Forestry Department
Food and Agriculture Organization of the United Nations

GLOBAL FOREST RESOURCES ASSESSMENT

COUNTRY REPORTS

BAHAMAS

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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).

The Global Forest Resources Assessment process is coordinated by the Forestry Department at FAO headquarters in Rome. The contact person for matters related to FRA 2005 is:

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No official report has been received from the Bahamas.

This report is, therefore, the result of a desk study prepared by the FRA 2005 secretariat in Rome, which summarizes existing available information using the established format for FRA 2005 country reports.

Contents

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 *in situ*. 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 *in situ*; 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
Bacon P.R. 1993. Mangroves in the Lesser Antilles, Jamaica and Trinidad and Tobago. *In:* Lacerda L.D. 1993. *Conservation and sustainable utilization of mangrove forests in Latin America and Africa regions, Part I - Latin America.* p. 155 210 Mangrove Ecosystems technical reports ITTO/ISME Project PD114/90 (F). Okinawa, Japan. 272 pp.	H	Mangrove area	1991	Based on a ground survey
FAOSTAT	H	Land area		Secondary data source
Russell, C. 2000. Bahamas Country Report: Forestry Outlook Study for the Caribbean. Project GCP/INT, FAO, Rome	H	Forest area	1986	Secondary data source
FAO 2001. Validation Sheet Bahamas. FAO Rome	M	Forest area	2000	Estimated the area of coppice forest

1.2.2 Classification and definitions

1986

National class	Definition
Density Class 1 (70-100%)	Forest with 70-100% canopy cover
Density Class 2 (50-69%)	Forest with 50-69% canopy cover
Density Class3 (11-49%)	Forest with 11-49% canopy cover
Density Class 4 (0-10%)	Forest with 0-10% canopy cover
Swamp	No definition given
Bluehole	No definition given
Other	No definition given

1.2.3 Original data

1986

National Classes	Area (acres)
Density Class 1 (70-100%)	154 470
Density Class 2 (50-69%)	121 022
Density Class3 (11-49%)	139 381
Density Class 4 (0-10%)	88 239
Swamp	11 165
Bluehole	304
Other	423
Total pine forest	515 004

Russell (2000) also notes that the total area of wetlands is 4 286 km^2 some of which contains mangroves and that there are areas of coppice hardwood forests which have been harvested in the past for sawlogs. These areas have never been inventoried.

1991

Mangrove = 141 157 ha

2000

FRA 2000 estimated the area of coppice forest to be 200 000 ha based on the following assumptions:

"The Coppice Forest was estimated, by taking into consideration the total land area, and substracting the total area cover by wetland and pine forest. The remaining area (527,539 ha) is a combination of urban areas, agriculture and coppice forest. According to the country general description, it was estimated that at least half of this extension has being used for urban areas and agricuture. The coppice forest was then estimated in 200,000 ha."

1.3 Analysis and processing of national data

The 1986 data is given in acres. This has been converted into hectares using the ratio 1 acre = 0.404686 ha and the result is shown below.

National Classes	Area (hectares)
Density Class 1 (70-100%)	62 512
Density Class 2 (50-69%)	48 976
Density Class3 (11-49%)	56 406
Density Class 4 (0-10%)	35 709
Swamp	4 518
Bluehole	123
Other	171
Total pine forest	208 415

1.3.1 Estimation and forecasting

The mangrove area of 1991 and the estimated area of coppice forest were added to the pine forest area of 1986 and, after reclassification, the same values were reported for 1990, 2000 and 2005.

1.4 Reclassification into FRA 2005 classes

1986

All the pine forests, except density class 4 were classified as forests. Pine forests in density class 4 were classified as Other wooded land.

All mangroves and all coppice forests were reclassified as forests.

	Forest (ha)	OWL (ha)
PINE FOREST	172 705	35 709
COPPICE FOREST	200 000	
MANGROVES	141 957	
TOTAL	514 662	35 709

1.5 Data for National reporting table T1

FRA 2005 Categories	Area (1000 hectares)		
	1990	2000	2005
Forest	515	515	515
Other wooded land	35.7	35.7	35.7
Other land	450	450	450
...of which with tree cover [1)]	NDA	NDA	NDA
Inland water bodies	387	387	387
TOTAL	**1388**	**1388**	**1388**

1) 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.

1.6 Comments to National reporting table T1

There are no reliable data to make an accurate forest change estimation, although an increase in forest area is likely due to the closing of banana plantations which return to forests.

FRA 2000 estimated the forest area of the Bahamas to be 842 461 ha. However, this estimate erroneously classified all wetlands as mangroves, whereas the results of a ground survey found that the mangroves only cover about one third of this area. It also contained an estimate of 200 000 ha of coppice forest, which is a rough estimate but which has been retained due to lack of other information.

2 Table T2 – Ownership of Forest and Other wooded land

2.1 FRA 2005 Categories and definitions

Category	Definition
Private ownership	Land owned by individuals, families, private co-operatives, corporations, industries, religious and educational institutions, pension or investment funds, and other private institutions.
Public ownership	Land owned by the State (national, state and regional governments) or government-owned institutions or corporations or other public bodies including cities, municipalities, villages and communes.
Other ownership	Land that is not classified either as "Public ownership" or as "Private ownership".

2.2 National data

2.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Russell, C. 2000. Bahamas Country Report: Forestry Outlook Study for the Caribbean. Project GCP/INT, FAO, Rome	H	Ownership of forests	1986	Secondary data source

2.2.2 Original data

According to Russell (2000), 80% of the forest is owned by government while 20% is privately owned.

2.3 Analysis and processing of national data

2.3.1 Estimation and forecasting

The percentages from the original data is applied to the estimated areas of forests and of other wooded land in T1 to obtain ownership estimates for 1990 and 2000.

2.4 Data for National reporting table T2

FRA 2005 Categories	Area (1000 hectares)			
	Forest		Other wooded land	
	1990	2000	1990	2000
Private ownership	103	103	7.1	7.1
Public ownership	412	412	28.6	28.6
Other ownership				
TOTAL	**515**	**515**	**35.7**	**35.7**

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

No information available

4 Table T4 – Characteristics of Forest and Other wooded land

4.1 FRA 2005 Categories and definitions

Category	Definition
Primary	Forest / Other wooded land of native species, where there are no clearly visible indications of human activities and the ecological processes are not significantly disturbed.
Modified natural	Forest / Other wooded land of naturally regenerated native species where there are clearly visible indications of human activities.
Semi-natural	Forest / Other wooded land of native species, established through planting, seeding or assisted natural regeneration.
Productive plantation	Forest / Other wooded land of introduced species, and in some cases native species, established through planting or seeding mainly for production of wood or non wood goods.
Protective plantation	Forest / Other wooded land of native or introduced species, established through planting or seeding mainly for provision of services.

4.2 National data

4.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Russell, C. 1998. Bahamas national report on the state of forestry for the period 1996-1997. 20th session of the Latin American and Caribbean Forestry Commision, 10-14th September 1998. FAO, Rome	H	Plantation forests	1997	Secondary data source

4.2.2 Classification and definitions

4.2.3 Original data

There are no forest plantations in Bahamas.

4.3 Reclassification into FRA 2005 classes

All forests reported in T1 have been reclassified as 100 % “Modified natural”

4.4 Data for National reporting table T4

FRA 2005 Categories	Area (1000 hectares)					
	Forest			Other wooded land		
	1990	2000	2005	1990	2000	2005
Primary						
Modified natural	515	515	515	35.7	35.7	35.7
Semi-natural						
Productive plantation	0	0	0	0	0	0
Protective plantation						
TOTAL	**515**	**515**	**515**	**35.7**	**35.7**	**35.7**

4.5 Comments to National reporting table T4

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
Russell, C. 2000. Bahamas Country Report: Forestry Outlook Study for the Caribbean. Project GCP/INT, FAO, Rome	H	Standing volume of pine forests that have been inventoried, Pine forest area	1986	Secondary data source

5.2.2 Original data

Area of pine inventoried (acres)	Standing volume (1000 ft3)
362 783	165 068

The total pine area in forest and other wooded land is 203602 ha.

5.3 Analysis and processing of national data

The area in the original data was converted to hectares (using 1 acre = 0.404686 ha) while the standing volume was converted to m3 (using 1ft3 = 0.02832 m3) giving the results in the table below:

Area of pine inventoried (ha)	standing volume (1000 m3)
146 813	4 674.7

This gives an average volume of 31.84 m3/ha.

5.3.1 Estimation and forecasting

No distinction was made between forests and other wooded land in obtaining the standing volume. Using the above data, the volume per hectare of pines was calculated and applied to the total area of pine forests (including those classified as OWL) for each reporting year – i.e. 208 415 ha.

5.4 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	6.64	6.64	6.64			
Commercial growing stock						

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

5.5 Comments to National reporting table T5

The above table is incomplete as it refers only to growing stock on pine forests. No data on the growing stock of the mangrove forests or the coppice forests are available.

6 Table T6 – Biomass stock

Insufficient information.

7 Table T7 – Carbon stock

Insufficient information.

8 Table T8 – Disturbances affecting health and vitality

No information available.

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	H	Vulnerable and endangered species	2005	

9.2.2 Original data

Endangered species: *Guaiacum officinale, Guaiacum sanctum* and *Swietenia mahogani.*
Vulnerable species: *Juniperus barbadensis* and *Zanthoxylum flavum.*

9.3 Data for National reporting table T9

FRA 2005 Categories	Number of species (year 2000)
Native tree species	
Critically endangered tree species	
Endangered tree species	3
Vulnerable tree species	2

9.4 Comments to National reporting table T9

Endangered species: *Guaiacum officinale, Guaiacum sanctum* and *Swietenia mahogani.*
Vulnerable species: *Juniperus barbadensis* and *Zanthoxylum flavum.*

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
Russell, C. 2000. Bahamas Country Report: Forestry Outlook Study for the Caribbean. Project GCP/INT, FAO, Rome	H	Most common species	1986	Secondary data source

10.2.2 Original data

Pine (*Pinus caribaea* var *bahamensis*) is the most common tree species in Bahamas. Standing volume from T5 is 0.006483 million cubic metres. There is no information on the volume of other species.

10.3 Analysis and processing of national data

10.3.1 Estimation and forecasting

It is assumed that pine still remains the most common tree specie in 1990 and 2000

10.4 Data for National reporting table T10

Insufficient information.

10.5 Comments to National reporting table T10

Pine (*Pinus caribaea* var *bahamensis*) is the most common tree species in Bahamas. Standing volume from T5 is 0.006483 million cubic metres. There is no information on the volume of other species.

11 Table T11 – Wood removal

11.1 FRA 2005 Categories and definitions

Category	Definition
Industrial wood removal	The wood removed (volume of roundwood over bark) for production of goods and services other than energy production (woodfuel).
Woodfuel removal	The wood removed for energy production purposes, regardless whether for industrial, commercial or domestic use.

11.2 National data

11.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
FAOSTAT	H		1988-1992, 1998-2002	Secondary data source

11.2.2 Original data

Production of industrial roundwood under bark (m3).				
1988	**1989**	**1990**	**1991**	**1992**
115000	115000	115000	115000	115000
1998	**1999**	**2000**	**2001**	**2002**
17000	17000	17000	17000	17000

11.3 Analysis and processing of national data

11.3.1 Estimation and forecasting

Production of industrial roundwood over bark (m3) for 1990 = 1.15* Average value from 1988-1992.

Production of industrial roundwood over bark (m3) for 2000 = 1.15* Average value from 1998-2002.

Production of industrial roundwood over bark (m3) for 2005 = 1.15* value for 2002.

11.4 Reclassification into FRA 2005 classes

Production of industrial roundwood = 100% Industrial wood removal

11.5 Data for National reporting table T11

FRA 2005 Categories	Volume in 1000 cubic meters of roundwood over bark					
	Forest			Other wooded land		
	1990	2000	2005	1990	2000	2005
Industrial roundwood	132.25	19.55	19.55			
Woodfuel	NDA	NDA	NDA			
TOTAL for Country	**ID**	**ID**	**ID**			

11.6 Comments to National reporting table T11

FAOSTAT does not differentiate between forest and other wooded land. Data reported in Table T11 above is thus a combination of these two classes.

12 Table T12 – Value of wood removal

No information available.

13 Table T13 – Non-wood forest product removal

No information available.

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

No information available.

15 Table T15 – Employment in forestry

No information available.