Food and Agriculture Organization of the United Nations

Global Forest Resources Assessment 2020

Report

United States Virgin Islands

Rome, 2020

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

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Introduction

Report preparation and contact persons

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

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Introductory text

The information found in this database is derived from a national forest inventory (NFI) implemented in the U.S. Virgin Islands by the U.S. Forest Service Forest Inventory and Analysis (FIA) program. This NFI samples forest land on the islands of St. Croix, St. John and St. Thomas, excluding smaller islands and cays which are also part of the territory but are generally non-forested and/or uninhabited. The NFI began in the U.S. Virgin Islands in 2004 and remeasures sampling points every 5 years. To date, there have been three such periodic forest inventories in 2004, 2009 and 2014, with preparation for the 2019 inventory underway.

Forest inventory plot data collected include land use and its change, disturbances to the forest, whether stands are naturally or artificially regenerated, forest ownership and information on many other variables. All live and standing dead trees are measured down to a diameter at breast height of 12.5 cm. A sub-sample of plots have additional data collected on soils, floor litter, and down woody materials. Other forest carbon pools such as belowground live tree and understory vegetation are modeled.

All data used to populate this database is publically available through a variety of on-line tools that access the larger FIA database. Links to these tools can be found at: https://www.fia.fs.fed.us/tools-data/index.php. Additional documentation from FIA can be found on-line at https://www.fia.fs.fed.us/library/index.php or in publications listed below.

Brandeis, Thomas J.; Oswalt, Sonja N. 2007. The status of U.S. Virgin Islands'' forests, 2004. Resour. Bull. SRS–122. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 61 p.

Brandeis, Thomas J.; Turner, Jeffery A. 2013. U.S. Virgin Islands' Forests, 2009. Resource Bullentin SRS-RB-196. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 56 p.

Marcano-Vega, Humfredo; Williamson, Joe R. 2017. Forests of U.S.Virgin Islands, 2014. Resource Update FS–144. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 4 p.

1 Forest extent, characteristics and changes

1a Extent of forest and other wooded land

National data

Data sources

2004	**References**	Brandeis, Thomas J.; Oswalt, Sonja N. 2007. The status of U.S. Virgin Islands'' forests, 2004. Resour. Bull. SRS–122. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 61 p.
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	Additional comments	

Classifications and definitions

	National class	**Definition**
2004	Forest land	Forest land - Land at least 10-percent stocked by trees of any size, including land that formerly had such tree cover and that will be naturally or artificially regenerated. Forest land includes transition zones, such as areas between heavily forested and nonforested lands that are at least 10-percent stocked with trees and forest areas adjacent to urban and built-up lands. The minimum area for classification of forest land is 0.4 hectare and 36 meters wide measured stem-to-stem from the outer-most edge. Unimproved roads and trails, streams, and clearings in forest areas are classified as forest if less than 36 meters wide.

2009	**National class**	**Definition**
	Forest land	

		Forest land - Land at least 10-percent stocked by trees of any size, including land that formerly had such tree cover and that will be naturally or artificially regenerated. Forest land includes transition zones, such as areas between heavily forested and nonforested lands that are at least 10-percent stocked with trees and forest areas adjacent to urban and built-up lands. The minimum area for classification of forest land is 0.4 hectare and 36 meters wide measured stem-to-stem from the outer-most edge. Unimproved roads and trails, streams, and clearings in forest areas are classified as forest if less than 36 meters wide.

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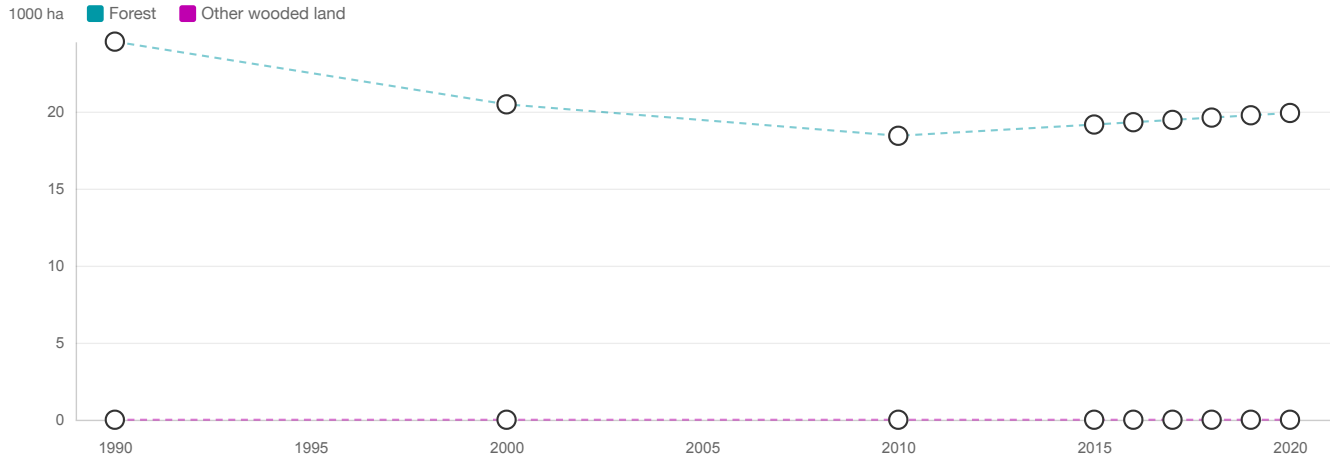
Original data and reclassification

	Classifications and definitions		**FRA classes**		
2004	**Class**	**Area (1000 ha)**	**Forest**	**Other wooded land**	**Other land**
	Forest land	18.84	100.00 %	0.00 %	**0.00 %**
	Total	**18.84**	**18.84**	**0.00**	**0.00**

	Classifications and definitions		**FRA classes**		
2009	**Class**	**Area (1000 ha)**	**Forest**	**Other wooded land**	**Other land**
	Forest land	18.28	100.00 %	0.00 %	**0.00 %**
	Total	**18.28**	**18.28**	**0.00**	**0.00**

	Classifications and definitions		**FRA classes**		
2014	**Class**	**Area (1000 ha)**	**Forest**	**Other wooded land**	**Other land**
	Forest land	19.01	100.00 %	0.00 %	**0.00 %**
	Total	**19.01**	**19.01**	**0.00**	**0.00**


1000 ha
Forest
Other wooded land
20
15
10
5
0
1990
1995
2000
2005
2010
2015
2020

FRA categories	Area (1000 ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Forest (a)	24.54	20.47	18.43	19.16	19.31	19.46	19.61	19.76	19.91
Other wooded land (a)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other land (c-a-b)	**10.46**	**14.53**	**16.57**	**15.84**	**15.69**	**15.54**	**15.39**	**15.24**	**15.09**
Total land area (c)	**35.00**	**35.00**	**35.00**	**35.00**	**35.00**	**35.00**	**35.00**	**35.00**	**35.00**

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**	100.00
Tropical	**100.00**	0.00

Comments

The addition of the 2014 NFI data showed a new trend in forest area (increasing forest area rather than decreasing), changing the estimates from those previously reported for 2015.

1b Forest characteristics

National data

Data sources

2004	**References**	Brandeis, Thomas J.; Oswalt, Sonja N. 2007. The status of U.S. Virgin Islands'' forests, 2004. Resour. Bull. SRS–122. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 61 p.
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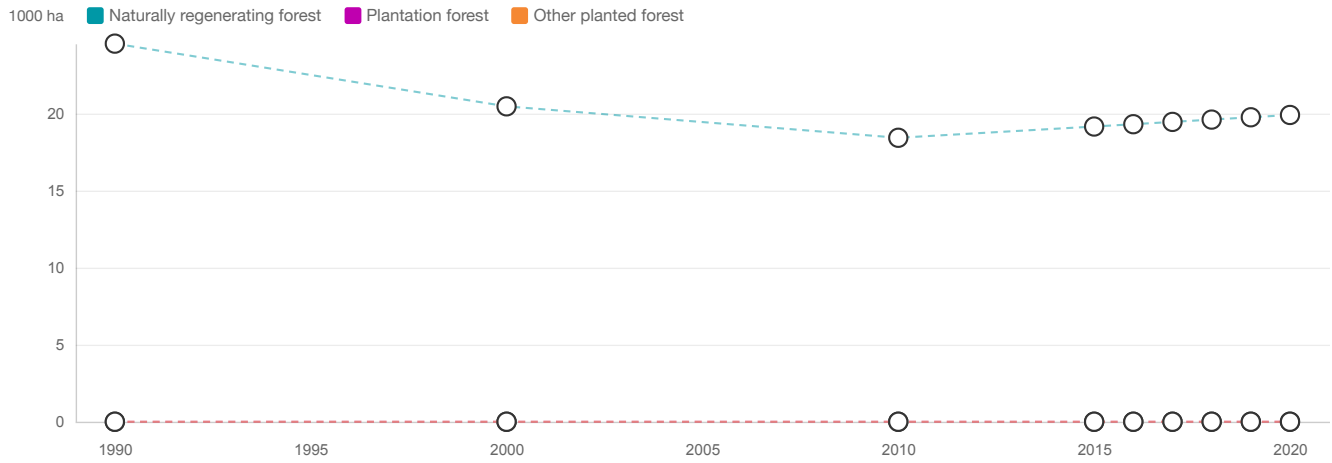
2014	National class	Definition
	Forest land	Forest land - Land at least 10-percent stocked by trees of any size, including land that formerly had such tree cover and that will be naturally or artificially regenerated. Forest land includes transition zones, such as areas between heavily forested and nonforested lands that are at least 10-percent stocked with trees and forest areas adjacent to urban and built-up lands. The minimum area for classification of forest land is 0.4 hectare and 36 meters wide measured stem-to-stem from the outer-most edge. Unimproved roads and trails, streams, and clearings in forest areas are classified as forest if less than 36 meters wide.

Original data and reclassification

2004	Classifications and definitions		FRA classes		
	Class	**Area (1000 ha)**	**Naturally regenerating forest**	**Plantation forest**	**Other planted forest**
	Forest land	18.84	100.00 %	0.00 %	0.00 %
	Total	**18.84**	**18.84**	**0.00**	**0.00**

2009	Classifications and definitions		FRA classes		
	Class	**Area (1000 ha)**	**Naturally regenerating forest**	**Plantation forest**	**Other planted forest**
	Forest land	18.28	100.00 %	0.00 %	0.00 %
	Total	**18.28**	**18.28**	**0.00**	**0.00**

2014	Classifications and definitions		FRA classes		
	Class	**Area (1000 ha)**	**Naturally regenerating forest**	**Plantation forest**	**Other planted forest**
	Forest land	19.01	100.00 %	0.00 %	0.00 %
	Total	**19.01**	**19.01**	**0.00**	**0.00**


1000 ha
Naturally regenerating forest
Plantation forest
Other planted forest
20
15
10
5
0
1990
1995
2000
2005
2010
2015
2020

FRA categories	Forest area (1000 ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest (a)	24.54	20.47	18.43	19.16	19.31	19.46	19.61	19.76	19.91
Planted forest (b)	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Plantation forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
…of which introduced species	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other planted forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total (a+b)	**24.54**	**20.47**	**18.43**	**19.16**	**19.31**	**19.46**	**19.61**	**19.76**	**19.91**
Total forest area	**24.54**	**20.47**	**18.43**	**19.16**	**19.31**	**19.46**	**19.61**	**19.76**	**19.91**

Comments

For this FIA NFI, stands are classified as naturally or artificially regenerated. An artificially regenerated stand is established by plant or artificial seeding. While there is a small amount of artificial stand regeneration in the US Virgin Islands, it is generally too little or in areas which are too small to be detected by the NFI, therefore we consider that all forests on the islands have been naturally regenerated.

1c Primary forest and special forest categories

National Data

Data sources + type of data source eg NFI, etc

While there are areas with bamboos in the US Virgin Islands, they are not included as tally species in the NFI.

Mangroves are included as trees in the NFI and there are small areas with mangrove forests. The NFI, however, was not intensive enough to capture their limited extent, therefore we do not have estimates of mangrove forest area.

There are not areas of primary forests nor rubber plantations.

National classification and definitions

-

Original data

-

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

-

FRA categories	Area (1000 ha)				
	1990	2000	2010	2015	2020
Primary forest					
Temporarily unstocked and/or recently regenerated					
Bamboos					
Mangroves					
Rubber wood					

Comments

1d Annual forest expansion, deforestation and net change

National Data

Data sources + type of data source eg NFI, etc

Based on the NFI data, we can say that the vast majority of reforested forest land in US Virgin Islands are due to natural regeneration. We cannot, however, assess forest land area losses due to deforestation.

National classification and definitions

-

Original data

-

Analysis and processing of national data

Estimation and forecasting

Reclassification into FRA 2020 categories

-

FRA categories	Area (1000 ha/year)			
	1990-2000	2000-2010	2010-2015	2015-2020
Forest expansion (a)				
…of which afforestation				
…of which natural expansion				
Deforestation (b)				
Forest area net change (a-b)	**-0.41**	**-0.20**	**0.15**	**0.15**

Comments

1e Annual reforestation

National Data

Data sources + type of data source eg NFI, etc

While there are small areas reforested artificially in the US Virgin Islands, the NFI sampling has not been sufficiently intensive to capture these plantations. Therefore we will not attempt to estimate annual reforestation.

National classification and definitions

-

Original data

-

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

-

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

Comments

1f Other land with tree cover

National Data

Data sources + type of data source eg NFI, etc

These categories of other land with tree cover are not currently included in the NFI.

National classification and definitions

-

Original data

-

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

-

FRA categories	Area (1000 ha)				
	1990	2000	2010	2015	2020
Palms (a)					
Tree orchards (b)					
Agroforestry (c)					
Trees in urban settings (d)					
Other (specify in comments) (e)					
Total (a+b+c+d+e)	–	–	–	–	–
Other land area	**10.46**	**14.53**	**16.57**	**15.84**	**15.09**

Comments

2 Forest growing stock, biomass and carbon

2a Growing stock

National Data

Data sources + type of data source eg NFI, etc

The information found in this database is derived from a national forest inventory (NFI) implemented in the U.S. Virgin Islands by the U.S. Forest Service Forest Inventory and Analysis (FIA) program. This NFI samples forest land on the islands of St. Croix, St. John and St. Thomas, excluding smaller non-forested and/or uninhabited islands and cays which are also part of the island group. The NFI began in the U.S. Virgin Islands in 2004 and remeasures sampling points every 5 years. To date, there have been three such periodic forest inventories in 2004, 2009 and 2014, with preparation for the 2019 inventory underway.

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Tree: A woody plant usually having one or more erect perennial stems, a stem diameter at breast height of at least 7.5 cm, a more or less definitely formed crown of foliage, and a height of at least 5 meters at maturity.

Net cubic-foot volume. For timber species (trees where the diameter is measured at breast height [DBH]), this is the net volume of wood in the central stem of a sample tree >=12.5 cm in diameter **inside the bark**, from a 30 cm stump to a minimum 10 cm top diameter, or to where the central stem breaks into limbs all of which are < 10 cm in diameter. For woodland species (trees where the diameter is measured at root collar [DRC]), this is the net volume of wood and bark from the DRC measurement point(s) to a 3.5 cm top diameter; includes branches that are at least 2.5 cm in diameter along the length of the branch.

Note again that the above definition and all subsequent volume estimates are for inside the bark, not outside the bark as requested by FRA. We are currently unable to produce outside the bark volume estimates.

Original data

Original data from the FIA database is below. Cubic feet values were converted to cubic meters using a conversion factor of 0.028317. Note the trends toward increasing volume density per hectare over time as these secondary forests mature.

Tab 2a. Total Volume (million cubic meters)		
Year	**m3**	**M m3**
2004	273,152.91	0.27
2009	404,526.61	0.40
2014	593,120.27	0.59

Analysis and processing of national data

Estimation and forecasting

Original data in cubic feet were converted to million cubic meters. Then annual change was calculated.

Annualized change	**m3**	**Mm3**	

2004-2014 (10 yr)	31,996.74	0.03	
2004-2009 (5 yr)	26,274.74	0.03	
2009-2014 (5 yr)	37,718.73	0.04	
Year	**m3 (measured and projected using 5-yr and 10-yr rates of change)**		
2004	273,152.91	0.27	
2005	305,149.65	0.31	2004-2009 5-yr rate of change
2006	337,146.38	0.34	
2007	369,143.12	0.37	
2008	401,139.86	0.40	
2009	404,526.61	0.40	
2010	430,801.35	0.43	2009-2014 5-yr rate of change
2011	457,076.09	0.46	
2012	483,350.83	0.48	
2013	509,625.57	0.51	
2014	593,120.27	0.59	
2015	625,117.00	0.63	2004-2014 10-yr rate of change
2016	657,113.74	0.66	
2017	689,110.47	0.69	
2018	721,107.21	0.72	
2019	753,103.94	0.75	
2020	785,100.68	0.79	

Reclassification into FRA 2020 categories

The FIA NFI definition of forest land is compatible with the FRA 2020 forest land categories.

The FIA NFIs implemented in the United States, its associated Territories and Commonwealths defines growing stock as a subset of all live trees of commercial species that meet minimum merchantability standards. In the Caribbean islands, however, difficulties in applying those guidelines result in our choosing to present all live tree volume as growing stock.

Net cubic foot volume (converted to cubic meters for this report) is calculated inside bark rather than outside bark as per FRA 2020 guidelines. Also, we estimate volume down to a 12.5 cm tree, not the 10 cm lower limit used by FRA. Conversion to outside bark volume is not feasible at this time because the volume equations used in the NFI data processing system produce inside bark volume estimates only.

FRA categories	Growing stock m³/ha (over bark)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest	11.00	13.19	23.33	32.88	34.18	35.46	36.72	37.96	39.68
Planted forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
…of which plantation forest									
…of which other planted forest									
Forest	11.00	13.19	23.33	32.88	34.18	35.46	36.72	37.96	39.68
Other wooded land									

FRA categories	Total growing stock (million m³ over bark)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest	0.27	0.27	0.43	0.63	0.66	0.69	0.72	0.75	0.79
Planted forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
…of which plantation forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
…of which other planted forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forest	0.27	0.27	0.43	0.63	0.66	0.69	0.72	0.75	0.79
Other wooded land									

Comments

The 2004 NFI value of 0.27 million cubic meters was used for the 1990 and 2000 years.

There are minor differences between the directly calculated volume density (cubic feet per acre) estimates available from the FIA DB with Evalidator and those automatically calculated by the FRA platform. To simplify, I have chosen to leave this table populated with the automatically generated estimates from the FRA platform.

2b Growing stock composition

National Data

Data sources + type of data source eg NFI, etc

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Original data

Estimates were derived from the FIADB using the Evalidator query tool for the NFI years of 2004, 2009 and 2014; net merchantable volume by species. Original data from the FIA database is below. Species ranking from the 2014 NFI was used. Note that the original data were in cubic feet and then converted to cubic meters.

USDA Forest Service, Forest Inventory and Analysis Program. Forest Inventory EVALIDator web-application Version 1.7.0.01. St. Paul, MN: U.S. Department of Agriculture, Forest Service, Northern Research Station. [Available only on internet: http://fsxopsx1056.fdc.fs.usda.gov:9001/Evalidator/evalidator.jsp]

Species	Total	2014	2009	2004
blackbrush wattle	13,418	-	13,418	-
porknut	29,585	-	-	29,585
naked albizia	35,806	-	35,806	-
pride-of-Barbados	20,176	-	-	20,176
Jamaican caper	29,942	-	18,365	11,577
papaya	3,833	-	3,833	-
wild honeytree	13,475	-	-	13,475
galen del monte	17,966	-	9,656	8,310

false chiggergrape	37,723	-	-	37,723
burn nose	5,179	-	5,179	-
royal poinciana	48,602	-	-	48,602
white-mangrove	17,055	-	17,055	-
bulletwood	209,738	-	-	209,738
Nectandra coriacea	14,912	-	-	14,912
aceitillo	6,866	-	6,866	-
palo amargo	3,901	-	3,901	-
mahogany	17,412	-	17,412	-
aceitunilla	160,684	-	-	160,684
Other or unknown live tree	102,842	-	18,177	84,665
Total	44,877,945	20,945,879	14,285,746	9,646,320
Spanish lime	6,932,139	3,457,120	2,161,800	1,313,219
black mampoo	5,764,421	2,330,109	1,971,629	1,462,683
gumbo limbo	4,126,634	1,800,147	1,350,628	975,859
West Indian mahogany	4,704,775	1,627,237	1,592,723	1,484,815
mango	1,231,973	1,231,973	-	-
sweet acacia	1,628,258	1,183,719	322,765	121,774
water mampoo	2,421,395	1,001,550	819,528	600,317
bodywood	2,249,072	933,584	698,987	616,502
spineless wattle	2,076,297	910,629	702,133	463,535
cabbagebark tree	1,882,653	852,273	770,160	260,220
stinkingtoe	548,038	538,353	9,685	-
woman's tongue	781,102	493,689	222,109	65,304
raintree	733,463	367,193	308,801	57,468
tamarind	645,594	336,016	225,256	84,322
puckhout	461,544	297,455	164,089	-
sapodilla	646,265	289,691	356,574	-
Spanish elm	600,852	271,181	210,130	119,542
white cinnamon	771,520	251,803	299,211	220,506
Jamaican nettletree	256,948	233,874	23,074	-

white cedar	487,977	219,386	210,530	58,061
tietongue, pigeon-plum	215,739	215,739	-	-
Florida fiddlewood	389,173	199,138	-	190,035
San Bartolome	328,258	192,533	135,724	-
camito de perro	525,118	191,770	189,233	144,115
Spanish cedar	452,049	184,387	116,995	150,667
gregorywood	273,385	155,242	85,286	32,857
bastard hogberry	278,490	148,255	130,235	-
tall albizia	279,569	109,962	169,607	-
sacky sac bean	354,979	83,044	70,905	201,030
leadwood	273,385	73,523	96,280	103,581
breakbill	102,978	62,968	40,011	-
stinkwood	105,021	59,314	38,686	7,021
Royen's tree cactus	180,949	55,289	48,427	77,233
white pricklyash	134,861	53,575	43,696	37,590
golden shower	62,649	51,165	11,484	-
linguam	108,140	47,799	31,530	28,811
bayrumtree	127,283	44,824	43,572	38,887
bloodwoodtree	41,473	41,473	-	-
guavaberry	130,443	38,708	62,891	28,845
wild guave	62,393	37,796	16,988	7,610
seagrape	67,357	30,185	21,779	15,392
smooth manjack	54,779	28,740	20,549	5,491
wild lime	47,402	27,822	19,580	-
ratapple	24,834	24,834	-	-
spiny fiddlewood	210,125	19,992	190,133	-
Poitea florida	75,332	19,456	49,716	6,161
cucubano de vieques	32,955	18,381	14,574	-
white leadtree	35,870	17,382	18,488	-
marbletree	33,653	14,958	6,080	12,614
bastard redwood	14,897	14,897	-	-

wild cinnamon	24,682	12,456	12,226	-
red rodwood	9,924	9,924	-	-
red stopper	15,414	8,800	6,614	-
bridgotree	42,944	8,595	19,543	14,806
yellow trumpetbush	8,548	8,548	-	-
ratwood	12,860	7,423	5,437	-

Analysis and processing of national data

Estimation and forecasting

Estimation and forecasting was done with the annual change methodology for each species. Species were categorized as native or introduced to the US Virgin Islands according to the NRCS PLANTS database accessed on September 4, 2018. The top 10 native and top 5 introduced species are presented. Cubic feet volume estimates were converted to cubic meters using a 0.0283168 conversion factor. Values were then expressed in million cubic meters.

Reclassification into FRA 2020 categories

The FIA NFI definition of forest land is compatible with the FRA 2020 forest land categories.

The FIA NFIs implemented in the United States, its associated Territories and Commonwealths defines growing stock as a subset of all live trees of commercial species that meet minimum merchantability standards. In the Caribbean islands, however, difficulties in applying those guidelines result in our choosing to present all live tree volume as growing stock.

Net cubic foot volume (converted to cubic meters for this report) is calculated inside bark rather than outside bark as per FRA 2020 guidelines. Conversion to outside bark volume is not feasible at this time because the volume equations used in the NFI data processing system produce inside bark volume estimates only.

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	Guapira fragrans (Dum. Cours.) Little	black mampoo	0.04	0.04	0.06	0.07	0.08
#2 Ranked in terms of volume	Bursera simaruba (L.) Sarg.	gumbo limbo	0.03	0.03	0.04	0.05	0.07
#3 Ranked in terms of volume	Swietenia mahagoni (L.) Jacq.	West Indian mahogany	0.04	0.04	0.05	0.05	0.05
#4 Ranked in terms of volume	Vachellia farnesiana (L.) Wight & Arn.	sweet acacia	0.00	0.00	0.01	0.04	0.06
#5 Ranked in terms of volume	Pisonia subcordata Sw.	water mampoo	0.02	0.02	0.02	0.03	0.04
#6 Ranked in terms of volume	Bourreria succulenta Jacq.	bodywood	0.02	0.02	0.02	0.03	0.03
#7 Ranked in terms of volume	Senegalia muricata (L.) Britton & Rose	spineless wattle	0.01	0.01	0.02	0.03	0.03
#8 Ranked in terms of volume	Andira inermis (W. Wright) Kunth ex DC.	cabbagebark tree	0.01	0.01	0.03	0.03	0.03
#9 Ranked in terms of volume	Hymenaea courbaril L.	stinkingtoe	0.00	0.00	0.00	0.02	0.03
#10 Ranked in terms of volume	Coccoloba microstachya Willd.	puckhout	0.00	0.00	0.00	0.01	0.01
Remaining native tree species			0.04	0.04	0.07	0.09	0.12

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 native tree species			**0.21**	**0.21**	**0.32**	**0.45**	**0.55**
Introduced tree species							
#1 Ranked in terms of volume	Melicoccus bijugatus Jacq.	Spanish lime	0.04	0.04	0.07	0.11	0.14
#2 Ranked in terms of volume	Mangifera indica L.	mango	0.00	0.00	0.00	0.03	0.03
#3 Ranked in terms of volume	Albizia lebbeck (L.) Benth.	woman's tongue	0.00	0.00	0.01	0.02	0.02
#4 Ranked in terms of volume	Samanea saman (Jacq.) Merr.	raintree	0.00	0.00	0.01	0.01	0.01
#5 Ranked in terms of volume	Tamarindus indica L.	tamarind	0.00	0.00	0.01	0.01	0.01
Remaining introduced tree species			0.00	0.00	0.00	0.01	0.01
Total volume of introduced tree species			**0.04**	**0.04**	**0.10**	**0.19**	**0.22**
Total growing stock			**0.25**	**0.25**	**0.42**	**0.64**	**0.77**

Comments

Total growing stock values in table 2a (0.27 million m3 for 1990 and 2000; 0.43 Mm3 for 2010; 0.63 Mm3 for 2015; and 0.79 Mm3 for 2020) are not the same as total growing stock here probably due to rounding and unit conversion differences.

2c Biomass stock

National Data

Data sources + type of data source eg NFI, etc

The information found in this database is derived from a national forest inventory (NFI) implemented in the U.S. Virgin Islands by the U.S. Forest Service Forest Inventory and Analysis (FIA) program. This NFI samples forest land on the islands of St. Croix, St. John and St. Thomas, excluding smaller non-forested and/or uninhabited islands and cays which are also part of the island group. The NFI began in the U.S. Virgin Islands in 2004 and remeasures sampling points every 5 years. To date, there have been three such periodic forest inventories in 2004, 2009 and 2014, with preparation for the 2019 inventory underway.

Forest inventory plot data collected include land use and its change, disturbances to the forest, whether stands are naturally or artificially regenerated, forest ownership and information on many other variables. All live and standing dead trees are measured down to a diameter at breast height of 12.5 cm. A sub-sample of plots have additional data collected on soils, floor litter, and down woody materials. Other forest carbon pools such as belowground live tree and understory vegetation are modeled.

All data used to populate this database is publically available through a variety of on-line tools that access the larger FIA database. Links to these tools can be found at: https://www.fia.fs.fed.us/tools-data/index.php. Additional documentation from FIA can be found on-line at https://www.fia.fs.fed.us/library/index.php or in publications listed below.

Brandeis, Thomas J.; Oswalt, Sonja N. 2007. The status of U.S. Virgin Islands'' forests, 2004. Resour. Bull. SRS–122. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 61 p.

Brandeis, Thomas J.; Turner, Jeffery A. 2013. U.S. Virgin Islands' Forests, 2009. Resource Bulletin SRS-RB-196. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 56 p.

Marcano-Vega, Humfredo; Williamson, Joe R. 2017. Forests of U.S. Virgin Islands, 2014. Resource Update FS–144. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 4 p.

National classification and definitions

Forest land - Land at least 10-percent stocked by trees of any size, including land that formerly had such tree cover and that will be naturally or artificially regenerated. Forest land includes transition zones, such as areas between heavily forested and nonforested lands that are at least 10-percent stocked with trees and forest areas adjacent to urban and built-up lands. The minimum area for classification of forest land is 0.4 hectare and 36 meters wide measured stem-to-stem from the outer-most edge. Unimproved roads and trails, streams, and clearings in forest areas are classified as forest if less than 36 meters wide.

Tree: A woody plant usually having one or more erect perennial stems, a stem diameter at breast height of at least 7.5 cm, a more or less definitely formed crown of foliage, and a height of at least 5 meters at maturity.

The aboveground weight of live trees (including bark but excluding foliage) reported in dry tons (dry weight). Biomass has four components for most tree species (bole, tops and limbs, saplings, and stump) but is estimated as a single component for woodland species.

1. Bole: Biomass of a tree from 30 cm above the ground to a 10 cm top outside bark or to a point where the central stem breaks into limbs.
2. Tops and limbs: Total biomass of a tree from a 30 cm stump minus the bole.
3. Saplings: Total aboveground biomass of a tree from 2.5 to 12.5 cm in d.b.h.
4. Stump: Biomass of a tree 12.5 cm d.b.h. and larger from the ground to a height of 30 cm.

Woodland species: The oven-dry biomass (pounds) of the aboveground portion of a live or dead woodland species tree (where the species belongs to either of the Western woodland softwoods species group or the Western woodland hardwoods species group), excluding foliage, the tree tip (top of the tree above 4 cm in diameter), and a portion of the stump from ground to diameter at root collar (DRC).

Dry biomass of the roots. The oven-dry biomass (pounds) of the belowground portion of a tree, includes coarse roots with a root diameter >=0.25 cm. This is a modeled estimate, calculated on live trees with a diameter of >=2.5 cm and dead trees with a diameter of >=12.5 cm, for both timber and woodland.

The aboveground weight of standing dead trees (including bark but excluding foliage) reported in green tons. Biomass has four components for most tree species (bole, tops and limbs, saplings, and stump) but is estimated as a single component for woodland species.

Coarse Woody Debris (CWD): Pieces or portion of pieces of down dead wood with a minimum small-end diameter of at least 7.5 cm and a length of at least 1 m (excluding decay class 5). CWD pieces must be detached from a bole and/or not be self-supported by a root system with a lean angle more than 45 degrees from vertical.

Original data

Original data from the FIA database is below. Note that the original data is in short tons per acre and was then converted to metric tons per hectare.

USDA Forest Service, Forest Inventory and Analysis Program. Forest Inventory EVALIDator web-application Version 1.7.0.01. St. Paul, MN: U.S. Department of Agriculture, Forest Service, Northern Research Station. [Available only on internet: http://fsxopsx1056.fdc.fs.usda.gov:9001/Evalidator/evalidator.jsp]

	Original data short tons/acre		

	2004	2009	2014
AGB	12.0473	16.9821	21.5804
BGB	2.5647	3.5528	4.4641
Snag	0.0447	0.0488	0.1243
CWD	0.1685	0.1685	0.1685

	Converted to metric tons/ha		
	2004	2009	2014
AGB	27.0065	38.0688	48.3768
BGB	5.7493	7.9643	10.0072
Snag	0.1002	0.1094	0.2786
CWD	0.3777	0.3777	0.3777
Dead	0.4779	0.4871	0.6564

	Mtons/ha with dead summed		
	2004	2009	2014
AGB	27.0065	38.0688	48.3768
BGB	5.7493	7.9643	10.0072
Dead	0.4779	0.4871	0.6564

Analysis and processing of national data

Estimation and forecasting

Annual rates of change were calculated for the periods of 2004-2009 and 2009-2014 for the three biomass pools.

Annual rate of change	
2004-2009	2009-2014
2.2125	2.0616
0.4430	0.4086
0.0018	0.0338

Rates of change were then applied to the NFI estimates to forecast biomass.

	1990	2000	2010	2015	2016	2017	2018	2019	2020
AGB	n.a.	n.a.	40.13	42.19	44.25	46.32	48.38	50.44	52.50
BGB	n.a.	n.a.	10.03	12.09	14.15	16.21	18.27	20.33	22.40
Dead	n.a.	n.a.	2.55	4.61	6.67	8.73	10.80	12.86	14.92

Reclassification into FRA 2020 categories

Aboveground and belowground biomass pools were sufficiently close in definition between the FIA NFI categories and the FRA 2020 definition to not require reclassification. To present the estimates for the FRA 2002 dead biomass pool, the FIA NFI biomass pools of standing dead trees ("snags") and coarse woody debris were summed.

FRA categories	Forest biomass (tonnes/ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Above-ground biomass	27.01	27.01	40.13	42.19	44.25	46.32	48.38	50.44	52.50
Below-ground biomass	5.75	5.75	10.03	12.09	14.15	16.21	18.27	20.33	22.40
Dead wood	0.48	0.48	2.55	4.61	6.67	8.73	10.80	12.86	14.92

Comments

Biomass values from the 2004 NFI were used for the 1990 and 2000 estimates.

2d Carbon stock

National Data

Data sources + type of data source eg NFI, etc

The information found in this database is derived from a national forest inventory (NFI) implemented in the U.S. Virgin Islands by the U.S. Forest Service Forest Inventory and Analysis (FIA) program. This NFI samples forest land on the islands of St. Croix, St. John and St. Thomas, excluding smaller non-forested and/or uninhabited islands and cays which are also part of the island group. The NFI began in the U.S. Virgin Islands in 2004 and remeasures sampling points every 5 years. To date, there have been three such periodic forest inventories in 2004, 2009 and 2014, with preparation for the 2019 inventory underway.

Forest inventory plot data collected include land use and its change, disturbances to the forest, whether stands are naturally or artificially regenerated, forest ownership and information on many other variables. All live and standing dead trees are measured down to a diameter at breast height of 12.5 cm. A sub-sample of plots have additional data collected on soils, floor litter, and down woody materials. Other forest carbon pools such as belowground live tree and understory vegetation are modeled.

All data used to populate this database is publically available through a variety of on-line tools that access the larger FIA database. Links to these tools can be found at: https://www.fia.fs.fed.us/tools-data/index.php. Additional documentation from FIA can be found on-line at https://www.fia.fs.fed.us/library/index.php or in publications listed below.

Brandeis, Thomas J.; Oswalt, Sonja N. 2007. The status of U.S. Virgin Islands'' forests, 2004. Resour. Bull. SRS–122. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 61 p.

Brandeis, Thomas J.; Turner, Jeffery A. 2013. U.S. Virgin Islands' Forests, 2009. Resource Bulletin SRS-RB-196. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 56 p.

Marcano-Vega, Humfredo; Williamson, Joe R. 2017. Forests of U.S. Virgin Islands, 2014. Resource Update FS–144. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 4 p.

National classification and definitions

Forest land: Land at least 10-percent stocked by trees of any size, including land that formerly had such tree cover and that will be naturally or artificially regenerated. Forest land includes transition zones, such as areas between heavily forested and nonforested lands that are at least 10-percent stocked with trees and forest areas adjacent to urban and built-up lands. Also included are pinyon-juniper and chaparral areas in the West and afforested areas. The minimum area for classification of forest land is 0.5 hectare and 36 meters wide measured stem-to-stem from the outer-most edge. Unimproved roads and trails, streams, and clearings in forest areas are classified as forest if less than 36 meters wide.

Tree: A woody plant usually having one or more erect perennial stems, a stem diameter at breast height of at least 7.5 cm, a more or less definitely formed crown of foliage, and a height of at least 5 meters at maturity.

The aboveground weight of live trees (including bark but excluding foliage) reported in dry tons (dry weight). Biomass has four components for most tree species (bole, tops and limbs, saplings, and stump) but is estimated as a single component for woodland species.

1. Bole: Biomass of a tree from 30 cm above the ground to a 10 cm top outside bark or to a point where the central stem breaks into limbs.
2. Tops and limbs: Total biomass of a tree from a 30 cm stump minus the bole.
3. Saplings: Total aboveground biomass of a tree from 2.5 to 12.5 cm in d.b.h.
4. Stump: Biomass of a tree 12.5 cm d.b.h. and larger from the ground to a height of 30 cm.

The 5 IPCC pools are derived from 8 components (six condition-level components and two tree-level components):

Pool 1 : live aboveground (oven-dry metric tonnes):

Carbon in understory aboveground. Carbon (tons per acre) in the aboveground portions of seedlings and shrubs. Estimated from models based on geographic area, forest type, and (except for nonstocked and pinyon-juniper stands) live tree carbon density (Smith and Health 2008). This modeled attribute is a component of the EPA's Greenhouse Gas Inventory and is not a direct sum of Phase 2 or Phase 3 measurements.

Carbon in the aboveground portion of the tree. The carbon (pounds) in the aboveground portion, excluding foliage, of live trees with a diameter >=1 inch, and dead trees with a diameter >=5 inches. Calculated for both timber and woodland species.

Pool 2: live belowground (oven-dry metric tonnes)

Carbon in understory aboveground. Carbon (tons per acre) in the aboveground portions of seedlings and shrubs. Estimated from models based on geographic area, forest type, and (except for nonstocked and pinyon-juniper stands) live tree carbon density (Smith and Health 2008). This modeled attribute is a component of the EPA's Greenhouse Gas Inventory and is not a direct sum of Phase 2 or Phase 3 measurements.

Carbon in the aboveground portion of the tree. The carbon (pounds) in the aboveground portion, excluding foliage, of live trees with a diameter >=1 inch, and dead trees with a diameter >=5 inches. Calculated for both timber and woodland species.

Pool 3: dead wood (oven-dry metric tonnes)

Carbon in down dead. Carbon (tons per acre) of woody material >3 inches in diameter on the ground, and stumps and their roots >3 inches in diameter. Estimated from models based on geographic area, forest type, and live tree carbon density (Smith and Heath 2008). This modeled attribute is a component of the EPA's Greenhouse Gas Inventory and is not a direct sum of Phase 2 or Phase 3 measurements.

Carbon in standing dead. Carbon (tons per acre) in standing dead trees, including coarse roots, is estimated from models based on geographic area, forest type, and (except for nonstocked stands) growing stock volume (Smith and Heath 2008). This modeled variable is a component of the EPA's Greenhouse Gas Inventory and is not a direct sum of Phase 2 or Phase 3 measurements. For most users it is preferable to calculate carbon (tons per acre) for annual inventories from the Phase 2 tree data.

Pool 4: litter IPCC (oven-dry metric tonnes)

Carbon in litter. Carbon (tons per acre) of organic material on the floor of the forest, including fine woody debris, humus, and fine roots in the organic forest floor layer above mineral soil. Estimated from models based on geographic area, forest type, and (except for nonstocked and pinyon-juniper stands) stand age (Smith and Heath 2002). This modeled attribute is a component of the EPA's Greenhouse Gas Inventory and is not a direct sum of Phase 2 or Phase 3 measurements.

Pool 5: soil organic (oven-dry metric tonnes)

Carbon in organic soil. Carbon (tons per acre) in fine organic material below the soil surface to a depth of 1 meter. Does not include roots. Estimated from models based on geographic area and forest type (Smith and Heath 2008). This modeled attribute is a component of the EPA's Greenhouse Gas Inventory and is not a direct sum of Phase 2 or Phase 3 measurements.

Smith, J.E.; Heath, L.S. 2008. Forest sections of the land use change and forestry chapter, and Annex. In: US Environmental Protection Agency, Inventory of US Greenhouse Gas Emissions and Sinks: 1990-2006. EPA 430-R-08-005. http://www.epa.gov/climatechange/ghgemissions/usinventoryreport/archive.html (17 October) Smith, J.E.; Heath, L.S. 2002. A model of forest floor carbon mass for United States forest types. Res. Paper. NE-722. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northeastern Research Station. 37 p.

Original data

Original data from the FIA database can be found in the documentation for 2c Biomass Stock.

Published estimates of fine woody debris and forest floor carbon as measured in 2004 appear in Brandeis, Thomas J.; Oswalt, Sonja N. 2007. The status of U.S. Virgin Islands'' forests, 2004. Resour. Bull. SRS–122. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 61 p. These values were 2.50 Mg/ha of carbon in fine woody debris and 3.72 Mg/Ha in forest floor litter for a combined total of 6.22 Mg/ha.

Subsequent values were derived from queries of the USDA Forest Service, Forest Inventory and Analysis Program. Forest Inventory EVALIDator web-application Version 1.7.0.01. St. Paul, MN: U.S. Department of Agriculture, Forest Service, Northern Research Station. [Available only on internet: http://fsxopsx1056.fdc.fs.usda.gov:9001/Evalidator/evalidator.jsp] and gave values of 2.79 Mg/ha of fine woody debris and 14.21 Mg/ha of forest floor litter carbon for a combined total of 17.00 Mg/ha of carbon.

Analysis and processing of national data

Estimation and forecasting

Annual rates of change were calculated for the periods of 2004-2009 and 2009-2014 for the three biomass pools. These pools were then multiplied by 0.5 to estimate carbon content.

For litter carbon, the 2009 value was used for 1990 and 2000. The 2009 measured values were used from 2010 forward.

Reclassification into FRA 2020 categories

Aboveground and belowground biomass pools were sufficiently close in definition between the FIA NFI categories and the FRA 2020 definition to not require reclassification. To present the estimates for the FRA 2002 dead biomass pool, the FIA NFI biomass pools of standing dead trees ("snags") and coarse woody debris were summed.

FRA categories	Forest carbon (tonnes/ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Carbon in above-ground biomass	13.50	13.50	20.07	21.10	22.13	23.16	24.19	25.22	26.25
Carbon in below-ground biomass	2.87	2.87	5.01	6.04	7.07	8.11	9.14	10.17	11.20
Carbon in dead wood	0.24	0.24	1.27	2.31	3.34	4.37	5.40	6.43	7.46
Carbon in litter	6.22	6.22	17.00	17.00	17.00	17.00	17.00	17.00	17.00
Soil carbon									

Soil depth (cm) used for soil carbon estimates	

Comments

At the time of this report, carbon estimates for forest soil organic carbon are not available from the FIA database.

3 Forest designation and management

3a Designated management objective

National Data

Data sources + type of data source eg NFI, etc

We are currently unable to categorize forests in the US Virgin Islands by these categories.

National classification and definitions

-

Original data

-

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

-

Primary designated management objective

FRA 2020 categories	Forest area (1000 ha)				
	1990	2000	2010	2015	2020
Production (a)					
Protection of soil and water (b)					
Conservation of biodiversity (c)					
Social Services (d)					
Multiple use (e)					
Other (specify in comments) (f)					
None/unknown (g)	**24.54**	**20.47**	**18.43**	**19.16**	**19.91**
Total forest area	**24.54**	**20.47**	**18.43**	**19.16**	**19.91**

Total area with designated management objective

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

Comments

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

We are currently unable to categorize forests in the US Virgin Islands by these categories.

National classification and definitions

-

Original data

-

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

-

FRA categories	Area (1000 ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Forest area within protected areas									
Forest area with long-term forest management plan									
…of which in protected areas									

Comments

4 Forest ownership and management rights

4a Forest ownership

National Data

Data sources + type of data source eg NFI, etc

The information found in this database is derived from a national forest inventory (NFI) implemented in the U.S. Virgin Islands by the U.S. Forest Service Forest Inventory and Analysis (FIA) program. This NFI samples forest land on the islands of St. Croix, St. John and St. Thomas, excluding smaller non-forested and/or uninhabited islands and cays which are also part of the island group. The NFI began in the U.S. Virgin Islands in 2004 and remeasures sampling points every 5 years. To date, there have been three such periodic forest inventories in 2004, 2009 and 2014, with preparation for the 2019 inventory underway.

Forest inventory plot data collected include land use and its change, disturbances to the forest, whether stands are naturally or artificially regenerated, forest ownership and information on many other variables. All live and standing dead trees are measured down to a diameter at breast height of 12.5 cm. A sub-sample of plots have additional data collected on soils, floor litter, and down woody materials. Other forest carbon pools such as belowground live tree and understory vegetation are modeled.

All data used to populate this database is publically available through a variety of on-line tools that access the larger FIA database. Links to these tools can be found at: https://www.fia.fs.fed.us/tools-data/index.php. Additional documentation from FIA can be found on-line at https://www.fia.fs.fed.us/library/index.php or in publications listed below.

Brandeis, Thomas J.; Oswalt, Sonja N. 2007. The status of U.S. Virgin Islands'' forests, 2004. Resour. Bull. SRS–122. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 61 p.

Brandeis, Thomas J.; Turner, Jeffery A. 2013. U.S. Virgin Islands' Forests, 2009. Resource Bulletin SRS-RB-196. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 56 p.

Marcano-Vega, Humfredo; Williamson, Joe R. 2017. Forests of U.S. Virgin Islands, 2014. Resource Update FS–144. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 4 p.

National classification and definitions

Forest land: Land at least 10-percent stocked by trees of any size, including land that formerly had such tree cover and that will be naturally or artificially regenerated. Forest land includes transition zones, such as areas between heavily forested and nonforested lands that are at least 10-percent stocked with trees and forest areas adjacent to urban and built-up lands. Also included are pinyon-juniper and chaparral areas in the West and afforested areas. The minimum area for classification of forest land is 0.5 hectare and 36 meters wide measured stem-to-stem from the outer-most edge. Unimproved roads and trails, streams, and clearings in forest areas are classified as forest if less than 36 meters wide.

Original data

Original data from the FIA database is below.

	Ownership group - Major		
EVALID	**Total**	**Public**	**Private**
Total	138,694	30,929	107,765
US Virgin Islands 2004 rscd= 33 evalid= 780401	46,564	9,774	36,790
US Virgin Islands 2009 rscd= 33 evalid= 780901	45,163	9,362	35,801
US Virgin Islands 2014 rscd= 33 evalid= 781401	46,967	11,793	35,174

USDA Forest Service, Forest Inventory and Analysis Program. Forest Inventory EVALIDator web-application Version 1.7.0.01. St. Paul, MN: U.S. Department of Agriculture, Forest Service, Northern Research Station. [Available only on internet: http://fsxopsx1056.fdc.fs.usda.gov:9001/Evalidator/evalidator.jsp]

The average percentage forest land ownership was then applied to the FRA 2020 table 1a, pasted below.

FRA categories	Area (1000 ha)												
	1990	**1994**	**2000**	**2004**	**2009**	**2010**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Forest (a)	25	22.91	20.47	18.84	18.28	18	19.01	18.99	18.97	18.95	18.93	18.91	18.89
Other wooded land (b)		0		0	0		0.00						

Other land (c-a-b)	10	12	15	16	17	16.57	15.99	16.01	16.03	16.05	16.07	16.09	16.11
Total land area (c)	35	35	35	35	35	35.00	35.00	35.00	35.00	35	35	35	35

Analysis and processing of national data

Estimation and forecasting

The average percentage of public and private forest land ownership was calculated for the NFI years of 2004, 2009 and 2014.

Inventory year	Percentage	
	Public	Private
2004	0.2099	0.7901
2009	0.2073	0.7927
2014	0.2511	0.7489
Average	0.2228	0.7772

These above average percentage (22.8% public and 77.7% private) were then applied to all years, making the assumption that the percentage of public and private forest land ownership has remained relatively constant over time.

	1990	2000	2010	2015	2020
Public	5.46	4.56	4.11	4.23	4.21
Private	19.07	15.91	14.32	14.76	14.68
	24.53	20.47	18.43	18.99	18.89

Reclassification into FRA 2020 categories

Reclassification was not necessary.

FRA categories	Forest area (1000 ha)			
	1990	2000	2010	2015
Private ownership (a)	19.07	15.91	14.32	14.76
…of which owned by individuals				
…of which owned by private business entities and institutions				
…of which owned by local, tribal and indigenous communities				
Public ownership (b)	5.46	4.56	4.11	4.23
Unknown/other (specify in comments) (c)	**0.01**	**0.00**	**0.00**	**0.17**
Total forest area	**24.54**	**20.47**	**18.43**	**19.16**

Comments

4b Holder of management rights of public forests

National Data

Data sources + type of data source eg NFI, etc

We are currently unable to categorize forests in the US Virgin Islands by these categories.

National classification and definitions

-

Original data

-

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

-

FRA categories	Forest area (1000 ha)			
	1990	2000	2010	2015
Public Administration (a)				
Individuals (b)				
Private business entities and institutions (c)				
Local, tribal and indigenous communities (d)				
Unknown/other (specify in comments) (e)	**5.46**	**4.56**	**4.11**	**4.23**
Total public ownership	**5.46**	**4.56**	**4.11**	**4.23**

Comments

5 Forest disturbances

5a Disturbances

National Data

Data sources + type of data source eg NFI, etc

The information found in this database is derived from a national forest inventory (NFI) implemented in the U.S. Virgin Islands by the U.S. Forest Service Forest Inventory and Analysis (FIA) program. This NFI samples forest land on the islands of St. Croix, St. John and St. Thomas, excluding smaller non-forested and/or uninhabited islands and cays which are also part of the island group. The NFI began in the U.S. Virgin Islands in 2004 and remeasures sampling points every 5 years. To date, there have been three such periodic forest inventories in 2004, 2009 and 2014, with preparation for the 2019 inventory underway.

Forest inventory plot data collected include land use and its change, disturbances to the forest, whether stands are naturally or artificially regenerated, forest ownership and information on many other variables. All live and standing dead trees are measured down to a diameter at breast height of 12.5 cm. A sub-sample of plots have additional data collected on soils, floor litter, and down woody materials. Other forest carbon pools such as belowground live tree and understory vegetation are modeled.

All data used to populate this database is publically available through a variety of on-line tools that access the larger FIA database. Links to these tools can be found at: https://www.fia.fs.fed.us/tools-data/index.php. Additional documentation from FIA can be found on-line at https://www.fia.fs.fed.us/library/index.php or in publications listed below.

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Brandeis, Thomas J.; Turner, Jeffery A. 2013. U.S. Virgin Islands' Forests, 2009. Resource Bulletin SRS-RB-196. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 56 p.

Marcano-Vega, Humfredo; Williamson, Joe R. 2017. Forests of U.S. Virgin Islands, 2014. Resource Update FS–144. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 4 p.

National classification and definitions

Disturbance: A code indicating the kind of disturbance occurring since the last measurement or within the last 5 years for new plots. The area affected by the disturbance must be at least 1 acre in size. A significant level of disturbance (mortality or damage to 25 percent of the trees in the condition) is required.

Original data

Original data from query of the FIA DB using the Evalidator query tool on Sept. 4, 2018. Query was run on disturbance code 1 and data in acres of forest land disturbed presented below. Disturbances 2 and 3 gave no additional disturbed acres.

EVALID	Total	No visible disturbance	Domestic animal/livestock (includes grazing)	Flooding (weather induced)	Human-caused damage
Total	138,694	129,993	1,320	562	6,818
US Virgin Islands 2004 rscd= 33 evalid= 780401	46,564	44,979	-	-	1,585
US Virgin Islands 2009 rscd= 33 evalid= 780901	45,163	40,265	1,320	-	3,577
US Virgin Islands 2014 rscd= 33 evalid= 781401	46,967	44,750	-	562	1,655

Analysis and processing of national data

Estimation and forecasting

The infrequence and episodic nature of damage occurrences in the US Virgin Islands makes forecasting difficult. For the other category (the combined domestic animal/livestock and human-caused damage categories for FIA), I took the average of the 3 NFI values (1,098 hectares) and applied it to the preceding, intervening and predicted years.

I chose not to estimate or forecast acres disturbed by severe weather because of periodic hurricane damage. Hurricanes will result in sudden and unpredictable increases. The extensive 2017 hurricanes Irma and Maria damage cannot be reflected in this table at this time so any forecasted values will be incorrect.

Reclassification into FRA 2020 categories

No reclassification 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)					0.00					0.00					0.00			
Diseases (b)					0.00					0.00					0.00			
Severe weather events (c)					0.00					0.00					0.23			
Other (specify in comments) (d)	1.10	1.10	1.10	1.10	0.64	1.10	1.10	1.10	1.10	1.98	1.10	1.10	1.10	1.10	0.67	1.10	1.10	1.10
Total (a+b+c+d)	**1.10**	**1.10**	**1.10**	**1.10**	**0.64**	**1.10**	**1.10**	**1.10**	**1.10**	**1.98**	**1.10**	**1.10**	**1.10**	**1.10**	**0.90**	**1.10**	**1.10**	**1.10**
Total forest area	**20.47**	–	–	–	**18.84**	–	–	–	–	**18.28**	**18.43**	–	–	–	**19.01**	**19.16**	**19.31**	**19.46**

Comments

Other damages include "domestic animal/livestock (includes grazing)" and "human-casued damages".

5b Area affected by fire

National Data

Data sources + type of data source eg NFI, etc

While wildland fires occur in the forests of the US Virgin Islands, the three NFI have not yet encountered sufficient acreage for them to be estimated.

National classification and definitions

-

Original data

-

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

-

FRA categories	Area (1000 ha)																	
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Total land area affected by fire																		
…of which on forest																		

Comments

5c Degraded forest

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

Comments

The NFI implemented in the US Virgin Islands does not specifically classify forests as degraded. There is no specific definition of forest degradation being used at this time.

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

-

National classification and definitions

-

Original data

-

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

Comments

6b Area of permanent forest estate

National Data

Data sources + type of data source eg NFI, etc

We were unable to compile this information in time for FRA 2020 reporting.

National classification and definitions

-

Original data

-

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

Comments

7 Employment, education and NWFP

7a Employment in forestry and logging

National Data

Data sources + type of data source eg NFI, etc

We are unable to provide these estimates at this time.

National classification and definitions

-

Original data

-

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												
…of which silviculture and other forestry activities												
…of which logging												
…of which gathering of non wood forest products												
…of which support services to forestry												

Comments

7b Graduation of students in forest-related education

National Data

Data sources + type of data source eg NFI, etc

We are unable to provide these estimates at this time.

National classification and definitions

-

Original data

-

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												
Master's degree												
Bachelor's degree												
Technician certificate / diploma												
Total												

Comments

7c Non wood forest products removals and value 2015

National Data

Data sources + type of data source eg NFI, etc

We are unable to provide these estimates at this time.

National classification and definitions

-

Original data

-

	Name of NWFP product	Key species	Quantity	Unit	Value (1000 local currency)	NWFP category
#1						
#2						
#3						
#4						
#5						
#6						
#7						
#8						
#9						
#10						
All other plant products						
All other animal products						
Total					–	

Name of currency	

Comments

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	58.49	52.66	54.74	55.17	55.60	56.03	56.46	56.89

Name of agency responsible	Virgin Islands Department of Agriculture; US Forest Service

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	-1.04	0.78	0.78	0.77	0.76	0.76	0.75

Name of agency responsible	Virgin Islands Department of Agriculture; US Forest Service

Sub-Indicator 2	Forest biomass (tonnes/ha)							
	2000	2010	2015	2016	2017	2018	2019	2020
Above-ground biomass stock in forest	27.01	40.13	42.19	44.25	46.32	48.38	50.44	52.50

Name of agency responsible	Virgin Islands Department of Agriculture; US Forest Service

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	–	–	–	–	–	–	–	–

Name of agency responsible	

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	–	–	–	–	–	–	–	–

Name of agency responsible	

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	–	–