest owners will enjoy an increased return of profits from stepped-up forestry practices. This will lead to healthier forests.

(3) New challenges for forestry

- ◇ Taking new challenges by dedicated forestry industry players to collect forestry practices and reduce costs is indispensable for maintaining healthy forests for future generations.

## Forest GIS (Example: Posted on the website of Gifu Prefecture)

The screenshot shows a web browser window displaying a GIS application. On the left is a metadata table, and on the right is a map of forest plots. The map shows various numbered plots (1-16) and a central plot labeled 'C' with a red crosshair. The map is overlaid on a pink background. Below the map, there are coordinates: X: -16190.78 Y: -22106.46, E136° 59' 15.1" N35° 48' 2.204".

Prefecture Office	Gujo Forest Office
New Municipality	Gujo City
Municipality Code	45
Municipality Name	Gujo City (formerly Hachiman Town)
Forest Group No.	259
Assistant Forest Group No.	C
Subgroup	6
Branch No.	1
Non-Target Areas	Forest subject to Regional Forest Plan
First Tier Class	Upper level trees
First Forest Type	Planted forest
First Tree Type	Coniferous trees
First Tree Species	Japanese cedar
Landslide Monitoring Area	Within monitoring area
Zoning	Land and water forest reserve

Forest Map

X: -16190.78 Y: -22106.46 E136° 59' 15.1" N35° 48' 2.204"

\*Click on an area of the map to display it at the center.

### Increasing Needs for Forestry

- ◆ Public interest functions (global warming mitigation, etc.)
- ◆ Steady supply of domestic wood



Dedicated forestry industry players should take new challenges toward:

- (1) Expanding the scope of management through collection of forestry practices
- (2) Reducing forestry costs



The major pillars of these new challenges are:

- (1) Entrusting forestry practices to dedicated contractors
- (2) Improving efficiency of forestry management through collection

By doing this, steady supply of domestic wood and development of forests fulfilling public interest functions could be achieved into the future.

## Chapter II Accelerating forest carbon-sink measures to achieve Kyoto Protocol commitment

### 1. International efforts to mitigate global warming

- ◇ Global warming is one of the most important environmental issues that affect the very foundations of human existence.
- ◇ According to the 4th Assessment Report issued by the Intergovernmental Panel on Climate Change (IPCC), society that continues to enjoy high rates of economic growth depending on fossil fuels—is expected to see temperature increase by approximately 4 °C by the end of this century. Additionally, several organizations in the world have made observations on increased carbon dioxide concentration in the atmosphere and rising temperature.
- ◇ Efforts are activated to build frameworks to reduce greenhouse gas emissions after the first commitment period (2008 to 2012) under the Kyoto Protocol. In the 13th session of the Conference of the Parties of the United Nations Framework Convention on Climate Change (COP13) and the 3rd session of the Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol (COP/MOP3) held in December 2007, it was agreed that a new forum for party nations to discuss post-first commitment period frameworks would be established to reach final decision by 2009. One agenda item at this forum is reducing emissions from deforestation and forest degradation in developing countries.

### 2. Japan's initiative to mitigate global warming

- ◇ In order to evaluate the progress of measures stipulated under the Kyoto Protocol Target Achievement Plan approved by the Cabinet in 2005 and take necessary steps during the first commitment period, the Plan was revised in FY 2007.
- ◇ The carbon dioxide removals by Japan's forests under the Kyoto Protocol in FY 2005 was calculated at 9.66 million carbon tons (35.42 million CO<sub>2</sub> tons). This is equivalent to 2.8% of Japan's total emissions in the base year.

(Securing 13 million carbon tons in forest carbon sinks)

- ◇ According to preliminary estimates (released in November 2007), total greenhouse gas emissions in FY 2006 were 6.4% higher than those in base year, which means that 7.0% reduction of emissions would be necessary to achieve the 6% emission reduction commitment, even if Japan implemented the Kyoto mechanism and forest carbon-sink measures as planned.
- ◇ To meet the removal target of 13 million carbon tons (47.67 million CO<sub>2</sub> tons) by forest carbon sinks for achievement of the 6% emission reduction commitment, it is necessary to boost the area eligible for forest management by conducting adequate thinning and other forestry practices in managed forests. Thinning will be needed on additional 200,000 ha of forest per year for the 6 years from FY 2007 through FY 2012, the end of the first commitment period.
- ◇ It is necessary for Japan to continue to promote the program of "National Movement for Utsukushii Mori Zukuri (Fostering Beautiful Forests) in Japan" and accelerate the implementation of carbon-sink measures including thinning and other forestry practices.

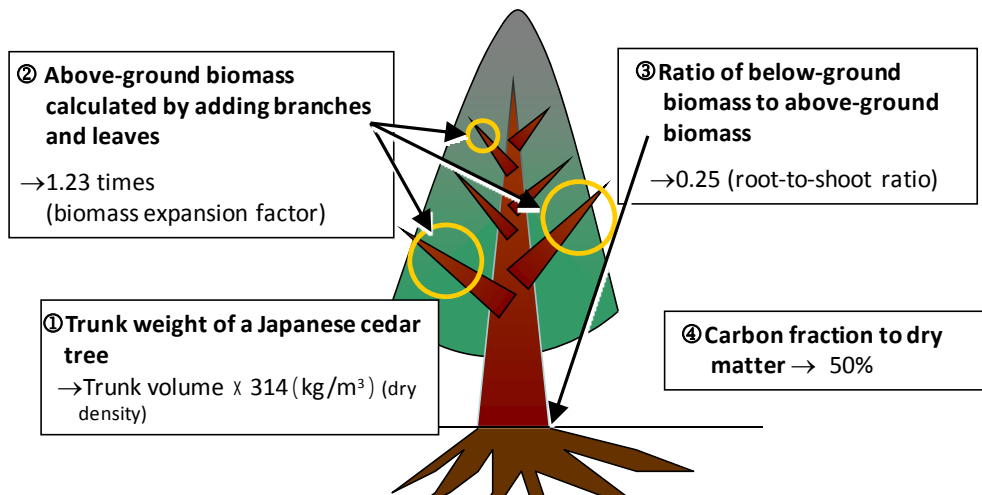
## Removals by Forest Carbon-Sink under the Kyoto Protocol (FY 2005)

Unit: 10,000 carbon tons (10,000 CO<sub>2</sub> tons in parentheses)

	Total emissions in the base year	Absorption Amounts Under the Kyoto Protocol			Percentage to total emissions in the base year
		Afforestation, Reforestation, Deforestation	Forest management	Total	
Total	34,390 (126,100)	-57 (-209)	1,023 (3,751)	966 (3,542)	2.8%

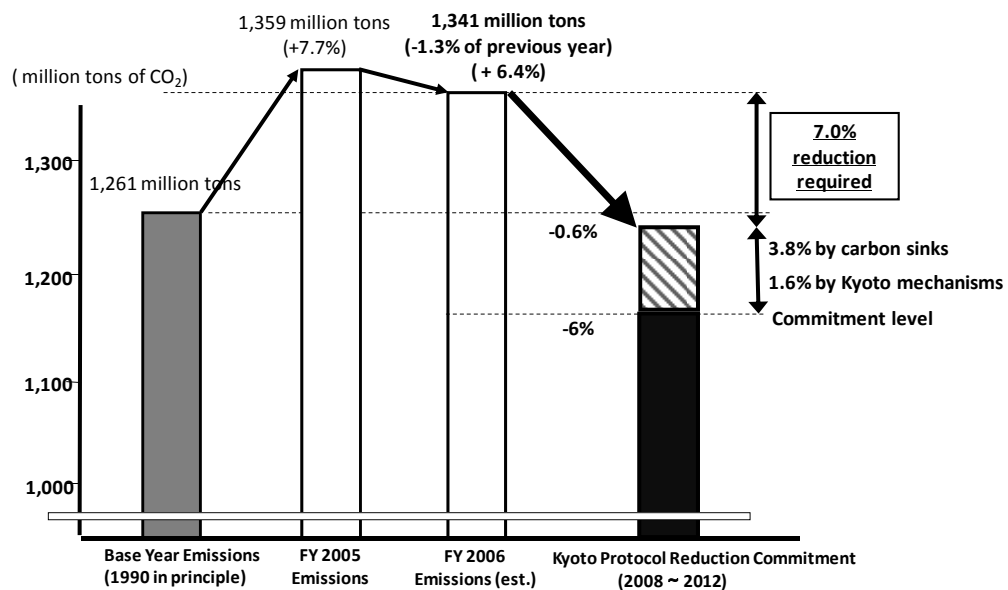
### The Amount of Carbon in a Tree

Ex.) 35-year old Japanese cedar (With a diameter of 20cm, a height of 18m and a trunk volume of 0.28m<sup>3</sup> in average)



The amount of carbon removed by this tree:  
 $0.28\text{m}^3 \times 314\text{kg/m}^3 \times 1.23 \times (1+0.25) \times 0.5 \doteq 68\text{kg}$

## Japan's Greenhouse Gas Emissions for FY 2006



## Chapter III Promotion of forest management and conservation for diverse and healthy forests

### 1. Forest management and conservation for diverse and healthy forests –For Fostering Beautiful Forests-

- ◇ With two-thirds of its total area covered by forests, Japan is a lush, green country. However, some planted forests established by our forefathers have not been properly managed, via thinning and other forestry practices, due to the declining profitability of forestry industry.
- ◇ Forest management and conservation is now promoted in order to develop healthy forests. In recent years, forestry practices including thinning have been accelerated as a means to mitigate global warming while developing broad-leaf and mixed forests is pursued in order to further diversify Japan's forests.
- ◇ To cope with the nationwide issue of Japanese Cedar pollinosis, Japanese Cedar forests should be converted to varieties which produce less pollen. It is necessary to establish a system to substantially increase the sapling supply of these varieties with less pollen.
- ◇ There has been an increasing number of citizens who wish to participate in volunteer activities for forest management and conservation. Corporations are also making contributions to forest management and conservation as part of their corporate social responsibility (CSR) activities.
- ◇ Prefectural governments have stepped up introducing an independent tax system for forest management and conservation. By FY 2007, 23 Prefectures have instituted a new tax system while 7 more are planning to do so after 2008.

### 2. Land Conservation for security and safety

- ◇ Forests that are especially expected to fulfill public interest functions such as water resource conservation and disaster prevention are designated as protection forests and managed to secure the expected functions.
- ◇ Large-scale mountain disasters have become more common due to growing frequency of localized heavy rains over the past few years. Construction of effective and efficient forest conservation facilities as well as information sharing on disasters must be pursued for regional safety improvement.
- ◇ Pine forest damages by pine wood nematode (*Bursaphelenchus xylophilus*) have been spreading to both high latitude and altitude areas where this disease was not observed before. Preventive measures in these areas are essential.
- ◇ The oak platypodid beetle (*Platypus quercivorus*) has caused the mass mortality of deciduous oaks (*Quercus crispula*, etc.) on the mainland along the Sea of Japan. Development of effective pest control measures is under way to prevent the further expansion of the damaged areas.
- ◇ Forest damage by deer and other wild animals has been spreading to new areas with the expansion of habitats. It is important to take measures such as developing broad-leaf forests to accommodate wild animal habitats and installing facilities such as guard fences to prevent damage.

### 3. Forests in the world

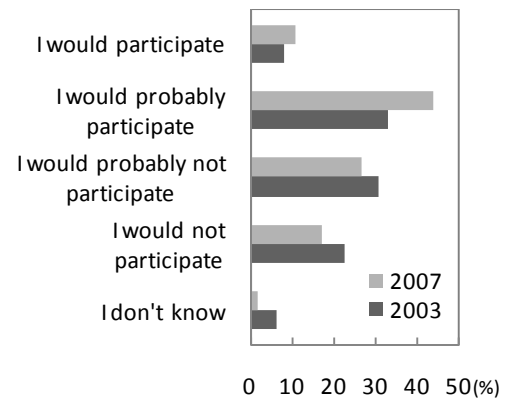
- ◇ There is a grave concern that deforestation and forest degradation in the world would worsen environmental problems such as global warming, loss of biodiversity and desertification.
- ◇ For this reason, it is important to actively promote cooperation for forestation and forest conservation in collaboration with international communities.
- ◇ Criteria and indicators initiatives for sustainable forest management are under way in many regions in the world. Japan is a member of the Montreal Process dealing with temperate forests other than in Europe, and has been the secretariat of the Process since the beginning of 2007, contributing to facilitating sustainable forest management worldwide.
- ◇ Combating illegal logging is critical for attaining sustainable forest management. Japan has been actively promoting measures against illegal logging and associated trade through participation in international talks and cooperative actions.

### Countries with the Highest Percentage and Largest Areas of Forest

		Ratio (%)	Forest area (million ha)
Forest cover: Top 5 countries	Finland	73.9	23
	Japan	68.2	25
	Sweden	66.9	28
	Malaysia	63.6	21
	South Korea	63.5	6
Total forest area: Top 5 countries	Russia	47.9	809
	Brazil	57.2	478
	Canada	33.6	310
	USA	33.1	303
	China	21.2	197

Source: Created based on FAO's "State of the World's Forests 2005"  
 Note: This indicates the top 5 countries in forest percentage and forest area from among OECD member nations or countries with at least 10 million ha of forest area and populations of at least 10 million people.

### Willingness to Participate in Forest Volunteer Activities



Source: Cabinet Office "Public Opinion Poll on Forest and Lifestyles" (2007)

### Mountain Disasters in FY 2007

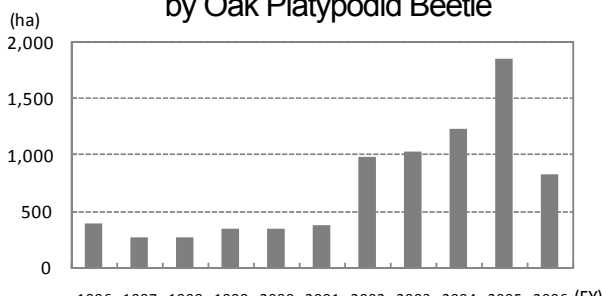


Earthquake damage on the Noto Peninsula (Wajima City, Ishikawa Prefecture)



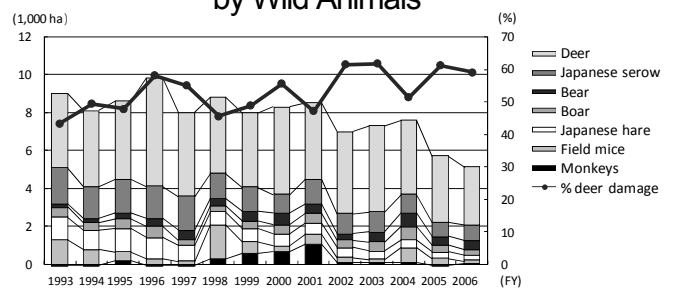
Damage from Typhoon #4 (Minami-Osumi Town, Kagoshima Prefecture)

### Changes in Forest Area Damaged by Oak Platypodid Beetle



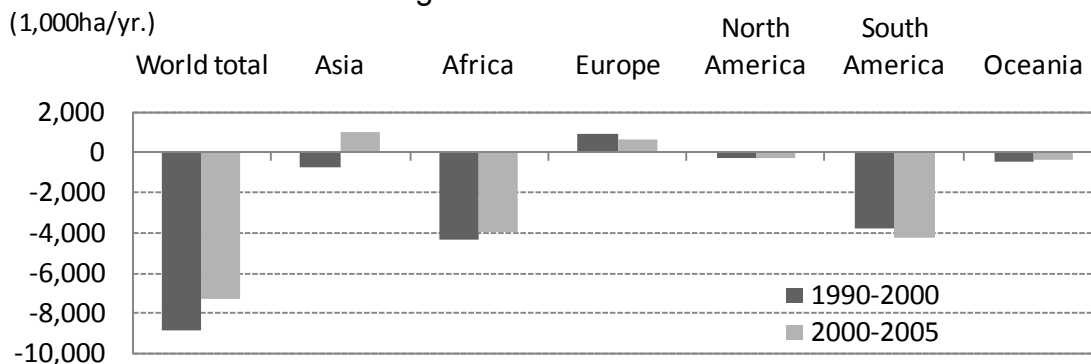
Source: Forestry Agency

### Changes in Forest Area Damaged by Wild Animals



Source: Forestry Agency

### Changes in World Forest Area



Source: FAO "State of the World's Forests 2005"

## Chapter IV Supply/demand of wood and wood industry

### 1. Overview of supply and demand of wood

- ◇ Demand for industrial wood in 2006 was 86.79 million m<sup>3</sup>. While the demand has been below 90 million m<sup>3</sup> since 2002, this still represents an increase of 0.93 million m<sup>3</sup> compared with the previous year.
- ◇ Supply of domestic wood (industrial wood) has increased for 4 consecutive years and reached 17.62 million m<sup>3</sup> in 2006, backed by the increase in the supply of domestic wood for plywood. The self-sufficiency rate of industrial wood for 2006 was 20.3%, rising for 2 years in a row.
- ◇ Over the past 2 years, supplies of wood for all sectors including sawnwood, pulp and chips, and plywood have increased, a trend not typically seen in past years.

### 2. Trends in wood industry

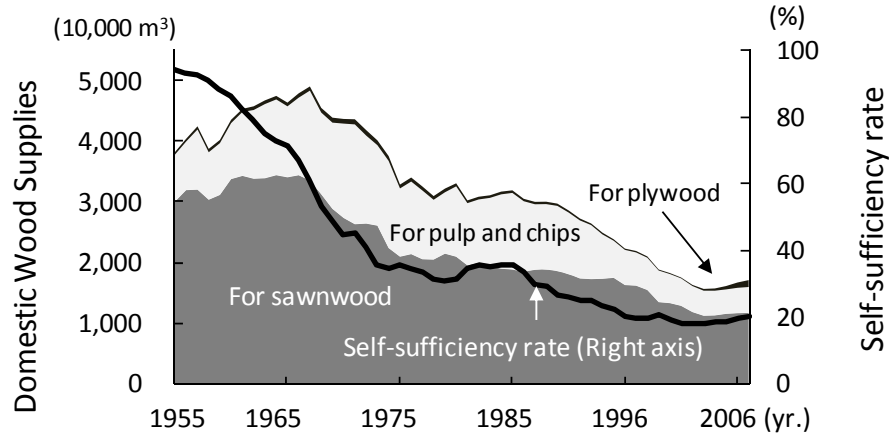
- ◇ The number of new housing starts, which reached 1.29 million units in 2006, fell to 1.06 million units in 2007 due to the adverse effects of the revised Building Standards Law.
- ◇ As there is a growing need for wood products of high quality and performance, demand for plywood and laminated wood has grown. In particular, domestic wood use for these areas is on the rise.
- ◇ It is important to promote cooperation between forestry industry and wood industry, make efforts to provide a steady supply of wood and wood products of high quality and performance and win new customers for Japanese cedar and other domestic wood.
- ◇ While the number of small-scale sawmills has decreased, the log consumption at large-scale sawmills is on the rise.
- ◇ To steadily provide consumers with wood products that meet their needs, it is important to develop processing systems that maximize economies of scale and make efforts to make the most of unique regional characteristics. It is also important to develop new usage of still-unused wood.
- ◇ Among various efforts to promote the use of appropriately produced woods, measures have been taken to combat illegal logging, such as encouraging the use of *Goho* (=legal) wood along with increased acquisition of forest certification.

### 3. Promoting wood use

- ◇ It is important to supply housing sectors with the wood products that meet their needs and promote "home building with wood materials which clearly show their quality and origin" in order to comprehensively encourage the use of wood. In addition, MAFF proactively utilizes wood products through government procurement including public works projects, government buildings and office supplies. It is also essential to further promote the use of such wood products in other public facilities and civil engineering works.
- ◇ Furthermore, it is important to continue "Familiarization with Wood Campaign" and "Mokuiku", i.e., education on the quality of wood products and the importance of their use.
- ◇ A wide array of practical applications for wood biomass has also been developed, and it is expected to serve as an eco-friendly resource.
- ◇ Wood exports have risen over the past few years. Lumber exports for houses to China and South Korea are noticeable. Going forward, it will be important to develop new markets in light of consumer needs in destination countries and to make efforts to export high value-added products.

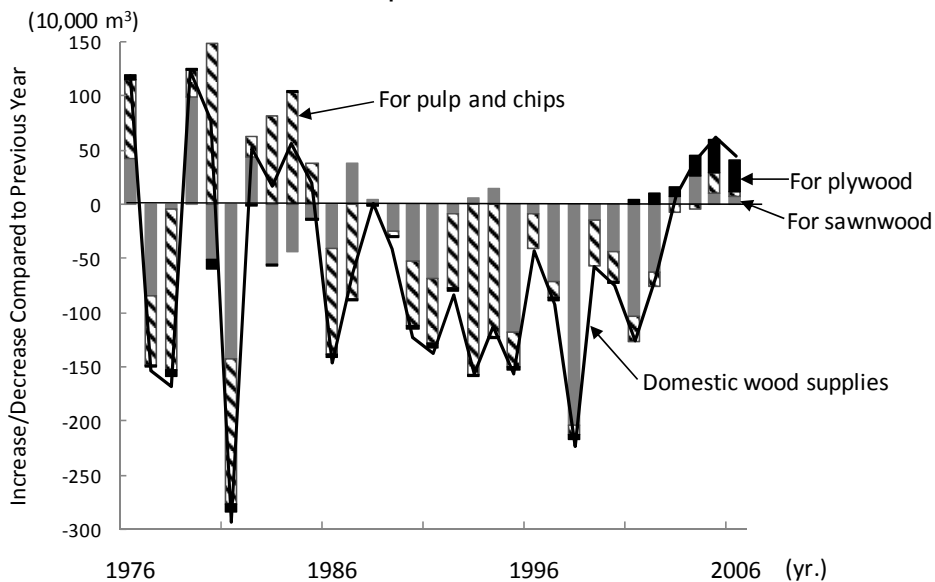


### Supply of Domestic Wood (Industrial Wood) and Self-Sufficiency Rate



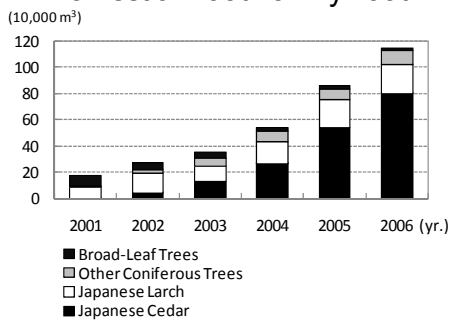
Source: Forestry Agency "Wood Demand and Supply Chart"

### Changes in the Supply of Domestic Wood (Industrial Wood) Compared to Previous Year



Source: Forestry Agency "Wood Demand and Supply Chart"

### Changes in the Supply of Domestic Wood for Plywood



Source: MAFF "Wood Demand and Supply Report", "Timber Statistics"



Kochi Station: A Station Built with Regional Wood (Kochi City, Kochi Prefecture)



Okhotsk Wood Plaza: "Mokuiku" Educational Promotion with Wooden Play Set (Kitami City, Hokkaido)

## Chapter V Measures for the “Forest for the People” in the National Forest






### 1. Expectations for the National Forest

- ◇ The National Forest covers 30% of Japan’s land area. It is the national asset with vital roles in serving public interest functions such as mitigation of global warming, conservation of national land and water resources.
- ◇ The National Forest includes a large area of natural, virgin forests as seen in the almost entirely government-owned forests of the UNESCO World Heritage sites of Yakushima, Shirakami-Sanchi and Shiretoko. These areas serve as vital habitats for wildlife.
- ◇ Moreover, 60% of special areas of National Parks are within the National Forest. The National Forest is also located along the coasts and in suburban areas where they play important roles as recreation areas for the people. Their proximity allows citizens to easily enjoy the abundance of Japan’s forests.

### 2. Various projects for achieving “Forest for the People”

- ◇ In order to adequately meet the nation’s diversifying needs, the National Forest categorizes its forests into 3 types based on strategic functions. Various forestry practices aimed at developing broad-leaf forests, long-term forests and multi-storied forests, have been implemented to enhance the public interest functions thereof.
- ◇ Thinning area increased 5,000 ha compared with previous year and reached 63,000 ha in 2006 as part of the carbon-sink measures required to meet the targets of the Kyoto Protocol. Local wood is utilized in Regional Forest Office buildings and thinned wood is actively employed in forest civil engineering projects.
- ◇ Forests where primeval forest ecosystems remain have been designated as protected forests or “Green Corridors” which connect several protected forests. In FY 2007, monitoring surveys started in order to observe and ascertain the changes of protected forests after the designation.
- ◇ 88% of national forests are designated as protection forests in order to conserve water resources and prevent soil runoff, etc. In addition, forest conservation projects are systematically implemented to restore affected areas and achieve safe and secure living environment.
- ◇ Forests suitable as natural sanctuaries and recreation are designated as Recreational Forests. The National Forest also promotes “Fun Forest”, “Friendly Forest” and “Corporation Forest”: programs designed to encourage and provide fields for environmental education and forest management by various entities.
- ◇ The National Forest produces approximately 20% of Japan’s domestic wood. Not only do they play a vital role in providing steady supply of domestic wood, they also serve as well-planned suppliers of long, large-diameter logs that cannot be easily provided from non-national forests.

## Ideals per National Forest Function Type

Function Type (Total 7.59 mil.ha)		Target Forest Ideal	Example Forests
Forest for public functions	Forest for water and soil conservation National Land Protection type 1.49 mil. ha (20%)	Forests with strong tree root networks, plant litter and healthy underbrush.	 Okushiri National Forest (Hokkaido Regional Forest Office)
	5.02 mil. ha (66%) Watershed Protection type 3.53 mil. ha (46%)	Forests with porous soil that easily absorbs water, diverse tree compositions, root networks and healthy underbrush.	 Tonnoyama National Forest (Kyushu Regional Forest Office)
	Forest for symbiosis with people Nature conservation Type 1.52 mil. ha (20%)	Forest with primal ecosystem and habitats for rare wildlife	 Tsurugisan National Forest (Shikoku Regional Forest Office)
	2.11 mil. ha (28%) Recreation Type 0.59 mil. ha (8%)	Forests home for outstanding natural beauty, historic sites, scenic views and other unique landscapes	 Kiriya National Forest (Kanto Regional Forest Office)
Forests for Cyclic Use of Resources 0.46 mil. Ha (6%)	Forests suited for producing strong and healthy timber that also have road networks	 Shimoashizawayama National Forest (Tohoku Regional Forest Office)	

Source: Forestry Agency

Notes: 1) Area data are of April 1, 2007.

2) Approximately 8,000 ha of forests with unclassified functions are included in "Forests for Cyclic Use of Resources".

## State of Protected Forests Established

(Units: Number / 1,000 ha)

Name		Purpose	No. of Sites	Area
Types of Protected Forest	Forest ecosystem conservation area	Protection of the ecosystems of forests, wildlife and genetic resources	28	494
	Forests for the conservation of genetic resources	Protection of genetic resources of all flora and fauna comprising the forest ecosystem	12	35
	Forest for the preservation of the genetic resources of tree species.	Protection of gene pool of timber species and endangered species	324	9
	Forest for the protection of plant colonies	Protection of rare plants and trees in high mountains that are valuable for scientific research	363	181
	Forest for the protection of specified wildlife habitats	Protection of habitats and breeding areas of rare and endangered fauna	36	21
	Forests for the protection of specified geographical features, etc.	Protection against erosion of unique landforms and geological features such as types of rock, joint of rock, spring areas and glaciated places	35	35
	Forests for the local culture	Protection of local forests that have cultural, spiritual and symbolic significance	35	4
	Total		833	778

Source: Forestry Agency

Note: Figures are of April 1, 2007.

## Appendix

### 1. Forestry-related Fundamental Indicators

Item	Unit	1980	1990	1996	2001	2002	2003	2004	2005	2006
① Gross domestic product	100 mil. yen	2,409,692	4,682,344	5,042,619	4,977,197	4,913,122	4,902,940	4,983,284	5,017,345	5,089,251
Forestry	"	8,260	6,626	8,340	8,037	6,621	5,767	5,265	4,464	4,757
Forestry/GDP	%	0.34	0.14	0.17	0.16	0.13	0.12	0.11	0.09	0.09
② Total number of workers	10,000 people	5,536	6,369	6,557	6,412	6,330	6,316	6,329	6,356	6,382
Forestry	"	19	11	8	7	6	6	6	6	6
Forestry/Total No. of workers	%	0.34	0.17	0.12	0.11	0.09	0.09	0.09	0.09	0.09
③ Area of national land of Japan	10,000 ha	3,777	3,777	3,778	3,779	3,779	3,779	3,779	3,779	3,779
④ Forest area	"	2,528	2,521	2,515	2,515	2,512	2,512	2,512	2,512	2,512
Forest/National land	%	67.8	67.6	67.5	67.5	67.4	67.4	67.4	67.4	67.4
⑤ Protection forest area	10,000 ha	732	833	863	905	920	1,019	1,133	1,165	1,176
Protection forest/Forest	%	29.0	33.0	34.3	36.0	36.6	40.6	45.1	46.4	46.8
⑥ Growing forest stock	100 mil. m <sup>3</sup>	25	31	35	35	40	40	40	40	40
⑦ Wood (Industrial wood) Supply (Consumption)	10,000 m <sup>3</sup>	10,896	11,220	11,233	9,125	8,813	8,719	8,980	8,586	8,679
Domestic production	"	3,456	2,800	2,249	1,676	1,608	1,616	1,656	1,718	1,762
Wood import	"	7,441	8,420	8,984	7,449	7,205	7,104	7,325	6,868	6,917
Self-sufficiency rate	%	31.7	25.0	20.0	18.4	18.2	18.5	18.4	20.0	20.3
⑧ New housing starts	10,000 houses	127	137	164	117	115	116	119	124	129
Wooden structure rate	%	59.2	45.5	45.9	44.5	43.8	45.1	45.5	43.9	43.3

Sources: ① Cabinet Office "SNA (System of National Accounts)" ② Ministry of Internal Affairs and Communications "Labor Force Survey"  
 ③ Ministry of Land, Infrastructure, Transport and Tourism "Statistical reports of Administrative" ④, ⑤ and ⑥ Forestry Agency  
 ⑦ Forestry Agency "Wood Demand and Supply Chart" ⑧ MLIT "Statistics on Building Construction Starts"

Notes 1: "Protection forest area" in ⑤ refers to actual measured area.

2: "Wood (industrial wood) Supply (consumption)", "Domestic production" and "Wood import" in ⑦ refer to the volume in log-equivalent.

### 2. Current State of Forest Resources

(Units: 1,000 ha, 10,000m<sup>3</sup>)

Classification	Total		Standing timber area				Treeless land		Bamboo groves area		
	Area	Stock	Planted Forest		Natural Forest		Area	Stock			
			Area	Stock	Area	Stock					
Total	25,121	404,012	10,361	233,804	13,349	170,086	1,255	122	156		
National Forest	Total	7,838	101,129	2,411	36,824	4,770	64,209	656	97	0	
	Under the Forestry Agency's jurisdiction	Total	7,641	98,961	2,384	36,419	4,633	62,445	624	97	0
		State-owned	7,524	97,163	2,289	34,649	4,630	62,424	604	90	0
		Government reforestation	107	1,791	95	1,770	3	21	10	0	0
		Others	10	6	0	0	0	0	10	6	0
Under other Agency's jurisdiction	197	2,169	28	405	137	1,764	32	0	0		
Private and public forest	Total	17,283	302,883	7,949	196,980	8,579	105,877	598	26	156	
	Public Forests	Total	2,796	43,301	1,232	25,483	1,426	17,802	133	16	5
		Prefecture	1,200	17,450	476	9,021	665	8,419	59	11	0
		Municipality/Financial ward	1,596	25,851	756	16,462	762	9,383	73	5	5
	Private Forest	14,440	259,035	6,705	171,244	7,126	87,782	461	10	149	
Others	46	548	12	254	27	294	4	0	3		

Source: Forestry Agency

Notes 1: Data cover the forests defined in the Forest Law Article 2.1.

2: "Treeless land" refers to cutover and unplanted areas.

3: Areas facing difficulty in regeneration are included in the natural forests.

4: "Others" refer to forests that are not subject to the Regional Forest Plans for Non-national Forest under the Forest Law Article 5 or the Regional Forest Management Plan for National Forests under the Forest Law Article 7.2.

5: Figures for the total may not agree with the sum of the each item due to the rounding-off in calculation.

6: Figures are of March 31, 2002.



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