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**Food and Agriculture Organization of the United Nations**

**GLOBAL FOREST RESOURCES  
ASSESSMENT**

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## The Forest Resources Assessment Programme

Sustainably managed forests have multiple environmental and socio-economic functions important at the global, national and local scales, and play a vital part in sustainable development. Reliable and up-to-date information on the state of forest resources - not only on area and area change, but also on such variables as growing stock, wood and non-wood products, carbon, protected areas, use of forests for recreation and other services, biological diversity and forests' contribution to national economies - is crucial to support decision-making for policies and programmes in forestry and sustainable development at all levels.

FAO, at the request of its member countries, regularly monitors the world's forests and their management and uses through the Forest Resources Assessment Programme. This country report forms part of the Global Forest Resources Assessment 2005 (FRA 2005), which is the most comprehensive assessment to date. More than 800 people have been involved, including 172 national correspondents and their colleagues, an Advisory Group, international experts, FAO staff, consultants and volunteers. Information has been collated from 229 countries and territories for three points in time: 1990, 2000 and 2005.

The reporting framework for FRA 2005 is based on the thematic elements of sustainable forest management acknowledged in intergovernmental forest-related fora and includes more than 40 variables related to the extent, condition, uses and values of forest resources. More information on the FRA 2005 process and the results - including all the country reports - is available on the FRA 2005 Web site ([www.fao.org/forestry/fra2005](http://www.fao.org/forestry/fra2005)).

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The Global Forest Resources Assessment 2005 Country Report Series is designed to document and make available the information forming the basis for the FRA 2005 reports. The Country Reports have been compiled by officially nominated country correspondents in collaboration with FAO staff. Prior to finalisation, these reports were subject to validation by forestry authorities in the respective countries.

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## 1 Table T1 – Extent of Forest and Other wooded land

### 1.1 FRA 2005 Categories and definitions

Category	Definition
Forest	Land spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of more than 10 percent, or trees able to reach these thresholds <i>in situ</i> . It does not include land that is predominantly under agricultural or urban land use.
Other wooded land	Land not classified as “Forest”, spanning more than 0.5 hectares; with trees higher than 5 meters and a canopy cover of 5-10 percent, or trees able to reach these thresholds <i>in situ</i> ; or with a combined cover of shrubs, bushes and trees above 10 percent. It does not include land that is predominantly under agricultural or urban land use.
Other land	All land that is not classified as “Forest” or “Other wooded land”.
Other land with tree cover (Subordinated to “Other land”)	Land classified as “Other land”, spanning more than 0.5 hectares with a canopy cover of more than 10 percent of trees able to reach a height of 5 meters at maturity.
Inland water bodies	Inland water bodies generally include major rivers, lakes and water reservoirs.

### 1.2 National data

#### 1.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Donnegan, J. A., S. L. Butler, W. Graboweicki, B. A. Hiserote, and D. Limtiaco. 2004. Guam's Forest Resources, 2002. Resource Bulletin PNW-RB-243, U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, Portland, OR.	H	Forest land area	2002	A five class land cover map was derived from IKONOS satellite data (1m resolution). Classes included: forest, nonforest vegetation, barren land, urban, and inland water.

#### 1.2.2 Classification and definitions

National class	Definition
Forest land	Land spanning more than 0.5 hectares and a tree canopy cover of more than 10 percent.
Unreserved forest land	Forest land available for wood removals.
Protected forest land	Forest land that is not available for wood removals.
Limestone forest	Forest occurring on limestone substrate, generally in northern Guam
Volcanic forest	Forest occurring on volcanic soils, generally in southern Guam
Nonforest urban	Land used primarily for urban purposes.
Nonforest vegetation	Land characterized primarily by non-tree species or <10% canopy cover of trees.

Barren lands	Lands with exposed soil, rock, or sand, devoid of vegetation.
Water	Inland water bodies generally include major rivers, lakes and water reservoirs.

### 1.2.3 Original data

Landcover	Acres	Hectares
Limestone forest	44,704	18,091
Volcanic forest	19,129	7,741
Total unreserved	63,833	25,832
Reserved forest land	0	0
All forest land	63,833	25,832
Nonforest and other area:		
Nonforest urban	23,956	9,695
Nonforest vegetation	44,455	17,990
Barren lands	1,539	623
Area not classified	1,622	656
Water	255	103
All nonforest and other	71,827	29,067
Total area	135,660	54,900

## 1.3 Analysis and processing of national data

### 1.3.1 Calibration

FAOSTAT total area = 55,000 ha

Calibration factor 2002 =  $(55,000/54,900) = 1.00182379604469$

Landcover	Acres	Hectares	Recalibration Hectares
Limestone forest	44,704	18,091	18,124
Volcanic forest	19,129	7,741	7,755
Total unreserved	63,833	25,832	25,880
Reserved forest land	0	0	0
All forest land	63,833	25,832	25,880
Nonforest and other area:			
Nonforest urban	23,956	9,695	9,712
Nonforest savanna or fernland	44,455	17,990	18,023
Barren lands	1,539	623	624
Area not classified	1,622	656	658
Water	255	103	103
All nonforest and other	71,827	29,067	29,120
Total area	135,660	54,900	55,000

### 1.3.2 Estimation and forecasting

Only one point in time, 2002, is provided for the forest inventory data, thus no estimation and forecasting was used.

### 1.4 Data for National reporting table T1

FRA 2005 Categories	Area (1000 hectares)		
	1990	2000	2005
Forest	NDA	25.88	25.88
Other wooded land			
Other land	NDA	29.12	29.12
...of which with tree cover <sup>1</sup>			
Inland water bodies <sup>2</sup>	0	0	0
<b>TOTAL</b>	<b>55.00</b>	<b>55.00</b>	<b>55.00</b>

<sup>1</sup>Area of “Other land with tree cover” is included in the area reported under “Other land” and should therefore be excluded when calculating the total area for the country.

<sup>2</sup>FAOSTAT reports no water for Guam.

### 1.5 Comments to National reporting table T1

Data reported in FRA 2005 for the year 2000 was collected in 2002. No other inventory data exists to establish a trend. The 2002 data was collected prior to the two major typhoons that struck Guam later in that year. The 2002 data was placed in the 2000 column as the best fit for this reason. Forest land area in Guam includes minor components of agroforest and secondary forest. No data was available for an estimate of 1990 forest land. The FRA 2000 estimate for forest land in Guam was 21,000 ha.

## 2 Table T2 – Ownership of Forest and Other wooded land

No quantitative data are available for ownership on Guam currently.

From the U.S. Department of the Interior, Office of Insular Affairs: *“There are three categories of land-use ownership: private, Government of Guam, and the U.S. Government. The Federal Government holds about 30 percent of the total land area; the Government of Guam approximately 25 percent; and the remaining 45 percent is privately owned. Private land ownership on Guam is not restricted on the basis of nationality or residency and title can be held in fee simple. Some Federal military land has recently been turned back for the Government of Guam determination as to future use.”*

### 3 Table T3 – Designated function of Forest and Other wooded land

#### 3.1 FRA 2005 Categories and definitions

##### *Types of designation*

Category	Definition
Primary function	A designated function is considered to be primary when it is significantly more important than other functions. This includes areas that are legally or voluntarily set aside for specific purposes.
Total area with function	Total area where a specific function has been designated, regardless whether it is primary or not.

##### *Designation categories*

Category / Designated function	Definition
Production	Forest / Other wooded land designated for production and extraction of forest goods, including both wood and non-wood forest products.
Protection of soil and water	Forest / Other wooded land designated for protection of soil and water.
Conservation of biodiversity	Forest / Other wooded land designated for conservation of biological diversity.
Social services	Forest / Other wooded land designated for the provision of social services.
Multiple purpose	Forest / Other wooded land designated to any combination of: production of goods, protection of soil and water, conservation of biodiversity and provision of social services and where none of these alone can be considered as being significantly more important than the others.
No or unknown function	Forest / Other wooded land for which a specific function has not been designated or where designated function is unknown.

#### 3.2 National data

##### 3.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Fosberg, F. R. 1960. The vegetation of Micronesia: 1. General descriptions, the vegetation of the Marianas Islands, and a detailed consideration of the vegetation of Guam. Bulletin of the American Museum of Natural History 119:1-76.	M	Descriptive comments on forest land use.	1960	
Stone, B. C. 1971. The flora of Guam. Micronesica 6:657 pp.	M	Descriptive comments on forest land use.	1971	
Morton, J. M., F. A. Amidon, and L. R. Quinata. 2000. Structure of a limestone forest on Northern Guam. Micronesica 32:299-244.	M	Descriptive comments on forest land use.	2000	

### 3.2.2 Classification and definitions

No national classification for designated function exists on Guam.

### 3.2.3 Original data

All forest land is assumed to be multiple purpose use.

## 3.3 Analysis and processing of national data

### 3.3.1 Calibration

Same as table 1.

## 3.4 Data for National reporting table T3

FRA 2005 Categories / Designated function	Area (1000 hectares)					
	Primary function			Total area with function		
	1990	2000	2005	1990	2000	2005
<b>Forest</b>						
Production						
Protection of soil and water						
Conservation of biodiversity						
Social services						
Multiple purpose		25.880	25.880	not appl.	not appl.	not appl.
No or unknown function				not appl.	not appl.	not appl.
<b>Total - Forest</b>	NDA	25.880	25.880	not appl.	not appl.	not appl.
<b>Other wooded land</b>						
Production						
Protection of soil and water						
Conservation of biodiversity						
Social services						
Multiple purpose				not appl.	not appl.	not appl.
No or unknown function				not appl.	not appl.	not appl.
<b>Total – Other wooded land</b>	NDA	NDA	NDA	not appl.	not appl.	not appl.

### 3.5 Comments to National reporting table T3

Forests on Guam provide cover for protection of soil and water, conservation of biodiversity, and social services, such as recreation, hunting, and non-wood forest products. Some wood is gathered for cooking, but wood production is a very low priority on Guam.

#### **4 Table T4 – Characteristics of Forest and Other wooded land**

No quantitative data are available on forest characteristics.

The majority of Guam's forests would be classified as modified-natural and semi-natural. There are vast areas that were aurally-seeded following World War II with the non-native, small tree species *Leucaena leucocephala*, for soil and water protection purposes. Currently the Government of Guam, Forestry & Soil Resource Division is attempting to revegetate extensive tracts of barren, eroding volcanic soils in southern Guam.

## 5 Table T5 – Growing stock

### 5.1 FRA 2005 Categories and definitions

Category	Definition
Growing stock	Volume over bark of all living trees more than X cm in diameter at breast height (or above buttress if these are higher). Includes the stem from ground level or stump height up to a top diameter of Y cm, and may also include branches to a minimum diameter of W cm.
Commercial growing stock	The part of the growing stock of species that are considered as commercial or potentially commercial under current market conditions, and with a diameter at breast height of Z cm or more.

### 5.2 National data

#### 5.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Donnegan, J. A., S. L. Butler, W. Graboweicki, B. A. Hiserote, and D. Limtiaco. 2004. Guam's Forest Resources, 2002. Resource Bulletin PNW-RB-243, U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, Portland, OR.	H	Tree stem volume.	2002	Data derived from 46 - 670 sq. m field plots where tree diameters and heights were measured.

#### 5.2.2 Classification and definitions

National class	Definition
Gross volume	Wood volume of the tree stem, from the ground to a height where the diameter equals 2.5 cm.
Net volume	Wood volume of the tree stem, from the ground to a height where the diameter equals 2.5 cm, minus portions of the stem that are rotten or missing.

#### 5.2.3 Original data

##### Estimated gross volume of all live trees on forest land by forest type-group and diameter class

Forest type group	Diameter class				All sizes
	<12.7 cm	12.7 – 28 cm	28.1 - 51 cm	51.1+ cm	
	<i>Cubic meters</i>				
Limestone forest type	707,922	628,488	234,418	111,497	1,682,325
Volcanic/ravine forest type	182,293	398,406	324,433	0	905,132
Total	890,215	1,026,895	558,851	111,497	2,587,458

**Estimated net volume of all live trees greater than or equal to 5 inches in diameter on forest land by forest-type group and diameter class**

Forest type group	Diameter class (inches)			All sizes
	12.7 – 28 cm	28.1 - 51 cm	51.1+ cm	
	<i>Cubic meters</i>			
Limestone forest type	607,899	233,571	106,385	947,855
Volcanic/ravine forest type	397,820	320,495	0	718,315
Total	1,005,719	554,066	106,385	1,666,170

### 5.3 Analysis and processing of national data

#### 5.3.1 Calibration

Conversion to metric units.

#### 5.3.2 Estimation and forecasting

None. 2002 data placed into FRA 2000 column.

### 5.4 Reclassification into FRA 2005 classes

Total net volume was used for FRA growing stock category.

## 5.5 Data for National reporting table T5

FRA 2005 Categories	Volume (million cubic meters over bark)					
	Forest			Other wooded land		
	1990	2000	2005	1990	2000	2005
Growing stock		1.666170				
Commercial growing stock	NDA	NDA	NDA	NDA	NDA	NDA

Specification of country threshold values	Unit	Value	Complementary information
1. Minimum diameter at breast height of trees included in Growing stock (X)	cm	12.7	
2. Minimum diameter at the top end of stem (Y) for calculation of Growing stock	cm	2.5	
3. Minimum diameter of branches included in Growing stock (W)	cm	NDA	
4. Minimum diameter at breast height of trees in Commercial growing stock (Z)	cm	NDA	
5. Volume refers to “Above ground” (AG) or “Above stump” (AS)	AG / AS	AG	
6. Have any of the above thresholds (points 1 to 4) changed since 1990	Yes/No	No	
7. If yes, then attach a separate note giving details of the change	Attachment		

## 5.6 Comments to National reporting table T5

Two major typhoon struck Guam within a year of the 2001 inventory. Volume, biomass, and carbon mass estimates for 2005 cannot be reliably projected from 2001 data.

## 6 Table T6 – Biomass stock

### 6.1 FRA 2005 Categories and definitions

Category	Definition
Above-ground biomass	All living biomass above the soil including stem, stump, branches, bark, seeds, and foliage.
Below-ground biomass	All living biomass of live roots. Fine roots of less than 2mm diameter are excluded because these often cannot be distinguished empirically from soil organic matter or litter.
Dead wood biomass	All non-living woody biomass not contained in the litter, either standing, lying on the ground, or in the soil. Dead wood includes wood lying on the surface, dead roots, and stumps larger than or equal to 10 cm in diameter or any other diameter used by the country.

### 6.2 National data

#### 6.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Donnegan, J. A., S. L. Butler, W. Graboweicki, B. A. Hiserote, and D. Limtiaco. 2004. Guam's Forest Resources, 2002. Resource Bulletin PNW-RB-243, U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, Portland, OR.	H	Biomass from tree stem volume.	2002	Cited publication provides species level aboveground biomass data. For the FRA 2005 report, averages were used derived from stem volumes.
Penman, J., M. Gytarsky, T. Hiraishi, T. Krug, D. Kruger, R. Pipatti, L. Buendia, K. Miwa, T. Ngara, K. Tanabe, and F. Wagner, editors. 2003. Good Practice Guidance for Land Use, Land-Use Change and Forestry. Intergovernmental Panel on Climate Change, National Greenhouse Gas Inventories Programme, Institute for Global Environmental Strategies (IGES), Hayama, Kanagawa, Japan,.	M	Biomass expansion factors and ratio of aboveground to belowground biomass.	2003	

#### 6.2.2 Classification and definitions

No national classification exists.

### 6.2.3 Original data

Volume data in table 5 was used for biomass estimation.

## 6.3 Analysis and processing of national data

### 6.3.1 Calibration

Biomass was calculated using total stem volumes and an average wood density (0.5), biomass expansion factor (3.4; tropical broadleaf), and aboveground to belowground ratio estimator (0.27; tropical/sub-tropical dry forest).

## 6.4 Data for National reporting table T6

FRA 2005 Categories	Biomass (million metric tonnes oven-dry weight)					
	Forest			Other wooded land		
	1990	2000	2005	1990	2000	2005
Above-ground biomass		2.832489325				
Below-ground biomass		0.764772118				
Dead wood biomass		NDA		NDA	NDA	NDA
<b>TOTAL</b>	NDA	3.597261442	NDA	NDA	NDA	NDA

Thresholds used by the country are the following:  
Same as for volume in table 5.

## 6.5 Comments to National reporting table T6

Original data used species-specific wood density where known (31 out of 50 cases). The data presented in table 6 estimates biomass from the volume estimates presented in table 5 and uses the average wood density, biomass expansion factors, and ratio of aboveground to belowground biomass documented in the IPCC Good Practice Guidance for Land Use, Land-Use Change and Forestry. Two major typhoon struck Guam within a year of the 2001 inventory. Volume, biomass, and carbon mass estimates for 2005 cannot be reliably projected from 2001 data.

## 7 Table T7 – Carbon stock

### 7.1 FRA 2005 Categories and definitions

Category	Definition
Carbon in above-ground biomass	Carbon in all living biomass above the soil, including stem, stump, branches, bark, seeds, and foliage.
Carbon in below-ground biomass	Carbon in all living biomass of live roots. Fine roots of less than 2 mm diameter are excluded, because these often cannot be distinguished empirically from soil organic matter or litter.
Carbon in dead wood biomass	Carbon in all non-living woody biomass not contained in the litter, either standing, lying on the ground, or in the soil. Dead wood includes wood lying on the surface, dead roots, and stumps larger than or equal to 10 cm in diameter or any other diameter used by the country.
Carbon in litter	Carbon in all non-living biomass with a diameter less than a minimum diameter chose by the country for lying dead (for example 10 cm), in various states of decomposition above the mineral or organic soil. This includes the litter, fomic, and humic layers.
Soil carbon	Organic carbon in mineral and organic soils (including peat) to a specified depth chosen by the country and applied consistently through the time series.

### 7.2 National data

#### 7.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Donnegan, J. A., S. L. Butler, W. Graboweicki, B. A. Hiserote, and D. Limtiaco. 2004. Guam's Forest Resources, 2002. Resource Bulletin PNW-RB-243, U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, Portland, OR.	H	Carbon mass from tree stem volume.	2002	Cited publication provides species level aboveground carbon mass data. For the FRA 2005 report, averages were used derived from stem volumes.
Penman, J., M. Gytarsky, T. Hiraishi, T. Krug, D. Kruger, R. Pipatti, L. Buendia, K. Miwa, T. Ngara, K. Tanabe, and F. Wagner, editors. 2003. Good Practice Guidance for Land Use, Land-Use Change and Forestry. Intergovernmental Panel on Climate Change, National Greenhouse Gas Inventories Programme, Institute for Global Environmental Strategies (IGES), Hayama, Kanagawa, Japan,.	M	Carbon mass conversion factors, biomass expansion factors and ratio of aboveground to belowground biomass.	2003	

## 7.2.2 Classification and definitions

National class	Definition
Weight of stem carbon	Mass of carbon in main stem of trees from the ground to a height where the diameter equals 2.5 cm.

Note: If different national data sources use different classes and definitions, a table such as above is needed for each relevant data source.

## 7.2.3 Original data

Volume data from table 5 was used in carbon mass estimation.

## 7.3 Data for National reporting table T7

FRA 2005 Categories	Carbon (Million metric tonnes)					
	Forest			Other wooded land		
	1990	2000	2005	1990	2000	2005
Carbon in above-ground biomass		1.41624				
Carbon in below-ground biomass		0.38239				
<b>Sub-total: Carbon in living biomass</b>		<b>1.79863</b>				
Carbon in dead wood		NDA				
Carbon in litter		NDA				
<b>Sub-total: Carbon in dead wood and litter</b>		<b>NDA</b>				
Soil carbon to a depth of _____ cm		NDA				
<b>TOTAL CARBON</b>	<b>NDA</b>	<b>1.79863</b>	<b>NDA</b>	<b>NDA</b>	<b>NDA</b>	<b>NDA</b>

## 7.4 Comments to National reporting table T7

Biomass numbers were reduced by 50% to calculate carbon stocks. Two major typhoon struck Guam within a year of the 2001 inventory. Volume, biomass, and carbon mass estimates for 2005 cannot be reliably projected from 2001 data.

## 8 Table T8 – Disturbances affecting health and vitality

### 8.1 FRA 2005 Categories and definitions

Category	Definition
Disturbance by fire	Disturbance caused by wildfire, independently whether it broke out inside or outside the forest/OWL.
Disturbance by insects	Disturbance caused by insect pests that are detrimental to tree health.
Disturbance by diseases	Disturbance caused by diseases attributable to pathogens, such as a bacteria, fungi, phytoplasma or virus.
Other disturbance	Disturbance caused by other factors than fire, insects or diseases.

### 8.2 National data

#### 8.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Donnegan, J. A., S. L. Butler, W. Graboweicki, B. A. Hiserote, and D. Limtiaco. 2004. Guam's Forest Resources, 2002. Resource Bulletin PNW-RB-243, U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, Portland, OR.	H	Disturbance	2002	Data collection is extensive on the field plots, but the sample of 46 plots may not be sufficient to capture disturbance for the entire island.

#### 8.2.2 Classification and definitions

National class	Definition
None - no observable disturbance	
Insect damage	Disturbance caused by insect pests that are detrimental to tree health.
insect damage to understory vegetation	
insect damage to trees, including seedlings and saplings	
Disease damage	Disturbance caused by diseases attributable to pathogens, such as a bacteria, fungi, phytoplasma or virus.
disease damage to understory vegetation	
disease damage to trees, including seedlings and saplings	
Fire (from crown and ground fire, either prescribed or natural)	Disturbance caused by wildfire, independently whether it broke out inside or outside the forest/OWL.
ground fire	
crown fire	
Animal damage	Significant damage caused by feeding and rooting animals.
beaver (includes flooding caused by beaver)	

porcupine	
deer/ungulate	
bear	
rabbit	
domestic animal/livestock (includes grazing):	
pigs, wild boars	
Weather damage	Damage caused by specific weather agents.
ice	
wind (includes typhoon, hurricane, tornado)	
flooding (weather induced)	
drought	
earth movement/avalanches	
erosion	
Vegetation (suppression, competition, vines)	Disturbance caused by physical effects of one plant on another. Generally limited to mechanical actions of rubbing, striking, or breakage caused by loading.
Unknown / not sure / other	Disturbance caused by factors other than listed
Human-caused damage	

Note: If different national data sources use different classes and definitions, a table such as above is needed for each relevant data source.

### 8.2.3 Original data

Description	Acres
None - no observable disturbance	59,536.56
pigs, wild boars	4,296.95

## 8.3 Analysis and processing of national data

### 8.3.1 Estimation and forecasting

Acres were converted to hectares by multiplying by 0.404687261.

Description	Hectares
None - no observable disturbance	24,093.68739
pigs, wild boars	1,738.920926

## 8.4 Reclassification into FRA 2005 classes

Wild boars were reclassified as other disturbance.

## 8.5 Data for National reporting table T8

FRA-2005 Categories	Average annual area affected (1000 hectares)			
	Forests		Other wooded land	
	1990	2000	1990	2000
Disturbance by fire	NDA	NDA	NDA	NDA
Disturbance by insects	NDA	NDA	NDA	NDA
Disturbance by diseases	NDA	NDA	NDA	NDA
Other disturbance	NDA	1.74	NDA	NDA

## **8.6 Comments to National reporting table T8**

Fire and insects are significant disturbance agents in Guam. Human-caused fire is especially prevalent during the dry season in grasslands and adjacent forest. Donnegan et al. (2004) estimate that about 20 percent of the individual trees on Guam have been damaged by storms and people, diseases, insects, decay, and damage by other plant species. Fire was not detected on plots in the 2002 inventory owing to rapid revegetation and the relatively small number of field plots installed.

## 9 Table T9 – Diversity of tree species

### 9.1 FRA 2005 Categories and definitions

Category	Definition
Number of native tree species	The total number of native tree species that have been identified within the country.
Number of critically endangered tree species	The number of native tree species that are classified as “Critically endangered” in the IUCN red list.
Number of endangered tree species	The number of native tree species that are classified as “Endangered” in the IUCN red list.
Number of vulnerable tree species	The number of native tree species that are classified as “Vulnerable” in the IUCN red list.

### 9.2 National data

#### 9.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
IUCN Red list	M			

### 9.3 Data for National reporting table T9

FRA 2005 Categories	Number of species (year 2000)
Native tree species	NDA
Critically endangered tree species	1
Endangered tree species	0
Vulnerable tree species	2

### 9.4 Comments to National reporting table T9

Critically endangered:

*Serianthes nelsonii*

Vulnerable:

*Aglaia mariannensis*

*Heritiera longipetiolata*

## 10 Table T10 – Growing stock composition

### 10.1 FRA 2005 Categories and definitions

List of species names (scientific and common names) of the ten most common species.

### 10.2 National data

#### 10.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Donnegan, J. A., S. L. Butler, W. Graboweicki, B. A. Hiserote, and D. Limtiaco. 2004. Guam's Forest Resources, 2002. Resource Bulletin PNW-RB-243, U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, Portland, OR.	H	Stem volume	2002	Data derived from 46 - 670 sq. m field plots where tree diameters and heights were measured. Small sample sizes at the species level may correspond to high standard errors.

#### 10.2.2 Original data

### 10.3 Analysis and processing of national data

#### 10.3.1 Calibration

Numbers were converted to metric units.

#### 10.3.2 Estimation and forecasting

### 10.4 Data for National reporting table T10

FRA 2005 Categories / Species name (Scientific name and common name)	Growing Stock in Forests (million cubic meters)	
	1990	2000
<i>Cocos nucifera</i>	NDA	0.3857
<i>Vitex parviflora</i>	NDA	0.2182
<i>Cycas circinalis</i>	NDA	0.1312
<i>Mangifera indica</i>	NDA	0.1210
<i>Ficus prolixa</i>	NDA	0.1014
<i>Heterospathe elata</i>	NDA	0.1009
<i>Premna obtusifolia</i>	NDA	0.0886
<i>Pandanus tectorius</i>	NDA	0.0793
<i>Leucaena leucocephala</i>	NDA	0.0790
<i>Hibiscus tiliaceus</i>	NDA	0.0500
Remainder of species	NDA	0.3110
<b>TOTAL</b>	<b>NDA</b>	<b>1.6662</b>

## 11 Table T11 – Wood removal

No quantitative data are available for wood removals.

Small amounts of wood are collected for cooking. No industrial roundwood industry exists on Guam.

## 12 Table T12 – Value of wood removal

No quantitative data are available for wood removals.

## 13 Table T13 – Non-wood forest product removal

No quantitative data are available for non-wood forest products.

Hunting of wild pig and deer is prevalent on Guam though no reliable statistics exist. Betel nut (the fruit of *Areca catechu*) and other fruits are regularly collected by people who live in and near forests.

## 14 Table T14 – Value of non-wood forest product removal

No quantitative data are available for non-wood forest products.

## 15 Table T15 – Employment in forestry

No quantitative data are available for employment in forestry.

The following data applies to the Territory of Guam’s Division of forestry only. Data are from the U.S. National Association of State Foresters for the Territory of Guam, Division of Forestry & Soil Resources:

<b>Employment Classification</b>	<b>Number of Employees</b>
Managerial Employees	1
Professional Employees	2
Technician Employees	12
Administrative/Clerical Employees	2
Seasonal/Temporary Employees	20
<b>Guam Forestry Total</b>	<b>37</b>