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Front cover: top left, disturbed areas with early secondary vegetation are regularly seen across subtropical dry forest stands in St. Croix, U.S. Virgin Islands; top right, dry and moist forests act as biological refuges on the numerous volcanic islands, islets and cays comprised by the U.S. Virgin Islands; bottom, wind-driven sugar mills are a common sight from the past of the U.S. Virgin Islands, where the predominant easterly trade winds still blow memories of sugar plantations over the secondary forests of today. Back cover: top left, a total of 121 tree species were encountered on the forest inventory plots measured on the U.S. Virgin Islands in 2014; top right, disturbed areas with early secondary vegetation are regularly seen across subtropical dry forest stands in St. Croix, U.S. Virgin Islands; bottom, the 18th century yellow Danish Customs House in Christiansted National Historic Site is a reminder of a past commerce when St. Croix, U.S. Virgin Islands was predominantly deforested for sugarcane production. (photo by Iván Vicéns-Jiménez, IITF, U.S. Forest Service).

All photos by Humfredo Marcano-Vega unless otherwise noted.

The introduced white-tailed deer (*Odocoileus virginianus*) browses throughout the Virgin Islands National Park, St. John, U.S. Virgin Islands.

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View of the bay near the Havensight Cruise Ship Dock on St. Thomas, U.S. Virgin Islands where the balance of development and forest conservation is tested. (photo by Iván Vicéns-Jiménez, IITF, U.S. Forest Service)

FOREWORD

The Forest and Rangeland Renewable Resources Research Act of 1978 mandated inventories of our Nation's forest resources. These inventories are part of a continuing nationwide undertaking by the regional research stations of the U.S. Department of Agriculture Forest Service and cooperating State forestry agencies. Forest inventories in the 13 Southern States (Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas and Virginia), the Commonwealth of Puerto Rico, and the Territory of U.S. Virgin Islands are conducted by the Southern Research Station, Forest Inventory and Analysis (FIA) Research Work Unit (SRS–4801) operating from its headquarters in Knoxville, TN. The primary objective of these appraisals is to develop and maintain the resource information needed to formulate sound forest policies and programs.

Additional information about any aspect of this inventory may be obtained from:

Forest Inventory and Analysis
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This resource bulletin highlights changes in the U.S. Virgin Islands forest resources as interpreted from the third cycle of remeasurements. Forest inventories of U.S. associated Commonwealth and Territory forests were originally mandated by the Agricultural Research Extension and Education Reform Act of 1998 (Farm Bill). These inventories feature: (1) a nationally consistent, fixed-radius, four-point plot configuration; (2) a systematic national sampling design consisting of a base grid derived by subdividing the Environmental Monitoring and Assessment Program grid into roughly 6,000-acre hexagons; (3) integration of the forest inventory and forest health monitoring sampling designs; (4) annual measurement of a fixed proportion of permanent plots; (5) a default 5-year moving average estimator, with provisions for optional estimators based on techniques for updating information; and (6) a summary report every 5 years. Additional information about annual surveys is available at http://fia.fs.fed.us/.

The Southern Research Station's Forest Inventory and Analysis (FIA) Research Work Unit and the International Institute of Tropical Forestry (IITF) collected data for this third forest inventory of the U.S. Virgin Islands in 2014. This bulletin provides inventory statistics and discusses the principal findings from the full remeasurement of all plots of annual inventory data from the mapped-plot design. Forest land estimates and inventory volume, growth, removals, and mortality statistics are summarized from these data.

The 2004, 2009, and 2014 inventory data and tools to query those data as well as data for other States and survey years, are available at http://www.fia.fs.fed.us/tools-data/default.asp.

ACKNOWLEDGMENTS

We gratefully acknowledge the U.S. Forest Service's International Institute of Tropical Forestry (IITF) and the Virgin Islands Department of Agriculture (VI DOA) for their assistance with the third forest inventory of the U.S. Virgin Islands, and Dr. Ariel E. Lugo and Dr. Tamara Heartsill-Scalley for their review of this manuscript. The Forest Inventory and Analysis program also thanks other public agencies and the many private landowners who provided access to measurement plots.

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HIGHLIGHTS FROM THE THIRD FOREST INVENTORY OF THE U.S. VIRGIN ISLANDS

Forest Area

• The overall forest area in the U.S. Virgin Islands (USVI) experienced a period of relative stability from 2004 to 2014, considering that forest cover changes have been within sampling errors ever since 2004. A total of 46,967 acres of forest area (57.2 percent forest cover) was estimated in 2014 for the USVI. There were 29,610 acres of forest on St. Croix (56.1 percent forest cover), 9,830 acres on St. John (81.3 percent forest cover) and 7,528 acres of forest on St. Thomas (43.6 percent forest cover). Seventy-one percent of the forested area falls in the subtropical dry forest life zone and 29 percent in the subtropical moist forest life zone.

Forest Ownership

As noticed on previous inventories, most of U.S. Virgin Islands' forests are privately owned (75 percent). The remaining forests are publically administered by the National Park Service, the U.S. Forest Service (21 percent), or by Territory or local government (4 percent).

Forest Stand Structure and Tree Species Composition

• Forest structural changes suggest that stand sizes increased during the period 2004–14. An expansion from 9 percent to 19 percent of the forested acreage dominated by medium- and large-diameter stands is observed along with a reduction from 90 percent to 81 percent of the forested area dominated by small diameter stands.

Disturbed areas with early secondary vegetation are regularly seen across subtropical dry forest stands in St. Croix, U.S. Virgin Islands.

• A total of 121 tree species of at least 12 inches in height were encountered within a total sampled area of 8.1 acres in the inventory of 2014. Typical species of USVI's forest life zones such as Black mampoo (*Guapira fragrans*) and gumbo limbo (*Bursera simaruba*) figure as the ones with the highest importance values among trees with diameter at breast height (d.b.h., 4.5 feet) ≥ 5.0 inches. Alternatively, species characteristic of abandoned pastures or open forests and clearings such as white leadtree or tan-tan (*Leucaena leucocephala*) and Jamaican nettletree (*Trema micrantha*) have the highest importance values among trees with d.b.h. < 5.0 inches.

Number of Live Trees, Volume, Biomass, and Carbon

• Considering the relative stability of overall forest area, the changes observed in volume, biomass, and carbon suggest a tendency towards more mature stages of development within the USVI's forest stands. Estimates reveal an increase from 84.1 to 92.2 million trees in the U.S. Virgin Islands from 2004 to 2014. This increase in number of trees is parallel to the development from 9.6 to 20.9 million cubic feet of merchantable wood; 74 percent of which is on unreserved, private lands. Around 55 percent of the available merchantable wood was found in trees with less than the typical 11 inch d.b.h. considered for saw timber, but has potential for wooden crafts done by local artisans. Correlated to the increase in net volume was an increase in biomass and carbon in live trees. There were 446,000 tons of aboveground carbon stored in the USVI's forests in 2004 and 798,000 tons in 2014. The amount of carbon stored in the forests in 2014 is equivalent to the CO^2 emissions from the total number of barrels of oil that are consumed in the USVI in 13.5 years, or the greenhouse gas emissions avoided by 116 million trash bags of waste recycled instead of landfilled (greenhouse gas equivalencies calculator; U.S. Environmental Protection Agency 2018).

Net Growth, Removals, and Mortality

• The U.S. Virgin Island's forest trees grew by 762,848 cubic feet each year but lost 113,254 cubic feet per year to natural mortality and another 31,939 cubic feet to removals, for a net annual gain of 617,655 cubic feet on average. This represents a net total gain of 3.1 million cubic feet of wood volume over the entire 5-year period between inventories (2009–14). A total of 159,695 cubic feet of wood were removed from the forests by cutting or land clearance over that same 5-year time period.

Forest Health

• For trees with d.b.h. ≥1 inch, 11.2 percent showed some sign of a health indicator or agent that affected their aspect (e.g., signs of advanced decay, wind effects, epiphytic growth). For seedlings (d.b.h. <1.0 inch and ≥12.0 inches in length), only 1.9 percent showed some sign of a health indicator. Evidence of stem decay represented 54.5 percent of effects found in trees and defoliation by insects represented 79.5 percent of effects found in seedlings. Stem decay found in trees was of minor severity (affecting <10 percent of the tree's bole) and not considered a threat. On the other hand, although the severity of defoliation of seedlings by insects showed a mean of 42.5 percent when observed, it was considered as light for the forest community considering that it was found in only 1.5 percent of the recorded seedlings. Uncompacted crown ratios showed a 9–15 percent reduction from 2004–14 indicative of the normal maturity of stands, as the forest canopy closes and the crown ratio of trees is expected to decrease due to an increase in competition for light. Only 0.5 percent of the trees assessed on forest health monitoring plots showed any signs of crown dieback or recent mortality.

INTRODUCTION

The U.S. Virgin Islands' Third Forest Inventory

Forest inventories are a tool for monitoring forest resources. Their fundamental objective is to "provide quantitative information about the forest and its resources that will allow making reasonable decisions on its destiny, use, and management." (Kershaw and others 2017). The intent of this report is to present the results of the third forest inventory of the islands of the Territory of the U.S. Virgin Islands (USVI), as an extended version of the Resource Update previously published by Marcano and Williamson (2017). The key goal is to provide a more comprehensive view about the status of the USVIs' forest stands prior to the incidence of hurricanes Irma and María in September 2017. Along with previous reports of the Forest Inventory and Analysis (FIA) program in the USVI (Brandeis and Oswalt 2007, Brandeis and Turner 2013, Marcano-Vega and Williamson 2017), the forest data presented here follows an analogous format to offer the status and change of forest area in the USVI (St. Croix, St. John, St. Thomas), forest ownership, forest stand structure and tree species composition, number of live trees, volume of merchantable wood, amount of biomass and carbon stored, net growth, removals, mortality, and forest health indicators (e.g., tree crown health). The remeasurement in 2014 of the same plots and trees that were measured in the first and second forest inventories of 2004 and 2009 allow the FIA program to provide estimates of change and insights into the dynamics of the USVIs' forests. This will enable a clearer interpretation of the effects from the recent hurricanes of 2017, when the ongoing fourth forest inventory of the USVI is complete.

Trunk Bay on St. John exemplifies the interconnection between forests, beaches, coral reefs, islands, and cays embodied by the Caribbean archipelago.

METHODS USED IN THE 2014 FOREST INVENTORY

Study Area and Forest Associations

The FIA sampling plots on the islands of St. Croix, St. John, and St. Thomas that were visited on the previous forest inventories were revisited and remeasured during this inventory. Bechtold and Scott (2005) and Brandeis and Oswalt (2007) can be consulted for details on the FIA sampling and plot design. As with the previous forest inventories, the Holdridge life zone system (Ewel and Whitmore 1973) is used to depict forest types and present the results of this third inventory of the USVI forests.

Forest Area Estimation

The FIA program defines an area as forested if it has a minimum of 10 percent canopy cover of live trees of at least 12 inches in height, or has had such tree cover previously, and is not undergoing development for a nonforest use. The minimum 10 percent canopy cover must also have a minimum area of 1 acre or be in a strip at least 120 feet wide for a continuous length of at least 363 feet, to meet the acre threshold. More details on how FIA defines forest can be found in Brandeis and Oswalt (2007) and the FIA national core field guide (U.S. Department of Agriculture Forest Service 2014).

As with the previous forest inventory, aerial photograph interpretation was used to assign plots to meaningful strata to reduce the variance of estimates and land area stratification estimates based on satellite imagery. Reams and others 2005, Scott and others 2005, and Woudenberg and others 2010 offer information on the stratified estimation approach used by FIA.

Field Data Collection and Forest Health Monitoring

All the plots from the previous inventory were revisited except for a percentage that could not be relocated and remeasured, usually where the landowners denied access to the plot location. Table A.1 presents the numbers of permanent sampling plots in the 2014 forest inventory by survey unit and land status. The FIA sampling and field plot designs remained basically unchanged compared to the previous forest inventories (U.S. Department of Agriculture Forest Service 2014). As noted by Brandeis and Turner 2013 on the report from the prior inventory, all previously tallied trees were relocated and remeasured, new ingrowth trees were measured and added to the inventory, and trees that died were measured if still standing, and the cause and date of their death estimated. All trees on the plots that were removed or cut were also accounted for and their estimated removal dates recorded.

Visual assessments of the condition of the tree crowns were done as a forest health indicator, based on statistical evidence that demonstrates its ability to predict tree survival (Morin and others 2012), and to provide a broader understanding of tree crown patterns along forest successional dynamics and regeneration (Holdaway 1986). Forest health indicators are recurrently recorded by the FIA Program for trees with d.b.h. ≥ 5 inches (Brandeis and Oswalt 2007), but forest health sampling efforts were expanded for this third USVI forest inventory to include the effects of insects and other agents on all trees with d.b.h. ≥1 inch, and on seedlings (d.b.h. <1 inch and ≥12 inches in length). The field data collection procedures and analysis for the various forest health indicators recurrently recorded by the

The 18th century yellow Danish Customs House in Christiansted National Historic Site is a reminder of a past commerce when St. Croix, U.S. Virgin Islands was predominantly deforested for sugarcane production. (photo by Iván Vicéns-Jiménez, IITF, U.S. Forest Service)

FIA Program (e.g., crown ratio, signs of advanced decay, wind effects, defoliators) can be found in the FIA field guides (U.S. Department of Agriculture Forest Service 2011, 2014) and technical reports (Schomaker and others 2007, Smith and Conkling 2005).

Analysis and Statistical Techniques

Field data collected on the permanent forest inventory plots in the U.S. Virgin Islands is consistently processed, formatted, and stored in the National Information Management System (NIMS) and the FIA Database (FIADB) (Burrill and others 2018). Accordingly, the same methodology described in Brandeis and Turner (2013) was applied for estimating tree volume and aboveground biomass using the d.b.h. and total tree height with locally developed allometric equations. The FIA nationally consistent Component Ratio Method (CRM) was used for estimating live tree belowground biomass. CRM is employed by calculating a coarse root component based on the measured d.b.h of trees. This coarse root component is subsequently used to estimate belowground biomass as a product of the aboveground biomass and such component ratio (Heath and others 2008, Jenkins and others 2003). The biomass estimates were multiplied by 0.5 to obtain the carbon estimates.

RESULTS OF THE 2014 FOREST INVENTORY

Forest Land

Forest area on the U.S. Virgin Islands has held relatively steady from 2004 (46,564 acres) to 2009 (45,163 acres), to 2014 (46,967 acres) (fig. 1). In terms of the percent cover of the islands, the dynamic has been from 56.7 percent in 2004 to 55.0 percent in 2009, to 57.2 percent in 2014. As observed by Brandeis and Turner (2013) in the previous forest inventory, the sampling errors are sufficiently large to encompass these small changes in forest cover, and it is best to state that forest cover has remained relatively stable from 2004 to 2014 on all three islands. Total forest area on St. Croix was estimated at 26,179 acres (49.6 percent forest cover) in 2009 and 29,610 acres (56.1 percent forest cover) in 2014 (fig. 1). There were 10,343 acres of forest (85.5 percent forest cover) on St. John in 2009 and 9,830 acres (81.3 percent forest cover) in 2014, while on St. Thomas there were 8,641 acres of forest (50.1 percent forest cover) in 2009 and 7,528 acres of forest (43.6 percent forest cover) in 2014 (table A.2). Although these values appear to illustrate an increase in forest cover on St. Croix and a decrease on St. John and St. Thomas, the changes they represent are still within sampling errors. However, projections in housing development have estimated that around 12 percent of USVI's forest land will undergo an increase in housing density from 2000 to 2030, mainly across inland areas of northern St. Croix and patches of coastal forest in St. Thomas (Stein and others 2014). The continuous monitoring of the FIA program will reveal if the noticed trend of relative stability in forest area since 2004 will prevail or change, considering the development projections and particularly after the passing of hurricanes Irma and María through the USVI in September 2017.

Figure 2 shows the forest area by forest type (sensu Holdridge) from 1994 to 2014, exposing a slight increase in subtropical dry forest from 2009 to 2014, after a period of relative loss from 1994 to 2004. In the case of the subtropical moist forest, its area has remained relatively stable from 2004 to 2014 after a period of forest loss from 1994 to 2004. There were 33,536 acres of dry forest (71.4 percent of total forested land) and 13,432 acres of moist forest (28.6 percent of total forested land) in the USVI in 2014 (fig. 2).

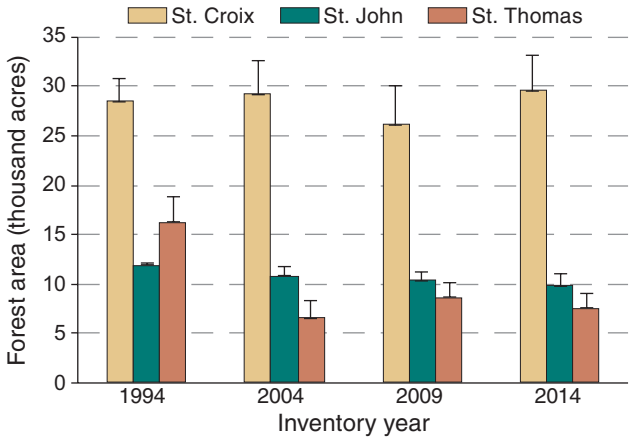

Figure 1—Forest area with sampling errors of the U.S. Virgin Islands for the 1994 aerial photograph estimation, and the 2004, 2009, and 2014 forest inventories.

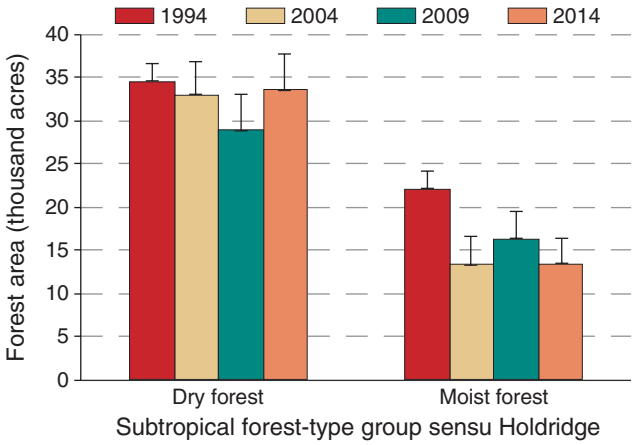

Figure 2—Forest area with sampling errors by forest-type group, U.S. Virgin Islands, 1994–2014.

Forest Ownership

The forests on the U.S. Virgin Islands are predominately (75 percent) privately owned (fig. 3). Nevertheless, there is also an important part of the forested area managed as public forests by local and Federal agencies. The percent of forested acres administered by the National Park Service ascends to 19 percent in the case of the dry forest-type group (sensu Holdridge) and to 26 percent in the case of the moist forest-type group (fig. 3). Only 4 percent of the forest acreage is publicly administered by the local government. Table A.3 presents the area of forest land by ownership class and land status in 2014, and table A.4 presents the area of forest land by forest-type group and ownership group in 2014. The categorization of forest land as reserved by the FIA program assumes that national parks are spaces where the harvest of trees is restricted by law or statute (table A.3) (Brandeis and Turner 2013).

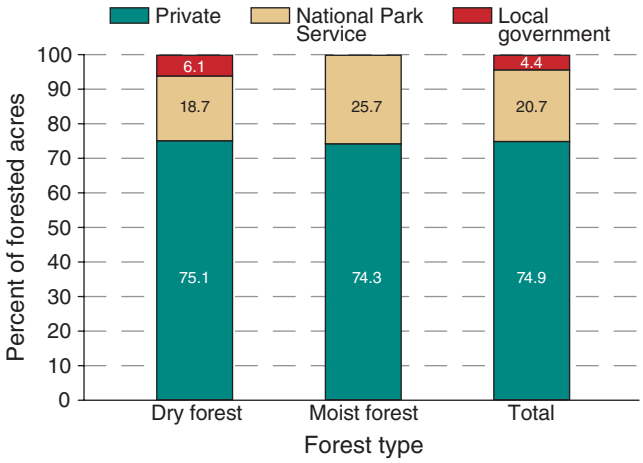

Figure 3—Percent of forested acres by ownership group and forest-type group, U.S. Virgin Islands, 2014.

Forest Stand Structure and Tree Species Composition

Forest Stand Structure—Modifications in stand structure can be observed by categorizing forest stands according to the predominant diameter of the live trees present. Figure 4 shows changes in the percent of forested acres by stand-size class from 2004 to 2014. Nonstocked stands were those that had <10 percent tree cover, usually represented by a part of a forested plot where trees were not sufficiently developed to fully meet the minimum requirements. Small diameter stands were predominantly (at least ⅔ of the canopy cover) made up of trees <5 inches d.b.h., medium diameter stands had canopy trees that were mostly 5 to 10 inches d.b.h, and large diameter stands were those with their canopy predominately made up of trees ≥11.0 inches d.b.h. The dynamics in forest structure suggest that stand sizes increased across the USVI's landscape from 2004 to 2014 (fig. 4). An expansion from 7 percent to 14 percent of the forested acreage dominated by medium diameter stands and from 2 percent to 5 percent by large diameter stands is observed, along with a reduction from 90 percent to 81 percent of the forested area dominated by small diameter stands. Even so, the percent of forested acreage dominated by small diameter stands in 2014 is 85 percent in the case of the dry forest and 70 percent in the case of the moist forest (fig. 5). Table A.5 shows the area of forest land by forest type and stand-size class in 2014.

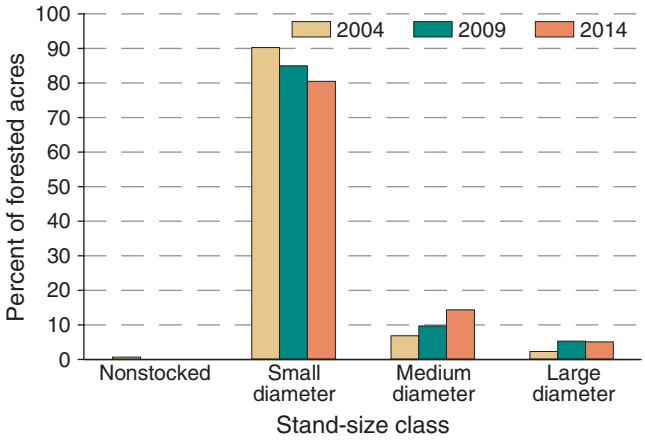

Figure 4—Percent of forested acres by stand-size class, U.S. Virgin Islands, 2004–14.

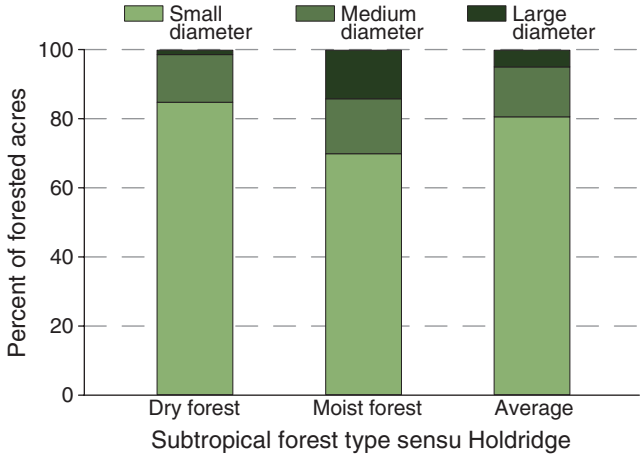

Figure 5—Percent of forested acres by stand-size class and forest-type group, U.S. Virgin Islands, 2014.

Tree Species Composition—A total of 121 tree species of at least 12 inches in length (≥ seedling size) were encountered on the forest inventory plots measured in 2014, which had a total sampled area of 8.1 acres. An importance value index was calculated for each tallied tree species by separating into an overstory class (here defined as trees with d.b.h. ≥ 5.0 inches) and a midstory/sapling class (defined as trees with d.b.h. between 1.0 inch and 4.9 inches). This index represents a combination of the relative density, relative dominance and relative frequency of each tree species, respectively within the overstory class and midstory/sapling class. Relative density was calculated as the number of trees of each species as a percent of the total number of trees of all species, relative dominance is the total basal area of each species as a percent of the total basal area of all species, and relative frequency is the percent of plots occupied by each species as a percent of the occurrence of all species. Each importance value resulted from the sum of the relative density, relative dominance and relative frequency of each species divided by three. Tables A.6 and A.7 present importance values for all of the U.S. Virgin Islands, and tables A.8–A.11 by the subtropical dry forest and subtropical moist forest (sensu Holdridge life zones). Typical species of USVI's forest life zones such as Black mampoo (*Guapira fragrans*) and gumbo limbo (*Bursera simaruba*) (Little and Wadsworth 1964) figure as the ones with the highest importance values among trees with d.b.h. ≥ 5.0 inches (tables A.6, A.8 and A.10). Alternatively, species characteristic of abandoned pastures or open forests and clearings such as white leadtree or tan-tan (*Leucaena leucocephala*) and Jamaican nettletree (*Trema micrantha*) have the highest importance values among trees with d.b.h. < 5.0 inches (tables A.7, A.9, and A.11). The predominance of tan-tan as a pioneer species forming dense stands throughout the USVI has been noted since the first forest inventory of 2004 (Brandeis and Oswalt 2007, Brandeis and Turner 2013), and especially in studies examining secondary subtropical dry forests previously used as pastureland in St. Croix (Atkinson and Marín-Spiotta 2015, Morgan and others 2017).

Number of Live Trees, Volume, Biomass, and Carbon

Number of Live Trees—Estimates reveal an increase from 84.1 to 92.2 million trees with d.b.h. ≥ 1 inch in the U.S. Virgin Islands during the period 2004 to 2014. As noted on former inventories (Brandeis and Turner 2013), there is still a pattern of a large number of trees in smaller diameter classes with decreasing occurrence as diameters increase (fig. 6, table A.12). Nevertheless, this reverse-J-shaped pattern characteristic of many naturally regenerated, uneven-aged stands (Kershaw and others 2017) shows a trend of increasing frequency in larger diameter classes from 2004 to 2014 (fig. 6). While the number of trees with d.b.h. ≥ 3 inches increased from 8.0 million to 15.6 million from 2004 to 2014 (96 percent buildup), the number of trees with smaller diameters only increased from 76.1 million to 76.6 million (1 percent buildup) during the same period.

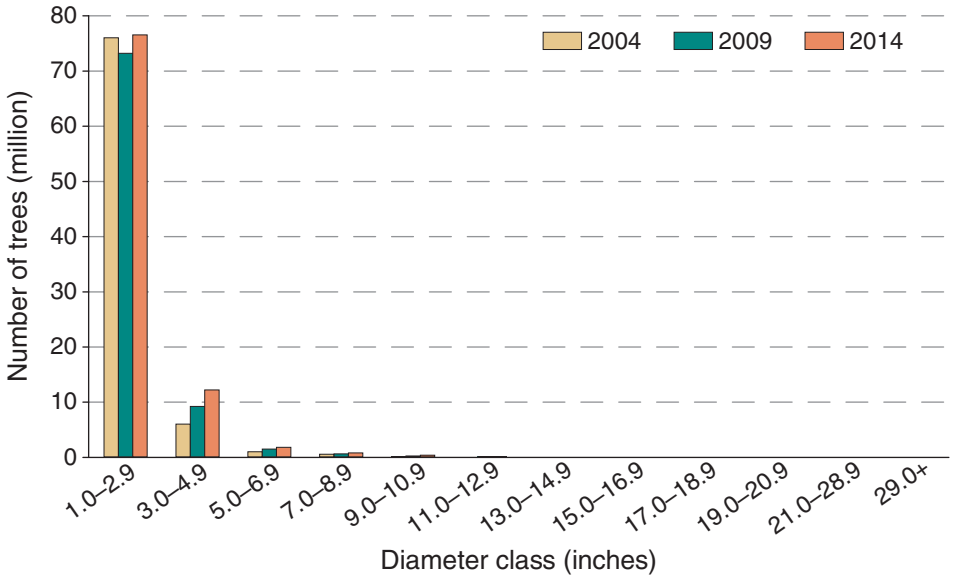

Figure 6—Number of live trees with d.b.h. ≥ 1 inch by diameter class, U.S. Virgin Islands, 2004–14.

This tendency aligns with the expansion of the forested area dominated by medium and large diameter stands previously discussed (see section on Forest Stand Structure) and suggest a progression in the maturity of USVI's forest stands from 2004 to 2014.

Merchantable Stem Volume—The observed increase in the number of trees and forested area dominated by medium and large diameter stands corresponded to the development from 9.6 million cubic feet of merchantable wood volume in 2004 to 14.5 million cubic feet in 2009, to 20.9 million cubic feet in 2014 (fig. 7). Tables A.13–A.17 present the estimated net volume for live trees with d.b.h ≥ 5 inches on forest land by ownership class and land status, forest type and stand-size class, species group and ownership group, and species group and diameter class, respectively. Of the total estimated wood volume in 2014, 15.6 million cubic feet (74 percent) is on unreserved, nonindustrial private land (table A.13) within a context where it has been assessed that 51 percent of the private forest land in St. Croix, and 44 percent of the private forest land in St. John and St. Thomas have high stewardship potential (Slatton and Chakroff 2007a, 2007b). Even though table A.16 shows that 55 percent of the available merchantable wood was found in trees with less than the typical 11 inch d.b.h. considered for sawtimber, the wood that is available has potential for wooden crafts done by local artisans. Awareness of these nonsawtimber merchantable opportunities can open options for the development of sustainable wood production in private forest land, to support a tradition of recognized local wood artists that display their creations and promote the art of woodworking at organized exhibits (Morris 2015, Simescu 2011).

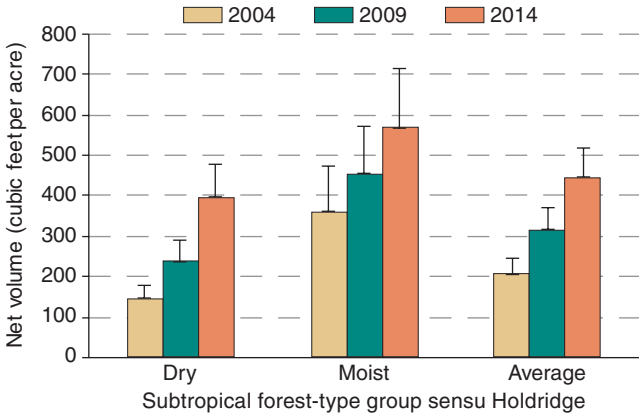

Figure 7—Net volume of live stems ≥ 5 inches d.b.h., with sampling errors, on forest land by forest-type group, U.S. Virgin Islands, 2004–14.

There was a total gain of 352 tons of aboveground carbon in the forests of the U.S. Virgin Islands over the 5-year period between the last forest inventories (2009–14).

Biomass and Carbon—The FIA program provides a central linkage between future projections for climate in the Caribbean and its potential effects on ecosystem services, by documenting the dynamics of live-tree biomass and carbon accumulation. As described in the Analysis and Statistical Techniques section, locally developed allometric equations were used to estimate the values of biomass presented in this report. Considering the region's vulnerability to climate change, it is important to maintain a record of associated effects for the development of suitable mitigation/adaptation strategies and action plans (Taylor and others 2012). Tables A.17 and A.18 show the aboveground dry weight of live trees with d.b.h. ≥1.0 inch in 2014 on forest land by ownership class and land status, and by species group and diameter class, respectively. Of the estimated total aboveground biomass, 73 percent is stored in private unreserved forest land (table A.17), and 64 percent in trees with d.b.h. <5.0 inches (table A.18). White leadtree or tan-tan, which figured as the tree with highest importance value index among stems with d.b.h. <5.0 inches, was the species with highest biomass storage in 2014 (Marcano-Vega and Williamson 2017), revealing the legacy of land-use dynamics in the USVI (see Tree Species Composition section). Regarding the estimated values of above- and belowground live-tree biomass by forest type, there were 38.9 tons per acre in dry forest and 46.2 tons per acre in moist forest (fig. 8).

As shown by the changes of live-tree carbon per acre by forest type (2004–14) (fig. 9), there was an increase in biomass and carbon correlated to the increase in net volume described earlier. This substantiates the previous indication of a trend towards more mature states of stand development.

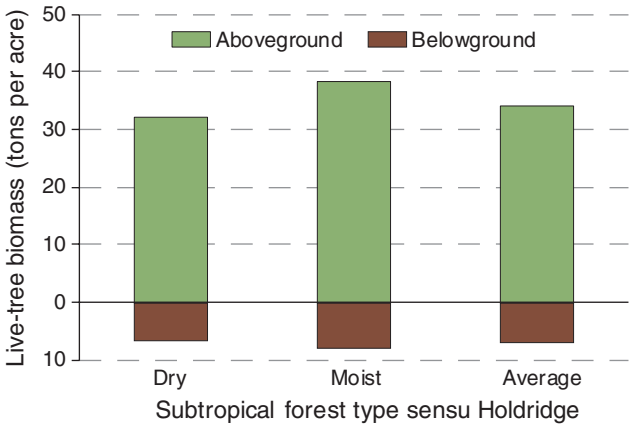

Figure 8—Above- and belowground live-tree biomass by forest-type group, U.S. Virgin Islands, 2014.

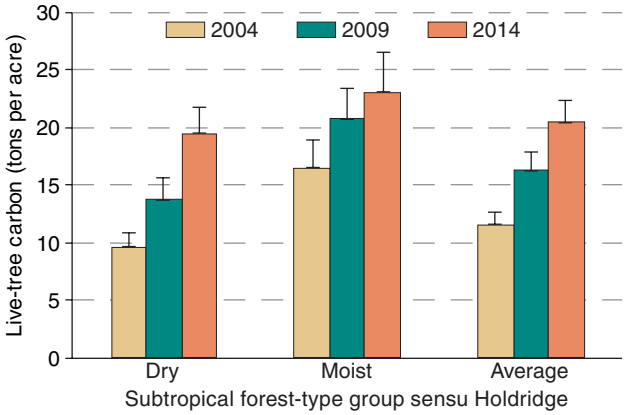

Figure 9—Total carbon (above- and belowground) of live stems ≥1 inch d.b.h., with sampling errors, by forest-type group, U.S. Virgin Islands, 2004–14.

There were 446,000 tons of aboveground carbon stored in the USVI's forests in 2004 and 798,000 tons in 2014. The amount of carbon stored in 2014 is equivalent to the CO^2 emissions from the total number of barrels of oil that are consumed in the USVI in 13.5 years, or the greenhouse gas emissions avoided by 116 million trash bags of waste recycled instead of landfilled (greenhouse gas equivalencies calculator; United States Environmental Protection Agency 2018). According to the most recent estimations, 452,600 barrels of oil are consumed per year in the U.S. Virgin Islands (Central Intelligence Agency 2016).

Net Growth, Removals, and Mortality

The remeasurement of trees in the permanent inventory plots on the islands of St. Croix, St. John, and St. Thomas allowed for estimations of net annual growth, annual mortality, and annual removal of stems with d.b.h. ≥ 5 inches by unit of volume (cubic feet). This activity embodies measuring each tree in the plots after a period of 5 years (2009–14) with the exemption of circumstances in which (1) the area of the inventory plot was in the process of reverting to forest land, (2) there was forest previously, but the area was cleared and put into a nonforest land use, (3) the original forested plot could not be relocated and a new plot had to be installed in its place, or (4) access to the plot was not allowed by the landowner during the period of the inventory. While estimations of mortality are calculated according to the trees that died of natural causes and remained in the forest, removals are estimated according to the trees felled and left in the forest or cut due to deforestation and conversion to some nonforest land use (e.g., agriculture, residential development). Therefore, removed trees are not included in the estimates of mortality and vice versa. Values of average annual net growth, annual mortality, and annual removals of live trees are shown in tables A.19–A.27.

Shrublands and subtropical dry forest thrive in coastal areas of St. John, U.S. Virgin Islands.

Trees within the forest lands of the U.S. Virgin Islands grew by 762,848 cubic feet each year (tables A.19–A.21), lost 113,254 cubic feet per year due to natural mortality (tables A.22–A.24), and lost an additional 31,939 cubic feet per year to removals (tables A.25–A.27). This dynamic represents on average a net annual gain of 617,655 cubic feet of wood and a net total gain of 3.1 million cubic feet of wood over the 5-year period between inventories. Around 71 percent of the growth in volume was within dry forest stands (table A.20), which displayed an average annual development of 18.6 cubic feet in volume per acre (fig. 10). The naturalized species genip or Spanish lime (*Melicoccus bijugatus*) contributed the highest amount of growth

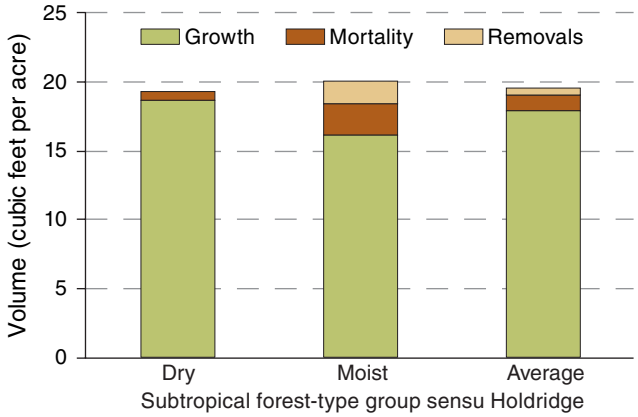

Figure 10—Annual volume of net growth, mortality, and removals by forest-type group, U.S. Virgin Islands, 2009–14.

mainly in dry forest stands, adding around 18.1 percent to the total gain in wood volume. Genip has been part of the flora of the insular Caribbean for centuries and may have been brought to some islands in pre-Columbian times (Francis 1992). As a popular edible fruit in the U.S. Virgin Islands, it is commonly sold on roadsides as a nontimber forest product (Chamberlain and others 2018, VInow 1999–2019), suggesting that humans are major dispersers along with birds and bats (Francis 1992). Noting that volume is estimated in trees with d.b.h. ≥ 5 inches, the total number of genip with at least that minimum diameter have increased as individuals matured from 201,000 stems in 2004, to 253,000 stems in 2009, to 358,000 stems in 2014 (fig. 11). On the other hand, a total of 159,695 cubic feet of wood were removed during the 5-year period principally in moist forest stands (table A.26), averaging 1.7 cubic feet per acre of volume felled or cut annually in that forest type (fig. 10).

Forest Health Indicators

Of the trees encountered with d.b.h. ≥ 1 inch, 11.2 percent showed some sign of a health indicator or agent that affected their aspect, while seedlings (d.b.h. < 1.0 inch, ≥ 12.0 inches in length) only showed some sign of a health agent in 1.9 percent of its individuals. Evidence of stem decay represented 54.5 percent of effects found in trees (fig. 12) and defoliation by insects represented 79.5 percent of effects found in seedlings (fig. 13). The stem decay found in trees was of minor severity, affecting < 10 percent of the tree's bole and therefore not considered as a threat. Alternatively, the severity of defoliation by insects on seedlings showed a mean of 42.5 percent when observed, but it was nonetheless considered as light for the forest community because it was found in only 1.5 percent of the recorded seedlings (n = 2,060). The

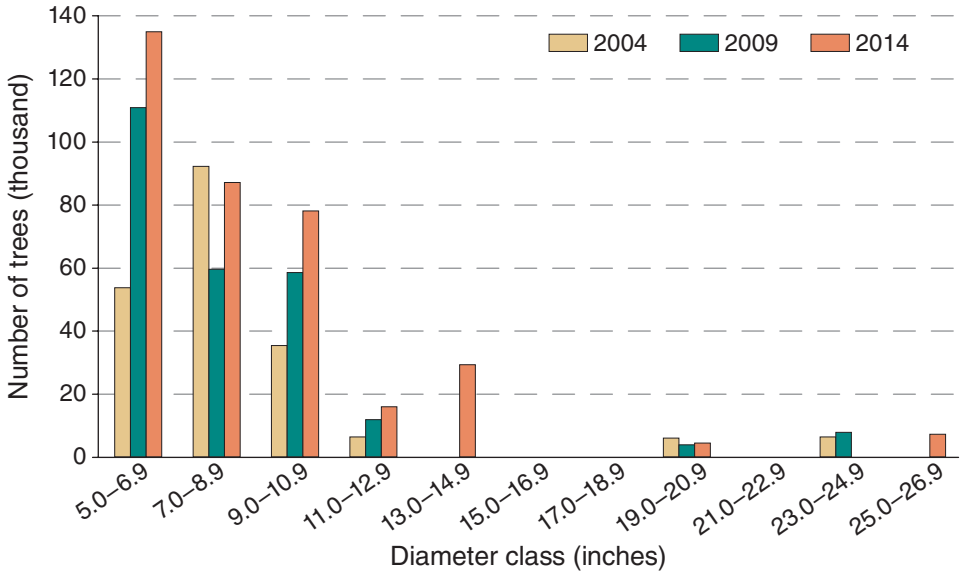

Figure 11—Number of live trees of genip (*Melicoccus bijugatus*) with d.b.h. ≥ 5 inches by diameter class, U.S. Virgin Islands, 2004–14

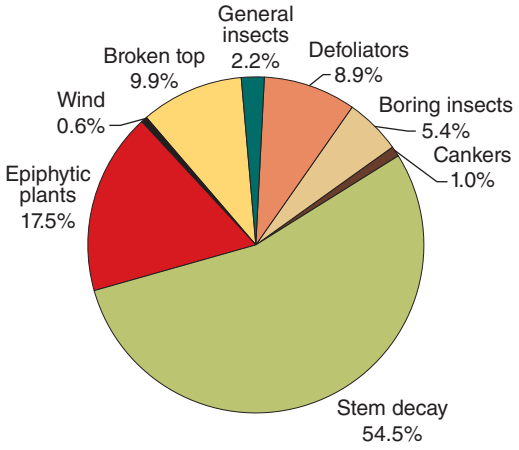

Figure 12—Frequency of tree (d.b.h. ≥ 1 inch) impairment agents observed in the forest inventory, U.S. Virgin Islands, 2014.

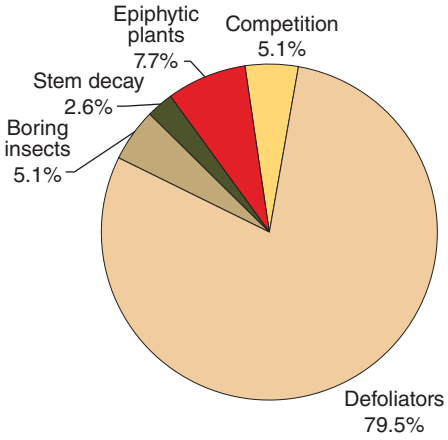

Figure 13—Frequency of seedling (d.b.h. < 1 inch) impairment agents observed in the forest inventory, U.S. Virgin Islands, 2014.

palm leaf skeletonizer (*Homaledra sabalella*) and the larva of the cactus moth (*Cactoblastis cactorum*) were however observed as intense feeders when respectively found in palm species and native cacti within USVI forest stands (Marcano-Vega and Williamson 2017).

Assessed uncompacted crown ratios showed a 9–15 percent reduction from 2004 to 2014 considering all crown classes of trees with d.b.h. ≥ 5 inches (fig. 14). This reduction is indicative of the normal development of stands illustrated on prior sections of this report involving trends in stand-size class, volume, and biomass. As the forest canopy closes during maturity, the crown ratio of trees is expected to decrease due to an increase in competition for light (Holdaway 1986). Only 0.5 percent of the trees assessed on the forest health monitoring plots showed any signs of crown dieback or recent mortality, which begins at the terminal portion of a branch and proceeds toward the trunk. These forest health indicators recorded since the first inventory of 2004 (Brandeis and Oswalt 2007) will serve as baseline data for contrasting conceivable changes due to the passing of hurricanes Irma and María through the USVI, once the ongoing fourth forest inventory is finished.

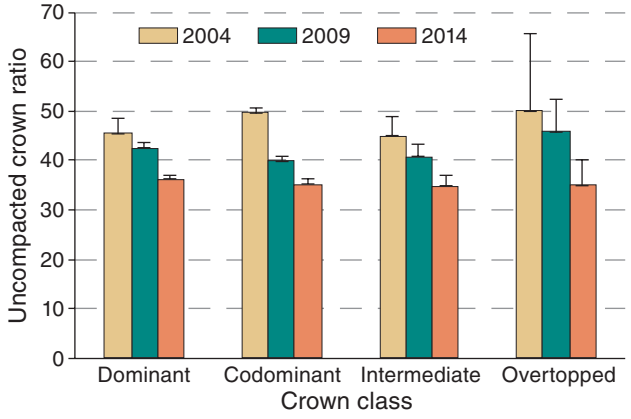

Figure 14—Uncompacted crown ratio with sampling errors by crown class for trees with d.b.h. ≥ 5.0 inches, U.S. Virgin Islands, 2004–14.

CONCLUSIONS

The aim of this report is to provide a rich set of relevant data concerning the dynamics of the forest stands of the U.S. Virgin Islands' from 2004–14, following the overview provided by Marcano-Vega and Williamson (2017). In view of the projections in housing development combined with the influence of recent hurricanes in 2017, the information offered is intended to serve as a baseline for the interpretation of expected changes in the future, and especially when the ongoing forest inventory is planned to be finished shortly after the publication of this bulletin. After witnessing a period of relative stability in forest area corresponding to a development in wood volume, biomass, and carbon stored in live trees from 2004 to 2014, stakeholders will have the opportunity to detect changes involving the structure, composition, and health of their unique forests. The net gain in cubic feet of merchantable stem volume, together with the stewardship potential of considerable private forest land, expose the need to ponder the capability for local artisan-level wood markets, congruent with continuous forest monitoring and conservation. The knowledge gained about the structure and tree species composition characterizing the conditions of closed vs. open forest types and clearings will support the detection of modifications and consequent appropriate management. We hope to serve as a source for informed decisions regarding the welfare of Virgin Islanders, as we continue expanding our insight about the successional patterns, ecosystem services, and resilience portrayed by the forests of the U.S. Virgin Islands.

Tree species such as white leadtree or tan-tan (*Leucaena leucocephala*) have been consistently seen forming dense stands in open areas and clearings since the first forest inventory of the U.S. Virgin Islands in 2004.

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The depressed-globose barrel cactus or turk's cap (*Melocactus intortus*) is a common plant in scrub formations over shallow soils along dry coastal areas of the U.S. Virgin Islands. (photo by Luis Omar Ortiz-López, SRS, U.S. Forest Service)

GLOSSARY

All-live trees—All living trees. All size classes, all tree classes, and both saw-log and nonsaw-log species are included. See FIA tree species list in the field manual.

Average annual mortality—Average annual volume of trees ≥ 5.0 inches diameter at breast height that died from natural causes during the intersurvey period, excluding those removed by harvesting, cultural operations, land clearing or changes in land use.

Average annual removals—Average annual volume of trees ≥ 5.0 inches diameter at breast height removed from the inventory by harvesting, cultural operations (such as timber-stand improvement), land clearing, or changes in land use during the intersurvey period.

Average net annual growth—Average annual net change in volume of trees ≥ 5.0 inches diameter at breast height/ diameter at root collar without taking into account losses from cutting during the intersurvey period.

Basal area—The cross sectional area of a tree at breast height or of all the trees in a stand, usually expressed in square feet per tree or square feet per acre.

Biomass—Total aboveground biomass is estimated using allometric equations and is defined as the aboveground weight of wood and bark in live trees ≥ 1.0-inch diameter at breast height from the ground to the tip of the tree, excluding all foliage (leaves, buds, fruit, and limbs < 0.5 inch in diameter). Biomass is expressed as oven-dry weight and the units are short tons (2,000 pounds, or 0.9072 metric tons).

Additionally, biomass in the merchantable stem is estimated regionally, where the main and merchantable stems are defined as follows:

Main stem—The central portion of the tree extending from the ground level to the tip for timber species. For timber species trees that fork, the main stem refers to the fork that would yield the most merchantable volume.

Merchantable stem—That portion of the main stem of a timber species tree from a 1-foot stump to a minimum 4-inch top diameter inside or outside bark depending on species.

Nationally aboveground and belowground biomass is estimated from each tree's sound volume using a Component Ratio Method that is consistently applied in all FIA regions (Heath and others 2008).

Gross aboveground biomass—Total tree biomass excluding foliage and roots with no deductions made for rotten, missing, or broken-top cubic-foot cull.

Net aboveground biomass—Gross aboveground biomass minus deductions for missing cull, broken-top, and a reduction for a proportion of rotten cull for live or standing dead trees ≥ 5.0 inches d.b.h. (Rotten cull will have a factor to reduce specific gravity separately from sound wood). Live and standing dead trees 1.0–4.9 inches only have deductions for broken-top cull. Additional deductions are made for dead trees ≥ 1.0 inch using decay class.

Belowground biomass—Coarse roots only.

Further, the total net aboveground biomass estimated using the Component Ratio Method is divided into the following components:

Top—That portion of the main stem of a timber species tree above the 4-inch top.

Branches—All the branches of a timber species tree excluding the main stem.

Bole—See: Merchantable stem.

Stump—That portion of timber species below 1-foot to ground level.

Bole—Trunk or main stem of a tree. (See: Main stem.)

Census water—See: Land use.

Codominant tree—See: Crown class.

Components of change—Volume increment and decrement values that explain the change in inventory between two points in time. Components of change are usually expressed in terms of growing-stock or all-live merchantable volume. These components can be expressed as average annual values by dividing the component by the number of years in the measurement cycle.

FIA inventories are designed to measure net change over time, as well as the individual components of change that constitute net change (e.g., growth, removals, mortality). Change estimates are computed for two sequential measurements of each inventory panel. Upon remeasurement, a new initial inventory is established for remeasurement at the next scheduled inventory. As such, computation of change components is not intended to span more than one inventory cycle. Rather, the change estimation process is repeated cycle by cycle. This simplifies field protocols and ensures that change estimation is based on short and relatively constant time intervals (e.g., 5 years).

FIA recognizes the following components of change as prescribed core variables; they usually are expressed in terms of growing-stock or all-live volume, where t is the initial inventory of a measurement cycle, and $t+1$ is the terminal inventory (Scott and others 2005):

Cut—The volume of trees cut between time t and time $t+1$. The estimate is based on tree size at the midpoint of the measurement interval (includes cut growth). Tree size at the midpoint is modeled from tree size at time t. Trees felled or killed in conjunction with a harvest or silvicultural operation (whether they are utilized or not) are included, but trees on land diverted from forest to nonforest (diversions) are excluded.

Cut growth—The growth of cut trees between time t and the midpoint of the measurement interval. Tree size at the midpoint is modeled from tree size at time t. This term also includes the subsequent growth on ingrowth trees that achieve the minimum diameter threshold prior to being cut.

Diversion—The volume of trees on land diverted from forest to nonforest (or, for some analyses, this may also include land diverted to reserved forest land and other forest land), whether utilized or not, between time t and time $t+1$. The estimate is based on tree size at the midpoint of the measurement interval (includes diversion growth). Tree size at the midpoint is modeled from tree size at time t.

Diversion growth—The growth of diversion trees from time t to the midpoint of the measurement interval. Tree size at the midpoint is modeled from tree size at time t. This term also includes the subsequent growth on ingrowth trees that achieve the minimum diameter threshold prior to diversion.

Growth on ingrowth—The growth on trees between the time they grow across the minimum diameter at breast height/diameter at root collar threshold and time $t+1$.

Ingrowth—The volume of trees at the time that they grow across the minimum diameter at breast height/diameter at root collar threshold between time t and time $t+1$. The estimate is based on the size of trees at the diameter at breast height threshold which is 1.0 inch for

all-live trees and 5.0 inches for growing-stock trees. This term also includes trees that subsequently die (i.e., ingrowth mortality), are cut (i.e., ingrowth, cut), or diverted to nonforest (i.e., ingrowth diversion); as well as trees that achieve the minimum threshold after an area reverts to a forest land use (i.e., reversion ingrowth).

Mortality—The volume of trees that die from natural causes between time *t* and time *t* + 1, excluding that removed by harvesting, cultural operations, land clearing or changes in land use. The estimate is based on tree size at the midpoint of the measurement interval (includes mortality growth). Tree size at the midpoint is modeled from tree size at time *t*.

Mortality growth—The growth of trees that died from human or natural causes between time *t* and the midpoint of the measurement interval. Tree size at the midpoint is modeled from tree size at time *t*. This term also includes the subsequent growth on ingrowth trees that achieve the minimum diameter threshold prior to mortality.

Reversion—The volume of trees on land that reverts from a nonforest land use to a forest land use (or, for some analyses, land that reverts from any source to timberland) between time *t* and time *t* + 1. The estimate is based on tree size at the midpoint of the measurement interval. Tree size at the midpoint is modeled from tree size at time *t* + 1.

Reversion growth—The growth of reversion trees from the midpoint of the measurement interval to time *t* + 1. Tree size at the midpoint is modeled from tree size at time *t* + 1. This term also includes the subsequent growth on ingrowth trees that achieve the minimum diameter threshold after reversion.

Survivor growth—The growth on trees tallied at time *t* that survive until time *t* + 1.

Condition class—The combination of discrete landscape and forest attributes that identify, define, and stratify the area associated with a plot. Examples of such attributes include condition status, forest type, stand origin, stand size, owner group, reserve status and stand density (U.S. Department of Agriculture Forest Service 2014).

Crown—The part of a tree or woody plant bearing live branches or foliage (Schomaker and others 2007, U.S. Department of Agriculture Forest Service 2011).

Crown class—A classification of trees based on dominance in relation to adjacent trees in the stand as indicated by crown development and amount of light received from above and the sides (Schomaker and others 2007, U.S. Department of Agriculture Forest Service 2011). Crown classes recognized by forest inventory and analysis include:

Dominant—Trees with crown extending above the general level of the crown canopy and receiving full light from above and partly from the sides. These trees are taller than the average trees in the stand and their crowns are well developed, but they could be somewhat crowded on the sides. Also, trees whose crowns have received full light from above and from all sides during early development and most of their life. Their crown form or shape appears to be free of influence from neighboring trees (U.S. Department of Agriculture Forest Service 2011, 2014).

Codominant—Trees with crowns at the general level of the crown canopy. Crowns receive full light from above but little direct sunlight penetrates their sides. Usually they have medium-sized crowns

and are somewhat crowded from the sides. In stagnated stands, codominant trees have small-sized crowns and are crowded on the sides.

Intermediate—Trees that are shorter than dominants and codominant, but their crowns extend into the canopy of codominant and dominant trees. They receive little direct light from above and none from the sides. As a result, intermediate trees usually have small crowns and are very crowded from the sides.

Open grown—Trees with crowns that received full light from above and from all sides throughout most of its life, particularly during its early developmental period.

Overtopped—Trees with crowns entirely below the general level of the crown canopy that receive no direct sunlight either from above or the sides.

Crown dieback—Recent mortality of branches with fine twigs, which begins at the terminal portion of a branch and proceeds toward the trunk. Dieback is only considered when it occurs in the upper and outer portions of the tree. Dead branches in the lower live crown are not considered as part of crown dieback, unless there is continuous dieback from the upper and outer crown down to those branches (Schomaker and others 2007, U.S. Department of Agriculture Forest Service 2011).

Cull—Portions of a tree that are unusable for industrial wood products because of rot, form, or other defect. Cull is further categorized as the following:

Broken-top cubic-foot cull—The broken-top proportion of a timber species tree's merchantable portion from the break to the actual or projected 4-inch top diameter outside bark, or to where the central stem forks, where all forks are < 4.0 inches diameter. For trees 1.0–4.9 inches diameter this is the proportion of the main stem missing due to a broken-top.

Form board-foot cull—The part of the tree's saw-log portion that is sound but not usable for sawn wood products due to sweep, crook, forking, or other physical culls.

Missing cubic-foot cull—The proportion of a tree's merchantable portion that is missing or absent. Does not include any cull deductions above actual length for broken-top timber trees. Does include cull deductions above actual length for broken-top woodland species. Trees with diameter at breast height/diameter at root collar < 5.0 inches have a null value in this field.

Percent board-foot cull—Percentage of sound and unsound board-foot volume, to the nearest 1 percent.

Rotten cubic-foot cull—The proportion of a tree's merchantable portion that is in a decayed state. Does not include any cull deductions above actual length for broken-top timber trees. Does include cull deductions above actual length for broken-top woodland species. Trees < 5.0 inches diameter at breast height have a null value in this field.

Rotten/missing cull—The part of the tree's merchantable portion that is decayed and/or absent due to other factors.

Total board-foot cull—The proportion of a timber species tree's saw-log portion that is rotten, missing, or sound but not useable for sawn wood products due to sweep, crook, forking, or other physical defects (form board-foot cull). Nonsaw-log species < 11.0 inches diameter at breast height have a null value in this field.

Cull tree—Live trees that are unsuitable for the production of some roundwood products, now or prospectively. Cull trees

can include those with decay (rotten cull) or poor form, limbiness, or splits (rough cull). Rough cull is suitable for pulpwood and other fiber products.

Cut—See: Components of change.

Cutting type—This category of stand treatment indicates the type of cutting that has occurred on the condition. See: Treatment.

Decay class—Qualitative assessment of stage of decay (5 classes) of coarse woody debris based on visual assessments of color of wood, presence/absence of twigs and branches, texture of rotten portions, and structural integrity (Woodall and Williams 2005).

Diameter at breast height (d.b.h.)—The diameter for tree stem, located at 4.5 feet above the ground (breast height) on the uphill side of a tree. The point of diameter measurement may vary on abnormally formed trees.

Diameter class—A classification of trees based on diameter outside bark, measured at breast height (diameter at breast height) above the ground. Note: Diameter classes are commonly in 2-inch increments. Each class provides a range of values with the class name being the approximate midpoint. For example, the 6-inch class includes trees 5.0 through 6.9 inches diameter at breast height.

Diameter inside bark (d.i.b.)—Diameter measured at any point on a tree or log that excludes the bark.

Diameter outside bark (d.o.b.)—Diameter measured at any point on a tree or log that includes the bark.

Disturbance—Natural or human-caused disruption that is at least 1.0 acre in size and results in mortality and/or effect to 25 percent of all trees in a stand or 50 percent of an individual species' count or, in the case when the disturbance does not initially affect tree growth or health (e.g., grazing, browsing, flooding, etc.), affects 25 percent of the soil surface or understory vegetation. For initial forest plot establishment the disturbance must be within the last 5 years. For remeasured plots only those disturbances that have occurred since the previous inventory are recognized.

Diversion—See: Components of change.

Dominant tree—See: Crown class.

Double sampling for stratification—A sampling method whereby a large sample of plots are stratified in Phase 1, then a subsample are measured for all attributes in Phase 2. When the strata are homogeneous with respect to the attribute, then the estimators are more accurate versus simple random sampling (Bechtold and Scott 2005).

Dry weight—The oven-dry weight of biomass.

Fixed-radius plot—A circular sampled area with a specified radius in which all trees of a given size, shrubs, or other items are tallied.

Forest land—Land that is at least 10 percent stocked by forest trees of any size, or land formerly having such tree cover, and is not currently developed for a nonforest use. The minimum area for classification as forest land is 1 acre. Roadside, streamside, and shelterbelt strips of timber must have a crown width at least 120 feet wide to qualify as forest land. Unimproved roads and trails, streams and other bodies of water, or natural clearings in forested areas shall be classified as forest, if <120 feet in width or 1.0 acre in size. Forest land is divided into timberland, reserved forest land, and other forest land (such as woodland) (U.S. Department of Agriculture Forest Service 2014).

Forest type—A classification of forest land based upon site characteristics and the tree species that forms the plurality of live-tree stocking. A forest-type classification for a field location indicates the predominant site characteristics and live-tree species cover for the field location.

Forest-type group—A combination of forest types that share closely associated species or site requirements. For the U.S. Virgin Islands, the following are used by the FIA program:

Subtropical dry forest—Found in areas with about 24 to 44 inches (600 to 1100 mm) of annual precipitation. Some of the native tree species that are common in subtropical dry forest in the U.S. Virgin Islands are gumbo limbo [*Bursera simaruba* (L.) Sarg.], bodywood (*Bourreria succulenta* Jacq.), Jamaican caper (*Capparis cynophallophora* L.), black mampoo [*Guapira fragrans* (Dum. Cours.)], and water mampoo (*Pisonia subcordata* Sw.). The more heavily-disturbed dry forest areas have numerous, smaller stemmed tan tan [*Leucaena leucocephala* (Lam.) deWit], Jamaican nettletree [*Trema micrantha* (L.) Blume] and spineless wattle [*Acacia muricata* (L.) Britton & Rose] individuals.

Subtropical moist forest—Found in areas with about 40 to 88 inches (1000 to 2200 mm) of annual precipitation. Some of the many natural indicator species of subtropical moist forest in the U.S. Virgin Islands include the dog almond [*Andira inermis* (W. Wright) Kunth ex DC.], black mampoo [*Guapira fragrans* (Dum.-Cours.) Little], yellow mombin (*Spondias mombin* L.), gre gre (*Bucida buceras* L.), sandbox tree (*Hura crepitans* L.), kapoktree [*Ceiba pentandra* (L.) Gaertn.], cigar box cedar (*Cedrela odorata* L.), bayrumtree (*Pimenta racemosa* var. racemosa), royal palm (*Roystonea borinquena* O.F. Cook) (on St. Croix only), stinkingtoe (*Hymanaea courbaril* L.), pumpwood (*Cecropia schreberiana* Miq.), and white cedar [*Tabebuia heterophylla* (DC.) Britt.]. While subtropical moist forests have some of the same introduced species found in subtropical dry forest, genip (*Melicoccus bijugatus* Jacq.) is also commonly found.

Mangrove forest—Mangrove forests comprised of *Rhizophora mangle* L., *Avicennia nitidia* Jacq., *Laguncularia racemosa* (L.) Gaertn. f., and *Conocarpus erectus* L. are found along the coastlines and estuaries.

Nonstocked stands—Stands with < 10 percent stocking or canopy coverage of live trees.

Gross aboveground biomass—See: Biomass.

Gross board-foot volume—See: Volume.

Gross cubic-foot volume—See: Volume.

Ingrowth tree—See: Components of change.

Intermediate tree—See: Crown class.

Land—The area of dry land and land temporarily or partly covered by water, such as marshes, swamps, and river flood plains.

Land cover—The dominant vegetation or other kind of material that covers the land surface. A given land cover may have many land uses.

Land use—The purpose of human activity on the land; it is usually, but not always, related to land cover.

Regional present land use categories are as follows:

Accessible timberland—Land that is within the population of interest, is accessible, is on a subplot that can be occupied at subplot center, can safely be visited, and meets the criteria for forest land (see forest land).

Accessible other forest land—Land that meets the definition of accessible forest land, but is incapable of producing 20 cubic feet per acre per year of industrial wood under natural conditions because of adverse site conditions. Adverse conditions include sterile soils, dry climate, poor drainage, high elevation, steepness, and soil rockiness.

Agricultural land—Land managed for crops, pasture, or other agricultural use. The area must be at least 1.0 acre in size and 120-feet wide (with the exception of windbreak/shelterbelt, which has no minimum width). This land use includes cropland, pasture (improved through cultural practices), idle farmland, orchard, maintained wildlife opening, and windbreak/shelterbelt.

Rangeland—Land primarily composed of grasses, forbs, or shrubs. This includes lands vegetated naturally or artificially to provide a plant cover managed like native vegetation and does not meet the definition of pasture. The area must be at least 1.0 acre in size and 120-feet wide.

Developed—Land used primarily by humans for purposes other than forestry or agriculture. This land use includes cultural (business, industrial/commercial, residential, and other places of intense human activity), rights-of-way (improved roads, railway, power lines, maintained canal), recreation (parks, skiing, golf courses), and mining.

Other—Land parcels > 1.0 acre in size and > 120.0-feet wide, which do not fall into one of the uses described above. Examples include undeveloped beaches, barren land (rock, sand), marshes, bogs, ice, and snow. This land use includes nonvegetated, wetland, and beach.

Census water—Rivers and streams that are > 200-feet wide and bodies of water > 4.5 acres in size.

Noncensus water—Rivers, streams, and other bodies of water that do not meet the requirements for census water.

Nonsampled—Not sampled due to denied access, hazardous conditions, being outside the United States, or other reasons.

Large-diameter trees—Trees ≥ 11.0 inches diameter at breast height. These trees were called sawtimber-sized trees in prior surveys. See: Stand-size class.

Life zone—The Holdridge life zone model defines ecological life zones using mean annual precipitation and mean annual biotemperature (Holdridge 1967, Ewel and Whitmore 1973). The forested life zones found on the U.S. Virgin Islands are subtropical dry forest and subtropical moist forest.

Log—Eight foot (2.4 m) or longer tree segment suitable for processing into lumber, veneer, or other wood products.

Main stem—The central portion of the tree extending from the ground level to the tip. For timber species trees that fork, the main stem follows the fork that would yield the most merchantable volume.

Medium-diameter tree—Tree species 5.0 to 10.9 inches diameter at breast height. These trees were called poletimber-sized trees in prior surveys. See: Stand-size class.

Merchantable portion—The portion of the main stem of a timber species tree from a 1-foot stump to a minimum 4-inch top diameter inside or outside bark depending on species.

Microplot—A circular, fixed-radius plot with a radius of 6.8 feet (0.003 acre) that is used to sample trees < 5.0 inches diameter at breast height, as well as other vegetation. Point center is 90 degrees and 12 feet offset from point center of each subplot (Bechtold and Scott 2005).

Missing cubic-foot cull—See: Cull.

Mortality—See: Components of change.

National forest land—See: Ownership.

Net aboveground biomass—See: Biomass.

Net board-foot volume—See: Volume.

Net cubic-foot volume—See: Volume.

Noncensus water—See: Land use.

Nonforest land—Land that does not support or has never supported, forests, and lands formerly forested where use for timber management is precluded by development for other uses. Includes areas used for crops, improved pasture, residential areas, city parks, improved roads of any width and adjoining rights-of-way, power line clearings of any width, and noncensus water. If intermingled in forest areas, unimproved roads and nonforest strips must be >120-feet wide, and clearings, etc., >1.0 acre in size, to qualify as nonforest land (U.S. Department of Agriculture Forest Service 2014).

Nonindustrial private forest land—See: Ownership.

Open-grown trees—See: Crown class.

Other forest land—Forest land other than timberland and reserved forest land. It includes available and reserved forest land that is incapable of producing 20 cubic feet per acre per year of wood under natural conditions because of adverse site conditions such as sterile soils, dry climate, poor drainage, high elevation, steepness, or rockiness.

Other public land—See: Ownership.

Other removals—The volume of trees removed from the inventory by cultural operations such as timber stand improvement, land clearing, and other changes in land use, resulting in the removal of the trees from timberland.

Overstory canopy zone—Average live crown height for all trees in a forest. The bottom of the overstory canopy zone is the average height of the live crown bases. The top of the overstory canopy zone is the average height of the live crown tops.

Overtopped—See: Crown class.

Ownership—A legal entity having control of a parcel or group of parcels of land. An ownership may be an individual; a combination of persons; a legal entity such as corporation, partnership, club, or trust; or a public agency.

National forest land—Federal land that has been legally designated as national forests or purchase units, and other land under the administration of the Forest Service, including experimental areas and Bankhead-Jones Title III land.

Forest industry land—An ownership class of private lands owned by a company or an individual(s) operating a primary wood-processing plant.

Nonindustrial private forest (NIPF) land—Privately owned land excluding forest industry land.

Corporate—Owned by corporations, including incorporated farm ownerships.

Individual—All lands owned by individuals, including farm operators.

Other public—An ownership class that includes all public lands except national forests.

Miscellaneous Federal land—Federal land other than national forests.

State, county, and municipal land—Land owned by States, counties, and local

public agencies or municipalities, or land leased to these governmental units for 50 years or more.

Phase 1 (P1)—Forest inventory and analysis activities related to remote sensing, the primary purpose of which is to label plots and obtain stratum weights for population estimates (Bechtold and Scott 2005).

Phase 2 (P2)—Forest inventory and analysis activities conducted on the network of ground plots. The primary purpose is to obtain field data that enable classification and summarization of area, tree, and other attributes associated with forest land uses (Bechtold and Scott 2005).

Phase 3 (P3)—A subset of phase 2 plots where additional attributes related to forest health are measured (Bechtold and Scott 2005).

Plantation—Stands that currently show evidence of being planted or artificially seeded.

Poletimber-sized tree—Tree species 5.0 to 10.9 inches diameter at breast height Now referred to as medium-diameter trees.

Private land—See: Ownership.

Reserved forest land—Forest land where management for the production of wood products is prohibited through statute or administrative designation. Examples include national forest wilderness areas and national parks and monuments.

Reversion—Land that reverts from a nonforest land use to a forest land use. See: Components of change.

Rotten cubic-foot cull—See: Cull.

Rotten cull—See: Tree class.

Rotten/missing cull—See: Cull.

Rotten trees—Live timber species (excludes nonsaw-log species) that do not contain at least one 12-foot saw log or two noncontiguous 8-foot merchantable logs now or prospectively primarily because of rotten cull. Less than ⅓ of its gross board-foot volume meets size, soundness, and grade requirements and <½ of the total board-foot cull is due to form board-foot cull.

Rough cull—See: Tree class.

Sampling error—The standard error of the mean expressed as a percentage. This percentage format allows the application of confidence intervals to the population values (the most common values presented in FIA reports). Most FIA sampling errors are presented at the 0.6827 level but the 0.95 level can easily be obtained by multiplying the sampling error by 1.96, or higher appropriate *t*-value if *n* is <120.

Sapling—Live trees 1.0 to 4.9 inches diameter at breast height (U.S. Department of Agriculture Forest Service 2014).

Sawtimber-sized trees—Tree species ≥11.0 inches diameter at breast height. Now referred to as large-diameter trees.

Seedling—Live trees <1.0-inch diameter at breast height that are ≥12 inches in height.

Small-diameter trees—Trees 1.0 to 4.9 inches in diameter at breast height. These were called sapling-seedling sized trees in prior surveys. See: Stand-size class.

Species group—A collection of species used for reporting purposes.

Stand—Vegetation or a group of plants occupying a specific area and sufficiently uniform in species composition, age arrangement, structure, and condition as to be distinguished from the vegetation on adjoining areas.

Stand origin—A classification of forest stands describing their means of origin.

Planted—Planted or artificially seeded.

Natural—No evidence of artificial regeneration.

Standing dead tree—A dead tree ≥ 5.0 inches diameter at breast height that has a bole which has an unbroken actual length of at least 4.5 feet, and lean < 45 degrees from vertical as measured from the base of the tree to 4.5 feet.

Stand-size class—A classification of forest land based on the diameter-class distribution of live trees in the stand. See definitions of large-, medium-, and small-diameter trees.

Large-diameter stands—Stands at least 10 percent stocked with live trees, with one-half or more of total stocking in large- and medium-diameter trees, and with large-diameter tree stocking at least equal to medium-diameter tree stocking.

Medium-diameter stands—Stands at least 10 percent stocked with live trees, with one-half or more of total stocking in medium- and large-diameter trees, and with medium-diameter tree stocking exceeding large-diameter tree stocking.

Small-diameter stands—Stands at least 10 percent stocked with live trees, in which small-diameter trees account for more than one-half of total stocking.

Nonstocked stands—Stands < 10 percent stocked with live trees.

State, county, and municipal land—See: Ownership.

Stratification—A statistical tool used to reduce the variance of the attributes of interest by partitioning the population into homogenous strata. It may also involve partitioning a highly variable but small portion of the population.

Subplot—A circular area with a fixed horizontal radius of 24.0 feet (1/24 acre), primarily used to sample trees ≥ 5.0 inches diameter at breast height (Bechtold and Scott 2005).

Survivor growth—See: Components of change.

Survivor tree—A sample tree alive at both the current and previous inventories.

Total length—The total length of the tree, recorded to the nearest 1.0 foot from ground level to the tip of the apical meristem. Trees growing on a slope are measured on the uphill side of the tree. If the tree has a broken or missing top, the total length is estimated to what the length would be if there were no missing or broken top. Forked trees are treated the same as unforked trees (U.S. Department of Agriculture Forest Service 2014).

Total tree biomass—See: Biomass.

Treatment—Forestry treatments are a form of human disturbance. The term treatment further implies that a silvicultural application has been prescribed. This does not include occasional stumps of unknown origin or sparse removals for firewood or other miscellaneous purposes. The area affected by any treatment must be at least 1.0 acre in size.

None—No observable treatment.

Cutting—The removal of trees from a stand. SRS-FIA categories are the following:

Clearcut harvest—The removal of the majority of the merchantable trees in a stand; residual stand stocking is under 50 percent.

Partial harvest—Removal primarily consisting of highest quality trees. Residual consists of lower quality trees because of high grading or

selection harvest (e.g. uneven aged, group selection, high grading, species selection).

Seed-tree/shelterwood harvest—Crop trees are harvested leaving seed source trees either in a shelterwood or seed tree. Also includes the final harvest of the seed trees.

Commercial thinning—The removal of trees (usually of medium diameter) from medium-diameter stands leaving sufficient stocking of growing-stock trees to feature in future stand development. Also included are thinning in large-diameter stands where medium-diameter trees have been removed to improve quality of those trees featured in a final harvest.

Timber stand improvement (cut trees only)—The cleaning, release, or other stand improvement involving noncommercial cutting applied to an immature stand that leaves sufficient stocking.

Salvage cutting—The harvesting of dead or damaged trees or of trees in danger of being killed by insects, disease, flooding, or other factors in order to save their economic value.

Site preparation—Clearing, slash burning, chopping, disking, bedding, or other practices clearly intended to prepare a site for either natural or artificial regeneration.

Artificial regeneration—Following a disturbance or treatment (usually cutting), a new stand where at least 50 percent of the live trees present resulted from planting or direct seeding.

Natural regeneration—Following a disturbance or treatment (usually cutting), a new stand where at least 50 percent of the live trees present (of any size) were established through the growth of existing trees and/or natural seeding or sprouting.

Other silvicultural treatment—The use of fertilizers, herbicides, girdling, pruning, or other activities designed to improve the commercial value of the residual stand, or chaining, which is a practice used on woodlands to encourage wildlife forage.

Tree—A woody perennial plant, typically large, with a single well-defined stem carrying a more or less definite crown; sometimes defined as attaining a minimum diameter of 3 inches and a minimum height of 15 feet at maturity. For FIA, any plant on the tree list in the current field manual is measured as a tree (U.S. Department of Agriculture Forest Service 2014).

Uncompacted live-crown ratio—The length of a tree that supports live foliage relative to actual tree length. The ratio is determined by dividing the live crown length by the actual tree length, then multiplying by 100 and expressing the ratio as a percentage (Schomaker and others 2007, U.S. Department of Agriculture Forest Service 2011).

Volume—A measure of the solid content of the tree stem used to measure wood quantity.

Gross board-foot volume—Total board-foot volume of wood inside bark without deductions for total board-foot cull.

Gross cubic-foot volume—Total cubic-foot volume of wood inside bark without deductions for rotten, missing, or broken-top cull.

Net board-foot volume—Gross board-foot volume minus deductions for total board-foot cull.

Net cubic-foot volume—Gross cubic-foot volume minus deductions for rotten, missing, and broken-top cull.

Table A.1—Number of plots by survey unit and land status, U.S. Virgin Islands, 2014

Survey unit	Total plots	Forest inventory		
		Forested	Nonforest	Nonsampled
		number of plots		
St. Croix	54	30	14	10
St. John	23	16	3	4
St. Thomas	29	15	8	6
All units	106	61	25	20

Table A.2—Area by survey unit and land status, U.S. Virgin Islands, 2014

Survey unit	Total area	Land status					
		All forest	Unreserved	Reserved	Nonforest land	Census water	Forest
	acres						*percent*
St. Croix	52,819	29,610	28,167	1,443	23,209	0	56.06
St. John	12,096	9,830	1,535	8,294	2,266	0	81.27
St. Thomas	17,249	7,528	7,528	0	9,721	0	43.64
All survey units	82,164	46,967	37,230	9,738	35,196	0	57.16

Numbers in rows and columns may not sum to totals due to rounding.

0 = no sample for the cell or a value of > 0 but < 0.5.

Table A.3—Area of forest land by ownership class and land status, U.S. Virgin Islands, 2014

Ownership class	All forest land	Land status	
		Unreserved	Reserved
		acres	
U.S. Forest Service			
National Park Service	9,738	0	9,738
Total	9,738	0	9,738
Territory and local government			
Local	2,056	2,056	0
Total	2,056	2,056	0
Nonindustrial private			
Corporate	2,963	2,963	0
Conservation/natural resources organization	1,221	1,221	0
Individual	30,990	30,990	0
Total	35,174	35,174	0
All classes	46,967	37,230	9,738

Numbers in rows and columns may not sum to totals due to rounding.

0 = no sample for the cell or a value of > 0 but < 0. 5.

Table A.4—Area of forest land by forest type and ownership group, U.S. Virgin Islands, 2014

Forest-type	All ownerships	Ownership group				
		U.S. Forest Service	Other Federal	Territory and local government	Forest industry	Nonindustrial private
				acres		
Hardwood						
Dry forest	33,536	0	6,282	2,056	0	25,199
Moist forest	13,432	0	3,456	0	0	9,976
Total hardwoods	46,967	0	9,738	2,056	0	35,174
All forest types	46,967	0	9,738	2,056	0	35,174

Numbers in rows and columns may not sum to totals due to rounding.
0 = no sample for the cell or a value of > 0 but < 0. 5.

Table A.5—Area of forest land by forest-type and stand-size class, U.S. Virgin Islands, 2014

Forest-type	All classes	Stand-size class			
		Large diameter	Medium diameter	Small diameter	Non-stocked
			acres		
Hardwood					
Dry forest	33,536	470	4,616	28,450	0
Moist forest	13,432	1,912	2,135	9,384	0
Total hardwoods	46,967	2,382	6,751	37,835	0
All forest types	46,967	2,382	6,751	37,835	0

Numbers in rows and columns may not sum to totals due to rounding.
0 = no sample for the cell or a value of > 0 but < 0. 5.

Table A.6—All tree species with d.b.h. ≥ 5.0 inches by scientific name, number tallied, relative density, species sum total basal area, relative dominance, number of plots where species was found, relative frequency, and importance value, U.S. Virgin Islands, 2014. Nomenclature based on USDANRCS PLANTS 2015 database. (Total stems counted = 670; total sum of basal area = 255.63 ft^2; Total number of plots = 56; total sampled area = 7.42 acres.)

Scientific name	Species	Relative density	Species basal area	Relative dominance	Species plot count	Relative frequency	Importance value
	- number -		- - ft^2 - -		- number -		
Guapira fragrans	102	13.34	34.55	13.52	28	13.27	13.37
Bursera simaruba	69	13.23	29.56	11.56	17	8.06	10.95
Bourreria succulenta	56	9.96	15.10	5.91	21	9.95	8.61
Melicoccus bijugatus	60	7.35	28.60	11.19	10	4.74	7.76
Acacia muricata	51	5.58	13.76	5.38	6	2.84	4.60
Pisonia subcordata	33	4.20	14.73	5.76	8	3.79	4.58
Acacia farnesiana	30	5.26	9.21	3.60	8	3.79	4.22
Swietenia mahagoni	12	2.63	19.24	7.53	4	1.90	4.02
Maytenus laevigata	22	3.33	4.51	1.77	7	3.32	2.81
Andira inermis	12	1.31	9.28	3.63	5	2.37	2.44
Albizia lebbeck	16	1.80	5.33	2.09	5	2.37	2.08
Mangifera indica	11	2.38	8.66	3.39	1	0.47	2.08
*Cordia ricksecker*i	10	2.53	3.56	1.39	4	1.90	1.94
Tabebuia heterophylla	14	1.65	3.19	1.25	6	2.84	1.91
Trema micrantha	16	1.85	2.67	1.04	6	2.84	1.91
Coccoloba microstachya	17	2.56	5.04	1.97	2	0.95	1.83
Cordia alliodora	13	1.48	3.82	1.50	5	2.37	1.78
Citharexylum fruticosum	8	1.40	2.38	0.93	6	2.84	1.72
Tamarindus indica	4	0.43	4.38	1.72	3	1.42	1.19
Piscidia carthagenensis	6	0.73	1.09	0.43	5	2.37	1.18
Pilosocereus royenii	6	1.04	1.43	0.56	4	1.90	1.17
Krugiodendron ferreum	8	0.86	1.78	0.69	4	1.90	1.15
Thespesia populnea	5	2.16	1.33	0.52	1	0.47	1.05
Laguncularia racemosa	5	2.16	0.96	0.38	1	0.47	1.00
Guettarda scabra	6	0.71	1.02	0.40	4	1.90	1.00
Hymenaea courbaril	5	0.55	3.42	1.34	2	0.95	0.94
Chrysophyllum pauciflorum	6	0.65	3.10	1.21	2	0.95	0.94
Inga laurina	6	0.68	1.49	0.58	2	0.95	0.74
Albizia procera	6	0.69	1.37	0.53	2	0.95	0.72
Coccoloba diversifolia	7	0.76	1.58	0.62	1	0.47	0.62
Bucida buceras	4	0.58	2.01	0.79	1	0.47	0.61
Samanea saman	3	0.32	2.45	0.96	1	0.47	0.59
Capparis indica	3	0.43	0.90	0.35	2	0.95	0.58
Zanthoxylum martinicense	2	0.86	0.93	0.37	1	0.47	0.57
Manilkara zapota	1	0.11	2.86	1.12	1	0.47	0.57
Myrciaria floribunda	3	0.32	0.58	0.23	2	0.95	0.50
Cedrela odorata	1	0.11	2.14	0.84	1	0.47	0.47
Cassine xylocarpa	2	0.25	0.33	0.13	2	0.95	0.44

(continued)

Table A.6—All tree species with d.b.h. ≥ 5.0 inches by scientific name, number tallied, relative density, species sum total basal area, relative dominance, number of plots where species was found, relative frequency, and importance value, U.S. Virgin Islands, 2014. Nomenclature based on USDANRCS PLANTS 2015 database. (Total stems counted = 670; total sum of basal area = 255.63 ft^2; Total number of plots = 56; total sampled area = 7.42 acres.) (continued)

Scientific name	Species	Relative density	Species basal area	Relative dominance	Species plot count	Relative frequency	Importance value
	- number -		- - ft^2 - -		- number -		
Leucaena leucocephala	2	0.22	0.28	0.11	2	0.95	0.43
Haematoxylum campechianum	2	0.56	0.41	0.16	1	0.47	0.40
Margaritaria nobilis	2	0.22	1.19	0.46	1	0.47	0.38
Coccoloba uvifera	3	0.43	0.55	0.22	1	0.47	0.37
Cassia fistula	3	0.32	0.62	0.24	1	0.47	0.35
Morisonia americana	2	0.29	0.40	0.16	1	0.47	0.31
Guettarda odorata	2	0.22	0.48	0.19	1	0.47	0.29
Pimenta racemosa	1	0.11	0.61	0.24	1	0.47	0.27
Myrcia citrifolia	2	0.22	0.33	0.13	1	0.47	0.27
Sideroxylon obovatum	1	0.11	0.59	0.23	1	0.47	0.27
Cordia laevigata	1	0.11	0.35	0.14	1	0.47	0.24
Adelia ricinella	1	0.14	0.26	0.10	1	0.47	0.24
Canella winteriana	1	0.14	0.18	0.07	1	0.47	0.23
Erythroxylum rotundifolium	1	0.11	0.18	0.07	1	0.47	0.22
Chionanthus compactus	1	0.11	0.18	0.07	1	0.47	0.22
Chrysophyllum argenteum	1	0.11	0.18	0.07	1	0.47	0.22
Poitea florida	1	0.11	0.16	0.06	1	0.47	0.22
Eugenia rhombea	1	0.11	0.16	0.06	1	0.47	0.21
Tecoma stans	1	0.11	0.15	0.06	1	0.47	0.21

Table A.7—All tree species with d.b.h. < 5.0 inches by scientific name, number tallied, relative density, species sum total basal area, relative dominance, number of plots where species was found, relative frequency, and importance value, U.S. Virgin Islands, 2014. Nomenclature based on USDANRCS PLANTS 2015 database. (Total stems counted = 1,284; total sum of basal area = 32.29 ft^2; Total number of plots = 60; total sampled area = 0.63 acres.)

Scientific name	Species	Relative density	Species basal area	Relative dominance	Species plot count	Relative frequency	Importance value
	- number -		- - ft^2 - -		- number -		
Leucaena leucocephala	334	28.07	7.20	22.30	35	10.87	20.41
Trema micrantha	83	5.55	2.55	7.91	10	3.11	5.52
Guapira fragrans	55	4.15	1.93	5.99	18	5.59	5.24
Bourreria succulenta	53	3.58	1.89	5.84	15	4.66	4.69
Acacia muricata	58	4.01	2.08	6.44	6	1.86	4.10
Maytenus laevigata	52	3.77	1.83	5.67	6	1.86	3.77
Citharexylum spinosum	27	2.18	0.81	2.49	15	4.66	3.11
Erythroxylum rotundifolium	28	1.83	0.48	1.50	13	4.04	2.45
Myrciaria floribunda	36	2.37	0.80	2.47	8	2.48	2.44
Capparis cynophallophora	23	1.64	0.66	2.03	11	3.42	2.36
Eugenia biflora	30	2.06	0.47	1.46	8	2.48	2.00
Guettarda scabra	21	1.38	0.60	1.86	8	2.48	1.91
Bursera simaruba	8	1.49	0.43	1.32	7	2.17	1.66
Eugenia monticola	25	1.64	0.46	1.43	6	1.86	1.64
Tecoma stans	25	1.78	0.32	1.00	5	1.55	1.44
Coccothrinax barbadensis	14	0.88	0.68	2.10	3	0.93	1.30
Coccoloba uvifera	19	1.58	0.61	1.88	1	0.31	1.26
Krugiodendron ferreum	9	0.79	0.22	0.69	7	2.17	1.22
Eugenia cordata	17	1.06	0.30	0.93	5	1.55	1.18
Morisonia americana	21	1.56	0.32	1.00	3	0.93	1.16
Melicoccus bijugatus	11	0.89	0.30	0.92	5	1.55	1.12
Coccoloba microstachya	16	1.48	0.28	0.87	3	0.93	1.09
Acacia farnesiana	9	0.62	0.42	1.30	4	1.24	1.05
Pictetia aculeata	23	1.43	0.44	1.36	1	0.31	1.03
Randia aculeata	9	0.58	0.11	0.34	7	2.17	1.03
Capparis hastata	7	0.46	0.10	0.32	6	1.86	0.88
Eugenia rhombea	14	0.87	0.17	0.52	4	1.24	0.88
Amyris elemifera	10	0.62	0.14	0.43	5	1.55	0.87
Capparis flexuosa	11	1.01	0.21	0.64	3	0.93	0.86
Eugenia sessiliflora	12	1.50	0.25	0.76	1	0.31	0.86
Myrcia citrifolia	10	0.75	0.25	0.76	3	0.93	0.81
Swietenia mahagoni	6	0.96	0.07	0.22	4	1.24	0.81
Adelia ricinella	8	0.58	0.16	0.50	4	1.24	0.78
Croton astroites	9	0.69	0.11	0.35	4	1.24	0.76
Capparis indica	8	0.54	0.14	0.44	4	1.24	0.74
Nectandra coriacea	6	0.39	0.29	0.89	3	0.93	0.74
Rondeletia inermis	6	0.40	0.28	0.86	3	0.93	0.73
Exostema caribaeum	8	0.54	0.22	0.67	3	0.93	0.72

(continued)

Table A.7—All tree species with d.b.h. < 5.0 inches by scientific name, number tallied, relative density, species sum total basal area, relative dominance, number of plots where species was found, relative frequency, and importance value, U.S. Virgin Islands, 2014. Nomenclature based on USDANRCS PLANTS 2015 database. (Total stems counted = 1,284; total sum of basal area = 32.29 ft^2; Total number of plots = 60; total sampled area = 0.63 acres.) (continued)

Scientific name	Species	Relative density	Species basal area	Relative dominance	Species plot count	Relative frequency	Importance value
	- number -		- - ft^2 - -		- number -		
Pithecellobium unguis-cati	11	1.04	0.15	0.47	2	0.62	0.71
Poitea florida	6	0.37	0.25	0.76	3	0.93	0.69
Pithecellobium dulce	6	1.50	0.07	0.22	1	0.31	0.68
Pisonia subcordata	5	0.42	0.42	1.29	1	0.31	0.67
Tabebuia heterophylla	7	0.44	0.28	0.86	2	0.62	0.64
Laguncularia racemosa	4	1.00	0.16	0.50	1	0.31	0.60
Guettarda odorata	5	0.33	0.13	0.39	3	0.93	0.55
Chionanthus compactus	3	0.21	0.15	0.47	3	0.93	0.54
Chrysophyllum pauciflorum	6	0.37	0.19	0.59	2	0.62	0.53
Faramea occidentalis	9	0.56	0.18	0.55	1	0.31	0.48
Eugenia procera	4	1.00	0.03	0.08	1	0.31	0.46
Eugenia pseudopsidium	4	0.27	0.04	0.12	3	0.93	0.44
Cordia sebestena	5	0.80	0.07	0.20	1	0.31	0.44
Schaefferia frutescens	6	0.37	0.09	0.26	2	0.62	0.42
Euphorbia petiolaris	6	0.37	0.12	0.38	1	0.31	0.36
Erithalis fruticosa	6	0.50	0.08	0.25	1	0.31	0.35
Casearia sylvestris	6	0.37	0.11	0.35	1	0.31	0.35
Colubrina arborescens	3	0.21	0.07	0.20	2	0.62	0.34
Triphasia trifolia	5	0.31	0.03	0.10	2	0.62	0.34
Mangifera indica	2	0.25	0.13	0.41	1	0.31	0.32
Casearia decandra	3	0.19	0.02	0.07	2	0.62	0.29
Casearia guianensis	2	0.15	0.03	0.09	2	0.62	0.29
Plumeria alba	4	0.29	0.07	0.21	1	0.31	0.27
Cassine xylocarpa	5	0.31	0.05	0.16	1	0.31	0.26
Albizia lebbeck	2	0.12	0.10	0.32	1	0.31	0.25
Pilosocereus royenii	1	0.08	0.10	0.31	1	0.31	0.24
Savia sessiliflora	4	0.25	0.04	0.13	1	0.31	0.23
Guettarda elliptica	2	0.17	0.06	0.17	1	0.31	0.22
Cordia alliodora	1	0.12	0.06	0.20	1	0.31	0.21
Ardisia obovata	2	0.12	0.06	0.18	1	0.31	0.21
Neea buxifolia	3	0.19	0.03	0.10	1	0.31	0.20
Chrysophyllum argenteum	3	0.19	0.03	0.10	1	0.31	0.20
Cordia rickseckeri	1	0.08	0.06	0.17	1	0.31	0.19

(continued)

Table A.7—All tree species with d.b.h. < 5.0 inches by scientific name, number tallied, relative density, species sum total basal area, relative dominance, number of plots where species was found, relative frequency, and importance value, U.S. Virgin Islands, 2014. Nomenclature based on USDANRCS PLANTS 2015 database. (Total stems counted = 1,284; total sum of basal area = 32.29 ft^2; Total number of plots = 60; total sampled area = 0.63 acres.) (continued)

Scientific name	Species	Relative density	Species basal area	Relative dominance	Species plot count	Relative frequency	Importance value
	- number -		*- - ft^2 - -*		*- number -*		
Rondeletia pilosa	2	0.12	0.04	0.11	1	0.31	0.18
Crescentia cujete	2	0.17	0.01	0.05	1	0.31	0.17
Gymnanthes lucida	2	0.12	0.02	0.07	1	0.31	0.17
Zanthoxylum monophyllum	1	0.06	0.04	0.12	1	0.31	0.17
Daphnopsis americana	1	0.08	0.03	0.10	1	0.31	0.16
Ixora ferrea	2	0.12	0.01	0.04	1	0.31	0.16
Solanum polygamum	2	0.12	0.01	0.04	1	0.31	0.16
Ficus citrifolia	1	0.06	0.02	0.07	1	0.31	0.15
Haematoxylum campechianum	1	0.06	0.02	0.07	1	0.31	0.15
Croton flavens	1	0.06	0.01	0.04	1	0.31	0.14
Eugenia xerophytica	1	0.06	0.01	0.03	1	0.31	0.14
Crossopetalum rhacoma	1	0.06	0.01	0.03	1	0.31	0.13
Comocladia dodonaea	1	0.06	0.01	0.02	1	0.31	0.13
Solanum torvum	1	0.06	0.01	0.02	1	0.31	0.13
Capparis baducca	1	0.06	0.01	0.02	1	0.31	0.13
Piscidia carthagenensis	1	0.06	0.01	0.02	1	0.31	0.13

Table A.8—Tree species with d.b.h. ≥ 5.0 inches in subtropical dry forest by scientific name, number tallied, relative density, species sum total basal area, relative dominance, number of plots where species was found, relative frequency, and importance value, U.S. Virgin Islands, 2014. Nomenclature based on USDANRCS PLANTS 2015 database. (Total stems counted = 365; total sum of basal area = 136.81 ft^2; Total number of plots = 37; total sampled area = 4.78 acres.)

Scientific name	Species	Relative density	Species basal area	Relative dominance	Species plot count	Relative frequency	Importance value
	- number -		- - ft^2 - -		- number -		
Bursera simaruba	52	18.45	21.96	16.05	11	9.17	14.55
Guapira fragrans	36	8.78	10.54	7.71	16	13.33	9.94
Melicoccus bijugatus	42	7.87	21.63	15.81	6	5.00	9.56
Bourreria succulenta	32	10.80	8.61	6.29	13	10.83	9.31
Acacia farnesiana	29	8.51	9.02	6.59	7	5.83	6.98
Pisonia subcordata	28	5.87	13.41	9.81	6	5.00	6.89
Swietenia mahagoni	11	4.18	7.34	5.37	3	2.50	4.02
Mangifera indica	11	3.94	8.66	6.33	1	0.83	3.70
Maytenus laevigata	14	4.09	2.92	2.14	5	4.17	3.46
Trema micrantha	15	2.87	2.46	1.80	5	4.17	2.94
Tamarindus indica	4	0.72	4.38	3.20	3	2.50	2.14
Acacia muricata	12	2.27	2.14	1.56	3	2.50	2.11
Thespesia populnea	5	3.58	1.33	0.97	1	0.83	1.79
Tabebuia heterophylla	8	1.50	1.86	1.36	3	2.50	1.79
Laguncularia racemosa	5	3.58	0.96	0.70	1	0.83	1.70
Piscidia carthagenensis	5	0.95	0.95	0.69	4	3.33	1.66
Pilosocereus royenii	5	1.55	1.17	0.85	3	2.50	1.63
Citharexylum spinosum	4	0.78	1.38	1.01	3	2.50	1.43
Krugiodendron ferreum	5	0.89	1.03	0.75	3	2.50	1.38
Hymenaea courbaril	4	0.72	3.09	2.26	1	0.83	1.27
Coccoloba diversifolia	7	1.25	1.58	1.16	1	0.83	1.08
Samanea saman	3	0.54	2.45	1.79	1	0.83	1.05
Capparis indica	3	0.72	0.90	0.66	2	1.67	1.01
Cordia alliodora	3	0.66	0.68	0.50	2	1.67	0.94
Coccoloba microstachya	2	0.37	1.75	1.28	1	0.83	0.83
Haematoxylum campechianum	2	0.93	0.41	0.30	1	0.83	0.69
Coccoloba uvifera	3	0.72	0.55	0.41	1	0.83	0.65
Albizia lebbeck	2	0.36	0.64	0.47	1	0.83	0.55
Morisonia americana	2	0.48	0.40	0.29	1	0.83	0.53
Sideroxylon obovatum	1	0.18	0.59	0.43	1	0.83	0.48
Cordia laevigata	1	0.18	0.35	0.26	1	0.83	0.42
Adelia ricinella	1	0.24	0.26	0.19	1	0.83	0.42
Canella winteriana	1	0.24	0.18	0.13	1	0.83	0.40
Cordia rickseckeri	1	0.18	0.24	0.17	1	0.83	0.40
Cassine xylocarpa	1	0.18	0.19	0.14	1	0.83	0.38
Chrysophyllum argenteum	1	0.18	0.18	0.13	1	0.83	0.38
Andira inermis	1	0.18	0.16	0.12	1	0.83	0.38
Poitea florida	1	0.18	0.16	0.12	1	0.83	0.38
Eugenia rhombea	1	0.18	0.16	0.12	1	0.83	0.38
Leucaena leucocephala	1	0.18	0.14	0.10	1	0.83	0.37

Table A.9—Tree species with d.b.h. < 5.0 inches in subtropical dry forest by scientific name, number tallied, relative density, species sum total basal area, relative dominance, number of plots where species was found, relative frequency, and importance value, U.S. Virgin Islands, 2014. Nomenclature based on USDANRCS PLANTS 2015 database. (Total stems counted = 866; total sum of basal area = 21.52 ft^2; Total number of plots = 42; total sampled area = 0.43 acres.)

Scientific name	Species	Relative density	Species basal area	Relative dominance	Species plot count	Relative frequency	Importance value
	- number -		- - ft^2 - -		- number -		
Leucaena leucocephala	269	32.40	5.45	25.33	26	13.20	23.64
Trema micrantha	81	7.91	2.53	11.75	9	4.57	8.08
Acacia muricata	49	5.03	1.58	7.34	4	2.03	4.80
Guapira fragrans	37	3.79	1.02	4.76	11	5.58	4.71
Bourreria succulenta	32	3.31	1.11	5.16	11	5.58	4.68
Maytenus laevigata	30	3.50	1.19	5.52	3	1.52	3.51
Capparis cynophallophora	15	1.58	0.56	2.61	7	3.55	2.58
Erythroxylum rotundifolium	20	1.94	0.23	1.09	9	4.57	2.53
Bursera simaruba	6	1.96	0.35	1.62	5	2.54	2.04
Citharexylum spinosum	8	1.08	0.24	1.13	7	3.55	1.92
Eugenia monticola	21	2.00	0.35	1.63	4	2.03	1.89
Coccoloba uvifera	19	2.30	0.61	2.82	1	0.51	1.88
Tecoma stans	19	2.05	0.24	1.13	4	2.03	1.74
Coccothrinax barbadensis	12	1.10	0.57	2.66	2	1.02	1.59
Eugenia cordata	13	1.19	0.26	1.22	4	2.03	1.48
Eugenia biflora	17	1.55	0.26	1.21	3	1.52	1.43
Melicoccus bijugatus	9	1.11	0.23	1.05	4	2.03	1.40
Swietenia mahagoni	6	1.39	0.07	0.33	4	2.03	1.25
Acacia farnesiana	8	0.73	0.30	1.39	3	1.52	1.21
Adelia ricinella	8	0.85	0.16	0.75	4	2.03	1.21
Guettarda scabra	7	0.64	0.30	1.40	3	1.52	1.19
Capparis indica	8	0.79	0.14	0.65	4	2.03	1.16
Eugenia rhombea	13	1.18	0.16	0.76	3	1.52	1.15
Myrciaria floribunda	10	0.91	0.32	1.48	2	1.02	1.13
Krugiodendron ferreum	6	0.58	0.16	0.76	4	2.03	1.12
Pithecellobium unguis-cati	11	1.52	0.15	0.70	2	1.02	1.08
Capparis flexuosa	9	1.29	0.19	0.90	2	1.02	1.07
Morisonia americana	10	1.27	0.18	0.82	2	1.02	1.04
Pisonia subcordata	5	0.61	0.42	1.94	1	0.51	1.02
Pithecellobium dulce	6	2.18	0.07	0.34	1	0.51	1.01
Tabebuia heterophylla	7	0.64	0.28	1.29	2	1.02	0.98
Rondeletia pilosa	6	0.58	0.13	0.61	3	1.52	0.90
Laguncularia racemosa	4	1.46	0.16	0.75	1	0.51	0.90
Randia aculeata	4	0.39	0.03	0.15	4	2.03	0.86
Poitea florida	5	0.45	0.22	1.00	2	1.02	0.82
Amyris elemifera	7	0.64	0.06	0.30	3	1.52	0.82
Exostema caribaeum	6	0.61	0.13	0.63	2	1.02	0.75
Capparis hastata	3	0.27	0.07	0.31	3	1.52	0.70

(continued)

Table A.9—Tree species with d.b.h. < 5.0 inches in subtropical dry forest by scientific name, number tallied, relative density, species sum total basal area, relative dominance, number of plots where species was found, relative frequency, and importance value, U.S. Virgin Islands, 2014. Nomenclature based on USDANRCS PLANTS 2015 database. (Total stems counted = 866; total sum of basal area = 21.52 ft^2; Total number of plots = 42; total sampled area = 0.43 acres.) (continued)

Scientific name	Species	Relative density	Species basal area	Relative dominance	Species plot count	Relative frequency	Importance value
	- number -		- - ft^2 - -		- number -		
Eugenia pseudopsidium	4	0.39	0.04	0.17	3	1.52	0.70
Eugenia procera	4	1.46	0.03	0.12	1	0.51	0.70
Euphorbia petiolaris	6	0.55	0.12	0.57	1	0.51	0.54
Colubrina arborescens	3	0.30	0.07	0.31	2	1.02	0.54
Triphasia trifolia	5	0.45	0.03	0.14	2	1.02	0.54
Erithalis fruticosa	6	0.73	0.08	0.37	1	0.51	0.53
Mangifera indica	2	0.36	0.13	0.61	1	0.51	0.49
Croton astroites	6	0.61	0.08	0.35	1	0.51	0.49
Casearia decandra	3	0.28	0.02	0.10	2	1.02	0.46
Plumeria alba	4	0.42	0.07	0.32	1	0.51	0.42
Pilosocereus royenii	1	0.12	0.10	0.47	1	0.51	0.37
Cordia alliodora	1	0.18	0.06	0.29	1	0.51	0.33
Chrysophyllum argenteum	3	0.27	0.03	0.14	1	0.51	0.31
Schaefferia frutescens	2	0.18	0.03	0.12	1	0.51	0.27
Gymnanthes lucida	2	0.18	0.02	0.11	1	0.51	0.27
Zanthoxylum monophyllum	1	0.09	0.04	0.18	1	0.51	0.26
Ficus citrifolia	1	0.09	0.02	0.10	1	0.51	0.23
Croton flavens	1	0.09	0.01	0.06	1	0.51	0.22
Crossopetalum rhacoma	1	0.09	0.01	0.04	1	0.51	0.21
Comocladia dodonaea	1	0.09	0.01	0.04	1	0.51	0.21
Solanum torvum	1	0.09	0.01	0.03	1	0.51	0.21
Nectandra coriacea	1	0.09	0.01	0.03	1	0.51	0.21
Piscidia carthagenensis	1	0.09	0.01	0.03	1	0.51	0.21

Table A.10—Tree species with d.b.h. ≥ 5.0 inches in subtropical moist forest by scientific name, number tallied, relative density, species sum total basal area, relative dominance, number of plots where species was found, relative frequency, and importance value, U.S. Virgin Islands, 2014. Nomenclature based on USDANRCS PLANTS 2015 database. (Total stems counted = 305; total sum of basal area = 118.82 ft$^{2;}$ Total number of plots = 19; total sampled area = 2.64 acres.)

Scientific name	Species	Relative density	Species basal area	Relative dominance	Species plot count	Relative frequency	Importance value
	- number -		- - ft^2 - -		- number -		
Guapira fragrans	66	20.30	24.01	20.21	12	13.19	17.90
Acacia muricata	39	10.65	11.62	9.78	3	3.30	7.91
Bourreria succulenta	24	8.67	6.50	5.47	8	8.79	7.64
Bursera simaruba	17	5.26	7.60	6.40	6	6.59	6.09
Melicoccus bijugatus	18	6.55	6.96	5.86	4	4.40	5.60
Andira inermis	11	3.05	9.11	7.67	4	4.40	5.04
Albizia lebbeck	14	3.99	4.69	3.95	4	4.40	4.11
*Cordia ricksecker*i	9	6.12	3.32	2.79	3	3.30	4.07
Swietenia mahagoni	1	0.27	11.89	10.01	1	1.10	3.79
Coccoloba microstachya	15	5.90	3.29	2.77	1	1.10	3.26
Cordia alliodora	10	2.73	3.14	2.65	3	3.30	2.89
Guettarda scabra	6	1.80	1.02	0.86	4	4.40	2.35
Citharexylum spinosum	4	2.34	1.01	0.85	3	3.30	2.16
Chrysophyllum pauciflorum	6	1.64	3.10	2.61	2	2.20	2.15
Tabebuia heterophylla	6	1.88	1.33	1.12	3	3.30	2.10
Maytenus laevigata	8	2.18	1.59	1.34	2	2.20	1.91
Inga laurina	6	1.72	1.49	1.25	2	2.20	1.72
Albizia procera	6	1.74	1.37	1.15	2	2.20	1.70
Pisonia subcordata	5	1.64	1.31	1.10	2	2.20	1.65
Bucida buceras	4	1.46	2.01	1.69	1	1.10	1.42
Zanthoxylum martinicense	2	2.18	0.93	0.79	1	1.10	1.36
Manilkara zapota	1	0.27	2.86	2.41	1	1.10	1.26
Myrciaria floribunda	3	0.82	0.58	0.49	2	2.20	1.17
Cedrela odorata	1	0.27	2.14	1.80	1	1.10	1.06
Margaritaria nobilis	2	0.55	1.19	1.00	1	1.10	0.88
Krugiodendron ferreum	3	0.82	0.75	0.63	1	1.10	0.85
Cassia fistula	3	0.82	0.62	0.52	1	1.10	0.81
Guettarda odorata	2	0.55	0.48	0.41	1	1.10	0.68
Myrcia citrifolia	2	0.55	0.33	0.27	1	1.10	0.64
Pimenta racemosa	1	0.27	0.61	0.52	1	1.10	0.63
Hymenaea courbaril	1	0.29	0.32	0.27	1	1.10	0.55
Piscidia carthagenensis	1	0.39	0.14	0.12	1	1.10	0.54
Pilosocereus royenii	1	0.27	0.27	0.22	1	1.10	0.53
Cassine xylocarpa	1	0.36	0.14	0.12	1	1.10	0.53
Trema micrantha	1	0.29	0.21	0.18	1	1.10	0.52
Acacia farnesiana	1	0.29	0.20	0.17	1	1.10	0.52
Erythroxylum rotundifolium	1	0.27	0.18	0.15	1	1.10	0.51
Chionanthus compactus	1	0.27	0.18	0.15	1	1.10	0.51
Tecoma stans	1	0.27	0.15	0.13	1	1.10	0.50
Leucaena leucocephala	1	0.27	0.15	0.12	1	1.10	0.50

Table A.11—Tree species with d.b.h. < 5.0 inches in subtropical moist forest by scientific name, number tallied, relative density, species sum total basal area, relative dominance, number of plots where species was found, relative frequency, and importance value, U.S. Virgin Islands, 2014. Nomenclature based on USDANRCS PLANTS 2015 database. (Total stems counted = 418; total sum of basal area = 10.77 ft^2; Total number of plots = 18; total sampled area = 0.20 acres.)

Scientific name	Species	Relative density	Species basal area	Relative dominance	Species plot count	Relative frequency	Importance value
	- number -		- - ft^2 - -		- number -		
Leucaena leucocephala	65	18.63	1.75	16.26	9	7.26	14.05
Guapira fragrans	18	4.94	0.91	8.44	7	5.65	6.34
Citharexylum spinosum	19	4.58	0.56	5.22	7	5.65	5.15
Myrciaria floribunda	26	5.55	0.48	4.47	6	4.84	4.95
Bourreria succulenta	21	4.16	0.78	7.21	4	3.23	4.87
Maytenus laevigata	22	4.36	0.64	5.97	3	2.42	4.25
Guettarda scabra	14	2.97	0.30	2.79	5	4.03	3.27
Coccoloba microstachya	16	4.69	0.28	2.60	3	2.42	3.24
Pictetia aculeata	23	4.56	0.44	4.06	1	0.81	3.14
Eugenia biflora	13	3.17	0.21	1.96	5	4.03	3.05
Acacia muricata	9	1.78	0.50	4.63	2	1.61	2.68
Eugenia sessiliflora	12	4.76	0.25	2.28	1	0.81	2.61
Erythroxylum rotundifolium	8	1.59	0.25	2.31	4	3.23	2.37
Myrcia citrifolia	10	2.38	0.25	2.29	3	2.42	2.36
Capparis cynophallophora	8	1.78	0.10	0.89	4	3.23	1.97
Nectandra coriacea	5	1.06	0.28	2.61	2	1.61	1.76
Guettarda odorata	5	1.06	0.13	1.17	3	2.42	1.55
Chrysophyllum pauciflorum	6	1.19	0.19	1.76	2	1.61	1.52
Chionanthus compactus	3	0.66	0.15	1.41	3	2.42	1.50
Morisonia americana	11	2.18	0.15	1.37	1	0.81	1.45
Faramea occidentalis	9	1.78	0.18	1.66	1	0.81	1.42
Krugiodendron ferreum	3	1.26	0.06	0.53	3	2.42	1.40
Randia aculeata	5	0.99	0.08	0.73	3	2.42	1.38
Cordia sebestena	5	2.54	0.07	0.61	1	0.81	1.32
Capparis hastata	4	0.86	0.04	0.35	3	2.42	1.21
Croton astroites	3	0.86	0.04	0.34	3	2.42	1.20
Eugenia monticola	4	0.86	0.11	1.02	2	1.61	1.16
Casearia sylvestris	6	1.19	0.11	1.06	1	0.81	1.02
Rondeletia inermis	2	0.40	0.18	1.70	1	0.81	0.97
Amyris elemifera	3	0.59	0.07	0.69	2	1.61	0.97
Bursera simaruba	2	0.46	0.08	0.73	2	1.61	0.94
Tecoma stans	6	1.19	0.08	0.73	1	0.81	0.91
Casearia guianensis	2	0.47	0.03	0.28	2	1.61	0.79
Acacia farnesiana	1	0.40	0.12	1.12	1	0.81	0.77
Cassine xylocarpa	5	0.99	0.05	0.49	1	0.81	0.76
Coccothrinax barbadensis	2	0.40	0.11	0.98	1	0.81	0.73
Albizia lebbeck	2	0.40	0.10	0.96	1	0.81	0.72

(continued)

Table A.11—Tree species with d.b.h. < 5.0 inches in subtropical moist forest by scientific name, number tallied, relative density, species sum total basal area, relative dominance, number of plots where species was found, relative frequency, and importance value, U.S. Virgin Islands, 2014. Nomenclature based on USDANRCS PLANTS 2015 database. (Total stems counted = 418; total sum of basal area = 10.77 ft^2; Total number of plots = 18; total sampled area = 0.20 acres.) (continued)

Scientific name	Species	Relative density	Species basal area	Relative dominance	Species plot count	Relative frequency	Importance value
	- number -		*- - ft^2 - -*		*- number -*		
Schaefferia frutescens	4	0.79	0.06	0.55	1	0.81	0.72
Savia sessiliflora	4	0.79	0.04	0.38	1	0.81	0.66
Exostema caribaeum	2	0.40	0.08	0.77	1	0.81	0.66
Eugenia cordata	4	0.79	0.04	0.35	1	0.81	0.65
Melicoccus bijugatus	2	0.40	0.07	0.67	1	0.81	0.62
Guettarda elliptica	2	0.53	0.06	0.51	1	0.81	0.62
Ardisia obovata	2	0.40	0.06	0.54	1	0.81	0.58
Neea buxifolia	3	0.59	0.03	0.29	1	0.81	0.56
*Cordia ricksecker*i	1	0.26	0.06	0.52	1	0.81	0.53
Crescentia cujete	2	0.53	0.01	0.14	1	0.81	0.49
Trema micrantha	2	0.40	0.03	0.24	1	0.81	0.48
Daphnopsis americana	1	0.26	0.03	0.29	1	0.81	0.45
Capparis flexuosa	2	0.40	0.01	0.12	1	0.81	0.44
Ixora ferrea	2	0.40	0.01	0.11	1	0.81	0.44
Solanum polygamum	2	0.40	0.01	0.11	1	0.81	0.44
Poitea florida	1	0.20	0.03	0.29	1	0.81	0.43
Haematoxylum campechianum	1	0.20	0.02	0.20	1	0.81	0.40
Eugenia xerophytica	1	0.20	0.01	0.10	1	0.81	0.37
Capparis baducca	1	0.20	0.01	0.06	1	0.81	0.36
Eugenia rhombea	1	0.20	0.01	0.05	1	0.81	0.35

Table A.12—Number of live trees on forest land by species group and diameter class, U.S. Virgin Islands, 2014

Species group	All classes	Diameter class (inches at breast height) 1.0–2.9	3.0–4.9	5.0–6.9	7.0–8.9	9.0–10.9	11.0–12.9	13.0–14.9	15.0–16.9	17.0–18.9	19.0–20.9	21.0–24.9	25.0–28.9	29.0–32.9	33.0–36.9	37.0+
	million trees															
Hardwood																
Tropical and subtropical hardwoods	92.2	76.6	12.2	1.8	0.8	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total hardwoods	92.2	76.6	12.2	1.8	0.8	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Numbers in rows and columns may not sum to totals due to rounding.

0.0 = no sample for the cell or a value of > 0.0 but < 0.05.

Table A.13—Net[a] volume of live trees on forest land by ownership class and land status, U.S. Virgin Islands, 2014

Ownership class	All forest land	Land status: Unreserved	Land status: Reserved
	million cubic feet		
U.S. Forest Service			
National Park Service	5.4	0.0	5.4
Total	5.4	0.0	5.4
Territory and local government			
Local	0.0	0.0	0.0
Total	0.0	0.0	0.0
Nonindustrial private			
Corporate	1.1	1.1	0.0
Conservation/natural resources organization	0.0	0.0	0.0
Individual	14.5	14.5	0.0
Total	15.6	15.6	0.0
All classes	20.9	15.6	5.4

Numbers in rows and columns may not sum to totals due to rounding.

0.0 = no sample for the cell or a value of > 0.0 but < 0.05.

[a] Excludes rotten, missing, and form cull defects volume.

Table A.14—Net[a] volume of live trees on forest land by forest type and stand-size class, U.S. Virgin Islands, 2014

Forest-type	All size classes	Stand-size class			
		Large diameter	Medium diameter	Small diameter	Non-stocked
	million cubic feet				
Hardwood					
Dry forest	13.3	0.6	5.4	7.3	0.0
Moist forest	7.6	3.4	1.7	2.5	0.0
Total hardwoods	20.9	3.9	7.2	9.8	0.0

Numbers in rows and columns may not sum to totals due to rounding.

0.0 = no sample for the cell or a value of > 0.0 but < 0.05.

[a] Excludes rotten, missing, and form cull defects volume.

Table A.15—Net[a] volume of live trees on forest land by species group and ownership group, U.S. Virgin Islands, 2014

Species group	All ownerships	Ownership group				
		U.S. Forest Service	Other Federal	Territory and local government	Forest industry	Nonindustrial private
	million cubic feet					
Hardwood						
Tropical and subtropical hardwoods	20.9	0.0	5.4	0.0	0.0	15.6
Total hardwoods	20.9	0.0	5.4	0.0	0.0	15.6
All species	20.9	0.0	5.4	0.0	0.0	15.6

0.0 = no sample for the cell or a value of > 0.0 but < 0.05.

[a] Excludes rotten, missing, and form cull defects volume.

Table A.16—Net[a] volume of live trees on forest land by species group and diameter class, U.S. Virgin Islands, 2014

Species group	All classes	Diameter class (inches at breast height) 5.0–6.9	7.0–8.9	9.0–10.9	11.0–12.9	13.0–14.9	15.0–16.9	17.0–18.9	19.0–20.9	21.0–24.9	25.0–28.9	29.0–32.9	33.0–36.9	37.0+
	million cubic feet													
Hardwood														
Tropical and subtropical hardwoods	20.9	4.3	4.0	3.2	2.0	2.0	1.2	0.3	0.6	1.1	1.7	0.0	0.0	0.6
Total hardwoods	20.9	4.3	4.0	3.2	2.0	2.0	1.2	0.3	0.6	1.1	1.7	0.0	0.0	0.6

0.0 = no sample for the cell or a value of > 0.0 but < 0.05.

[a] Excludes rotten, missing, and form cull defects volume.

Table A.17—Aboveground dry weight of live trees on forest land by ownership class and land status, U.S. Virgin Islands, 2014

Ownership class	All forest land	Land status: Unreserved	Land status: Reserved
	thousand tons		
U.S. Forest Service			
National Park Service	426.2	0.0	426.2
Total	426.2	0.0	426.2
Territory and local government			
Local	6.1	6.1	0.0
Total	6.1	6.1	0.0
Nonindustrial private			
Corporate	72.9	72.9	0.0
Conservation/natural resources organization	1.6	1.6	0.0
Individual	1,088.7	1,088.7	0.0
Total	1,163.2	1,163.2	0.0
All classes	1,595.6	1,169.4	426.2

Numbers in rows and columns may not sum to totals due to rounding.

0.0 = no sample for the cell or a value of > 0.0 but < 0.05.

Table A.18—Aboveground dry weight of live trees on forest land by species group and diameter class, U.S. Virgin Islands, 2014

Species group	All classes	Diameter class (inches at breast height) 1.0–2.9	3.0–4.9	5.0–6.9	7.0–8.9	9.0–10.9	11.0–12.9	13.0–14.9	15.0–16.9	17.0–18.9	19.0–20.9	21.0–24.9	25.0–28.9	29.0–32.9	33.0–36.9	37.0+
		thousand tons														
Hardwood																
Tropical and subtropical hardwoods	1,595.6	622.1	399.0	157.6	120.1	85.7	49.4	45.7	28.9	5.5	11.1	22.6	29.1	0.0	0.0	18.7
Total hardwoods	1,595.6	622.1	399.0	157.6	120.1	85.7	49.4	45.7	28.9	5.5	11.1	22.6	29.1	0.0	0.0	18.7

0.0 = no sample for the cell or a value of > 0.0 but < 0.05.

Table A.19—Average annual net growth of live trees by ownership class and land status, U.S. Virgin Islands, 2014 (2009–14)

Ownership class	Land status: Timberland	Land status: Forest land
	cubic feet per year	
Other Federal		
National Park Service	0	122,360
Total	0	122,360
Territory and local government		
Local	0	515
Total	0	515
Nonindustrial private		
Corporate	20,129	56,488
Individual	172,538	583,485
Total	192,667	639,973
All classes	192,667	762,848

0 = no sample for the cell or a value of > 0 but < 0. 5.

Table A.20—Average annual net growth of live trees on forest land by forest-type and stand-size class, U.S. Virgin Islands, 2014 (2009–14)

Forest-type	All size classes	Stand-size class			
		Large diameter	Medium diameter	Small diameter	Non-stocked
	cubic feet per year				
Hardwood					
Dry forest	543,054	67,628	55,178	420,248	0
Moist forest	219,794	29,591	63,551	126,652	0
Total hardwoods	762,848	97,219	118,729	546,900	0
All forest types	762,848	97,219	118,729	546,900	0

0 = no sample for the cell or a value of > 0 but < 0. 5.

Table A.21—Average annual net growth of live trees on forest land by species group and ownership group, U.S. Virgin Islands, 2014 (2009–14)

Species group	All ownerships	Ownership group				
		U.S. Forest Service	Other Federal	Territory and local government	Forest industry	Nonindustrial private
	cubic feet per year					
Hardwood						
Tropical and subtropical hardwoods	762,848	0	122,360	515	0	639,973
Total hardwoods	762,848	0	122,360	515	0	639,973
All species	762,848	0	122,360	515	0	639,973

0 = no sample for the cell or a value of > 0 but < 0. 5.

Table A.22—Average annual mortality of live trees by ownership class and land status, U.S. Virgin Islands, 2014 (2009–14)

Ownership class	Land status	
	Timberland	Forest land
	cubic feet per year	
Other Federal		
National Park Service	0	42,950
Total	0	42,950
Nonindustrial private		
Corporate	13,510	13,510
Individual	32,288	56,794
Total	45,798	70,304
All classes	45,798	113,254

0 = no sample for the cell or a value of > 0 but < 0. 5.

Table A.23—Average annual mortality of live trees on forest land by forest-type and stand-size class, U.S. Virgin Islands, 2014 (2009–14)

Forest-type	All size classes	Stand-size class			
		Large diameter	Medium diameter	Small diameter	Non-stocked
	cubic feet per year				
Hardwood					
Dry forest	48,260	0	9,134	39,126	0
Moist forest	64,994	7,814	12,380	44,801	0
Total hardwoods	113,254	7,814	21,514	83,927	0
All forest types	113,254	7,814	21,514	83,927	0

0 = no sample for the cell or a value of > 0 but < 0. 5.

Table A.24—Average annual mortality of live trees on forest land by species group and ownership group, U.S. Virgin Islands, 2014 (2009–14)

Species group	All ownerships	Ownership group				
		U.S. Forest Service	Other Federal	Territory and local government	Forest industry	Nonindustrial private
	cubic feet per year					
Hardwood						
Tropical and subtropical hardwoods	113,254	0	42,950	0	0	70,304
Total hardwoods	113,254	0	42,950	0	0	70,304
All species	113,254	0	42,950	0	0	70,304

0 = no sample for the cell or a value of > 0 but < 0. 5.

Table A.25—Average annual net removals of live trees by ownership class and land status, U.S. Virgin Islands, 2014 (2009–14)

Ownership class	Land status	
	Timberland	Forest land
	cubic feet per year	
Territory and local government		
Local	0	5,997
Total	0	5,997
Nonindustrial private		
Corporate	12,247	12,247
Individual	11,261	13,695
Total	23,508	25,942
All classes	23,508	31,939

0 = no sample for the cell or a value of > 0 but < 0.5.

Table A.26—Average annual removals of live trees on forest land by forest-type and stand-size class, U.S. Virgin Islands, 2014 (2009–14)

Forest-type	All size classes	Stand-size class			
		Large diameter	Medium diameter	Small diameter	Non-stocked
	cubic feet per year				
Hardwood					
Dry forest	2,434	0	0	2,434	0
Moist forest	29,506	0	18,244	11,261	0
Total hardwoods	31,939	0	18,244	13,695	0
All forest types	31,939	0	18,244	13,695	0

Numbers in rows and columns may not sum to totals due to rounding.

0 = no sample for the cell or a value of > 0 but < 0. 5.

Table A.27—Average annual removals of live trees on forest land by species group and ownership group, U.S. Virgin Islands, 2014 (2009–14)

Species group	All ownerships	Ownership group				
		U.S. Forest Service	Other Federal	Territory and local government	Forest industry	Nonindustrial private
	cubic feet per year					
Hardwood						
Tropical and subtropical hardwoods	31,939	0	0	5,997	0	25,942
Total hardwoods	31,939	0	0	5,997	0	25,942
All species	31,939	0	0	5,997	0	25,942

0 = no sample for the cell or a value of > 0 but < 0. 5.

RELIABILITY OF THE DATA

Resulting sampling errors are offered here as calculated from the standard error of the mean and expressed as a percentage for forest land acreage, numbers of live trees, aboveground biomass and all live tree volume (table B1). This percentage format allows the application of confidence intervals to the population values (the most common values presented in FIA reports). Most FIA sampling errors are presented at the 0.6827 level but the 0.95 level can easily be obtained by multiplying the sampling error by 1.96 or higher, appropriate *t*-value if the sample size *n* is < 120.

Sampling error is associated with the natural and expected deviation of the sample from the true population mean. This deviation is susceptible to a mathematical evaluation of the probability of error.

Sampling errors for State totals are based on one standard deviation. That is, there is a 68.27-percent probability that the confidence interval given for each sample estimate will cover the true population mean.

The size of the sampling error generally increases as the size of the area examined decreases. Also, as area or volume totals are stratified by forest type, species, diameter class, ownership, or other subunits, the sampling error may increase and be greatest for the smallest divisions. However, there may be instances where a smaller component does not have a proportionately larger sampling error. This can happen when the post-defined strata are more homogeneous than the larger strata, thereby having a smaller variance. For specific post-defined strata the sampling error is available from online

Table B.1—Sampling error, at one standard error, of the estimates of forest land area, number of trees, aboveground live biomass, and all-live volume, U.S. Virgin Islands, 2014

Item	Sample estimate	Confidence interval (+/-)	Sampling error
			percent
Forest land (*acres*)	46,967	4,067	8.66
Number of trees	92,200,768	10,252,725	11.12
Aboveground live biomass (*tons*)	1,595,599	175,835	11.02
All-live volume (*cubic feet*)			
Inventory	20,945,879	3,736,745	17.84
Net annual growth	762,848	153,714	20.15
Annual mortality	113,254	30,341	26.79
Annual removals	31,939	17,624	55.18

retrievals using the USDA Forest Service EVALIDator Online FIA database query tool (Version 1.8.0.00, https://apps.fs.usda.gov/Evalidator/evalidator.jsp) or can be calculated using the following formula:

$$SE_s = SE_t \frac{\sqrt{X_t}}{\sqrt{X_s}}$$

where

SE_s = sampling error for subdivision of Territory total

SE_t = sampling error for Territory total

X_s = sum of values for the variable of interest (area or volume) for subdivision of Territory

X_t = total area or volume for Territory

For example, the sampling error for the estimate of subtropical dry forest acreage, (33,536 acres) would be calculated based on the total forested acreage in the U.S. Virgin Islands (46,967 acres) and its associated sampling error (8.66 percent):

$$SE_s = 8.66 \left[\frac{\sqrt{46{,}967}}{\sqrt{33{,}536}} \right] = 10.25$$

Thus, the sampling error is 10.25 percent, and the resulting 67-percent confidence interval for subtropical dry forest acreage would be 33,536 acres ± 3,437 acres.

Sampling errors obtained by this method are only approximations of reliability because this process assumes constant variance across all subdivisions of totals. The resulting errors derived by this approximation method should be considered very liberal, i.e. it usually produces sampling errors much better than those derived by the actual random sampling formula. Users are free to use more conservative variance estimators based on their specific applications.

A subtropical moist forest environment prevails at higher elevations within the mountainous areas of the U.S. Virgin Islands.

Table C.1—List of tree species with d.b.h. ≥1.0 inch encountered by scientific name, common name, family, number of stems measured, and origin [whether native (N) or introduced (I)], U.S. Virgin Islands, 2014

Scientific name	Common name	Family	Number	Origin
Acacia farnesiana (L.) Willd.	Sweet acacia	Fabaceae	39	N
A. muricata (L.) Willd.	Spineless wattle	Fabaceae	109	N
Adelia ricinella L.	Wild lime	Euphorbiaceae	9	N
Albizia lebbeck (L.) Benth.	Woman's tongue	Fabaceae	18	I
A. procera (Roxb.) Benth.	Tall albizia	Fabaceae	6	I
Amyris elemifera L.	Sea torchwood	Rutaceae	10	N
Andira inermis (W. Wright) Kunth ex DC.	Cabbagebark tree	Fabaceae	12	N
Ardisia obovata Desv. ex Ham.	Guadeloupe marlberry	Myrsinaceae	2	N
Bourreria succulenta Jacq.	Bodywood	Boraginaceae	109	N
Bucida buceras L.	Gregorywood	Combretaceae	4	N
Bursera simaruba (L.) Sarg.	Gumbo limbo	Burseraceae	77	N
Canella winterana (L.) Gaertn.	Wild cinnamon	Canellaceae	1	N
Capparis baducca L.	Caper	Capparaceae	1	N
C. cynophallophora L.	Jamaican caper	Capparaceae	23	N
C. flexuosa (L.) L.	Falseteeth	Capparaceae	11	N
C. hastata Jacq.	Broadleaf caper	Capparaceae	7	N
C. indica (L.) Druce	Linguam	Capparaceae	11	N
Casearia decandra Jacq.	Wild honeytree	Flacourtiaceae	3	N
C. guianensis (Aubl.) Urb.	Guyanese wild coffee	Flacourtiaceae	2	N
C. sylvestris Sw.	Crackopen	Flacourtiaceae	6	N
Cassia fistula L.	Golden shower	Fabaceae	3	I
Cassine xylocarpa Vent.	Marbletree	Celastraceae	7	N
Cedrela odorata L.	Spanish cedar	Meliaceae	1	N
Chionanthus compactus Sw.	Bridgotree	Oleaceae	4	N
Chrysophyllum argenteum Jacq.	Bastard redwood	Sapotaceae	4	N
C. pauciflorum Lam.	Camito de perro	Sapotaceae	12	N
Citharexylum spinosum L.	Spiny fiddlewood	Verbenaceae	35	N
Coccoloba diversifolia Jacq.	Tietongue, pigeon-plum	Polygonaceae	7	N
C. microstachya Willd.	Puckhout	Polygonaceae	33	N
C. uvifera (L.) L.	Seagrape	Polygonaceae	22	N
Coccothrinax barbadensis (Lodd. ex Mart.) Becc.	Coccothrinax barbadensis	Arecaceae	14	N
Colubrina arborescens (Mill.) Sarg.	Greenheart, common snakebark	Rhamnaceae	3	N
Comocladia dodonaea (L.) Urb.	Poison ash	Anacardiaceae	1	N
Cordia alliodora (Ruiz & Pav.) Oken	Spanish elm	Boraginaceae	14	N
C. laevigata Lam.	Smooth manjack	Boraginaceae	1	N
C. rickseckeri Millsp.	San Bartolome	Boraginaceae	11	N
C. sebestena L.	Largeleaf geigertree	Boraginaceae	5	I
Crescentia cujete L.	Common calabash tree	Bignoniaceae	2	N
Crossopetalum rhacoma Crantz	Maidenberry	Celastraceae	1	N
Croton astroites Dryand.	Wild marrow	Euphorbiaceae	9	N
C. flavens L.	Croton flavens	Euphorbiaceae	1	N
Daphnopsis americana (Mill.) J.R. Johnst.	Burn nose	Thymelaeaceae	1	N

(continued)

Table C.1—List of tree species with d.b.h. ≥1.0 inch encountered by scientific name, common name, family, number of stems measured, and origin [whether native (N) or introduced (I)], U.S. Virgin Islands, 2014 (continued)

Scientific name	Common name	Family	Number	Origin
Erithalis fruticosa L.	Blacktorch	Rubiaceae	6	N
Erythroxylum rotundifolium Lunan	Ratwood	Erythroxylaceae	29	N
Eugenia biflora (L.) DC.	Blackrodwood	Myrtaceae	30	N
E. cordata (Sw.) DC.	Lathberry	Myrtaceae	17	N
E. monticola (Sw.) DC.	Birdcherry	Myrtaceae	25	N
E. procera (Sw.) Poir.	Rockmyrtle	Myrtaceae	4	N
E. pseudopsidium Jacq.	Christmas cherry	Myrtaceae	4	N
E. rhombea (Berg) Krug & Urb.	Red stopper	Myrtaceae	15	N
E. sessiliflora Vahl	Sessileleaf stopper	Myrtaceae	12	N
E. xerophytica Britton	Aridland stopper	Myrtaceae	1	N
Euphorbia petiolaris Sims	Manchineel berry	Euphorbiaceae	6	N
Exostema caribaeum (Jacq.) Schult.	Caribbean princewood	Rubiaceae	8	N
Faramea occidentalis (L.) A. Rich.	False coffee	Rubiaceae	9	N
Ficus citrifolia Mill.	Wild banyantree, shortleaf fig	Moraceae	1	N
Guapira fragrans (Dum. Cours.) Little	Black mampoo	Nyctaginaceae	157	N
Guettarda elliptica Sw.	Hammock velvetseed	Rubiaceae	2	N
G. odorata (Jacq.) Lam.	Cucubano de vieques	Rubiaceae	7	N
G. scabra (L.) Vent.	Wild guave	Rubiaceae	27	N
Gymnanthes lucida Sw.	Oysterwood	Euphorbiaceae	2	N
Haematoxylum campechianum L.	Bloodwoodtree	Fabaceae	3	I
Hymenaea courbaril L.	Stinkingtoe	Fabaceae	5	N
Inga laurina (Sw.) Willd.	Sacky sac bean	Fabaceae	6	N
Ixora ferrea (Jacq.) Benth.	Palo de hierro	Rubiaceae	2	N
Krugiodendron ferreum (Vahl) Urb.	Leadwood	Rhamnaceae	17	N
Laguncularia racemosa (L.) C.F. Gaertn.	White mangrove	Combretaceae	9	N
Leucaena leucocephala (Lam.) de Wit	White leadtree, tan-tan	Fabaceae	336	I
Mangifera indica L.	Mango	Anacardiaceae	13	I
Manilkara zapota (L.) P. Royen	Sapodilla	Sapotaceae	1	I
Margaritaria nobilis L. f.	Bastard hogberry	Euphorbiaceae	2	N
Maytenus laevigata (Vahl) Griseb. ex Eggers	White cinnamon	Celastraceae	74	N
Melicoccus bijugatus Jacq.	Genip, Spanish lime	Sapindaceae	71	I
Morisonia americana L.	Ratapple	Capparaceae	23	N
Myrcia citrifolia (Aubl.) Urb.	Red rodwood	Myrtaceae	12	N
Myrciaria floribunda (West ex Willd.) *Berg*	Guavaberry	Myrtaceae	39	N
Nectandra coriacea (Sw.) Griseb.	Nectandra coriacea	Lauraceae	6	N
Neea buxifolia (Hook. f.) Heimerl	Saltwood	Nyctaginaceae	3	N
Pictetia aculeata (Vahl) Urb.	Fustic	Fabaceae	23	N
Pilosocereus royenii (L.) Byles & Rowley	Royen's tree cactus	Cactaceae	7	N
Pimenta racemosa (Mill.) J.W. Moore	Bayrumtree	Myrtaceae	1	N
Piscidia carthagenensis Jacq.	Stinkwood	Fabaceae	7	N
Pisonia subcordata Sw.	Water mampoo	Nyctaginaceae	38	N
Pithecellobium dulce (Roxb.) Benth.	Monkeypod	Fabaceae	6	I
P. unguis-cati (L.) Benth.	Catclaw blackbead	Fabaceae	11	N

(continued)

Table C.1—List of tree species with d.b.h. ≥1.0 inch encountered by scientific name, common name, family, number of stems measured, and origin [whether native (N) or introduced (I)], U.S. Virgin Islands, 2014 (continued)

Scientific name	Common name	Family	Number	Origin
Plumeria alba L.	Nosegaytree	Apocynaceae	4	N
Poitea florida (Vahl) Lavin	Poitea florida	Fabaceae	7	N
Randia aculeata L.	White indigoberry	Rubiaceae	9	N
Rondeletia pilosa Sw.	Cordobancillo peludo	Rubiaceae	8	N
Samanea saman (Jacq.) Merr.	Raintree	Fabaceae	3	I
Savia sessiliflora (Sw.) Willd.	Amansa guapo	Euphorbiaceae	4	N
Schaefferia frutescens Jacq.	Florida boxwood	Celastraceae	6	N
Sideroxylon obovatum Lam.	Breakbill	Sapotaceae	1	N
Solanum polygamum Vahl	Cakalaka berry	Solanaceae	2	N
S. torvum Sw.	Turkey berry	Solanaceae	1	N
Swietenia mahagoni (L.) Jacq.	West Indian mahogany	Meliaceae	18	I
Tabebuia heterophylla (DC.) Britton	White cedar	Bignoniaceae	21	N
Tamarindus indica L.	Tamarind	Fabaceae	4	I
Tecoma stans (L.) Juss. ex Kunth	Yellow trumpetbush	Bignoniaceae	26	N
Thespesia populnea (L.) Sol. ex Corrêa	Portia tree	Malvaceae	5	I
Trema micrantha (L.) Blume	Jamaican nettletree	Ulmaceae	99	N
Triphasia trifolia (Burm. f.) P. Wilson	Limeberry	Rutaceae	5	I
Zanthoxylum martinicense (Lam.) DC.	White pricklyash	Rutaceae	2	N
Z. monophyllum (Lam.) P. Wilson	Yellow prickle	Rutaceae	1	N

Marcano-Vega, Humfredo. 2020. U.S. Virgin Islands' forests, 2014. Resour. Bull. SRS–227. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 54 p.

The overall forest area in the U.S. Virgin Islands (USVI) experienced a period of relative stability from 2004 to 2014, considering that forest cover changes have been within sampling errors ever since 2004. A total of 46,967 acres of forest area (57.2 percent forest cover) was estimated in 2014 for the USVI. There were 29,610 acres of forest on St. Croix (56.1 percent forest cover), 9,830 acres on St. John (81.3 percent forest cover) and 7,528 acres of forest on St. Thomas (43.6 percent forest cover). A total of 121 tree species were encountered within a total sampled area of 8.1 acres in 2014. Typical species of USVI's forest life zones such as Black mampoo (*Guapira fragrans*) and gumbo limbo (*Bursera simaruba*) figure as the ones with the highest importance values among trees with diameter at breast height (d.b.h., 4.5 feet) ≥ 5.0 inches. Alternatively, species characteristic of abandoned pastures or open forests and clearings such as white leadtree or tan-tan (*Leucaena leucocephala*) and Jamaican nettletree (*Trema micrantha*) have the highest importance values among smaller trees. The changes observed in volume, biomass, and carbon between 2004 and 2014 suggest a tendency towards more mature stages of development within the USVI's forest stands. Estimates show an increase from 84.1 to 92.2 million trees from 2004 to 2014. This increase in number of live trees is parallel to the development from 14.5 to 20.9 million cubic feet of merchantable wood and an increase in stored carbon. There were 446,000 tons of aboveground carbon stored in the forests in 2004 and 798,000 tons in 2014. This amount of carbon in 2014 is equivalent to the CO^2 emissions from the total number of barrels of oil that are consumed in the USVI in 13.5 years. The forest trees grew by 762,848 cubic feet each year but lost 113,254 cubic feet per year to natural mortality and another 31,939 cubic feet to removals, for a net annual gain of 617,655 cubic feet on average. This represents a net total gain of 3.1 million cubic feet of wood volume over the entire 5-year period between the last inventories (2009–14). A total of 159,695 cubic feet of wood were removed from the forests by cutting or land clearance over that same 5-year time period. Forest health indicators revealed that there were no widespread threats or diseases and only 0.5 percent of the live trees showed any signs of crown dieback or recent mortality. This bulletin intends to serve as a baseline for the interpretation of the effects of the hurricanes of September 2017 to the unique USVI's forests, which are to be evaluated after an ongoing fourth forest inventory is completed.

Keywords: Caribbean, FIA program, forest health, forest inventory, secondary forest, tropical forest, U.S. Virgin Islands.

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Stands of bay rum trees (*Pimenta racemosa*) can be seen growing in St. John, U.S. Virgin Islands as a legacy of abandoned plantations that supplied the cosmetic and perfume industry in the 1940's.

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