



Food and Agriculture
Organization of the
United Nations

Global Forest Resources Assessment 2020

Report

Jamaica

Rome, 2020



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

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

TABLE OF CONTENTS

Introduction

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

Introduction

Report preparation and contact persons

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

Name	Role	Email	Tables
Alicia Edwards	Collaborator	fstsgis@gmail.com	All
Upton Edwards	National correspondent	uptonredwards@gmail.com	All

Introductory text

The FRA 2020 Report is prepared by the Forestry Department with supporting information by other national agencies and departments.

National land use / land cover data for 2013, 1998 and 1989 along with national forestry inventory of 2001 provide the basis of the report. Other reporting years are extrapolated using the said 1989, 1998 and 2013 figures.

The report may reflect changes to acreages already reported in 2005, 2010 and 2015 reports as figures for the 2013 report are used to update previously reported figures.

For the purpose of this report, whenever the national class consist of two distinct land use / land cover categories the first class is given a rating of 75% and the second class 25%.

Differences may appear in the reporting acreages for forest totals for reporting years as against previously reported acreages, because in previous reports some national classes previously classified as Other Wooded Lands are now classified as Forests.

1 Forest extent, characteristics and changes

1a Extent of forest and other wooded land

National data

Data sources

1989	References	Source: National Forestry Management and Conservation Plan, March 2001, Forestry Department, Jamaica
	Methods used	Sample-based remote sensing assessment
	Additional comments	http://www.forestry.gov.jm/sites/default/files/Resources/forestplan.pdf (pages 19-20); http://www.forestry.gov.jm/sites/default/files/Resources/natinvreport.pdf
1998	References	Source: National Forestry Management and Conservation Plan, March 2001, Forestry Department, Jamaica, National Forest Inventory Report 2003; Volume 1 of 2; Main Report & Appendices 1-5.
	Methods used	National Forest Inventory, Sample-based remote sensing assessment
	Additional comments	
2013	References	Jamaica's Land Use Cover Assessment, A comparative assessment of forest change between 1998 and 2013, Forestry Department, 2013
	Methods used	Sample-based remote sensing assessment
	Additional comments	

Classifications and definitions

1989	National class	Definition
	Closed Broadleaf	Closed primary forest with broadleaf trees at least 5 m tall and crowns interlocking, with minimal human disturbance
	Disturbed Broadleaf	Disturbed Broadleaf forest with broadleaf trees at least 5 m tall and species-indicators of disturbance such as <i>Cecropia peltata</i> (trumpet tree).
	Bamboo	<i>Bambusa vulgaris</i> (Bamboo brakes) on the lower shale hills (disturbed forest).
	Tall Open Dry	Open natural woodland or forest with trees at least 5 m tall and crowns not in contact; in drier part of Jamaica with species-indicators such as <i>Bursera simaruba</i> (red birch).
	Short Open Dry	Open scrub, shrub, bush or brushland with trees or shrubs 1-5 m tall and crowns not in contact, in drier part of Jamaica with species-indicators such as <i>Prosopis juliflora</i> (cashaw) or <i>Stenocereus hystrix</i> (columnar cactus).

	Swamp	Edaphic forest (soil waterlogging) with a single tree storey with species indicators such as Symphonia globulifera (hog gum) and Roystonea princeps (royal palm).
	Mangrove	Edaphic forest (areas with brackish water) composed of trees with stilt roots or pneumatophores, species-indicators such as Rhizophora mangle (red mangrove).
	Fields or Disturbed Broadleaf Forest and Pine Plantation	>50% fields or Disturbed Broadleaf forest; >25% Pine plantation
	Bamboo and Disturbed Broadleaf Forest	>50% bamboo; >25% Disturbed Broadleaf forest
	Disturbed Broadleaf Forest and Fields	>50% Disturbed Broadleaf forest; >25% fields
	Bamboo and Fields	>50% bamboo; >25% fields
	Fields and Disturbed Broadleaf Forest	>50% fields; >25% Disturbed Broadleaf forest
	Bauxite Extraction and Disturbed Broadleaf Forest	>50% bauxite extraction; >25% Disturbed Broadleaf forest
	Plantations	Tree crops, shrub crops like sugar cane, bananas, citrus and coconuts
	fields	Herbaceous crops, fallow, cultivated crass/legumes
	Herbaceous Wetland	Edaphic vegetation (soil waterlogging) with herbaceous plants
	Water Bodies	Lakes, rivers
	Small Islands	Mostly sand/limestone, unvegetated small islands (cays)
	Bare Rock	Bare sand/rock
	Bauxite Extraction	Surface mining/bauxite
	Buildings and Other Infrastructure	Buildings and other constructed features such as airstrips, quarries, etc.

1998	National class	Definition
	Fields	Herbaceous crops, fallow, cultivated grass/legumes
	Herbaceous Wetlands	Edaphic vegetation (soil waterlogging) with herbaceous plants
	Water Bodies	Lakes, rivers
	Small Islands	Mostly sand/limestone, unvegetated small islands (cays)
	Bare Rock	

		Bare sand/rock
	Bauxite Extraction	Surface mining/bauxite
	Building and Other Infrastructure	Buildings and other constructed features such as airstrips, quarries, etc.
	Closed Broadleaf	Closed primary forest with broadleaf trees at least 5 m tall and crowns interlocking, with minimal human disturbance
	Disturbed Broadleaf	Disturbed Broadleaf forest with broadleaf trees at least 5 m tall and species-indicators of disturbance such as Cecropia peltata (trumpet tree).
	Bamboo	Bambusa vulgaris (Bamboo brakes) on the lower shale hills (disturbed forest).
	Tall Open Dry	Open natural woodland or forest with trees at least 5 m tall and crowns not in contact; in drier part of Jamaica with species-indicators such as Bursera simaruba (red birch).
	Short Open Dry	Open scrub, shrub, bush or brushland with trees or shrubs 1-5 m tall and crowns not in contact, in drier part of Jamaica with species-indicators such as Prosopis juliflora (cashaw) or Stenocereus hystrix (columnar cactus).
	Swamp	Edaphic forest (soil waterlogging) with a single tree storey with species indicators such as Symphonia globulifera (hog gum) and Roystonea princeps (royal palm).
	Mangrove	Edaphic forest (areas with brackish water) composed of trees with stilt roots or pneumatophores, species-indicators such as Rhizophora mangle (red mangrove).
	Fields or Disturbed Broadleaf Forest and Pine Plantation	>50% fields or Disturbed Broadleaf forest; >25% Pine plantation
	Bamboo and Disturbed Broadleaf Forest	>50% bamboo; >25% Disturbed Broadleaf forest
	Disturbed Broadleaf Forest and Fields	>50% Disturbed Broadleaf forest; >25% fields
	Bamboo and Fields	>50% bamboo; >25% fields
	Fields and Disturbed Broadleaf Forest	>50% fields; >25% Disturbed Broadleaf forest
	Bauxite Extraction and Disturbed Broadleaf Forest	>50% bauxite extraction; >25% Disturbed Broadleaf forest
	Plantations	Tree crops, shrub crops like sugar cane, bananas, citrus and coconuts

2013	National class	Definition
	Closed broadleaf forest	

	Forest cover consisting broadleaf trees at least at least 5 m tall and crowns interlocking with minimal human disturbance. This is as close to primary forest one can get.
Disturbed broadleaf forest	Forest with broadleaf tress at least 5 m tall and species-indicators of disturbance such as Cecropia peltata (trumpet tree). This category has less than 15% disturbance.
Open dry forest – Tall	Open natural woodland or forest with trees at least 5 m tall and crown not in contact in drier part of Jamaica with species-indicators such as Symphonia globulifera (hog plum) and Roystonea princeps (Royal palm).
Open dry forest – Short	Open scrubs, shrubs, bush or brushland with trees or shrubs 1-5 m tall and crowns not in contact in drier part of Jamaica with species-indicators such as Prosopis juliflora (cashew) or Stenocereus hystrix (Columnar cactus).
Forest Plantation	Forest cover re-established by reforestation or natural regeneration consisting of hardwood species such as Mahogany & Mahoe and Softwoods such as Caribbean Pine.
Secondary forest	New classification identified (2013) having broadleaf forest equal or greater than 75% with disturbance levels between 10 - 25%. This level of disturbance distinguishes it from disturbed broad leaf forest.
Mangrove forest	Edaphic forest (areas with brackish water) composed of trees with stilt roots or pneumatophores with indicator species such as Rhizophora mangle (red mangrove).
Swamp forest	Edaphic forest (waterlogged soils) with a single tree storey with indicator species such as Symphonia globulifera (hog plum) and Roystonea princeps (Royal palm).
Fields and secondary forest	>50% Fields, >25% Secondary Forest
Bamboo and secondary forest	>50% Bamboo, >25% Disturbed Broadleaf Forest
Bamboo	Bambusa vulgaris (Bamboo brakes) on the lower shale hill (disturbed forest).Not considered as a forest type. Removed in reforestation programmes administered by the Agency
Bamboo and Fields	>50% Bamboo, >25% Fields
Bauxite Extraction	Surface mining/bauxite
Bare Rock	Bare sand/rock
Cultivation: (Fields) Herbaceous crops, fallow, cultivated vegetables	Cultivated herbaceous crops, shrub crops, fallow, legumes or grasslands/pastures.
Fields: Pasture, grassland*	Grasslands/pastures.
Herbaceous wetland	Edaphic vegetation (soil waterlogging) with herbaceous plants.
Crop plantation: Tree crops, shrub crops, sugar cane, banana	Tree crops, shrub crops like sugar cane, bananas, citrus and coconuts
Buildings and other infrastructure	Buildings and other constructed features such as airstrips, roads, bridges etc.
Water bodies	

		Lakes, rivers & streams, ponds etc.
	Quarries*	
	Bare land*	

Original data and reclassification

1989	Classifications and definitions		FRA classes		
	Class	Area (1000 ha)	Forest	Other wooded land	Other land
	Closed Broadleaf	88.72	100.00 %	0.00 %	0.00 %
	Disturbed Broadleaf	177.25	100.00 %	0.00 %	0.00 %
	Bamboo	2.79	100.00 %	0.00 %	0.00 %
	Tall Open Dry	42.12	100.00 %	0.00 %	0.00 %
	Short Open Dry	12.08	0.00 %	100.00 %	0.00 %
	Swamp	2.36	100.00 %	0.00 %	0.00 %
	Mangrove	9.75	100.00 %	0.00 %	0.00 %
	Fields or Disturbed Broadleaf Forest and Pine Plantation	8.86	100.00 %	0.00 %	0.00 %
	Bamboo and Disturbed Broadleaf Forest	12.31	100.00 %	0.00 %	0.00 %
	Disturbed Broadleaf Forest and Fields	166.84	75.00 %	0.00 %	25.00 %
	Bamboo and Fields	29.82	75.00 %	0.00 %	25.00 %
	Fields and Disturbed Broadleaf Forest	118.90	25.00 %	0.00 %	75.00 %
	Bauxite Extraction and Disturbed Broadleaf Forest	1.59	25.00 %	0.00 %	75.00 %
	Plantations	83.15	0.00 %	0.00 %	100.00 %
	fields	273.18	0.00 %	0.00 %	100.00 %
	Herbaceous Wetland	10.91	0.00 %	0.00 %	100.00 %
	Water Bodies	1.66	0.00 %	0.00 %	100.00 %
	Small Islands	0.16	0.00 %	0.00 %	100.00 %

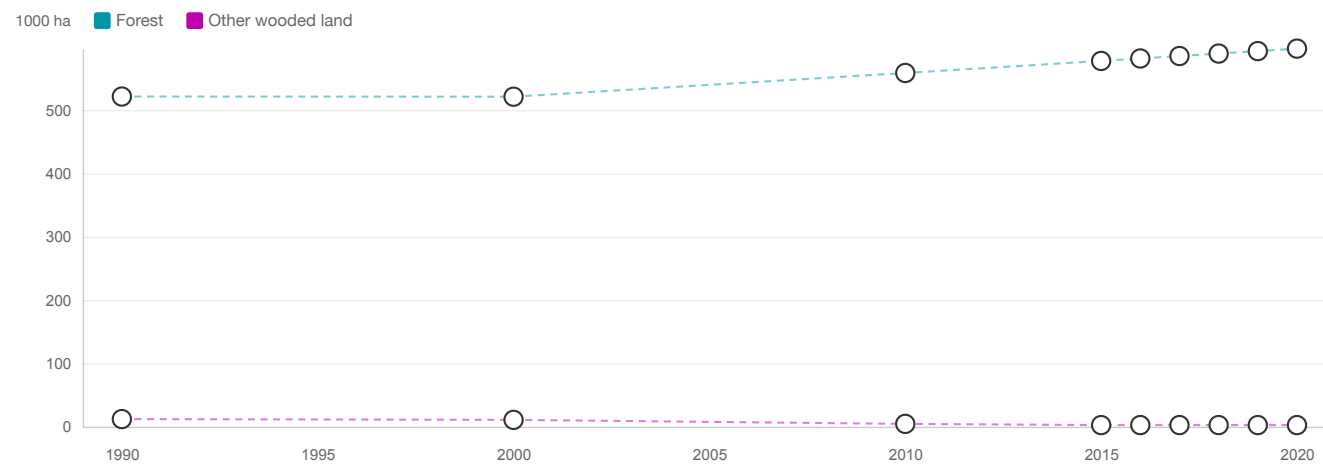
	Bare Rock	0.87	0.00 %	0.00 %	100.00 %
	Bauxite Extraction	1.19	0.00 %	0.00 %	100.00 %
	Buildings and Other Infrastructure	51.91	0.00 %	0.00 %	100.00 %
	Total	1 096.42	521.78	12.08	562.56

1998	Classifications and definitions		FRA classes		
	Class	Area (1000 ha)	Forest	Other wooded land	Other land
	Fields	274.48	0.00 %	0.00 %	100.00 %
	Herbaceous Wetlands	10.91	0.00 %	0.00 %	100.00 %
	Water Bodies	1.59	0.00 %	0.00 %	100.00 %
	Small Islands	0.16	0.00 %	0.00 %	100.00 %
	Bare Rock	0.93	0.00 %	0.00 %	100.00 %
	Bauxite Extraction	4.92	0.00 %	0.00 %	100.00 %
	Building and Other Infrastructure	52.26	0.00 %	0.00 %	100.00 %
	Closed Broadleaf	88.23	100.00 %	0.00 %	0.00 %
	Disturbed Broadleaf	174.72	100.00 %	0.00 %	0.00 %
	Bamboo	2.98	100.00 %	0.00 %	0.00 %
	Tall Open Dry	42.00	100.00 %	0.00 %	0.00 %
	Short Open Dry	12.10	0.00 %	100.00 %	0.00 %
	Swamp	2.25	100.00 %	0.00 %	0.00 %
	Mangrove	9.73	100.00 %	0.00 %	0.00 %
	Fields or Disturbed BroadleafForest and Pine Plantation	8.19	100.00 %	0.00 %	0.00 %
	Bamboo and Disturbed Broadleaf Forest	12.69	100.00 %	0.00 %	0.00 %
	Disturbed Broadleaf Forest and Fields	165.95	75.00 %	0.00 %	25.00 %

	Bamboo and Fields	29.16	75.00 %	0.00 %	25.00 %
	Fields and Disturbed Broadleaf Forest	117.97	25.00 %	0.00 %	75.00 %
	Bauxite Extraction and Disturbed Broadleaf Forest	2.85	25.00 %	0.00 %	75.00 %
	Plantations	82.34	0.00 %	0.00 %	100.00 %
	Total	1 096.41	517.33	12.10	566.98

2013	Classifications and definitions		FRA classes		
	Class	Area (1000 ha)	Forest	Other wooded land	Other land
	Closed broadleaf forest	84.64	100.00 %	0.00 %	0.00 %
	Disturbed broadleaf forest	175.59	100.00 %	0.00 %	0.00 %
	Open dry forest – Tall	37.56	100.00 %	0.00 %	0.00 %
	Open dry forest – Short	2.62	0.00 %	100.00 %	0.00 %
	Forest Plantation	8.32	100.00 %	0.00 %	0.00 %
	Secondary forest	121.36	100.00 %	0.00 %	0.00 %
	Mangrove forest	9.73	100.00 %	0.00 %	0.00 %
	Swamp forest	0.12	100.00 %	0.00 %	0.00 %
	Fields and secondary forest	162.88	25.00 %	0.00 %	75.00 %
	Bamboo and secondary forest	36.70	100.00 %	0.00 %	0.00 %
	Bamboo	4.67	100.00 %	0.00 %	0.00 %
	Bamboo and Fields	67.03	75.00 %	0.00 %	25.00 %
	Bauxite Extraction	3.35	0.00 %	0.00 %	100.00 %
	Bare Rock	2.39	0.00 %	0.00 %	100.00 %
	Cultivation: (Fields) Herbaceous crops, fallow, cultivated vegetables	147.12	0.00 %	0.00 %	100.00 %
	Fields: Pasture, grassland*	6.52	0.00 %	0.00 %	100.00 %
	Herbaceous wetland	15.02	0.00 %	0.00 %	100.00 %

	Crop plantation: Tree crops, shrub crops, sugar cane, banana	69.76	0.00 %	0.00 %	100.00 %
	Buildings and other infrastructure	131.32	0.00 %	0.00 %	100.00 %
	Water bodies	4.60	0.00 %	0.00 %	100.00 %
	Quarries*	0.72	0.00 %	0.00 %	100.00 %
	Bare land*	7.08	0.00 %	0.00 %	100.00 %
	Total	1 099.10	569.68	2.62	526.80



FRA categories	Area (1000 ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Forest (a)	521.28	521.00	558.45	577.46	581.34	585.23	589.12	593.00	596.89
Other wooded land (a)	12.08	10.84	4.52	2.62	2.62	2.62	2.62	2.62	2.62
Other land (c-a-b)	549.64	551.16	520.03	502.92	499.04	495.15	491.26	487.38	483.49
Total land area (c)	1 083.00	1 083.00	1 083.00	1 083.00	1 083.00	1 083.00	1 083.00	1 083.00	1 083.00

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	0.00	
Sub-tropical	0.00	
Tropical	100.00	

Comments

The forest cover class **Disturbed Broadleaf and fields** have been reclassified as **Secondary Forest** with removal of 'fields' in the 2013 Land Use/Land Cover assessment.

In previous country reports the forest cover values assigned to **Disturbed Broadleaf and fields** were classified as **Other wooded lands (OWL)**. Based on the available data for point years 1989 and 1998 **Disturbed Broadleaf and fields** is now classified as forest for this current country report. This shift in classification caused an increase in forest area and a decrease on OWL for the country at each preceding reporting year.

Also in previous reports the percentage allocation of land use classes: Fields and Secondary Forest; Bamboo and Fields; Bauxite and Disturbed Broadleaf which were classified as OWL are now re-categorized as Forest. This approach was adopted because the percentage classified as tree coverage of the land use category meets the FAO definition of Forests.

For the 1990 report year figures, the statistics from the Land Cover assesment conducted for 1989 and 1998 were interpolated to produce figures for each category. This data was then reclasssified in FRA classes (Forest ; OWL ; Other lands).

Therefore, the national data point years differ from FRA reporting years; linear interpolation and extrapolation was used for generating values for reporting years. For land cover classes Riparian/ Swamp Forest and Short Open Dry ; the reported figures from 2013 LUCA are maintained until next assesement.

For this report where there are two land use types in a national class the 1st class is weighted as 75% and the 2nd class as 25%

Secondary Forest remains static at 121.36 as there are nothing to compare it with and so we decided to keep this total through the reporting years. Similarly with Riparian/Swamp Forest estimations were done for 2000 and 2010 using the data point years but the total of 0.12 was retained from 2013 onward. This is so because using the change rate would give negative figure from 2015 onward. These factors have resulted in the estimates not reflecting a steady change rate but one which vary during 1998 and 2013 and then remains steady after 2013.

National Classes	1989*	1990	1998*	2000	2010	2013*	2015	2016	2017	2018	2019	2020	FAO Forest	OWL
Closed broadleaf forest	88.72	88.67	88.23	87.75	85.36	84.64	84.16	83.92	83.68	83.44	83.20	82.96	100.00	
Disturbed broadleaf forest	177.25	176.97	174.72	174.84	175.42	175.59	175.71	175.76	175.82	175.88	175.94	176.00	100.00	

Open dry forest – Tall	42.12	42.11	42.00	41.41	38.45	37.56	36.97	36.67	36.38	36.08	35.78	35.49	100.00	
Pine & Hardwood Plantations	8.86	8.79	8.19	8.21	8.29	8.32	8.34	8.35	8.35	8.36	8.37	8.38	100.00	
Disturbed broadleaf and fields	166.84	166.74	165.95										0.75	
Secondary forest				121.36	121.36	121.36	121.36	121.36	121.36	121.36	121.36	121.36	100.00	
Mangrove forest	9.75	9.75	9.73	9.73	9.73	9.73	9.73	9.73	9.73	9.73	9.73	9.73	100.00	
Swamp forest	2.36	2.35	2.25	1.97	0.55	0.12	0.12	0.12	0.12	0.12	0.12	0.12	100.00	
Bamboo and secondary forest	12.31	12.35	12.70	15.90	31.90	36.70	39.90	41.50	43.10	44.70	46.30	47.90	100.00	
Bamboo	2.79	2.81	2.98	3.21	4.33	4.67	4.90	5.01	5.12	5.23	5.35	5.46	100.00	
Fields and secondary forest	118.90	118.80	117.97	123.96	153.90	162.88	168.87	171.86	174.86	177.85	180.84	183.84	0.25	
Bamboo and Fields	29.82	29.75	29.16	34.21	59.46	67.03	72.08	74.60	77.13	79.65	82.18	84.70	0.75	
Bauxite and disturbed broadleaf	1.59	1.73	2.85										0.25	
Open dry forest – Short	12.08	12.08	12.10	10.84	4.52	2.62	2.62	2.62	2.62	2.62	2.62	2.62		100.00

*: land use/land cover assessment year

Reclassification Result

National Classes	1990	2000	2010	2013	2015	2016	2017	2018	2019	2020
Closed broadleaf forest	88.67	87.75	85.36	84.64	84.16	83.92	83.68	83.44	83.20	82.96
Disturbed broadleaf forest	176.97	174.84	175.42	175.59	175.71	175.76	175.82	175.88	175.94	176.00
Open dry forest – Tall	42.11	41.41	38.45	37.56	36.97	36.67	36.38	36.08	35.78	35.49
Pine & Hardwood Plantations	8.79	8.21	8.29	8.32	8.34	8.35	8.35	8.36	8.37	8.38
Disturbed broadleaf and fields	125.06									
Secondary forest		121.36	121.36	121.36	121.36	121.36	121.36	121.36	121.36	121.36
Mangrove forest	9.75	9.73	9.73	9.73	9.73	9.73	9.73	9.73	9.73	9.73
Swamp forest	2.35	1.97	0.55	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Bamboo and secondary forest	12.35	15.90	31.90	36.70	39.90	41.50	43.10	44.70	46.30	47.90
Bamboo	2.81	3.21	4.33	4.67	4.90	5.01	5.12	5.23	5.35	5.46
Fields and secondary forest	29.70	30.99	38.47	40.72	42.22	42.97	43.71	44.46	45.21	45.96
Bamboo and Fields	22.31	25.66	44.59	50.27	54.06	55.95	57.85	59.74	61.63	63.53
Bauxite and disturbed broadleaf	0.43									
Open dry forest – Short										
Forest	521.28	521.01	558.45	569.68	577.45	581.34	585.23	589.11	593.00	596.88
Owl	12.08	10.84	4.52	2.62	2.62	2.62	2.62	2.62	2.62	2.62

1b Forest characteristics

National data

Data sources

1989	References	Source: National Forestry Management and Conservation Plan, March 2001, Forestry Department, Jamaica
	Methods used	Sample-based remote sensing assessment
	Additional comments	http://www.forestry.gov.jm/sites/default/files/Resources/forestplan.pdf (pages 19-20); http://www.forestry.gov.jm/sites/default/files/Resources/natinvreport.pdf

1998	References	Source: National Forestry Management and Conservation Plan, March 2001, Forestry Department, Jamaica, National Forest Inventory Report 2003; Volume 1 of 2; Main Report & Appendices 1-5.
	Methods used	National Forest Inventory, Sample-based remote sensing assessment
	Additional comments	

2013	References	Jamaica's Land Use Cover Assessment, A comparative assessment of forest change between 1998 and 2013, Forestry Department, 2013
	Methods used	Sample-based remote sensing assessment
	Additional comments	

Classifications and definitions

1989	National class	Definition
	Closed Broadleaf	Closed primary forest with broadleaf trees at least 5 m tall and crowns interlocking, with minimal human disturbance
	Disturbed Broadleaf	Disturbed Broadleaf forest with broadleaf trees at least 5 m tall and species-indicators of disturbance such as <i>Cecropia peltata</i> (trumpet tree).
	Bamboo	<i>Bambusa vulgaris</i> (Bamboo brakes) on the lower shale hills (disturbed forest).
	Tall Open Dry	Open natural woodland or forest with trees at least 5 m tall and crowns not in contact; in drier part of Jamaica with species-indicators such as <i>Bursera simaruba</i> (red birch).
	Short Open Dry	Open scrub, shrub, bush or brushland with trees or shrubs 1-5 m tall and crowns not in contact, in drier part of Jamaica with species-indicators such as <i>Prosopis juliflora</i> (cashaw) or <i>Stenocereus hystrix</i> (columnar cactus).
	Swamp	

		Edaphic forest (soil waterlogging) with a single tree storey with speciesindicators such as Symphonia globulifera (hog gum) and Roystonea princeps (royal palm).
	Mangrove	Edaphic forest (areas with brackish water) composed of trees with stilt roots or pneumatophores, species-indicators such as Rhizophora mangle (red mangrove).
	Fields or Disturbed Broadleaf Forest and Pine Plantation	>50% fields or Disturbed Broadleaf forest; >25% Pine plantation
	Bamboo and Disturbed Broadleaf Forest	>50% bamboo; >25% Disturbed Broadleaf forest
	Disturbed Broadleaf Forest and Fields	>50% Disturbed Broadleaf forest; >25% fields
	Bamboo and Fields	>50% bamboo; >25% fields
	Fields and Disturbed Broadleaf Forest	>50% fields; >25% Disturbed Broadleaf forest
	Bauxite Extraction and Disturbed Broadleaf Forest	>50% bauxite extraction; >25% Disturbed Broadleaf forest
	Plantations	Tree crops, shrub crops like sugar cane, bananas, citrus and coconuts
	fields	Herbaceous crops, fallow, cultivated crass/legumes
	Herbaceous Wetland	Edaphic vegetation (soil waterlogging) with herbaceous plants
	Water Bodies	Lakes, rivers
	Small Islands	Mostly sand/limestone, unvegetated small islands (cays)
	Bare Rock	Bare sand/rock
	Bauxite Extraction	Surface mining/bauxite
	Buildings and Other Infrastructure	Buildings and other constructed features such as airstrips, quarries, etc.

1998	National class	Definition
	Fields	Herbaceous crops, fallow, cultivated grass/legumes
	Herbaceous Wetlands	Edaphic vegetation (soil waterlogging) with herbaceous plants
	Water Bodies	Lakes, rivers
	Small Islands	Mostly sand/limestone, unvegetated small islands (cays)
	Bare Rock	

		Bare sand/rock
	Bauxite Extraction	Surface mining/bauxite
	Building and Other Infrastructure	Buildings and other constructed features such as airstrips, quarries, etc.
	Closed Broadleaf	Closed primary forest with broadleaf trees at least 5 m tall and crowns interlocking, with minimal human disturbance
	Disturbed Broadleaf	Disturbed Broadleaf forest with broadleaf trees at least 5 m tall and species-indicators of disturbance such as <i>Cecropia peltata</i> (trumpet tree).
	Bamboo	<i>Bambusa vulgaris</i> (Bamboo brakes) on the lower shale hills (disturbed forest).
	Tall Open Dry	Open natural woodland or forest with trees at least 5 m tall and crowns not in contact; in drier part of Jamaica with species-indicators such as <i>Bursera simaruba</i> (red birch).
	Short Open Dry	Open scrub, shrub, bush or brushland with trees or shrubs 1-5 m tall and crowns not in contact, in drier part of Jamaica with species-indicators such as <i>Prosopis juliflora</i> (cashaw) or <i>Stenocereus hystrix</i> (columnar cactus).
	Swamp	Edaphic forest (soil waterlogging) with a single tree storey with species indicators such as <i>Symphonia globulifera</i> (hog gum) and <i>Roystonea princeps</i> (royal palm).
	Mangrove	Edaphic forest (areas with brackish water) composed of trees with stilt roots or pneumatophores, species-indicators such as <i>Rhizophora mangle</i> (red mangrove).
	Fields or Disturbed Broadleaf Forest and Pine Plantation	>50% fields or Disturbed Broadleaf forest; >25% Pine plantation
	Bamboo and Disturbed Broadleaf Forest	>50% bamboo; >25% Disturbed Broadleaf forest
	Disturbed Broadleaf Forest and Fields	>50% Disturbed Broadleaf forest; >25% fields
	Bamboo and Fields	>50% bamboo; >25% fields
	Fields and Disturbed Broadleaf Forest	>50% fields; >25% Disturbed Broadleaf forest
	Bauxite Extraction and Disturbed Broadleaf Forest	>50% bauxite extraction; >25% Disturbed Broadleaf forest
	Plantations	Tree crops, shrub crops like sugar cane, bananas, citrus and coconuts

2013	National class	Definition
	Closed broadleaf forest	

	Forest cover consisting broadleaf trees at least at least 5 m tall and crowns interlocking with minimal human disturbance. This is as close to primary forest one can get.
Disturbed broadleaf forest	Forest with broadleaf tress at least 5 m tall and species-indicators of disturbance such as Cecropia peltata (trumpet tree). This category has less than 15% disturbance.
Open dry forest – Tall	Open natural woodland or forest with trees at least 5 m tall and crown not in contact in drier part of Jamaica with species-indicators such as Symphonia globulifera (hog plum) and Roystonea princeps (Royal palm).
Open dry forest – Short	Open scrubs, shrubs, bush or brushland with trees or shrubs 1-5 m tall and crowns not in contact in drier part of Jamaica with species-indicators such as Prosopis juliflora (cashew) or Stenocereus hystrix (Columnar cactus).
Forest Plantation	Forest cover re-established by reforestation or natural regeneration consisting of hardwood species such as Mahogany & Mahoe and Softwoods such as Caribbean Pine.
Secondary forest	New classification identified (2013) having broadleaf forest equal or greater than 75% with disturbance levels between 10 - 25%. This level of disturbance distinguishes it from disturbed broad leaf forest.
Mangrove forest	Edaphic forest (areas with brackish water) composed of trees with stilt roots or pneumatophores with indicator species such as Rhizophora mangle (red mangrove).
Swamp forest	Edaphic forest (waterlogged soils) with a single tree storey with indicator species such as Symphonia globulifera (hog plum) and Roystonea princeps (Royal palm).
Fields and secondary forest	>50% Fields, >25% Secondary Forest
Bamboo and secondary forest	>50% Bamboo, >25% Disturbed Broadleaf Forest
Bamboo	Bambusa vulgaris (Bamboo brakes) on the lower shale hill (disturbed forest).Not considered as a forest type. Removed in reforestation programmes administered by the Agency
Bamboo and Fields	>50% Bamboo, >25% Fields
Bauxite Extraction	Surface mining/bauxite
Bare Rock	Bare sand/rock
Cultivation: (Fields) Herbaceous crops, fallow, cultivated vegetables	Cultivated herbaceous crops, shrub crops, fallow, legumes or grasslands/pastures.
Fields: Pasture, grassland*	Grasslands/pastures.
Herbaceous wetland	Edaphic vegetation (soil waterlogging) with herbaceous plants.
Crop plantation: Tree crops, shrub crops, sugar cane, banana	Tree crops, shrub crops like sugar cane, bananas, citrus and coconuts
Buildings and other infrastructure	Buildings and other constructed features such as airstrips, roads, bridges etc.
Water bodies	

		Lakes, rivers & streams, ponds etc.
	Quarries*	
	Bare land*	

Original data and reclassification

	Classifications and definitions		FRA classes		
	Class	Area (1000 ha)	Naturally regenerating forest	Plantation forest	Other planted forest
1989	Closed Broadleaf	88.72	100.00 %	%	%
	Disturbed Broadleaf	177.25	100.00 %	%	0.00 %
	Bamboo	2.79	100.00 %	%	%
	Tall Open Dry	42.12	100.00 %	%	%
	Swamp	2.36	100.00 %	%	%
	Mangrove	9.75	100.00 %	%	%
	Fields or Disturbed Broadleaf Forest and Pine Plantation	8.86	0.00 %	100.00 %	%
	Bamboo and Disturbed Broadleaf Forest	12.31	100.00 %	%	%
	Disturbed Broadleaf Forest and Fields	125.13	100.00 %	%	%
	Bamboo and Fields	22.37	100.00 %	%	%
	Fields and Disturbed Broadleaf Forest	29.73	100.00 %	%	%
	Bauxite Extraction and Disturbed Broadleaf Forest	0.40	100.00 %	%	%
	Total	521.78	512.92	8.86	0.00

Plantation forest	Area (1000 ha)	...of which introduced
Fields or Disturbed Broadleaf Forest and Pine Plantation	8.86	98.80 %
Total	8.86	8.75

--	--	--

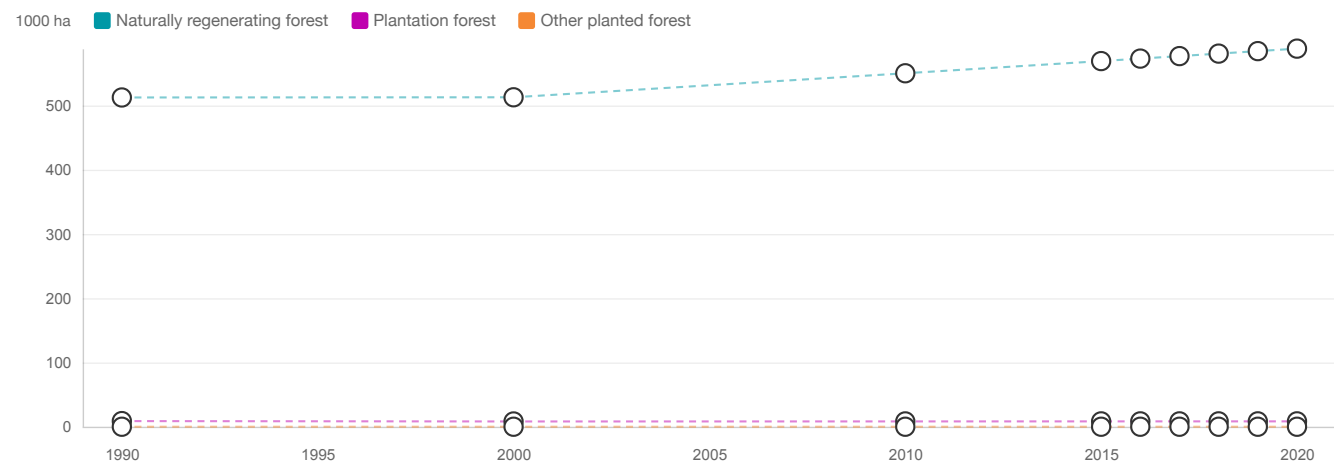
1998	Classifications and definitions		FRA classes		
	Class	Area (1000 ha)	Naturally regenerating forest	Plantation forest	Other planted forest
	Closed Broadleaf	88.23	100.00 %	%	%
	Disturbed Broadleaf	174.72	100.00 %	%	0.00 %
	Bamboo	2.98	100.00 %	%	%
	Tall Open Dry	42.00	100.00 %	%	%
	Swamp	2.25	100.00 %	%	%
	Mangrove	9.73	100.00 %	%	%
	Fields or Disturbed BroadleafForest and Pine Plantation	8.19	%	100.00 %	%
	Bamboo and Disturbed Broadleaf Forest	12.69	100.00 %	%	%
	Disturbed Broadleaf Forest and Fields	124.46	100.00 %	%	%
	Bamboo and Fields	21.87	100.00 %	%	%
	Fields and Disturbed Broadleaf Forest	29.49	100.00 %	%	%
	Bauxite Extraction and Disturbed Broadleaf Forest	0.71	100.00 %	%	%
	Total	517.33	509.14	8.19	0.00

Plantation forest	Area (1000 ha)	...of which introduced
Fields or Disturbed BroadleafForest and Pine Plantation	8.19	98.80 %
Total	8.19	8.09

2013	Classifications and definitions		FRA classes		
	Class	Area (1000 ha)	Naturally regenerating forest	Plantation forest	Other planted forest
	Closed broadleaf forest	84.64	100.00 %	0.00 %	0.00 %
	Disturbed broadleaf forest	175.59	100.00 %	0.00 %	0.00 %

	Open dry forest – Tall	37.56	100.00 %	0.00 %	0.00 %
	Forest Plantation	8.32	0.00 %	100.00 %	0.00 %
	Secondary forest	121.36	100.00 %	0.00 %	0.00 %
	Mangrove forest	9.73	100.00 %	0.00 %	0.00 %
	Swamp forest	0.12	100.00 %	0.00 %	0.00 %
	Fields and secondary forest	40.72	100.00 %	0.00 %	0.00 %
	Bamboo and secondary forest	36.70	100.00 %	0.00 %	0.00 %
	Bamboo	4.67	100.00 %	0.00 %	0.00 %
	Bamboo and Fields	50.27	100.00 %	0.00 %	0.00 %
	Total	569.68	561.36	8.32	0.00

Plantation forest	Area (1000 ha)	...of which introduced
Forest Plantation	8.32	98.80 %
Total	8.32	8.22



FRA categories	Forest area (1000 ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest (a)	512.49	512.79	550.16	569.12	573.00	576.88	580.76	584.63	588.51
Planted forest (b)	8.79	8.21	8.29	8.34	8.35	8.35	8.36	8.37	8.38
Plantation forest	8.79	8.21	8.29	8.34	8.35	8.35	8.36	8.37	8.38
...of which introduced species	8.68	8.11	8.19	8.24	8.25	8.25	8.26	8.27	8.28
Other planted forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total (a+b)	521.28	521.00	558.45	577.46	581.35	585.23	589.12	593.00	596.89
Total forest area	521.28	521.00	558.45	577.46	581.34	585.23	589.12	593.00	596.89

Comments

Since national data point years differ from FRA reporting years linear interpolation and extrapolation was used for generating values for non-reporting years.

Similar percentaces used for data point years are used for reporting years in reclassifying into FRA classes.

1c Primary forest and special forest categories

National Data

Data sources + type of data source eg NFI, etc

See Table 1a, data point years

National classification and definitions

See Table 1a, data point years

Original data

See Table 1a, data point years

Analysis and processing of national data

Estimation and forecasting

National Classes	1989	1990	1998	2000	2010	2013	2015	2016	2017	2018	2019	2020	% FAO Forest	OWL
Closed broadleaf forest	88.72	88.67	88.23	87.75	85.36	84.64	84.16	83.92	83.68	83.44	83.20	82.96	100.00	
Disturbed broadleaf forest	177.25	176.97	174.72	174.84	175.42	175.59	175.71	175.76	175.82	175.88	175.94	176.00	100.00	
Open dry forest – Tall	42.12	42.11	42.00	41.41	38.45	37.56	36.97	36.67	36.38	36.08	35.78	35.49	100.00	
Pine & Hardwood Plantations	8.86	8.79	8.19	8.21	8.29	8.32	8.34	8.35	8.35	8.36	8.37	8.38	100.00	
Disturbed droadleaf and fields	166.84	166.74	165.95										0.75	
Secondary forest				121.36	121.36	121.36	121.36	121.36	121.36	121.36	121.36	121.36	100.00	
Mangrove forest	9.75	9.75	9.73	9.73	9.73	9.73	9.73	9.73	9.73	9.73	9.73	9.73	100.00	
Swamp forest	2.36	2.35	2.25	1.97	0.55	0.12	0.12	0.12	0.12	0.12	0.12	0.12	100.00	
Bamboo and secondary forest	12.31	12.35	12.70	15.90	31.90	36.70	39.90	41.50	43.10	44.70	46.30	47.90	100.00	
Bamboo	2.79	2.81	2.98	3.21	4.33	4.67	4.90	5.01	5.12	5.23	5.35	5.46	100.00	
Fields and secondary forest	118.90	118.80	117.97	123.96	153.90	162.88	168.87	171.86	174.86	177.85	180.84	183.84	0.25	
Bamboo and Fields	29.82	29.75	29.16	34.21	59.46	67.03	72.08	74.60	77.13	79.65	82.18	84.70	0.75	
Bauxite and disturbed broadleaf	1.59	1.73	2.85										0.25	
Open dry forest – Short	12.08	12.08	12.10	10.84	4.52	2.62	2.62	2.62	2.62	2.62	2.62	2.62		100.00

This table is produced from data from the reporting years 1989, 1998 and 2013.

to produce 1900, extropolation of data using 1989 and 1998 figures

to produce other years, extrapolation od data using 1998 and 2013 data (except for Secondary forest where the figure remains constant from 2000 onwards and for Riparian/Swamp forest where the figure remains constant from 2013 onwards.

Using the % FAO Forest * reporting years total to produce the forest classification table below

Forest Reclassification Table

	1990	2000	2010	2015	2016	2017	2018	2019	2020

Closed broadleaf forest	88.67	87.75	85.36	84.16	83.92	83.68	83.44	83.20	82.96
Disturbed broadleaf forest	176.97	174.84	175.42	175.71	175.76	175.82	175.88	175.94	176.00
Open dry forest – Tall	42.11	41.41	38.45	36.97	36.67	36.38	36.08	35.78	35.49
Pine & Hardwood Plantations	8.79	8.21	8.29	8.34	8.35	8.35	8.36	8.37	8.38
Disturbed broadleaf and fields	125.06								
Secondary forest		121.36	121.36	121.36	121.36	121.36	121.36	121.36	121.36
Mangrove forest	9.75	9.73	9.73	9.73	9.73	9.73	9.73	9.73	9.73
Swamp forest	2.35	1.97	0.55	0.12	0.12	0.12	0.12	0.12	0.12
Bamboo and secondary forest	12.35	15.90	31.90	39.90	41.50	43.10	44.70	46.30	47.90
Bamboo	2.81	3.21	4.33	4.90	5.01	5.12	5.23	5.35	5.46
Fields and secondary forest	29.70	30.99	38.47	42.22	42.97	43.71	44.46	45.21	45.96
Bamboo and Fields	22.31	25.66	44.59	54.06	55.95	57.85	59.74	61.63	63.53
Bauxite and disturbed broadleaf	0.43								
Total	521.28	521.00	558.45	577.46	581.34	585.23	589.12	593.00	596.89

Reclassification into FRA 2020 categories

Bamboo = Bamboo and secondary forest + Bamboo + Bamboo and fields

Primary forest = Closed broadleaf forest

FRA categories	Area (1000 ha)				
	1990	2000	2010	2015	2020
Primary forest	88.67	87.75	85.36	84.16	82.96
Temporarily unstocked and/or recently regenerated					
Bamboos	37.47	44.78	80.82	98.89	116.89
Mangroves	9.75	9.73	9.73	9.73	9.73
Rubber wood	0.00	0.00	0.00	0.00	0.00

Comments

1d Annual forest expansion, deforestation and net change

National Data

Data sources + type of data source eg NFI, etc

Forestry Department

Land use data 1989, 1998, 2013

National Forest Management and Conservation Plan, 2001

National Forest Inventory Report, Volume 1 of 2, Main Report and Appendices

Jamaica's Land Use Cover Assessment, 2013

National classification and definitions

See Table 1a

Original data

See data point years 1989, 1998 and 2013 in Table 1a

Analysis and processing of national data

Estimation and forecasting

National Classes	1989	1990	1998	2000	2010	2013	2015	2016	2017	2018	2019	2020	% FAO Forest
Closed broadleaf forest	88.72	88.67	88.23	87.75	85.36	84.64	84.16	83.92	83.68	83.44	83.20	82.96	100.00
Disturbed broadleaf forest	177.25	176.97	174.72	174.84	175.42	175.59	175.71	175.76	175.82	175.88	175.94	176.00	100.00
Open dry forest – Tall	42.12	42.11	42.00	41.41	38.45	37.56	36.97	36.67	36.38	36.08	35.78	35.49	100.00
Pine & Hardwood Plantations	8.86	8.79	8.19	8.21	8.29	8.32	8.34	8.35	8.35	8.36	8.37	8.38	100.00
Disturbed broadleaf and fields	166.84	166.74	165.95										0.75
Secondary forest				121.36	121.36	121.36	121.36	121.36	121.36	121.36	121.36	121.36	100.00
Mangrove forest	9.75	9.75	9.73	9.73	9.73	9.73	9.73	9.73	9.73	9.73	9.73	9.73	100.00
Swamp forest	2.36	2.35	2.25	1.97	0.55	0.12	0.12	0.12	0.12	0.12	0.12	0.12	100.00
Bamboo and secondary forest	12.31	12.35	12.70	15.90	31.90	36.70	39.90	41.50	43.10	44.70	46.30	47.90	100.00
Bamboo	2.79	2.81	2.98	3.21	4.33	4.67	4.90	5.01	5.12	5.23	5.35	5.46	100.00
Fields and secondary forest	118.90	118.80	117.97	123.96	153.90	162.88	168.87	171.86	174.86	177.85	180.84	183.84	0.25
Bamboo and Fields	29.82	29.75	29.16	34.21	59.46	67.03	72.08	74.60	77.13	79.65	82.18	84.70	0.75
Bauxite and disturbed broadleaf	1.59	1.73	2.85										0.25

Data point years = 1989, 1998, 2013

1990 data done by extrapolation using 1989 and 1998 data

Other reporting years data extrapolated using 1998 and 2013 data

Reclassification into FRA 2020 categories

Reporting years acreage * % forest from table in estimation and forecasting above, produces the below reclassification table with forested area totals

National Classes	1990	2000	2010	2015	2016	2017	2018	2019	2020		1990-2000	2000-2010	2010-2015	2015-2020
Closed broadleaf forest	88.67	87.75	85.36	84.16	83.92	83.68	83.44	83.20	82.96		-0.91	-2.39	-1.20	-0.96
Disturbed broadleaf forest	176.97	174.84	175.42	175.71	175.76	175.82	175.88	175.94	176.00		-2.13`	0.58	0.29	0.23
Open dry forest – Tall	42.11	41.41	38.45	36.97	36.67	36.38	36.08	35.78	35.49		-0.70	-2.96	-1.48	-1.18
Pine & Hardwood Plantations	8.79	8.21	8.29	8.34	8.35	8.35	8.36	8.37	8.38		-0.58	0.09	0.04	0.03
Disturbed broadleaf and fields	125.06										-3.70	0.00	0.00	0.00
Secondary forest		121.36	121.36	121.36	121.36	121.36	121.36	121.36	121.36		0.00	0.00	0.00	0.00
Mangrove forest	9.75	9.73	9.73	9.73	9.73	9.73	9.73	9.73	9.73		-0.02	0.00	0.00	0.00
Swamp forest	2.35	1.97	0.55	0.12	0.12	0.12	0.12	0.12	0.12		-0.38	-1.42	-0.43	0.00
Bamboo and secondary forest	12.35	15.90	31.90	39.90	41.50	43.10	44.70	46.30	47.90		3.55	16.00	8.00	6.40
Bamboo	2.81	3.23	4.33	4.93	5.01	5.12	5.23	5.35	5.46		0.39	1.13	0.56	0.45
Fields and secondary forest	29.70	30.99	38.47	42.22	42.97	43.71	44.46	45.21	45.96		1.29	7.49	3.74	2.99
Bamboo and Fields	22.31	25.66	44.59	54.06	55.95	57.85	59.74	61.63	63.53		3.35	18.94	9.47	7.57
Bauxite and disturbed broadleaf	0.43										-0.43	0.00	0.00	0.00

Data for table 1c

	Change for Period				Annual change			
	1990-2000	2000-2010	2010-2015	2015-2020	1990-2000	2000-2010	2010-2015	2015-2020
Forest expansion (a)	8.58	44.21	22.11	22.11	0.86	4.42	4.42	4.42
...of which afforestation	0.00	0.09	0.04	0.04	0.00	0.01	0.01	0.01
...of which natural expansion	8.58	44.13	21.50	22.06	0.86	4.41	4.30	4.41
Deforestation (b)	8.85	6.77	3.10	2.68	0.89	0.68	0.62	0.54
Forest area change	-0.27	37.44	19.00	19.43	-0.03	3.74	3.80	3.89

Forest expansion = all areas showing an increase in latter reporting year over former reporting year

(ie. latter year- former year (where latter year is greater)

Deforestation = all areas showing a decrease in latter reporting year over former reporting year

(ie. former year- latter year (where former year is greater)

Note: For this table, the areas for Disturbed broadleaf and fields (1990) and Secobdary forest (2000) for used together to reflect the actual expansion or decrease in forest coverf over the reporting period 1990-2000

The same applies for afforestation and natural expansion

afforestation = pine and hardwood plantations

natural expansion = all areas except pine and hardwood plantations

Annual change = the period change/ number of years in period

FRA categories	Area (1000 ha/year)			
	1990-2000	2000-2010	2010-2015	2015-2020
Forest expansion (a)	0.86	4.42	4.42	4.43
...of which afforestation	0.00	0.01	0.01	0.01
...of which natural expansion	0.86	4.41	4.30	3.53
Deforestation (b)	0.89	0.68	0.62	0.54
Forest area net change (a-b)	-0.03	3.75	3.80	3.89

Comments

The data shows that for the reporting periods, the period 190-2000 show a decrease in the forest cover and an annual increase thereafter. This in part is due to the efforts of te Forestry Department and other stakeholders trying to protect Jamaica's remaining forest and increase forest cover to an acceptable level over time. The aim over the next period is to arrest the decrease in the forests which contributes most to our biodiversity which include Closed Broadleaf Forest, Tall open Dry Forest, Mangrove Forest and Riparian/Swamp Forest. These efforts are already in place.

1e Annual reforestation

National Data

Data sources + type of data source eg NFI, etc

Forestry Department

FRA2010 Report

Annual Reports; Published (2010-2011, 2011-1012, 2012-2013); Drafts (2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018)

UNFF12_Reporting_Format_UNFF_pilot_2017FD_Aug2017(SMT_Inputs)_REVISED_FINAL.pdf (see links and repository)

https://www.un.org/esa/forests/wp-content/uploads/bsk-pdf-manager/177_JAMAICA.PDF

National classification and definitions

Not necessary

Original data

	1990-2000	2000-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
Projects	283	312	29.85	227.92	162.89	405	172		26.08	
Forestry Departmenty	621	186	203.79	46.37					106.9	74.5
Private planters	333	962	51.76							
Total	1237	1460	285.4	274.29	162.89	405	172	0	132.98	74.5
	1990-2000	2000-2010			2010-2015					2015-2020
	1237	1460			1299.58					207.48
Project Donor	GOJ	GOJ	Local donors	CCADRR + local donors	CCADRR	EU	JAREECH		Local donors	

Local donors include banks, service clubs etc

GOJ - Government of Jamaica

CCADRR -Climate change adaptation and disaster risk reduction

EU - European Union

JaRFEECH - Jamaica Rural Economy and Ecosystems Adapting to Climate Change

* - Proposed/Projected

Analysis and processing of national data

Estimation and forecasting

	2018-2019	2019-2020
Projects	150	150
Forestry Departmenty	100	100

Private planters		
Total	*250	*250
Project Donor	EU	EU

EU - European Union

* - Proposed/Projected

Reclassification into FRA 2020 categories

	1990-2000	2000-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
Projects	283	312	29.85	227.92	162.89	405	172		26.08		150	150
Forestry Departmenty	621	186	203.79	46.37					106.9	74.5	100	100
Private planters	333	962	51.76									
Total	1237	1460	285.4	274.29	162.89	405	172	0	132.98	74.5	250	250
	1990-2000	2000-2010			2010-2015					2015-2020		
	1237	1460			1299.58					707.48		
	1.24	1.46			1.30					0.71		

FRA categories	Area (1000 ha/year)			
	1990-2000	2000-2010	2010-2015	2015-2020
Reforestation	1.24	1.46	1.30	0.71

Comments

Sice 2000 most of our reforestation activities are funded by external donor agencies with minor projects funded by local; agencies or service clubs. For the next two (2) years the country will be trying to achieve a minimum of 250 ha annually in reforestation activities. Funding will be provided by the EU, GOJ and assisted by private planting activities.

1f Other land with tree cover

National Data

Data sources + type of data source eg NFI, etc

Forestry Department, Satellite imagery used for 1998 and 2013 Land use assessments, plantation shapefile

Agroforestry data provided by Rural Agricultural Development Authotity (RADA)

National classification and definitions

Not necessary

Original data

Crop	1998	2013
coconut	2.04	2.47
orange	4.84	5.79
coffee		0.65
Other tree crops	2.23	0.63
Other crops	73.38	59.96
shapefile total	82.49	69.50

Figures were taken from the 1998 and 2013 land use data as seen from satellite imagery for those dates.

Other trees crops would have include a variety of crops such as mango, apple, breadfruit and other crops nor identified from the images.

Other crops include sugar cane, babana, plantain, pineapple and shrub crops.

Analysis and processing of national data

Estimation and forecasting

Crop	1990	1998	2010	2013	2015	2020
coconut	1.81	2.04	2.10	2.47	2.53	2.67
orange	4.33	4.84	4.97	5.79	5.92	6.23
coffee			0.09	0.65	0.74	0.95
Other tree crops	3.08	2.23	2.02	0.63	0.42	0.42
Other crops	80.54	73.38	71.59	59.96	58.17	53.70
shapefile total	89.76	82.49	80.76	69.50	67.77	63.97

From original dat above, estimation and forecasting was done using linear method to produce reporting years totals

Reclassification into FRA 2020 categories

Crop	1990	1998	2010	2013	2015	2020
Palms	1.81	2.04	2.10	2.47	2.53	2.67

Tree orchards	4.33	4.84	5.06	6.44	6.66	7.18
Agroforestry	3.08	2.23	2.02	0.63	0.42	0.42
Other crops	80.54	73.38	71.59	59.96	58.17	53.70
shapefile total	89.76	82.49	80.76	69.50	67.77	63.97

Palms =coconuts

tree orchards = orange and coffee

Agroforestry = other tree crops

Other crops are not considered as trees

Note: the agroforestry total for 2015 was repeated for 2020

FRA categories	Area (1000 ha)				
	1990	2000	2010	2015	2020
Palms (a)	1.81	2.04	2.10	2.53	2.67
Tree orchards (b)	4.33	5.06	6.40	6.66	7.18
Agroforestry (c)	3.08	2.02	0.64	0.42	0.42
Trees in urban settings (d)	2.00	2.00	2.00	2.00	2.00
Other (specify in comments) (e)					
Total (a+b+c+d+e)	11.22	11.12	11.14	11.61	12.27
Other land area	549.64	551.16	520.03	502.92	483.49

Comments

Trees in urban settings was an expert opinion. The figures given here may not be atrue reflection of onground reality but was the brest estimaites available at this time.

2 Forest growing stock, biomass and carbon

2a Growing stock

National Data

Data sources + type of data source eg NFI, etc

Source:	Year	
Forestry Department, National Forestry Management and Conservation Plan, Forestry Department, Jamaica	2001	Sample based remote sensing assesment
R. Camerand, O. Evelyn, TFT Project, National Forest Inventory Rerport 2003, Volume 1 of 2, Main Report and Appendices 1 to V	2004	National forest inventory
Forestry Department, LUCA	2013	National land use assesment, image based remote sensing assesment

National classification and definitions

National class	Definition
Closed Broadleaf	Closed primary forest with broadleaf trees at least 5 m tall and crowns interlocking, with minimal human disturbance
Disturbed Broadleaf	Disturbed Broadleaf forest with broadleaf trees at least 5 m tall and species-indicators of disturbance such as Cecropia peltata (trumpet tree).
Bamboo	Bambusa vulgaris (Bamboo brakes) on the lower shale hills (disturbed forest).
Tall Open Dry	Open natural woodland or forest with trees at least 5 m tall and crown not in contact in drier part of Jamaica with species-indicators such as Symphonia globulifera (hog plum) and Roystonea princeps (Royal palm).
Short Open Dry	Open scrub, shrub, bush or brushland with trees or shrubs 1-5 m tall and crowns not in contact, in drier part of Jamaica with species-indicators such as Prosopis juliflora (cashaw) or Stenocereus hystrix (columnar cactus).
Riparian/Swamp	Edaphic forest (soil waterlogging) with a single tree storey with speciesindicators such as Symphonia globulifera (hog gum) and Roystonea princeps (royal palm).
Mangrove	Edaphic forest (areas with brackish water) composed of trees with stilt roots or pneumatophores, species-indicators such as Rhizophora mangle (red mangrove).
Fields or Disturbed BroadleafForest and Pine Plantation	>50% fields or Disturbed Broadleaf forest; >25% Pine plantation
Bamboo and DisturbedBroadleaf Forest	>50% bamboo; >25% Disturbed Broadleaf forest
Disturbed Broadleaf Forest andFields	>50% Disturbed Broadleaf forest; >25% Fields
Bamboo and Fields	>50% bamboo; >25% fields
Fields and Disturbed BroadleafForest	>50% Fields >25% Disturbed Broadleaf forest
Bauxite Extraction andDisturbed Broadleaf Forest	>50% bauxite extraction; >25% Disturbed Broadleaf forest

National class	Definition
Source:	R. Camerand, O. Evelyn, TFT Project, National Forest Inventory Rerport 2003, Volume 1 of 2, Main Report and Appendices 1 to V

Original data

Total volume and aboveground living biomass by forest type			
Sub-class	Area (ha)	Total Volume ('000 m3)	Aboveground living biomass('000 t)
Name			
Closed Broadleaf	88230.5	17088.5	15567
Disturbed Broadleaf	174724.6	28909.9	28682.7
Tall Open Dry	41998.5	1585.9	3384.5
Short Open Dry	12104	275.9	736.9
Riparian/Swamp	2247	407.3	368.8
Mangrove	9730.8	765.1	1047.3
Caribbean Pine Plantations	4287	512.0	541.5
Other Species Plantation	3900	576.5	630
Forest Total	337222.4	50121.1	50958.7
Disturbed Broadleaf Forest & Non-Forest Land Use	165953.8	15534.9	20543.1
Non-Forest Land Use & Disturbed Broadleaf Forest	165639.8	10996.8	17233.4
Mixed Total	331593.6	26531.8	37776.5

Extracted from R. Camerand, O. Evelyn, TFT Project, National Forest Inventory Rerport 2003, Volume 1 of 2, Main Report and Appendices 1 to V

Analysis and processing of national data

Estimation and forecasting

Year 1990			
	Volume (m3/ha)	000 ha	Volume(Million m3 over bark)
Closed Broadleaf	193.68	88.67	17.17
Disturbed Broadleaf	165.46	176.97	29.28
Tall Open Dry	37.76	42.11	1 .59
Riparian/Swamp	181.26	2.35	0.43
Mangrove	78.63	9.75	0.77
Caribbean Pine Plantations	119.43	4.89	0.58
Other Species Plantation	147.82	3.90	0.58

Disturbed Broadleaf Forest & Non-Forest Land Use	94.00	125.33	11.73
Non-Forest Land Use & Disturbed Broadleaf Forest	66.00	33.22	2.21
Forest		487.18	64 .34
Short Open Dry	22.79	12.08	0.28
Owl		12.08	0.28
Total		499.37	64 61

Volume (m3/ha) (calculated from original data) = (Total Volume(000 m3)/Area (ha)) * 1000

Total volume = volume (m3/ha) * hectare ('000 ha)

Calculations are done for forest portion of Disturbed Broadleaf Forest & Non-Forest Land Us and Non-Forest Land Use & Disturbed Broadleaf Forest only

The process is repeated for all, the reporting years

Year 2000-2020	
	Volume (m3/ha)
Closed Broadleaf	193.68
Disturbed Broadleaf	165.46
Tall Open Dry	37.76
Riparian/Swamp	181.26
Mangrove	78.63
Caribbean Pine Plantations	119.43
Other Species Plantation	147.82
Secondary Forest	94.00
Fields and Secondary Forest	66.00
Bamboo and Secondary Forest	66.00
Short Open Dry	22.79

Volume (m3/ha) for Secondary Forest, Fields and Secondary Forest, and Bamboo and Secondary Forest are **Assumed Values**

Forest Class		2000	2010	2015	1016	2017	2018	2019	2020
--------------	--	------	------	------	------	------	------	------	------

		Volume	000 ha	Total Volume	000 ha	Total Volume	000 ha	Total Volume	000 ha	Total Volume	000 ha	Total Volume	000 ha	Total Volume	000 ha	Total Volume	000 ha	Total Volume
		(m3/ha)		(Million m3 over bark)		(Million m3 over bark)		(Million m3 over bark)		(Million m3 over bark)		('000 m3)		('000 m3)		('000 m3)		('000 m3)
Closed Broadleaf		193.68	87.75	17.00	85.36	16.563	84.16	16.30	83.92	16.25	83.68	16.21	83.44	16.16	83.20	16.11	82.96	16.07
Disturbed Broadleaf		165.46	174.84	28.93	175.42	29.02	175.71	29.07	175.76	29.08	175.82	29.09	175.88	29.10	175.94	29.11	176.00	29.12
Tall Open Dry		37.76	41.41	1.56	38.45	1.45	36.97	1.40	36.67	1.38	36.38	1.37	36.08	1.36	35.78	1.35	35.49	1.34
Riparian/Swamp		181.26	1.97	0.36	0.55	0.10	0.12	0.02	0.12	0.02	0.12	0.02	0.12	0.02	0.12	0.02	0.12	0.02
Mangrove		78.63	9.73	0.77	9.73	0.77	9.73	0.77	9.73	0.77	9.73	0.77	9.73	0.77	9.73	0.77	9.73	0.77
Caribbean Pine Plantations		119.43	4.31	0.51	4.39	0.52	4.44	0.53	4.45	0.53	4.45	0.53	4.46	0.53	4.47	0.53	4.48	0.54
Other Species Plantation		147.82	3.90	0.58	3.90	0.58	3.90	0.58	3.90	0.58	3.90	0.58	3.90	0.58	3.90	0.58	3.90	0.58
Secondary Forest		94.00	121.36	11.41	121.36	11.41	121.36	11.41	121.36	11.41	121.36	11.41	121.36	11.41	121.36	11.41	121.36	11.41
Fields and Secondary Forest		66.00	30.99	2.05	34.73	2.54	42.22	2.79	42.97	2.84	43.71	2.89	44.46	2.93	45.21	2.98	45.96	3.03
Bamboo and Secondary Forest		66.00	3.97	0.26	7.97	0.53	9.98	0.66	10.38	0.68	10.78	0.71	11.18	0.74	11.58	0.76	11.98	0.79
Forest Total			480.22	63.42	481.86	63.45	488.58	63.51	489.26	63.54	489.94	63.57	490.62	63.60	491.30	63.63	491.97	63.66
Short Open Dry		22.79	10.84	0.25	4.52	0.10	2.62	0.06	2.62	0.06	2.62	0.06	2.62	0.06	2.62	0.06	2.62	0.06
Owl			10.84	0.25	4.52	0.10	2.62	0.06	2.62	0.06	2.62	0.06	2.62	0.06	2.62	0.06	2.62	0.06
Total			491.06	63.66	490.11	63.55	491.19	63.57	491.87	63.60	492.55	63.63	493.23	63.66	493.91	63.69	494.59	63.72

Reclassification into FRA 2020 categories

For 1990:

Naturally regenerating forest = Closed Broadleaf, Disturbed Broadleaf, Tall Oen Dry, Riparian/Swamp, Mangrove, Disturbed Broadleaf Forest and Non-Forest Land-use *75%, Non-Forest Land Use and Disturbed Broadleaf Forest * 25%

Planted Forest = Plantation Forest

Plantation Forest = Caribbean Pine Plantations and Other Species Plantation

OWL = Short Open Dry Forest

For Other Reporting Years:

Naturalyl regenerating forest = Closed Broadleaf, Disturbed Broadleaf, Tall Open Dry, Riparian/Swamp, Mangrove, Secondary Forest, Fields and Secondary Forest * 25%, Bamboo and Secondary Forest * 25%

Planted Forest = Plantation Forest

Plantation Forest = Caribbean Pine Plantations and Other Species Plantation

OWL = Short Open Dry Forest

FRA category	Growing stock m3/ha (over bark)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest	132.06	132.04	130.62	129.95	129.83	129.71	129.58	129.46	129.34
Planted forest	132.03	132.92	132.79	132.71	132.70	132.68	132.67	132.66	132.64
...of which plantation forest	132.03	132.92	132.79	132.71	132.70	132.68	132.67	132.66	132.64
...of which other planted forest	0	0	0	0	0	0	0	0	0
Forest	132.05	132.05	130.66	130.00	129.88	129.76	129.64	129.52	129.39
Other wooded land	22.79	22.79	22.79	22.79	22.79	22.79	22.79	22.79	22.79

For Growing stock m3/ha (over bark)

Naturally regenerating forest = naturally regenerating forest total volume ('000m3) / naturally regenerating forest total ('000 ha)

Planted forest = planted forest total volume ('000m3) / planted forest total area ('000 ha)

Plantation forest = plantation forest total volume ('000m3) / plantation forest total ('000 ha)

Other species plantation =other species plantation total volume ('000m3) / other species plantation total ('000ha)

Forest = total forest volume)'000 m3)/ total forest area ('000 ha)

OWL = Short open dry total volume ('000 m3) / tShort open dry total area ('000 ha)

For Total growing stock (million m3) over bark

Total growing stock = (average growing stock m3/ha * total acreage)/1000

FRA category	Total growing stock (Million m3/ha (over bark)								
	1990	2000	2010.0	2015.00	2016.00	2017.00	2018.00	2019.00	2020.00
Naturally regenerating fores	62.17	62.32	62.35	62.41	62.44	62.46	62.49	62.52	62.55
Planted forest	1.16	1.09	1.10	1.11	1.11	1.11	1.11	1.11	1.11
...of which plantation forest	1.16	1.09	1.10	1.11	1.11	1.11	1.11	1.11	1.11
...of which other planted forest	0	0	0	0	0	0	0	0	0
Forest	64.34	63.42	63.45	63.51	63.54	63.57	63.60	63.63	63.66
Other wooded land	0.28	0.25	0.10	0.06	0.06	0.06	0.06	0.06	0.06

Calculated figures are placed in the reporting table

FRA categories	Growing stock m³/ha (over bark)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest	123.26	121.53	113.33	109.66	108.97	108.27	107.60	106.94	106.29
Planted forest	132.03	132.92	132.79	132.71	132.70	132.68	132.67	132.66	132.64
...of which plantation forest	132.03	132.92	132.79	132.71	132.70	132.68	132.67	132.66	132.64
...of which other planted forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forest	123.43	121.73	113.62	109.98	109.30	108.62	107.96	107.30	106.65
Other wooded land	22.79	22.79	22.79	22.79	22.79	22.79	22.79	22.79	22.79

FRA categories	Total growing stock (million m³ over bark)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest	63.17	62.32	62.35	62.41	62.44	62.46	62.49	62.52	62.55
Planted forest	1.16	1.09	1.10	1.11	1.11	1.11	1.11	1.11	1.11
...of which plantation forest	1.16	1.09	1.10	1.11	1.11	1.11	1.11	1.11	1.11
...of which other planted forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forest	64.34	63.42	63.45	63.51	63.54	63.57	63.60	63.63	63.66
Other wooded land	0.28	0.25	0.10	0.06	0.06	0.06	0.06	0.06	0.06

Comments

From the estimation and forecasting done the **Total growing stock (million m³ over bark)** figures were placed directly into the reporting table

2b Growing stock composition

National Data

Data sources + type of data source eg NFI, etc

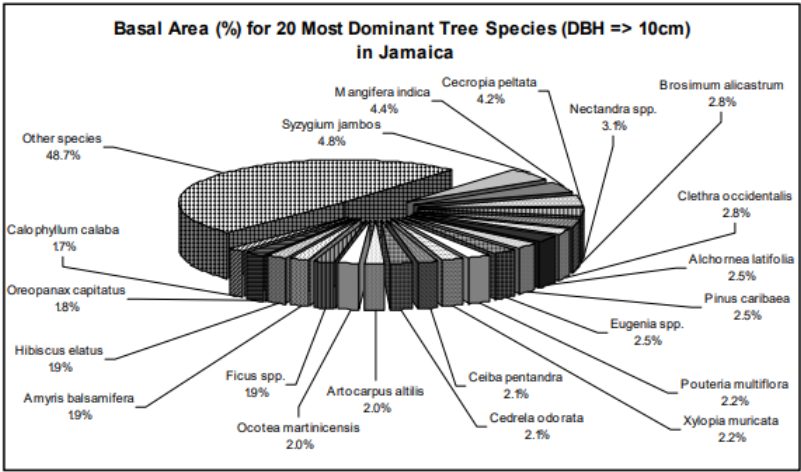
Source:	Year	
Forestry Department, National Forestry Management and Conservation Plan, Forestry Department, Jamaica	2001	Sample based remote sensing assesment
R. Camerand, O. Evelyn, TFT Project, National Forest Inventory Rerport 2003, Volume 1 of 2, Main Report and Appendices 1 to V	2004	National forest inventory

National classification and definitions

Not Necessary

Original data

Figure 6. Basal area of the most dominant tree species (DBH => 10cm) in Jamaica



Basal Area (%) for 20 Most Dominant Tree Species (DBH => 10cm) in Jamaica Other species 48.7% Calophyllum calaba 1.7% Oreopanax capitatus 1.8% Hibiscus elatus 1.9% Amyris balsamifera 1.9% Ficus spp. 1.9% Ocotea martinicensis 2.0% Artocarpus altilis 2.0% Syzygium jambos 4.8% M angifera indica 4.4% Cecropia peltata 4.2% Nectandra spp. 3.1% Brosimum alicastrum 2.8% Clethra occidentalis 2.8% Alchornea latifolia 2.5% Pinus caribaea 2.5% Pouteria multiflora 2.2% Cedrela odorata 2.1% Ceiba pentandra 2.1% Eugenia spp. 2.5% Xylopia muricata 2.2%

The twenty most dominant tree species in basal area belong to the following plant families: Myrtaceae, Moraceae, Cecropiaceae (Moraceae), Euphorbiaceae, Anacardiaceae, Pinaceae, Meliaceae, Malvaceae, Clethraceae, Lauraceae, Clusiaceae, Sapotaceae, Annonaceae, Bombacaceae, Rutaceae and Araliaceae.

5.5.2 Total and stem volumes On average, the total volume over bark per hectare for trees with DBH =>10cm is 114.6 m3 /ha, with a range between 22.8 m3 /ha in the short open dry forest to 193.7 m3 /ha in the closed broadleaf forest. The total standing volume over bark of forest and mixed forest land in Jamaica is approximately 76.65 million cubic meters, with 65.4% coming from the forest land classes (Table 25). Also, on average, the stem volume over bark represents between 41% and 68% of the total volume per hectare, by forest type (see details in Appendix VI, Volume 2 of this report). The most dominant tree species, representing 20.3% of the total volume by hectare with DBH =>10cm, are Syzygium jambos (Rose Apple), Cecropia peltata (Trumpet Tree), Nectandra spp. (Sweetwood), Brosimum alicastrum (Breadnut) and Mangifera indica (Mango). Native timber species, such as Santa maria, Blue mahoe, Sweetwoods, Bullets (Sideroxylon spp.) and Cedar represent 2.3, 2.3, 2.2, 2.2 and 2.1% of the total volume per hectare respectively. Timber plantation species, ie, Caribbean pine, Honduras mahogany and Eucalyptus make up only 2.8% of the total volume per hectare. The total volume is derived mainly from stems with DBH between 10cm and 30cm, a size group found mostly in the driest forest types, mangroves and forest plantations. Since closed broadleaf forests and riparian/swamp forest types are to be protected, potential timber production should be found in the disturbed broadleaf forest types, in addition to the forest plantations (Figure 8). The presence of the large numbers of small DBH trees in the Jamaican forests and the volume dominance by Rose Apple, Trumpet Tree and Mango species indicate the youth of the Jamaican forests as a result of long time human disturbance of the natural ecosystems.

Source:<http://www.forestry.gov.jm/sites/default/files/Resources/natinvreport.pdf>

Analysis and processing of national data

Estimation and forecasting

FRA Category								
Rank	Scientific name	Common name	1990	2000	2010	2015	2020	%
1st	Syzygium jambos	Rose Apple	3.09	3.04	3.05	3.05	3.06	4.8
2nd4.4	Mangifera indica	Mango	2.83	2.79	2.79	2.79	2.80	4.4
3rd	Cecropia peltata	Trumpet Tree	2.70	2.66	2.66	2.67	2.67	4.2
4th	Nectandra spp.	Sweetwood	1.99	1.97	1.97	1.97	1.97	3.1
5th	Brosimum alicastrum	Breadnut	1.80	1.78	1.78	1.78	1.78	2.8
6th	Calophyllum calaba	Santa Maria	1.48	1.46	1.46	1.46	1.46	2.3
7th	Hibiscus elatus	Blue Mahoe	1.48	1.46	1.46	1.46	1.46	2.3
8th	Lauraceae spp.	Sweetwoods	1.42	1,40	1.40.	1.40	1.40	2.2
9th	Sideroxylon spp.	Bullets	1.42	1.40	1.40	1.40	1.40	2.2
10th	Cedrela odorata	Cedar	1.35	1.33	1.33	1.33	1.34	2.1
Total			19.56	19.28	19.29	19.31	19.35	
Remaining			42.85	44.14	44.16	44.20	44.31	
Total volume of introduced tree species			1.93	1.90	1.90	1.91	1.91	3.0
Total growing stock			64.34	63.42	63.45	63.51	63.66	

Growing stock per ranking = % growing stock of ranking /100 * total growing stock

Introduced tree species = total introduced tree species

Remaining = Total growing stock -(Total+Total volume of introduced species)

Reclassification into FRA 2020 categories

Not Necessary

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	Syzygium jambos	Rose Apple	3.09	3.04	3.05	3.05	3.06
#2 Ranked in terms of volume	Mangifera indica	Mango	2.83	2.79	2.79	2.79	2.80
#3 Ranked in terms of volume	Cecropia peltata	Trumpet Tree	2.70	2.66	2.66	2.66	2.67
#4 Ranked in terms of volume	Nectandra spp.	Sweetwood	1.99	1.97	1.97	1.97	1.97
#5 Ranked in terms of volume	Brosimum alicastrum	Breadnut	1.80	1.78	1.78	1.78	1.78
#6 Ranked in terms of volume	Calophyllum calaba	Santa Maria	1.48	1.46	1.46	1.46	1.46
#7 Ranked in terms of volume	Hibiscus elatus	Blue Mahoe	1.48	1.46	1.46	1.46	1.46
#8 Ranked in terms of volume	Lauraceae spp.	Sweetwoods	1.42	1.40	1.40	1.40	1.40
#9 Ranked in terms of volume	Sideroxylon spp.	Bullets	1.42	1.40	1.40	1.40	1.40
#10 Ranked in terms of volume	Cedrela odorata	Cedar	1.35	1.33	1.33	1.33	1.34
Remaining native tree species			42.85	42.24	42.25	42.30	42.40
Total volume of native tree species			62.41	61.53	61.55	61.60	61.74
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			1.93	1.90	1.90	1.91	1.91

FRA categories	Scientific name	Common name	Growing stock in forest (million m³ over bark)				
			1990	2000	2010	2015	2020
Native tree species							
Total volume of introduced tree species			1.93	1.90	1.90	1.91	1.91
Total growing stock			64.34	63.43	63.45	63.51	63.65

Comments

Introduce tree species was not broken down into ranking but given an accumulated value of (2.8%) used as 3% in the report. This resulted in the Remaining value and the Total value being the same.

2c Biomass stock

National Data

Data sources + type of data source eg NFI, etc

see table 2a

National classification and definitions

see table 2a

Original data

see table 2a

Analysis and processing of national data

Estimation and forecasting

Insert the percentages of Growing stock by IPCC forest type for each of the FRA forest categories									
IPCC forest types	FRA forest categories								
	Naturally regenerating forest	Plantation forest	Other planted forest						
	% of Growing stock								
Broadleaved humid	76%		100%						
Broadleaved dry	24%								
Coniferous		100%							
	100%	100%	100%	Must add up to 100%					
Insert Carbon fraction used by country (IPCC default = 0.47)									
Carbon Fraction	47%								
Biomass conversion and expansion factors (BCEF)									
Naturally regenerating forest	1990	2000	2010	2015	2016	2017	2018	2019	2020
Broadleaved humid	1.30	1.30	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Broadleaved dry	1.30	1.30	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Coniferous	0.70	0.70	0.76	0.76	0.76	0.76	0.76	0.76	0.76

Plantation forest									
Broadleaved humid	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30
Broadleaved dry	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30
Coniferous	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Other planted forest									
Broadleaved humid	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Broadleaved dry	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Coniferous	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75
Weighted BCEF									
Naturally regenerating forest	1.30	1.30	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Plantation forest	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Other planted forest	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Root-shoot ratios									
Naturally regenerating forest	1990	2000	2010	2015	2016	2017	2018	2019	2020
Broadleaved humid	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Broadleaved dry	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28
Coniferous	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Plantation forest									
Broadleaved humid	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Broadleaved dry	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28
Coniferous	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29
Other planted forest									
Broadleaved humid	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Broadleaved dry	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56
Coniferous	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Weighted RS ratio									
Naturally regenerating forest	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Plantation forest	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29
Other planted forest	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20

Above-ground biomass (t/ha)									
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest	159.55	157.99	170.00	164.49	163.46	162.41	161.40	160.41	159.44
Plantation forest	92.42	93.04	92.95	92.90	92.89	92.88	92.87	92.86	92.85
Other planted forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	158.42	156.97	168.85	163.46	162.44	161.41	160.43	159.46	158.50
Below-ground biomass (t/ha)									
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest	39.82	39.43	42.43	41.06	40.80	40.54	40.29	40.04	39.79
Plantation forest	26.80	26.98	26.96	26.94	26.94	26.93	26.93	26.93	26.93
Other planted forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	39.60	39.24	42.20	40.85	40.60	40.34	40.10	39.85	39.61

Reclassification into FRA 2020 categories

Not necessary

FRA categories	Forest biomass (tonnes/ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Above-ground biomass	158.42	156.97	168.85	163.46	162.44	161.41	160.43	159.46	158.50
Below-ground biomass	39.60	39.24	42.20	40.85	40.60	40.34	40.10	39.85	39.61
Dead wood									

Comments

2d Carbon stock

National Data

Data sources + type of data source eg NFI, etc

Biomass Calculator

National classification and definitions

Not required

Original data

From table 1b to Biomass calculator

Analysis and processing of national data

Estimation and forecasting

Not required

Reclassification into FRA 2020 categories

Not necessary

FRA categories	Forest carbon (tonnes/ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Carbon in above-ground biomass	74.46	73.77	79.36	76.82	76.35	75.86	75.40	74.94	74.50
Carbon in below-ground biomass	18.61	18.44	19.83	19.20	19.08	18.96	18.85	18.73	18.62
Carbon in dead wood									
Carbon in litter									
Soil carbon									

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

Comments

Calculations done using Biomass Calculator and as such all other requirements (data source, national classification, analysis etc.) were not necessary

3 Forest designation and management

3a Designated management objective

National Data

Data sources + type of data source eg NFI, etc

Forestry Department:

National Forest Management and Conservation Plan 2001 (<http://www.forestry.gov.jm/sites/default/files/Resources/forestplan.pdf>)

National Forest Management and Conservation Plan 2016-2026 (http://www.forestry.gov.jm/sites/default/files/Resources/nfmcpl_final_sep2017.pdf)

National Forestry Action Plan, 1989

Forest Land Use Policy, 1996

National land use data, 1998, 1989, 2013

National classification and definitions

National Forest Management and Conservation Plan 2001, a plan to promote and improve the conservation and sustainable use of the forest resources of the country.

National Forest Management and Conservation Plan 2016-2026, a 10 year plan to promote and improve the conservation and sustainable use of the forest resources of the country

National Forestry Action Plan, 1989, a plan to promote and improve the conservation and sustainable use of the forest resources of the country

Forestry Land Use Policy, 1996, a plan to promote and improve the conservation and sustainable use of the forest resources of the country

National land use data, 1998, 1989, 2013 the land use data as detetded by interpretation of satellite data for the reported years

Original data

National Classes	1990	2000	2010	2013	2015	2016	2017	2018	2019	2020
Closed broadleaf forest	88.67	87.75	85.36	84.64	84.16	83.92	83.68	83.44	83.20	82.96
Disturbed broadleaf forest	176.97	174.84	175.42	175.59	175.71	175.76	175.82	175.88	175.94	176.00
Open dry forest – Tall	42.11	41.41	38.45	37.56	36.97	36.67	36.38	36.08	35.78	35.49
Pine & Hardwood Plantations	8.79	8.21	8.29	8.32	8.34	8.35	8.35	8.36	8.37	8.38
Disturbed broadleaf and fields	125.06									
Secondary forest		121.36	121.36	121.36	121.36	121.36	121.36	121.36	121.36	121.36
Mangrove forest	9.75	9.73	9.73	9.73	9.73	9.73	9.73	9.73	9.73	9.73
Swamp forest	2.35	1.97	0.55	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Bamboo and secondary forest	12.35	15.90	31.90	36.70	39.90	41.50	43.10	44.70	46.30	47.90
Bamboo	2.81	3.21	4.33	4.67	4.90	5.01	5.12	5.23	5.35	5.46
Fields and secondary forest	29.70	30.99	38.47	40.72	42.22	42.97	43.71	44.46	45.21	45.96
Bamboo and Fields	22.31	25.66	44.59	50.27	54.06	55.95	57.85	59.74	61.63	63.53
Bauxite and disturbed broadleaf	0.43									
Forest	521.28	521.01	558.45	569.68	577.45	581.34	585.23	589.11	593.00	596.88

Data extracted from Table 1

Analysis and processing of national data

Estimation and forecasting

National Class and forested areas

National Classes	1990	2000	2010	2015	2016	2017	2018	2019	2020
Closed broadleaf forest	88.67	87.75	85.36	84.16	83.92	83.68	83.44	83.20	82.96
Disturbed broadleaf forest	176.97	174.84	175.42	175.71	175.76	175.82	175.88	175.94	176.00
Open dry forest – Tall	42.11	41.41	38.45	36.97	36.67	36.38	36.08	35.78	35.49
Pine & Hardwood Plantations	8.79	8.21	8.29	8.34	8.35	8.35	8.36	8.37	8.38
Disturbed broadleaf and fields	125.06								
Secondary forest		121.36	121.36	121.36	121.36	121.36	121.36	121.36	121.36
Mangrove forest	9.75	9.73	9.73	9.73	9.73	9.73	9.73	9.73	9.73
Swamp forest	2.35	1.97	0.55	0.12	0.12	0.12	0.12	0.12	0.12
Bamboo and secondary forest	12.35	15.90	31.90	39.90	41.50	43.10	44.70	46.30	47.90
Bamboo	2.81	3.23	4.33	4.93	5.01	5.12	5.23	5.35	5.46
Fields and secondary forest	29.70	30.99	38.47	42.22	42.97	43.71	44.46	45.21	45.96
Bamboo and Fields	22.31	25.66	44.59	54.06	55.95	57.85	59.74	61.63	63.53
Bauxite and disturbed broadleaf	0.43								
Total	521.28	521.00	558.45	577.46	581.34	585.23	589.12	593.00	596.89

Forested areas produced from original data table

For Primary designated management objectives of forested areas

1990	Production	Protection of soil and water	Conservation of biodiversity	Social services	Multiple purposes	No or unknown function
Closed broadleaf forest			67.59			21.08
Disturbed broadleaf forest		14.50				162.47
Open dry forest – Tall					20.60	21.51
Pine & Hardwood Plantations	8.79					0.00
Disturbed broadleaf and fields						125.05
Secondary forest						
Mangrove forest			7.56			2.19
Swamp forest		1.00	1.00			0.35
Bamboo and secondary forest		1.24				11.11

Bamboo						2.81
Fields and secondary forest						29.70
Bamboo and Fields		2.23				20.08
Bauxite and disturbed broadleaf						0.43
Total	8.79	18.97	76.15	0.00	20.60	

Estimation based on expet knowledge and national classification

Areas in bold are placed in reporting table

2000						
	Production	Protection of soil and water	Conservation of biodiversity	Social services	Multiple purposes	No or unknown function
Closed broadleaf forest			63.53			24.22
Disturbed broadleaf forest		14.50				160.34
Open dry forest – Tall					20.60	20.81
Pine & Hardwood Plantations	8.21					0.00
Disturbed broadleaf and fields						0.00
Secondary forest						121.36
Mangrove forest			7.22			2.51
Riparian/Swamp forest		1.00	0.43			0.54
Bamboo and secondary forest		1.59				14.31
Bamboo						3.23
Fields and secondary forest						30.99
Bamboo and Fields		2.57				23.09
Bauxite and disturbed broadleaf						
	8.21	19.66	71.18	0.00	20.60	

Estimation based on expet knowledge and national classification

Areas in bold are placed in reporting table

2010						
	Production	Protection of soil and water	Conservation of biodiversity	Social services	Multiple purposes	No or unknown function
Closed broadleaf forest			61.80			23.56
Disturbed broadleaf forest		14.50				160.92
Open dry forest – Tall					20.60	17.85

Pine & Hardwood Plantations	8.29					0.00
Disturbed broadleaf and fields						0.00
Secondary forest						121.36
Mangrove forest			7.22			2.51
Riparian/Swamp forest		0.50	0.05			0.00
Bamboo and secondary forest		3.19				28.71
Bamboo						3.33
Fields and secondary forest						38.47
Bamboo and Fields		4.49				40.41
Bauxite and disturbed broadleaf						
	8.29	22.68	69.07	0.00	20.60	

Estimation based on expet knowledge and national classification

Areas in bold are placed in reporting table

2015	Production	Protection of soil and water	Conservation of biodiversity	Social services	Multiple purposes	No or unknown function
Closed broadleaf forest			60.93			23.23
Disturbed broadleaf forest		15.00				160.71
Open dry forest – Tall					20.60	16.37
Pine & Hardwood Plantations	8.34					0.00
Disturbed broadleaf and fields						0.00
Secondary forest						121.36
Mangrove forest			7.22			2.51
Swamp forest		0.12				0.00
Bamboo and secondary forest		3.99				35.91
Bamboo						4.93
Fields and secondary forest						42.22
Bamboo and Fields		5.41				48.65
Bauxite and disturbed broadleaf						
	8.34	24.52	68.15	0.00	20.60	

Estimation based on expet knowledge and national classification

Areas in bold are placed in reporting table

2020								
			Production	Protection of soil and water	Conservation of biodiversity	Social services	Multiple purposes	No or unknown function
Closed broadleaf forest					60.76			22.20
Disturbed broadleaf forest				15.00				161.00
Open dry forest – Tall							20.60	14.89
Pine & Hardwood Plantations			8.38					0.00
Disturbed broadleaf and fields								0.00
Secondary forest								121.36
Mangrove forest					7.22			2.51
Swamp forest				0.12				0.12
Bamboo and secondary forest				4.79				43.00
Bamboo								5.46
Fields and secondary forest								45.96
Bamboo and Fields				6.35				57.18
Bauxite and disturbed broadleaf								
			8.38	19.12	67.98	0.00	20.60	

Estimation based on expet knowledge and national classification

Areas in bold are placed in reporting table

For designated management objective

Production = forest plantations

Protection of soil and water = Closed broadleaf forest, Disturbed broladleaf forest, Mangrove forest, Riparian/Swamp forest, Bamboo and secondary forest, Bamboo, Fields and Secondary forest, Bambioo and fields

Conservation of biodiversity = Closed broadleaf forest and mangrove forest

Social Services = Disturbed broladleaf forest, Open dry forest - Tall, Pines and Hardwood plantations, Disturbed broadleaf and fields, Riparian/Swamp forest, Bamboo and secondary forest

Other = Total forest area

These classifications results in designated management objective table

Reclassification into FRA 2020 categories

not necessary

Primary designated management objective

FRA 2020 categories	Forest area (1000 ha)				
	1990	2000	2010	2015	2020
Production (a)	8.79	8.21	8.29	8.34	8.38
Protection of soil and water (b)	18.97	19.66	22.68	24.52	26.26
Conservation of biodiversity (c)	76.15	71.18	69.07	68.15	67.98
Social Services (d)	0.00	0.00	0.00	0.00	0.00
Multiple use (e)	20.60	20.60	20.60	20.60	20.60
Other (specify in comments) (f)	0.00	0.00	0.00	0.00	0.00
None/unknown (g)	396.77	401.35	437.81	455.85	473.67
Total forest area	521.28	521.00	558.45	577.46	596.89

Total area with designated management objective

FRA 2020 categories	Forest area (1000 ha)				
	1990	2000	2010	2015	2020
Production	430.27	431.29	472.55	493.17	513.80
Protection of soil and water	302.86	303.17	319.97	328.70	337.80
Conservation of biodiversity	198.95	136.05	136.69	137.07	137.17
Social Services	521.28	521.00	558.45	577.46	596.89
Other (specify in comments)					

Comments

Both tables are based on expert knowledge and management objectives. all the forest on protected lands are used for conservation of biodiversity.

Total area designated for production timber production, fuel wood and other non wood forest products.(all forest types except closed broadleaf forest and swamp forest).

The entire forest is used for social services especially for recreation, education and research.

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

Forestry Department

National Forest Management and Conservation Plan 2001 (<http://www.forestry.gov.jm/sites/default/files/Resources/forestplan.pdf>)

National Forest Management and Conservation Plan 2016-2026 (http://www.forestry.gov.jm/sites/default/files/Resources/nfmcp_final_sep2017.pdf)

National Forestry Action Plan, 1989

Forest Land Use Policy, 1996

National land use data, 1989, 1998, 2013

Protected areas shapefile 1998, 2010, 2017

National classification and definitions

National Forest Management and Conservation Plan 2001, a plan to promote and improve the conservation and sustainable use of the forest resources of the country.

National Forest Management and Conservation Plan 2016-2026, a 10 year plan to promote and improve the conservation and sustainable use of the forest resources of the country

National Forestry Action Plan, 1989, a plan to promote and improve the conservation and sustainable use of the forest resources of the country

Forestry Land Use Policy, 1996, a plan to promote and improve the conservation and sustainable use of the forest resources of the country

National land use data, 1989, 1998, 2013 the land use data as detected by interpretation of satellite data for the reported years

Protected areas shapefile 1998, 2010, 2017; Shapefile of protected by the National Environmental and Planning Agency (NEPA) and the Forestry Department (FD)

Original data

Forest data as produced from land use data and protected areas shapefiles.

Thse tables were produced by using the protected areas shapefiles for the respective years to clip the landuse data for the corresponding years and calculating the clipped areas for forest land use.

Forest within protected areas

National Classes	1998	2010	2017
Closed broadleaf forest	60.73	61.80	62.39
Disturbed broadleaf forest	17.58	14.81	15.66
Open dry forest – Tall	21.01	21.49	21.49
Pine & Hardwood Plantations	2.19	4.57	4.57
Disturbed broadleaf and fields	8.51		
Secondary forest		12.18	12.79
Mangrove forest	7.25	7.22	7.22
Swamp forest	1.54	0.12	0.12
Bamboo and secondary forest	0.46	0.36	0.36
Bamboo	0.37	0.15	0.15

Fields and secondary forest	1.93	2.07	2.10
Bamboo and Fields	2.16	4.26	4.27
Bauxite and disturbed broadleaf	0.43		
Forest	123.73	129.06	131.12

Forest areas with management plans

National Class	1998	2010	2017
	Area ('000)	Area ('000)	Area ('000)
Closed broadleaf forest ¹	56.62	61.16	60.63
Disturbed broadleaf forest	17.73	14.76	16.36
Open dry forest – Tall	8.97	10.26	10.37
Pine & Hardwood Plantations	2.13	5.42	5.25
Disturbed broadleaf and fields	6.06		
Secondary forest ^{*2}		8.06	8.10
Mangrove forest	2.05	2.26	2.21
Swamp forest	0.00	0.00	0.00
Bamboo and secondary forest	0.43	1.70	1.19
Bamboo	0.37	0.18	0.15
Fields and secondary forest	3.87	2.14	2.01
Bamboo and Fields	1.33	3.07	2.99
Bauxite and disturbed broadleaf	0	0	0.00
Total	99.56	109.01	109.26

Forest areas with management plans within protected areas

National Class	1998	2010	2017
	Area ('000)	Area ('000)	Area ('000)
Closed broadleaf forest ¹	56.62	61.16	60.63
Disturbed broadleaf forest	17.73	14.76	16.36
Open dry forest – Tall	8.97	10.26	10.37
Pine & Hardwood Plantations	2.13	5.42	5.25
Disturbed broadleaf and fields	6.06		
Secondary forest ^{*2}		8.06	8.10

Mangrove forest	2.05	2.26	2.21
Swamp forest	0.00	0.00	0.00
Bamboo and secondary forest	0.43	1.70	1.19
Bamboo	0.37	0.18	0.15
Fields and secondary forest	0.97	2.14	2.01
Bamboo and Fields	1.33	3.07	2.99
Bauxite and disturbed broadleaf	0		
Total	96.66	109.01	109.26

Analysis and processing of national data

Estimation and forecasting

Using the land use shapefiles for the years 1998 and 2013 along with protected areas shapefiles for 1998, 2010 and 2017 intersections were done to produce the table below showing forested areas within protected areas for the reporting years.

Forest areas within protected areas

National Class	1990	2000	2010	2015	2016	2017	2018	2019	2020
	Area ('000)	Area ('000)	Area ('000)	Area ('000)	Area ('000)	Area ('000)	Area ('000)	Area ('000)	Area ('000)
Closed broadleaf forest	58.95	60.38	61.80	62.22	62.31	62.39	62.47	62.56	62.64
Disturbed broadleaf forest	22.15	18.50	14.84	15.43	15.54	15.66	15.78	15.89	16.01
Open dry forest – Tall	20.21	20.38	21.49	21.49	21.49	21.49	21.49	21.49	21.49
Pine & Hardwood Plantations	1.46	3.28	4.57	4.57	4.57	4.57	4.57	4.57	4.57
Disturbed broadleaf and fields	8.51								
Secondary forest		10.35	12.18	12.62	12.70	12.79	12.88	12.96	13.05
Mangrove forest	7.30	7.25	7.22	7.22	7.22	7.22	7.22	7.22	7.22
Swamp forest	3.91	2.02	0.12	0.12	0.03	0.12	0.12	0.12	0.12
Bamboo and secondary forest	0.63	0.49	0.36	0.36	0.36	0.36	0.36	0.36	0.36
Bamboo	0.74	0..44	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Fields and secondary forest	1.70	1.89	2.07	2.09	2.10	2.11	2.11	2.12	2.12
Bamboo and Fields	2.16	3.21	4.26	4.27	4.27	4.27	4.27	4.27	4.27
Bauxite and disturbed broadleaf	0.00	0	0	0	0	0	0		
Total	127.71	128.19	129.06	130.53	130.83	131.12	131.42	131.71	132.01

estimation and forecasting was done using linear method assisted by expert opinion

Total area in bold is placed in reporting table

Forest areas with management plans

National Class	1990	2000	2010	2015	2016	2017	2018	2019	2020
	Area ('000)	Area ('000)	Area ('000)	Area ('000)	Area ('000)	Area ('000)	Area ('000)	Area ('000)	Area ('000)
Closed broadleaf forest ¹	49.05	57.38	61.16	60.78	60.71	60.63	60.55	60.48	60.40
Disturbed broadleaf forest	22.68	17.24	14.76	15.90	16.13	16.36	16.59	16.82	17.05
Open dry forest – Tall	6.82	9.19	10.26	10.34	10.35	10.37	10.39	10.40	10.42
Pine & Hardwood Plantations	1.76	2.68	5.42	5.30	5.27	5.25	5.23	5.20	5.18
Disturbed broadleaf and fields	8.51								
Secondary forest ^{*2}		6.39	8.06	8.09	8.09	8.10	8.11	8.11	8.12
Mangrove forest	1.70	2.09	2.26	2.22	2.22	2.21	2.20	2.20	2.19
Swamp forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bamboo and secondary forest	0.20	0.64	1.70	1.34	1.26	1.19	1.12	1.04	0.97
Bamboo	0.69	0.34	0.18	0.16	0.15	0.15	0.15	0.14	0.14
Fields and secondary forest	6.75	3.58	2.14	2.05	2.03	2.01	1.99	1.97	1.95
Bamboo and Fields	1.33	1.62	3.07	3.01	3.00	2.99	2.98	2.97	2.96
Bauxite and disturbed broadleaf	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	99.50	101.14	109.01	109.19	109.22	109.26	109.30	109.33	109.37

estimation and forecasting was done using linear method assisted by expert opinion

Total area in bold is placed in reporting table

Areas under management plans and in protected areas

National Class	1990	2000	2010	2015	2016	2017	2018	2019	2020
	Area ('000)	Area ('000)	Area ('000)	Area ('000)	Area ('000)	Area ('000)	Area ('000)	Area ('000)	Area ('000)
Closed broadleaf forest ¹	49.05	57.38	61.16	60.78	60.71	60.63	60.55	60.48	60.40
Disturbed broadleaf forest	22.68	17.24	14.76	15.90	16.13	16.36	16.59	16.82	17.05
Open dry forest – Tall	6.82	9.19	10.26	10.34	10.35	10.37	10.39	10.40	10.42
Pine & Hardwood Plantations	1.76	2.68	5.42	5.30	5.27	5.25	5.23	5.20	5.18
Disturbed broadleaf and fields	8.51								
Secondary forest ^{*2}		6.39	8.06	8.09	8.09	8.10	8.11	8.11	8.12
Mangrove forest	1.70	2.09	2.26	2.22	2.22	2.21	2.20	2.20	2.19
Swamp forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bamboo and secondary forest	0.20	0.64	1.70	1.34	1.26	1.19	1.12	1.04	0.97
Bamboo	0.69	0.34	0.18	0.16	0.15	0.15	0.15	0.14	0.14

Fields and secondary forest	0.40	1.17	2.14	2.05	2.03	2.01	1.99	1.97	1.95
Bamboo and Fields	1.33	1.62	3.07	3.01	3.00	2.99	2.98	2.97	2.96
Bauxite and disturbed broadleaf	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	93.15	98.72	109.01	109.19	109.22	109.26	109.30	109.33	109.37

estimation and forecasting was done using linear method assisted by expert opinion

Total area in bold is placed in reporting table

Reclassification into FRA 2020 categories

Not necessary

FRA categories	Area (1000 ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Forest area within protected areas	127.71	128.19	129.06	130.53	130.83	131.12	131.42	131.71	132.01
Forest area with long-term forest management plan	98.15	98.72	109.01	109.19	109.22	109.26	109.30	109.33	109.37
...of which in protected areas	93.15	98.72	109.01	109.19	109.22	109.26	109.30	109.33	109.37

Comments

The source documents used for this report outlines how Jamaica's forest can best be used for the benefits of its people in a sustainable manner. The forested areas classified as forest reserves or forest management areas are used as the area for with long term forest management plan and of which in protected areas. These are either public or private forests.

4 Forest ownership and management rights

4a Forest ownership

National Data

Data sources + type of data source eg NFI, etc

Forestry Departmen^{gt}, Land use data sets, 1998 and 2013; national land use assessment

National Land Agency, National land parcel data sets, 2005 and 2015,; shapefiles showing land parcels, ownership, occupation and land use statuses

National classification and definitions

Public Ownership Government, Statutard bodies, Parish Councils all government bodies

Private Ownership Individuals, Private companies, Bauxite companies, churches, etc

Unknown Private, with ownerr type uncertain

Original data

Original Data for table 1a, 1998 and 2013 land use data

Land parcel shapefile for 2005 and 2015

Extracted from intersection of land-use and land parcel shapefiles

FRA category	1998	2013
Private ownership	224.33	285.80
owned by individuals	185.75	244.23
private business and institutions	38.58	41.07
local, tribal and indigenous communities		0.50
Public ownership	195.25	201.93
Other/unknown	97.75	81.95
Total forest area	517.33	569.69

Intersections of the shapefiles for 1998 landuse data and the land parcel dataset for 2005 was carried out to produce an excel file for land owners for 1998.

Similar operation was done to produce file for land owners for 2013, using 2013 landuse shapefile and the 2015 land parcel shapefiles

Analysis and processing of national data

Estimation and forecasting

Table 4a Forest ownership						
FRA 2020 categories	Area (1000 ha)					
	1990	1998	2000	2010	2013	2015
Private ownership (a)	192	224.33	232.53	273.60	285.8	294.00
... of which owned by individuals	155	185.75	193.52	232.53	244.23	252.10

... of which owned by private business entities and institutions	37	38.58	38.91	40.57	41.07	41.40
... of which owned by local, tribal and indigenous communities				0.50	0.5	0.50
Public ownership (b)	192	195.25	196.14	200.59	201.93	202.82
Other (specify)/unknown (c)	137.28	97.75	92.33	84.26	81.95	80.64
Total forest area	521.28	517.33	521.00	558.45	569.68	577.46

Estimation and forecasting using linear equation was carried out to get values for reporting years.

Expert assumption was also required

Bold figures are extracted from shapefiles intersection

Reclassification into FRA 2020 categories

not necessary

FRA categories	Forest area (1000 ha)			
	1990	2000	2010	2015
Private ownership (a)	192.00	232.53	273.60	294.00
...of which owned by individuals	155.00	193.52	232.53	252.10
...of which owned by private business entities and institutions	37.00	38.90	40.57	41.40
...of which owned by local, tribal and indigenous communities	0.00	0.00	0.50	0.50
Public ownership (b)	192.00	196.14	200.59	202.82
Unknown/other (specify in comments) (c)	137.28	92.33	84.26	80.64
Total forest area	521.28	521.00	558.45	577.46

Comments

the category unknown/other is also termed private in some instances but because the category of private ownership is unknown for this report it will be classified seperately from the private ownership category.

Although local, tribal and indigenous communities ownership was before 1990 it was not reflected in the database at that time.

4b Holder of management rights of public forests

National Data

Data sources + type of data source eg NFI, etc

Forestry Department, Forestry databases and shapefiles, 1998 and 2013

National classification and definitions

Private business entities and institutions include Local Forest Management Commitees (LFMC), community based organisations (cbo) and the Jamaica Conservation and Development Trust (JCDT) an NGO

Original data

Management rights to public forest	1990	1998	2000	2010	2013	2015
Public Administration		159.08			165.04	
Blue Mtn (JCDT)		36.23			36.87	
LFMC areas (Rio Minho)					0.01	
Private business entities and institutions (c)		36.23			36.88	
Total public ownership	192	195.31	196.14	200.58	201.92	202.82

The JCDT manages the Blue and John Crow Mountains National Park which consists of the Blue Mountain Forest Reserve which is managed by the Forestry Department. The JCDT manages the area as anational park while the FD manages as a forest reserve, as such the two entities co-manages the same area for different purposes.

The Rio Mlnho Local Forest Management Committee has management rights to 10 hectares of the Bull Head Forest Reserve in the parish of Clarendon

Analysis and processing of national data

Estimation and forecasting

Management rights to public forest	1990	1998	2000	2010	2013	2015
Public Administration	156.16	159.08	159.82	163.82	165.04	165.84
Blue Mtn (JCDT)	35.84	36.23	36.32	36.77	36.87	36.97
LFMC areas (Rio Minho)					0.01	0.01
Private business entities and institutions (c)	35.84	36.23	36.32	36.77	36.88	36.98
Total public ownership	192	195.31	196.14	200.58	201.92	202.82

Figures for the reporting years are arrived at using linear estimation and the original data table

Reclassification into FRA 2020 categories

Not necessary

FRA categories	Forest area (1000 ha)			
	1990	2000	2010	2015
Public Administration (a)	156.16	159.82	163.82	165.84
Individuals (b)	0.00	0.00	0.00	0.00
Private business entities and institutions (c)	35.84	36.32	36.77	36.98
Local, tribal and indigenous communities (d)	0.00	0.00	0.00	0.00
Unknown/other (specify in comments) (e)	0.00	0.00	0.00	0.00
Total public ownership	192.00	196.14	200.59	202.82

Comments

Management responsibility for publicly owned forests resides primarily within the Forestry Department (the Agency). This authority is derived from the Forest Act (1996) and facilitates the management of these forested areas. The size of the state-owned forests managed by the Agency was just over 49% in 1990, and this increased to 51% in 2015. Other government entities that control smaller parcels of publicly owned forests include the Natural Resources Conservation Authority (NRCA) and local authorities or Municipal Corporations, among others. There are instances where non-government organizations exercise some management responsibility for forested crown land. One such example is the Jamaica Conservation and Development Trust, which co-manages sections of the Blue Mountains Forest Reserve, as the Blue and John Crown Mountains National Park. It should be noted that the Agency is the primary entity with management rights in this forest reserve.

5 Forest disturbances

5a Disturbances

National Data

Data sources + type of data source eg NFI, etc

Forestry Department, Regional Reports

Estimates of damage done to forest plantations by hurricane Ivan in September 2004

Table 1a

National classification and definitions

not necessary

Original data

Year	Hurricane damage ('000 ha)					
2004	0.78					
Reporting years	2000	2010	2013	2015	2016	2017
Forest (000' ha)	521.00	558.45	569.68	577.46	581.34	585.23

Extracted from Table 1a

Analysis and processing of national data

Estimation and forecasting

Reporting years	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Forest (000' ha)	521.00	524.75	528.49	532.24	535.98	539.73	543.47	547.22	550.96	554.71	558.45	562.19	565.94	569.68	573.57	577.46	581.34	585.23

Using table above and linear forecasting to produce estimated forest areas for reporting years

Reclassification into FRA 2020 categories

not necessary

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)																		
Diseases (b)																		
Severe weather events (c)					0.78													
Other (specify in comments) (d)																		
Total (a+b+c+d)	–	–	–	–	0.78	–	–	–	–	–	–	–	–	–	–	–	–	–
Total forest area	521.00	–	–	–	–	–	–	–	–	–	558.45	–	–	569.68	–	577.46	581.34	585.23

Comments

Jamaica's forests are not significantly affected by listed conditions except for Hurricane Gilber which is outside the reporting period and Hurruicane Ivan which is reported. Insects and diseases are not much of a factor in our forests.

5b Area affected by fire

National Data

Data sources + type of data source eg NFI, etc

FRA 2015, land area burnt, 2003-2012

Jamaica Fire Brigade (JFB), bush fires 2002-2017

National classification and definitions

Not necessary

Original data

Years	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Bush Fires	2231	2749	5942	5028	6121	5188	6402	9547	6196	7089	7539	7811	7614	6740	3716	4161

Source: Jamaica Fire Brigade

Category	000 ha, number of fires																			
	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012	
	000' ha	#	000' ha	#	000' ha	#	000' ha	#	000' ha	#	000' ha	#	000' ha	#	000' ha	#	000' ha	#	000' ha	#
Total Land area burned	29.1	N/A	29.1	N/A	26.6	N/A	28.5	N/A	29.3	N/A	28.5	N/A	25.1	10.2	26.3	6.5	26.6	7.4	N/A	7.9
..of which forest area burned	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: FRA 2015

Analysis and processing of national data

Estimation and forecasting

Category	000 ha, number of fires																																			
	2000		2001		2002		2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		2014		2015		2016		2017	
	000' ha	#	000' ha	#	000' ha	#	000' ha	#	000' ha	#	000' ha	#	000' ha	#	000' ha	#	000' ha	#	000' ha	#	000' ha	#	000' ha	#	000' ha	#	000' ha	#	000' ha	#	000' ha	#	000' ha	#		
Total Land area burned	N/A	N/A	N/A	N/A	N/A	2231	29.1	2749	29.1	5942	26.6	5028	28.5	6121	29.3	5188	28.5	6402	25.1	9546	26.3	6196	26.6	7089	N/A	7539	N/A	7811	N/A	7614	N/A	6740	N/A	3716	N/A	4161
..of which forest area burned	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Reclassification into FRA 2020 categories

Not needed

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				29.10	29.10	26.60	28.50	29.30	28.50	25.10	26.30	26.60						
...of which on forest																		

Comments

Figures for land area affected by fire is noit collated by the JFB. Figures are only collected in two categories, household fires and bush fires by numbers and not by acreages.

The FD have no data for foirest fires at this time.

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

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

The forest Act, 1996

(<http://www.forestry.gov.jm/sites/default/files/Resources/theforestact1996.pdf>)

The Forest Regulations, 2001

(http://www.forestry.gov.jm/sites/default/files/Resources/forest_regulations.pdf)

Forest Policy of Jamaica, 2001

(<http://www.forestry.gov.jm/sites/default/files/Resources/forestpolicy2001.pdf>)

Forest Policy of Jamaica, 2017

(http://www.forestry.gov.jm/sites/default/files/Resources/forest_policy_of_jamaica_2017.pdf)

National Forest Management and Conservation Plan, 2001

(<http://www.forestry.gov.jm/sites/default/files/Resources/forestplan.pdf>)

National Forest Management and Conservation Plan, 2016-2026

(http://www.forestry.gov.jm/sites/default/files/Resources/nfmcp_final_sep2017.pdf)

National classification and definitions

The forest Act, 1996, This law establishes the Forestry Department (the Agency) as the lead government entity responsible for the management of forests located on Crown lands, and also by which the Forest Department operates

The Forest Regulations, 2001, the accompanying regulations supporting the Forest Act

Forest Policy of Jamaica, 2001; the guiding document for jamaica's forest sector

Forest Policy of Jamaica, 2017; the guiding document for jamaica's forest sector (revised 2017)

National Forest Management and Conservation Plan, 2001; details actions and achievements expected by the Forestry Department and the forest sector over a specific period of time (2001-2010)

National Forest Management and Conservation Plan, 2016-2026; details actions and achievements expected by the Forestry Department and the forest sector over a specific period of time (2016-2026)

Original data

See national classification and definitions

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

Comments

there is a system in place to trace publicly sold lumber from plantation to the sawmill. Noit much is known natiuonally from this stage onward and not much is known as to the removal or production from private land owners.

6b Area of permanent forest estate

National Data

Data sources + type of data source eg NFI, etc

Forest Policy for Jamaica: http://www.forestry.gov.jm/sites/default/files/Resources/forest_policy_of_jamaica_final_nov._2016.pdf

The Forest Regulations, 2001

National classification and definitions

Forest Reserve, any area of forest declared by the **responsible minister** to be a Forest Reserve (a protected forest)

Forest Management Area, any area of forest declared under the **Forest Act** to be a Forest Management Area (a protected forest)

Original data

Forested areas that are within Forest Reseeves or Forest Management Areas

FRA 2020 categories	Forest area (1000 ha)					
	Applicable?	1990	2000	2010	2015	2020
Area of permanent forest estate	Yes	100.02	100.02	100.02	101.60	104.72

Comments

Declaration of crown lands as Forest Reserve (FR) or Forest Management Area (FMA) is ongoing and as such the area in the reporting table is subject to change over time as new areas are declared FR or FMA

7 Employment, education and NWFP

7a Employment in forestry and logging

National Data

Data sources + type of data source eg NFI, etc

Forestry Department, records

Jamaica Conservation and Development Trust (JCDDT), records

Lions Club, records

FRA 2015, report

National classification and definitions

Not needed

Original data

	1990			2000			2010			2015		
	Total	Female	Male	Total	Female	Male	Total	Female	Male	Total	Female	Male
Employment in Forestry and logging	3.63			1.13			0.44	0.15		256		
...of which silviculture and other forestry activities							0.20			20		
...of which logging							0.01					
...of which gathering of non wood forest products							0.01					
...of which support services to forestry							0.22			236		

Note: 2010 data taken from FRA 2015,

2015 data, support services, 227 -(Forestry Department): 7- (JCDDT); 2-(Lions Club)

silviculture and other 20-(FD)

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	3.63			1.13			0.44	0.15	0.29	0.26		
...of which silviculture and other forestry activities										0.02		
...of which logging												
...of which gathering of non wood forest products												
...of which support services to forestry				0.14	0.05	0.09				0.24		

Comments

Total employment in the forestry cannot be accurately measured at this time due to a number of factors. the Forestry Department employs contractors for its field works (Silviculture and other activities) who in turn employs other labourers of which the number is not known. Logging activities is of similar nature, which makes the numbers unknown.

Although the Forestry Department utilises a considerable amount of labour through its seedling production, reforestation and forest management activities, these are mostly given out as contracts. the contractor then employs labour as needed. This system makes the number of persons involved in forestry activities difficult to access.

7b Graduation of students in forest-related education

National Data

Data sources + type of data source eg NFI, etc

Dr. Kirk McLaren, Senior Lecturer, Department of Life Sciences, University of the West Indies (UWI), Mona, Jamaica

Dr. Garfield Young, Dean & Associate Professor, Faculty of the Built Environment, University of Technology, Jamaica

National classification and definitions

Not required

Original data

From University of Technology

Table 9: Graduation of students in forest related education							
FRA 2020 categories	2000		2010		2015		UTech, Ja, Faculty of the Built Environment selected programmes
	Total	...of which female	Total	.of which female	Total	.of which female	
Doctoral degree (Ph.D.)							
Master's degree (MSc)	0	0	0	0	1	0	MScBE Geomatics Specialisation
Bachelor's degree (BSc)	0	0	9	1	21	5	BSc SGIS BScURP
	18	10	17	9	24	5	
Technician certificate / diploma	8	0	4	0	9	1	Cert. LST/ Associate Degree SGIT
The Faculty of the Built Environment, University of Technology, Jamaica offers four graduate programmes and nine undergraduate programmes. Of these, four courses of study have been identified as having direct relevance to forestry: The MScBE's Geomatics/Geoinformatics specialisation; BSc Land Surveying & Geographic Information Sciences, the BSc in Urban and Regional Planning and the Associate Degree in Surveying and Geographic Informantion Technology.							
Of note, the Faculty of the Built Environment, UTech will accept its first cohort of students in the MSc Integrated Rural Development which is also provides a forest related education. It is expected that at least fifteen new students will enorl in this 18-month course of study.							
Prepared by Dr. Garfield Young							
Dean, Faculty of the Built Environment							
October 3, 2018							

From University of the West Indies

Upton,

Here is a list of BSc and MSc dissertations (these students only completed their research dissertations on a forestry topic, which is a requirement for their degree programme; their respective degrees were in environmental sciences, forestry, environmental biology etc) , MPhil and PhDs related to forestry. The female students are indicated.

Regards,

Kurt

MPhil, MSc and undergraduate dissertations

- 2010 Milena Niño (Female) - Estimating carbon sequestration in three forests found along a rainfall gradient in Jamaica. (MSc. Sustainable Tropical Forestry, Faculty of Life Sciences, University of Copenhagen Denmark).
- 2009 Mathieu Levesque - The recovery and dynamics of a tropical dry forest ten years after human disturbance in Jamaica. (MSc.School of the Environment and Natural Resources, University of Wales, Bangor).
- 2007 Elwyn Sharps - Habitat loss and fragmentation in the Black River Morass, St. Elizabeth, Jamaica (1980 – 2003). (MSc. School of the Environment and Natural Resources, University of Wales, Bangor)
- 2007 Minke Newman (Female)- Assessing forest fragmentation in the moist forests of the Cockpit country, Trelwany, Jamaica, using remote sensing and GIS (1983 – 2003). (MSc. Department of Life Sciences, UWI, Jamaica)
- 2006 The status and productivity of silvopastoral agro-forestry systems in Jamaica. (MSc. Department of Life Sciences, UWI, Jamaica)
- 2006 Nichelle Oxford (Female) - Documenting the spread of the invasive ginger *Alpinia allughas* in the Black River Morass, St. Elizabeth, Jamaica using remote sensing and GIS. (MSc. Department of Life Sciences, UWI, Jamaica)
- 2004 Philone Mantock (Female)- Participatory Evaluation of Indigenous and Exotic Tree Species in three Communities in the Cockpit Country of Jamaica. (MSc. Department of Geography, UWI, Jamaica)
- 2003 Kerry-Ann Curtis (Female) - Structure and floristic diversity of a secondary dry limestone forest in Jamaica. (MSc. Department of Life Sciences, UWI, Jamaica)
- 2003 Participatory Evaluation of Indigenous and Exotic Tree Species in two Communities in the Dolphin Head Mountains of Jamaica. (BSc Dissertation, School of Agroforestry and Forest Sciences, Bangor UK)
- 2003 Kimon Fassoulas - Participatory Evaluation of Indigenous and Exotic Tree Species in three PBPA in the John Crow Mountains of Jamaica. (MSc Dissertation, School of Agroforestry and Forest Sciences, Bangor UK)
- 2000 Adam Owen - Ecophysiology of four tree seedling species in contrasting light conditions in a tropical dry forest in Jamaica. (MSc Dissertation, School of Agroforestry and forest sciences, Bangor UK)

MPhil degrees

Completed Aug. 2008. Howard Beckford - The regeneration ecology of a tropical wet forest over limestone, in Portland, Jamaica.

PhD degrees

Completed Aug. 2014: Minke Newman (Female)- Assessing the impacts of socio-economic parameters and environmental policies on deforestation and habitat fragmentation in the forests of the Cockpit Country, Jamaica.

Completed Aug. 2017: Denneko Luke - Assessing the effects of hurricanes on the short and long-term dynamics of a tropical wet forest over limestone, the John Crow Mountains, Jamaica.

Completed Aug.. 2018. Kurt Prospere - Quantification of ecosystem services in the Black River Lower Morass; technology choices and management options.

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				1.00	0.00	1.00				1.00	1.00	0.00
Master's degree							2.00	1.00	1.00			
Bachelor's degree				18.00	10.00	8.00	26.00	10.00	16.00	45.00	10.00	35.00
Technician certificate / diploma		0.00		8.00	0.00	8.00	4.00	0.00	4.00	9.00	1.00	8.00
Total				27.00	10.00	17.00	32.00	11.00	21.00	55.00	12.00	43.00

Comments

Prior to 2000 most of the forestry officer were trained in forestry in Trinidad, USA or Canada.

7c Non wood forest products removals and value 2015

National Data

Data sources + type of data source eg NFI, etc

Forestry Department 2001,National Forestry Management and Conservation Plan. Jamaica

National classification and definitions

Not necessary

Original data

Plant material collected from the forest is used for a variety of purposes. The principal source of materials for making hats, bags, table-mats, etc., is Jippi jappa (Carludovica palmata). Bamboo and thatch are used most often for temporary construction. Strips from the Rose Apple (Eugenia jambos) are used to make baskets and hampers. Wicker is widely used in furniture making. The bark from the bastard cabbage tree is used to make rope to bundle agricultural produce and for lashing poles together in temporary construction. Fern root is collected for the horticultural sector for use as a growing medium, particularly in orchid production. Mahogany bark is still collected for use as a dye. Many trees and other forest plants are used medicinally: for example, Chainy root is used in the making of restorative tonics, chewsticks are collected for cleaning teeth, nettle is steeped to make a drink rich in mineral salts and vitamins, and the extract of bitterwood bark is used as a liver tonic, for fevers and for eliminating round worm. How much of these materials are removed from the forest is not known nor is there current information with respect to their relative social and economic importance. A survey (with quantity data) of the utilisation of minor forest products would provide valuable information for use in assessing forest management options.

	Name of NWFP product	Key species	Quantity	Unit	Value (1000 local currency)	NWFP category
#1	Bamboo	Bambusa vulgaris				5 Raw material for utensils handicrafts construction
#2	Jippi jappa	Carludovica palmata				5 Raw material for utensils handicrafts construction
#3	Thatch	Bactris jamaicana				5 Raw material for utensils handicrafts construction
#4	Rose Apple	Eugenia jambosa				5 Raw material for utensils handicrafts construction
#5	Wicker	Philodendron scandens				5 Raw material for utensils handicrafts construction
#6	Bastard cabbage	Andira inermis				5 Raw material for utensils handicrafts construction
#7	Fern root	Cynthea pubescens				6 Ornamental plants
#8	Chainy root	Smilax balbisiana				3 Raw material for medicine and aromatic products
#9	Chewsticks	Spathodea camponulate				3 Raw material for medicine and aromatic products
#10	Bitterwood bark	Picros maexcels				3 Raw material for medicine and aromatic products
All other plant products						
All other animal products						
Total					—	

Name of currency	N/A
------------------	-----

Comments

Although some NWFP are known to have been removed from the forest throughout the years, no effort have been made to collect data for volume/amount remove and value of removal

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	48.11	51.57	53.32	53.68	54.04	54.40	54.76	55.11

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

SDG Indicator 15.2.1 Progress towards sustainable forest management

Sub-Indicator 1	Percent						
	2000-2010	2010-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
Forest area annual net change rate	0.70	0.67	0.67	0.66	0.66	0.65	0.65

Name of agency responsible	Forestry Department
----------------------------	---------------------

Sub-Indicator 2	Forest biomass (tonnes/ha)							
	2000	2010	2015	2016	2017	2018	2019	2020
Above-ground biomass stock in forest	156.97	168.85	163.46	162.44	161.41	160.43	159.46	158.50

Name of agency responsible	Forestry Department
----------------------------	---------------------

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	22.20	22.35	22.60	22.66	22.71	22.76	22.81	22.86

Name of agency responsible	Forestry Department
----------------------------	---------------------

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	17.10	18.88	18.91	18.91	18.92	18.93	18.93	18.94

Name of agency responsible	Forestry Department
----------------------------	---------------------

Sub-Indicator 5	Forest area (1000 ha)							
	2000	2010	2015	2016	2017	2018	2019	2020
Forest area under independently verified forest management certification schemes	0.00	0.00	0.00	0.00	0.00	0.00	–	–