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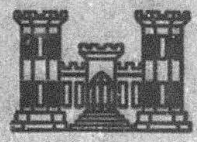
TECHNICAL REPORT M-69-1

VEGETATION STRUCTURAL CHARACTERISTICS AT SELECTED SITES IN THE PANAMA CANAL ZONE AND THAILAND

by

H. W. West



January 1969

Sponsored by

Joint Chiefs of Staff

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U. S. Army Materiel Command

Conducted by

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ARMY-MRC VICKSBURG, MISS.

FOREWORD

This study was sponsored by the Degradation Effects Program (DEP), formerly Joint Environmental Effects Program. Funds for the study were allocated to the U. S. Army Engineer Waterways Experiment Station (WES) by the Program Manager for Selected Ammunition, Picatinny Arsenal, Dover, New Jersey.

This report was prepared by Mr. H. W. West, Military Activities Section (MAS), Terrain Analysis Branch (TAB), Mobility and Environmental (M&E) Division, from data collected by WES field teams at DEP test sites in the Canal Zone (CZ) during September and October 1966, and at selected sites in Thailand during February to April 1965 in support of a research project sponsored by the Office, Secretary of Defense, Advanced Research Projects Agency. Computer programs for plotting the graphs and histograms and printing the data tabulations were developed by Miss J. A. Parks, MAS, and Mr. E. A. Baylot, Remote Sensing Section, TAB.

All phases of this study were under the direct supervision of Mr. R. R. Friesz, Chief, MAS, and under the general supervision of Mr. W. E. Grabau, Chief, TAB, and Messrs. W. G. Shockley and S. J. Knight, Chief and Assistant Chief, respectively, of the M&E Division.

The Directors of WES during the collection of data and preparation of this report were COL Alex G. Sutton, Jr., CE; COL John R. Oswalt, Jr., CE; and COL Levi A. Brown, CE. Technical Director was Mr. J. B. Tiffany.

CONTENTS

SUMMARY

A mission of the Degradation Effects Program (DEP), formerly Joint Environmental Effects Program (JEEP), is to extrapolate estimates of lethality and munition effectiveness in DEP test environments to Southeast Asian environments. If these extrapolations are to be reliable it is imperative that the environmental conditions of the test areas be similar to those of Southeast Asia. Accordingly, objective comparisons must be made of DEP test environments and Southeast Asian environments.

This report describes and compares some significant vegetation structural characteristics of two selected DEP test sites in the Piña and Balboa forests in the Panama Canal Zone (CZ) and four selected sites in two forests and two rubber plantations in Thailand. The vegetation structural characteristics considered herein include stem diameter, stem spacing, stem height, and number of stems. Detailed ground measurements were available from seven data collection points in the CZ and four data collection points in Thailand. Location maps, air and ground photographs, and the personal knowledge of the field survey personnel were used to provide a general description of each site. Site comparisons were made from an analysis of a series of graphs and histograms illustrating the number and cumulative number of stems and the spacing and cumulative spacing of stems included in each 1-cm-stem-diameter class and each 1-m-stem-height class.

Results of the study revealed the CZ and Thailand forests to be remarkably similar when comparing number of stems in each stem diameter class; however, when comparing spacing of stems in each diameter class and in each height class the forests were somewhat dissimilar. The larger trees in the CZ Piña forest and the two Thailand forests were generally of the same height and were taller than the trees in the CZ Balboa forest. The structural characteristics of the rubber plantations were very unlike those of the forests, which is to be expected.

The procedures used in sampling vegetation physiognomy are included as Appendix A. Computer print-outs of the vegetation data and the results obtained from manipulation of these data are included as Appendix B.

VEGETATION STRUCTURAL CHARACTERISTICS AT SELECTED SITES IN THE PANAMA CANAL ZONE AND THAILAND

PART I: INTRODUCTION

Background

1. A mission of the Degradation Effects Program (DEP), formerly Joint Environmental Effects Program (JEEP), is to extrapolate estimates of lethality and munition effectiveness in DEP test environments to Southeast Asian environments. If these extrapolations are to be reliable, it is imperative that the environmental conditions of the test areas be similar to those of Southeast Asia. Accordingly, objective comparisons must be made of DEP test environments and Southeast Asian environments. This task is a function of the Environmental Characterization Working Group (ECWG), of which the U. S. Army Engineer Waterways Experiment Station (WES) is a member.

2. An inquiry to WES by the DEP Program Manager concerning the similarity between the Piña and Balboa forest sites in the Panama Canal Zone (CZ) precipitated a decision by WES to undertake an objective comparison of the vegetation characteristics of the two sites. Because no objective comparisons of DEP test environments and Southeast Asian environments had yet been made, a further decision was made to compare the CZ sites with selected sites in Thailand. The latter decision was based on the knowledge that detailed data were available on vegetation variations that occur in Thailand, and that, to quote Williams,[1] "The vegetation of Thailand, in general, is representative of the countries drained by the Mekong River and its tributaries." The results of these comparisons are included herein.

Purpose

3. The purpose of this report is to describe and compare some significant vegetation structural characteristics of two selected DEP sites in the CZ and four selected sites in Thailand.

Approach

4. The basic information for this report was obtained primarily from field surveys. Detailed ground measurements were available from seven data collection points* at two sites** in the CZ (fig. 1) and four data

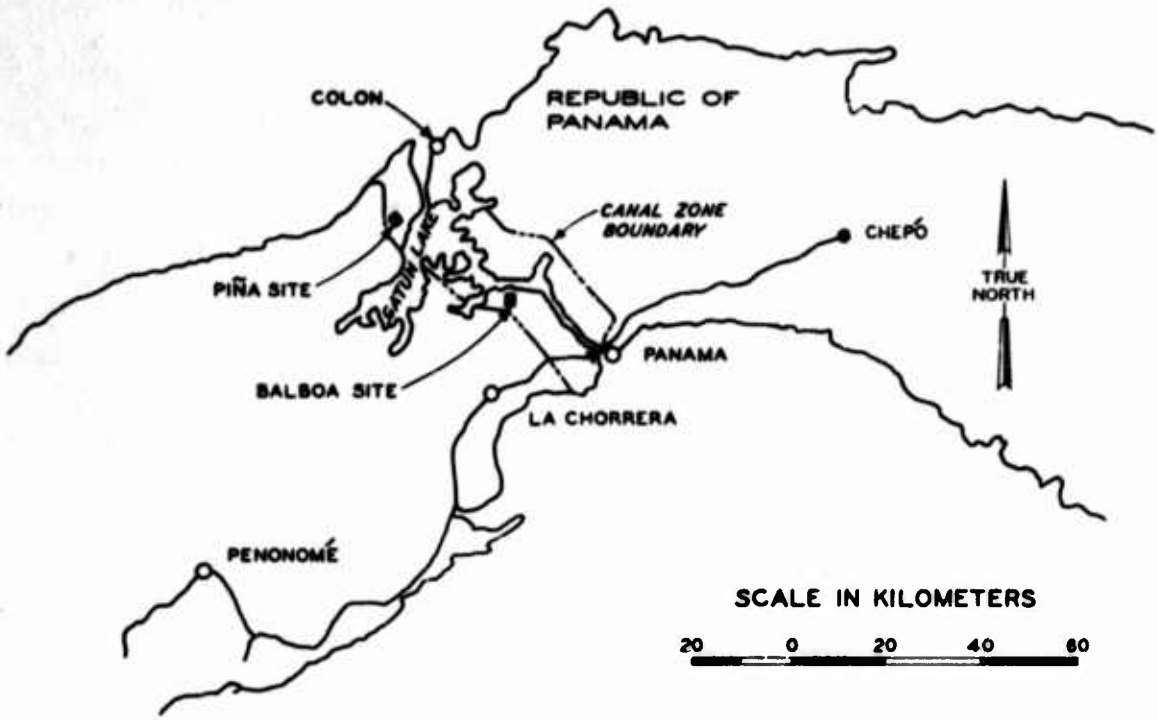

Fig. 1. Panama Canal Zone sites

collection points at four sites in Thailand (fig. 2). The CZ data were collected in support of DEP tests and special airdrop tests by the U. S. Air Force,[2] whereas the Thailand data were obtained in connection with another project.[3] Location maps, air and ground photographs, and the personal knowledge of WES personnel were used to provide a general description of each site. Detailed site comparisons were made from an analysis of selected vegetation structural data plotted as histograms and graphs in

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* The term "data collection point" in this report refers to a small circular sample area (usually less than 50 m in diameter) in which the structural attributes of a vegetation assemblage were measured and recorded in the field.

** The term "site" in this report refers to a specific area under study, the boundaries of which encompass one or more data collection points.

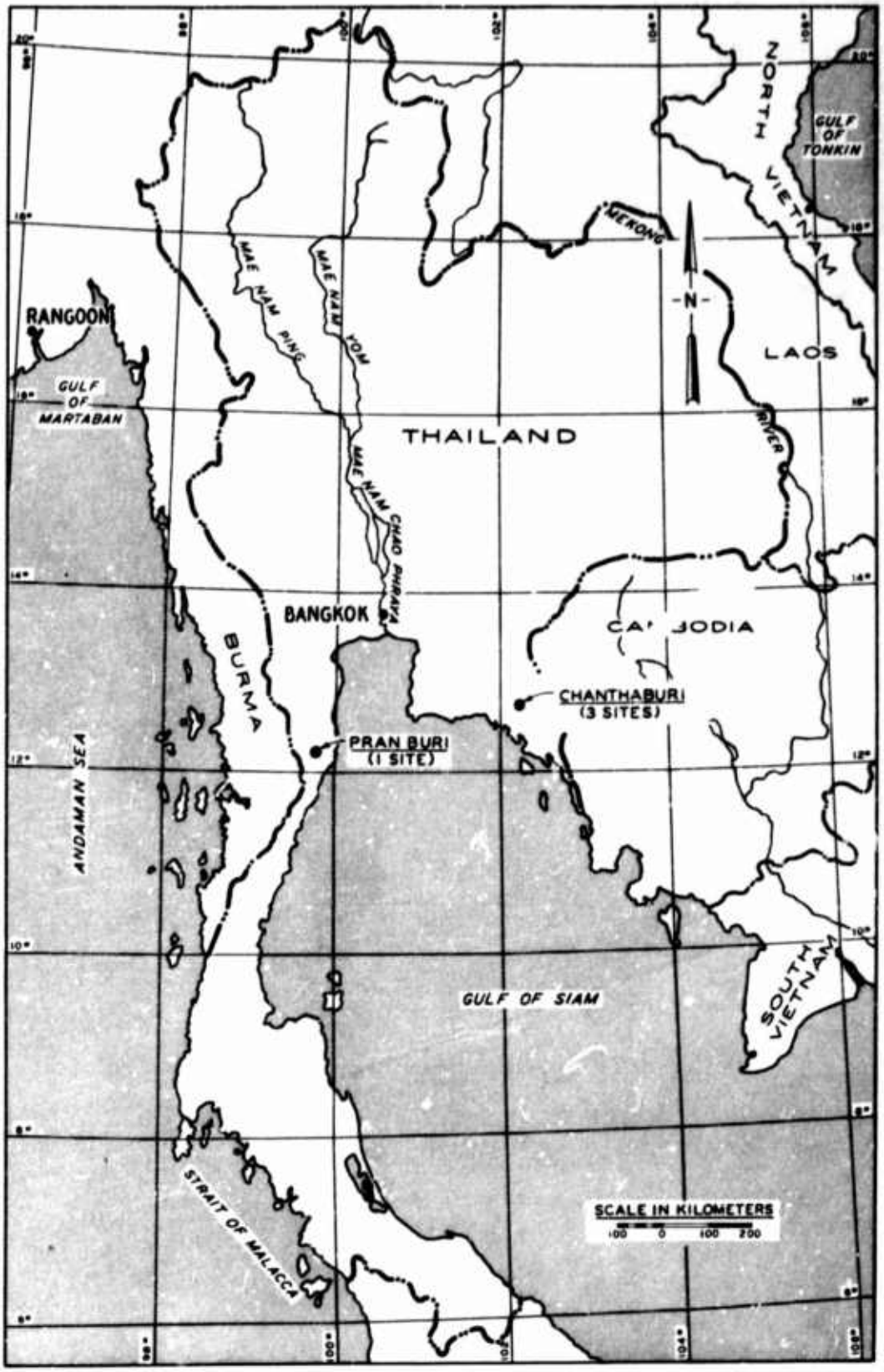

Fig. 2. Thailand sites

plates 1-8. Procedures for sampling vegetation physiognomy and the methods used for the reduction and presentation of data are discussed in Appendixes A and B, respectively. Also included in Appendix B are the computer print-outs of the vegetation structure data for each site and the results of computations that were used to construct the graphs and histograms.

PART II: LOCATION AND GENERAL DESCRIPTION OF SITES

5. General locations of the CZ and Thailand sites are shown in figs. 1 and 2, respectively. Specific locations and general descriptions of the selected sites are presented in the following paragraphs.

Canal Zone Sites

Piña forest (WES site P3)

6. This site, which is designated as being within the tropical rain forest zone,[4,5] is in a forested area in the narrow stream valley of the Rio Providencia on the U. S. Air Force Piña Range approximately 25 km southwest of Colon, Panama (fig. 3). Relatively steep slopes (20 percent at two data collection points) are present throughout the site, although narrow floodplains, usually less than 100 m in width, are found occasionally along the Rio Providencia. The soils are very dark brown silty clay loams, classified as MH according to the Unified Soil Classification System (USCS). The site, which from the air appears to be typical of many tropical rain forests, consists of a relatively uniform, densely interwoven canopy through which a number of widely spaced, giant, individual ("emergent") trees are visible. The appearance of the site from the air is illustrated by the vertical air photograph in fig. 4. Plotted on the photograph is an outline of the site and the approximate centers of the data collection points (P3-01 through -04) at which detailed ground data were collected. From the ground within the forest a number of canopy openings are visible, and the canopy does not appear as uniform as it does from the air. Frequently on sunny days, shafts of sunlight pierce the canopy, often reaching the forest floor (figs. 5-8). The understory is quite dense and twigs and decaying leaves cover the forest floor; the appearance from the ground is illustrated by figs. 9-13. A description of vegetation found at data collection points P3-01 through -04 is given in Appendix B, tables B1-B4.

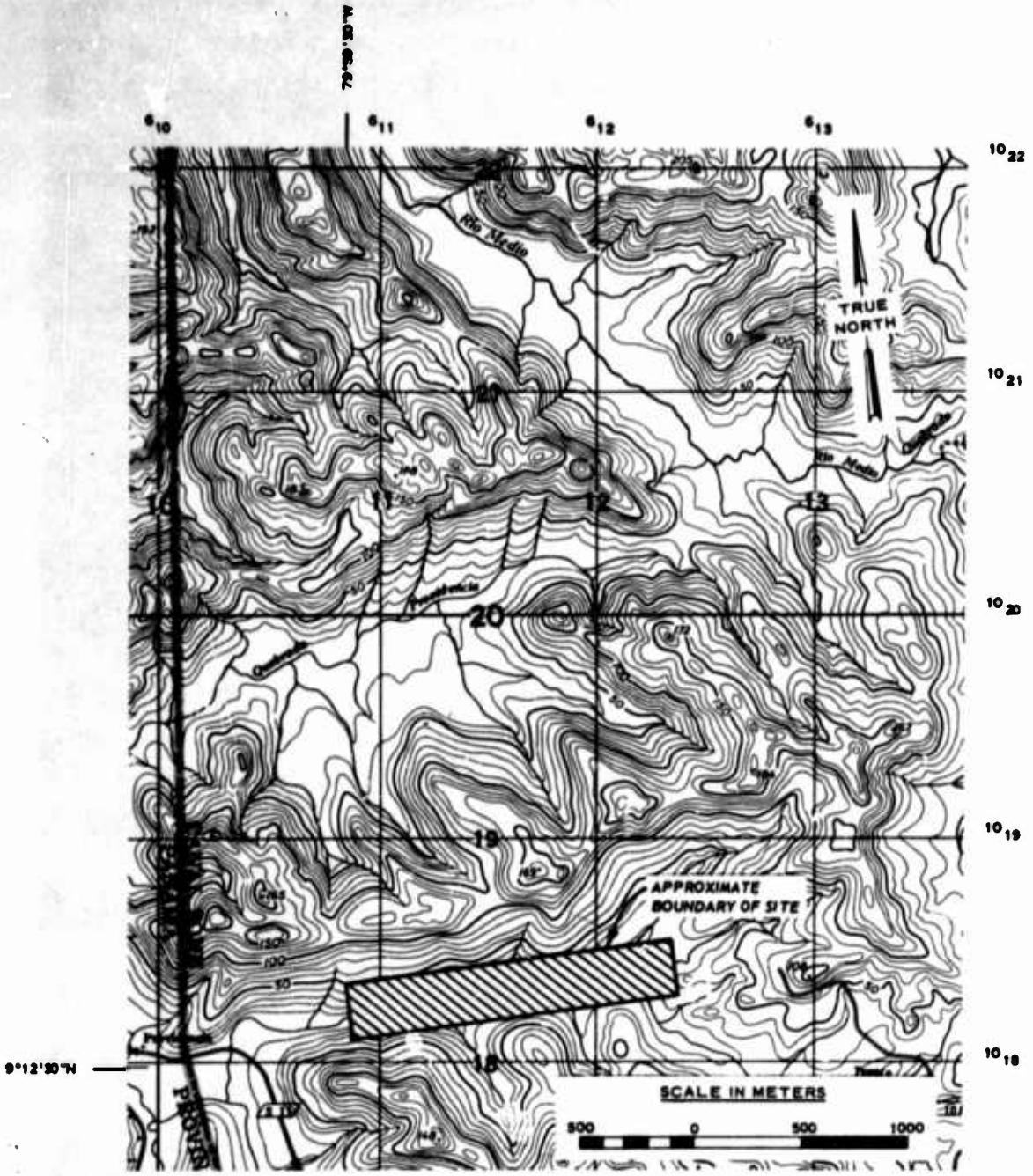

Fig. 3. Location of forest site, Piña Range, Panama Canal Zone

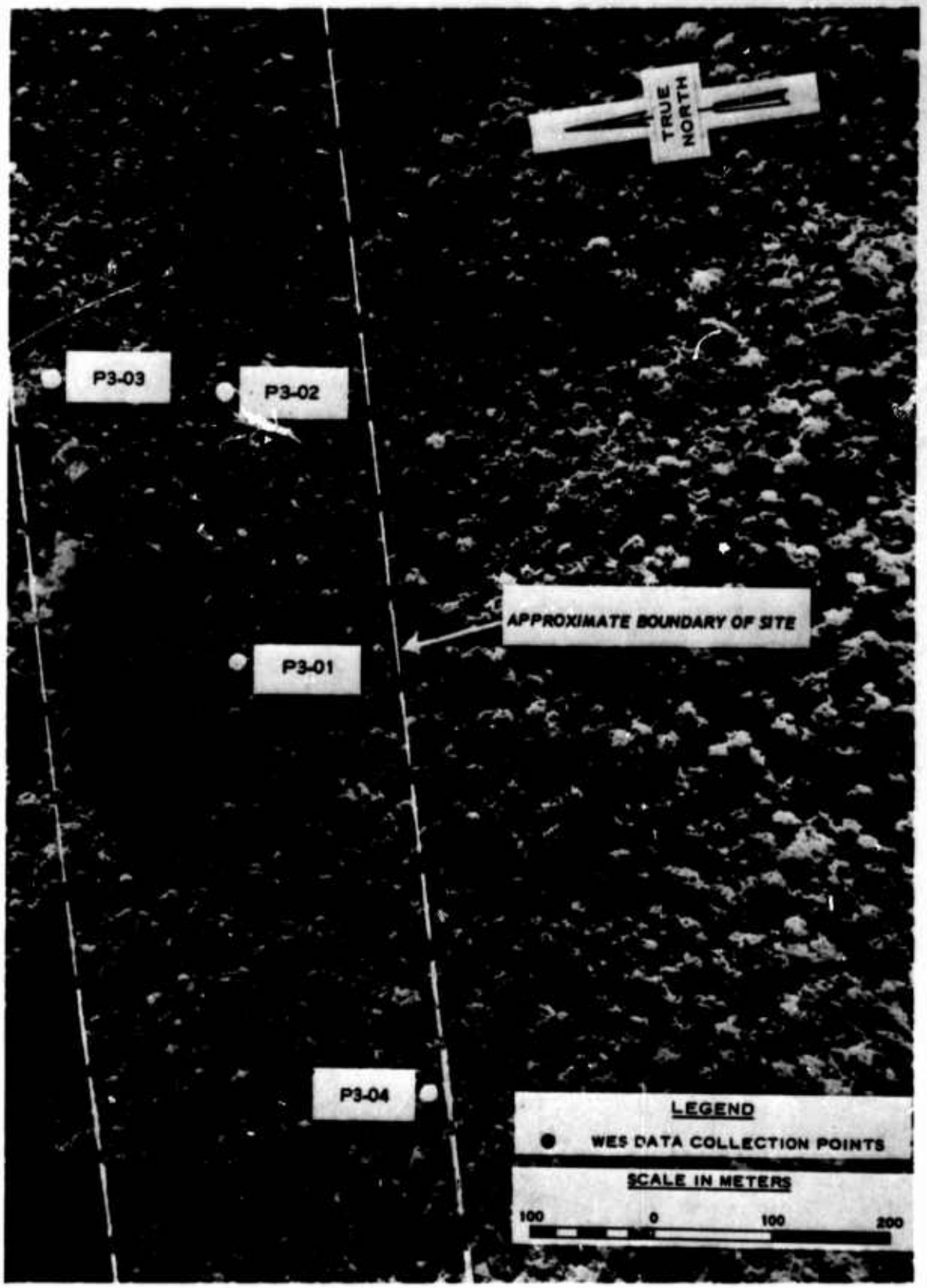

Fig. 4. Vertical air photo of forest site, Piña Range, Panama Canal Zone

Fig. 5. Canopy at data collection point P3-01. Note crown of palm tree in center of photograph (September 1966)

Fig. 6. Lower canopy at data collection point P3-01. Note large vines (September 1966)

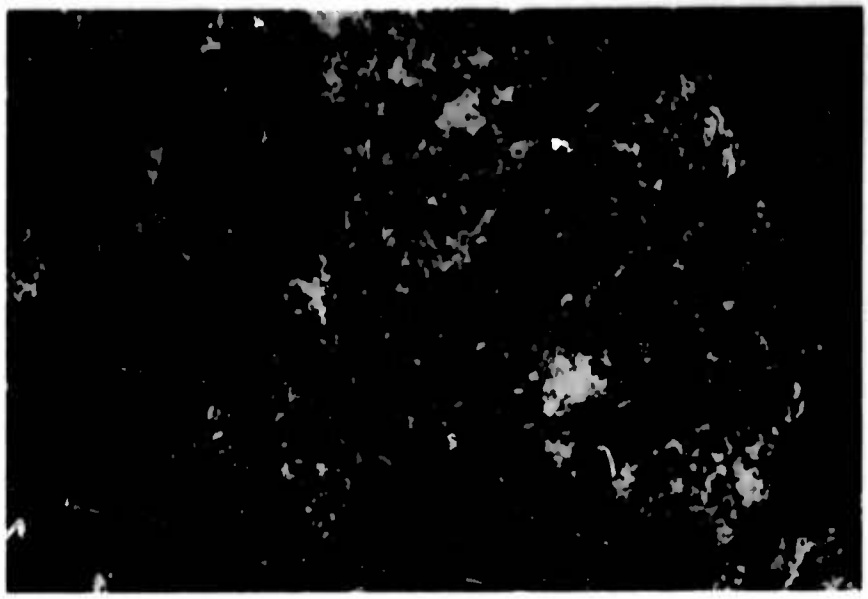

Fig. 7. Canopy at data collection point P3-02. Note large vines extending into the upper canopy (September 1966)

Fig. 8. Holes and gaps in canopy at data collection point P3-04 (September 1966)

Fig. 9. Stereopair showing the dense undergrowth vegetation at data collection point P3-01 (September 1966)

Fig. 10. Stereopair showing bole of large emergent tree near data collection point P3-02 (September 1966)

Fig. 11. Forest floor at data collection point P3-02 (September 1966)

Fig. 12. Stereopair showing bole of emergent tree and large concentration of vines near data collection point P3-03 (September 1966)

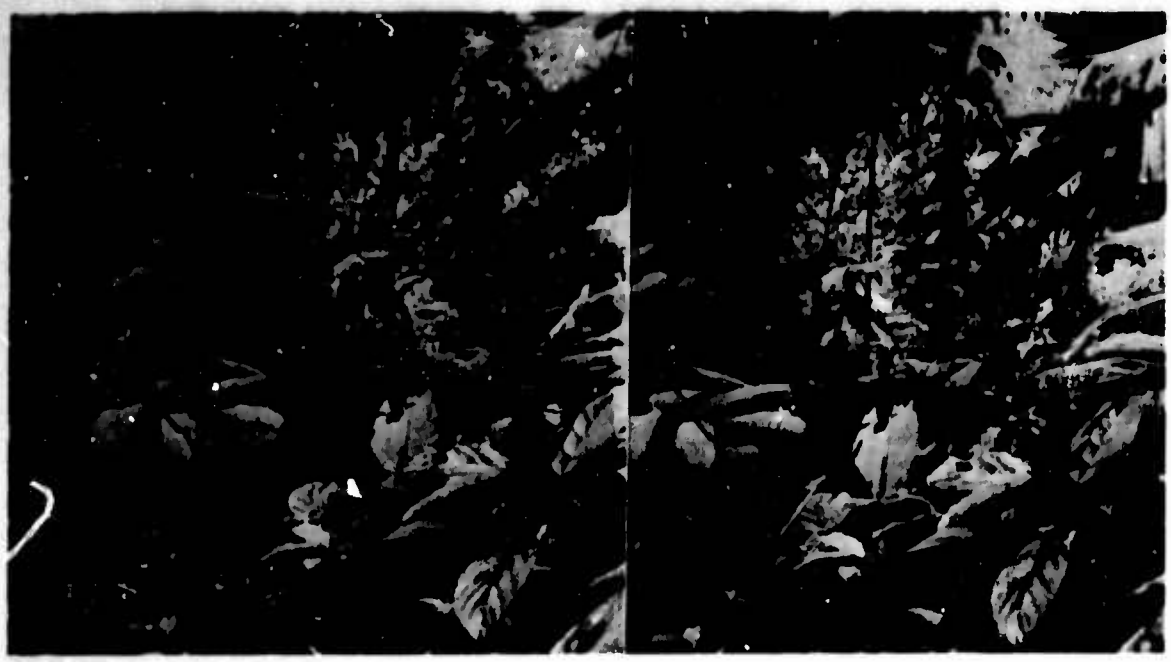

Fig. 13. Stereopair showing understory vegetation at data collection point P3-04 (September 1966)

Balboa forest (WES site P4)

7. This site, which is designated as being within the transition zone between tropical deciduous and tropical rain forest,[5] is in a forested area on the U. S. Air Force Balboa Range approximately 25 km northwest of Panama City (fig. 14). The site is on a generally south-facing slope of approximately 15 percent, but there are several minor slope reversals (including a road embankment), causing the ground surface configuration to be quite irregular. The soils are predominantly brownish silt loams to clay loams (MH by USCS). From the air the appearance of the site is similar to that of many tropical forests of the world; the main canopy closure looks complete and the canopy appears to be uniform, although a number of widely spaced emergent trees can be seen extending above the main level of the canopy. The vertical air photograph in fig. 15 and the oblique air photograph in fig. 16 illustrate the appearance of the site from the air. The site limits are outlined in figs. 15 and 16; also shown in fig. 15 are the approximate locations of the data collection points P4-01, -06, and -07 at which detailed ground data were obtained (figs. 17-23). From the ground within the forest it is usually possible to see patches of sky through

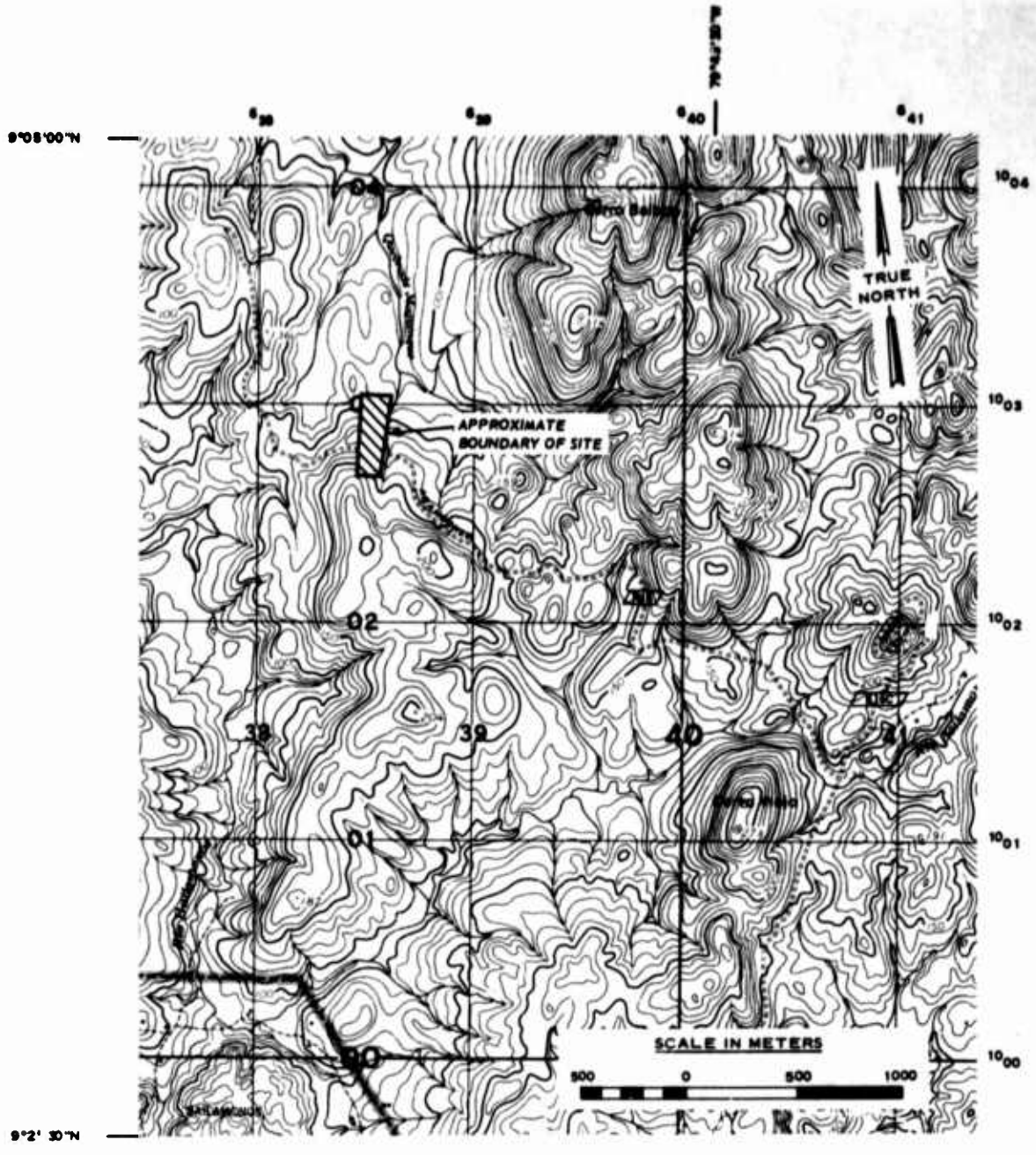

Fig. 14. Location of forest site, Balboa Range, Panama Canal Zone

holes and gaps in the canopy (figs. 20 and 21). The understory vegetation has a tendency to be more dense in the depressions than on the ridges and hillsides. Small loose stems and leaves litter the ground surface. Figs. 17, 18, 19, 22, and 23 illustrate the appearance of the forest floor. A description of vegetation found at data collection points P4-01, -06, and -07 is given in Appendix B, tables B5-B7, respectively.

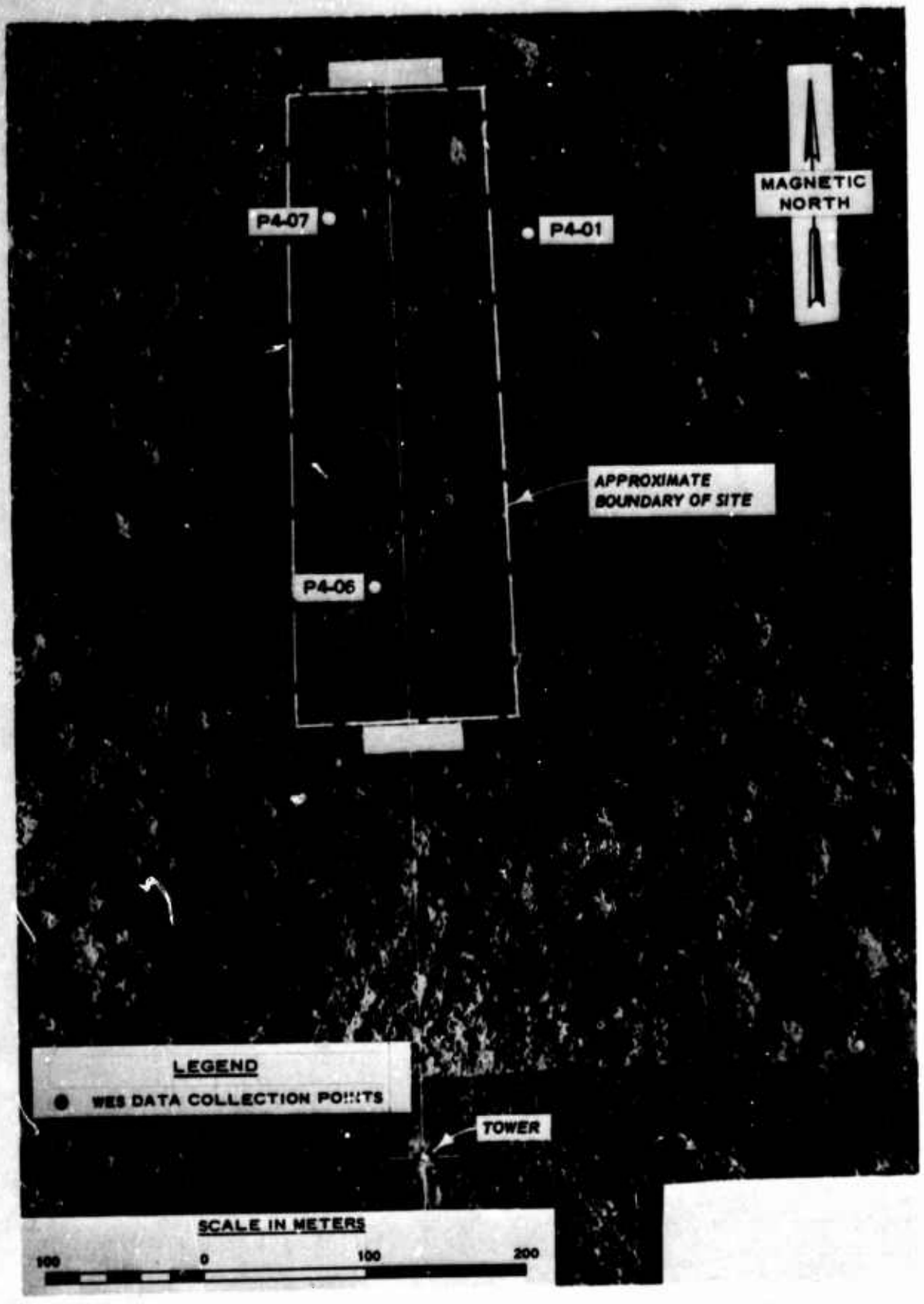

Fig. 15. Vertical air photo of forest site, Balboa Range, Panama Canal Zone

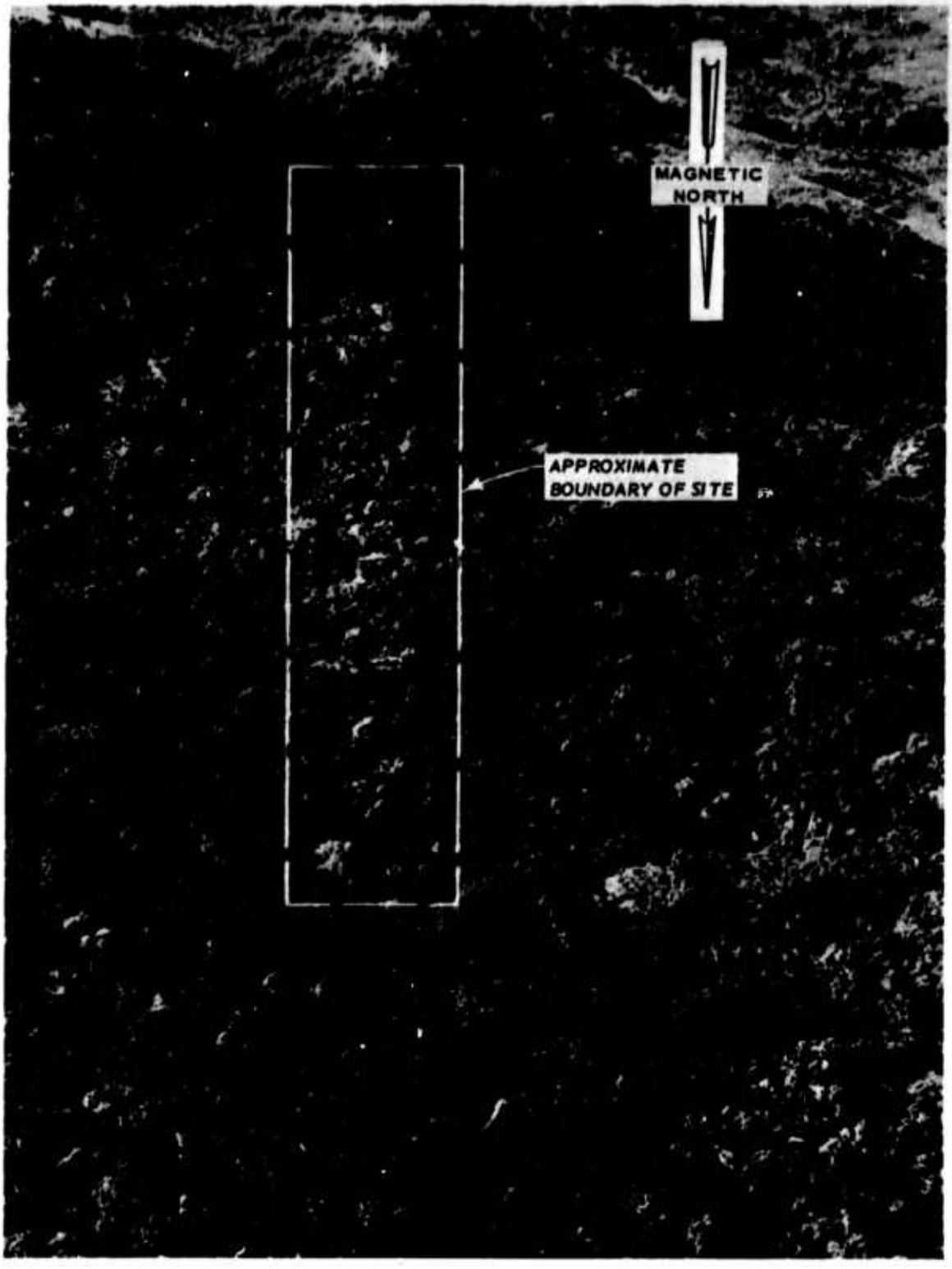

Fig. 16. Oblique air photo of Balboa Range Site, Panama Canal Zone

Fig. 17. Looking north toward the center of data collection point P4-01 (September 1966)

Fig. 18. Large-stem trees and understory vegetation near data collection point P4-01 (September 1966)

Fig. 19. Stereopair showing plank buttress of large tree at data collection point P4-01. Buttresses are 4 m high and have a 4-m spread (September 1966)

Fig. 20. Crown of the tree with large buttress shown in fig. 19 (September 1966)

Fig. 21. Lower canopy at data collection point P4-01 (September 1966)

Fig. 22. Stereopair of forest floor near data collection point P4-06 (September 1966)

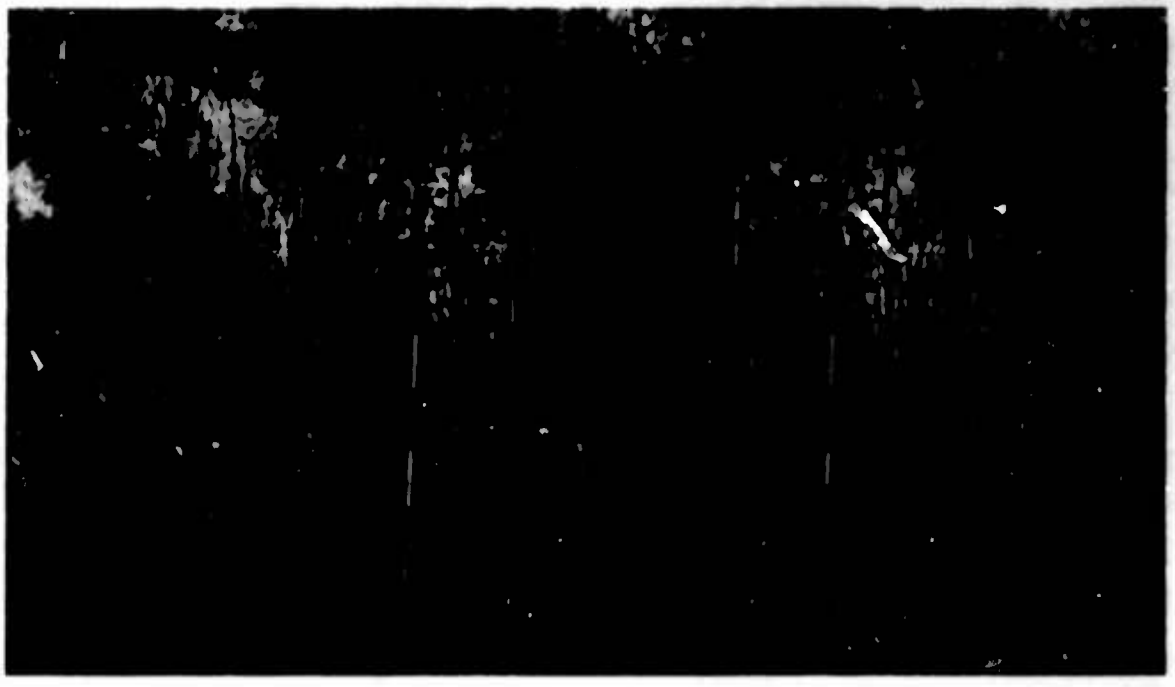

Fig. 23. Stereopair showing dense understory vegetation near data collection point P4-07 (September 1966)

Thailand Sites

Pran Buri forest (WES site V0458)

8. This site, which is designated as being within the tropical rain forest zone by Richards[4] but within the deciduous mixed forest zone by Williams,[1] is in a forested area in the alluvial floodplain of the Mae Nam Pran Buri approximately 20 km northwest of Amphoe Pran Buri (fig. 24). The site is on a relatively flat terrace. The soils in the surface layer (approximately 35 cm in depth) are predominantly sandy loams (SM by USCS), and those in the subsurface layer are predominantly gravelly clay loams (GM by USCS). From the air (fig. 25) the top of the canopy appears to be relatively level, although crowns of tall trees are occasionally seen protruding through the main canopy level. The approximate location of the center of the data collection point V0458 and the outline of the site boundary are plotted in fig. 25. From the ground within the forest the canopy seems to be full of holes and gaps of various sizes that allow large shafts of sunlight to filter through to the forest floor. Numerous closely

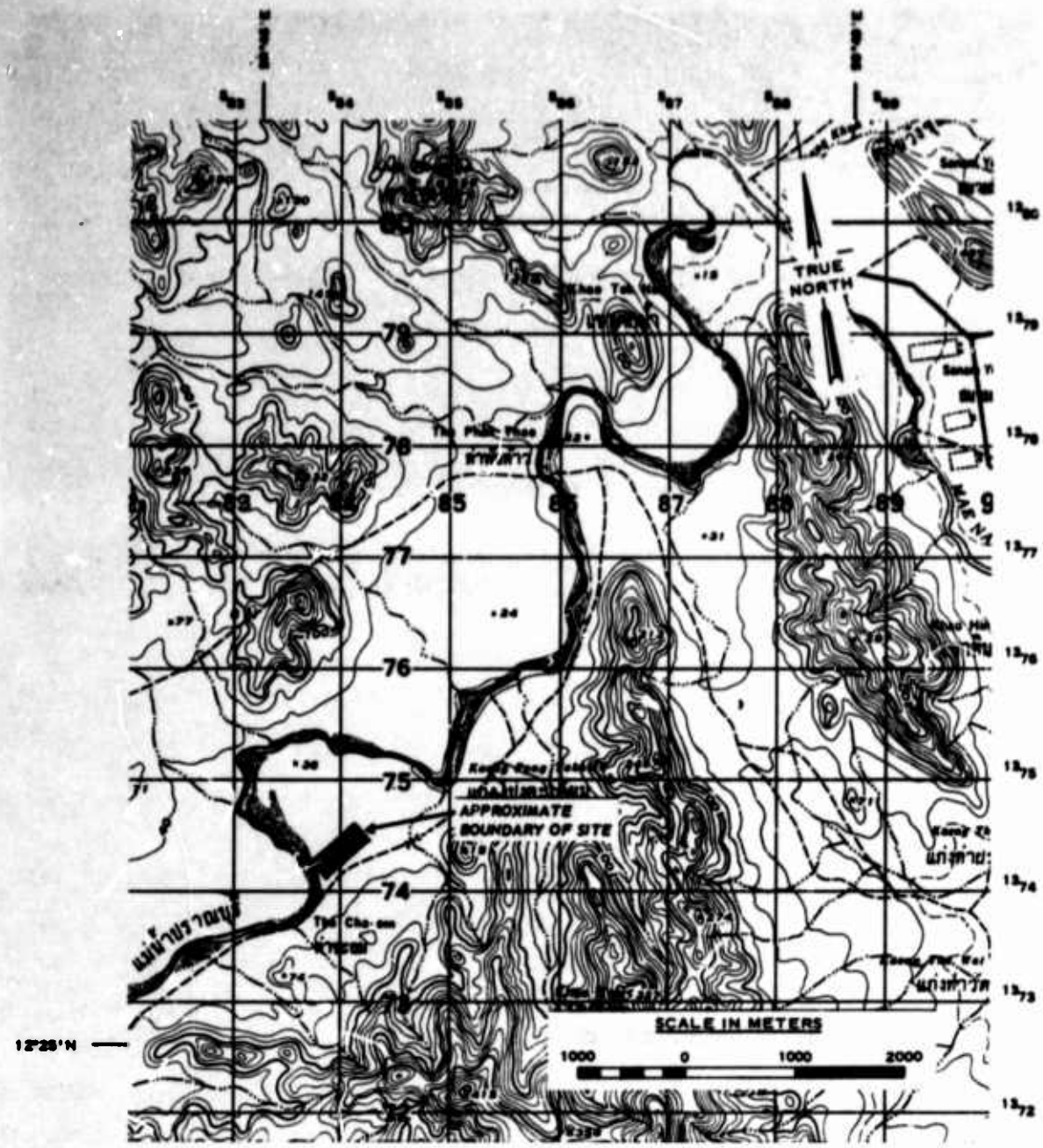

Fig. 24. Location of forest site, Pran Buri, Thailand

spaced small stems comprise a dense understory that varies in height up to the bottom of the main canopy. Fig. 26 shows the forest floor at this site. A description of vegetation found at data collection point V0458 is given in Appendix B, table B8.

Fig. 25. Vertical air photo of forest site, Pran Buri, Thailand

Fig. 26. Stereopair showing dense understory vegetation at data collection point V0458. Note sunlight hitting the forest floor (April 1965)

Chanthaburi rubber
plantation (WES site V0615)

9. This site is on a 22 percent ridge slope in a mature, well-kept rubber plantation approximately 15 km southeast of Chanthaburi (fig. 27). In this type of plantation the land is cleared before the rubber trees are planted and the plantation is then usually kept clear of underbrush. The surface soil (depth approximately 25 cm) is predominantly a sandy clay loam (SM by USCS) and the subsurface soil is a sandy loam (SM by USCS). From the air (fig. 28) the canopy seems to be quite uniform, especially when compared with that of the forested area that surrounds the plantation. Plotted on fig. 28 is an outline of the site and the approximate location of the center of data collection point V0615 at which detailed ground data were collected. From the ground within the rubber plantation the crowns of the trees seem to make a fairly well-defined stratum, although the maximum heights of individual trees may vary as much as 6 to 8 m. The understory of the plantation consists mostly of low shrubs and plants (less than 0.5 m in height). Fig. 29 is a ground photograph showing the site and the edge

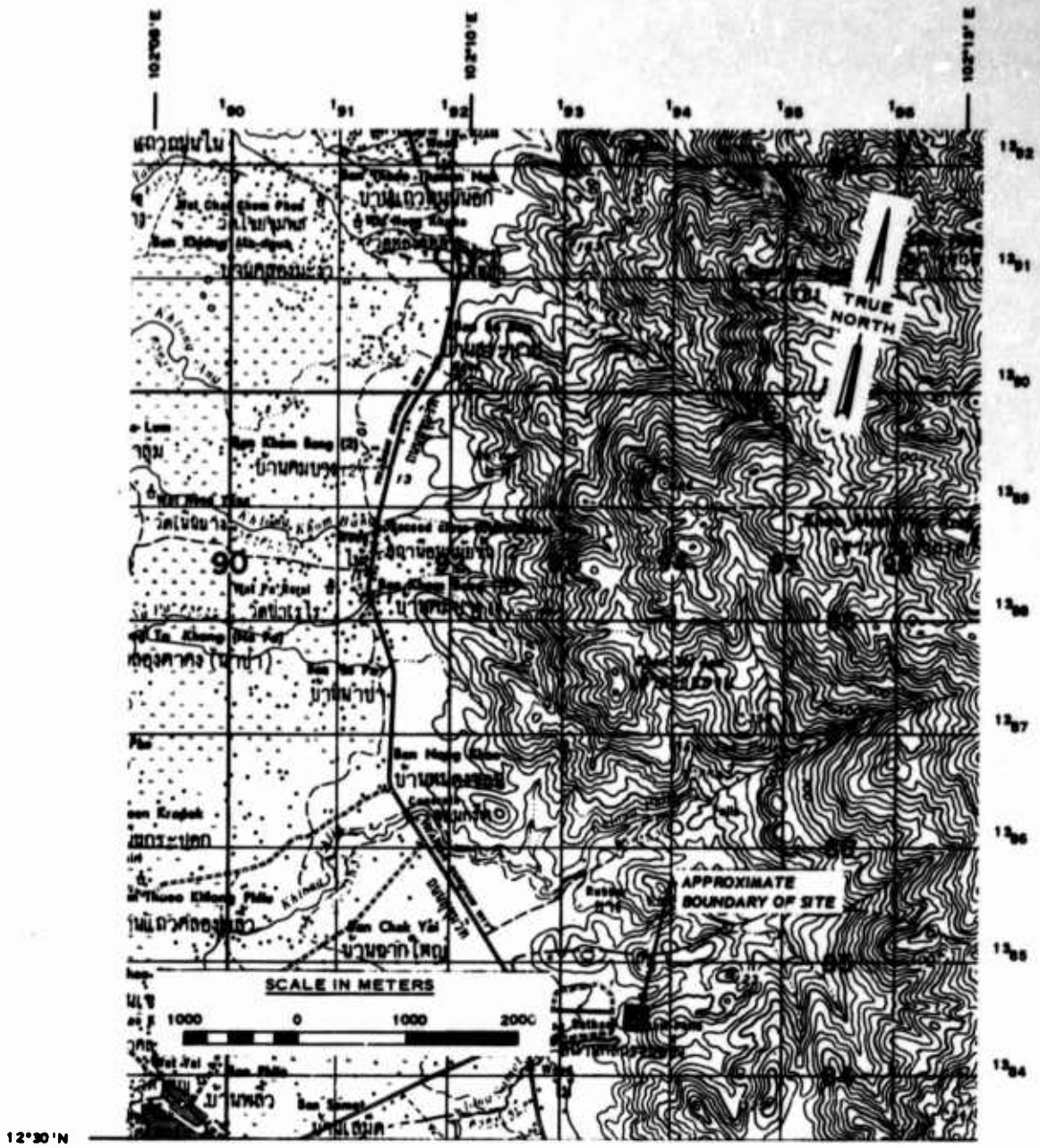

Fig. 27. Location of rubber plantation site, Chanthaburi, Thailand

of the dense forest that surrounds the plantation. A description of vegetation found at data collection point V0615 is given in Appendix B, table B9.

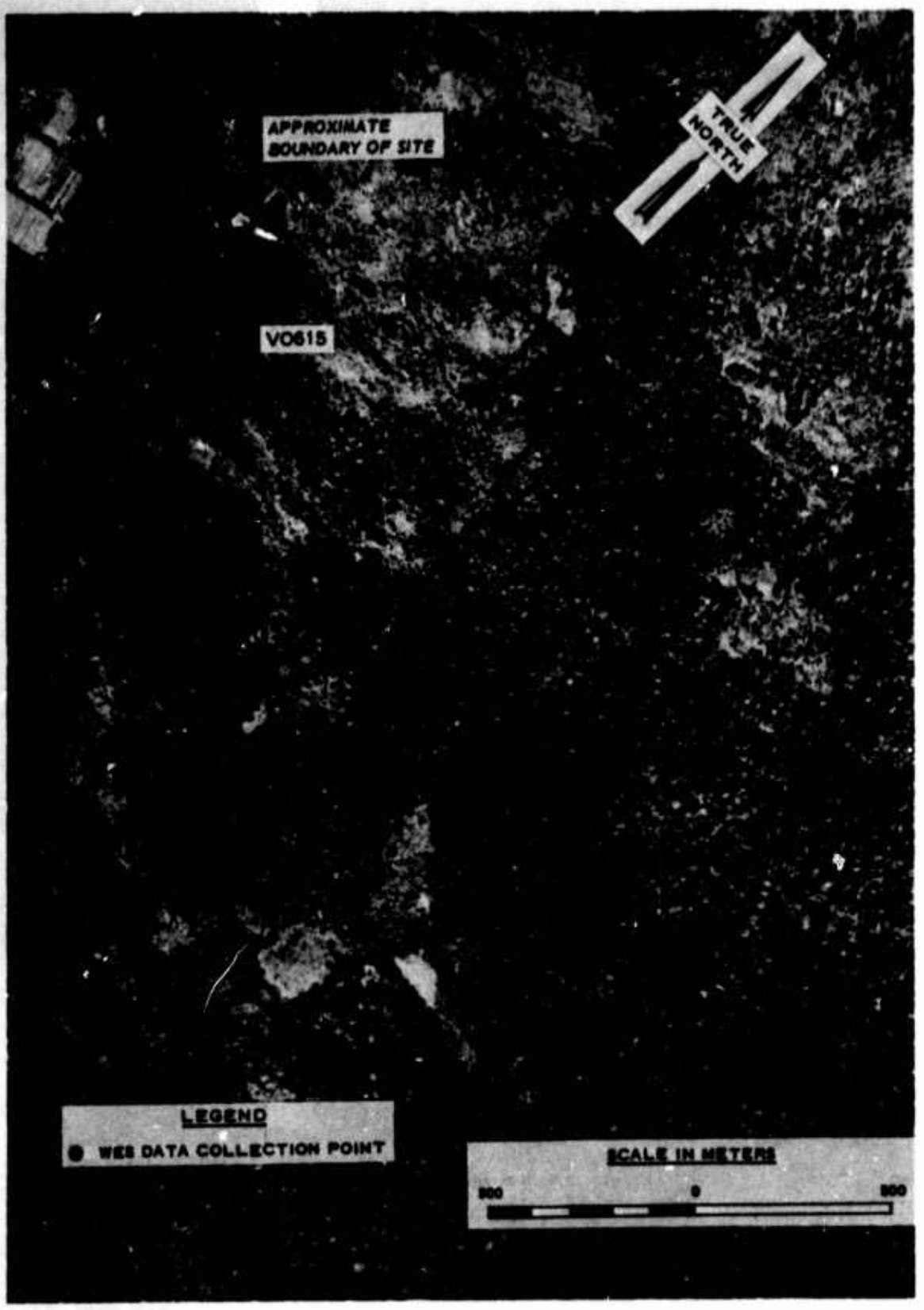

Fig. 28. Rubber plantation site, Chanthaburi, Thailand

Fig. 29. Stereopair of the plantation floor at data collection point V0615 (February 1965)

Chanthaburi forest (WES site V0640)

10. This site, which is within the tropical rain forest zone,[1] is in a small forest in a predominantly agricultural area approximately 16 km northwest of Chanthaburi (fig. 30). The site is near the top of a ridge at the head of a normally dry drainage channel on slopes of about 4 percent. The soils are predominantly loam (ML by USCS) in the surface layer (depth approximately 35 cm) and gravelly clay loam (CL by USCS) in the subsurface layer. From the air the canopy appears to be somewhat uniform, but gaps can be observed. Fig. 31 illustrates the appearance of the site from the air and shows the approximate location of the center of data collection point V0640 where detailed ground data were obtained. From the ground the crowns of the trees that form the main canopy level appear somewhat widely spaced. The understory vegetation is quite dense, and no well-marked stratum beneath the main canopy level is apparent. Photographs illustrating the appearance of the forest floor are shown in figs. 32 and 33. A description of vegetation found at data collection point V0640 is given in Appendix B, table B11.

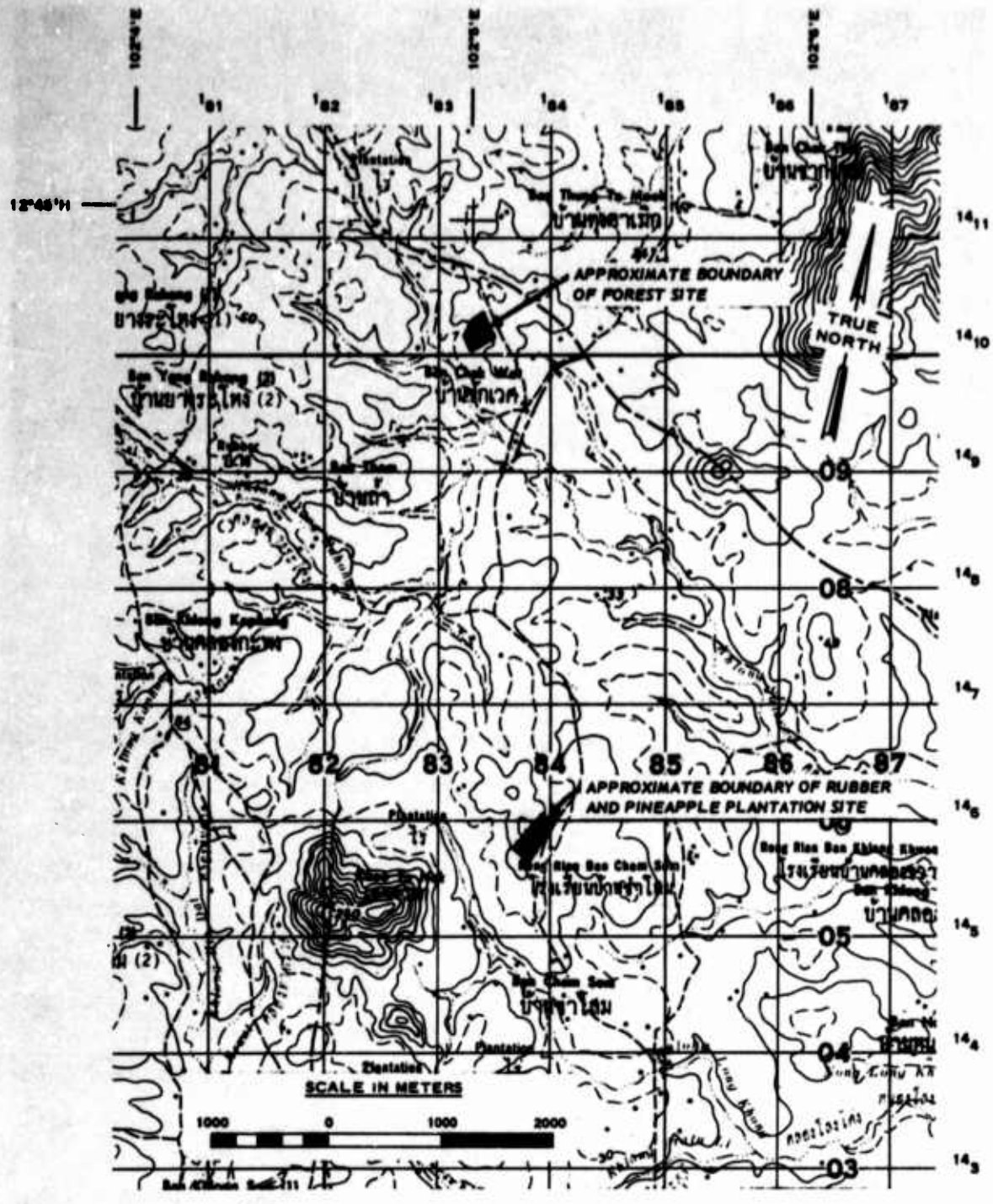

Fig. 30. Location of forest and rubber and pineapple plantation sites, Chanthaburi, Thailand

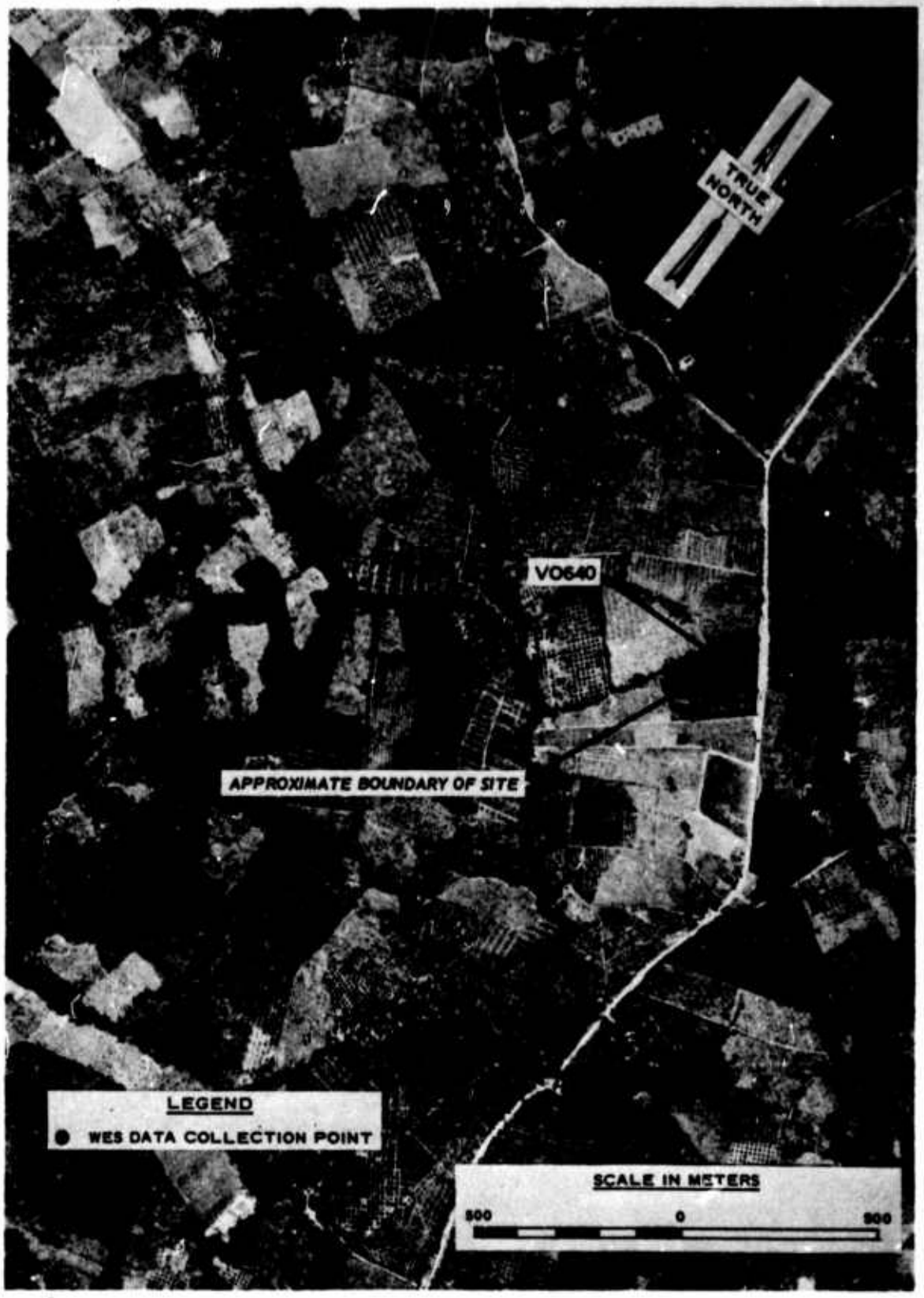

Fig. 31. Vertical air photo of forest site, Chanthaburi, Thailand

Fig. 32. Dense understory vegetation at data collection point V0640 (March 1965)

Fig. 33. Stereopair showing dense understory vegetation at data collection point V0640

Chanthaburi rubber and pine-
apple plantation (WES site V0639)

11. This site is in a poorly kept rubber and pineapple plantation approximately 12 km northwest of Chanthaburi (fig. 30). In this type of plantation, the land is not completely cleared of the old rubber trees (slash) from the previous crop before another generation is allowed to grow undisturbed, thereby producing a somewhat dense understory. The site is on an east-to-west slope of approximately 4 percent. The soil in the surface layer (depth approximately 25 cm) as well as that in the subsurface layer is a sandy loam (SM by USCS). From the air the site appears to be a relatively young plantation. From the ground it is apparent that the canopy is not complete. Fig. 34, a ground photograph of the site, illustrates the understory (pineapple plants, etc.) and the amount of sunlight penetrating the canopy to the plantation floor. An aerial view of the site is shown in fig. 35; plotted therein are the outline of the site and the approximate location of the center of data collection point V0639. A description of vegetation found at this point is given in Appendix B, table B10.

Fig. 34. Stereopair of the plantation floor at data collection point V0639. Note pineapple plants and other understory vegetation (March 1965)

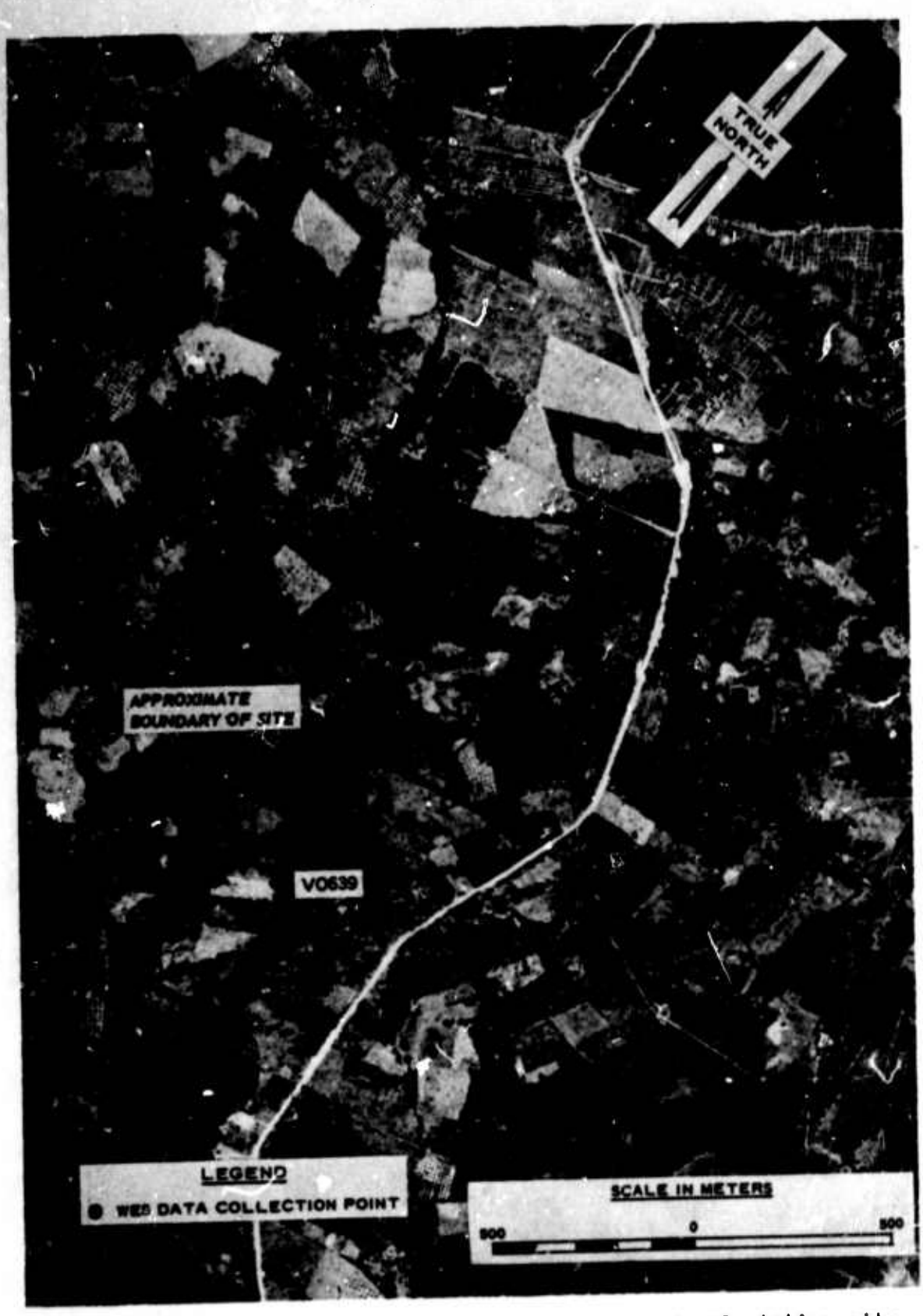

Fig. 35. Vertical air photo of rubber and pineapple plantation site, Chanthaburi, Thailand

PART III: COMPARISON OF VEGETATION STRUCTURE CHARACTERISTICS

12. In this study comparisons were made of stem diameter, stem spacing, stem height, and number of stems. Although these are by no means the only vegetation factors that affect the performance of munitions, they appear to be among the most significant. The number, size, and spacing of the stems control the free-flight path of projectiles; and the stem heights influence the distance aboveground at which fuses activate.

13. To provide an expedient means of making objective site comparisons two computer programs were developed to plot automatically a series of graphs and histograms that illustrate similarities and dissimilarities among the selected characteristics. One program computes the number and cumulative number of stems and the spacing and cumulative spacing of stems in 1-cm-stem-diameter classes, and the other program computes the number and cumulative number of stems and the spacing and cumulative spacing of stems in 1-m-height classes. In order for the environmental factors of one data collection point to be compared with those of another, all data collection points were placed on a common unit area (1257 sq m) that was equal to the area representing the largest structural cell that was measured. (For the procedures used see Appendix B.) Plates 1-8 present the various histograms and graphs that were produced for the CZ and Thailand site comparisons. Computer print-outs showing the computations used in constructing these histograms and graphs are also included as tables B12-B22 in Appendix B.

14. In the following paragraphs, only the general and most significant structural likenesses and differences among the study sites are discussed. Detailed comparisons among the CZ and Thailand data collection points can easily be made by an analysis of the graphs and histograms.

Number of Stems in Each Stem Diameter Class

15. Histograms representing the number of stems in each 1-cm-stem-diameter class for the CZ and Thailand sites are shown in plate 1. It is apparent that for most of the histograms the number of stems decreases

rapidly with increasing stem diameter to less than 10 stems somewhere in the 1- to 21-cm-stem-diameter class, then remains fairly constant at only a few stems for the remaining diameter classes. Obvious exceptions to this trend are found in three Thailand sites where (a) a significant increase occurs in the number of stems for stem diameter classes 8, 10-16, and 20 cm for the Pran Buri forest (fig. 4, plate 1); (b) a significant lack of stems in the 2- to 12-cm-stem-diameter class is noted for the Chanthaburi rubber plantation (fig. 5, plate 1); and (c) almost all of the stems in the Chanthaburi rubber and pineapple plantation (fig. 6, plate 1) are grouped in stem diameter classes of 1-9 and 15-20 cm. Other readily discernible dissimilarities are the nonexistence of any stems in the 26- to 46-cm-stem-diameter class for data collection point P4-06 (fig. 2b, plate 1) in the Balboa forest and the 23- to 57-cm-stem-diameter class for the Chanthaburi rubber and pineapple plantation (fig. 6, plate 1).

16. A point worthy of note is the absence of stems with large diameters at data collection point P4-01 (fig. 2a, plate 1) in the Balboa forest. This is partly attributed to the exclusion of the widely spaced emergent trees (trees with heights greater than 35 m) from the structural comparison (for an explanation of this see paragraph 6, Appendix B). Also, data collection point P3-01 in the Piña forest would show a larger concentration of stems for diameter class 58 had not the emergent trees been excluded.

Cumulative Number of Stems of a Given Stem Diameter Class

17. Graphs illustrating the cumulative number of stems of a given stem diameter class and less (line A) and a given stem diameter class and greater (line B) for the sites are shown in plate 2. All of the forest sites exhibit similar characteristics; however, the curves for the Chanthaburi plantation sites (figs. 5 and 6, plate 2) are not only different from those of the forest sites but are dissimilar to each other. The two Chanthaburi plantation sites exhibit more stems than any of the forest sites. It will be noted that the Chanthaburi rubber and pineapple plantation has in excess of 250,000 stems, while the Chanthaburi rubber plantation

contains almost 50,000 stems; both sites show 99 percent of the stems occurring in stem diameter class 1. All of the sample points in the forest sites show a range of between 5000 and slightly more than 10,000 stems with approximately 80 percent of the stems occurring in stem diameter class 1.

Spacing of Stems in Each Stem Diameter Class

18. Plate 3 portrays spacing of stems in each 1-cm-stem-diameter class for the various study sites. The histograms, in general, show a gradual increase in stem spacing with increasing stem diameter, up to a diameter class of approximately 13-17 cm. Notable deviations from this trend are the poorly kept rubber and pineapple plantation (fig. 6, plate 3) where a maximum spacing is reached at a stem diameter class of 7 cm, the well-kept rubber plantation (fig. 5, plate 3), which shows a close spacing of understory plants, and the Pran Buri forest (fig. 4, plate 3) where a maximum spacing is attained at a stem diameter class of 3 cm. The greatest maximum spacing (40 m) is portrayed by the Chanthaburi forest (fig. 3, plate 3), and the least maximum spacing (20 m) is portrayed by the Pran Buri forest (fig. 4, plate 3). All other sites have maximum spacing ranging from 23 to 30 m, although one data collection point, P4-01 (fig. 2a, plate 3), in the Balboa forest site also shows a maximum stem spacing of 20 m.

19. Perhaps the most striking variation revealed by the histograms is the sudden decrease in stem spacing for most stem diameter classes between 8 and 21 cm in the Pran Buri forest (fig. 4, plate 3) and between 15 and 19 cm in the Chanthaburi rubber and pineapple plantation (fig. 6, plate 3). The close spacing in the 8- to 21-cm-stem-diameter range in the Pran Buri forest can be attributed to the fact that many of the plants within those stem diameter classes have multiple stems. Since the graphs are based on the number of stems rather than the number of plants, the result is a concentration of stems in the 8- to 21-cm-stem-diameter classes. The relatively close spacing in the 15- to 19-cm-stem-diameter class in the Chanthaburi rubber and pineapple plantation was brought about by the ordered planting of the rubber trees.

20. Another apparent anomaly worthy of discussion is the decrease in spacing for stem diameter class 58 in a number of the histograms. This feature is a product of the stem diameter computer program and is discussed in paragraph 5, Appendix B. Also it is notable that data collection point P4-01 (fig. 2a, plate 3) in the Balboa forest shows no spacing values for stem diameters greater than 45 cm. Here, the absence of stems can be attributed to the exclusion of the emergent trees from the structural comparison (see paragraph 6, Appendix B).

Cumulative Spacing of Stems of a Given Stem Diameter Class

21. Graphs representing the cumulative spacing of stems of a given stem diameter class and less (line A) and of a given stem diameter class and greater (line B) are contained in plate 4. Since the curves depicting cumulative spacing of a given diameter class and less are nearly straight lines extending almost horizontally across the graph they are irrelevant in this case. However, the curves for cumulative spacing of stems of a given stem diameter class and greater portray some predominant variations if only the 35- to 58-cm-stem-diameter classes are considered. Sharp increases in cumulative spacing take place in these diameter classes in the Chanthaburi rubber plantation (fig. 5, plate 4), and the Chanthaburi forest (fig. 3, plate 4). The four Piña data collection points (figs. 1a-1d, plate 4) are remarkably similar while the variation among the three Balboa data collection points (figs. 2a-2c, plate 4) is somewhat greater. It should be noted that the Pran Buri forest (fig. 4, plate 4) displays a much smaller spacing value in the low stem diameter classes than any of the other sites. The Chanthaburi rubber and pineapple plantation (fig. 6, plate 4) clearly displays the "stepped" spacing that would be expected in an artificially planted and maintained stand; it is perhaps worthy of note that the Chanthaburi rubber plantation (fig. 5, plate 4) displays this feature less clearly, probably because of the practice of replacing the old nonproductive trees with new trees.

Number of Stems in Each Height Class

22. Histograms portraying the number of stems in each 1-m height class are presented in plate 5. It is readily discernible that the number of stems generally decreases exponentially with increasing height. The most obvious exceptions to this trend, however, occur in fig. 4, plate 5 (Pran Buri forest), fig. 5, plate 5 (Chanthaburi rubber plantation), and fig. 6, plate 5 (Chanthaburi rubber and pineapple plantation). The concentration of stems in the 8- to 12-m height classes in fig. 4, plate 5, is attributable to the tendency for plants in those height classes to have multiple stems. In fig. 5, plate 5, the 0- to 1-m height class represents a dense ground cover of small, long-leaf plants, whereas the 14- to 23-m height classes contain the planted rubber trees. Grass, pineapple plants, and rubber trees comprise the 0- to 1-, 1- to 2-, and 10- to 12-m height classes, respectively, in fig. 6, plate 5.

23. When comparing the heights of the taller trees in the forest sites the Chanthaburi (fig. 3, plate 5), the Pran Buri (fig. 4, plate 5), and Piña forests (fig. 1, plate 5) showed heights in the 30- to 33-m range, whereas the Balboa forest (fig. 2, plate 5) exhibited heights in the 25- to 28-m range. The heights of the taller trees in the rubber plantation sites occurred in the 12- to 23-m range.

Cumulative Number of Stems of a Given Height Class

24. Graphs of cumulative number of stems of a given height class and less (line A) and of a given height class and greater (line B) are shown in plate 6. Except for the Chanthaburi plantations (figs. 5 and 6, plate 6), the general appearances of the graphs are very much alike. The differences portrayed by line B for the plantation sites (figs. 5 and 6, plate 6) are due to the existence of a large number of stems for the smallest height class and the occurrence of no stems in the 1- to 13-m and 2- to 9-m height classes. Perhaps the most significant aspect of these graphs is the extraordinary accumulation of stems (almost 260,000) in the 0- to 1-m height class for the Chanthaburi rubber and pineapple plantation (fig. 6, plate 6).

Spacing of Stems in Each Height Class

25. The spacing of stems in each 1-m height class is presented in the form of histograms in plate 7. Although all of the forest sites exhibit a general increase in spacing with increasing height class to a height of about 13-18 m, the Pran Buri forest (fig. 4, plate 7) exhibits a much smaller spacing for the larger height classes than the other forest sites (about 20 m as opposed to 23-40 m for the other forest sites; although one of the three data collection points in the Balboa forest, P4-01, shows maximum spacing at 20 m). The Chanthaburi forest (fig. 3, plate 7) is the reverse; the spacing value of the larger height classes is 40 m, considerably greater than that displayed by any of the forests.

26. The two rubber plantation sites display the ordered arrangement that is to be expected in a planted array of trees: the trees tend to be of approximately the same height. The peculiar shape of the histograms, with smaller spacings characterizing the taller stems, is probably the result of the practice of replacing nonproductive trees with new plantings. Thus there are always a few small, widely spaced trees in any rubber grove.

Cumulative Spacing of Stems of a Given Height Class

27. Graphs denoting the cumulative spacing of stems of a given height class and less (line A) and of a given height class and greater (line B) are displayed in plate 8. Since line A on all of the graphs is nearly a straight line extending along, and almost parallel to, the base of the horizontal axis, the cumulative spacing of stems of a given height class and less is irrelevant in this instance. Line B, however, shows a relatively uniform increase in cumulative spacing with corresponding greater stem height; notable exceptions to this trend again appear in the two Thailand plantations (figs. 5 and 6, plate 8), where the stems are grouped into only a few classes, thereby resulting in no increase in cumulative spacing for those classes that were void of stems. Notable differences in the cumulative curves (line B) for the forest sites were the wide

spacing for the taller stems in the Chanthaburi forest (fig. 3, plate 8) and the close spacing in the Pran Buri forest (fig. 4, plate 8).

PART IV: CONCLUSIONS AND RECOMMENDATIONS

Conclusions

28. Based on the descriptions and comparisons presented herein, it is concluded that:

a. The CZ and Thailand forests were remarkably similar in the number of stems in each stem diameter class; however, in the spacing of stems in each stem diameter class and in each height class the forests showed some dissimilarity.

b. The taller trees in the Chanthaburi, Pran Buri, and Piña forests occurred in the 30- to 33-m range, whereas the taller trees in the Balboa forest occurred in the 25- to 28-m range.

c. The structural characteristics of the rubber plantations are very unlike those of the forests.

Recommendations

29. In view of the need for extrapolating munition effectiveness from one environment to another and for predicting performance in any given environment, it is recommended that:

a. Work be continued on the identification of those parameters of a vegetated environment that significantly affect the performance of munitions.

b. Additional objective comparisons be made of other DEP test environments and potential operational environments.

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4. Richards, P. W., The Tropical Rain Forest; An Ecological Study, 1st ed., Cambridge University Press, Cambridge, England, 1952.

5. McCullough, C. R., Johnston, I. M., and Parker, J. M., III, "Terrain Study of the Panama Canal Zone with Specific Reference to the Ft. Sherman Area and Vicinity," Contract Report No. 3-18, July 1956, U. S. Army Engineer Waterways Experiment Station, CE, Vicksburg, Miss.; prepared by North Carolina State College, School of Engineering, Raleigh, N. C.

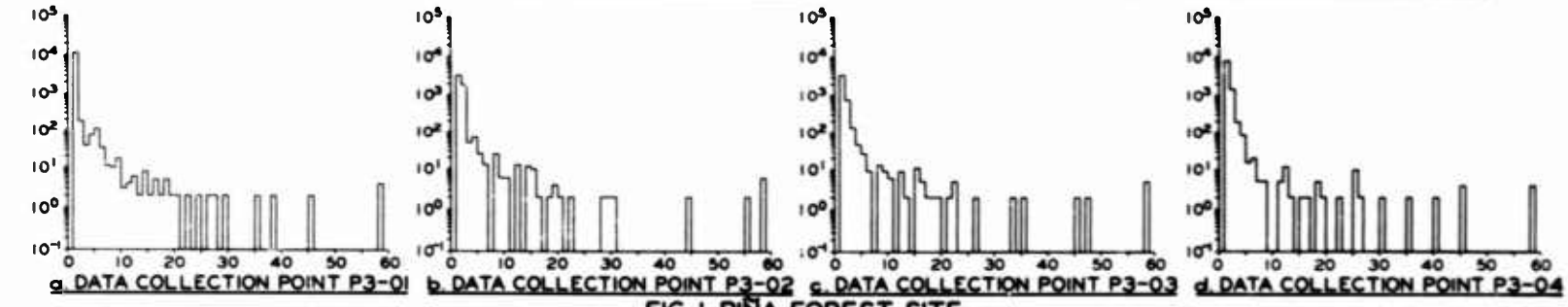


FIG. 1. PIÑA FOREST SITE

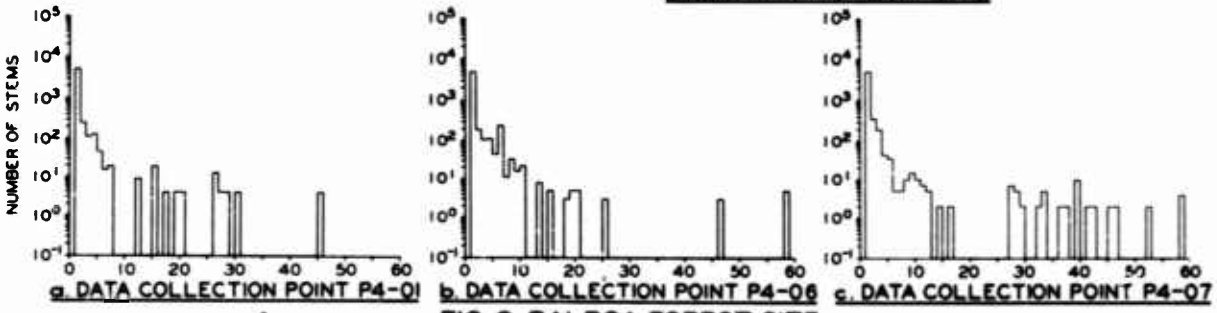


FIG. 2. BALBOA FOREST SITE

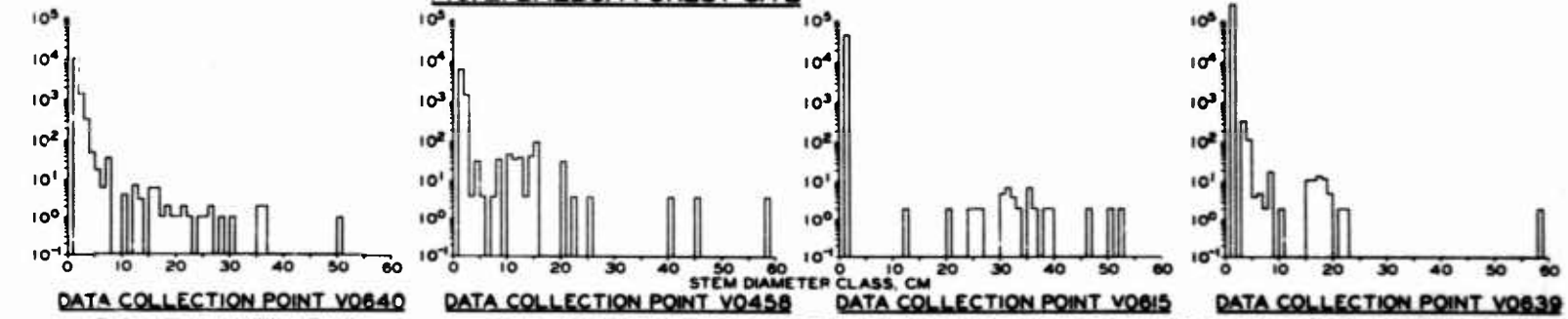


FIG. 3. CHANTHABURI FOREST SITE

FIG. 4. PRAN BURI FOREST SITE

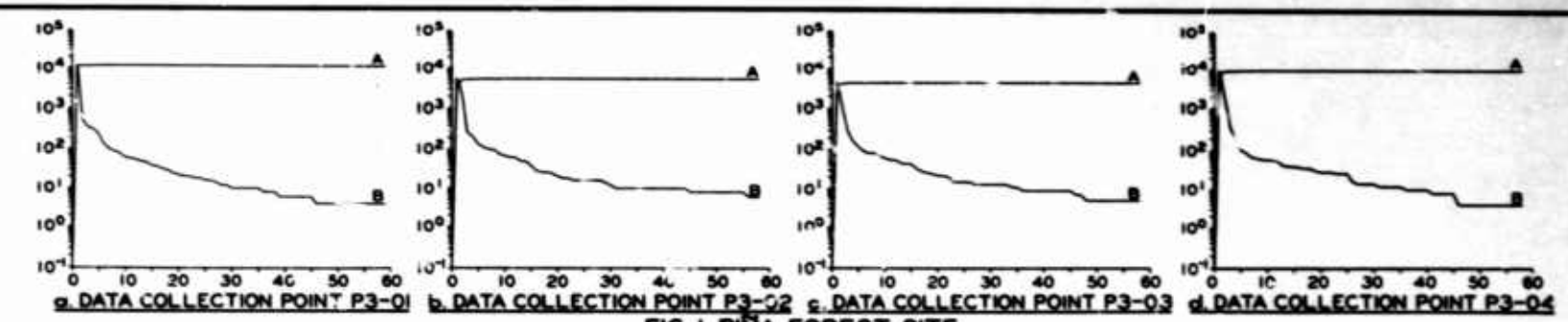
FIG. 5. CHANTHABURI RUBBER PLANTATION SITE

FIG. 6. CHANTHABURI RUBBER AND PINEAPPLE PLANTATION SITE

NUMBER OF STEMS IN EACH STEM DIAMETER CLASS

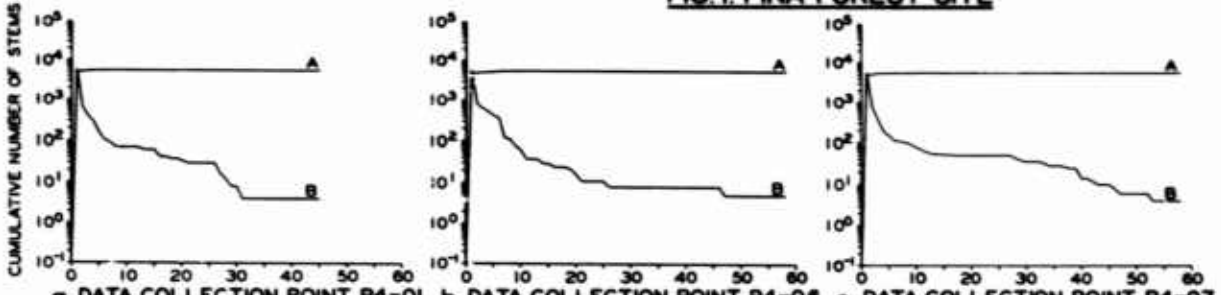
PLATE I

PLATE 2



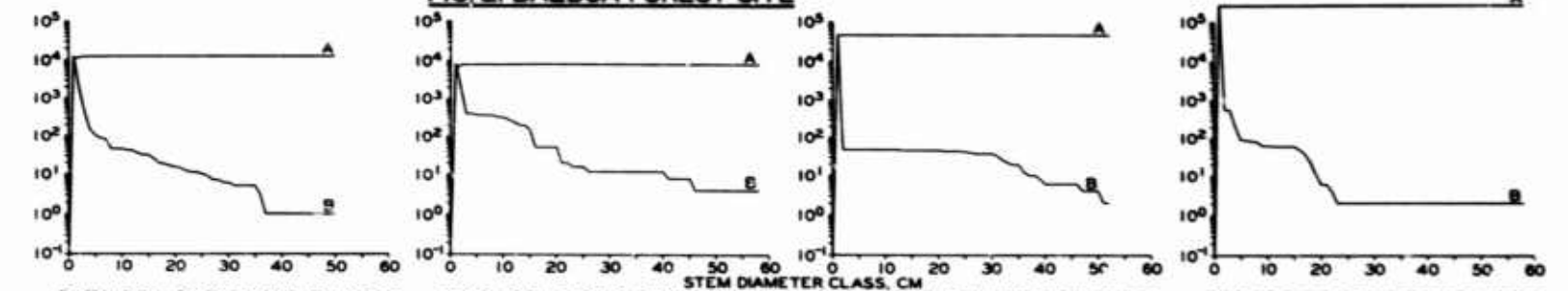
a. DATA COLLECTION POINT P3-01 b. DATA COLLECTION POINT P3-02 c. DATA COLLECTION POINT P3-03 d. DATA COLLECTION POINT P3-04

FIG. 1. PINA FOREST SITE



a. DATA COLLECTION POINT P4-01 b. DATA COLLECTION POINT P4-06 c. DATA COLLECTION POINT P4-07

FIG. 2. BALBOA FOREST SITE



DATA COLLECTION POINT V0640 DATA COLLECTION POINT V0458 DATA COLLECTION POINT V2615 DATA COLLECTION POINT V0639

FIG. 3. CHANTHABURI FOREST SITE

FIG. 4. PRAN BURI FOREST SITE

FIG. 5. CHANTHABURI RUBBER PLANTATION SITE

FIG. 6. CHANTHABURI RUBBER AND PINEAPPLE PLANTATION SITE

NOTE: LINE A DENOTES CUMULATIVE NUMBER OF STEMS OF A GIVEN STEM DIAMETER CLASS AND LESS. LINE B DENOTES CUMULATIVE NUMBER OF STEMS OF A GIVEN STEM DIAMETER CLASS AND GREATER.

CUMULATIVE NUMBER OF STEMS OF A GIVEN STEM DIAMETER CLASS

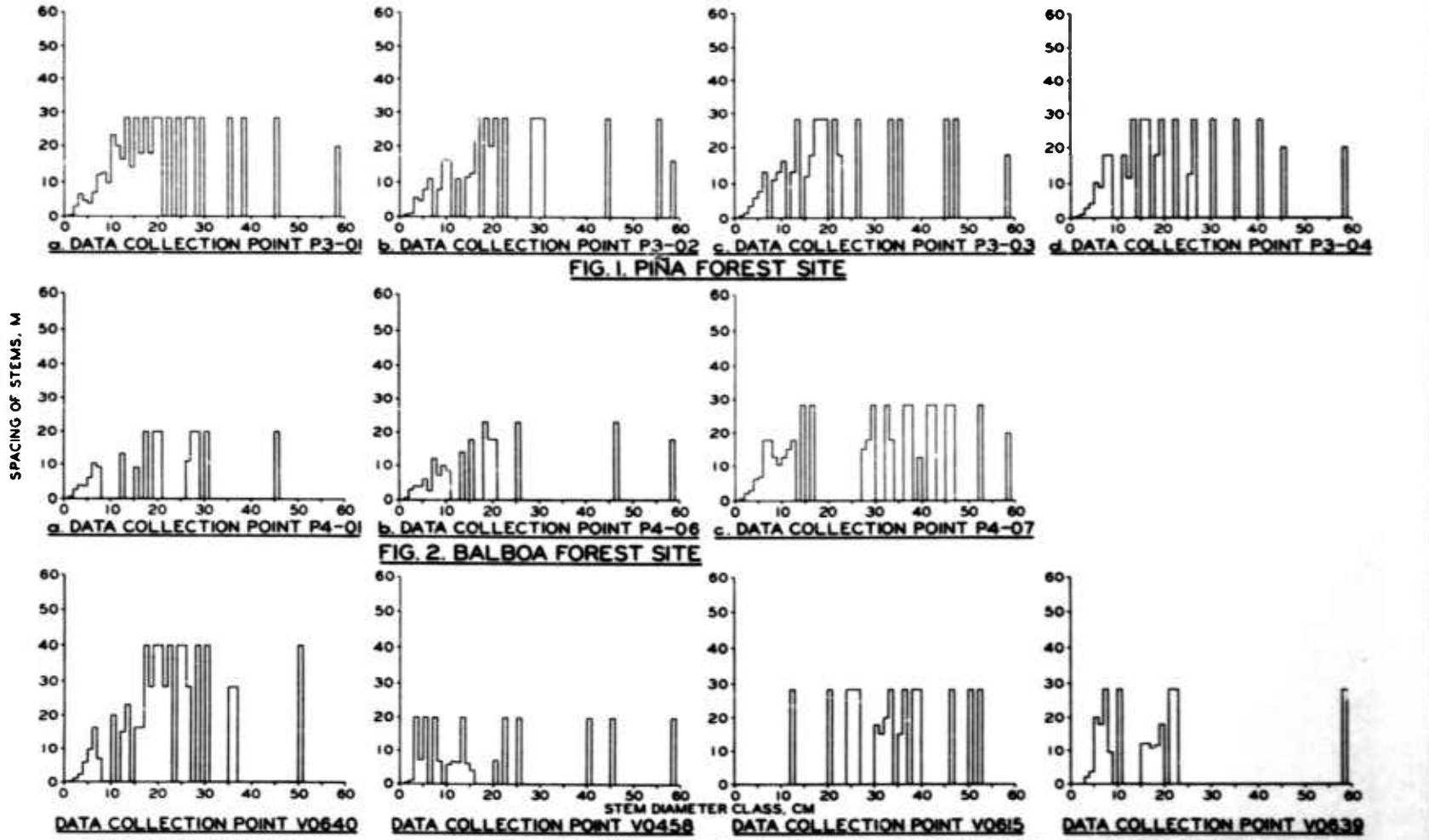


FIG. 1. PIÑA FOREST SITE

FIG. 2. BALBOA FOREST SITE

FIG. 3. CHANTHABURI FOREST SITE

FIG. 4. PRAN BURI FOREST SITE

FIG. 5. CHANTHABURI RUBBER PLANTATION SITE

FIG. 6. CHANTHABURI RUBBER AND PINEAPPLE PLANTATION SITE

SPACING OF STEMS IN EACH STEM DIAMETER CLASS

PLATE 3

PLATE 4

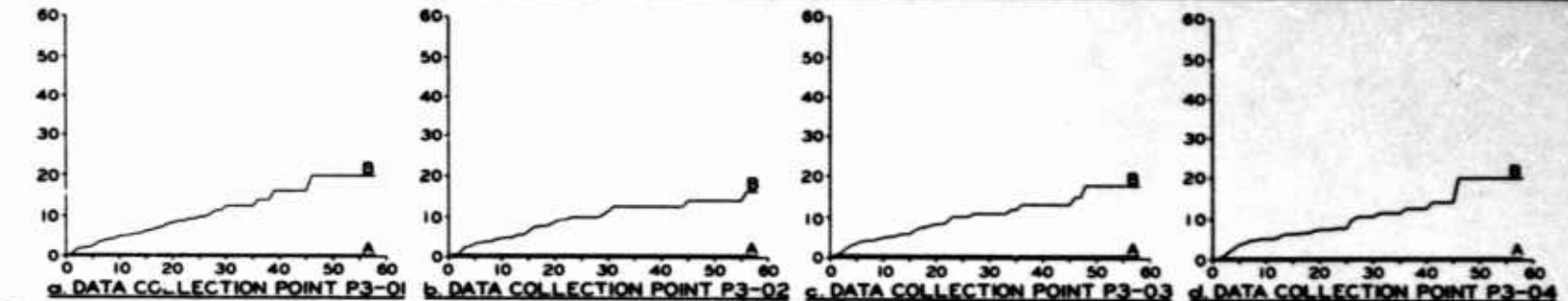


FIG. 1. PIÑA FOREST SITE

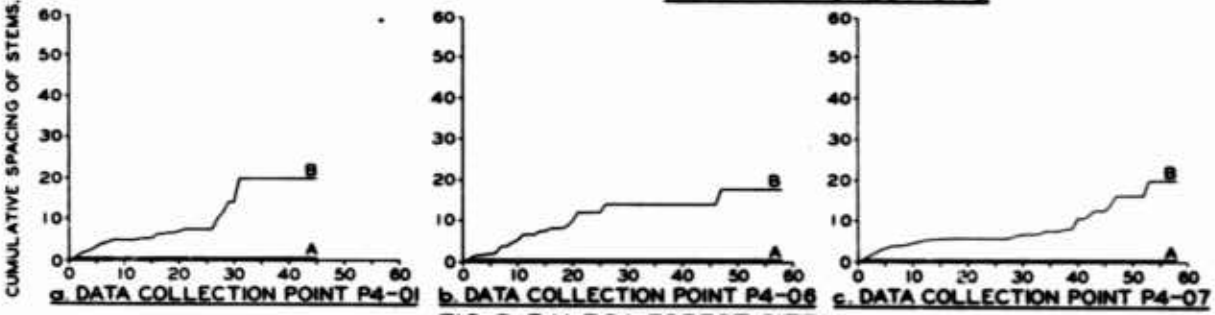


FIG. 2. BALBOA FOREST SITE

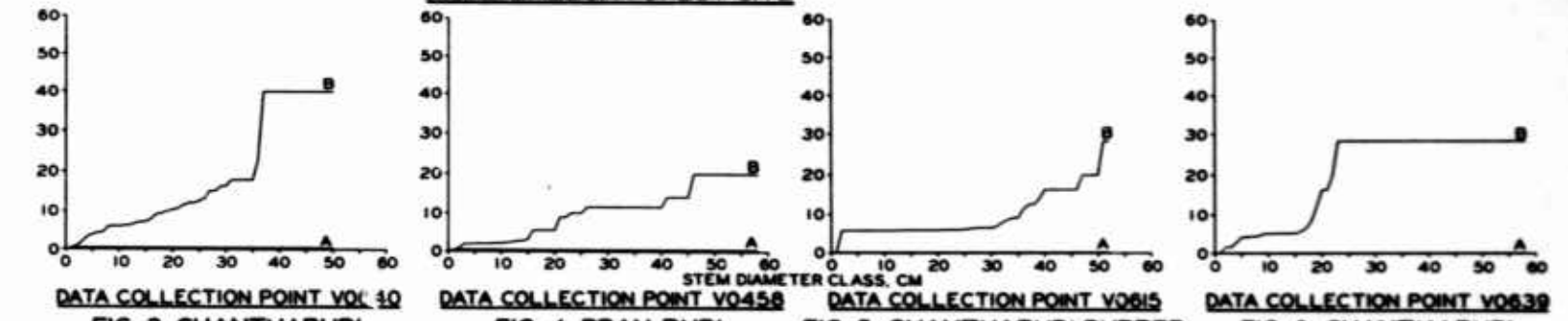


FIG. 3. CHANTHABURI FOREST SITE

FIG. 4. PRAN BURI FOREST SITE

FIG. 5. CHANTHABURI RUBBER PLANTATION SITE

FIG. 6. CHANTHABURI RUBBER AND PINEAPPLE PLANTATION SITE

NOTE: LINE A DENOTES CUMULATIVE SPACING OF STEMS OF A GIVEN STEM DIAMETER CLASS AND LESS.
LINE B DENOTES CUMULATIVE SPACING OF STEMS OF A GIVEN STEM DIAMETER CLASS AND GREATER.

CUMULATIVE SPACING OF STEMS OF A GIVEN STEM DIAMETER CLASS

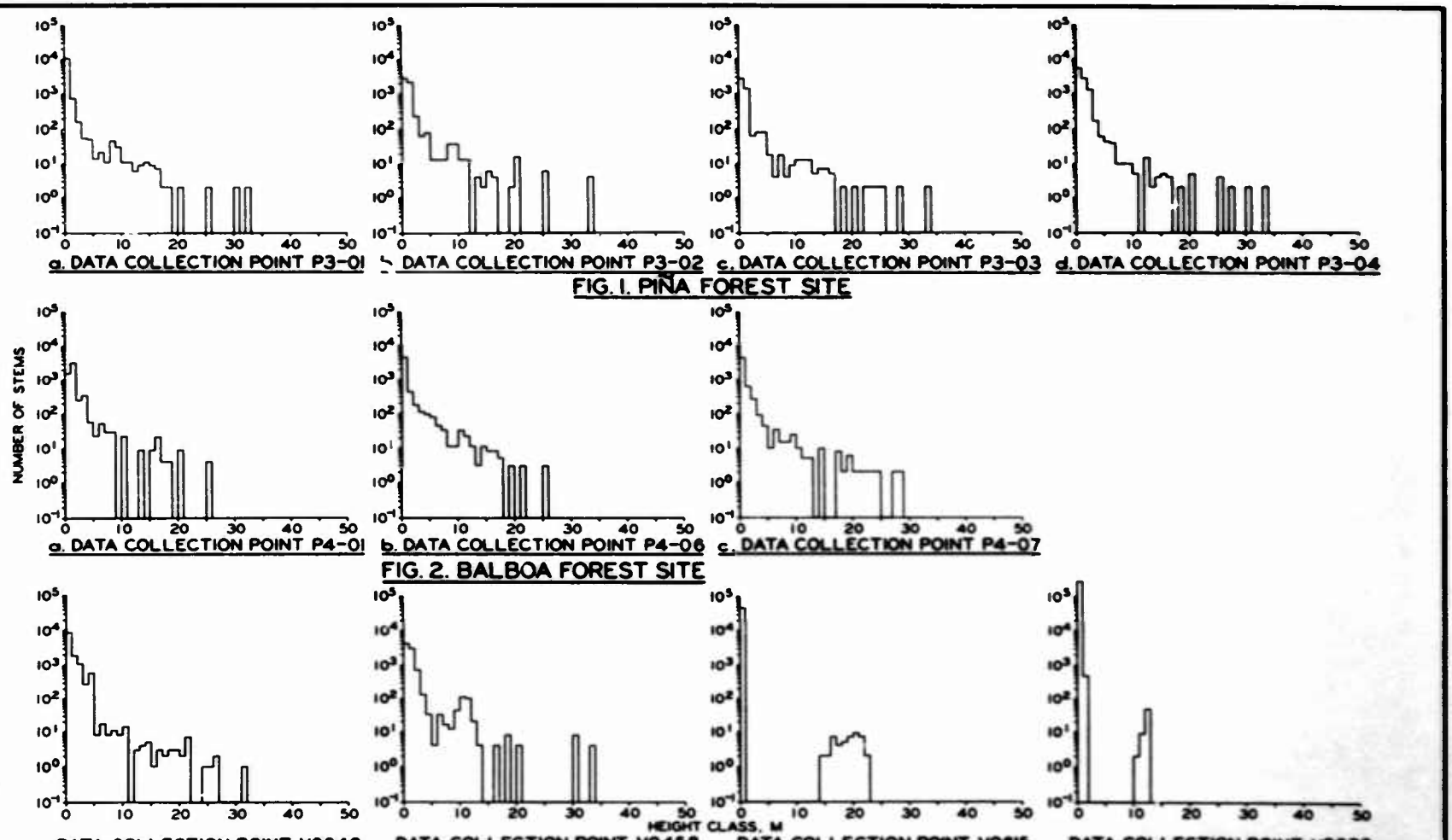


FIG. 1. PINA FOREST SITE

FIG. 2. BALBOA FOREST SITE

FIG. 3. CHANTHABURI FOREST SITE

FIG. 4. PRAN BURI FOREST SITE

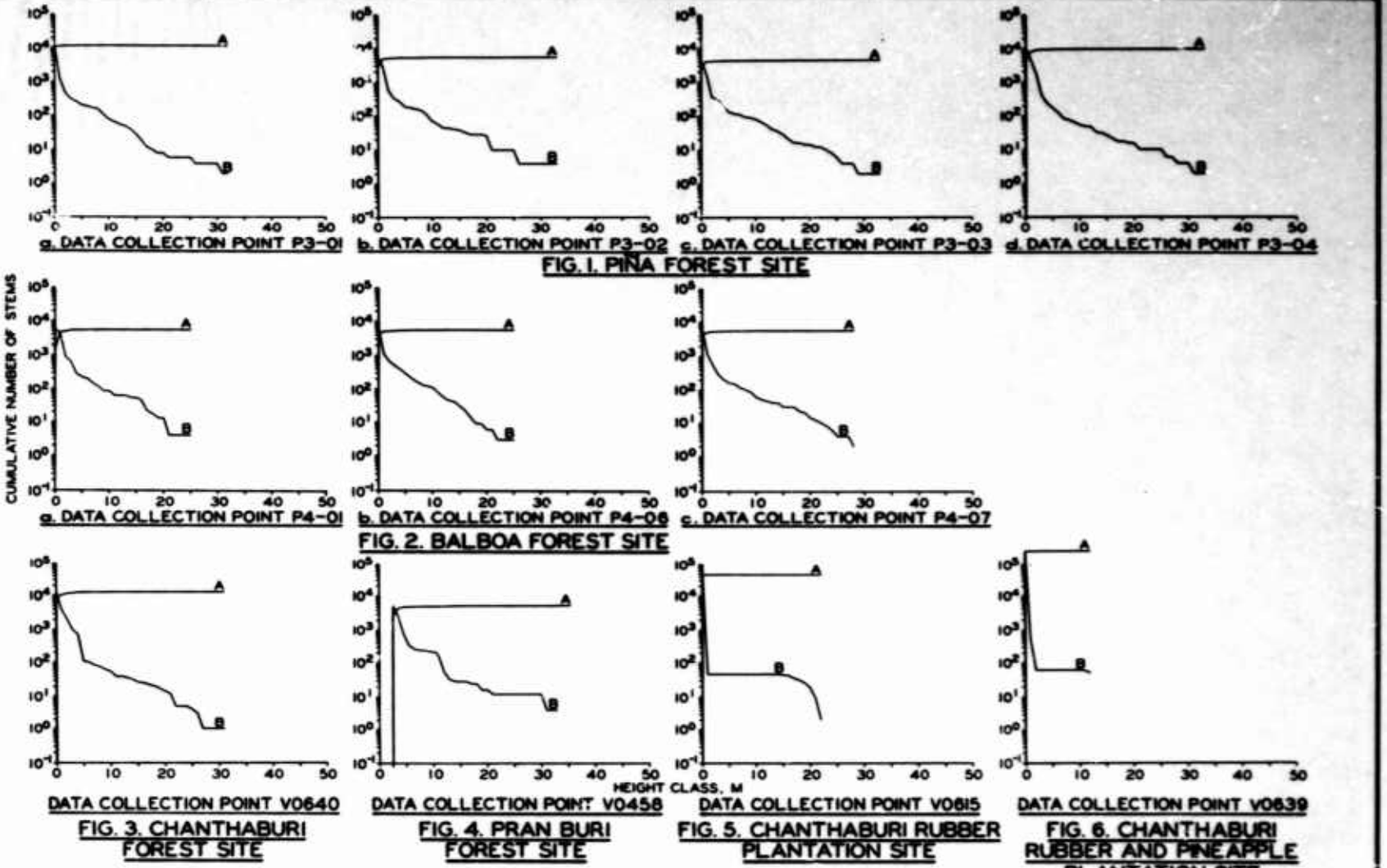
FIG. 5. CHANTHABURI RUBBER PLANTATION SITE

FIG. 6. CHANTHABURI RUBBER AND PINEAPPLE PLANTATION SITE

NUMBER OF STEMS IN EACH HEIGHT CLASS

PLATE 5

PLATE 6



a. DATA COLLECTION POINT P3-01 b. DATA COLLECTION POINT P3-02 c. DATA COLLECTION POINT P3-03 d. DATA COLLECTION POINT P3-04

FIG. 1. PINA FOREST SITE

a. DATA COLLECTION POINT P4-01 b. DATA COLLECTION POINT P4-06 c. DATA COLLECTION POINT P4-07

FIG. 2. BALBOA FOREST SITE

DATA COLLECTION POINT V0640

FIG. 3. CHANTHABURI FOREST SITE

DATA COLLECTION POINT V0458

FIG. 4. PRAN BURI FOREST SITE

DATA COLLECTION POINT V0615

FIG. 5. CHANTHABURI RUBBER PLANTATION SITE

DATA COLLECTION POINT V0639

FIG. 6. CHANTHABURI RUBBER AND PINEAPPLE PLANTATION SITE

NOTE: LINE A DENOTES CUMULATIVE NUMBER OF STEMS OF A GIVEN HEIGHT CLASS AND LESS.
LINE B DENOTES CUMULATIVE NUMBER OF STEMS OF A GIVEN HEIGHT CLASS AND GREATER.

CUMULATIVE NUMBER OF STEMS OF A GIVEN HEIGHT CLASS

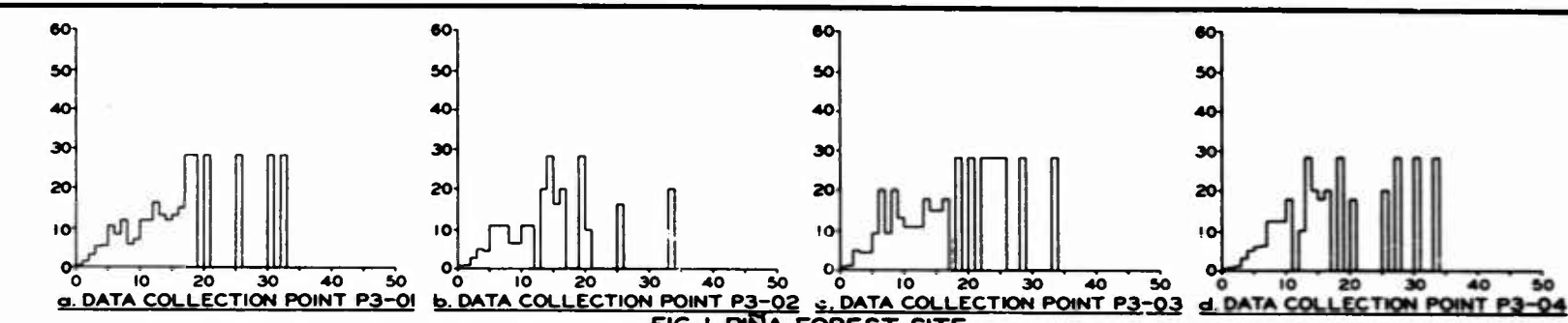


FIG. 1. PINA FOREST SITE

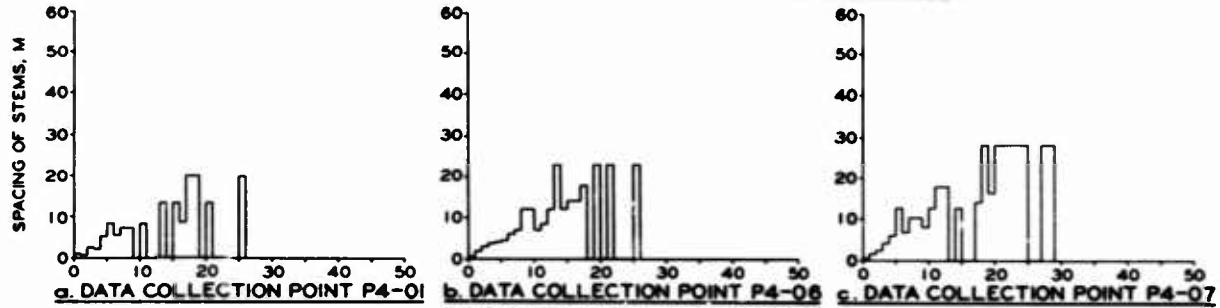


FIG. 2. BALBOA FOREST SITE

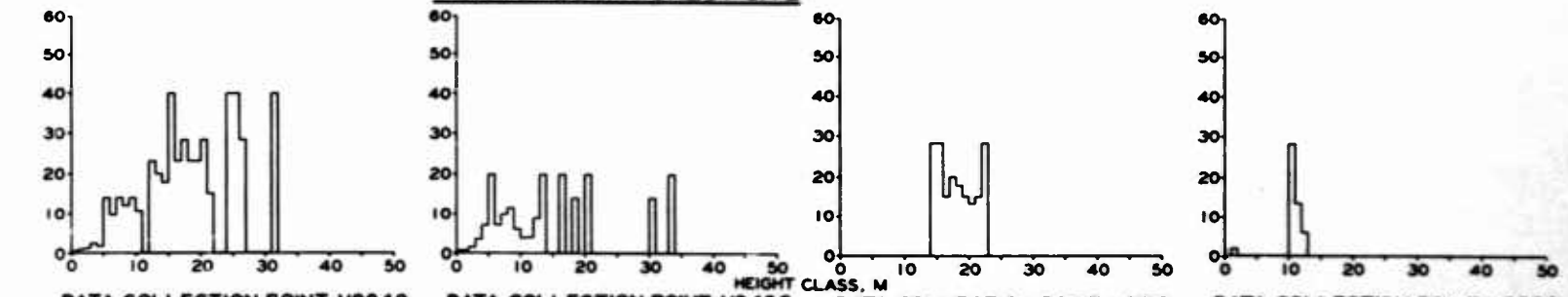


FIG. 3. CHANTHABURI FOREST SITE

FIG. 4. PRAN BURI FOREST SITE

FIG. 5. CHANTHABURI RUBBER PLANTATION SITE

FIG. 6. CHANTHABURI RUBBER AND PINEAPPLE PLANTATION SITE

SPACING OF STEMS IN EACH HEIGHT CLASS

PLATE 7

PLATE 8

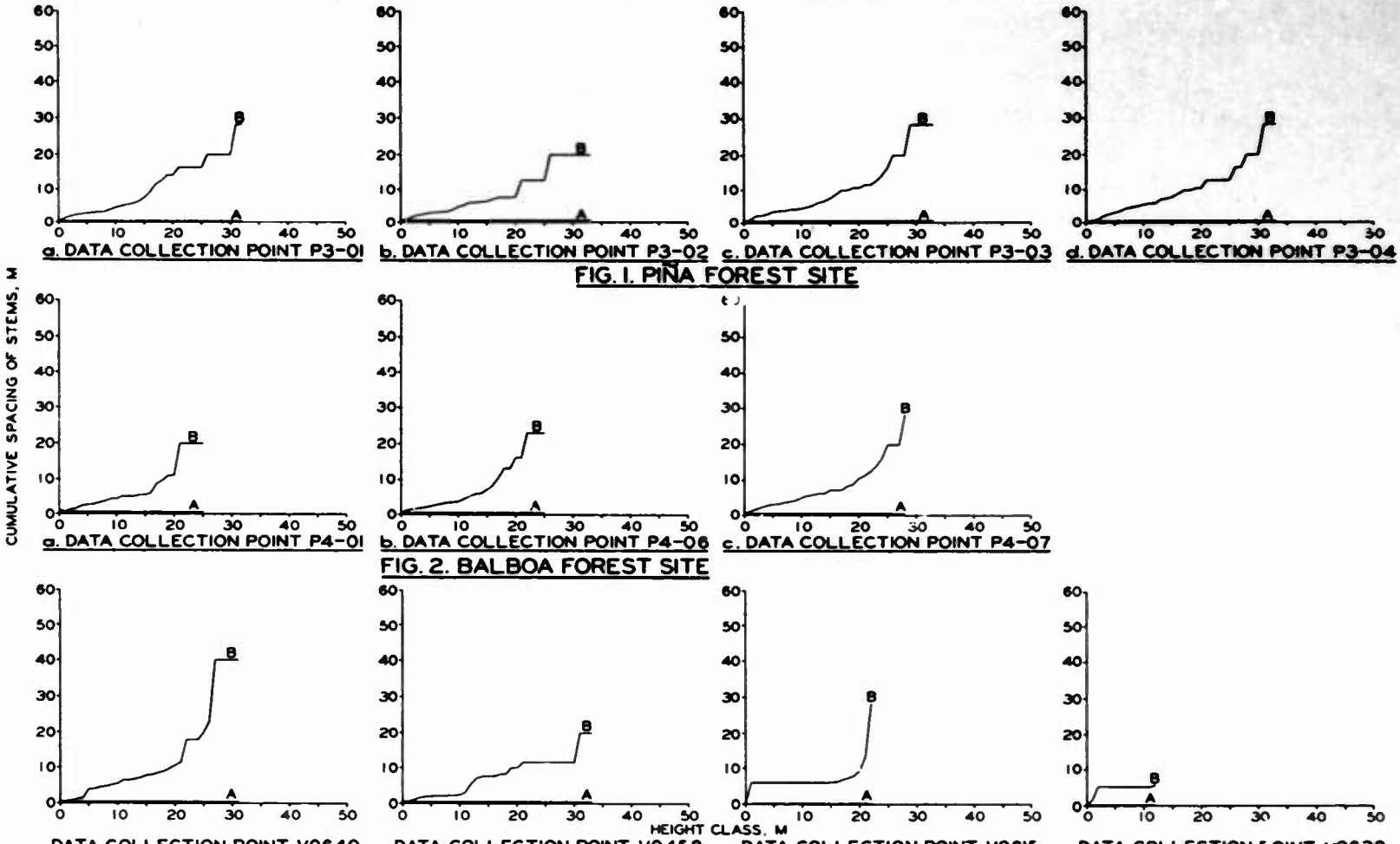


FIG. 1. PIÑA FOREST SITE

FIG. 2. BALBOA FOREST SITE

FIG. 3. CHANTHABURI FOREST SITE

FIG. 4. PRAN BURI FOREST SITE

FIG. 5. CHANTHABURI RUBBER PLANTATION SITE

FIG. 6. CHANTHABURI RUBBER AND PINEAPPLE PLANTATION SITE

NOTE: LINE A DENOTES CUMULATIVE SPACING OF STEMS OF A GIVEN HEIGHT CLASS AND LESS.
LINE B DENOTES CUMULATIVE SPACING OF STEMS OF A GIVEN HEIGHT CLASS AND GREATER.

CUMULATIVE SPACING OF STEMS OF A GIVEN HEIGHT CLASS

APPENDIX A: PROCEDURE FOR SAMPLING VEGETATION PHYSIOGNOMY

Data Collection Procedure

1. Collection of vegetation structural data in the field is accomplished most economically in open and simple structures with a three-man team, and in complex structures with a four-man team. Basic instrumentation consists of a Brunton compass and tripod (a site-marker transit or an alidade and plane table may be substituted under most conditions), a 30-m tape or chain, a range pole, and an Abney level (or similar instrument for measuring vertical angles). The Brunton compass is set up at any arbitrary location, and an arbitrarily oriented line of sight (usually magnetic north) is established. Each plant large enough to be significant is located by distance and azimuth, and its physiognomy is described in accordance with the definitions given below. Normally all of the plants in a relatively small annulus, with the Brunton compass at the center, are first described. Another annulus is then added and so on until a sufficiently large area is covered. Any circular area that encompasses at least 20 individuals of any designated structural type is considered to be a structural cell. Such a cell is believed to be the minimum area required to obtain a statistically significant sample of a given plant assemblage.*

Explanation of Vegetation Data Form

2. Definitions of information placed on the vegetation data form (plate A1) at a sample site are given in the following paragraphs. The annotation format is as follows: first, the type of information; second, a number or set of numbers in parentheses, identifying the column numbers in which the information is to be placed on the ADP cards (see Appendix B)

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* For a detailed discussion of sampling theory and practice, see: H. L. Mills, "The Physiognomy of Vegetation: A Quantitative Approach to Vegetation Geometry Based upon the Structural Cell Concept as the Minimum Sample Size," Contract Report No. 4-103, May 1964, U. S. Army Engineer Waterways Experiment Station, CE, Vicksburg, Miss.; prepared by Marshall University, Huntington, W. Va.

(this number also appears on the vegetation data form in parentheses under heading items, and at the head of columns on the body of the form); and third, a definition or other comment, as required in order to convey the exact form of data specified. When applicable, the code numbers used by the field crew for any encoded parameter are given within the definition or explanation of that parameter.

Heading items on data form

3. Heading items (see top of vegetation data form, plate A1) are those that contain general site and sampling information as follows:

a. Country (1-3). Each country (nation) is assigned a number from 001 through 999. The number for Panama is 103, and for Thailand, 132.

b. Site number (4-7). Within any given country, vegetation sample sites (referred to as data collection points in the main text of the report) are numbered consecutively from 0001 to 9999. For the DEP project an additional sample number that includes one letter is used to further identify the test area. The field party normally assigns the identification number.

c. Data group (8). This term designates the factors for which data are recorded on a given data sheet. The data group for vegetation data is signified by the printed "1" in the appropriate space.

d. Sample number (9-10). This is defined as the number of times the specific site has been sampled for this data group. The sample numbers will be 01 through 99. A new number is given if a sample site has been completed, then at some later time resampled.

e. Cover card identifier (11-13). Each sample site card deck has a cover card that provides certain general information, such as date, and so on. Cover cards must be removed before the data cards are analyzed. This column field corresponds to the field for "item number," on the data cards. Since "item number" is always some real positive value, a blank field in columns 11-13 identifies a cover card.

f. Date (14-19). The date of the sample will be recorded in the sequence, day, month, year; thus: day, 01 through 31; month, 01 through 12; year, last two digits of the number of the year.

g. Number of lines in sample (20-22). This is the total number of lines occupied by data on the data sheet or sheets for this particular sample, including supplementary lines. It will not necessarily indicate the number of items in a

sample, since there are many cases in which an item may occupy more than one line.

h. Data system reference (23). This is a reference to the set of definitions and instructions according to which these data were collected. The references may be spelled out on the data sheet and the index number inserted at the time of punching. The code is 4 for these samples.

i. Data form reference (24). This is a reference to the data form (form number and date) from which these cards are punched. As with the data system reference, a file of data forms is maintained at WES. This reference number (2) is printed on the data sheet.

j. State (25-27). The term "state" describes any secondary political subdivision ("country" being the primary subdivision). Thus it may be a state (U. S.), province (Canada), changwat (Thailand), Canal Zone (Panama), etc. On the data sheet it should be written out; a suitable number code will be devised by WES at the time the cards are punched. The code for the Canal Zone in Panama is 003.

k. Geographic coordinates (28-40). The geographic coordinates of the sample site, as nearly as these can be determined, will be recorded as follows:

(1) Longitude. Columns 28-30, degrees; columns 31-32, minutes; columns 33-34, seconds.

(2) Latitude. Columns 35-36, degrees; columns 37-38, minutes; columns 39-40, seconds.

l. Map reference (41-58). This should be a complete reference to any generally acceptable map of the area in which the sample site is located. In general, the information contained in the columns will be publisher, sheet or index number, and grid coordinates. This should be abbreviated and arrayed for coding when the data are edited for punching.

m. Unassigned columns (59-80). Twenty-two columns on the cover card have not yet been assigned; these may be used to encode any additional notes or remarks that may be appropriate. The field team has no responsibility in this regard beyond recording what notes are appropriate.

Information on data form, sheet 1

4. Information on the first page of the data form is discussed in the same format as that for the heading items (paragraph 3 above).

a. Identification (1-10). These columns for a line of actual data contain the same information as that for similar columns on the cover card.

b. Item number (11-13). This refers to the number of the structural component being described. A structural "component" is either a single plant, or any aggregation of plants so closely allied that the aggregation can be described on a single line of the field data form. Item numbers will be repeated when two or more lines are required to record necessary data.

c. Line number and number of lines (14-15). "Line number" refers to the order in which this line appears in the recording of data concerning an item. "Number of lines" refers to the total number of lines necessary to describe an item, including those lines concerning that item on the supplementary data sheet if any line appears there.

d. Data sheet (16). This simply refers to the page of the data form, either "1" or "2." This number is printed on the data sheet.

e. Location (17-23). This information locates the item of interest with respect to distance, in centimeters, from the plot center and its azimuth in degrees. North is recorded as 360, not 0.

f. Height of plant (24-28). The height in centimeters is recorded as the vertical distance from the ground to the top of the plant. The height class refers to the category of heights assigned in the following list:

Class	Height, cm
1	0 to less than 10
2	10 to less than 30
3	30 to less than 100
4	100 to less than 200
5	200 to less than 500
6	500 to less than 1300
7	1300 to less than 3500
8	3500 or more

g. Crown (29-33).

(1) Crown shape is the gross outline of the crown as viewed against a vertical plane. The following categories, which of necessity are somewhat subjective, are as follows:

Shape Category	Description
1	Round. Top of crown round or nearly so, base of crown rounded or broad.
2	Flat topped. Top of crown flat or nearly so, base of crown rounded or tapered

(Continued)

Shape Category	Description
3	Pointed. Top of crown conical or pointed, base of crown rounded or broad
4	Spindle. Top of crown conical or pointed, base of crown slender or long tapered toward stem
5	Irregular. Crown shape not classifiable or undeterminable
6	Crownless. Branch mass is absent, but stem is still anchored to the ground
7	Conforming. Leaf or branch mass essentially conforms to configuration of ground or supporting plant or structure. (Associated primarily with decumbent plants and vines.)

(2) Crown diameter is the diameter of the crown when projected on a horizontal plane. (NOTE: If the outline of the crown as projected on a horizontal plane is quite irregular, the crown area is measured as the area of an irregular polygon, and the crown diameter is determined as the diameter of the circle of equivalent area. If the crowns of several plants with similar characteristics (i.e. identical structural elements) are closely intermingled, the polygon is applied to the group, the area proportioned among the several plants under consideration, and then converted to the diameter of equivalent circles.)

If the center of the circle of the crown (in plan view) is significantly offset (e.g. approximately one-half the crown radius, or more) from the base of the stem, as in the case of strongly leaning plants, or plants with lopsided crowns, description of the plant will require two lines on the data sheet, but both with the same item number. On the first of the two lines, the crown shape and diameter are recorded and all other information is recorded as pertinent. In column 75, a "2" is recorded. The location (distance and azimuth) on this line pertains to the stem. On the second of the two lines, the location (distance and azimuth) of the center of the crown circle is recorded in the appropriate columns; and all other columns are left blank. The occurrence of blanks in these columns will identify it as a special case.

If the crown (in plan view) is too irregular to be readily normalized to a circle (or if several crowns are to be recorded collectively as a single item) as many

lines as necessary are used to describe the crown, but all lines have the same item number. On the first of these lines, the crown diameter is recorded as "0," and all other data including crown shape are supplied in the appropriate columns. The location (distance and azimuth) on this line will pertain to the stem. Any required number of subsequent lines may be used for recording the distances and azimuths to the turning points on the polygon of the irregular crown. On these lines the identification data and crown shape data are repeated, and all other data are recorded as "0." For analysis, the fact that there are three or more lines shows the recorded locations can only be turning points on a polygon. The last line of such a series outlining an irregular crown must describe the same location as the first, i.e. the polygon must be closed.

h. Crown branching (34-42). A branch is any protuberance from any stem of the plant definitely a part of the crown and protruding more than 10 cm, measured horizontally from the stem, but not satisfying the definition of stem. It shall be considered to be as follows: for plants less than 30 cm tall, not applicable, recorded as "0"; for plants 30 to less than 500 cm tall, applicable as defined; for plants 500 cm tall or over, applicable when the protuberance has a diameter of 1 cm or more and a horizontal distance of 10 cm from the surface of the stem (i.e. for plants of this height and with no protuberance satisfying this criterion, hardness and all factors thereof will be none), recorded as "0."

(1) Crown branching height is the vertical height in centimeters from the base of the plant, or from a horizontal plane through the base of the plant, to the point on the stem at which the lowest branch (as defined) emerges, EXCEPT for epiphytes in which the branching height is the height of attachment to the supporting plant.

(2) Crown branch diameter is the diameter in centimeters of the branch (as defined) at a distance of 10 cm, measured horizontally from the surface of the main trunk. If significant, the actual measurement of the diameter, in millimeters, is noted in the comments column. The abbreviation CBD in the comments column denotes crown branch diameter.

(3) Crown branch angle is the angle formed between the branch and a line drawn vertically downward from the intercept of the branch axis with the stem axis. See plate A2. Branch angle is measured in degrees from 1 to 180. When the branches are so entangled as to make finding the branch angle difficult or impossible, 181 should be recorded in the column field.

i. Stem (43-55). The stem is the dominant or main axis of the plant; specifically, the largest axis at the height where the diameter is measured, and all other axes equal to or greater than one-half that diameter at that height. Stem characteristics for plants less than 10 cm in height are recorded as "0."

(1) Stem diameter is the diameter in centimeters of the cross-sectional circle of the stem at the height specified according to the list below. If significant, the actual measurement of the diameter, in millimeters, is noted in the comments column. The abbreviation STD in the comments column denotes stem diameter.

If Height of Stem Is	Measure Stem Diameter at
3500 cm or more	150 cm
1300 cm to less than 3500 cm	150 cm
500 cm to less than 1300 cm	150 cm
200 cm to less than 500 cm	100 cm
100 cm to less than 200 cm	30 cm
30 cm to less than 100 cm	10 cm
10 cm to less than 30 cm	Ground level
0 cm to less than 10 cm	Not measured

(2) The number of stems is a numerical count of all of those axes of a given individual that qualify as stems according to the definition set forth above and recorded in centimeters from 1 through 99. In those cases where only one line on the data form is used to describe an aggregation of like plants (grasses, etc.) these columns are used to record the total number of stems counted in the structural cell. (Any axes at this height that are not stems by definition must, of course, be considered to be branches.)

(3) Stem attitude is the angle formed by the intercept of an idealized axis of the stem with a plane horizontal through the base of the plant. Stem attitude is not measured in the field, nor recorded on the data sheet; instead, the values necessary for its calculation are measured and recorded thus:

See plate A3. Assume a plane horizontal through the base B of the plant, or let B be the point at which the stem contacts the ground. Drop a vertical (XV) to this plane from a point (X) on the stem 2 m above the plane, or from the geometric center of the crown, plan view, whichever is lower. The horizontal distance (BV) is measured and recorded. The stem attitude is described by the angle VBX which can be calculated.

(4) Sinuosity is the ratio of the actual length of that segment of the stem within a specified zone having its lower limit as the surface of the ground, to the length of an idealized axis of that stem within that zone. As with stem attitude, sinuosity is not measured in the field; instead, the values necessary for its calculation are measured and recorded thus:

Continuing the notation of plate A3, measure the actual length L of the stem axis from B to X and record in centimeters. For plants less than 2 m tall, X is at the geometric center of the crown.

(5) Detached is a condition intended to accommodate plants or plant material not anchored in the soil. It is recorded using the following code:

0. Not applicable or none

1. Not detached

2. Detached

(6) Hardness of a stem is determined by attempting to push a pencil point into the stem. If it can be easily penetrated it is soft, etc. It is recorded using the following code:

0. Not applicable or none

1. Hard

2. Soft

j. Stem branching (56-68). A stem branch is any protuberance from any item of the plant that protrudes more than 10 cm, measured horizontally from the stem but not satisfying the definition of stem. It is considered to be the same as crown branching except when the stem branching does not constitute part of the crown. Stem branching characteristics for plants less than 10 cm tall are recorded as "0."

(1) Stem branching height, diameter, and angle are measured and recorded in the same manner as that for crown branching (see paragraph 4h). If significant, the actual measurement of the diameter, in millimeters, is noted in the comments column. The abbreviation SBD in the comments column denotes stem branch diameter.

(2) Stem branching length is the horizontal distance in centimeters from the point of emergence from the main stem to a point vertically above or below the tip of the branch.

k. Foliage (69-74). The term "leaf" is defined to include fronds and other analogous organs displaying leaflike

characteristics. Foliage characteristics are recorded only when leaves, either living or dead, are actually present on the plant.

(1) Size-shape is determined by a direct measurement of the length and a computed ratio of width to length, length being considered to be always the greater of the two measurements and width the measurement across the leaf perpendicular to the length. Length and width are defined so that the width/length ratio can never exceed 1. If the ratio is equal to 1, it is recorded as 99. In the case of very small leaves, even though the length is recorded to the nearest centimeter, the width/length ratio is determined by any sufficiently small unit of measure. Foliage lengths of 100 cm or greater are recorded as 99 in columns 69 and 70. The actual measurement of the length is noted in the comments column.

(2) Texture can be described by any one of the following five alternatives (with code numbers preceding):

0. Foliage absent.

1. A filmy leaf is one that is characterized by its translucency.

2. A membranous leaf is one that is not permanently deformed when wrapped around a pencil. (NOTE: "upper" surface is placed next to pencil.)

3. A hard leaf is one that is permanently deformed when wrapped around a pencil.

4. A succulent leaf is one that is more than 2 mm thick.

(3) Condition refers to whether the leaves are living (1) or dead (2), or if absent (0).

l. Supplementary line (75). Frequently more than one line on the first page of the data form is needed to adequately describe an item. For this project two lines are used to record the azimuth and distance of the center of an "offset" crown (i.e. for a crown whose geometric center is not directly, or nearly so, above the point of stem emergence from the ground. When it is necessary to use more than one line, a code number is placed in column 75 to indicate that more than one line has been used. The number 2 in column 75 for an item indicates that "this tree has an offset crown and its polar coordinates are given in the next line." Only columns 1-23 will be filled in in that case.

m. Supplementary card (76). This information denotes whether or not any more information can be found on the supplementary data sheet (page 2 of plate A1). The code used for this

column generally describes the kind of information that is to be found. At present there are five alternatives that can be described by this column. They are given below together with their code number:

0. No supplementary card for this item.
1. Supplementary card used for this item; it is a comment card and its contents must be examined for possible significance.
2. Armature present.
3. Aboveground roots present.
4. Combination of any of the above.

Information on data form, sheet 2

5. The purpose of the second page of the data form (plate A1, sheet 2) is to allow the recording of supplementary data, that is, data that are applicable for only a selected number of all plants measured. Specific data for comments, armature, and aboveground root characteristics are recorded according to the following:

a. Identification (1-10) is the same as those for the cover card, see paragraph 3e.

b. Item number (11-13). The item number on the supplementary page is the same as that on the first page.

c. Line number and number of lines (14-15). See paragraph 3g. These columns indicate the total number of lines on both pages of the form necessary to describe an item.

d. Data sheet (16). This number is printed on the data sheet. The number is the page of data.

e. Location (17-23). These columns repeat the information for the item on the first page to which these lines of data refer.

f. Armature (24-27). When a "2" appears on data sheet 1, column 76, further information regarding the position of the armature is recorded in this column field. The following code is applied regarding the position of these types of armature: spines equal to or greater than 5 mm, spines less than 5 mm, cutting edges, and stinging organs. If none are present, a "0" is placed in the column(s).

1. Stem and/or branches
2. Foliage
3. Fruit

4. Stem and/or branches, foliage

5. Stem and/or branches, fruit

6. Foliage and fruit

7. Stem and/or branches, foliage, and fruit

g. Root habit (28-34). Aboveground root structures are recorded on data sheet 1, column 76, as "3." When such structures are present additional information will be recorded on the supplementary data sheet.

(1) Root habit type may be one of the following:

1. Stilt or prop roots

2. Enlarged base

3. Plank buttresses

(2) The height is the measured value in centimeters of the vertical distance from the base of the plant to where the root modification diverges from the stem.

(3) The spread of the root habit is the diameter in centimeters of the mass of the root modification at ground level.

h. Columns 35-80 are used for other comments or other supplementary material. Where supplementary information is recorded on sheet 2, a 1 is recorded in column 76 on sheet 1.

VEGETATION STRUCTURE DATA

IDENTIFICATION: (COLUMNS) COUNTRY______ (1-3) SITE NUMBER______ (4-7)

PAGE / DATA GROUP __1__ (8) SAMPLE NUMBER______ (9-10)

SUBSIDIARY DATA: (ON COVER CARD ONLY) (11-13, BLANK) DATE______ (DAY, MONTH, YEAR, 14-19) LINES IN SAMPLE______ (20-22) DATA SYSTEM REF______ (23)

DATA FORM REF __2__ (24) STATE______ (25-27) GEOGRAPHIC COORD______ (28-40) MAP REF______ (41-80)

				LOCATION		HEIGHT OF PLANT		CROWN			CROWN BRANCHING			STEM							STEM BRANCHING				FOLIAGE						FIELD PERSONNEL
									DIAMETER		HEIGHT	DIAM	ANGLE	DIAM			ATTITUDE	SINUOSITY			HEIGHT	DIAM	ANGLE	LENGTH	SIZE-SHAPE						
ITEM NUMBER	LINE NUMBER	NUMBER OF LINES	DATA SHEET	DISTANCE FROM PLOT CENTER	AZIMUTH	MEASURED	CLASS	SHAPE	MEASURED	CLASS	MEASURED	MEASURED	MEASURED	MEASURED	CLASS	NUMBER OF	HORIZ DIST (BV) MEASURED	LENGTH / MEASURED	DETACHED	HARDNESS	MEASURED	MEASURED	MEASURED	MEASURED	LENGTH MEASURED	WIDTH/ LENGTH	TEXTURE	CONDITION	SUPPLEMENTARY LINE	SUPPLEMENTARY CARD	
11 12 13	14	15	16	17 18 19 20	21 22 23	24 25 26 27	28	29	30 31 32 33	X	34 35 36 37	38 39	40 41 42	43 44 45	X	46 47	48 49 50	51 52 53	54	55	56 57 58 59	60 61	62 63 64	65 66 67 68	69 70	71 72	73	74	75	76	NOTES

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REV APR 1966

PLATE A1 (1 of 2 sheets)

PLATE A1 (2 of 2 sheets)

VEGETATION STRUCTURE DATA, SUPPLEMENT

IDENTIFICATION: (COLUMNS)
COUNTRY ______ (1-3)
SITE NUMBER ______ (4-7)
PAGE /
DATA GROUP 1 (8)
SAMPLE NUMBER ______ (9-10)

SUBSIDIARY DATA: (ON COVER CARD ONLY) (11-13, BLANK)
DATE ______ (DAY, MONTH, YEAR, 14-19)
LINES IN SAMPLE ______ (20-22)
DATA SYSTEM REF ______ (23)
DATA FORM REF 2 (24)
STATE ______ (25-27)
GEOGRAPHIC COORD ______ (28-40)
MAP REF ______ (41-50)

ITEM NUMBER	LINE NUMBER	NUMBER OF LINES	DATA SHEET	LOCATION		ARMATURE				ROOT HABIT				
				DISTANCE FROM PLOT CENTER	AZIMUTH	SPINES ≥ 5 MM	SPINES < 5 MM	CUTTING EDGES	STING ORGANS	TYPE	HT MEASURED	SPREAD MEASURED		
11 12 13	14	15	16	17 18 19 20	21 22 23	24	25	26	27	28	29 30 31	32 33 34	35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80	
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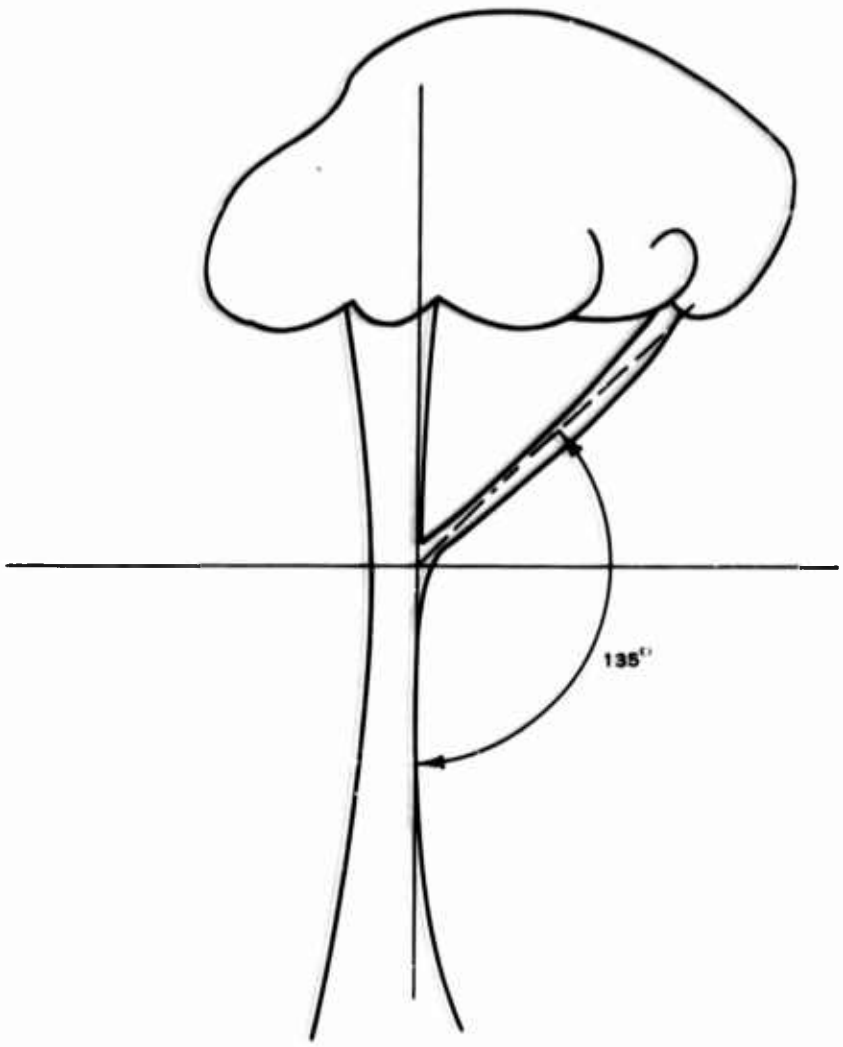
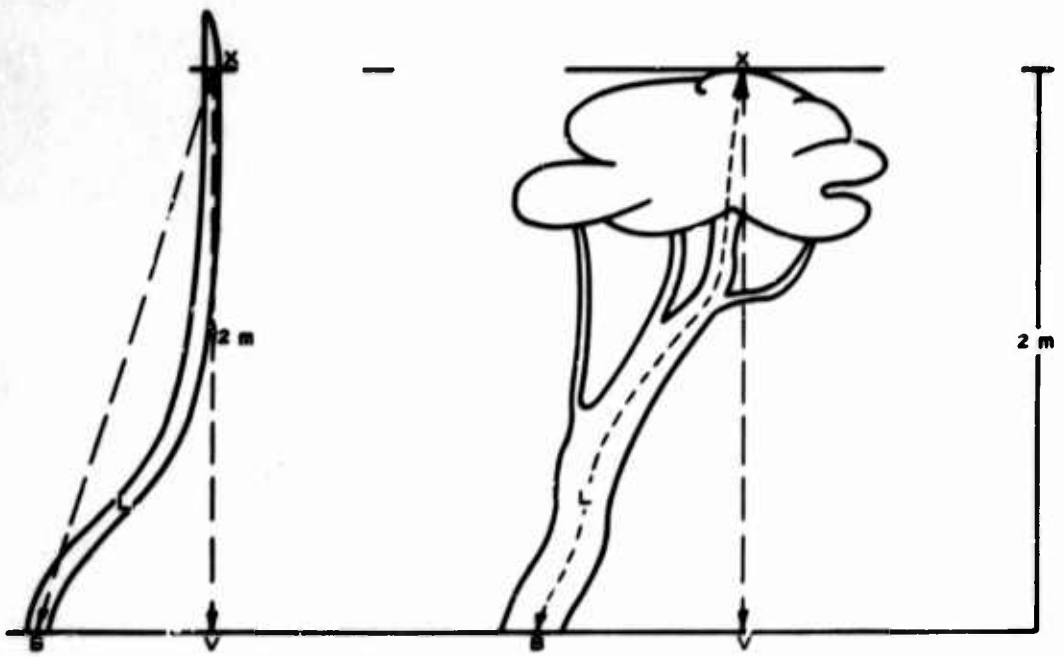
WES FORM NO. 1374-1
REV APR 1966



DETERMINATION OF
BRANCH ANGLE

PLATE A2



XV = HEIGHT OF PLANT
B = BASE OF PLANT
L = LENGTH OF STEM

GEOMETRY FOR MEASURING STEM ATTITUDE AND SINUOSITY

PLATE A3

APPENDIX B: DATA REDUCTION AND PRESENTATION

1. The object of the columned vegetation structure data form and the codes shown in Appendix A is to make the field data compatible with automatic data processing procedures. After a brief check of the field data and the coding of various items such as location, map reference, etc., the sheets of raw data were given to a punch card operator for placing onto standard automatic data processing (ADP) cards. The column numbers on the data forms (see plate A1, sheets 1 and 2) correspond to the column number on the ADP cards. The card deck for each sample site consists of three types of cards: a cover card containing the general heading information; a set of data cards containing the detailed structural information from sheet 1 of the form, plate A1; and a set of supplementary cards containing data recorded on the second sheet of the data form, plate A1. The kinds of data included on these cards are described in detail in Appendix A.

2. With the field data punched onto ADP cards, various computer programs were used to present, reduce, or otherwise manipulate the data. Tables B1-B11 are computer print-outs of the basic structural data for the seven data collection points in the Panama Canal Zone and the four data collection points in Thailand.

3. Certain special computer programs have been written to compute structural relations not necessarily obvious from scrutinizing the raw data. Two programs used herein compute the spacing and cumulative spacing of stems and the number and cumulative number of stems included in each 1-cm-stem-diameter class and each 1-m-stem-height class. The information generated by these programs was used to prepare the histograms and graphs shown in plates 1-8 in the main text of this report. Tables B12-B22 are print-outs of the results of computations used to prepare the histograms and graphs. The histograms and graphs were prepared with an automatic plotter.

4. In accordance with the concept of the structural cell, a much larger circular area was sampled for the larger plants than for the smaller ones in a given plant assemblage. For example, for data collection point P4-01 the circular area for sampling at least 20 plants in height class 4

was 6 m in diameter, whereas for height class 7 it was 23 m. When analyzing the data, however, it became evident that all plants at a given data collection point(s) would have to be put on a common unit area basis. Therefore, the area representing the largest structural cell diameter occurring in the 11 data collection points was selected as the unit area. (The structural cell diameter used was 40 m and occurred in the Chanthaburi forest.) Because of this expansion, it became necessary to calculate the number of smaller plants that would have been sampled in a larger cell ("expanded cell"). The formula used for this expansion is

$$N_2 = \left(\frac{D_2^2}{D_1^2}\right) N_1$$

where

N_1 = the number of stems of a given stem diameter class in the original cell

N_2 = the number of stems of a given stem diameter class in the expanded cell

D_1 = the diameter of the original cell

D_2 = the diameter of the expanded cell

The computed data used to construct the histograms and graphs in plates 1-8 in the main text utilize information based on expanded cells.

5. Because some of the trees have very large stem diameters, it was necessary to write the stem diameter computer program in such a way that all stem diameters could be used. This resulted in storage of all stems having diameters equal to or greater than 58 cm as if they exhibited a stem diameter of 58 cm. Thus, in the histograms and graphs in plates 1-8 this class usually contains stems of several stem diameter classes and thereby results in apparent increases in the number of stems and apparent decreases in spacing of stems for this stem diameter class.

6. On the basis of inadequate field sampling (less than 20 stems as discussed in paragraph 1, Appendix A), the trees that occurred in height class 8 (trees with heights greater than 35 m) in data collection points P4-01 in the Balboa forest and P3-01 in the Piña forest were excluded. It is believed that, if adequate samples could have been obtained of the

height class 8 trees in the Piña and Balboa forests, spacing of stems would probably have occurred in the 100- to 150-m range. For the structural description of the height class 8 trees that did occur in data collection points P3-01 and P4-01, see tables B1 and B5, respectively.

Table B1

Vegetation Structure Data, Data Collection Point P3-01

DATA SHEET 1

PINA FOREST SITE, PANAMA CANAL ZONE
WES DATA COLLECTION POINT P3-01, 19 SEP 66
GEOGRAPHIC COORD LAT 09 DEG 12 MIN 38 SEC N, LONG 079 DEG 59 MIN 02 SEC W
AMS MAP NO.4243 IV SW, GATUN LAKE, SCALE 1/25,000, MIL GRID COORD 11601029

COUNTRY	SITE NO	DATA GP	SMPL NO	ITEM NO	LINE NO	LINES	DA SH	DC IE BH TT E FR H	AZIMUTH	HEIGHT	HT CLSS	CR SPH	CR DIAN	CR BRANCHING HT	DIAM	ANG	DIAM	STEM NO	ATTD	SINU	DTCH	HDNS	STEM BRANCHING HT	DIAM	ANG	LGTH	LGTH	FOLIAGE SHRO	TEX	CND	SUP LN	SUP SD
103	0012	1	01	001	1	1	1	0100	000	0017	2	2	0000				001	23			1	1					04	90	1	1	0	0
103	0012	1	01	002	1	1	1	0290	000	0000	3	5	0039	0039	00	160	001	23	000	000	1	1	0039	00	160	0013	19	33	1	1	0	0
103	0012	1	01	003	1	1	1	0130	360	0120	4	5	0050	0065	00	160	001	01	010	125	1	1	0065	00	160	0010	09	33	1	1	0	0
103	0012	1	01	004	1	1	1	0150	004	0110	4	5	0050	0095	00	140	001	01	000	110	1	1	0095	00	170	0015	09	33	1	1	0	0
103	0012	1	01	005	1	1	1	0150	002	0110	4	5	0050	0095	00	140	001	01	000	110	1	1	0095	00	170	0015	09	33	1	1	0	0
103	0012	1	01	006	1	1	1	0100	015	0150	4	5	0040	0090	01	150	001	01	000	150	1	1	0090	01	150	0020	09	33	1	1	0	0
103	0012	1	01	007	1	1	1	0130	012	0110	4	5	0030	0030	00	100	000	01	000	110	1	1	0030	00	100	0015	04	90	1	1	0	0
103	0012	1	01	008	1	2	1	0210	076	0190	4	5	0150	0030	00	170	001	03	400	190	1	1	0030	00	170	0030	06	90	1	1	2	0
103	0012	1	01	008	2	2	1	0190	054																							
103	0012	1	01	009	1	1	1	0270	050	0110	4	5	0050	0040	00	110	001	01	000	110	1	1	0040	00	110	0015	12	90	1	1	0	0
103	0012	1	01	010	1	1	1	0200	060	0110	4	5	0050	0040	00	110	001	01	000	110	1	1	0040	00	110	0015	12	90	1	1	0	0
103	0012	1	01	011	1	1	1	0210	274	0110	4	5	0060	0050	00	100	001	02	050	125	1	1	0050	00	100	0025	16	90	1	1	0	0
103	0012	1	01	012	1	1	1	0175	290	0190	4	2	0200	0050	02	100	005	01	000	190	1	1	0050	02	150	0100	40	20	1	1	0	0
103	0012	1	01	013	1	1	1	0030	279	0110	4	5	0040	0595	00	100	001	02	000	110	1	1	0055	00	100	0050	15	33	1	1	0	0
103	0012	1	01	014	1	1	1	0400	004	0140	4	5	0050	0070	00	100	001	01	000	140	1	1	0070	00	100	0030	12	37	1	1	0	0
103	0012	1	01	015	1	1	1	0460	010	0110	4	5	0050	0070	00	100	001	01	000	110	1	1	0070	00	100	0030	12	37	1	1	0	0
103	0012	1	01	016	1	1	1	0460	021	0110	4	5	0050	0070	00	100	001	01	000	110	1	1	0070	00	100	0030	10	22	1	1	0	0
103	0012	1	01	017	1	1	1	0300	074	0130	4	5	0100	0095	00	110	001	01	000	130	1	1	0095	00	110	0040	12	90	1	1	0	0
103	0012	1	01	018	1	1	1	0400	080	0170	4	5	0050	0035	00	150	001	01	000	170	1	1	0035	00	150	0030	06	90	1	1	0	0
103	0012	1	01	019	1	1	1	0500	076	0190	4	2	0250	0095	02	150	005	01	000	150	1	1	0095	02	150	0120	40	90	1	1	0	0
103	0012	1	01	020	1	1	1	0460	125	0190	4	2	0200	0050	01	150	005	01	000	190	1	1	0050	01	150	0100	04	90	1	1	0	0
103	0012	1	01	021	1	1	1	0430	130	0110	4	2	0200	0095	02	150	005	01	000	110	1	1	0095	02	150	0100	70	20	1	1	0	0
103	0012	1	01	022	1	1	1	0300	150	0140	4	2	0100	0090	00	090	001	06	000	140	1	1	0090	00	090	0025	25	20	1	1	0	0
103	0012	1	01	023	1	1	1	0490	154	0130	4	5	0040	0110	00	160	002	01	030	130	1	1	0110	00	160	0010	12	33	1	1	0	0
103	0012	1	01	024	1	1	1	0500	154	0163	4	2	0200	0050	00	150	002	01	000	160	1	1	0050	00	150	0025	20	20	1	1	0	0
103	0012	1	01	025	1	1	1	1390	160	0190	4	5	0060	0090	00	090	001	01	000	150	1	1	0090	00	090	0030	15	33	1	1	0	0
103	0012	1	01	026	1	1	1	0479	169	0130	4	2	0120	0100	00	090	001	01	000	130	1	1	0100	00	090	0030	30	40	1	1	0	0
103	0012	1	01	027	1	1	1	0300	171	0190	4	2	0090	0080	01	110	002	01	000	150	1	1	0080	01	110	0030	45	33	1	1	0	0
103	0012	1	01	028	1	1	1	0350	104	0120	4	2	0100	0060	00	090	001	01	000	120	1	1	0060	00	090	0015	25	20	1	1	0	0
103	0012	1	01	029	1	1	1	0495	217	0130	4	5	0050	0060	00	170	001	02	000	130	1	1	0060	00	170	0020	10	33	1	1	0	0
103	0012	1	01	030	1	1	1	0360	251	0130	4	5	0040	0055	01	120	001	01	000	130	1	1	0055	01	120	0025	15	33	1	1	0	0
103	0012	1	01	031	1	1	1	0500	260	0130	4	5	0040	0020	00	170	001	01	000	130	1	1	0020	00	170	0014	00	33	1	1	0	0
103	0012	1	01	032	1	1	1	0315	319	0120	4	5	0060	0060	00	170	001	01	000	120	1	1	0060	00	170	0024	12	90	1	1	0	0
103	0012	1	01	033	1	1	1	0420	315	0150	4	5	0100	0070	00	100	001	01	000	150	1	1	0070	00	100	0050	21	24	1	1	0	0
103	0012	1	01	034	1	1	1	0410	324	0190	4	5	0100	0070	00	100	001	01	000	150	1	1	0070	00	100	0050	21	24	1	1	0	0
103	0012	1	01	035	1	2	1	0410	342	0100	4	2	0240	0110	00	110	001	04	000	180	1	1	0110	00	110	0025	21	24	1	1	0	2
103	0012	1	01	036	1	1	1	0200	031	0220	5	2	0300	0080	01	160	002	07	000	200	1	1	0080	01	160	0030	30	17	1	1	0	7
103	0012	1	01	037	1	2	1	0240	026	0220	5	5	0100	0140	01	110	002	01	030	210	1	1	0140	01	110	0060	14	90	1	1	2	0
103	0012	1	01	037	2	2	1	0290	020																							
103	0012	1	01	038	1	1	1	0500	035	0230	5	2	0200	0090	01	170	001	07	000	200	1	1	0090	01	170	0025	45	33	1	1	0	0
103	0012	1	01	039	1	1	1	0379	042	0205	5	5	0060	0140	00	160	001	03	000	200	1	1	0140	00	160	0045	15	91	1	1	0	0
103	0012	1	01	040	1	1	1	0379	045	0260	5	5	0100	0090	00	160	002	01	300	200	1	1	0090	00	160	0041	15	91	1	1	0	0
103	0012	1	01	041	1	2	1	0479	040	0400	5	5	0200	0050	00	120	001	02	000	200	1	1	0050	00	120	0060	15	33	1	1	0	2
103	0012	1	01	042	1	2	1	0410	064	0400	5	5	0150	0220	02	170	005	01	120	230	1	1	0220	02	170	0070	30	33	1	1	2	0
103	0012	1	01	042	2	2	1	0360	042																							
103	0012	1	01	043	1	2	1	0160	005	0270	5	5	0100	0110	00	150	002	01	140	270	1	1	0110	00	150	0060	15	90	1	1	2	0
103	0012	1	01	043	2	2	1	0210	039																							
103	0012	1	01	044	1	2	1	0200	070	0450	5	5	0200	0220	02	110	003	01	000	200	1	1	0220	02	110	0120	12	90	1	1	2	0
103	0012	1	01	044	2	2	1	0100	056																							
103	0012	1	01	045	1	1	1	0500	150	0300	5	5	0070	0150	01	170	002	01	000	200	1	1	0150	01	170	0060	12	33	1	1	0	0
103	0012	1	01	046	1	1	1	0590	102	0220	5	5	0060	0190	01	120	001	01	000	200	1	1	0120	01	120	0040	12	90	1	1	0	0
103	0012	1	01	047	1	1	1	0490	190	0210	5	2	0140	0150	01	170	002	01	000	200	1	1	0150	01	170	0080	30	13	1	1	0	0
103	0012	1	01	048	1	1	1	0515	222	0220	5	5	0080	0130	01	090	002	01	020	205	1	1	0130	01	090	0045	50	36	1	1	0	0
103	0012	1	01	049	1	1	1	0400	220	0250	5	5	0125	0160	02	150	004	01	000	200	1	1	0160	02	150	0070	50	36	1	1	0	0
103	0012	1	01	050	1	1	1	0530	260	0490	5	5	0250	0320	01	120	004	01	000	200	1	1	0220	01	110	0090	15	33	1	1	[illegible]	0
103	0012	1	01	051	1	1	1	0370	260	0490	5	5	0150	0250	01	150	003	01	020	205	1	1	0250	01	150	0060	15	33	1	1	0	0
103	0012	1	01	052	1	1	1	0310	271	0300	5	5	0140	0290	01	100	002	01	000	200	1	1	0290	01	100	0040	22	46	1	1	0	0
103	0012	1	01	053	1	2	1	0500	335	0400	5	2	0400	0060	01	160	006	01	000	200	1	1	0060	01	160	0100	40	13	1	1	0	2
103	0012	1	01	054	1	2	1	0200	345	0400	5	2	0400	0060	01	160	006	01	000	200	1	1	0060	01	160	0100	40	13	1	1	0	2
103	0012	1	01	055	1	2	1	0340	345	0400	5	2	0490	0090	01	150	005	01	000	200	1	1	0090	01	150	0150	40	13	1	1	0	2
103	0012	1	01	056	1	2	1	0330	350	0350	5	2	0300	0080	01	160	004	01	000	200	1	1	0080	07	160	0120	40	13	1	1	0	2
103	0012	1	01	057	1	2	1	0640	019	0250	5	5	0200	0120	01	170	002	01	040	215	1	1	0120	01	170	0060	00	37	1	1	2	0
103	0012	1	01	057	2	2	1	0500	019																							
103	0012	1	01	058	1	1	1	0800	012	0450	5	5	0150	0190	01	110	004	01	000	200	1	1	0190	01	110	0060	00	37	1	1	0	0
103	0012	1	01	059	1	1	1	0600	105	0350	5	5	0150	0250	01	110	002	01	000	200	1	1	0250	01	110	0070	12	90	1	1	0	0
103	0012	1	01	060	1	1	1	0720	162	0320	5	5	0150	0160	01	120	003	01	000	200	1	1	0160	01	120	0070	12	90	1	1	0	0
103	0012	1	01	061	1	1	1	0790	180	0250	5	5	0200	0250	01	110	002	01	000	200	1	1	0250	01	110	0050	12	90	1	1	0	0
103	0012	1	01	062	1	2	1	0700	230	0291	5	5	0300	0070	01	170	003	01	140	270	1	1	0070	01	170	0050	12	90	1	1	2	0
103	0012	1	01	062	2	2	1	0200	240																							
103	0012	1	01	063	1	1	1	0650	241	0240	5	5	0060	0170	01	150	001	01	000	200	1	1	0170	01	150	0025	12	90	1	1	0	0
103	0012	1	01	064	1	1	1	0775	246	0270	5	5	0070	0220	01	090	002	01	000	200	1	1	0220	01	090	0025	40	37	1	1	0	0
103	0012	1	01	065	1	1	1	0800	240	0200	5	5	0110	0210	01	120	002	01	000	200	1	1	0210	01	120	0050	40	37	1	1	0	0
103	0012	1	01	066	1	1	1	0620	275	0490	5	5	0250	0230	02	150	005	01	050	210	1	1	0230	02	150	0100	12	90	1	1	0	0
103	0012	1	01	067	1	1	1	0725	200	0250	5	5	0040	0160	01	150	001	01	000	200	1	1	0160	01	150	0025	12	90	1	1	0	0
103	0012	1	01	068	1	1	1	0695	201	0300	5	5	0120	0130	01	150	002	01	000	200	1	1	0130	01	150	0060	12	90	1	1	0	0
103	0012	1	01	069	1	1	1	0625	251	0240	5	5	0150	0160	01	110	002	01	000	200	1	1	0160	01	110	0080	12	90	1	1	0	0
103	0012	1	01	070	1	1	1	0690	334	0400	5	5	0350	0220	01	150	003	01	000	200	1	1	0220	01	150	0150	25	32	1	1	0	0
103	0012	1	01	071	1	1	1	0675	001	0240	5	5	0150	0120	01	110	002	02	000	200	1	1	0120	01	110	0060	12	90	1	1	0	0
103	0012	1	01	072	1	1	1	0775	352	0210	5	5	0090	0085	01	110	002	01	000	200	1	1	0085	01	110	0050	30	90	1	1	0	0
103	0012	1	01	073	1	1	1	0900	020	0250	5	5	0200	0190	07	100	004	02	000	200	1	1	0190	02	160	0100	40	90	1	1	0	0
103	0012	1	01	074	1	1	1	0900	031	0220	5	5	0200	0240	02	120	003	01	000	200	1	1	0240	02	120	0100	40	90	1	1	0	0
103	0012	1	01	075	1	1	1	0950	035	0250	5	5	0150	0160	02	150	003	01	000	200	1	1	0160	02	150	0060	40	90	1	1	0	0

(Continued)

Table B1 (Continued)

DATA SHEET 1

SOURCE	BIT MAP	DATA TYPE	SHAPE	LINE	LINE SEG	DATA SET	DC ID	AREA	NEIGH	NT	CAR	CAR	GR BRANCHING				STEM			STEM BRANCHING					FOLIAGE			SUP	SUP
													NT	DIA	ANG	DIA	NO	ATD	DIN	DHCN	NT	DIA	ANG	LGT	LGT	SHR	TEX	COND	LW	CD
103	0012	1	01	076	1	1	1	1000	041	0200	5	5	0250	0210	02	190	004	01	000	200	1	1	0210	02	190	0100	12	90	1	1	0	0
103	0012	1	01	077	1	2	1	1000	120	0200	5	5	0070	0190	01	110	002	01	000	220			0190	01	110	0040	12	90	1	1	2	0
103	0012	1	01	077	2	2	1	1000	110																							
103	0012	1	01	078	1	1	1	0020	197	0200	5	5	0200	0190	01	110	002	01	000	200	1	1	0190	01	110	0070	10	44	1	1	0	0
103	0012	1	01	079	1	1	1	0050	104	0220	5	5	0100	0160	01	120	002	01	000	200	1	1	0160	01	120	0080	30	33	1	1	0	0
103	0012	1	01	080	1	2	1	0050	197	0400	5	5	0250	0190	01	120	003	01	000	230	1	1	0190	01	120	0080	12	90	1	1	2	0
103	0012	1	01	080	2	2	1	0760	180																							
103	0012	1	01	081	1	1	1	0020	202	0270	5	5	0120	0160	01	110	002	01	000	200	1	1	0160	01	110	0050	12	90	1	1	0	0
103	0012	1	01	082	1	1	1	0020	200	0200	5	2	0230	0190	01	160	004	01	000	200	1	1	0190	01	160	0100	40	20	1	1	0	0
103	0012	1	01	083	1	1	1	0070	202	0240	5	5	0150	0170	01	090	002	01	000	200	1	1	0170	01	090	0040	60	36	1	1	0	0
103	0012	1	01	084	1	1	1	0050	206	0220	5	5	0100	0170	01	110	002	01	000	200	1	1	0170	01	110	0040	25	40	1	1	0	0
103	0012	1	01	085	1	1	1	0040	001	0240	5	5	0120	0110	01	090	002	01	000	200	1	1	0110	01	090	0040	25	40	1	1	0	0
103	0012	1	01	086	1	1	1	0000	046	0000	6	5	0300	0220	02	100	007	01	000	200	1	1	0220	02	100	0080	40	50	1	1	0	0
103	0012	1	01	087	1	2	1	0000	070	0000	6	2	0400	0400	03	120	006	01	000	200	1	1	0400	03	120	0200	40	50	1	1	0	2
1	0012	1	01	088	1	2	1	0050	069	0000	6	2	0400	0400	03	120	006	01	000	200	1	1	0400	03	120	0200	40	50	1	1	0	2
104	0012	1	01	089	1	2	1	0000	071	0000	6	2	0400	0400	03	120	009	01	000	200	1	1	0400	03	120	0200	40	50	1	1	0	2
103	0012	1	01	090	1	2	1	0000	076	0000	6	2	0400	0400	03	120	009	01	000	200	1	1	0400	03	120	0200	40	50	1	1	0	2
103	0012	1	01	091	1	2	1	0000	081	0000	6	2	0400	0400	03	120	006	01	000	200	1	1	0400	03	120	0200	40	50	1	1	0	2
103	0012	1	01	092	1	2	1	0000	122	0000	6	5	0300	0400	03	150	009	01	000	220	1	1	0400	03	150	0150	20	35	1	1	2	0
103	0012	1	01	092	2	2	1	0000	198																							
103	0012	1	01	093	1	2	1	0020	118	0000	6	5	0500	0140	02	170	009	01	000	200	1	1	0140	02	170	0070	20	35	1	1	2	0
103	0012	1	01	093	2	2	1	0070	142																							
103	0012	1	01	094	1	2	1	0000	169	1200	6	5	0700	0600	02	160	010	01	010	205	1	1	0600	02	160	0150	15	67	1	1	2	0
103	0012	1	01	094	2	2	1	0150	183																							
103	0012	1	01	095	1	2	1	0040	201	1200	6	5	0600	0700	05	150	012	01	000	200	1	1	0700	05	150	0300	15	67	1	1	2	0
103	0012	1	01	095	2	2	1	0120	240																							
103	0012	1	01	096	1	1	1	0000	181	0950	6	5	0200	0400	01	110	008	01	000	200	1	1	0400	01	110	0100	12	90	1	1	0	0
103	0012	1	01	097	1	2	1	0000	189	1000	6	5	0500	0300	05	150	009	01	050	220	1	1	0300	05	150	0300	12	90	1	1	2	0
103	0012	1	01	097	2	2	1	0710	167																							
103	0012	1	01	098	1	2	1	0040	219	0950	6	5	0190	0140	02	170	009	01	000	230	1	1	0140	02	170	0070	12	90	1	1	2	0
103	0012	1	01	098	2	2	1	0940	219																							
103	0012	1	01	099	1	2	1	0000	230	0650	6	2	0300	0300	02	120	008	01	000	200	1	1	0300	02	120	0100	40	50	1	1	0	2
103	0012	1	01	100	1	1	1	0200	259	0000	6	5	0250	0250	04	150	005	01	000	200	1	1	0250	04	150	0100	20	30	1	1	0	0
103	0012	1	01	101	1	1	1	0300	270	1150	6	5	0700	0300	04	120	014	01	000	200	1	1	0300	10	120	0300	20	30	1	1	0	0
103	0012	1	01	102	1	1	1	0400	290	0650	6	5	0200	0250	01	110	004	01	000	200	1	1	0250	01	110	0100	20	30	1	1	0	0
103	0012	1	01	103	1	1	1	0420	290	0000	6	5	0500	0300	03	160	009	01	000	200	1	1	0300	03	160	0250	20	30	1	1	0	0
103	0012	1	01	104	1	1	1	0900	304	0000	6	5	0250	0300	01	120	004	01	000	200	1	1	0300	01	120	0100	20	30	1	1	0	0
103	0012	1	01	105	1	2	1	0000	310	1100	6	2	0500	0600	03	120	010	01	000	200	1	1	0600	03	120	0250	40	20	1	1	0	2
103	0012	1	01	106	1	2	1	0560	340	0000	6	2	0400	0400	02	120	004	01	000	200	1	1	0400	02	120	0200	40	20	1	1	0	2
103	0012	1	01	107	1	2	1	0420	347	0000	6	2	0500	0600	02	120	009	01	000	200	1	1	0600	02	120	0250	40	20	1	1	0	2
103	0012	1	01	108	1	1	1	0000	020	0000	6	5	0600	0400	03	150	007	01	000	200	1	1	0400	03	150	0300	15	33	1	1	0	0
103	0012	1	01	109	1	1	1	1000	098	0700	6	5	0300	0250	01	150	006	01	020	210	1	1	0250	01	150	0050	30	33	1	1	0	0
103	0012	1	01	110	1	2	1	0000	078	0000	6	2	0400	0400	03	120	009	01	000	200	1	1	400	03	120	0200	40	20	1	1	0	2
103	0012	1	01	111	1	2	1	0000	071	0000	6	2	0400	0400	03	120	005	01	000	200	1	1	0400	03	120	0200	40	20	1	1	0	2
103	0012	1	01	112	1	2	1	0020	083	0000	6	2	0500	0450	03	120	006	01	000	200	1	1	0450	03	120	0250	40	20	1	1	0	2
103	0012	1	01	113	1	1	1	0000	144	0000	6	5	0400	0400	02	120	006	01	000	200	1	1	0400	02	120	0150	12	90	1	1	0	0
103	0012	1	01	114	1	2	1	1000	192	0950	6	5	0300	0350	02	110	004	01	000	220	1	1	0350	02	110	0150	12	90	1	1	2	0
103	0012	1	01	114	2	2	1	1070	190																							
103	0012	1	01	115	1	2	1	0000	191	0950	6	5	0200	0400	02	190	004	01	130	240	1	1	0400	02	190	0100	30	90	1	1	2	0
103	0012	1	01	115	2	2	1	0000	165																							
103	0012	1	01	116	1	1	1	1000	240	1000	6	5	0000	0200	03	190	000	02	200	300	1	1	0200	03	190	0250	12	90	1	1	0	0
103	0012	1	01	117	1	1	1	1000	225	0600	6	5	0250	0350	03	140	004	01	000	200	1	1	0350	03	140	0150	12	90	1	1	0	0
103	0012	1	01	118	1	2	1	0020	244	0000	6	5	0700	0300	03	190	009	02	200	300	1	1	0300	03	190	0300	12	90	1	1	2	0
103	0012	1	01	118	2	2	1	0000	290																							
103	0012	1	01	119	1	1	1	1000	300	0000	6	2	0400	0600	02	120	004	01	000	200	1	1	0600	02	120	0200	40	20	1	1	0	0
103	0012	1	01	120	1	1	1	1000	300	0000	6	5	0250	0600	02	150	004	01	000	200	1	1	0600	02	150	0100	12	90	1	1	0	0
103	0012	1	01	121	1	2	1	1170	012	1000	6	2	0400	0800	03	120	009	01	000	200	1	1	0800	03	120	0200	40	20	1	1	0	2
103	0012	1	01	122	1	1	1	1100	020	0050	6	5	0300	0160	03	160	006	01	020	210	1	1	0160	03	160	0100	12	90	1	1	0	0
103	0012	1	01	123	1	1	1	1050	031	0550	6	5	0200	0000	02	160	005	01	020	205	1	1	0000	02	160	0100	20	29	1	1	0	0
103	0012	1	01	124	1	1	1	1100	069	0600	6	5	0250	0400	01	120	004	01	000	200	1	1	0400	01	120	0100	12	90	1	1	0	0
103	0012	1	01	125	1	1	1	1200	068	0750	6	5	0250	0400	02	120	004	01	020	205	1	1	0400	02	120	0100	12	90	1	1	0	0
103	0012	1	01	126	1	2	1	1100	129	0900	6	5	0000	0250	05	120	014	01	200	250	1	1	0250	05	120	0250	12	90	1	1	2	0
103	0012	1	01	126	2	2	1	0960	140																							
103	0012	1	01	127	1	1	1	1150	101	0000	6	5	0200	0400	01	120	006	01	000	200	1	1	0400	01	120	0100	12	90	1	1	0	0
103	0012	1	01	128	1	1	1	1100	193	0750	6	5	0350	0350	02	110	007	01	010	205	1	1	0350	02	110	0150	12	90	1	1	0	0
103	0012	1	01	129	1	1	1	1050	228	0000	6	5	0350	0400	03	150	006	01	000	200	1	1	0400	03	150	0200	12	90	1	1	0	0
103	0012	1	01	130	1	2	1	1100	234	0850	6	5	0000	0350	02	160	012	01	040	230	1	1	0350	02	160	0200	12	90	1	1	2	0
103	0012	1	01	130	2	2	1	1300	246																							
103	0012	1	01	131	1	1	1	1100	273	1100	6	5	0400	0400	04	170	009	01	000	200	1	1	0400	04	170	0150	12	90	1	1	0	0
103	0012	1	01	132	1	1	1	1100	269	0700	6	5	0300	0300	02	110	007	01	020	215	1	1	0300	02	110	0150	12	90	1	1	0	0
103	0012	1	01	133	1	2	1	1100	305	0850	6	2	0400	0600	02	120	004	01	000	200	1	1	0600	02	120	0200	40	20	1	1	0	2
103	0012	1	01	134	1	2	1	1110	304	0850	6	2	0400	0600	02	120	004	01	000	200	1	1	0600	02	120	0200	40	20	1	1	0	2
103	0012	1	01	135	1	2	1	1200	309	0650	6	2	0400	0400	02	120	004	01	000	200	1	1	0400	02	120	0200	40	20	1	1	0	2
103	0012	1	01	136	1	2	1	1150	303	0650	6	2	0400	0400	02	120	004	01	000	200	1	1	0400	02	120	0200	40	20	1	1	0	2
103	0012	1	01	137	1	2	1	1200	319	0000	6	2	0400	0370	02	120	004	01	000	200	1	1	0370	02	120	200	40	20	1	1	0	2
103	0012	1	01	138	1	1	1	1170	260	1150	6	5	0400	1100	02	120	009	01	000	200			1100	02	110	0150	10	90	1	1	0	0
103	0012	1	01	139	1	1	1	1300	296	1600	7	2	0700	1400	03	090	010	01	000	200	1	1	1400	03	090	0350	90	99	1	1	0	0
103	0012	1	01	140	1	1	1	1300	296	1600	7	7	0000	0000	00	000	001	10	000	200	1	1	0000	00	000	0000	00	00	0	0	0	0
103	0012	1	01	141	1	2	1	1270	320	2000	7	5	1200	1000	07	120	020	01	000	200	1	1	1000	07	120	0400	09	33	1	1	0	2
103	0012	1	01	142	1	2	1	1120	341	2000	7	2	0300	1000	02	110	010	01	000	200	1	1	1000	02	110	0100	30	99	1	1	0	2
103	0012	1	01	143	1	1	1	1100	337	1700	7	5	0200	0270	01	160	005	01	000	200	1	1	0270	01	160	0000	30	30	1	1	0	0
103	0012	1	01	144	1	1	1	0770	340	1500	7	5	0000	0500	10	140	026	01	000	200	1	1	0500	10	140	0400	09	95	1	1	0	0
103	0012	1	01	145	1	1	1	0770	340	1400	7	7	0000	0000	00	000	005	00	000	200	1	1	0000	00	000	0000	00	00	0	0	0	0
103	0012	1	01	146	1	1	1	0770	327	1500	7	5	0350	1000	02	150	008	02	000	200	1	1	1000	02	130	0150	14	19	1	1	0	0
103	0012	1	01	147	1	2	1	1500	347	1600	7	5	1000	1200	10	160	030	01	000	200	1	1	1200	10	160	0300	12	90	1	1	2	0
103	0012	1	01	147	2	2	1	1650	293																							
103	0012	1	01	148	1	1	1	1300	293	1500	7	7	0400	0000	00	000	001	04	000	700	1	1	0000	00	000	0000	00	00	0	0	0	0
103	0012	1	01	149	1	1	1	1290	297	1700	7	7	0000	0000	00	000	012	01	400	950	1	1	0000	00	000	0000	00	00	0	0	0	0
103	0012	1	01	150	1	1	1	1420	010	1600	7	5	0490	0490	03	140	011	02	000	200	1	1	0490	03	140	0200	12	00	1	1	0	0

(Continued)

Table B1 (Concluded)

DATA SHEET 1

COUNTRY	SITE NO	DATA SP	SHIP NO	INTEN NO	LINE NO	LINE DATA	DC IN GMT FR	AIR AUTH	HSI SHIP	HT CLSS	CR SPCH	CR DIAN	OR HT	BRANCHING DIAM	BRANCHING ANG	BRANCHING DIAM	STEM NO	STEM ATT D	STEM INCL	BRANCHING DTCHS	BRANCHING NDNS	BRANCHING HT	BRANCHING SIAM	BRANCHING ANG	BRANCHING LGTH	BRANCHING LGTH	FOLIAGE J N	FOLIAGE TEX	FOLIAGE COND	SUP LN	SUP CD
103	0012	1	01	191	1	2	1	0600	042	1300	7	5	0400	0050	04	160	015	01	000	200	1	1	0650	04	160	0300	12	90	1	1	0	0
103	0012	1	01	192	1	1	1	0600	042	1400	7	7	0000	0000	00	000	003	09	000	200	1	1	0000	00	000	0000	00	00	0	0	0	0
103	0012	1	01	193	1	2	1	1100	054	1450	7	5	0600	0350	03	160	027	01	000	200	1	1	0300	03	165	0150	20	60	1	1	1	1
103	0012	1	01	194	1	1	1	1200	070	2000	7	7	0000	0000	00	000	012	01	000	200	1	1	0000	00	000	0000	00	00	0	0	0	0
103	0012	1	01	195	1	1	1	1400	078	1400	7	5	1000	0050	13	165	022	01	000	200	1	1	0050	13	160	0400	12	90	1	1	0	0
103	0012	1	01	196	1	1	1	1500	082	1450	7	5	0350	0050	04	120	010	01	000	200			0050	04	120	0200	12	90	1	1	0	0
103	0012	1	01	197	1	1	1	1500	082	1350	7	7	0000	0000	00	000	001	04	000	200	1	1	0000	00	000	0000	00	00	0	0	0	0
103	0012	1	01	198	1	1	1	1300	096	1650	7	5	0450	1000	02	140	010	01	000	200	1	1	1000	02	140	0150	12	90	1	1	0	0
103	0012	1	01	199	1	1	1	1300	096	1650	7	7	0000	0000	00	000	001	07	000	200	1	1	0000	00	000	0000	00	00	0	0	0	0
103	0012	1	01	160	1	2	1	1000	102	3200	7	5	1500	1700	05	150	199	01	000	200	1	1	1700	05	150	0700	12	90	1	1	0	0
103	0012	1	01	161	1	1	1	1000	116	2900	7	7	0000	0000	00	000	003	20	000	200	1	1	0000	00	000	0000	00	00	0	0	0	0
103	0012	1	01	162	1	2	1	1200	108	1350	7	2	0450	1150	03	130	016	01	000	200	1	1	1150	03	130	0200	40		1	1	0	0
103	0012	1	01	163	1	2	1	1500	120	1420	7	5	0600	0350	10	160	029	01	100	210	1	1	0350	10	160	0500	16	90	1	1	2	0
103	0012	1	01	164	1	1	1	1600	130	1400	7	7	0000	0000	00	000	002	15	000	200	1	1	0000	00	000	0000	00	00	0	0	0	0
103	0012	1	01	164	2	2	1	1600	130																							
103	0012	1	01	165	1	1	1	1200	168	1800	7	5	0500	1000	03	000	010	01	020	205	1	1	1000	03	000	0250	20	90	1	1	0	0
103	0012	1	01	166	1	1	1	1400	165	1400	7	5	0500	0000	05	130	010	01	000	200	1	1	0000	05	130	0500	20	90	1	1	0	0
103	0012	1	01	167	1	3	1	0900	100	1900	7	2	0500	1350	05	000	010	01	170	325	1	1	1350	05	000	0250	40	01	1	1	2	2
103	0012	1	01	167	2	3	1	0900	209																							
103	0012	1	01	168	1	1	1	1350	100	1400	7	5	0400	0000	25	110	017	01	000	200	1	1	0000	05	110	0400	20	90	1	1	0	0
103	0012	1	01	169	1	1	1	1500	106	1500	7	5	0500	0350	10	170	045	01	000	200	1	1	0350	10	175	0600	12	90			0	0
103	0012	1	01	170	1	1	1	1150	200	1350	7	5	1000	0050	05	160	020	01	000	200	1	1	0050	05	160	0750	12	90	1	1	0	0
103	0012	1	01	171	1	1	1	1150	222	1350	7	5	0900	0650	07	140	024	01	000	200	1	1	0650	07	140	0900	12	90	1	1	1	1
103	0012	1	01	172	1	1	1	1150	222	1350	7	7	0000	0000	00	000	007	02	000	200	1	1	0000	00	000	0000	00	00	0	0	0	0
103	0012	1	01	173	1	2	1	0840	210	3000	7	5	1500	1400	25	190	105	01	000	200	1	1	1400	25	195	0000	12	90	1	1	0	0
103	0012	1	01	174	1	1	1	2020	321	4500	8	5	2500	2000	25	140	175	01	000	200	1	1	2000	25	140	1000	10	90	1	1	0	0
103	0012	1	01	175	1	2	1	3000	160	4000	8	5	2000	2500	25	140	210	01	000	200	1	1	2500	25	140	1200	16	50	1	1	0	0
103	0012	1	01	176	1	1	1	2200	070	4500	8	5	2000	1700	30	130	100	01	000	200	1	1	1700	30	130	1200	10	90	1	1	0	0

DATA SHEET 2

COUNTRY	SITE NO	DATA SP	SHIP NO	INTEN NO	LINE NO	LINE DATA	DATE FR	DC IN GMT	AZIM UTH	SPCS RSVD	SLT SVD	CTT SED	STG ORD	RT TYPE	HABIT HT	HABIT SPRD
103	0012	1	01	035	2	2	2	0410	342	1	0	0	0			
103	0012	1	01	041	2	2	2	0475	048	1	0	0	0			
103	0012	1	01	053	2	2	2	0560	335	1	0	0	0			
103	0012	1	01	054	2	2	2	0300	345	1	0	0	0			
103	0012	1	01	055	2	2	2	0340	345	1	0	0	0			
103	0012	1	01	056	2	2	2	0330	350	1	0	0	0			
103	0012	1	01	087	2	2	2	0680	070	1	0	0	0			
103	0012	1	01	088	2	2	2	0650	069	1	0	0	0			
103	0012	1	01	089	2	2	2	0600	071	1	0	0	0			
103	0012	1	01	090	2	2	2	0600	076	1	0	0	0			
103	0012	1	01	091	2	2	2	0800	081	1	0	0	0			
103	0012	1	01	099	2	2	2	0600	230					1	070	080
103	0012	1	01	1.5	2	2	2	0800	310					1	100	090
103	0012	1	01	1.6	2	2	2	0560	340	1	0	0	0			
103	0012	1	01	1.7	2	2	2	0420	347	1	0	0	0			
103	0012	1	01	110	2	2	2	1000	070	1	0	0	0			
103	0012	1	01	111	2	2	2	0990	071	1	0	0	0			
103	0012	1	01	112	2	2	2	0825	083	1	0	0	0			
103	0012	1	01	121	2	2	2	1175	012					1	100	080
103	0012	1	01	133	2	2	2	1100	305	1	0	0	0			
103	0012	1	01	134	2	2	2	1110	304	1	0	0	0			
103	0012	1	01	135	2	2	2	1200	300	1	0	0	0			
103	0012	1	01	136	2	2	2	1150	303	1	0	0	0			
103	0012	1	01	137	2	2	2	1200	319	1	0	0	0			
103	0012	1	01	141	2	2	2	1275	320					1	150	200
103	0012	1	01	142	2	2	2	1125	341	1				1	150	100
103	0012	1	01	147	3	3	2	1500	347	7				1	070	130
103	0012	1	01	151	2	2	2	0600	042	2				1	070	100
103	0012	1	01	153	2	2	2	1100	054	4				3	150	160
103	0012	1	01	160	2	2	2	1040	102	2				3	300	300
103	0012	1	01	162	2	2	2	1250	108	8				1	130	120
103	0012	1	01	167	3	3	2	0900	190	0	2	0	0			
103	0012	1	01	173	2	2	2	0840	210	0				3	300	450
103	0012	1	01	175	2	2	2	3000	160	0				3	450	900

COMMENTS

Table B2

Vegetation Structure Data, Data Collection Point P3-02

DATA SHEET 1

S	S	D	S	I	L	L	D	DC	A	N	N	C	C	GR	BRANCHING			STEM			STEM BRANCHING			FOLIAGE				
S	I	A	W	T	I	I	A	IE	Z	S	T	R	A														S	S
U	T	T	E	N	N	T	T	SH	I	I															S		U	P
N	E	A	L	H	E	E	A	TT	M	C	C	S	D	-1	S	A	D	N	A	S	S	W	W	S	A	L	L	H	T	C	P	
T						D		E	U	M	L	P	I	T	I	N	I	O	T	I	T	D	T	I	N	S	S		S	D		
A	M	S	M	M	M		S	FR	T	T	S	H	A		A	S	A		T	N	C	M		A	S	T	T	A	E	N	L	C
T	S	P	S	S	S		M	M	M		S		M		M		M		D	U	M	S		M		M	M	S		D	N	D

PINA FOREST SITE, PANAMA CANAL ZONE
MSS DATA COLLECTION POINT P3-02, 21 SEP 66
GEOGRAPHIC COORD LAT 09 DEG 12 MIN 37 SEC N, LONG 079 DEG 56 MIN 47 SEC W
AMS MAP NO.4343 IV SW, GATUN LAKE. SCALE 1/25,000. MIL GRID COORD 18041684

103	0013	1	01	W01	1	1	1	0000	000	0025	2	2	0010	0000	00	000	001	26	000	000	1	2	0000	00	000	0000	10	33	1	1	0	0
103	0013	1	01	W02	1	1	1	0000	000	0070	3	3	0040	0030	01	000	001	23	000	070	1	1	0030	01	000	0020	12	29	1	1	0	0
103	0013	1	01	W03	1	1	1	0030	041	0120	4	3	0090	0090	01	170	001	01	000	120	1	1	0090	01	170	0020	12	34	1	1	0	0
103	0013	1	01	W04	1	1	1	0170	087	0110	4	2	0030	0109	01	000	002	01	000	110	1	1	0109	01	000	0014	10	90	1	1	0	0
103	0013	1	01	W05	1	1	1	0109	060	0105	4	2	0150	0090	01	120	002	01	000	105	1	1	0090	01	120	0070	29	10	1	1	0	0
103	0013	1	01	W06	1	1	1	0105	000	0140	4	3	0040	0090	01	190	001	01	000	140	1	1	0090	01	190	0025	12	90	1	1	0	0
103	0013	1	01	W07	1	1	1	0200	140	0140	4	3	0025	0050	01	100	002	01	035	195	1	1	0090	01	100	0030	16	33	1	1	0	0
103	0013	1	01	W08	1	1	1	0170	141	0195	4	3	0080	0090	01	120	001	01	000	195	1	1	0090	01	120	0090	12	31	1	1	0	0
103	0013	1	01	W09	1	1	1	0140	100	0110	4	3	0050	0080	01	170	002	01	000	110	1	1	0080	01	170	0080	12	90	1	1	0	0
103	0013	1	01	W10	1	1	1	0105	105	0120	4	3	0070	0095	01	000	001	01	000	120	1	1	0095	01	000	0030	16	33	1	1	0	0
103	0013	1	01	W11	1	1	1	0130	042	0120	4	2	0070	0050	01	190	002	01	000	120	1	1	0050	01	190	0050	24	10	1	1	0	0
103	0013	1	01	W12	1	1	1	0100	206	0190	4	2	0240	0060	01	190	002	08	000	190	1	1	0060	01	190	0100	40	20	1	1	0	0
103	0013	1	01	W13	1	1	1	0200	207	0120	4	2	02C0	0060	01	120	002	02	000	120	1	1	0060	01	120	0030	40	29	1	1	0	0
103	0013	1	01	W14	1	1	1	0110	214	0180	4	3	0080	0080	01	000	001	01	010	185	1	1	0080	01	000	0030	12	26	1	1	0	0
103	0013	1	01	W15	1	1	1	0220	229	0179	4	2	0200	0090	01	100	002	07	000	179	1	1	0090	01	100	0030	30	16	1	1	0	0
103	0013	1	01	W16	1	1	1	0200	001	0190	4	2	0200	0050	02	190	002	12	000	190	1	1	0090	02	190	0070	78	33	1	1	0	0
103	0013	1	01	W17	1	1	1	0205	000	0195	4	3	0090	0080	01	160	001	01	000	195	1	1	0060	01	160	0030	09	33	1	1	0	0
103	0013	1	01	W18	1	1	1	0060	004	0160	4	3	0050	0060	01	190	001	01	000	160	1	1	0060	01	190	0030	16	33	1	1	0	0
103	0013	1	01	W19	1	1	1	0200	203	0195	4	3	0025	0009	01	170	001	01	000	195	1	1	0009	01	170	0010	16	33	1	1	0	0
103	0013	1	01	W20	1	1	1	0300	284	0130	4	2	0100	0060	01	120	001	04	000	130	1	1	0060	01	120	0030	20	11	1	1	0	0
103	0013	1	01	W21	1	1	1	0300	249	0135	4	2	0160	0060	01	110	002	01	000	160	1	1	0060	01	110	0075	29	16	1	1	0	0
103	0013	1	01	W22	1	1	1	0280	310	0190	4	2	0060	0060	01	170	002	01	000	190	1	1	0060	01	170	0040	40	22	1	1	0	0
103	0013	1	01	W23	1	1	1	0400	034	0210	5	3	0060	0110	01	170	002	01	000	200	1	1	0110	01	170	0040	12	29	1	1	0	0
103	0013	1	01	W24	1	1	1	0400	042	0240	5	3	0100	0110	02	160	003	01	000	200	1	1	0110	02	160	0040	30	64	1	1	0	0
103	0013	1	01	W25	1	1	1	0330	029	0400	5	3	0100	0240	01	160	002	01	000	200	1	1	0240	01	160	0090	12	90	1	1	0	0
103	0013	1	01	W26	1	1	1	0440	069	2220	5	3	0100	0190	01	110	002	01	000	200	1	1	0190	01	110	0040	12	90	1	1	0	0
103	0013	1	01	W27	1	1	1	0490	072	0270	5	3	0100	0160	01	120	002	01	000	200	1	1	0160	01	120	0040	09	33	1	1	0	0
103	0013	1	01	W28	1	1	1	0480	086	0230	5	3	0100	0190	01	110	002	01	000	200	1	1	0190	01	110	0060	21	33	1	1	0	0
103	0013	1	01	W29	1	2	1	0290	114	0490	5	3	0250	0290	02	140	004	01	035	220	1	1	0290	02	140	0100	12	33	1	1	2	0
103	0013	1	01	W29	2	2	1	0150	078																															
103	0013	1	01	W30	1	1	1	0100	115	0300	5	7	0000	0000	00	000	004	01	000	200	1	1	0000	00	000	0000	00	00	0	0	0	0
103	0013	1	01	W31	1	1	1	0379	126	0490	5	2	0300	0329	02	120	004	01	000	200	1	1	0320	02	120	0190	48	90	1	1	0	0
103	0013	1	01	W32	1	1	1	0500	132	0320	5	3	0150	0260	01	190	002	01	000	200	1	1	0260	01	190	0060	12	90	1	1	0	0
103	0013	1	01	W33	1	1	1	0500	194	0300	5	3	0150	0170	01	110	002	01	000	200	1	1	0170	01	110	0070	12	90	1	1	0	0
103	0013	1	01	W34	1	1	1	0480	188	0290	5	3	0120	0150	01	160	002	01	000	200	1	1	0290	01	160	0040	12	90	1	1	0	0
103	0013	1	01	W35	1	1	1	0420	196	0370	5	3	0200	0190	01	090	002	01	035	210	1	1	0190	01	090	0060	16	33	1	1	0	0
103	0013	1	01	W36	1	1	1	0420	208	0300	5	3	0150	0240	01	110	002	01	000	200	1	1	0240	01	110	0080	12	90	1	1	0	0
103	0013	1	01	W37	1	1	1	0280	199	0290	5	3	0100	0160	01	120	002	01	000	200	1	1	0160	01	120	0090	21	33	1	1	0	0
103	0013	1	01	W38	1	1	1	0405	244	0290	5	3	0120	0140	01	140	002	01	000	200	1	1	0140	01	140	0080	12	90	1	1	0	0
103	0013	1	01	W39	1	2	1	0405	254	0490	5	3	0150	0105	02	150	004	01	000	200	1	1	0105	02	150	0090	48	29	1	1	2	0
103	0013	1	01	W39	2	2	1	0090	243																															
103	0013	1	01	W39	1	1	1	0310	265	0240	5	3	0100	0190	02	100	002	01	000	200	1	1	0190	02	100	0040	48	90	1	1	0	0
103	0013	1	01	W40	1	1	1	0310	271	0250	5	3	0100	0130	01	150	002	01	000	200	1	1	0130	01	150	0040	12	90	1	1	0	0
103	0013	1	01	W41	1	1	1	0350	271	0400	5	3	0120	0400	02	120	003	01	000	200	1	1	0400	02	120	0100	20	90	1	1	0	0
103	0013	1	01	W42	1	1	1	0400	286	0300	5	3	0150	0110	01	100	002	01	000	200	1	1	0110	01	100	0060	12	33	1	1	0	0
103	0013	1	01	W43	1	1	1	0410	307	0210	5	3	0070	0160	01	150	002	01	000	200	1	1	0160	01	150	0030	16	33	1	1	0	0
103	0013	1	01	W44	1	1	1	0340	308	0240	5	3	0100	0190	01	100	002	01	000	200	1	1	0190	01	100	0090	29	99	1	1	0	0
103	0013	1	01	W45	1	1	1	0500	345	0240	5	3	0100	0130	01	120	001	01	000	200	1	1	0130	01	120	0090	06	33	1	1	0	0
103	0013	1	01	W46	1	2	1	0480	009	0270	5	3	0200	0220	01	170	002	01	000	230	1	1	0220	01	170	0040	39	29	1	1	2	0
103	0013	1	01	W46	2	2	1	0490	030																															
103	0013	1	01	W47	1	1	1	0430	012	0920	6	3	0200	0260	01	150	004	01	000	200	1	1	0120	01	120	0045	10	33	1	1	0	0
103	0013	1	01	W48	1	2	1	0500	027	0800	6	3	0190	0600	01	120	004	01	035	220	1	1	0600	01	120	0100	12	90	1	1	2	0
103	0013	1	01	W48	2	2	1	0460	035																															
103	0013	1	01	W49	1	1	1	0500	032	0800	6	3	0200	0600	02	120	004	01	000	200	1	1	0600	02	120	0100	24	42	1	1	0	0
103	0013	1	01	W50	1	1	1	0520	030	0600	6	2	0250	0450	02	120	003	01	000	200	1	1	0450	02	120	0120	40	20	1	1	0	0
103	0013	1	01	W51	1	2	1	0800	074	1100	6	3	0600	0350	03	100	014	01	030	215	1	1	0350	03	100	0300	30	33	1	1	2	0
103	0013	1	01	W51	2	2	1	1000	074																															
103	0013	1	01	W52	1	2	1	0790	101	1000	6	3	0600	0500	02	120	009	01	000	200	1	1	0500	02	120	0300	24	90	1	1	2	0
103	0013	1	01	W52	2	2	1	0790	090																															
103	0013	1	01	W53	1	1	1	0920	100	1100	6	3	0600	0400	03	120	012	01	000	220	1	1	0400	03	120	0150	39	60	1	1	0	0
103	0013	1	01	W54	1	1	1	0175	076	0650	6	3	0300	0190	03	150	009	01	000	200	1	1	0190	03	150	0190	12	90	1	1	0	0
103	0013	1	01	W55	1	2	1	0C50	108	0800	6	3	0200	0600	03	150	006	01	000	200	1	1	0600	03	150	0100	15	90	1	1	0	2
103	0013	1	01	W56	1	2	1	0440	116	0900	6	3	0400	0220	03	175	010	01	160	260	1	1	0220	03	175	0100	12	90	1	1	2	0
103	0013	1	01	W56	2	2	1	0260	093																															
103	0013	1	01	W57	1	2	1	0400	123	1300	6	3	0400	0100	04	150	012	01	140	250	1	1	0100	04	150	0150	12	90	1	1	2	0
103	0013	1	01	W57	2	2	1	0480	079																															
103	0013	1	01	W58	1	1	1	0530	108	0550	6	2	300	0260	02	150	003	01	003	200	1	1	0260	02	150	0060	40	20	1	1	0	0
103	0013	1	01	W59	1	1	1	0470	125	0800	6	3	0300	0400	01	120	004	01	000	200	1	1	0400	01	120	0050	12	90	1	1	0	0
103	0013	1	01	W60	1	1	1	0950	144	0900	6	3	0500	0270	02	160	006	01	000	200	1	1	0270	02	160	0150	16	90	1	1	0	0
103	0013	1	01	W61	1	1	1	0490	167	0700	6	3	0300	0210	01	150	009	01	025	210	1	1	0210	01	150	0100	16	32	1	1	0	0
103	0013	1	01	W62	1	3	1	0360	181	0900	6	3	0500	0350	01	120	008	01	000	200	1	1	0350	01	120	0150	40	90	1	1	2	2
103	0013	1	01	W62	2	3	1	0320	160																															
103	0013	1	01	W63	1	1	1	0320	180	0800	6	3	0400	0500	02	150	005	01	030	210	1	1	0110	01	140	0040	12	90	1	1	0	0
103	0013	1	01	W64	1	2	1	0205	169	0700	6	2	0300	0950	02	120	003	01	000	200	1	1	0950	02	120	0150	43	20	1	1	0	3
103	0013	1	01	W65	1	2	1	0110	326	0900	6	3	0400	0400	02	140	008	01	030	210	1	1	0220	01	190	0050	12	90	1	1	2	0
103	0013	1	01	W65	2	2	1	0190	360																															
103	0013	1	01	W66	1	1	1	0540	307	0800	6	3	0400	0300	02	090	005	01	000	200	1	1	0140	01	090	0050	12	90	1	1	0	0
103	0013	1	01	W67	1	1	1	0570	350	0900	6	3	0400	0350	02	120	008	01	000	200	1	1	0350	02	120	0100	12	90	1	1	0	0
103	0013	1	01	W68	1	2	1	0610	354	0900	6	3	0400	0300	03	175	008	01	000	200	1	1	0100	01	140	0040	45	40	1	1	2	0
103	0013	1	01	W68	2	2	1	0680	006																															
103	0013	1	01	W69	1	1	1	0950	199	1000	7	7	0000	0000	00	000	007	10	000	200	1	1	0000	00	000	0000	00	00	0	0	0	0

(Continued)

Table B2 (Continued)

Data Sheet 1

Country	Site	Date	Sample	Item	Line	Line	Date	Depth of Water	Air Temp	Wind Dir	Wind Vel	Cloud Cover	Cloud Type	Sea Ice Concentration	Sea Ice Type	Sea Ice Thickness	Snow Depth	Ice Temp	Ice Salinity	Ice Density	Ice Core Length	Ice Core Diameter	Ice Core Weight	Ice Core Volume
103	0013	1	01	070	1	1	1	1100	010	0000	7	9	0000	1000	40	190	110	01	000	000	1	1	0060	02	000	0100	00	00	1	1	0	0
103	0013	1	01	071	1	1	1	1100	100	0300	7	9	1400	0000	00	100	000	01	000	000	1	1	0100	01	000	0000	00	00	1	1	0	0
103	0013	1	01	072	1	1	1	1000	171	0000	7	9	0000	1000	00	000	010	01	000	000	1	1	0100	02	100	0040	40	00	1	1	0	0
103	0013	1	01	073	1	1	1	1100	100	0000	7	9	1000	1000	00	100	000	01	000	000	1	1	0100	01	100	0080	00	00	1	1	0	0
103	0013	1	01	074	1	1	1	0400	100	1000	7	9	0700	1000	00	100	010	01	000	000	1	1	1000	04	100	0400	10	00	1	1	0	0
103	0013	1	01	075	1	1	1	0300	040	1000	7	9	0900	0400	00	000	000	01	000	000	1	1	0130	00	000	0040	10	70	1	1	0	0
103	0013	1	01	076	1	1	1	0410	007	1400	7	9	0400	1100	00	000	010	01	000	000	1	1	1100	00	000	0000	10	00	1	1	0	0
103	0013	1	01	077	1	1	1	0440	270	1000	7	9	1900	1000	00	100	040	01	000	000	1	1	1000	00	100	0700	40	00	1	1	0	0
103	0013	1	01	078	1	1	1	0900	090	0000	7	9	1100	0090	00	100	010	01	000	000	1	1	0000	00	100	0100	10	00	1	1	0	0
103	0013	1	01	079	1	1	1	0700	000	0000	7	9	1000	0040	00	170	010	04	000	000	1	1	0040	00	170	0100	10	30	1	1	0	0
103	0013	1	01	080	1	2	1	1100	010	0000	7	9	1000	1000	00	100	100	01	000	000	1	1	0020	00	000	0000	00	70	1	1	0	0
103	0013	1	01	081	1	1	1	1100	040	1300	7	9	0700	0400	00	100	010	01	000	000	1	1	0400	00	100	0100	07	01	1	1	0	0
103	0013	1	01	082	1	1	1	1300	070	1000	7	9	0900	0700	00	100	010	01	000	000	1	1	0700	00	100	0000	10	00	1	1	0	0
103	0013	1	01	083	1	1	1	0900	071	1400	7	9	0000	0400	00	100	000	01	000	000	1	1	0400	00	100	0400	04	00	1	1	0	0
103	0013	1	01	084	1	1	1	1000	104	1400	7	9	0000	0010	00	170	010	01	000	000	1	1	0010	00	170	0000	10	00	1	1	0	0
103	0013	1	01	085	1	0	1	0400	109	2000	7	9	0900	1000	04	100	000	01	000	000	1	1	1000	04	100	0000	06	00	1	1	0	0
103	0013	1	01	086	2	0	1	0710	107																								
103	0013	1	01	086	1	1	1	1000	002	2000	7	9	0000	0400	00	100	000	01	000	000	1	1	0000	01	100	0000	01	40	1	1	0	0
103	0013	1	01	087	1	1	1	1400	005	0900	7	9	1000	1000	40	100	000	01	000	000	1	1	0000	00	100	0000	10	00	1	1	0	0
103	0013	1	01	088	1	1	1	1000	000	1000	7	9	0000	1000	00	100	010	01	000	000	1	1	0100	01	000	0000	10	00	1	1	0	0

Data Sheet 2

Country	Site	Date	Sample	Item	Line	Line	Date	Depth of Water	Core Length	Air Temp	Bottle Position	Cast	Station	Bottle Number	Salinity	Oxygen	Comments
103	0013	1	01	095	2	2	2	0200	100	0	0	0	0				
103	0013	1	01	042	2	2	2	0300	401	1	0	0	0				
103	0013	1	01	044	2	2	2	0200	100	0				1	040	070	
103	0013	1	01	045	2	2	2	1100	010	0				3	000	340	
103	0013	1	01	095	3	2	2	0400	109	0				1	100	140	

Table B3

Vegetation Structure Data, Data Collection Point P3-03

DATA SHEET 1

S	S	S	S	I	L	L	S	DC	A	N	N	C	C	DR	BRANCHING				STEM				STEM BRANCHING				FOLIAGE				S	S
S	I	A	S	T	I	I	A	IN	Z	S	T	A	R																			U	U
M	T	T	P	E	N	N	T	CM	I	I																		S				P	P
S	E	A	L	M	G	G	A	TT	M	A		C	S	S	N	S	A	S	N	A	S	D	N	N	S	A	L	L	M	T	C		
T						S		S	U	N		L	P	I		I	N	I	S	T	I	T	B	T	I	N	S	S	S	S	S		
O	N	S	S	N	N		S	PR	T	T		S	W	A		T	A	A		T	N		C	W	A	%	T	T	R	R	N	L	C
T	S	P	S	S	S		N	M	M			S	R	M		M		M		D	U		H	S	P		M	M	O	O	N	N	D

PINA PICADOT SITE, PANAMA CANAL ZONE
USGS DATA COLLECTION POINT P3-03, 22 DEG 44
GEOGRAPHIC COORD LAT 09 DEG 12 MIN 46 SEC N, LONG 079 DEG 56 MIN 56 SEC W
AMS MAP 4045 IV SW, BALBOA LAND, SCALE 1/25,000, MIL GRID COORD 11971646

```
103  0014 1 01 001 1  1  1 0000 000 0685 2  2 0020 0000 00 000 001 23 000 000  1 1 0000 00 000 0000 19 99 1 1  0  0
103  0014 1 01 002 1  1  1 0000 000 0000 3  9 0020 0010 01 140 001 20 090 035  1 1 0010 01 140 0020 20 99 1 1  0  0
103  0014 1 01 003 1  2  1 0000 207 0130 4  9 0100 0060 01 190 002 01 030 135  1 1 0060 01 190 0030 99 33 1 1  2  0
103  0014 1 01 003 2  2  1 0210 244
103  0014 1 01 004 1  1  1 0400 208 0100 4  9 0140 0060 01 140 001 01 030 190  1 1 0060 01 140 0030 12 99 1 1  0  0
103  0014 1 01 005 1  1  1 0300 013 0140 4  9 0070 0120 01 190 001 01 000 140  1 1 0120 01 190 0020 19 33 1 1  0  0
103  0014 1 01 006 1  1  1 0300 014 0170 4  9 0060 0090 01 190 001 01 000 120  1 1 0090 01 190 0020 19 33 1 1  0  0
103  0014 1 01 007 1  1  1 0400 022 0160 4  9 0240 0110 01 160 001 01 000 160  1 1 0110 01 160 0020 19 40 1 1  0  0
103  0014 1 01 008 1  1  1 0300 026 0100 4  2 0060 0090 01 000 001 04 000 100  1 1 0090 01 000 0030 99 33 1 1  0  0
103  0014 1 01 009 1  1  1 0200 026 0110 4  2 0110 0070 01 160 001 04 000 110  1 1 0070 01 160 0040 99 99 1 1  0  0
103  0014 1 01 010 1  1  1 0300 001 0140 4  2 0300 0090 01 140 002 06 000 140  1 1 0090 01 140 0020 99 99 1 1  0  0
103  0014 1 01 011 1  1  1 0300 009 0100 4  2 0150 0100 01 140 001 06 000 100  1 1 0100 01 140 0020 99 40 1 1  0  0
103  0014 1 01 012 1  1  1 0300 009 0170 4  9 0060 0140 01 000 002 01 000 170  1 1 0140 01 000 0020 99 40 1 1  0  0
103  0014 1 01 013 1  1  1 0300 108 0100 4  9 0060 0090 01 120 001 03 000 005  1 1 0090 01 120 0030 40 99 1 1  0  0
103  0014 1 01 014 1  1  1 0310 111 0100 4  9 0060 0090 01 110 001 02 000 100  1 1 0090 01 110 0040 12 99 1 1  0  0
103  0014 1 01 015 1  2  1 0310 139 0130 4  2 0060 0110 01 000 001 01 010 130  1 1 0110 01 000 0030 39 37 1 1  2  0
103  0014 1 01 015 2  2  1 0300 147
103  0014 1 01 016 1  2  1 0200 199 0130 4  9 0090 0100 01 110 002 01 000 150  1 1 0100 01 110 0030 24 33 1 1  2  0
103  0014 1 01 016 2  2  1 0200 201
103  0014 1 01 017 1  1  1 0300 199 0110 4  9 0070 0060 01 100 001 01 000 110  1 1 0060 01 100 0030 12 33 1 1  0  0
103  0014 1 01 018 1  1  1 0340 108 0190 4  9 0100 0080 01 100 002 02 000 190  1 1 0080 01 100 0040 19 99 1 1  0  0
103  0014 1 01 019 1  1  1 0400 100 0160 4  9 0190 0070 01 170 002 01 000 160  1 1 0070 01 170 0070 12 33 1 1  0  0
103  0014 1 01 020 1  1  1 0340 107 0100 4  7 0400 0000 00 000 001 01 000 110  1 1 0000 00 000 0000 00 00 0 0  0  0
103  0014 1 01 021 1  1  1 0100 101 0170 4  2 0300 0000 01 190 002 00 000 170  1 1 0000 01 190 0030 00 10 1 1  0  0
103  0014 1 01 022 1  1  1 0000 128 0130 4  2 0070 0070 01 130 001 03 001 130  1 1 0070 01 130 0030 40 29 1 1  0  0
103  0014 1 01 023 1  1  1 0310 220 0130 4  9 0100 0090 01 110 002 01 000 130  1 1 0090 01 110 0030 20 33 1 1  0  0
103  0014 1 01 024 1  1  1 0200 231 0140 4  9 0100 0100 01 110 002 01 000 190  1 1 0100 01 110 0030 20 33 1 1  0  0
103  0014 1 01 025 1  1  1 0340 230 0130 4  9 0100 0090 01 120 002 01 010 130  1 1 0090 01 120 0090 20 44 1 1  0  0
103  0014 1 01 026 1  1  1 0310 237 0120 4  9 0070 0060 01 110 002 01 000 120  1 1 0060 01 110 0020 20 40 1 1  0  0
103  0014 1 01 027 1  2  1 0110 007 0400 9  9 0090 0230 01 120 004 01 000 220  1 1 0230 01 120 0090 39 49 1 1  2  0
103  0014 1 01 027 2  2  1 0000 201
103  0014 1 01 028 1  1  1 0030 240 0400 9  9 0300 0090 02 120 004 01 000 200  1 1 0090 02 120 0200 12 99 1 1  0  0
103  0014 1 01 029 1  1  1 0400 104 0270 9  9 0120 0090 01 070 002 01 000 200  1 1 0090 01 000 0070 20 20 1 1  0  0
103  0014 1 01 030 1  1  1 0030 011 0060 9  9 0190 0140 01 000 002 01 000 200  1 1 0140 01 000 0090 19 99 1 1  0  0
103  0014 1 01 031 1  1  1 0000 012 0200 9  9 0100 0000 01 190 002 01 010 200  1 1 0000 01 190 0030 49 33 1 1  0  0
103  0014 1 01 032 1  1  1 0700 034 0200 9  9 0300 0190 02 160 002 03 000 220  1 1 0190 02 160 0120 20 99 1 1  0  0
103  0014 1 01 033 1  1  1 0270 034 0400 9  9 0200 0100 01 190 002 01 000 200  1 1 0100 01 190 0090 19 44 1 1  0  0
103  0014 1 01 034 1  1  1 0000 040 0200 9  9 0200 0000 01 000 003 01 000 200  1 1 0000 01 000 0090 30 30 1 1  0  0
103  0014 1 01 035 1  2  1 0470 070 0400 9  9 0400 0100 01 120 009 01 000 200  1 1 0100 01 120 0100 12 99 1 1  2  0
103  0014 1 01 035 2  2  1 0300 096
103  0014 1 01 036 1  1  1 0120 002 0200 9  9 0120 0020 01 170 003 01 000 200  1 1 0020 01 170 0030 30 33 1 1  0  0
103  0014 1 01 037 1  1  1 0000 104 0400 9  9 0200 0000 01 000 004 01 000 200  1 1 0000 01 000 0020 12 99 1 1  0  0
103  0014 1 01 038 1  1  1 0430 102 0220 9  9 0190 0100 01 160 003 01 030 200  1 1 0100 01 160 0020 12 99 1 1  0  0
103  0014 1 01 039 1  1  1 0400 103 0400 9  9 0200 0100 01 110 003 01 000 200  1 _ 0100 01 110 0100 12 99 1 1  0  0
103  0014 1 01 040 1  1  1 0200 107 0200 9  9 0200 0200 01 190 003 01 000 200  1 1 0200 01 190 0070 40 99 1 1  0  0
103  0014 1 01 041 1  1  1 0200 100 0200 9  9 0190 0070 01 170 002 00 000 200  1 1 0070 01 170 0030 12 99 1 1  0  0
103  0014 1 01 042 1  1  1 0010 104 0400 9  9 0100 0090 01 170 003 01 010 210  1 1 0090 01 170 0020 10 33 1 1  0  0
103  0014 1 01 042 2  2  1 0010 199 0090 9  9 0090 0000 01 140 003 01 040 220  1 1 0000 01 140 0190 24 33 1 1  2  0
103  0014 1 01 043 2  2  1 0100 197
103  0014 1 01 044 1  1  1 0500 101 0400 9  9 0190 0170 01 170 003 01 000 200  1 1 0170 01 170 0090 20 20 1 1  0  0
103  0014 1 01 045 1  1  1 0410 101 0500 9  9 0100 0190 02 160 002 02 000 200  1 1 0190 02 160 0040 12 99 1 1  0  0
103  0014 1 01 046 1  1  1 0400 104 0200 9  9 0190 0200 01 140 003 01 000 200  1 1 0110 01 000 0035 19 33 1 1  0  0
103  0014 1 01 047 1  1  1 0000 207 0200 9  2 0090 0170 01 110 003 01 010 200  1 1 0170 01 110 0120 30 14 1 1  0  0
103  0014 1 01 048 1  2  1 0400 210 0400 9  2 0090 0170 01 110 003 01 030 210  1 1 0090 01 110 0120 40 20 1 1  2  0
103  0014 1 01 048 2  2  1 0400 204
103  0014 1 01 049 1  1  1 0310 204 0200 9  9 0200 0120 01 190 003 01 000 200  1 1 0120 01 190 0000 40 33 1 1  0  0
103  0014 1 01 050 1  1  1 0200 200 0400 9  9 0090 0200 01 110 003 01 000 200  1 1 0200 01 110 0100 40 20 1 1  0  0
103  0014 1 01 051 1  1  1 0790 003 1100 6  9 0500 0000 07 190 012 01 000 200  1 1 0000 07 190 0300 20 99 1 1  0  0
103  0014 1 01 052 1  1  1 0700 049 0600 6  9 0200 0000 01 170 004 01 000 200  1 1 0000 01 170 0020 12 99 1 1  0  0
103  0014 1 01 053 1  1  1 0000 003 1200 6  9 0700 0090 09 110 019 01 000 200  1 1 0090 09 110 0290 40 33 1 1  0  0
103  0014 1 01 054 1  1  1 0770 104 0700 6  9 0400 0000 01 190 009 01 000 200  1 1 0000 01 190 0190 12 99 1 1  0  0
103  0014 1 01 055 1  1  1 0100 006 0750 6  9 0200 0200 01 190 006 01 000 200  1 1 0200 01 190 0100 40 33 1 1  0  0
103  0014 1 01 056 1  1  1 0010 102 0090 6  9 0290 0270 02 190 009 01 010 210  1 1 0270 02 190 0090 12 99 1 1  0  0
103  0014 1 01 057 1  1  1 0300 104 1200 6  9 0500 0000 09 120 000 01 000 200  1 1 0000 09 120 0290 20 99 1 1  0  0
103  0014 1 01 058 1  2  1 0400 101 0090 6  9 0300 0190 02 190 004 01 000 200  1 1 0190 02 190 0190 12 99 1 1  2  0
103  0014 1 01 058 2  2  1 0030 107
103  0014 1 01 059 1  1  1 0340 130 0700 6  9 0290 0400 01 110 009 01 000 200  1 1 0400 01 110 0120 20 99 1 1  0  0
103  0014 1 01 060 1  1  1 0040 100 0090 6  9 0200 0200 02 000 009 01 000 200  1 1 0200 01 170 0090 19 99 1 1  0  0
103  0014 1 01 061 1  1  1 0400 003 1000 6  9 0500 0140 01 110 010 01 010 210  1 1 0140 01 110 0080 99 40 1 1  0  0
103  0014 1 01 062 1  2  1 0000 212 1100 6  9 0500 0020 04 179 019 01 000 200  1 1 0020 04 179 0190 30 99 1 1  2  0
103  0014 1 01 062 2  2  1 1000 212
103  0014 1 01 063 1  1  1 0000 200 1000 6  9 0300 0400 02 190 006 01 000 200  1 1 0400 02 190 0190 20 33 1 1  0  0
103  0014 1 01 064 1  1  1 0000 202 1000 6  9 0400 0000 01 120 000 01 000 200  1 1 0000 01 120 0190 12 99 1 1  0  0
103  0014 1 01 065 1  2  1 0070 270 0000 6     0300 0400 02 110 000 01 030 220  1 1 0400 02 110 0120 40 33 1 1  2  0
103  0014 1 01 065 2  2  1 0070 270
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(Continued)

Table 23 (Concluded)

DATA SHEET 1

COUNTRY	SITE NO	DAY OF YEAR	SHIP TYPE	ITINERARY NO	LINE NO	LINE SEG	DATE OF OBS MO	DAY	YR	AREA ID	NET TYPE	CRUISE NO	SEQ NO	OBSERVATION TIME	DURATION	BRANCHING	NO	OBSERVATION TIME	DURATION	BRANCHING	NO	POLYAGE	SUCCESSIVE	SUCCESSIVE
103	0014	1	01	066	1	2	1	0140	20	1100	6	5	0400	0140	03	175	018	01	120	240	1	1	0140	03	175	0180	25	30	1	1	2	0
103	0014	1	01	066	2	2	1	0400	21?																							
103	0014	1	01	067	1	1	1	0000	074	1200	6	5	0300	0300	01	110	009	01	000	000	1	1	0300	01	110	0100	00	40	1	1	0	0
103	0014	1	01	068	1	1	1	0000	110	0000	6	5	0300	0300	01	110	004	01	000	000	1	1	0400	01	110	0100	00	30	1	1	0	0
103	0014	1	01	069	1	1	1	0000	120	0000	6	5	0400	0370	03	140	009	01	000	210	1	1	0370	03	140	0000	00	30	1	1	0	0
103	0014	1	01	070	1	1	1	0000	100	0000	6	2	0300	0400	02	110	004	01	000	200	1	1	0410	02	110	0100	00	00	1	1	0	0
103	0014	1	01	071	1	1	1	0000	100	0700	6	2	0200	0200	02	110	004	01	000	200	1	1	0400	02	110	0100	00	00	1	1	0	0
103	0014	1	01	072	1	1	1	0000	040	0000	7	5	0400	0300	03	120	010	01	000	200	1	1	0300	03	120	0000	00	00	1	1	0	0
103	0014	1	01	073	1	1	1	0000	030	0000	7	7	0000	0000	00	000	000	01	000	000	1	1	0000	00	000	0000	00	00	0	0	0	0
103	0014	1	01	074	1	1	1	0000	000	0000	7	7	0000	0000	00	000	007	04	000	000	1	1	0000	00	000	0000	00	00	0	0	0	0
103	0014	1	01	075	1	1	1	0000	004	0000	7	5	1000	0000	00	170	008	01	000	200	1	1	0000	00	170	0000	10	00	1	1	0	0
103	0014	1	01	076	1	1	1	1000	044	1500	7	5	0400	0400	00	160	021	01	000	200	1	1	0400	00	160	0300	12	00	1	1	0	0
103	0014	1	01	077	1	1	1	1100	010	1400	7	5	0900	0600	03	120	010	01	000	200	1	1	0600	03	120	0000	12	00	1	1	0	0
103	0014	1	01	078	1	1	1	1300	007	2400	7	5	1000	0400	04	150	039	01	000	200	1	1	0400	04	160	0100	12	00	1	1	0	0
103	0014	1	01	079	1	1	1	1100	004	1300	7	5	0400	0700	02	100	016	01	000	000	1	1	0700	02	100	0100	40	00	1	1	0	0
103	0014	1	01	080	1	1	1	0070	000	1600	7	2	1200	0000	00	140	040	01	000	200	1	1	0000	00	140	0500	00	01	1	1	0	0
103	0014	1	01	081	1	1	1	0070	184	2000	7	5	1300	1000	10	160	033	01	000	200	1	1	1000	10	160	0000	15	00	1	1	0	0
103	0014	1	01	082	1	2	1	0000	120	1400	7	2	1000	1200	04	130	013	01	000	200	1	1	1200	04	130	0400	00	01	1	1	0	0
103	0014	1	01	083	1		1	1100	160	2300	7	5	1200	0400	20	120	047	01	000	200	1	1	0400	20	120	0600	12	00	1	1	0	0
103	0014	1	01	084	1		1	1300	160	1600	7	7	0000	0000	00	000	000	01	000	000	1	1	0000	00	000	0000	00	00	0	0	0	0
103	0014	1	01	085	1	1	1	1300	020	1600	7	5	0800	0900	09	190	008	01	000	200	1	1	0900	09	190	0000	04	00	1	1	0	0
103	0014	1	01	086	1	1	1	1000	240	1300	7	5	0900	0400	03	000	010	01	000	200	1	1	0400	03	000	0000	10	30	1	1	0	0
103	0014	1	01	087	1	1	1	0600	203	1000	7	5	1000	0000	12	160	006	01	000	200	1	1	0000	12	160	0500	12	00	1	1	0	0
103	0014	1	01	088	1	1	1	0500	203	1500	7	7	0000	0000	00	000	235	09	000	200	1	1	0000	00	000	0000	00	00	0	0	0	0
103	0014	1	01	089	1	1	1	1300	260	1500	7	5	0050	1100	02	150	017	01	200	200	1	1	1100	02	150	0300	12	00	1	1	0	0
103	0014	1	01	090	1	1	1	1200	201	2200	7	5	1000	0400	05	130	008	01	000	210	1	1	0400	05	130	0400	10	00	1	1	0	0
103	0014	1	01	091	1	1	1	1140	204	2300	7	5	1200	2900	20	160	110	01	000	200	1	1	2900	20	160	0500	12	00	1	1	0	0
103	0014	1	01	092	1	1	1	0720	200	1500	7	5	0700	0400	03	150	010	01	000	200	1	1	0400	03	150	0300	12	00	1	1	0	0
103	0014	1	01	093	1	1	1	0140	210	1450	7	5	0500	0400	05	130	019	01	000	200	1	1	0400	05	130	0400	16	00	1	1	0	0

DATA SHEET 2

COUNTRY	SITE NO	DAY OF YEAR	SHIP TYPE	ITINERARY NO	LINE NO	LINE SEG	DATE OF OBS MO	DAY	YR	CRUISE NO	AREA ID	SPECIES	SEX	CONDITION	SAMPLE TYPE	RT	HABIT		COMMENTS
103	0014	1	01	082	2	2	2	0850	120	1	0	1	0						

Table B4

Vegetation Structure Data, Data Collection Point P3-04

DATA SHEET 1

C O V T Y P E	S I T E	D A T E	S T A N D	I N I T	L A N D	L O C A T	B A S A L	DC IB ON TY SP FR	A G E	H E I G H T	N U M B E R	C R O W N	C L A S S	CR	BRANCHING DIA	BRANCHING ANG	STEM DIA	STEM NO	STEM ANG	STEM SHP	BRANCHING NUM	BRANCHING TYP	BRANCHING HT	BRANCHING ANG	FOLIAGE LEN	FOLIAGE WID	FOLIAGE THK	FOLIAGE CON	SUP PLT	SUP CON
103	0019	1 01	001	1	1	1	0200	000 0007	1	2	0004	0000	00	000	001	29	000	000	1	2	0000	00	000	0000	03	90	1	1	0	0
103	0019	1 01	002	1	1	1	0200	000 0019	2	2	0012	0000	00	000	001	23	000	000	1	2	0000	00	000	0000	06	90	1	1	0	0
103	0019	1 01	003	1	1	1	0400	000 0070	3	5	0048	0030	01	110	001	22	000	000	1	1	0030	01	110	0020	16	30	1	1	0	0
103	0019	1 01	004	1	1	1	0140	000 0160	4	2	0100	0000	01	120	002	01	000	160	1	1	0090	01	120	0070	21	14	1	1	0	0
103	0019	1 01	005	1	1	1	0300	026 0110	4	5	0030	0005	01	110	001	01	000	110	1	1	0005	01	110	0015	16	50	1	1	0	0
103	0019	1 01	006	1	1	1	0130	020 0100	4	2	0100	0050	01	140	002	01	000	100	1	1	0090	01	140	0050	29	16	1	1	0	0
103	0019	1 01	007	1	2	1	0160	000 0110	4	5	0049	0090	01	120	002	01	025	115	1	1	0090	01	120	0085	24	30	1	1	2	0
103	0019	1 01	007	2	2	1	0160	073																						
103	0019	1 01	008	1	1	1	0230	106 0110	4	5	0050	0060	01	100	002	01	000	110	1	1	0060	01	100	0040	29	40	1	1	0	0
103	0019	1 01	009	1	1	1	0290	121 0110	4	5	0060	0080	01	080	001	01	000	110	1	1	0080	01	080	0050	24	33	1	1	0	0
103	0019	1 01	010	1	1	1	0170	132 0110	4	5	0040	0010	01	170	002	02	000	110	1	1	0010	01	170	0010	24	50	1	1	0	0
103	0019	1 01	011	1	1	1	0240	140 0120	4	2	0100	0060	01	110	001	04	000	120	1	1	0060	01	110	0035	40	30	1	1	0	0
103	0019	1 01	012	1	1	1	0240	146 0120	4	2	0100	0060	01	110	001	04	000	120	1	1	0060	01	110	0035	40	30	1	1	0	0
103	0019	1 01	013	1	1	1	0290	179 0150	4	5	0080	0080	01	100	001	01	000	150	1	1	0080	01	100	0040	16	16	1	1	0	0
103	0019	1 01	014	1	1	1	0220	184 0125	4	2	0120	0070	01	120	001	09	000	125	1	1	0070	01	120	0035	60	20	1	1	0	0
103	0019	1 01	015	1	1	1	0200	190 0170	4	5	0080	0110	01	170	003	01	000	170	1	1	0110	01	170	0050	60	20	1	1	0	0
103	0019	1 01	016	1	1	1	0180	198 0190	4	5	0080	0080	01	120	002	01	000	190	1	1	0080	01	120	0060	60	20	1	1	0	0
103	0019	1 01	017	1	2	1	0180	208 0130	4	5	0100	0110	01	100	002	01	140	200	1	1	0110	01	100	0070	60	20	1	1	2	0
103	0019	1 01	017	2	2	1	0230	229																						
103	0019	1 01	018	1	1	1	0190	235 0160	4	5	0110	0090	01	140	002	01	000	160	1	1	0090	01	140	0085	60	20	1	1	0	0
103	0019	1 01	019	1	2	1	0230	243 0140	4	5	0110	0090	01	140	002	02	140	200	1	1	0090	01	140	0080	60	20	1	1	2	0
103	0019	1 01	019	2	2	1	0180	267																						
103	0019	1 01	020	1	1	1	0290	254 0120	4	5	0090	0060	01	170	002	03	000	120	1	1	0060	01	170	0040	60	20	1	1	0	0
103	0019	1 01	021	1	1	1	0160	254 0110	4	5	0100	0090	01	170	002	03	000	110	1	1	0090	01	170	0040	60	20	1	1	0	0
103	0019	1 01	022	1	1	1	0290	263 0110	4	5	0100	0050	01	170	002	02	000	110	1	1	0050	01	170	0035	60	20	1	1	0	0
103	0019	1 01	023	1	1	1	0090	264 0140	4	5	0100	0050	01	150	001	01	000	140	1	1	0200	01	150	0095	10	33	1	1	0	0
103	0019	1 01	024	1	1	1	0480	267 0230	5	2	0260	0130	01	150	003	01	000	230	1	1	0130	01	150	0075	35	17	1	1	0	0
103	0019	1 01	025	1	1	1	0390	298 0400	5	5	0160	0090	01	120	002	02	000	200	1	1	0090	01	120	0040	15	40	1	1	0	0
103	0019	1 01	026	1	1	1	0220	299 0240	5	2	0200	0100	01	110	001	06	000	200	1	1	0100	01	110	0040	40	50	1	1	0	0
103	0019	1 01	027	1	1	1	0190	326 205	5	2	0150	0060	01	160	001	04	000	200	1	1	0060	01	160	0040	40	50	1	1	0	0
103	0019	1 01	028	1	1	1	0280	346 0250	5	2	0200	0080	01	110	001	07	000	200	1	1	0100	01	110	0040	40	50	1	1	0	0
103	0019	1 01	029	1	1	1	0280	360 0400	5	5	0200	0100	01	160	003	01	000	200	1	1	0100	01	160	0070	40	40	1	1	0	0
103	0019	1 01	030	1	1	1	0370	383 0230	5	5	0200	0110	01	170	002	04	000	200	1	1	0095	01	110	0010	90	40	1	1	0	0
103	0019	1 01	031	1	2	1	0390	039 0300	5	5	0100	0080	01	120	002	01	000	300	1	1	0080	01	120	0030	12	90	1	1	0	2
103	0019	1 01	032	1	1	1	0090	017 0350	5	2	0700	0190	01	120	003	01	000	300	1	1	0100	01	120	0100	30	15	1	1	0	0
103	0019	1 01	033	1	1	1	0210	080 0205	5	2	0220	0130	01	110	001	06	000	200	1	1	0130	01	110	0045	40	50	1	1	0	0
103	0019	1 01	034	2	1	1	0130	098 300	5	5	0120	0080	01	090	003	01	000	200	1	1	0080	01	090	0050	45	33	1	1	0	2
103	0019	1 01	035	1	1	1	0290	110 0210	5	2	0120	0120	01	100	001	09	000	200	1	1	0135	01	100	0040	40	50	1	1	0	0
103	0019	1 01	036	1	1	1	0230	113 0210	5	2	0120	0120	01	100	001	07	030	200	1	1	0135	01	100	0040	40	50	1	1	0	0
103	0019	1 01	037	1	1	1	0410	108 0230	5	2	0120	0120	01	100	001	06	000	200	1	1	0135	01	100	0040	40	50	1	1	0	0
103	0019	1 01	038	1	1	1	0220	127 0220	5	2	0200	0120	01	100	001	06	000	200	1	1	0120	01	100	0040	40	50	1	1	0	0
103	0019	1 01	039	1	1	1	0390	122 0260	5	5	0120	0140	01	160	002	01	000	200	1	1	0140	01	160	0040	20	50	1	1	0	0
103	0019	1 01	040	1	1	1	0310	144 0290	5	2	0300	0100	01	120	003	01	030	200	1	1	0100	01	120	0100	40	20	1	1	0	0
103	0019	1 01	041	1	1	1	0230	160 0210	5	2	0200	0130	01	110	001	06	000	200	1	1	0130	01	110	0040	40	50	1	1	0	0
103	0019	1 01	042	1	1	1	0420	102 350	5	5	0250	0140	01	170	002	02	000	200	1	1	0140	01	170	0080	24	33	1	1	0	0
103	0019	1 01	043	1	1	1	0410	199 0350	5	5	0200	0210	01	090	003	01	000	200	1	1	0210	01	090	0110	12	33	1	1	0	0
103	0019	1 01	044	1	1	1	0440	201 0300	5	2	0240	0120	01	150	004	01	000	200	1	1	0120	01	150	0110	35	20	1	1	0	0
103	0019	1 01	045	1	1	1	0220	189 0210	5	5	0100	0100	01	110	002	01	000	200	1	1	0100	01	110	0040	60	20	1	1	0	0
103	0019	1 01	046	1	1	1	0490	253 0750	6	5	0350	0330	02	140	006	01	000	200	1	1	0330	02	140	0100	25	20	1	1	0	0
103	0019	1 01	047	1	1	1	0490	293 0700	6	7	0500	0000	00	000	001	01	000	000	1	1	0000	00	000	0000	00	00	0	0	0	0
103	0019	1 01	048	1	1	1	0590	024 0650	6	5	0300	0230	02	150	006	01	001	200	1	1	0230	02	150	0120	20	20	1	1	0	0
103	0019	1 01	049	1	1	1	0780	034 0600	6	5	0300	0500	02	150	005	01	000	200	1	1	0400	02	150	0100	20	20	1	1	0	0
103	0019	1 01	050	1	1	1	0690	063 0900	6	5	0400	0600	04	150	020	01	000	200	1	1	0600	04	150	0150	20	50	1	1	0	0
103	0019	1 01	051	1	1	1	0690	099 0900	6	5	0300	0500	02	110	006	01	000	200	1	1	0500	02	110	0120	22	50	1	1	0	0
103	0019	1 01	052	1	1	1	0910	100 0800	6	5	0500	0300	03	140	011	01	000	200	1	1	0300	03	140	0200	22	50	1	1	0	0
103	0019	1 01	053	1	1	1	0490	100 1200	6	5	0450	0800	03	120	012	01	000	200	1	1	0500	03	120	0200	22	50	1	1	0	0
103	0019	1 01	054	1	1	1	0980	139 0650	6	5	0400	0240	02	090	006	01	000	200	1	1	0240	02	090	0150	15	42	1	1	0	0
103	0019	1 01	055	1	2	1	0690	164 0800	6	5	0450	0200	04	160	007	01	050	220	1	1	0260	04	160	0250	15	42	1	1	2	0
103	0019	1 01	055	2	2	1	0970	184																						
103	0019	1 01	056	1	1	1	0820	249 0950	6	5	0300	0220	03	170	0w4	01	000	200	1	1	0220	03	170	0100	20	90	1	1	0	0
103	0019	1 01	057	1	1	1	0480	246 0650	6	5	0400	0110	02	160	004	05	040	210	1	1	0110	02	160	0100	10	33	1	1	0	0
103	0019	1 01	058	1	2	1	0380	230 0950	6	5	0400	0150	02	170	004	04	100	200	1	1	0150	02	170	0150	10	33	1	1	2	0
103	0019	1 01	058	2	2	1	0330	252																						
103	0019	1 01	059	1	1	1	0310	286 0750	6	5	0300	0400	02	120	009	01	020	210	1	1	0400	02	120	0080	10	33	1	1	0	0
103	0019	1 01	060	1	1	1	0980	207 1300	6	5	0500	0400	02	120	012	01	000	200	1	1	0400	02	120	0250	60	90	1	1	0	0
103	0019	1 01	061	1	1	1	0770	269 1200	6	5	0500	0800	05	150	010	01	000	200	1	1	0600	04	110	0100	12	90	1	1	0	0
103	0019	1 01	062	1	1	1	0980	289 0920	6	5	0300	0290	02	090	004	01	000	200	1	1	0290	02	090	0200	12	90	1	1	0	0
103	0019	1 01	063	1	1	1	0829	030 0920	6	5	0300	0350	02	090	009	01	000	200	1	1	0350	02	090	0150	12	90	1	1	0	0
103	0019	1 01	064	1	1	1	0790	035 1200	6	5	0400	0800	03	150	008	01	000	200	1	1	0800	03	150	0250	12	90	1	1	0	0
103	0019	1 01	065	1	1	1	0730	035 0950	6	5	0150	0250	01	160	004	01	000	200	1	1	0250	01	160	0050	10	33	1	1	0	0
103	0019	1 01	066	1	1	1	0680	091 0950	6	5	0300	0200	01	090	004	01	000	200	1	1	0200	01	090	0150	12	90	1	1	0	0
103	0019	1 01	067	1	1	1	1010	104 1600	7	5	0800	0900	10	140	019	01	000	200	1	1	0900	10	140	0400	12	90	1	1	0	0
103	0019	1 01	068	1	1	1	1010	100 2900	7	5	1000	1000	25	150	049	01	000	200	1	1	1000	25	150	0500	12	90	1	1	0	0
103	0019	1 01	069	1	1	1	1079	149 1900	7	5	0800	0700	00	150	022	01	000	200	1	1	0700	00	150	0300	12	90	1	1	0	0
103	0019	1 01	070	1	1	1	1000	149 2700	7	5	0500	1000	00	120	026	01	000	200	1	1	1000	00	120	0200	12	90	1	1	0	0
103	0019	1 01	071	1	1	1	0640	170 3000	7	5	1200	0300	25	170	119	01	000	200	1	1	0300	25	170	0400	12	90	1	1	0	0
103	0019	1 01	072	1	1	1	0990	169 3000	7	7	0000	0000	00	000	005	01	000	200	1	1	0000	00	000	0000	00	00	0	0	0	0
103	0019	1 01	073	1	1	1	1230	209 1300	7	5	0500	1100	05	110	013	01	000	200	1	1	1100	05	110	0250	12	90	1	1	0	0
103	0019	1 01	074	1	1	1	1000	216 1400	7	5	0000	1000	15	140	040	01	000	200	1	1	1000	15	140	0300	12	90	1	1	0	0
103	0019	1 01	075	1	1	1	0900	224 1400	7	5	0400	0900	05	160	025	01	000	200	1	1	0900	05	160	0250	10	90	1	1	0	0

(Continued)

Table 26 (Concluded)

DATA SHEET 1

COUNTRY	SITE	DATA	SPECIES	ITEM	LINE	LINE	DATE	DC TIME	AZIMUTH	MONTH	DAY	HOUR	MIN	SEC	ON GRADIENT				OFF				OFF GRADIENT				POLARIZ			
															WT	DIAM	ANG	DIAM	NO	ATT	SIG	DIAM	NO	ATT	SIG	DIAM	SCAT	LOCK	LOCK	
103	0015	1	01	076	1	1	1	0000	224	1400	7	7	0000	3000	00	000	000	00	000	200	1	1	0000	00	000	0000	00	00	0	0	0	0
103	0015	1	01	077	1	1	1	0700	224	2000	7	8	1800	1600	10	100	050	01	000	210	1	1	0000	00	170	0000	12	00	1	1	0	0
103	0015	1	01	078	1	1	1	0700	224	2000	7	7	0000	0000	00	000	000	03	000	200	1	1	0000	00	000	0000	00	00	0	0	0	0
103	0015	1	01	079	1	2	1	0000	244	2000	7	8	0000	1800	04	120	050	01	000	200	1	1	1800	04	120	0800	40	00	1	1	0	0
103	0015	1	01	080	1	1	1	0400	014	1900	7	8	0700	0700	00	100	014	01	000	200	1	1	0700	00	100	0400	10	00	1	1	0	0
103	0015	1	01	081	1	1	1	0970	014	1800	7	8	0400	0600	00	100	012	01	000	200	1	1	0600	00	100	0300	10	00	1	1	0	0
103	0015	1	01	082	1	1	1	1200	000	1900	7	8	0300	0700	00	120	000	01	000	200	1	1	0700	00	120	0300	10	00	1	1	0	0
103	0015	1	01	083	1	2	1	0000	004	1600	7	9	1300	0700	00	170	000	01	000	200	1	1	0700	00	170	0400	10	00	1	1	0	0
103	0015	1	01	083	2	2	1	0300	000																							
103	0015	1	01	084	1	1	1	1500	000	2300	7	9	1900	1800	11	190	130	01	000	200	1	1	1800	70	190	0700	10	00	1	1	0	0
103	0015	1	01	085	1	1	1	1900	000	2000	7	9	0000	1000	07	160	000	01	000	200	1	1	100)	07	160	0000	10	00	1	1	0	0
103	0015	1	01	086	1	1	1	1900	224	2000	7	9	1300	1900	00	190	040	01	000	200	1	1	1900	00	190	1900	00	00	1	1	0	0

DATA SHEET 2

COUNTRY	SITE	DATA	SPECIES	ITEM	LINE	LINE	DATE	DC TIME	AZIMUTH	SPECIES	SEX	CITY	SEX	RT	HABIT		COMMENTS
														TYP	HAB	SPD	
103	0015	1	01	031	2	2	2	0350	035	1	0	1	0				
103	0015	1	01	034	2	2	2	0130	090	0	1	0	0				
103	0015	1	01	070	2	2	2	0000	344	1	0	0	0				

Table D4

Vegetation Structure Data, Data Collection Point P4-01

DATA SHEET 1

C O V T	C O I T	D A T E	S I T E	I N T E N S	L I N E	L O C A T	D B H	A Z I M U T H	S L O P E	N S E W	M O R	C R C	GR T	BRANCHING D I A M	BRANCHING A N G	BRANCHING H T	OTHER D I A M	OTHER N O	OTHER A T T	OTHER S I N U	OTHER BRANCHING D I A M	OTHER BRANCHING H T	FOLIAGE S H T	FOLIAGE C O V	SUP L C D	SUP L C D
103	0016	1	01	001	1	1	1	0300	000	0015	2	9	0015	0000	00	040	001	22	000	000	1	1	0000	00	000	0000	06	90	1	1	0	0
103	0016	1	01	002	1	1	1	0400	000	0070	3	9	0030	0040	01	100	001	23	000	070	1	1	0040	01	100	0030	12	33	1	1	0	0
103	0016	1	01	003	1	1	1	0090	170	0105	4	9	0090	0090	01	110	W01	03	000	105	1	1	0090	01	110	0011	19	33	1	1	0	0
103	0016	1	01	004	1	1	1	0000	100	0120	4	9	0040	0070	01	100	001	01	000	120	1	1	0070	01	100	0015	19	33	1	1	0	0
103	0016	1	01	005	1	1	1	0170	262	0130	4	9	0070	0010	01	120	001	01	015	140	1	1	0010	01	120	0090	19	33	1	1	0	0
103	0016	1	01	006	1	2	1	0000	272	0105	4	9	010C	0040	01	160	001	03	035	125	1	1	0040	01	160	0030	19	33	1	1	2	0
103	0016	1	01	006	2	2	1	0110	290																								
103	0016	1	01	007	1	1	1	0200	294	0140	4	9	0150	0070	01	190	001	20	000	140	1	2	0070	01	190	0030	45	13	1	1	0	0
103	0016	1	01	008	1	1	1	0140	001	0100	4	9	0150	0090	01	160	001	02	000	160	1	1	0090	01	160	0060	19	33	1	1	0	0
103	0016	1	01	009	1	1	1	W160	010	0110	4	9	0100	0090	01	100	001	02	000	110	1	1	0090	01	100	0030	19	33	1	1	0	0
103	0016	1	01	010	1	1	1	0140	360	0120	4	9	0100	0100	01	100	001	01	000	120	1	1	0100	01	100	0050	19	33	1	1	0	0
103	0016	1	01	011	1	1	1	0170	040	0110	4	9	0120	0060	01	100	001	00	000	110	1	2	0060	01	100	0040	45	13	1	1	0	0
103	0016	1	01	012	1	2	1	0070	074	0110	4	9	0060	0090	01	090	001	01	000	110	1	1	0090	01	090	0029	19	33	1	1	2	0
103	0016	1	01	012	2	2	1	0110	064																								
103	0016	1	01	013	1	1	1	0170	160	0100	4	9	0100	0070	01	170	001	01	000	100	1	1	0070	01	170	0030	00	90	1	1	0	0
103	0016	1	01	014	1	1	1	0090	200	0140	4	9	0150	0040	01	000	001	05	000	140	1	1	0040	01	000	0040	45	13	1	1	0	0
103	0016	1	01	015	1	1	1	0200	170	0120	4	9	0090	0090	01	000	001	01	000	120	1	1	0090	01	000	0050	19	33	1	1	0	0
103	0016	1	01	016	1	1	1	0300	170	0110	4	9	0090	0030	01	100	001	01	000	110	1	1	0030	01	100	0015	19	33	1	1	0	0
103	0016	1	01	017	1	1	1	0090	340	0105	4	9	0150	0000	01	110	001	06	000	105	1	1	0000	01	110	0000	45	13	1	1	0	0
103	0016	1	01	018	1	1	1	0300	000	0120	4	9	0090	0030	01	100	001	01	000	120	1	1	0030	01	100	0020	19	33	1	1	0	0
103	0016	1	01	019	1	1	1	0300	000	0105	4	9	0030	0060	0a	000	001	01	000	105	1	1	0060	01	000	0015	19	33	1	1	0	0
103	0016	1	01	020	1	1	1	0300	000	0110	4	9	0090	0060	01	150	001	01	000	110	1	1	0060	01	150	0035	19	33	1	1	0	0
103	0016	1	01	021	1	1	1	0270	110	0120	4	9	0030	0070	01	150	001	01	000	120	1	1	0070	01	150	0012	19	33	1	1	0	0
103	0016	1	01	022	1	2	1	0300	110	0170	4	2	0150	0070	01	120	001	01	000	170	1	1	0070	01	120	0070	20	29	1	1	0	2
103	0016	1	01	023	1	1	1	0280	134	0150	4	9	0200	0070	01	190	001	12	000	150	1	1	0070	01	000	0050	90	10	1	1	0	0
103	0016	1	01	024	1	1	1	0140	200	0290	5	9	0170	0190	01	150	002	01	000	200	1	1	0190	01	150	0090	19	33	1	1	0	0
103	0016	1	01	025	1	2	1	0240	210	0220	5	9	0190	0270	01	000	002	01	060	220	1	1	0270	01	000	0060	19	33	1	1	2	0
103	0016	1	01	025	2	2	1	0230	203																								
103	0016	1	01	026	1	1	1	0440	210	0290	5	9	0150	0040	01	160	002	01	000	200	1	1	0040	01	160	0040	20	29	1	1	0	0
103	0016	1	01	027	1	1	1	0360	207	0300	5	9	0150	0140	01	190	002	01	000	200	1	1	0140	01	190	0000	20	29	1	1	0	0
103	0016	1	01	028	1	1	1	0190	233	0400	5	9	0120	0290	01	190	002	01	020	220	1	1	0290	01	190	0040	20	30	1	1	0	0
103	0016	1	01	029	1	2	1	0440	240	0300	5	9	0200	0100	01	190	004	03	200	260	1	1	0100	01	190	0040	19	33	1	1	2	0
103	0016	1	01	029	2	2	1	0340	272																								
103	0016	1	01	030	1	1	1	0340	207	0205	5	9	0090	0100	01	190	001	01	000	200	1	1	0100	01	190	0030	19	33	1	1	0	0
103	0016	1	01	031	1	1	1	0340	272	0220	5	9	0060	0100	01	190	001	01	000	200	1	1	0100	01	190	0090	35	37	1	1	0	0
103	0016	1	01	032	1	1	1	0260	270	0200	5	9	0150	0220	01	190	002	01	000	200	1	1	0220	01	190	0100	16	90	1	1	0	0
103	0016	1	01	033	1	1	1	0100	340	0220	5	9	0290	0100	01	190	002	01	000	200	1	1	0100	02	190	0120	09	33	1	1	0	0
103	0016	1	01	034	1	1	1	0240	341	0250	5	9	0100	0070	01	160	002	01	000	200	1	1	0070	01	160	0029	16	90	1	1	0	0
103	0016	1	01	035	1	2	1	0300	334	0260	5	9	0190	0190	01	120	002	01	075	210	1	1	0190	01	120	0070	06	90	1	1	2	0
103	0016	1	01	035	2	2	1	0300	356																								
103	0016	1	01	036	1	1	1	0220	043	0205	5	9	0120	0100	01	090	001	01	000	200	1	1	0100	01	090	0090	09	33	1	1	0	0
103	0016	1	01	037	1	1	1	0280	044	0220	5	9	0100	0130	01	090	002	01	000	200	1	1	0130	01	100	0070	09	33	1	1	0	0
103	0016	1	01	038	1	1	1	0280	054	0290	5	9	0150	0300	01	150	002	01	000	200	1	1	0300	01	150	0040	09	33	1	1	0	0
103	0016	1	01	039	1	1	1	0340	000	0260	5	9	0300	0100	01	120	002	03	025	210	1	1	0100	01	120	0090	06	90	1	1	0	0
103	0016	1	01	040	1	1	1	0450	104	0270	5	9	0150	0120	01	110	003	01	000	200	1	1	0120	01	110	0090	06	90	1	1	0	0
103	0016	1	01	041	1	1	1	0400	120	0400	5	9	0150	0100	01	120	003	01	000	200	1	1	0100	01	120	0040	19	33	1	1	0	0
103	0016	1	01	042	1	1	1	0330	137	0300	5	9	0150	0120	01	160	003	01	000	200	1	1	0120	01	160	0000	19	33	1	1	0	0
103	0016	1	01	043	1	1	1	0290	163	0350	5	9	0150	0270	01	120	002	01	000	200	1	1	0270	01	120	0100	19	33	1	1	0	0
103	0016	1	01	044	1	1	1	0279	160	0400	5	9	0150	0120	01	160	004	01	000	200	1	1	0120	01	160	0070	16	29	1	1	0	0
103	0016	1	01	045	1	2	1	0409	188	0300	5	2	0300	0150	01	000	001	04	000	200	1	1	0150	01	000	0035	95	09	1	1	0	2
103	0016	1	01	046	1	1	1	0300	203	0700	6	9	0350	0290	03	100	005	01	000	200	1	1	0300	02	100	0150	16	90	1	1	0	0
103	0016	1	01	047	1	1	1	0400	260	0000	6	9	0350	0450	02	000	007	01	000	200	1	1	0400	02	000	0170	06	90	1	1	0	0
103	0016	1	01	048	1	1	1	0400	270	0750	6	9	0350	0500	01	110	006	01	000	200	1	1	0500	01	110	0190	16	90	1	1	0	0
103	0016	1	01	049	1	1	1	0120	269	0750	6	9	0250	0400	01	190	004	01	000	200	1	1	0400	01	190	0150	06	90	1	1	0	0
103	0016	1	01	050	1	2	1	0400	360	0000	6	9	0300	0220	01	000	006	01	040	220	1	1	0220	01	000	0040	16	29	1	1	2	0
103	0016	1	01	050	2	2	1	0410	021																								
103	0016	1	01	051	1	1	1	0200	040	0000	6	9	0250	0300	01	120	003	01	000	200	1	1	0300	01	120	0150	06	90	1	1	0	0
103	0016	1	01	052	1	2	1	0360	000	0700	6	9	0250	0300	01	100	005	01	060	720	1	1	0300	01	100	0100	16	90	1	1	2	0
103	0016	1	01	052	2	2	1	0700	102																								
103	0016	1	01	053	1	1	1	0979	037	1000	6	9	0400	0300	02	190	015	02	000	200	1	1	0300	02	190	0200	09	33	1	1	0	0
103	0016	1	01	054	1	1	1	0979	048	1000	6	7	0000	0000	00	000	004	01	100	200	1	1	0000	00	000	0000	00	00	0	0	0	0
103	0016	1	01	055	1	2	1	0730	127	0600	6	2	0300	0400	02	120	004	01	000	200	1	1	0400	02	120	0150	45	12	1	1	0	2
103	0016	1	01	056	1	2	1	0100	139	0600	6	2	0300	0400	02	120	004	01	000	200	1	1	0400	02	120	0150	45	12	1	1	0	2
103	0016	1	01	057	1	1	1	0400	134	1000	6	9	0400	0900	03	190	007	01	000	200	1	1	0900	03	190	0150	16	90	1	1	0	0
103	0016	1	01	058	1	1	1	0600	130	0990	6	9	0200	0300	01	120	004	01	000	200	1	1	0300	01	120	0100	16	90	1	1	0	0
103	0016	1	01	059	1	1	1	0460	142	0650	6	9	0250	0300	01	000	003	01	000	200	1	1	0300	01	000	0100	06	90	1	1	0	0
103	0016	1	01	060	1	2	1	0430	142	0650	6	7	0000	0000	00	000	020	10	002	001	1	0	0000	00	000	0000	00	00	0	0	0	2
103	0016	1	01	061	1	1	1	0490	173	0950	6	9	0300	0200	01	170	004	01	000	200	1	1	0200	01	170	0000	16	90	1	1	0	0
103	0016	1	01	062	1	2	1	0460	191	0800	6	9	0300	0400	02	160	005	01	030	220	1	1	0400	02	160	0150	09	40	1	1	2	0
103	0016	1	01	062	2	2	1	0500	172																								
103	0016	1	01	063	1	1	1	0700	186	0990	6	9	0500	0070	02	160	005	01	000	200	1	1	0070	02	160	0200	09	33	1	1	0	0
103	0016	1	01	064	1	1	1	0490	319	0650	6	9	0500	0010	02	170	005	01	040	220	1	1	0010	02	170	0200	16	90	1	1	0	0
103	0016	1	01	065	1	1	1	0700	050	0000	6	9	0250	0300	01	170	004	01	000	200	1	1	0300	01	170	0100	16	90	1	1	0	0
103	0016	1	01	066	1	1	1	0690	020	0600	6	9	0300	0120	01	170	005	01	000	200	1	1	0120	01	170	0100	16	29	1	1	0	0
103	0016	1	01	067	1	1	1	0700	120	0650	6	9	0250	0220	01	170	004	01	000	200	1	1	0220	01	170	0050	16	90	1	1	0	0
103	0016	1	01	068	1	1	1	0420	233	2000	7	9	0700	1900	06	100	027	01	000	200	1	1	1900	06	100	0250	12	90	1	1	0	0
103	0016	1	01	069	1	1	1	0450	230	2000	7	7	0000	0000	00	000	004	01	000	200	1	1	0000	00	000	0000	00	00	0	0	0	0
103	0016	1	01	070	1	2	1	0929	234	2000	7	9	0000	1900	19	120	049	01	000	200	1	1	1900	19	120	0400	12	90	1	1	0	0

(Continued)

Table B5 (Concluded)

DATA SHEET 1

COUNTRY	SITE NO	DATE OP	SHIPLN NO	ITEM NO	LINE NO	LINE NO	DATA SH	DD 1B YY MM DA	AIR TEMP	MT	MT LOB	CR SPN	CR DIA	OB MT	OB BRANCHING DIAM	OB BRANCHING ANG	OB BRANCHING DIAM	STEM NO	STEM ATT D	STEM INC U	STEM BRANCHING NO BRCH	STEM BRANCHING MT	STEM BRANCHING DIAM	STEM BRANCHING ANG	STEM BRANCHING LGTH	STEM BRANCHING LGTH	FOLIAGE SHT MT	FOLIAGE SHT DEN	SUP LN	SUP CD
103	0016	1	01	07[illegible]	1	1	1	0000	286	2000	7	7	0000	0000	00	000	000	04	000	000	1	1	0000	00	000	0000	00	00	0	0	0	0
103	0016	1	01	078	1	2	1	0000	279	1600	7	9	0500	1200	03	190	007	01	040	210	1	1	0300	01	160	0029	12	90	1	1	2	3
103	0016	1	01	078	2	2	1	0000	210																							
103	0016	1	01	078	1	1	1	0170	284	1600	7	7	0000	0000	00	000	000	03	070	290	1	1	0000	00	000	0000	00	00	0	0	0	0
103	0016	1	01	078	1	1	1	0700	200	1600	7	7	0000	0000	00	000	000	01	000	200	1	1	0000	00	000	0000	00	00	0	0	0	0
103	0016	1	01	079	1	1	1	0000	200	2000	7	9	1200	0700	04	190	030	01	000	200	1	1	0700	04	190	0200	12	90	1	1	0	0
103	0016	1	01	079	1	2	1	0040	280	1900	7	9	0400	0000	04	170	010	01	000	200	1	1	0000	04	170	0190	12	90	1	1	2	0
103	0016	1	01	079	2	2	1	1060	247																							
103	0016	1	01	077	1	1	1	0040	244	2000	7	7	0000	0000	00	000	000	02	400	000	1	1	0000	00	000	0000	00	00	0	0	0	0
103	0016	1	01	078	1	1	1	0190	000	1000	7	9	0000	0000	10	190	026	01	000	200	1	1	0000	10	190	0400	12	90	1	1	0	0
103	0016	1	01	079	1	1	1	0000	040	1900	7	9	0400	0000	04	200	012	01	000	200	1	1	0000	04	190	0200	12	90	1	1	0	0
103	0016	1	01	080	1	2	1	0300	074	1600	7	9	0000	1200	04	120	019	01	000	200	1	1	1200	04	120	0300	12	90	1	1	0	0
103	0016	1	01	081	1	1	1	0000	004	1900	7	9	0000	0200	05	101	000	01	000	200	1	1	0200	05	160	0300	12	90	1	1	0	0
103	0016	1	01	082	1	1	1	0040	120	1600	7	7	0000	0400	05	100	017	01	000	200	1	1	0400	05	100	0400	12	90	1	1	0	0
103	0016	1	01	083	1	1	1	0000	180	1600	7	7	0000	0000	00	000	004	01	000	200	1	1	0000	00	000	0000	00	00	0	0	0	0
103	0016	1	01	084	1	2	1	0090	194	1600	7	9	0500	1430	05	120	026	01	000	200	1	1	1400	05	120	0300	12	90	1	1	2	0
103	0016	1	01	044	2	2	1	1190	194																							
103	0016	1	01	085	1	1	1	0090	198	1600	7	7	0000	0000	00	000	004	02	000	200	1	1	0000	00	000	0000	00	00	0	0	0	0
103	0016	1	01	086	1	1	1	0700	168	1700	7	9	0700	0700	10	190	026	01	000	200	1	1	0700	10	190	0300	12	90	1	1	0	0
103	0016	1	01	087	1	1	1	0000	171	1700	7	7	0000	0000	00	000	000	03	400	000	1	1	0000	00	000	0000	00	00	0	0	0	0
103	0016	1	01	088	1	1	1	0900	187	1900	7	9	1000	0700	19	140	020	01	000	200	1	1	0700	19	140	0500	12	90	1	1	0	0
103	0016	1	01	089	1	1	1	0020	190	1900	7	9	0000	0000	00	170	012	01	000	200	1	1	0000	00	170	0300	90	20	1	1	0	0
103	0016	1	01	090	1	1	1	0900	196	1300	7	7	0000	0000	00	000	000	01	160	250	1	1	0000	00	000	0000	00	00	0	0	0	0
103	0016	1	01	091	1	1	1	1900	238	3000	8	9	3000	0700	40	160	200	01	000	200	1	1	0700	40	160	1900	12	90	1	1	0	3

DATA SHEET 2

COUNTRY	SITE NO	DATA OP	SHIPLN NO	ITEM NO	LINE NO	LINE NO	DATA SH	DBH TT	CR SPN	AZIMUTH	SP GRS	SLOPE	CT	ST	RT TYP	RT HABIT NY	RT HABIT SPP	COMMENTS
103	0016	1	01	022	2	2	2	0300	110	0	0	0	0	0	000	000		
103	0016	1	01	045	2	2	2	0400	100	0	0	0	0	0	000	000		
103	0016	1	01	055	2	2	2	0130	127	7	0	0	0	0	000	000		
103	0016	1	01	056	2	2	2	0190	135	9	0	0	0	0	000	000		
103	0016	1	01	001	2	2	2	0430	142	2	0	0	0	0	001	000		
103	0016	1	01	070	2	2	2	0029	236	6	0	0	0	3	110	000		
103	0016	1	01	072	3	3	2	0200	279	9	0	0	0	1	190	200		
103	0016	1	01	080	2	2	2	0390	076	4	0	0	0	3	070	170		
103	0016	1	01	091	2	2	2	1900	732	2	0	0	0	3	000	999		

Table 36

Vegetation Structure Data, Data Collection Point P4-06

DATA SHEET 1

CR BRANCHING   STEM   STEM BRANCHING   FOLIAGE

BALBOA FOREST SITE, PANAMA CANAL ZONE
[illegible] DATA COLLECTION POINT P4-06, 14 OCT 66
GEOGRAPHIC COORD LAT 07 DEG 04 MIN 10 SEC N, LONG 079 DEG 44 MIN 28 SEC W
AMS MAP NO.4242 II SW, PARAISO, SCALE 1/25,000, MIL GRID COORD 30700270

103	0031	1	01	001	1	1	1	0150	000	0025	2	5	0015	0000	00	000	001	22	000	200	1	1	0000	00	000	0000	00	30	2	1	0	0
103	0031	1	01	002	1	1	1	0200	000	0065	3	5	0030	0030	01	140	001	21	000	200	1	1	0030	01	140	0025	12	40	2	1	0	0
103	0031	1	01	003	1	1	1	0070	336	0190	4	5	0150	0150	01	080	001	01	000	200	1	1	0150	01	080	0050	26	35	2	1	0	0
103	0031	1	01	004	1	1	1	0150	336	0135	4	5	0140	0070	01	090	001	01	000	200	1	1	0030	01	100	0020	20	40	2	1	0	0
103	0031	1	01	005	1	1	1	0235	397	0120	4	5	0075	0077	01	080	001	01	000	200	1	1	0077	01	080	0040	16	30	2	1	0	0
103	0031	1	01	006	1	1	1	0320	035	0175	4	5	0080	0080	01	150	001	01	000	200	1	1	0080	01	150	0050	14	35	2	1	0	0
103	0031	1	01	007	1	1	1	0360	046	0160	4	5	0060	0090	01	090	001	01	000	200	1	1	0090	01	090	0040	14	35	2	1	0	0
103	0031	1	01	008	1	1	1	0370	048	0150	4	5	0060	0050	01	160	001	01	000	200	1	1	0050	01	160	0030	14	35	2	1	0	0
103	0031	1	01	009	1	1	1	0400	076	0170	4	5	0110	0110	01	110	001	01	000	200	1	1	0110	01	110	0040	16	40	2	1	0	0
103	0031	1	01	010	1	1	1	0410	101	0130	4	5	0100	0040	01	090	001	01	000	200	1	1	0040	01	090	0060	16	30	2	1	0	0
103	0031	1	01	011	1	2	1	0310	125	0110	4	2	0156	0010	02	090	006	01	000	200	1	1	0010	04	090	0120	99	05	2	1	0	4
103	0031	1	01	012	1	2	1	0340	125	0110	4	2	0150	0010	04	090	006	01	000	200	1	1	0010	04	090	0120	99	05	2	1	0	2
103	0031	1	01	013	1	1	1	0360	105	0140	4	5	0080	0060	01	150	001	01	000	200	1	1	0060	01	150	0040	20	45	2	1	0	0
103	0031	1	01	014	1	1	1	0330	101	0170	4	5	0080	0100	01	090	001	01	000	200	1	1	0100	01	090	0040	20	40	2	1	0	0
103	0031	1	01	015	1	2	1	0290	194	0130	4	2	0260	0010	03	100	006	01	000	200	1	1	0010	03	100	0045	99	05	2	1	0	2
103	0031	1	01	016	1	2	1	0420	200	0160	4	2	0300	0010	03	100	006	01	000	200	1	1	0010	03	160	0150	99	05	2	1	0	2
103	0031	1	01	017	1	2	1	0410	211	0130	4	2	0260	0010	03	100	006	01	000	200	1	1	0010	03	100	0045	99	05	2	1	0	2
103	0031	1	01	018	1	2	1	0210	225	0130	4	2	0260	0010	03	100	006	01	000	200	1	1	0010	03	100	0040	99	05	2	1	0	2
103	0031	1	01	019	1	2	1	0340	232	0150	4	2	0260	0014	03	100	006	01	000	200	1	1	0011	03	100	0040	99	05	2	1	0	2
103	0031	1	01	020	1	2	1	0110	197	0170	4	2	0220	0015	01	150	004	01	000	200	1	1	0015	01	150	0110	45	50	2	1	0	2
103	0031	1	01	021	1	2	1	0300	274	0130	4	5	0260	0010	03	120	006	01	000	200	1	1	0010	03	120	0130	45	50	2	1	0	2
103	0031	1	01	022	1	2	1	0340	277	0130	4	5	0260	0010	03	120	006	01	000	200	1	1	0010	03	120	0130	45	50	2	1	0	2
103	0031	1	01	023	1	2	1	0450	267	0130	4	5	0260	0010	03	120	006	01	000	200	1	1	0010	03	120	0130	45	50	2	1	0	2
103	0031	1	01	024	1	2	1	0370	266	0120	4	5	0200	0010	03	120	006	01	000	200	1	1	0010	03	120	0100	45	50	2	1	0	2
103	0031	1	01	025	1	2	1	0400	280	0120	4	5	0200	0010	03	120	006	01	000	200	1	1	0010	03	120	0100	45	50	2	1	0	2
103	0031	1	01	026	1	1	1	0360	314	0110	4	5	0080	0080	01	090	001	01	000	200	1	1	0035	01	090	0030	10	40	2	1	0	0
103	0031	1	01	027	1	1	1	0260	003	0490	5	5	0100	0200	01	160	002	01	010	202	1	1	0200	01	160	0060	24	25	2	1	0	0
103	0031	1	01	028	1	1	1	0270	004	0490	5	5	0100	0200	01	150	002	01	020	203	1	1	0209	01	160	0020	24	25	2	1	0	0
103	0031	1	01	029	1	1	1	0200	004	0350	5	5	0160	0160	01	150	002	01	080	203	1	1	0160	01	150	0080	24	25	2	1	0	0
103	0031	1	01	030	1	1	1	0350	013	0330	5	5	0120	0150	01	120	002	01	070	220	1	1	0150	01	120	0100	16	40	2	1	0	0
103	0031	1	01	031	1	1	1	0310	041	0220	5	5	0080	0030	01	170	001	01	000	200	1	1	0030	01	170	0050	10	25	2	1	0	0
103	0031	1	01	032	1	1	1	0300	090	0490	5	5	0100	0300	01	150	003	01	010	202	1	1	0300	01	150	0100	24	40	2	1	0	0
103	0031	1	01	033	1	1	1	0320	106	0250	5	5	0240	0110	01	140	002	01	060	225	1	1	0110	01	140	0130	14	50	2	1	0	0
103	0031	1	01	034	1	1	1	0350	130	0460	5	5	0100	0270	01	120	004	01	020	206	1	1	0270	01	120	0080	12	35	2	1	0	0
103	0031	1	01	035	1	2	1	0370	147	0330	5	5	0300	0190	01	120	003	01	020	260	1	1	0120	01	130	0060	13	99	2	1	2	0
103	0031	1	01	035	2	2	1	0300	130																							
103	0031	1	01	036	1	1	1	0360	105	0210	5	5	0100	0140	01	140	001	01	040	205	1	1	0040	01	130	0070	10	40	2	1	0	0
103	0031	1	01	037	1	1	1	0390	102	0250	5	5	0100	0150	01	160	001	02	020	206	1	1	0100	01	150	0050	10	45	2	1	0	0
103	0031	1	01	038	1	1	1	0360	224	0255	5	5	0240	0040	01	170	002	03	120	210	1	1	0040	01	170	0050	12	50	2	1	0	0
103	0031	1	01	039	1	1	1	0060	240	0270	5	5	0100	0210	01	100	001	01	020	204	1	1	0210	01	100	0080	10	45	2	1	0	0
103	0031	1	01	040	1	1	1	0410	300	0390	5	5	0160	0200	01	090	003	01	030	200	1	1	0100	01	090	0050	14	40	2	1	0	0
103	0031	1	01	041	1	1	1	0375	320	0300	5	5	0200	0170	01	140	002	01	040	206	1	1	0170	01	040	0090	16	40	2	1	0	0
103	0031	1	01	042	1	1	1	0450	390	0210	5	5	0100	0110	01	090	002	01	040	216	1	1	0110	01	090	0100	14	35	2	1	0	0
103	0031	1	01	043	1	1	1	0400	010	0430	5	5	0150	0240	01	190	003	01	060	210	1	1	0100	01	160	0040	10	35	2	1	0	0
103	0031	1	01	044	1	1	1	0900	050	0240	5	5	0150	0110	01	190	002	01	040	212	1	1	0100	01	190	0100	10	40	2	1	0	0
103	0031	1	01	045	1	2	1	0500	004	0320	5	5	0140	0100	01	120	002	01	070	215	1	1	0000	01	390	0090	10	40	2	1	0	5
103	0031	1	01	046	1	2	1	0505	105	0320	5	5	0260	0120	01	190	003	01	200	230	1	1	0120	01	190	0000	16	90	2	1	2	0
103	0031	1	01	046	2	2	1	0620	005																							
103	0031	1	01	047	1	1	1	0430	340	0490	5	5	0100	0200	01	150	003	01	030	205	1	1	0010	01	160	0030	16	30	2	1	0	0
103	0031	1	01	048	1	1	1	0190	291	1100	6	5	0150	0000	01	120	005	01	020	205	1	1	0000	01	120	0120	25	40	2	1	0	0
103	0031	1	01	049	1	1	1	0240	397	0550	6	5	0130	0230	01	150	004	01	000	200	1	1	0330	01	150	0100	30	40	2	1	0	0
103	0031	1	01	050	1	2	1	0310	002	1100	6	5	0400	0250	03	160	010	01	000	215	1	1	0250	03	160	0150	20	35	2	1	2	0
103	0031	1	01	050	2	2	1	0460	356																							
103	0031	1	01	051	1	1	1	0460	356	0510	6	5	0150	0250	01	110	004	01	000	200	1	1	0250	01	110	0070	12	40	2	1	0	0
103	0031	1	01	052	1	1	1	0320	049	1000	6	5	0500	0470	04	150	009	01	030	206	1	1	0470	04	150	0200	14	25	2	1	0	0
103	0031	1	01	053	1	1	1	0290	050	0530	6	5	0400	0120	01	090	004	01	000	200	1	1	0120	01	090	0120	10	30	2	1	0	0
103	0031	1	01	054	1	1	1	0300	007	0600	6	5	0100	0500	01	150	003	01	050	212	1	1	0500	01	150	0060	20	50	2	1	0	0
103	0031	1	01	055	1	1	1	0390	002	0550	6	5	0300	0300	01	100	004	01	030	206	1	1	0100	01	150	0050	16	30	2	1	0	0
103	0031	1	01	056	1	1	1	0420	147	0600	6	5	0250	0120	02	160	006	01	000	200	1	1	0100	01	160	0020	10	60	2	1	0	0
103	0031	1	01	057	1	1	1	0480	161	1050	6	5	0500	0500	02	100	006	01	000	200	1	1	0500	02	100	0230	16	45	2	1	0	0
103	0031	1	01	058	1	1	1	0400	190	0550	6	5	0300	0240	02	150	004	01	030	205	1	1	0100	01	100	0060	16	35	2	1	0	0
103	0031	1	01	059	1	1	1	0900	219	1000	6	5	0550	0420	04	120	000	01	020	205	1	1	0420	04	120	0220	16	30	2	1	0	0
103	0031	1	01	060	1	1	1	0400	296	0700	6	5	0300	0240	02	150	004	01	060	212	1	1	0240	02	150	0120	30	40	2	1	0	0
103	0031	1	01	061	1	1	1	0180	243	0550	6	5	0250	0230	03	140	010	01	100	240	1	1	0190	04	130	0090	00	50	2	1	0	0
103	0031	1	01	062	1	2	1	0275	294	1200	6	5	0350	0900	02	120	008	01	050	220	1	1	0900	02	120	0090	25	30	2	1	0	3
103	0031	1	01	063	1	1	1	0350	339	0900	6	5	0400	0650	02	100	006	01	000	200	1	1	0650	02	100	0130	14	25	2	1	0	0
103	0031	1	01	064	1	1	1	0525	305	0600	6	5	0250	0200	03	150	005	01	040	206	1	1	0200	03	150	0120	10	70	2	1	0	0
103	0031	1	01	065	1	2	1	0500	306	0700	6	5	0500	0200	04	150	007	01	100	235	1	1	0200	04	150	0200	10	70	2	1	0	3
103	0031	1	01	066	1	2	1	0525	325	0540	6	5	0300	0100	03	150	004	01	040	210	1	1	0100	03	150	0100	14	60	2	1	0	3
103	0031	1	01	067	1	1	1	0510	341	0600	6	5	0400	0200	03	130	005	01	205	230	1	1	0030	03	160	0200	20	35	2	1	0	0
103	0031	1	01	068	1	1	1	0600	020	0750	6	5	0350	0430	01	090	005	01	000	200	1	1	0430	01	090	0100	12	30	2	1	0	0
103	0031	1	01	069	1	1	1	0500	205	0850	6	5	0500	0500	03	130	000	01	030	205	1	1	0310	03	120	0200	14	25	2	1	0	0
103	0031	1	01	070	1	2	1	0340	324	1500	7	5	0600	0900	02	150	015	01	000	200	1	1	0900	02	150	0100	16	45	2	1	0	3
103	0031	1	01	071	1	2	1	0600	005	2500	7	5	1400	1100	25	150	064	01	000	200	1	1	1100	25	150	1000	14	25	2	1	0	2
103	0031	1	01	072	1	1	1	0630	360	2500	7	7	0000	0000	00	000	002	01	200	400	1	1	0000	00	000	0000	00	00	0	0	0	0
103	0031	1	01	073	1	1	1	0700	051	1700	7	5	0000	1200	06	140	046	01	000	200	1	1	1200	06	140	0400	12	20	2	1	0	0
103	0031	1	01	074	1	1	1	0700	020	1700	7	7	0000	0000	00	000	005	01	250	900	1	1	0000	00	000	0000	00	00	0	0	0	0
103	0031	1	01	075	1	1	1	0725	051	1400	7	5	0600	0300	10	150	009	01	040	210	1	1	0300	10	150	0300	14	40	2	1	0	0
103	0031	1	01	076	1	1	1	0740	020	1700	7	5	0500	0900	04	120	020	01	000	200	1	1	0900	04	120	0250	12	40	2	1	0	0
103	0031	1	01	077	1	1	1	0275	077	1600	7	5	0500	1100	05	150	009	01	000	200	1	1	1100	05	150	0300	16	35	2	1	0	0
103	0031	1	01	078	1	1	1	0230	118	1600	7	7	0000	0000	00	000	004	01	200	900	1	1	0000	07	000	0000	00	00	0	0	0	0
103	0031	1	01	079	1	2	1	0300	099	1400	7	5	0600	0700	00	120	010	01	100	230	1	1	0300	01	140	0060	14	35	2	1	2	0
103	0031	1	01	079	2	2	1	0000	072																							

(Continued)

Table B6 (Concluded)

DATA SHEET 1

COUNTRY	SITE NO	DATA TYPE	SAMPLE NO	ITEM NO	LINE NO	LINE NO	DATA SYM	DOMINANT AGE	AGE MAXIMUM	MORPHOLOGY	HT CLASS	CR SPH	CR DIAM	OR	OR BRANCHING DIAM	OR BRANCHING ANG	OR BRANCHING DIAM	OTHR	OTHR ATTD	OTHR SINU	OTHR BRANCHING NBR	OTHR BRANCHING HT	OTHR BRANCHING DIAM	OTHR BRANCHING ANG	OTHR BRANCHING LGTH	OTHR BRANCHING LGTH	FOLIAGE DENSITY	FOLIAGE TYPE	FOLIAGE COLOR	GRP LOC	GRP SIZE
103	0031	1	01	000	1	1	1	1000	100	0100	7	9	0400	1000	00	140	100	01	000	000	1	1	1000	00	140	1000	04	40	0	1	0	0
103	0031	1	01	001	1	1	1	0900	104	1000	7	9	0700	0700	14	100	010	01	040	000	1	1	0700	14	100	0300	12	40	0	1	0	0
103	0031	1	01	002	1	1	1	0900	104	1000	7	7	0000	0000	00	000	004	01	050	000	1	1	0000	00	000	0000	00	00	0	1	0	0
103	0031	1	01	003	1	1	1	0400	107	1000	7	9	0900	0400	10	100	000	01	000	000	1	1	0400	10	100	0900	12	40	0	1	0	0
103	0031	1	01	004	1	1	1	1000	107	1300	7	9	0900	0700	09	120	013	01	000	000	1	1	0700	09	120	0100	09	30	0	1	0	0
103	0031	1	01	005	1	1	1	1000	097	1400	7	9	0900	0400	08	130	015	01	000	000	1	1	0400	08	130	0100	14	30	0	1	0	0
103	0031	1	01	006	1	1	1	1200	097	1000	7	9	0900	1100	07	120	000	01	000	000	1	1	1100	07	120	0300	14	40	0	1	0	0
103	0031	1	01	007	1	1	1	0900	271	1000	7	9	0700	0700	04	120	013	01	000	000	1	1	0700	04	120	0300	14	30	0	1	0	0
103	0031	1	01	008	1	1	1	1200	109	1300	7	9	0600	0900	08	140	012	01	000	000	1	1	0900	08	140	0300	40	30	0	1	0	0
103	0031	1	01	009	1	1	1	1100	000	1400	7	9	0400	0700	04	120	010	01	000	000	1	1	0700	04	120	0200	40	30	0	1	0	0

DATA SHEET 2

COUNTRY	SITE NO	DATA TYPE	SAMPLE NO	ITEM NO	LINE NO	LINE NO	DATA SYM	DIAM TAPE	CR DIAM	AGE MINIMUM	DP CLASS	SL TYP	CT TYP	ST TYP	RT TYP	HABIT HT	HABIT SPR	COMMENTS
103	0031	1	01	011	2	2	2	0310	129	0	2	0	0	0	000	000	NAVA PLANT
103	0031	1	01	012	2	2	2	0340	135	0	2	0	0	0	000	000	NAVA PLANT
103	0031	1	01	015	2	2	2	0350	194	0	2	0	0	0	000	000	
103	0031	1	01	016	2	2	2	0420	208	0	2	0	0	0	000	000	
103	0031	1	01	017	2	2	2	0410	211	0	2	0	0	W	000	000	
103	0031	1	01	018	2	2	2	0210	239	0	2	0	0	0	000	000	
103	0031	1	01	019	2	2	2	0340	232	0	2	0	0	0	000	000	
103	0031	1	01	020	2	2	2	0110	197	0	2	0	0	0	000	000	
103	0031	1	01	021	2	2	2	0300	274	0	2	0	0	0	000	000	
103	0031	1	01	022	2	2	2	0340	277	0	2	0	0	0	000	000	
103	0031	1	01	023	2	2	2	0430	267	0	2	0	0	0	000	000	
103	0031	1	01	024	2	2	2	0370	286	0	2	0	0	0	000	000	
103	0031	1	01	025	2	2	2	0400	288	0	2	0	0	0	000	000	
103	0031	1	01	062	2	2	2	0275	294	0	0	0	0	1	090	000	
103	0031	1	01	065	2	2	2	0360	306	0	0	0	0	1	000	100	
103	0031	1	01	066	2	2	2	0325	305	0	0	0	0	1	038	060	
103	0031	1	01	070	2	2	2	0600	005	0	0	0	0	3	200	400	
103	0031	1	01	071	2	2	2	0610	360	0	1	0	0	0	000	000	
103	0031	1	01	080	2	2	2	1000	120	0	0	0	0	3	400	900	

Table 37

Vegetation Structure Data, Data Collection Point P4-07

DATA SHEET 1

BR BRANCHING   STEM   STEM BRANCHING   FOLIAGE

BALBOA FOREST SITE, PANAMA CANAL ZONE
WES DATA COLLECTION POINT P4-07, 14 OCT 66
GEOGRAPHIC COORD LAT 09 DEG 04 MIN 17 SEC N, LONG 079 DEG 41 MIN 25 SEC W
AMS MAP NO.4243 II SW, PARAISO, SCALE 1/25,000, MIL GRID COORD 30700290

108	0032	1	01	001	1	1	1	0200	360	0000	1	2	0006	0000	00	000	001	22	000	200	1	1	0000	00	000	0031	02	30	2	1	0	0
108	0032	1	01	002	1	1	1	0300	360	0024	2	5	0020	0000	00	000	001	22	000	200	1	1	0000	00	000	0016	12	30	2	1	0	0
108	0032	1	01	003	1	1	1	0260	360	0037	3	5	0035	0000	00	000	001	22	000	200	1	1	0000	00	000	0000	17	40	2	1	0	0
108	0032	1	01	004	1	1	1	0120	041	0120	4	5	0050	0040	01	140	001	01	000	200	1	1	0040	01	140	0040	06	40	2	1	0	0
108	0032	1	01	005	1	1	1	0250	080	0105	4	5	0030	0005	01	090	002	01	000	200	1	1	0015	01	140	0010	10	40	2	1	0	0
108	0032	1	01	006	1	1	1	0170	091	0120	4	2	0000	0060	01	190	002	01	000	200	1	1	0060	01	190	0060	30	25	2	1	0	0
108	0032	1	01	007	1	1	1	0170	106	0130	4	5	0090	0095	01	100	001	01	000	200	1	1	0095	01	100	0035	25	40	2	1	0	0
108	0032	1	01	008	1	1	1	0200	106	0190	4	5	0100	0075	01	140	001	01	000	200	1	1	0050	01	160	0070	12	35	2	1	0	0
108	0032	1	01	009	1	1	1	0210	125	0100	4	5	0090	0130	01	110	002	01	000	200	1	1	0030	01	090	0090	14	30	2	1	0	0
108	0032	1	01	010	1	1	1	0200	126	0145	4	5	0070	0110	01	150	001	01	000	200	1	1	0065	01	110	0030	16	30	2	1	0	0
108	0032	1	01	011	1	1	1	0200	134	0125	4	2	0120	0010	01	190	003	01	000	200	1	1	0010	01	150	0070	35	20	2	1	0	0
108	0032	1	01	012	1	1	1	0190	135	0130	4	5	0070	0090	01	135	001	01	000	200	1	1	0025	01	090	0070	10	40	2	1	0	0
108	0032	1	01	013	1	1	1	0300	169	0140	4	2	0190	0020	01	150	003	01	000	200	1	1	0020	01	150	0090	35	15	2	1	0	0
108	0032	1	01	014	1	1	1	0060	274	0170	4	5	0070	0120	01	140	001	01	000	200	1	1	0045	01	160	0010	10	45	2	1	0	0
108	0032	1	01	015	1	1	1	0005	282	0100	4	5	0055	0100	01	110	001	01	000	200	1	1	0100	01	110	0015	12	45	2	1	0	0
108	0032	1	01	016	1	1	1	0170	350	0100	4	5	0090	0120	01	110	002	01	000	200	1	1	0075	01	100	0030	10	45	2	1	0	0
108	0032	1	01	017	1	1	1	0200	345	0110	4	5	0110	0000	01	000	001	01	000	200	1	1	0000	01	000	0060	15	40	2	1	0	0
108	0032	1	01	018	1	1	1	0350	005	0105	4	5	0050	0080	01	090	001	01	000	200	1	1	0050	01	100	0020	20	25	2	1	0	0
108	0032	1	01	019	1	1	1	0340	180	0160	4	2	0120	0050	01	140	003	01	000	200	1	1	0070	01	140	0000	30	20	2	1	0	0
108	0032	1	01	020	1	1	1	0250	160	0100	4	5	0120	0110	01	130	001	02	000	200	1	1	0110	01	130	0090	12	40	2	1	0	0
108	0032	1	01	021	1	1	1	0340	243	0110	4	5	0000	0000	01	090	001	01	000	200	1	1	0000	01	090	0040	10	40	2	1	0	0
108	0032	1	01	022	1	1	1	0330	200	0150	4	5	0040	0075	01	100	001	01	000	200	1	1	0050	01	090	0015	16	30	2	1	0	0
108	0032	1	01	023	1	1	1	0375	190	0125	4	5	0040	0070	01	090	001	01	000	200	1	1	0070	01	090	0025	25	35	2	1	0	0
108	0032	1	01	024	1	1	1	0120	109	0490	5	5	0290	0107	01	060	004	01	090	210	1	1	0107	01	060	0100	14	30	2	1	0	0
108	0032	1	01	025	1	1	1	0425	115	0220	5	2	0300	0150	02	140	004	01	000	200	1	1	0150	02	140	0150	45	05	2	1	0	0
108	0032	1	01	026	1	1	1	0490	100	0270	5	5	0110	0130	01	120	002	01	010	204	1	1	0060	01	100	0050	14	40	2	1	0	0
108	0032	1	01	027	1	2	1	0500	143	0350	5	2	0200	0300	07	110	003	01	050	200	1	1	0300	01	110	0130	35	10	2	1	0	2
108	0032	1	01	028	1	2	1	0490	145	0290	5	2	0200	0070	01	130	005	01	000	200	1	1	0050	01	140	0170	35	10	2	1	0	2
108	0032	1	01	029	1	1	1	0600	136	0210	5	5	0100	0160	01	090	002	01	000	200	1	1	0160	01	090	0000	14	30	2	1	0	0
108	0032	1	01	030	1	1	1	0990	141	0220	5	5	0090	0120	01	090	001	01	000	200	1	1	0040	01	190	0020	09	60	2	1	0	0
108	0032	1	01	031	1	1	1	0460	141	0210	5	5	0170	0130	01	090	002	01	000	200	1	1	0040	01	150	0060	10	40	2	1	0	0
108	0032	1	01	032	1	1	1	0350	174	0400	5	2	0600	0050	01	090	003	01	070	220	1	1	0050	01	070	0050	75	05	2	1	0	0
108	0032	1	01	033	1	1	1	0260	200	0270	5	5	0100	0100	01	000	003	01	000	200	1	1	0100	01	000	0000	12	25	2	1	0	0
108	0032	1	01	034	1	1	1	0410	200	0260	5	5	0150	0140	01	130	002	01	040	225	1	1	0020	01	120	0070	14	40	2	1	0	0
108	0032	1	01	035	1	1	1	0460	200	0200	5	5	0000	0200	01	090	001	01	000	200	1	1	0020	01	190	0020	21	25	2	1	0	0
108	0032	1	01	036	1	1	1	0450	190	0230	5	5	0100	0100	01	100	002	01	030	212	1	1	0050	01	120	0000	09	50	2	1	0	0
108	0032	1	01	037	1	1	1	0550	290	0200	5	5	0130	0130	01	130	002	01	070	215	1	1	0000	01	150	0030	17	35	2	1	0	0
108	0032	1	01	038	1	1	1	0600	219	0240	5	5	0100	0150	01	120	002	01	070	230	1	1	0150	01	120	0070	10	45	2	1	0	0
108	0032	1	01	039	1	2	1	0550	225	0290	5	2	0400	0130	01	110	002	07	060	215	1	1	0130	01	110	0060	60	05	2	1	0	2
108	0032	1	01	040	1	1	1	0550	226	0400	5	5	0100	0230	01	160	003	01	000	200	1	1	0230	01	160	0050	20	40	2	1	0	0
108	0032	1	01	041	1	1	1	0600	243	0300	5	5	0090	0230	01	100	002	01	000	200	1	1	0230	01	100	0040	30	30	2	1	0	0
108	0032	1	01	042	1	1	1	0310	243	0330	5	5	0200	0100	01	000	003	01	000	220	1	1	0120	01	090	0000	06	05	2	1	0	0
108	0032	1	01	043	1	1	1	0390	252	0370	5	5	0150	0220	01	130	004	01	030	215	1	1	0220	01	130	0100	24	25	2	1	0	0
108	0032	1	01	044	1	1	1	0450	249	0290	5	5	0250	0200	02	090	003	01	030	220	1	1	0200	02	090	0150	12	40	2	1	0	0
108	0032	1	01	045	1	1	1	0540	268	0220	5	5	0160	0110	02	190	002	01	070	220	1	1	0110	02	190	0100	10	45	2	1	0	0
108	0032	1	01	046	1	1	1	0360	276	0220	5	5	0250	0100	01	130	002	02	060	270	1	1	0100	01	130	0090	14	40	2	1	0	0
108	0032	1	01	047	1	1	1	0900	201	0300	5	5	0100	0210	01	130	003	01	040	210	1	1	0170	01	090	0070	12	50	2	1	0	0
108	0032	1	01	048	1	1	1	0410	201	0300	5	5	0250	0060	01	160	002	02	050	212	1	1	0060	01	160	0000	12	40	2	1	0	0
108	0032	1	01	049	1	2	1	0220	292	0240	5	5	0090	0180	01	110	002	01	130	250	1	1	0070	01	130	0050	14	45	2	1	2	0
108	0032	1	01	049	2	2	1	0130	310																							
108	0032	1	01	050	1	1	1	0360	360	0400	5	5	0200	0230	01	120	003	01	000	200	1	1	0230	01	120	0007	12	40	2	1	0	0
108	0032	1	01	051	1	1	1	0390	026	0530	6	5	0100	0450	01	100	003	01	040	210	1	1	0320	01	130	0030	30	35	2	1	0	0
108	0032	1	01	052	1	1	1	0625	014	1100	6	5	0550	0540	04	110	012	01	000	200	1	1	0300	04	090	0140	16	35	2	1	0	0
108	0032	1	01	053	1	1	1	0625	012	0600	6	5	0300	0300	02	090	004	01	000	200	1	1	0240	02	000	0120	16	35	2	1	0	0
108	0032	1	01	054	1	1	1	0575	092	0750	6	5	0350	0370	02	160	005	02	040	200	1	1	0370	02	160	0070	14	60	2	1	0	0
108	0032	1	01	055	1	1	1	0600	065	1000	6	5	0700	0300	07	140	011	01	030	206	1	1	0300	07	140	0400	10	40	2	1	0	0
108	0032	1	01	056	1	2	1	0600	081	0900	6	5	0600	0070	04	160	010	01	130	250	1	1	0070	04	160	0250	16	40	2	1	2	0
108	0032	1	01	056	2	2	1	0000	093																							
108	0032	1	01	057	1	1	1	0450	105	0900	6	5	0300	0420	02	090	006	01	000	200	1	1	0420	02	090	0150	22	40	2	1	0	0
108	0032	1	01	058	1	1	1	0110	190	0600	6	5	0750	0190	02	170	005	01	030	200	1	1	0190	02	170	0100	16	30	2	1	0	0
108	0032	1	01	059	1	2	1	0690	116	0900	6	5	0900	0300	03	000	009	03	000	220	1	1	0100	01	170	0020	16	40	2	1	2	0
108	0032	1	01	059	2	2	1	0040	116																							
108	0032	1	01	060	1	1	1	0000	106	0550	6	5	0250	0250	02	090	004	01	000	200	1	1	0210	01	090	0130	14	30	2	1	0	0
108	0032	1	01	061	1	1	1	0070	199	1050	6	5	0550	0500	02	090	010	01	040	207	1	1	0300	03	000	0120	16	25	2	1	0	0
108	0032	1	01	062	1	1	1	0575	192	0800	6	5	0600	0250	04	190	027	01	060	200	1	1	0250	04	190	0400	60	05	2	1	0	0
108	0032	1	01	063	1	1	1	0900	210	1250	6	5	0900	0550	36	190	033	01	000	200	1	1	0550	06	190	0500	60	05	2	1	0	0
108	0032	1	01	064	1	1	1	0740	233	0050	6	5	0450	0430	02	100	006	01	000	200	1	1	0430	02	100	0200	10	35	2	1	0	0
108	0032	1	01	065	1	1	1	0900	237	0600	6	5	0300	0450	01	100	005	01	000	200	1	1	0450	01	100	0100	14	35	2	1	0	0
108	0032	1	01	066	1	1	1	0600	242	0550	6	5	0250	0240	02	140	004	01	070	220	1	1	0040	01	140	0200	16	35	2	1	0	0
108	0032	1	01	067	1	1	1	0410	290	0600	6	5	0250	0350	01	100	000	01	040	206	1	1	0030	01	170	0050	22	40	2	1	0	0
108	0032	1	01	068	1	1	1	0230	291	0000	6	5	0600	0250	02	150	005	03	050	215	1	1	0250	02	150	0100	14	25	2	1	0	0
108	0032	1	01	069	1	1	1	0300	320	0050	6	5	0700	0500	04	150	020	01	000	200	1	1	0500	04	150	0400	60	10	2	1	0	0
108	0032	1	01	070	1	1	1	0650	310	0750	6	5	0400	0200	02	100	007	01	056	210	1	1	0200	02	100	0130	12	50	2	1	0	0
108	0032	1	01	071	1	1	1	0300	032	1000	7	2	1200	1000	06	120	039	01	000	260	1	1	1000	00	120	0600	70	05	2	1	0	0
108	0032	1	01	072	1	1	1	1100	020	1400	7	5	0550	0750	03	130	014	01	030	210	1	1	0750	03	014	0130	12	35	2	1	0	0
108	0032	1	01	073	1	2	1	0050	056	1400	7	2	0000	1000	05	090	016	01	090	209	1	1	1000	05	090	0400	50	10	2	1	0	2
108	0032	1	01	074	1	1	1	0900	079	2200	7	5	1100	0650	22	160	046	01	000	200	1	1	0650	22	160	0600	60	35	2	1	0	0
108	0032	1	01	075	1	1	1	0180	105	1400	7	5	0550	0470	02	130	011	01	030	210	1	1	0470	02	130	0130	16	40	2	1	0	0
108	0032	1	01	076	1	1	1	1240	135	2700	7	5	1200	2000	12	120	077	01	000	200	1	1	2000	12	120	0500	16	00	2	1	0	0
108	0032	1	01	077	1	1	1	0750	162	1700	7	2	0900	1100	06	190	041	01	040	204	1	1	1100	06	190	0400	60	15	2	1	0	0
108	0032	1	01	078	1	1	1	0750	175	1700	7	7	0000	0000	00	000	009	01	100	200	1	1	0000	00	000	0000	00	00	0	0	0	0
108	0032	1	01	079	1	2	1	0645	196	2300	7	5	1000	0000	16	130	005	01	000	200	1	1	0000	16	130	1000	30	25	2	1	0	0

(Continued)

Table B7 (Concluded)

DATA SHEET 1

COUNTRY	SITE NO	DATA TYP	SAMPLE NO	ITEM NO	LINE NO	LINE NO	DATA SOM	DD MM YY FR	AIR MUTH	NS SHOT	WT SLOB	CR SPH	CR DIAM	OB WT	OB DIAM	OB ANG	OB DIAM	STCH NO	STCH ATTD	STCH INJU	PTCH NO	PTCH DMGD	STCH GRADDING WT	STCH GRADDING DIAM	STCH GRADDING ANG	STCH GRADDING LGTH	STCH GRADDING LGTH	POLIAGE SWOL OBS	POLIAGE TYPE	POLIAGE SCNS	GUMP LN	GUMP SD
103	0082	1	01	000	1	1	1	1100	100	1700	7	2	0900	1000	07	100	040	01	000	200	1	1	1000	07	100	0700	00	10	2	1	0	0
103	0082	1	01	001	1	1	1	0200	270	2000	7	2	1700	1600	20	110	000	01	000	200	1	1	1600	20	110	0700	10	40	2	1	0	0
103	0082	1	01	002	1	1	1	0000	263	2400	7	2	1100	1700	07	120	040	01	000	200	1	1	1700	07	120	0600	00	10	2	1	0	0
103	0082	1	01	003	1	1	1	1300	270	1900	7	2	1300	1400	00	110	000	01	000	200	1	1	1400	00	110	0700	00	00	2	1	0	0
103	0082	1	01	004	1	1	1	0700	000	1900	7	2	1100	1300	00	120	000	01	000	200	1	1	1300	00	120	0600	00	00	2	1	0	0
103	0082	1	01	005	1	1	1	1400	317	2100	7	2	1300	1600	00	110	037	01	000	200	1	1	1600	00	110	0700	00	00	2	1	0	0
103	0082	1	01	006	1	1	1	1100	004	2000	7	2	1100	1900	00	110	000	01	000	200	1	1	1900	00	110	0600	00	00	2	1	0	0
103	0082	1	01	007	1	1	1	0700	249	1900	7	9	1000	0900	12	130	000	01	000	200	1	1	0800	12	130	0900	10	00	2	1	0	0
103	0082	1	01	008	1	1	1	0900	307	1700	7	2	1000	1100	07	130	032	01	000	200	1	1	1100	07	130	0900	00	00	2	1	0	0
103	0082	1	01	009	1	1	1	1200	170	1700	7	2	1000	1100	07	100	036	01	000	200	1	1	1100	07	100	0300	00	00	2	1	0	0
103	0082	1	01	090	1	1	1	1400	090	1400	7	2	1100	0700	07	140	000	01	000	200	1	1	0700	07	140	0900	20	10	2	1	0	0
103	0082	1	01	091	1	1	1	1400	011	1400	7	9	0000	0000	00	100	027	01	000	200	1	1	0100	00	100	0090	12	90	2	1	0	0

DATA SHEET 2

COUNTRY	SITE NO	DATA TYP	SAMPLE NO	ITEM NO	LINE NO	LINE NO	DATA SOM	DD MM YY FR	CENTER AZIMUTH	AZIMUTH	DP STR SM	SLOB SM	CT ED	ST OR	RT TY PE	HABIT NT	HABIT SPRD	COMMENTS
103	0082	1	01	027	2	2	2	0500	143	143	4	0	0	0	0	000	000	
103	0082	1	01	028	2	2	2	0400	145	145	4	0	0	0	0	000	000	
103	0082	1	01	039	2	2	2	0900	223	223	1	0	0	0	0	000	000	
103	0082	1	01	073	2	2	2	0000	096	096	4	0	0	0		000	000	
103	0082	1	01	079	2	2	2	0875	196	196	0	0	0	0	3	300	290	

Table B6

Vegetation Structure Data, Data Collection Point V0498

DATA SHEET 1

S	S	S	S	I	L	L	S	DC	A	N	N	C	C	GR	BRANCHING			STEM				STEM BRANCHING				FOLIAGE			
U	I	A	M	T	I	I	A	IE	I	E	T	R	R															U	U
T	T	P	E	M	T	T	M	I	I																			P	P
M	E	A	L	N	E	E	A	TT	N	E	C	E	E	N	E	A	E	E	N	A	E	W	E	A	L	L	N	T	C
T						D		E	U	N	L	P	I	T	I	N		T	I	N	H	T	I	N	S	T	A	O	O
E	N	E	N	N	N		E	VR	T	T	E	N	A		A	E		T	N	E	T		A	E	T	N	R	N	L	C
T	E	P	E	E	E		N	N	N		E		N		N			E	U	N	E		N		N		E	E	N	E

PRAN BURI FOREST SITE, THAILAND
NEW DATA COLLECTION POINT V0498, 27 APR 68
GEOGRAPHIC COORD LAT 12 DEG 29 MIN 08 SEC N, LONG 099 DEG 44 MIN 23 SEC E
AMS MAP NB.4648 II, AMPHOE PRAN BURI, SCALE 1/50,000, MIL GRID COORD 840743

188	0498	1	01	001	1	1	1	0060	000	0040	8	1	0020	0006		001	00		1	1						0	1	0	0
188	0498	1	01	002	1	1	1	0250	002	0160	4	1	0040	0008		001	01		1	1						0	1	0	0
188	0498	1	01	003	1	1	1	0220	010	0140	4	1	0080	0009		001	01		1	1						0	1	0	0
188	0498	1	01	004	1	1	1	0200	011	0080	8	1	0040	0080		001	01		1	1						0	1	0	0
188	0498	1	01	005	1	1	1	0150	009	0120	4	1	0080	0042		001	01		1	1						0	1	0	0
188	0498	1	01	006	1	1	1	0220	017	0090	8	1	0080	0049		001	01		1	1						0	1	0	0
188	0498	1	01	007	1	1	1	0200	017	0110	4	1	0080	0010		001	01		1	1						0	1	0	0
188	0498	1	01	008	1	1	1	0220	028	0110	4	1	0040	0049		001	01		1	1						0	1	0	0
188	0498	1	01	009	1	1	1	0250	030	0190	4	1	0120	0040		002	01		1	1						0	1	0	0
188	049C	1	01	010	1	1	1	0250	033	0130	4	1	0100	0049		002	01		1	1						0	1	0	0
188	0498	1	01	011	1	2	1	0210	047	0100	4	1	0080			001	03		1	1						0	1	0	2
188	0498	1	01	012	1	1	1	0170	047	0090	8	1	0060	0010		001	01		1	1						0	1	0	0
188	0498	1	01	013	1	1	1	0220	050	0070	8	1	0060			001	04		1	1						0	1	0	0
188	0498	1	01	014	1	1	1	0200	079	0140	4	1	0060	0010		002	01		1	1						0	1	0	0
188	0498	1	01	015	1	1	1	0210	092	0160	4	1	0100	0005		001	01		1	1						0	1	0	0
188	0498	1	01	016	1	1	1	0250	102	0130	4	1	0060	0010		001	01		1	1						0	1	0	0
188	0498	1	01	017	1	1	1	0200	111	0120	4	1	0090	0025		001	01		1	1						0	1	0	0
188	0498	1	01	018	1	1	1	0200	119	0170	4	1	0100	0040		002	01		1	1						0	1	0	0
188	0498	1	01	019	1	1	1	0100	127	0160	4	1	0060	0049		001	01		1	1						0	1	0	0
188	0498	1	01	020	1	1	1	0140	134	0120	4	1	0080			001	03		1	1						0	1	0	0
188	0498	1	01	021	1	1	1	0200	144	0100	4	1	0080	0C10		001	01		1	1						0	1	0	0
188	0498	1	01	022	1	1	1	0100	144	0090	8	1	0060			001	02		1	1						0	1	0	0
188	0498	1	01	023	1	1	1	0100	146	0080	8	1	0100			001	04		1	1						0	1	0	0
188	0498	1	01	024	1	1	1	0250	156	0140	4	1	0090	0009		001	01		1	1						0	1	0	0
188	0498	1	01	025	1	1	1	0200	164	0080	8	1	0100			001	02		1	1						0	1	0	0
188	0498	1	01	026	1	1	1	0160	181	0100	4	1	0060			001	04		1	1						0	1	0	0
188	0498	1	01	027	1	1	1	0150	191	0080	8	1	0090	0040		001	01		1	1						0	1	0	0
188	0498	1	01	028	1	1	1	0080	194	0090	8	1	0060			001	02		1	1						0	1	0	0
188	0498	1	01	029	1	1	1	0250	199	0170	4	1	0100	0012		001	01		1	1						0	1	0	0
188	0498	1	01	030	1	1	1	0170	206	0190	4	1	0100			001	04		1	1						0	1	0	0
188	0498	1	01	031	1	2	1	0210	219	0100	4	1	0090	0005		001	01		1	1						0	1	0	2
188	0498	1	01	032	1	1	1	0080	218	0110	4	1	0080	0001		001	01		1	1						0	1	0	0
188	0498	1	01	033	1	1	1	0100	221	0120	4	1	0080	0049		001	01		1	1						0	1	0	0
188	0498	1	01	034	1	1	1	0200	230	0190	4	1	0100			001	03		1	1						0	1	0	0
188	0498	1	01	035	1	1	1	0120	250	0080	8	1	0090	0005		001	01		1	1						0	1	0	0
188	0498	1	01	036	1	1	1	0070	274	0170	4	1	0060	0049		002	01		1	1						0	1	0	0
188	0498	1	01	037	1	1	1	0140	279	0170	4	1	0100	0010		001	01		1	1						0	1	0	0
188	0498	1	01	038	1	1	1	0250	280	0140	4	1	0100			002	04		1	1						0	1	0	0
188	0498	1	01	039	1	1	1	0220	316	0130	4	1	0100	0009		001	01		1	1						0	1	0	0
188	0498	1	01	040	1	1	1	0200	329	0090	8	1	0120			001	10		1	1						0	1	0	0
188	0498	1	01	041	1	1	1	0140	335	0..0	4	1	0100	0019		002	01		1	1						0	1	0	0
188	0498	1	01	042	1	1	1	0210	355	0160	4	1	0120			002	03		1	1						0	1	0	0
188	0498	1	01	043	1	1	1	0250	010	0100	4	1	0090	0060		001	01		1	1						0	1	0	0
188	0498	1	01	044	1	1	1	0400	019	0220	9	1	0080	0070		002	01		1	1						0	1	0	0
188	0498	1	01	045	1	1	1	0300	027	0290	9	1	0100	0080		002	01		1	1						0	1	0	0
188	0498	1	01	046	1	1	1	0200	029	0003	9	1	0200	0100		003	0.		1	1						0	1	0	0
188	0498	1	01	047	1	1	1	0900	061	0230	9	1	00C0	0090		002	01		1	1						0	1	0	0
188	0498	1	01	048	1	1	1	0350	001	0300	9	1	0200	0130		004	01		1	1						0	1	0	0
188	0498	1	01	049	1	1	1	0300	074	0300	9	1	3060	0090		002	01		1	1						0	1	0	0
188	0498	1	01	050	1	1	1	0300	101	0200	9	1	0100			002	03		1	1						0	1	0	0
188	0498	1	01	051	1	1	1	0190	101	0200	9	1	0060	0080		002	01		1	1						0	1	0	0
188	0498	1	01	052	1	1	1	0400	119	0220	9	1	0100	0070		002	01		1	1						0	1	0	0
188	0498	1	01	053	1	1	1	0200	139	0300	9	1	0100	0090		002	01		1	1						0	1	0	0
188	0498	1	01	054	1	1	1	0350	184	0400	9	1	0120	0099		004	01		1	1						0	1	0	0
188	0498	1	01	055	1	1	1	0300	186	0300	9	1	0190	0090		002	01		1	1						0	1	0	0
188	0498	1	01	056	1	1	1	0900	184	0400	9	1	0170	0100		002	01		1	1						0	1	0	0
188	0498	1	01	057	1	1	1	0900	149	0270	9	1	0100	0010		002	01		1	1						0	1	0	0
188	0498	1	01	058	1	1	1	0400	199	0290	9	1	0100	0020		001	01		1	1						0	1	0	0
188	0498	1	01	059	1	1	1	0400	194	0300	9	1	0120	0020		002	01		1	1						0	1	0	0
188	0498	1	01	060	1	1	1	0400	170	0290	9	1	0100	0100		002	01		1	1						0	1	0	0
188	0498	1	01	061	1	1	1	0900	178	0290	9	1	0100	0090		002	01		1	1						0	1	0	0
188	0498	1	01	062	1	1	1	0400	197	0200	9	1	0120	0009		002	01		1	1						0	1	0	0
188	0498	1	01	063	1	1	1	0400	201	0210	9	1	0120	0009		002	01		1	1						0	1	0	0
188	0498	1	01	064	1	1	1	0200	219	0210	9	1	0080	0060		001	01		1	1						0	1	0	0
188	0498	1	01	065	1	1	1	0400	219	0200	9	1	0100			001	09		1	1						0	1	0	0
188	0498	1	01	066	1	2	1	0210	227	0290	9	1	0110	0090		001	01		1	1						0	1	0	2
188	0498	1	01	067	1	1	1	0200	243	0200	9	1	0120			002	03		1	1						0	1	0	0
188	0498	1	01	068	1	1	1	0400	244	0210	9	1	0060	0060		001	01		1	1						0	1	0	0
188	0498	1	01	069	1	1	1	0340	260	0300	9	1	0100	0090		002	01		1	1						0	1	0	0
188	0498	1	01	070	1	1	1	0170	294	0260	9	1	0100	0070		002	01		1	1						0	1	0	0
188	0498	1	01	071	1	1	1	0190	296	0210	9	1	0100	0090		002	01		1	1						0	1	0	0
188	0498	1	01	072	1	1	1	0400	300	0300	9	1	0120	0060		002	01		1	1						0	1	0	0
188	0498	1	01	073	1	1	1	0200	1[7]	0200	9	1	0140	0060		002	01		1	1						0	1	0	0
188	0498	1	01	074	1	1	1	0090	196	0200	9	1	0090	0080		002	01		1	1						0	1	0	0
188	0498	1	01	075	1	1	1	0900	299	0200	9	1	0100	0100		002	01		1	1						0	1	0	0
188	0498	1	01	076	1	1	1	0260	301	0250	9	1	0190			002	06		1	1						0	1	0	0
188	0498	1	01	077	1	1	1	0253	734	0300	9	1	0100	0090		002	01		1	1						0	1	0	0
188	0498	1	01	078	1	1	1	0300	295	0220	9	1	0100			002	06		1	1						0	1	0	0
188	0498	1	01	079	1	1	1	0220	291	0210	9	1	0000	0090		002	01		1	1						0	1	0	0

(Continued)

Table 20 (Concluded)

DATA SHEET 1

COUNTRY	SITE	DATE	GRP	ITEM	LINE	LINE	DATE	DD HH MM SS	AGE	MO	MT	CR	CR	OR	ORGANISM 1			0T0H			0T0H	ORGANISM 2			POLICE			
132	0498	1	01	000	1	1	1	0340	007	0300	5	1	0110	0010		000	01			1	1					0	1	0	0
132	0498	1	01	001	1	2	1	0200	010	1600	7	1	0500	0000		001	01			1	1					0	1	0	0
132	0498	1	01	002	1	1	1	0700	000	0300	7	1	0000	0000		000	01			1	1					0	1	0	0
132	0498	1	01	003	1	1	1	0610	009	0000	7	1	0000	0000		009	01			1	1					0	1	0	0
132	0498	1	01	004	1	1	1	0070	007	1200	6	1	0400	0000		009	01			1	1					0	1	0	0
132	0498	1	01	005	1	1	1	0090	009	1300	6	1	0300	0000		011	01			1	1					0	1	0	0
132	0498	1	01	006	1	1	1	0000	000	1100	6	1	0500			011	02			1	1					0	1	0	0
132	0498	1	01	007	1	1	1	0300	000	0700	6	1	0200	0300		000	01			1	1					0	1	0	0
132	0498	1	01	008	1	2	1	0620	001	1000	6	1	0500			014	00			1	1					0	1	0	0
132	0498	1	01	009	1	1	1	0700	070	0700	6	1	0400			000	00			1	1					0	1	0	0
132	0498	1	01	000	1	1	1	0000	009	1200	6	1	0400	0000		010	01			1	1					0	1	0	0
132	0498	1	01	001	1	1	1	1000	110	1000	7	1	0000	0300		000	01			1	1					0	1	0	0
132	0498	1	01	002	1	1	1	0400	006	0000	6	1	0400	0400		000	01			1	1					0	1	0	0
132	0498	1	01	003	1	1	1	0100	109	0000	6	1	0400	0100		000	01			1	1					0	1	0	0
132	0498	1	01	004	1	1	1	0000	114	0000	6	1	0300	0000		007	01			1	1					0	1	0	0
132	0498	1	01	005	1	1	1	0000	140	1200	6	1	0500	0300		010	01			1	1					0	1	0	0
132	0498	1	01	006	1	1	1	0000	141	0000	6	1	0300			010	02			1	1					0	1	0	0
132	0498	1	01	007	1	1	1	0300	139	0000	6	1	0300	0010		000	01			1	1					0	1	0	0
132	0498	1	01	008	1	1	1	0305	144	0000	6	1	0400	0019		012	01			1	1					0	1	0	0
132	0498	1	01	009	1	1	1	0700	171	1100	6	1	0400			012	06			1	1					0	1	0	0
132	0498	1	01	100	1	1	1	1000	100	1000	6	1	0000			010	10			1	1					0	1	0	0
132	0498	1	01	101	1	1	1	0000	210	0000	6	1	0500			011	03			1	1					0	1	0	0
132	0498	1	01	102	1	1	1	0040	209	2000	7	1	0000	0700		002	01			1	1					0	1	0	0
132	0498	1	01	103	1	1	1	0400	204	0000	6	1	0500			010	04			1	1					0	1	0	0
132	0498	1	01	104	1	1	1	0000	206	0000	6	1	0400	0050		010	05			1	1					0	1	0	0
132	0498	1	01	105	1	1	1	0000	204	2000	7	1	1000	0200		007	01			1	1					0	1	0	0
132	0498	1	01	106	1	1	1	0100	200	1200	6	1	0400			000	02			1	1					0	1	0	0
132	0498	1	01	107	1	1	1	0500	271	1100	6	1	0400	0500		010	01			1	1					0	1	0	0
132	0498	1	01	108	1	1	1	0200	270	0000	6	1	0400			010	02			1	1					0	1	0	0
132	0498	1	01	109	1	1	1	0000	200	1100	6	1	0300	0070		013	01			1	1					0	1	0	0
132	0498	1	01	110	1	1	1	0300	304	1000	7	1	0500	0030		040	01			1	1					0	1	0	0
132	0498	1	01	111	1	1	1	0400	304	0000	6	1	0300	0110		000	01			1	1					0	1	0	0
132	0498	1	01	112	1	1	1	1000	311	1100	6	1	0012			010	10			1	1					0	1	0	0
132	0498	1	01	113	1	1	1	0000	306	1000	6	1	0400			014	06			1	1					0	1	0	0
132	0498	1	01	114	1	1	1	0400	330	0000	6	1	0300	0010		012	01			1	1					0	1	0	0
132	0498	1	01	115	1	1	1	0310	340	1100	6	1	0305	0000		010	01			1	1					0	1	0	0
132	0498	1	01	116	1	1	1	1000	341	0000	6	1	0300	0030		011	01			1	1					0	1	0	0
132	0498	1	01	117	1	1	1	0700	347	1100	6	1	0500	0700		010	01			1	1					0	1	0	0
132	0498	1	01	118	1	1	1	0490	393	1000	6	1	0400			000	07			1	1					0	1	0	0

DATA SHEET 2

COUNTRY	SITE	DATE	GRP	ITEM	LINE	LINE	DATE	DD HH MM SS	AGE	MO	MT	CR	CR	OR	RT	HABIT		Comments
132	0498	1	01	011	2	2	2	0210	047	1	0	0	0					
132	0498	1	01	031	2	2	2	0210	219	1	0	0	0					
132	0498	1	01	006	2	2	2	0210	227	1	0	0	0					
132	0498	1	01	001	2	2	2	0200	010	1	0	0	0					
132	0498	1	01	000	2	2	2	0620	001	1	0	0	0					

Vegetation Survey Data, Data Collection Point [illegible]

Data Sheet 1

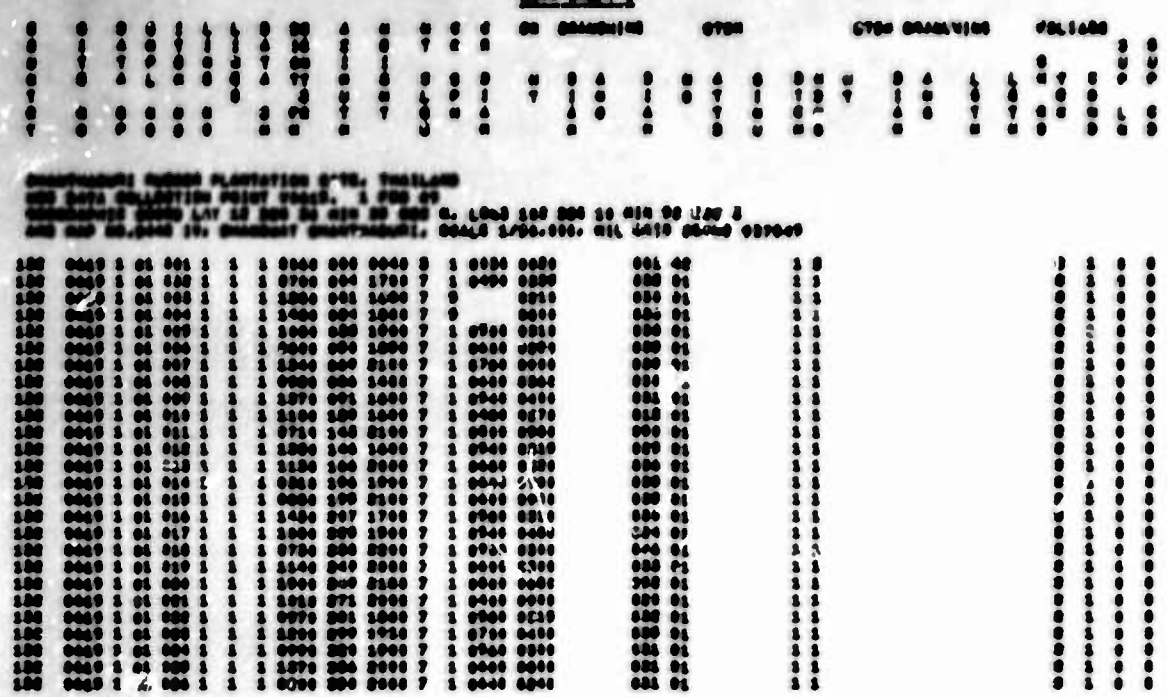

Table 3[illegible]

[illegible]

DATA SHEET 1

														BRANCHING	STEM	STEM BRANCHING	FOLIAGE
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible] PLANTATION [illegible], THAILAND

[illegible]

(Continued)

Table B10 (Concluded)

DATA SHEET 2

C O U N T	S I T E	S A T A	S P L	I T E M	L I N E	L I N E	D A T A	D I S	C S N	A Z I M U T H	SP S T	S L S	C T T	S RT TY	HABIT N T	S P R D	COMMENTS
132	0630	1	01	042	2	2	2	0100	000	0	1	0	0				
132	0630	1	01	043	2	2	2	0960	003	0	1	0	0				
132	0630	1	01	044	2	2	2			0	1	0	0				
132	0630	1	01	045	2	2	2	1480	012	0	1	0	0				
132	0630	1	01	046	2	2	2	1170	032	0	1	0	0				
132	0630	1	01	047	2	2	2	0700	030	0	1	0	0				
132	0630	1	01	048	2	2	2	0700	030	0	1	0	0				
132	0630	1	01	049	2	2	2	0830	000	0	1	0	0				
132	0630	1	01	010	2	2	2	0990	072	0	1	0	0				
132	0630	1	01	011	2	2	2	0820	079	0	1	0	0				
132	0630	1	01	012	2	2	2	1200	076	0	1	0	0				
132	0630	1	01	013	2	2	2	1170	100	0	1	0	0				
132	0630	1	01	014	2	2	2	1100	106	0	1	0	0				
132	0630	1	01	015	2	2	2	1060	109	0	1	0	0				
132	0630	1	01	016	2	2	2	0790	117	0	1	0	0				
132	0630	1	01	017	2	2	2	1100	129	0	1	0	0				
132	0630	1	01	018	2	2	2	0240	120	0	1	0	0				
132	0630	1	01	019	2	2	2	0460	139	0	1	0	0				
132	0630	1	01	020	2	2	2	1400	144	0	1	0	0				
132	0630	1	01	021	2	2	2	0880	151	0	1	0	0				
132	0630	1	01	022	2	2	2	1900	158	0	1	0	0				
132	0630	1	01	023	2	2	2	1300	152	0	1	0	0				
132	0630	1	01	024	2	2	2	0900	163	0	1	0	0				
132	0630	1	01	025	2	2	2	1290	168	0	1	0	0				
132	0630	1	01	026	2	2	2	1170	184	0	1	0	0				
132	0630	1	01	027	2	2	2	1430	190	0	1	0	0				
132	0630	1	01	028	2	2	2	1220	210	0	1	0	0				
132	0630	1	01	029	2	2	2	0730	214	0	1	0	0				
132	0630	1	01	030	2	2	2	0220	235	0	1	0	0				
132	0630	1	01	031	2	2	2	1400	222	0	1	0	0				
132	0630	1	01	032	2	2	2	1260	229	0	1	0	0				
132	0630	1	01	033	2	2	2	1020	234	0	1	0	0				
132	0630	1	01	034	2	2	2	0780	244	0	1	0	0				
132	0630	1	01	036	2	2	2	1200	254	0	1	0	0				
132	0630	1	01	037	2	2	2	0880	264	0	1	0	0				
132	0630	1	01	038	2	2	2	1120	275	0	1	0	0				
132	0630	1	01	039	2	2	2	0480	279	0	1	0	0				
132	0630	1	01	040	2	2	2	0780	282	0	1	0	0				
132	0630	1	01	041	2	2	2	1160	292	0	1	0	0				
132	0630	1	01	042	2	2	2	1100	304	0	1	0	0				
132	0630	1	01	043	2	2	2	0900	334	0	1	0	0				
132	0630	1	01	044	2	2	2	0980	344	0	1	0	0				
132	0630	1	01	045	2	2	2	1300	346	0	1	0	0				
132	0630	1	01	046	2	2	2	0700	352	0	1	0	0				
132	0630	1	01	047	2	2	2	0290	022	0	1	0	0				
132	0630	1	01	048	2	2	2	0790	021	0	1	0	0				
132	0630	1	01	049	2	2	2	1310	022	0	1	0	0				
132	0630	1	01	050	2	2	2	1200	044	0	1	0	0				

Table B11

Vegetation Structure Data, Data Collection Point V0640

DATA SHEET 1

CR BRANCHING — STEM — STEM BRANCHING — FOLIAGE

CHANTHABURI FOREST SITE, THAILAND
MDC DATA COLLECTION POINT V0640, 9 MAR 65
GEOGRAPHIC COORD LAT 12 DEG 44 MIN 30 SEC N, LON 102 DEG 09 MIN 52 SEC E
AMS MAP NO.5440 III, AMPHOE MAKHAM, SCALE 1/50,000, UTM GRID COORD 034105

132	0640	1	01	001	1	1	1	0100	000	0020	2	1	0020		001	10	1	1	8	1	0	0
132	0640	1	01	002	1	1	1	0200	000	0090	3	2	0060	0040	002	01	1	1	8	1	0	0
132	0640	1	01	003	1	1	1	0120	010	0090	3	9		0050	001	01	1	1	8	1	0	0
132	0640	1	01	004	1	1	1	0100	007	0170	4	9		0190	001	01	1	1	8	1	0	0
132	0640	1	01	005	1	1	1	0100	009	0000	3	9		0029	001	02	1	1	8	1	0	0
132	0640	1	01	006	1	1	1	0250	026	0000	3	1	0050		001	09	1	1	8	1	0	0
132	0640	1	01	007	1	1	1	0150		0075	3	9		0040	001	01	1	1	8	1	0	0
132	0640	1	01	008	1	1	1	0100	099	0170	4	9		0097	001	01	1	1	8	1	0	0
132	0640	1	01	009	1	1	1	0300	066	0009	3	1	0060	0059	002	01	1	1	8	1	0	0
132	0640	1	01	010	1	1	1	0170	065	0140	4	1	0030	0130	001	01	1	1	8	1	0	0
132	0640	1	01	011	1	1	1	0200	066	0190	4	9		0060	001	01	1	1	8	1	0	0
132	0640	1	01	012	1	1	1	0300	090	0140	4	1	0050	0060	001	01	1	1	8	1	0	0
132	0640	1	01	013	1	1	1	0250	099	0000	3	1	0080	0029	001	01	1	1	8	1	0	0
132	0640	1	01	014	1	1	1	0190	106	0070	3	9		0020	001	01	1	1	8	1	0	0
132	0640	1	01	015	1	1	1	0100	109	0125	4	1	0100	0030	001	01	1	1	8	1	0	0
132	0640	1	01	016	1	1	1	0120	112	0075	3	1	0040	0090	001	01	1	1	8	1	0	0
132	0640	1	01	017	1	1	1	0100	114	0100	4	1	0090	0009	001	01	1	1	8	1	0	0
132	0640	1	01	018	1	1	1	0200	109	0000	3	2	0100	0060	001	01	1	1	8	1	0	0
132	0640	1	01	019	1	1	1	0200	119	0000	3	2	0040	0090	001	01	1	1	8	1	0	0
132	0640	1	01	020	1	1	1	0200	117	0075	3	1	0090	0049	001	01	1	1	8	1	0	0
132	0640	1	01	021	1	1	1	0300	120	0125	4	1	0100		001	03	1	1	8	1	0	0
132	0640	1	01	022	1	1	1	0270	129	0105	4	9		0049	001	01	1	1	8	1	0	0
132	0640	1	01	023	1	1	1	0300	137	0110	4	2	0090	0005	001	01	1	1	8	1	0	0
132	0640	1	01	024	1	1	1	0000	128	0009	3	1	[illegible]	0150	001	01	1	1	8	1	0	0
132	0640	1	01	025	1	1	1	0140	129	0109	4	1	0060	0050	001	01	1	1	8	1	0	0
132	0640	1	01	026	1	1	1	0200	140	0000	3	1	0050	0050	001	01	1	1	8	1	0	0
132	0640	1	01	027	1	1	1	0270	143	0070	3	1	0050	0050	001	01	1	1	8	1	0	0
132	0640	1	01	028	1	1	1	0220	140	0000	3	1	0060	0050	002	01	1	1	8	1	0	0
132	0640	1	01	029	1	1	1	0170	147	0130	4	1	0080		001	04	1	1	8	1	0	0
132	0640	1	01	030	1	1	1	0240	150	0090	3	1	0060	0075	001	01	1	1	8	1	0	0
132	0640	1	01	031	1	1	1	0290	154	0145	4	1	0060	0070	001	01	1	1	8	1	0	0
132	0640	1	01	032	1	1	1	0060	170	0090	3	1	0040	0013	001	01	1	1	8	1	0	0
132	0640	1	01	033	1	1	1	0229	171	0105	4	1	0030	0090	001	01	1	1	8	1	0	0
132	0640	1	01	034	1	1	1	0300	173	0190	4	1	0100		001	09	1	1	8	1	0	0
132	0640	1	01	035	1	1	1	0200	179	0160	4	1	0060	0090	001	01	1	1	8	1	0	0
132	0640	1	01	036	1	1	1	0100	194	0080	3	1	0040	0029	001	01	1	1	8	1	0	0
132	0640	1	01	037	1	1	1	0200	222	0195	4	1	0100		001	09	1	1	8	1	0	0
132	0640	1	01	038	1	1	1	0220	232	0100	4	1	0060	0070	002	01	1	1	8	1	0	0
132	0640	1	01	039	1	1	1	0200	237	0100	4	1	0050	0050	001	01	1	1	8	1	0	0
132	0640	1	01	040	1	2	1	0200	254	0090	3	1	0000		001	04	1	1	8	1	0	0
132	0640	1	01	041	1	1	1	0100	270	0100	4	1	0090	0050	001	01	1	1	8	1	0	0
132	0640	1	01	042	1	1	1	0250	280	0105	4	1	0070	0049	[illegible]	01	1	1	8	1	0	0
132	0640	1	01	043	1	1	1	0040	293	0100	4	1	0030	0060	001	01	1	1	8	1	0	0
132	0640	1	01	044	1	1	1	0220	200	0120	4	9		0009	001	01	1	1	8	1	0	0
132	0640	1	01	045	1	1	1	0210	290	0040	3	1	0090	0060	[illegible]	01	1	1	8	1	0	0
132	0640	1	01	046	1	1	1	0190	305	0130	4	1	0060	0040	001	01	1	1	8	1	0	0
132	0640	1	01	047	1	1	1	0200	326	0110	4	1	0000	0069	001	01	1	1	8	1	0	0
132	0640	1	01	048	1	1	1	0190	326	0140	4	1	0040	0000	001	01	1	1	8	1	0	0
132	0640	1	01	049	1	1	1	0190	340	0145	4	1	0040	0060	001	01	1	1	8	1	0	0
132	0640	1	01	050	1	1	1	0125	351	0000	3	1	0050	0040	001	01	1	1	8	1	0	0
132	0640	1	01	051	1	1	1	0100	353	0100	4	1	0040	0060	001	01	1	1	8	1	0	0
132	0640	1	01	052	1	1	1	0250	360	0090	3	1	0060		001	04	1	1	8	1	0	0
132	0640	1	01	053	1	1	1	0100	010	0240	5	9		0110	001	01	1	1	2	1	0	0
132	0640	1	01	054	1	1	1	0250	026	0230	5	1	0050	0125	001	01	1	1	2	1	0	0
132	0640	1	01	055	1	1	1	0160	030	0215	5	1	0100	0100	001	01	1	1	2	1	0	0
132	0640	1	01	056	1	1	1	0100	034	0330	5	9		0150	002	01	1	1	2	1	0	0
132	0640	1	01	057	1	1	1	0250	033	0260	5	5		0115	001	01	1	1	2	1	0	0
132	0640	1	01	058	1	1	1	0170		0205	5	5		0100	002	01	1	1	2	1	0	0
132	0640	1	01	059	1	1	1	0300	093	0260	5	1	0000	0120	002	01	1	1	2	1	0	0
132	0640	1	01	060	1	1	1	0200	097	0270	5	9		0100	001	01	1	1	2	1	0	0
132	0640	1	01	061	1	1	1	0240	064	0200	5	9		0120	002	01	1	1	2	1	0	0
132	0640	1	01	062	1	1	1	0300	073	0210	5	1	0100	0100	002	01	1	1	2	1	0	0
132	0640	1	01	063	1	1	1	0200	089	0240	5	1	0000	0105	001	01	1	1	2	1	0	0
132	0640	1	01	064	1	1	1	0090	103	0210	5	9		0140	002	01	1	1	2	1	0	0
132	0640	1	01	065	1	1	1	0300	124	0230	5	1	0200	0115	003	01	1	1	2	1	0	0
132	0640	1	01	066	1	1	1	0220	141	0230	5	1	0000	0100	001	01	1	1	2	1	0	0
132	0640	1	01	067	1	1	1	0100	162	0160	5	9		0150	002	01	1	1	2	1	0	0
132	0640	1	01	068	1	2	1	0100	151	0200	5	5			002	04	1	1	2	1	0	0
132	0640	1	01	069	1	1	1	0090	169	0240	5	9		0120	002	01	1	1	2	1	0	0
132	0640	1	01	070	1	2	1	0250	177	0300	5	9			002	04	1	1	2	1	0	0
132	0640	1	01	071	1	1	1	0210	200	0250	5	3	0000	0090	001	01	1	1	2	1	0	0
132	0640	1	01	072	1	1	1	0060	250	0250	5	1	0060	0140	001	01	1	1	2	1	0	0
132	0640	1	01	073	1	1	1	0300	247	0300	5	1	0100	0150	002	01	1	1	2	1	0	0
132	0640	1	01	074	1	1	1	0240	256	0400	5	6	0120		002	02	1	1	2	1	0	0
132	0640	1	01	075	1	1	1	0300	260	0400	5	1	0200		003	03	1	1	2	1	0	0
132	0640	1	01	076	1	1	1	0200	266	0240	5	9		0155	001	01	1	1	2	1	0	0
132	0640	1	01	077	1	1	1	0160	297	0250	5	1	0000	0115	002	01	1	1	2	1	0	0
132	0640	1	01	078	1	1	1	0260	307	0495	5	6	0400		002	02	1	1	2	1	0	0
132	0640	1	01	079	1	1	1	0230	324	0400	5	2	0300	0200	004	01	1	1	2	1	0	0

(Continued)

DATA SHEET 1

COUNTRY	SITE NO	DATA SP	SMPL NO	ITEM NO	LINE NO	LINES	DATA SH	DIST	AZIMUTH	HEIGHT	HT CLS	CR COND	CR BRANCHING HT	CR BRANCHING DIAM	STEM DIAM	STEM NO	STEM DTCH	STEM NDS	FOLIAGE SMRO	FOLIAGE TYPE	FOLIAGE SUP LN	FOLIAGE SUP CD
132	0640	1	01	080	1	1	1	0070	333	0050	9	9		0100	002	01	1	1	2	1	0	0
132	0640	1	01	081	1	1	1	0190	339	0420	5	1	0060	0200	005	01	1	1	2	1	0	0
132	0640	1	01	082	1	1	1	0180	349	0440	5	1	0030	0200	002	01	1	1	2	1	0	0
132	0640	1	01	083	1	1	1	0310	004	0990	6	2	0190	0250	009	01	1	1	2	1	0	0
132	0640	1	01	084	1	1	1	0600	000	0600	6	2	0140	0310	007	01	1	1	2	1	0	0
132	0640	1	01	085	1	1	1	1000	000	0000	6	1	0200	0400	007	01	1	1	2	1	0	0
132	0640	1	01	086	1	1	1	1100	030	1290	6	1	0300	0900	007	01	1	1	2	1	0	0
132	0640	1	01	087	1	1	1	0720	044	0900	6	1	0490	0220	012	01	1	1	2	1	0	0
132	0640	1	01	088	1	1	1	1200	061	1000	6	1	0200	0900	007	01	1	1	2	1	0	0
132	0640	1	01	089	1	1	1	0000	060	0900	6	1	0400	0410	007	01	1	1	2	1	0	0
132	0640	1	01	090	1	1	1	0910	002	0920	6	1	0190	0300	005	01	1	1	2	1	0	0
132	0640	1	01	091	1	1	1	0900	110	0650	6	1	0140	0300	004	01	1	1	2	1	0	0
132	0640	1	01	092	1	1	1	0950	120	0600	6	1	0200	0250	006	01	1	1	2	1	0	0
132	0640	1	01	093	1	1	1	0400	121	0000	6	1	0260	0300	007	01	1	1	2	1	0	0
132	0240	1	01	094	1	1	1	0330	194	0990	6	1	0190	0400	005	01	1	1	2	1	0	0
132	0640	1	01	095	1	1	1	0330	199	1000	6	1	0200	0400	010	01	1	1	2	1	0	0
132	0640	1	01	096	1	1	1	0400	101	1006	6	1	0900	0050	013	01	1	1	2	1	0	0
132	0640	1	01	097	1	1	1	0050	160	0000	6	1	0300	0300	007	01	1	1	2	1	0	0
132	0640	1	01	098	1	1	1	0790	169	0020	6	1	0200	0390	007	01	1	1	2	1	0	0
132	0640	1	01	099	1	1	1	0990	179	0700	6	1	0200	0400	009	01	1	1	2	1	0	0
132	0640	1	01	100	1	1	1	0930	196	1000	6	1	0330	0900	007	01	1	1	2	1	0	0
132	0640	1	01	101	1	1	1	0440	194	0000	6	1	0200	0310	009	01	1	1	2	1	0	0
132	0640	1	01	102	1	1	1	0120	195	0700	6	2	0100	0600	007	01	1	1	2	1	0	0
132	0640	1	01	103	1	1	1	0950	207	0000	6	9		0400	006	01	1	1	2	1	0	0
132	0640	1	01	104	1	1	1	0720	206	1000	6	1	0400	0240	012	01	1	1	2	1	0	0
132	0640	1	01	105	1	1	1	0230	203	0700	6	1	0300	0300	007	01	1	1	2	1	0	0
132	0640	1	01	106	1	1	1	0620	290	0620	6	1	0100	0110	009	01	1	1	2	1	0	0
132	0640	1	01	107	1	1	1	0600	206	0900	6	1	0300	0490	007	01	1	1	2	1	0	0
132	0640	1	01	108	1	1	1	1050	007	2100	7	1	0500	0600	026	01	1	1	2	1	0	0
132	0640	1	01	109	1	1	1	2000	009	2000	7	1	0600	0400	024	01	1	1	2	1	0	0
132	0640	1	01	110	1	1	1	1090	019	1390	7	1	0400	0600	019	01	1	1	2	1	0	0
132	0640	1	01	111	1	1	1	1000	024	2000	7	1	0600	0970	020	01	1	1	2	1	0	0
132	0640	1	01	112	1	1	1	1200	039	2400	7	1	0000	0600	020	01	1	1	2	1	0	0
132	0640	1	01	113	1	1	1	1600	048	1800	7	1	0400	0310	019	01	1	1	2	1	0	0
132	0640	1	01	114	1	1	1	0900	098	2100	7	1	0490	0000	021	01	1	1	2	1	0	0
132	0640	1	01	115	1	1	1	0630	060	1600	7	1	0400	0660	016	01	1	1	2	1	0	0
132	0640	1	01	116	1	1	1	1600	060	1400	7	1	0600	0400	019	01	1	1	2	1	0	0
132	0640	1	01	117	1	1	1	1300	060	1300	7	1	0400	0479	016	01	1	1	2	1	0	0
132	0640	1	01	118	1	1	1	1400	077	1400	7	1	0400	0700	010	01	1	1	2	1	0	0
132	0640	1	01	119	1	1	1	1030	079	1390	7	0	0400		007	02	1	1	2	1	0	0
132	0640	1	01	120	1	1	1	2700	091	1900	7	1	0000	0600	030	01	1	1	2	1	0	0
132	0640	1	01	121	1	1	1	1040	098	2100	7	1	0900		037	02	1	1	2	1	0	0
132	0640	1	01	122	1	1	1	1930	099	1900	7	1	0400	0600	019	01	1	1	2	1	0	0
132	0640	1	01	123	1	1	1	1120	104	2100	7	1	0000	0000	022	01	1	1	2	1	0	0
132	0640	1	01	124	1	1	1	1900	111	1409	7	1	0400	0720	016	01	1	1	2	1	0	0
132	0640	1	01	125	1	1	1	1200	131	1000	7	1	0500	0800	010	01	1	1	2	1	0	0
132	0640	1	01	126	1	1	1	1000	101	1700	7	1	0400	0000	016	01	1	1	2	1	0	0
132	0640	1	01	127	1	1	1	1090	102	1000	7	1	1400	0620	016	01	1	1	2	1	0	0
132	0640	1	01	128	1	1	1	1700	191	2900	7	1	1000	0570	036	01	1	1	2	1	0	0
132	0640	1	01	129	1	1	1	1200	211	2600	7	1	1000	0135	090	01	1	1	2	1	0	0
132	0640	1	01	130	1	1	1	1090	229	1020	7	1	0600	0720	017	01	1	1	2	1	0	0
132	0640	1	01	131	1	1	1	0900	242	2100	7	1	0600	0800	030	01	1	1	2	1	0	0
132	0640	1	01	132	1	1	1	0700	299	1400	7	1	0400	0600	015	01	1	1	2	1	0	0
132	0640	1	01	133	1	1	1	0000	209	2600	7	1	0600	0800	020	01	1	1	2	1	0	0
132	0640	1	01	134	1	1	1	0900	207	1400	7	1	0900	0700	012	01	1	1	2	1	0	0
132	0640	1	01	135	1	1	1	1000	307	1900	7	1	0000	0320	018	01	1	1	2	1	0	0
132	0640	1	01	136	1	1	1	2000	311	2100	7	1	0600	0000	021	01	1	1	2	1	0	0
132	0640	1	01	137	1	1	1	1000	310	1000	7	1	0400	0790	019	01	1	1	2	1	0	0
132	0640	1	01	138	1	1	1	0400	321	1900	7	1	0600	0490	018	01	1	1	2	1	0	0
132	0640	1	01	139	1	1	1	1700	321	2100	7	1	0600	0000	029	01	1	1	2	1	0	0
132	0640	1	01	140	1	1	1	1900	323	1700	7	1	0400	0690	019	01	1	1	2	1	0	0

DATA SHEET 2

COUNTRY	SITE NO	DATA SP	SMPL NO	ITEM NO	LINE NO	LINES	DATA SH	DIST FR CENTER	AZIMUTH	SP GT RS MN	S LZS MN	C TT EDG	S TG ORG	HT HABIT TYPE	HT	SPRD	COMMENTS
132	0640	1	01	046	2	2	2	0200	254	1	0	0	0				
132	0640	1	01	060	2	2	2	0100	121	0	1	0	0				
132	0640	1	01	070	2	2	2	0250	177	0	1	0	0				

Table B12

Plant Height and Stem Spacing at WES Data Collection Point P3-01

WES DATA COLLECTION POINT P3-01, PINA FOREST SITE, PANAMA CANAL ZONE
GEOGRAPHIC COORD LAT 09 DEG 12 MIN 38 SEC N, LONG 79 DEG 59 MIN 02 SEC W
EXPANDED AREA = 1257. SQUARE METERS

PLANT HEIGHT

PLANT HEIGHT (M)	NUMBER OF STEMS IN EACH HEIGHT CLASS								TOTAL NUMBER OF STEMS				SPACING OF STEMS (CM)			
	1	2	3	4	5	6	7	8	OF GIVEN HT.	OF GIVEN HT. AND LESS	OF GIVEN HT. AND GREATER	OF GIVEN HT. AND LESS(OMIT HT. 0.1)	OF GIVEN HT.	OF GIVEN HT. AND LESS	OF GIVEN HT. AND GREATER	OF GIVEN HT. AND LESS (OMIT HT. 0.1)
0	0.	9201.	1472.	0.	0.	0.	0.	0.	10672.	10672.	11841.	0.	30.	30.	37.	0.
1	0.	0.	0.	720.	0.	0.	0.	0.	720.	11392.	1169.	0.	140.	37.	116.	0.
2	0.	0.	0.	0.	160.	0.	0.	0.	160.	11552.	449.	160.	316.	37.	105.	316.
3	0.	0.	0.	0.	96.	0.	0.	0.	96.	11648.	289.	216.	539.	37.	220.	272.
4	0.	0.	0.	0.	52.	0.	0.	0.	52.	11660.	253.	268.	999.	37.	251.	244.
5	0.	0.	0.	0.	0.	14.	0.	0.	14.	11674.	201.	282.	1460.	37.	282.	230.
6	0.	0.	0.	0.	0.	22.	0.	0.	22.	11696.	187.	304.	953.	37.	293.	229.
7	0.	0.	0.	0.	0.	11.	0.	0.	11.	11707.	165.	319.	1206.	37.	311.	229.
8	0.	0.	0.	0.	0.	47.	0.	0.	47.	11754.	154.	342.	983.	37.	322.	219.
9	0.	0.	0.	0.	0.	31.	0.	0.	31.	11785.	107.	393.	710.	37.	387.	202.
10	0.	0.	0.	0.	0.	11.	0.	0.	11.	11796.	76.	404.	1206.	37.	450.	199.
11	0.	0.	0.	0.	0.	11.	0.	0.	11.	11807.	65.	419.	1206.	37.	496.	196.
12	0.	0.	0.	0.	0.	6.	0.	0.	6.	11813.	54.	491.	1633.	37.	544.	195.
13	0.	0.	0.	0.	0.	0.	9.	0.	9.	11822.	48.	430.	1333.	37.	577.	193.
14	0.	0.	0.	0.	0.	0.	11.	0.	11.	11833.	39.	441.	1206.	37.	641.	198.
15	0.	0.	0.	0.	0.	0.	9.	0.	9.	11842.	28.	498.	1333.	37.	754.	189.
16	0.	0.	0.	0.	0.	0.	7.	0.	7.	11849.	19.	457.	1512.	37.	918.	187.
17	0.	0.	0.	0.	0.	0.	2.	0.	2.	11851.	12.	499.	2020.	37.	1199.	187.
18	0.	0.	0.	0.	0.	0.	2.	0.	2.	11853.	10.	441.	2020.	37.	1269.	186.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	11853.	8.	441.	0.	37.	1414.	186.
20	0.	0.	0.	0.	0.	0.	2.	0.	2.	11855.	8.	443.	2020.	37.	1414.	186.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	11855.	6.	443.	0.	37.	1633.	186.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	11855.	6.	443.	0.	37.	1633.	186.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	11855.	6.	443.	0.	37.	1633.	186.
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	11855.	6.	443.	0.	37.	1633.	186.
25	0.	0.	0.	0.	0.	0.	2.	0.	2.	11857.	6.	445.	2020.	37.	1633.	185.
26	0.	0.	0.	0.	0.	0.	0.	0.	0.	11857.	4.	445.	0.	37.	2020.	185.
27	0.	0.	0.	0.	0.	0.	0.	0.	0.	11857.	4.	445.	0.	37.	2020.	185.
28	0.	0.	0.	0.	0.	0.	0.	0.	0.	11857.	4.	445.	0.	37.	2020.	185.
29	0.	0.	0.	0.	0.	0.	0.	0.	0.	11857.	4.	445.	0.	37.	2020.	185.
30	0.	0.	0.	0.	0.	0.	2.	0.	2.	11859.	4.	447.	2020.	37.	2020.	185.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	11859.	2.	447.	0.	37.	2020.	185.
32	0.	0.	0.	0.	0.	0.	2.	0.	2.	11861.	2.	449.	2020.	37.	2020.	185.

(Continued)

Table 312 (Concluded)

STEM DIAMETER

STEM DIAM (CM)	NUMBER OF STEMS IN EACH HEIGHT CLASS 1	2	3	4	5	6	7	8	TOTAL NUMBER OF STEMS OF GIVEN DIAM	OF GIVEN DIAM AND LESS	OF GIVEN DIAM AND GREATER	SPACING OF STEMS (CM) OF GIVEN DIAM AND LESS (UNIT DIAM 1.0)	OF GIVEN DIAM	OF GIVEN DIAM AND LESS	OF GIVEN DIAM AND GREATER	OF GIVEN DIAM AND LESS (UNIT DIAM 1.2)
1	0.	9200.	1472.	638.	60.	0.	0.	0.	11340.	11340.	11060.	0.	30.	30.	37.	0.
2	0.	1.	0.	48.	124.	0.	0.	0.	172.	11512.	525.	0.	305.	37.	179.	0.
3	0.	0.	0.	0.	32.	6.	0.	0.	38.	11550.	353.	30.	640.	37.	213.	640.
4	0.	0.	0.	0.	32.	42.	0.	0.	74.	11624.	315.	112.	445.	37.	229.	370.
5	0.	0.	0.	64.	12.	31.	2.	0.	109.	11733.	241.	241.	383.	37.	250.	299.
6	0.	0.	0.	0.	0.	25.	0.	0.	33.	11766.	132.	264.	696.	37.	340.	291.
7	0.	0.	0.	0.	0.	11.	0.	0.	11.	11777.	99.	245.	1206.	37.	402.	266.
8	0.	0.	0.	0.	0.	6.	4.	0.	10.	11787.	88.	270.	1265.	37.	426.	241.
9	0.	0.	0.	0.	0.	17.	0.	0.	17.	11804.	78.	298.	970.	37.	453.	234.
10	0.	0.	0.	0.	0.	3.	0.	0.	3.	11807.	61.	295.	2369.	37.	512.	233.
11	0.	0.	0.	0.	0.	0.	4.	0.	4.	11811.	58.	299.	2888.	37.	529.	231.
12	0.	0.	0.	0.	0.	6.	0.	0.	6.	11817.	54.	305.	1633.	37.	544.	229.
13	0.	0.	0.	0.	0.	0.	2.	0.	2.	11819.	48.	307.	2828.	37.	577.	230.
14	0.	0.	0.	0.	0.	8.	0.	0.	8.	11827.	46.	315.	1414.	37.	590.	229.
15	0.	0.	0.	0.	0.	0.	2.	0.	2.	11829.	38.	317.	2828.	37.	649.	229.
16	0.	0.	0.	0.	0.	0.	5.	0.	5.	11834.	36.	326.	1789.	37.	667.	228.
17	0.	0.	0.	0.	0.	0.	2.	0.	2.	11836.	31.	324.	2828.	37.	718.	228.
18	0.	0.	0.	0.	0.	0.	5.	0.	5.	11841.	29.	329.	1789.	37.	743.	227.
19	0.	0.	0.	0.	0.	2.	0.	0.	2.	11843.	24.	331.	2828.	37.	816.	228.
20	0.	0.	0.	0.	0.	0.	2.	0.	2.	11845.	22.	333.	2828.	37.	853.	219.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	11845.	20.	333.	0.	37.	894.	219.
22	0.	0.	0.	0.	0.	2.	0.	0.	2.	11847.	20.	335.	2828.	37.	894.	219.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	11847.	18.	339.	0.	37.	943.	219.
24	0.	0.	0.	0.	0.	2.	0.	0.	2.	11849.	18.	337.	2828.	37.	943.	218.
25	0.	0.	0.	0.	0.	0.	0.	0.	0.	11849.	16.	337.	0.	37.	1000.	218.
26	0.	0.	0.	0.	0.	2.	0.	0.	2.	11851.	16.	339.	2828.	37.	1000.	217.
27	0.	0.	0.	0.	0.	2.	0.	0.	2.	11853.	14.	341.	2828.	37.	1060.	217.
28	0.	0.	0.	0.	0.	0.	0.	0.	0.	11853.	12.	341.	0.	37.	1199.	217.
29	0.	0.	0.	0.	0.	2.	0.	0.	2.	11855.	12.	343.	2828.	37.	1199.	216.
30	0.	0.	0.	0.	0.	0.	0.	0.	0.	11855.	10.	343.	0.	37.	1269.	216.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	11855.	10.	343.	0.	37.	1265.	216.
32	0.	0.	0.	0.	0.	0.	0.	0.	0.	11855.	10.	343.	0.	37.	1269.	216.
33	0.	0.	0.	0.	0.	0.	0.	0.	0.	11855.	10.	343.	0.	37.	1269.	216.
34	0.	0.	0.	0.	0.	0.	0.	0.	0.	11855.	10.	343.	0.	37.	1269.	216.
35	0.	0.	0.	0.	0.	2.	0.	0.	2.	11857.	10.	345.	2828.	37.	1269.	215.
36	0.	0.	0.	0.	0.	0.	0.	0.	0.	11857.	8.	345.	0.	37.	1414.	215.
37	0.	0.	0.	0.	0.	0.	0.	0.	0.	11857.	8.	345.	0.	37.	1414.	215.
38	0.	0.	0.	0.	0.	2.	0.	0.	2.	11859.	8.	347.	2828.	37.	1414.	215.
39	0.	0.	0.	0.	0.	0.	0.	0.	0.	11859.	6.	347.	0.	37.	1633.	215.
40	0.	0.	0.	0.	0.	0.	0.	0.	0.	11859.	6.	347.	0.	37.	1633.	215.
41	0.	0.	0.	0.	0.	0.	0.	0.	0.	11859.	6.	347.	0.	37.	1633.	215.
42	0.	0.	0.	0.	0.	0.	0.	0.	0.	11859.	6.	347.	0.	37.	1633.	215.
43	0.	0.	0.	0.	0.	0.	0.	0.	0.	11859.	6.	347.	0.	37.	1633.	215.
44	0.	0.	0.	0.	0.	0.	0.	0.	0.	11859.	6.	347.	0.	37.	1633.	215.
45	0.	0.	0.	0.	0.	2.	0.	0.	2.	11861.	4.	349.	2828.	37.	1633.	214.
46	0.	0.	0.	0.	0.	0.	0.	0.	0.	11861.	4.	349.	0.	37.	2000.	214.
47	0.	0.	0.	0.	0.	0.	0.	0.	0.	11861.	4.	349.	0.	37.	2000.	214.
48	0.	0.	0.	0.	0.	0.	0.	0.	0.	11861.	4.	349.	0.	37.	2000.	214.
49	0.	0.	0.	0.	0.	0.	0.	0.	0.	11861.	4.	349.	0.	37.	2000.	214.
50	0.	0.	0.	0.	0.	0.	0.	0.	0.	11861.	4.	349.	0.	37.	2000.	214.
51	0.	0.	0.	0.	0.	0.	0.	0.	0.	11861.	4.	349.	0.	37.	2000.	214.
52	0.	0.	0.	0.	0.	0.	0.	0.	0.	11861.	4.	349.	0.	37.	2000.	214.
53	0.	0.	0.	0.	0.	0.	0.	0.	0.	11861.	4.	349.	0.	37.	2000.	214.
54	0.	0.	0.	0.	0.	0.	0.	0.	0.	11861.	4.	349.	0.	37.	2000.	214.
55	0.	0.	0.	0.	0.	0.	0.	0.	0.	11861.	4.	349.	0.	37.	2000.	214.
56	0.	0.	0.	0.	0.	0.	0.	0.	0.	11861.	4.	349.	0.	37.	2000.	214.
57	0.	0.	0.	0.	0.	0.	0.	0.	0.	11861.	4.	349.	0.	37.	2000.	214.
58	0.	0.	0.	0.	0.	0.	4.	0.	4.	11865.	4.	343.	2600.	37.	2000.	213.

Table B13

Plant Height and Stem Spacing at WES Data Collection Point P3-02

WES DATA COLLECTION POINT P3-02, PINA FOREST SITE, PANAMA CANAL ZONE
GEOGRAPHIC COORD LAT 09 DEG 12 MIN 37 SEC N,LONG 079 DEG 50 MIN 47 SEC W
EXPANDED AREA = 1257. SQUARE METERS

PLANT HEIGHT

PLANT HEIGHT (M)	NUMBER OF STEMS IN EACH HEIGHT CLASS 1	2	3	4	5	6	7	8	TOTAL NUMBER OF STEMS OF GIVEN HT.	OF GIVEN HT. AND LESS	OF GIVEN HT. AND GREATER	OF GIVEN HT. AND LESS(OMIT HT. 0.1)	SPACING OF STEMS (CM) OF GIVEN HT.	OF GIVEN HT. AND LESS	OF GIVEN HT. AND GREATER	OF GIVEN HT. AND LESS (OMIT HT. 0.1)
0	0.	2500.	256.	0.	0.	0.	0.	0.	2756.	2756.	5442.	0.	76.	76.	54.	0.
1	0.	0.	0.	2133.	0.	0.	0.	0.	2133.	4889.	2686.	0.	87.	57.	77.	0.
2	0.	0.	0.	0.	224.	0.	0.	0.	224.	5113.	553.	224.	267.	56.	178.	267.
3	0.	0.	0.	0.	64.	0.	0.	0.	64.	5177.	329.	288.	500.	56.	221.	236.
4	0.	0.	0.	0.	80.	0.	0.	0.	80.	5257.	265.	368.	447.	55.	244.	209.
5	0.	0.	0.	0.	0.	12.	0.	0.	13.	5270.	185.	381.	1100.	55.	294.	209.
6	0.	0.	0.	0.	0.	12.	0.	0.	13.	5283.	172.	394.	1100.	55.	305.	262.
7	0.	0.	0.	0.	0.	12.	0.	0.	13.	5296.	159.	407.	1100.	55.	317.	190.
8	0.	0.	0.	0.	0.	37.	0.	0.	38.	5334.	146.	445.	640.	55.	331.	190.
9	0.	0.	0.	0.	0.	37.	0.	0.	38.	5372.	108.	483.	640.	55.	389.	182.
10	0.	0.	0.	0.	0.	12.	0.	0.	13.	5385.	71.	496.	1100.	55.	478.	180.
11	0.	0.	0.	0.	0.	12.	0.	0.	13.	5398.	57.	509.	1100.	54.	530.	177.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	5398.	44.	509.	0.	54.	603.	177.
13	0.	0.	0.	0.	0.	0.	4.	0.	4.	5402.	44.	513.	200.	54.	603.	177.
14	0.	0.	0.	0.	0.	0.	2.	0.	2.	5404.	40.	515.	2024.	54.	632.	176.
15	0.	0.	0.	0.	0.	0.	6.	0.	6.	5410.	38.	521.	1033.	54.	649.	175.
16	0.	0.	0.	0.	0.	0.	4.	0.	4.	5414.	32.	525.	2000.	54.	707.	175.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	5414.	28.	525.	0.	54.	756.	175.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	5414.	28.	525.	0.	54.	756.	175.
19	0.	0.	0.	0.	0.	0.	2.	0.	2.	5416.	28.	527.	2024.	54.	756.	174.
20	0.	0.	0.	0.	0.	0.	16.	0.	16.	5432.	26.	543.	1500.	54.	784.	172.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	5432.	10.	543.	0.	54.	1269.	172.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	5432.	10.	543.	0.	54.	1269.	172.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	5432.	10.	543.	0.	54.	1269.	172.
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	5432.	10.	543.	0.	54.	1269.	172.
25	0.	0.	0.	0.	0.	0.	6.	0.	6.	5438.	10.	549.	1033.	54.	1259.	171.
26	0.	0.	0.	0.	0.	0.	0.	0.	0.	5438.	4.	549.	0.	54.	2000.	171.
27	0.	0.	0.	0.	0.	0.	0.	0.	0.	5438.	4.	549.	0.	54.	2000.	171.
28	0.	0.	0.	0.	0.	0.	0.	0.	0.	5438.	4.	549.	0.	54.	2000.	171.
29	0.	0.	0.	0.	0.	0.	0.	0.	0.	5438.	4.	549.	0.	54.	2000.	171.
30	0.	0.	0.	0.	0.	0.	0.	0.	0.	5438.	4.	549.	0.	54.	2000.	171.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	5438.	4.	549.	0.	54.	2000.	171.
32	0.	0.	0.	0.	0.	0.	0.	0.	0.	5438.	4.	549.	0.	54.	2000.	171.
33	0.	0.	0.	0.	0.	0.	4.	0.	4.	5442.	4.	553.	2000.	54.	2000.	170.

(Continued)

Table B13 (Concluded)

STEM DIAMETER

NUMBER OF STEMS IN EACH HEIGHT CLASS									TOTAL NUMBER OF STEMS				SPACING OF STEMS (CM)			
STEM DIAM (CM)	1	2	3	4	5	6	7	8	OF GIVEN DIAM	OF GIVEN DIAM AND LESS	OF GIVEN DIAM AND GREATER	OF GIVEN DIAM AND LESS (UNIT DIAM 1.2)	OF GIVEN DIAM	OF GIVEN DIAM AND LESS	OF GIVEN DIAM AND GREATER	OF GIVEN DIAM AND LESS (UNIT DIAM 1.2)
1	0.	290.	294.	933.	16.	0.	0.	0.	3309.	3309.	9430.	0.	79.	79.	94.	0.
2	0.	0.	0.	1600.	279.	0.	0.	0.	1872.	5177.	2134.	0.	92.	96.	87.	0.
3	0.	0.	0.	0.	32.	19.	0.	0.	91.	5268.	262.	91.	508.	99.	247.	968.
4	0.	0.	0.	0.	48.	25.	0.	0.	73.	5301.	211.	126.	468.	99.	279.	390.
5	0.	0.	0.	0.	0.	25.	0.	0.	25.	5326.	138.	140.	600.	99.	341.	320.
6	0.	0.	0.	0.	0.	12.	0.	0.	13.	5339.	113.	162.	1100.	99.	376.	314.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	5339.	100.	162.	0.	99.	401.	314.
8	0.	0.	0.	0.	0.	25.	0.	0.	25.	5364.	100.	187.	800.	99.	408.	299.
9	0.	0.	0.	0.	0.	6.	0.	0.	6.	5370.	75.	193.	1033.	99.	462.	300.
10	0.	0.	0.	0.	0.	6.	0.	0.	6.	5376.	69.	199.	1033.	99.	482.	284.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	5376.	63.	199.	0.	99.	504.	284.
12	0.	0.	0.	0.	0.	12.	0.	0.	13.	5389.	63.	212.	1166.	94.	504.	279.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	5389.	50.	212.	0.	94.	566.	279.
14	0.	0.	0.	0.	0.	6.	0.	0.	6.	5401.	50.	224.	1199.	94.	566.	267.
15	0.	0.	0.	0.	0.	0.	10.	0.	10.	5411.	38.	234.	1269.	94.	649.	261.
16	0.	0.	0.	0.	0.	2.	0.	0.	2.	5413.	28.	236.	2020.	94.	756.	260.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	5413.	26.	236.	0.	94.	784.	260.
18	0.	0.	0.	0.	0.	2.	0.	0.	2.	5415.	26.	238.	2020.	94.	784.	259.
19	0.	0.	0.	0.	0.	4.	0.	0.	4.	5419.	24.	242.	2020.	94.	814.	257.
20	0.	0.	0.	0.	0.	2.	0.	0.	2.	5421.	20.	244.	2020.	94.	894.	256.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	5421.	18.	244.	0.	94.	943.	256.
22	0.	0.	0.	0.	0.	2.	0.	0.	2.	5423.	18.	246.	2020.	94.	943.	255.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	5423.	16.	246.	0.	94.	1088.	255.
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	5423.	16.	246.	0.	94.	1088.	255.
25	0.	0.	0.	0.	0.	0.	0.	0.	0.	5423.	16.	246.	0.	94.	1088.	255.
26	0.	0.	0.	0.	0.	0.	0.	0.	0.	5423.	16.	246.	0.	94.	1088.	255.
27	0.	0.	0.	0.	0.	0.	0.	0.	0.	5423.	16.	246.	0.	94.	1088.	255.
28	0.	0.	0.	0.	0.	2.	0.	0.	2.	5425.	16.	248.	2020.	94.	1088.	254.
29	0.	0.	0.	0.	0.	2.	0.	0.	2.	5427.	14.	250.	2020.	94.	1200.	253.
30	0.	0.	0.	0.	0.	2.	0.	0.	2.	5429.	12.	252.	2020.	94.	1333.	252.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	5429.	10.	252.	0.	94.	1600.	252.
32	0.	0.	0.	0.	0.	0.	0.	0.	0.	5429.	10.	252.	0.	94.	1769.	252.
33	0.	0.	0.	0.	0.	0.	0.	0.	0.	5429.	10.	252.	0.	94.	1769.	252.
34	0.	0.	0.	0.	0.	0.	0.	0.	0.	5429.	10.	252.	0.	94.	1769.	252.
35	0.	0.	0.	0.	0.	0.	0.	0.	0.	5429.	10.	252.	0.	94.	1769.	252.
36	0.	0.	0.	0.	0.	0.	0.	0.	0.	5429.	10.	252.	0.	94.	1769.	252.
37	0.	0.	0.	0.	0.	0.	0.	0.	0.	5429.	10.	252.	0.	94.	1769.	252.
38	0.	0.	0.	0.	0.	0.	0.	0.	0.	5429.	10.	252.	0.	94.	1769.	252.
39	0.	0.	0.	0.	0.	0.	0.	0.	0.	5429.	10.	252.	0.	94.	1769.	252.
40	0.	0.	0.	0.	0.	0.	0.	0.	0.	5429.	10.	252.	0.	94.	1769.	252.
41	0.	0.	0.	0.	0.	0.	0.	0.	0.	5429.	10.	252.	0.	94.	1769.	252.
42	0.	0.	0.	0.	0.	0.	0.	0.	0.	5429.	10.	252.	0.	94.	1769.	252.
43	0.	0.	0.	0.	0.	0.	0.	0.	0.	5429.	10.	252.	0.	94.	1769.	252.
44	0.	0.	0.	0.	0.	2.	0.	0.	2.	5431.	10.	244.	2020.	94.	1769.	251.
45	0.	0.	0.	0.	0.	0.	0.	0.	0.	5431.	8.	244.	0.	94.	1414.	251.
46	0.	0.	0.	0.	0.	0.	0.	0.	0.	5431.	8.	244.	0.	94.	1414.	251.
47	0.	0.	0.	0.	0.	0.	0.	0.	0.	5431.	8.	244.	0.	94.	1414.	251.
48	0.	0.	0.	0.	0.	0.	0.	0.	0.	5431.	8.	244.	0.	94.	1414.	251.
49	0.	0.	0.	0.	0.	0.	0.	0.	0.	5431.	8.	244.	0.	94.	1414.	251.
50	0.	0.	0.	0.	0.	0.	0.	0.	0.	5431.	8.	244.	0.	94.	1414.	251.
51	0.	0.	0.	0.	0.	0.	0.	0.	0.	5431.	8.	244.	0.	94.	1414.	251.
52	0.	0.	0.	0.	0.	0.	0.	0.	0.	5431.	8.	244.	0.	94.	1414.	251.
53	0.	0.	0.	0.	0.	0.	0.	0.	0.	5431.	8.	244.	0.	94.	1414.	251.
54	0.	0.	0.	0.	0.	0.	0.	0.	0.	5431.	8.	244.	0.	94.	1414.	251.
55	0.	0.	0.	0.	0.	2.	0.	0.	2.	5433.	8.	246.	2020.	94.	1414.	250.
56	0.	0.	0.	0.	0.	0.	0.	0.	0.	5433.	6.	246.	0.	94.	1633.	250.
57	0.	0.	0.	0.	0.	0.	0.	0.	0.	5433.	6.	246.	0.	94.	1633.	250.
58	0.	0.	0.	0.	0.	0.	0.	0.	6.	5439.	6.	252.	1633.	94.	1633.	247.

Table B14

Plant Height and Stem Spacing at WES Data Collection Point P3-03

WES DATA COLLECTION POINT P3-03, PINA FOREST SITE, PANAMA CANAL ZONE
GEOGRAPHIC COORD LAT 09 DEG 12 MIN 46 SEC N,LONG 079 DEG 58 MIN 58 SEC W
EXPANDED AREA = 1257. SQUARE METERS

PLANT HEIGHT

PLANT HEIGHT (M)	NUMBER OF STEMS IN EACH HEIGHT CLASS								TOTAL NUMBER OF STEMS			SPACING OF STEMS (CM)			
	1	2	3	4	5	6	7	8	OF GIVEN HT.	OF GIVEN HT. AND LESS	OF GIVEN HT. AND GREATER	OF GIVEN HT. AND LESS(OMIT HT. 0.1)	OF GIVEN HT.	OF GIVEN HT. AND LESS	OF GIVEN HT. AND GREATER	OF GIVEN HT. AND LESS (OMIT HT. 0.1)
0	0.	230.	400.	0.	0.	0.	0.	0.	2700.	2700.	4436.	0.	77.	77.	60.	0.
1	0.	0.	0.	1379.	0.	0.	0.	0.	1379.	4079.	1736.	0.	104.	63.	94.	0.
2	0.	0.	0.	0.	69.	0.	0.	0.	69.	4148.	361.	69.	494.	62.	211.	496.
3	0.	0.	0.	0.	82.	0.	0.	0.	82.	4222.	298.	147.	449.	62.	232.	338.
4	0.	0.	0.	0.	82.	0.	0.	0.	82.	4304.	214.	229.	442.	61.	273.	264.
5	0.	0.	0.	0.	0.	18.	0.	0.	18.	4322.	132.	247.	943.	61.	340.	295.
6	0.	0.	0.	0.	0.	4.	0.	0.	4.	4326.	114.	291.	2004.	61.	379.	292.
7	0.	0.	0.	0.	0.	18.	0.	0.	18.	4344.	110.	269.	943.	61.	381.	244.
8	0.	0.	0.	0.	0.	4.	0.	0.	4.	4348.	92.	273.	2400.	61.	417.	242.
9	0.	0.	0.	0.	0.	9.	0.	0.	9.	4357.	88.	282.	1333.	61.	426.	230.
10	0.	0.	0.	0.	0.	13.	0.	0.	13.	4370.	79.	295.	1100.	61.	450.	233.
11	0.	0.	0.	0.	0.	13.	0.	0.	13.	4383.	66.	308.	1109.	60.	492.	220.
12	0.	0.	0.	0.	0.	13.	0.	0.	13.	4396.	93.	321.	1109.	60.	540.	223.
13	0.	0.	0.	0.	0.	0.	5.	0.	5.	4401.	48.	326.	1700.	60.	632.	228.
14	0.	0.	0.	0.	0.	0.	7.	0.	7.	4408.	39.	333.	1512.	60.	676.	219.
15	0.	0.	0.	0.	0.	0.	7.	0.	7.	4415.	20.	340.	1512.	60.	796.	217.
16	0.	0.	0.	0.	0.	0.	9.	0.	9.	4424.	21.	349.	1700.	60.	873.	219.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	4424.	16.	349.	0.	60.	1000.	219.
18	0.	0.	0.	0.	0.	0.	2.	0.	2.	4426.	16.	347.	2020.	60.	1000.	219.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	4426.	14.	347.	0.	60.	1060.	219.
20	0.	0.	0.	0.	0.	0.	2.	0.	2.	4428.	14.	349.	2020.	60.	1060.	214.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	4428.	12.	349.	0.	60.	1199.	214.
22	0.	0.	0.	0.	0.	0.	2.	0.	2.	4430.	12.	391.	2020.	60.	1199.	214.
23	0.	0.	0.	0.	0.	0.	1.	0.	2.	4428.	10.	348.	2020.	60.	1200.	213.
24	0.	0.	0.	0.	0.	0.	2.	0.	2.	4430.	8.	359.	2020.	60.	1414.	212.
25	0.	0.	0.	0.	0.	0.	2.	0.	2.	4432.	8.	357.	2020.	60.	1633.	212.
26	0.	0.	0.	0.	0.	0.	0.	0.	0.	4432.	4.	357.	0.	60.	2000.	212.
27	0.	0.	0.	0.	0.	0.	0.	0.	0.	4432.	4.	357.	0.	60.	2000.	212.
28	0.	0.	0.	0.	0.	0.	2.	0.	2.	4434.	4.	359.	2020.	60.	2000.	211.
29	0.	0.	0.	0.	0.	0.	0.	0.	0.	4434.	2.	359.	0.	60.	2020.	211.
30	0.	0.	0.	0.	0.	0.	0.	0.	0.	4434.	2.	359.	0.	60.	2020.	211.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	4434.	2.	359.	0.	60.	2020.	211.
32	0.	0.	0.	0.	0.	0.	0.	0.	0.	4434.	2.	359.	0.	60.	2020.	211.
33	0.	0.	0.	0.	0.	0.	2.	0.	2.	4436.	2.	361.	2020.	60.	2020.	211.

(Continued)

Table B14 (Concluded)

STEM DIAMETER

STEM DIAM (CM)	NUMBER OF STEMS IN EACH HEIGHT CLASS 1	2	3	4	5	6	7	8	TOTAL NUMBER OF STEMS OF GIVEN DIAM	OF GIVEN DIAM AND LESS	OF GIVEN DIAM AND GREATER	OF GIVEN DIAM AND LESS (OMIT DIAM 1.2)	SPACING OF STEMS (CM) OF GIVEN DIAM	OF GIVEN DIAM AND LESS	OF GIVEN DIAM AND GREATER	OF GIVEN DIAM AND LESS (OMIT DIAM 1.2)
1	0.	2304.	480.	768.	0.	0.	0.	0.	3408.	3408.	4439.	0.	69.	69.	68.	0.
2	0.	0.	0.	675.	69.	0.	0.	0.	744.	4140.	1035.	0.	147.	68.	124.	0.
3	0.	0.	0.	0.	131.	0.	0.	0.	131.	4271.	299.	131.	349.	61.	283.	349.
4	0.	0.	0.	0.	44.	22.	0.	0.	66.	4317.	164.	177.	594.	61.	312.	301.
5	0.	0.	0.	0.	0.	10.	0.	0.	26.	4343.	110.	203.	764.	61.	340.	301.
6	0.	0.	0.	0.	0.	9.	0.	0.	9.	4352.	92.	212.	1339.	61.	417.	275.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	4352.	83.	212.	0.	61.	439.	275.
8	0.	0.	0.	0.	0.	13.	0.	0.	13.	4365.	83.	225.	1180.	61.	439.	267.
9	0.	0.	0.	0.	0.	9.	0.	0.	9.	4374.	70.	234.	1339.	60.	478.	261.
10	0.	0.	0.	0.	0.	6.	2.	0.	6.	4380.	61.	240.	1033.	60.	512.	256.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	4380.	55.	240.	0.	60.	539.	256.
12	0.	0.	0.	0.	0.	9.	0.	0.	9.	4389.	55.	249.	1333.	60.	539.	253.
13	0.	0.	0.	0.	0.	0.	2.	0.	2.	4391.	44.	251.	2028.	60.	598.	252.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	4391.	44.	251.	0.	60.	603.	252.
15	0.	0.	0.	0.	0.	9.	2.	0.	11.	4402.	44.	262.	1206.	60.	603.	247.
16	0.	0.	0.	0.	0.	5.	0.	0.	5.	4407.	33.	267.	1700.	60.	696.	245.
17	0.	0.	0.	0.	0.	0.	2.	0.	2.	4409.	28.	269.	2028.	60.	756.	244.
18	0.	0.	0.	0.	0.	0.	2.	0.	2.	4411.	26.	271.	2028.	60.	784.	243.
19	0.	0.	0.	0.	0.	0.	2.	0.	2.	4413.	24.	273.	2028.	63.	816.	242.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	4413.	22.	273.	0.	60.	853.	242.
21	0.	0.	0.	0.	0.	0.	2.	0.	2.	4415.	22.	275.	2028.	60.	853.	241.
22	0.	0.	0.	0.	0.	0.	5.	0.	5.	4420.	20.	280.	1700.	60.	894.	239.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	4420.	15.	280.	0.	60.	1033.	239.
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	4420.	15.	280.	0.	60.	1033.	239.
25	0.	0.	0.	0.	0.	0.	0.	0.	0.	4420.	15.	280.	0.	60.	1033.	239.
26	0.	0.	0.	0.	0.	0.	2.	0.	2.	4422.	15.	282.	2028.	60.	1033.	238.
27	0.	0.	0.	0.	0.	0.	0.	0.	0.	4422.	13.	282.	0.	60.	1109.	238.
28	0.	0.	0.	0.	0.	0.	0.	0.	0.	4422.	13.	282.	0.	60.	1109.	238.
29	0.	0.	0.	0.	0.	0.	0.	0.	0.	4422.	13.	282.	0.	60.	1109.	238.
30	0.	0.	0.	0.	0.	0.	0.	0.	0.	4422.	13.	282.	0.	60.	1109.	238.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	4422.	13.	282.	0.	60.	1109.	238.
32	0.	0.	0.	0.	0.	0.	0.	0.	0.	4422.	13.	282.	0.	60.	1109.	238.
33	0.	0.	0.	0.	0.	0.	2.	0.	2.	4424.	13.	284.	2028.	60.	1109.	237.
34	0.	0.	0.	0.	0.	0.	0.	0.	0.	4424.	11.	284.	0.	60.	1206.	237.
35	0.	0.	0.	0.	0.	0.	2.	0.	2.	4426.	11.	286.	2028.	60.	1206.	237.
36	0.	0.	0.	0.	0.	0.	0.	0.	0.	4426.	9.	286.	0.	60.	1333.	237.
37	0.	0.	0.	0.	0.	0.	0.	0.	0.	4426.	9.	286.	0.	60.	1333.	237.
38	0.	0.	0.	0.	0.	0.	0.	0.	0.	4426.	9.	286.	0.	60.	1333.	237.
39	0.	0.	0.	0.	0.	0.	0.	0.	0.	4426.	9.	286.	0.	60.	1333.	237.
40	0.	0.	0.	0.	0.	0.	0.	0.	0.	4426.	9.	286.	0.	60.	1333.	237.
41	0.	0.	0.	0.	0.	0.	0.	0.	0.	4426.	9.	286.	0.	60.	1333.	237.
42	0.	0.	0.	0.	0.	0.	0.	0.	0.	4426.	9.	286.	0.	60.	1333.	237.
43	0.	0.	0.	0.	0.	0.	0.	0.	0.	4426.	9.	286.	0.	60.	1333.	237.
44	0.	0.	0.	0.	0.	0.	0.	0.	0.	4426.	9.	286.	0.	60.	1333.	237.
45	0.	0.	0.	0.	0.	0.	2.	0.	2.	4428.	9.	288.	2028.	60.	1333.	236.
46	0.	0.	0.	0.	0.	0.	0.	0.	0.	4428.	7.	288.	0.	60.	1512.	236.
47	0.	0.	0.	0.	0.	0.	2.	0.	2.	4430.	7.	290.	2028.	60.	1512.	235.
48	0.	0.	0.	0.	0.	0.	0.	0.	0.	4430.	5.	290.	0.	60.	1700.	235.
49	0.	0.	0.	0.	0.	0.	0.	0.	0.	4430.	5.	290.	0.	60.	1700.	235.
50	0.	0.	0.	0.	0.	0.	0.	0.	0.	4430.	5.	290.	0.	60.	1700.	235.
51	0.	0.	0.	0.	0.	0.	0.	0.	0.	4430.	5.	290.	0.	60.	1700.	235.
52	0.	0.	0.	0.	0.	0.	0.	0.	0.	4430.	5.	290.	0.	60.	1700.	235.
53	0.	0.	0.	0.	0.	0.	0.	0.	0.	4430.	5.	290.	0.	60.	1700.	235.
54	0.	0.	0.	0.	0.	0.	0.	0.	0.	4430.	5.	290.	0.	60.	1700.	235.
55	0.	0.	0.	0.	0.	0.	0.	0.	0.	4430.	5.	290.	0.	60.	1700.	235.
56	0.	0.	0.	0.	0.	0.	0.	0.	0.	4430.	5.	290.	0.	60.	1700.	235.
57	0.	0.	0.	0.	0.	0.	0.	0.	0.	4430.	5.	290.	0.	60.	1700.	235.
58	0.	0.	0.	0.	0.	0.	5.	0.	5.	4435.	5.	295.	1700.	60.	1700.	233.

Table B15

Plant Height and Stem Spacing at WES Data Collection Point P3-04

WES DATA COLLECTION POINT P3-04, PINA FOREST SITE, PANAMA CANAL ZONE
GEOGRAPHIC COORD LAT 09 DEG 12 MIN 33 SEC N, LONG 79 DEG 59 MIN 10 SEC W
EXPANDED AREA = 1257. SQUARE METERS

PLANT HEIGHT	NUMBER OF STEMS IN EACH HEIGHT CLASS								PLANT HEIGHT TOTAL NUMBER OF STEMS			SPACING OF STEMS (CM)		
(M)	1	2	3	4	5	6	7	8	OF GIVEN HT.	OF GIVEN HT. AND LESS	OF GIVEN HT. AND GREATER	OF GIVEN HT. AND LESS (OMIT HT. 0.1)	OF GIVEN HT.	OF GIVEN HT. AND LESS	OF GIVEN HT. AND GREATER	OF GIVEN HT. AND LESS (OMIT HT. 0.1)
0	2500.	2300.	550.	0.	0.	0.	0.	0.	9350.	9350.	9607.	0.	99.	99.	41.	0.
1	0.	0.	0.	2624.	0.	0.	0.	0.	2624.	7974.	4257.	0.	78.	45.	61.	9.
2	0.	0.	0.	0.	1248.	0.	0.	0.	1248.	9214.	1633.	1248.	114.	42.	99.	114.
3	0.	0.	0.	0.	165.	0.	0.	0.	165.	9379.	393.	1409.	311.	41.	282.	107.
4	0.	0.	0.	0.	62.	0.	0.	0.	62.	9441.	228.	1407.	908.	41.	269.	104.
5	0.	0.	0.	0.	0.	44.	0.	0.	44.	9485.	166.	1911.	603.	41.	310.	103.
6	0.	0.	0.	0.	0.	40.	0.	0.	40.	9525.	122.	1991.	632.	41.	362.	102.
7	0.	0.	0.	0.	0.	10.	0.	0.	10.	9535.	82.	1961.	1265.	41.	442.	101.
8	0.	0.	0.	0.	0.	10.	0.	0.	10.	9545.	72.	1971.	1269.	41.	471.	101.
9	0.	0.	0.	0.	0.	10.	0.	0.	10.	9555.	62.	1981.	1269.	41.	500.	101.
10	0.	0.	0.	0.	0.	5.	0.	0.	5.	9560.	52.	1940.	1789.	41.	555.	100.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	9560.	47.	1940.	0.	41.	583.	100.
12	0.	0.	0.	0.	0.	15.	0.	0.	15.	9575.	47.	1601.	1033.	41.	583.	100.
13	0.	0.	0.	0.	0.	0.	2.	0.	2.	9577.	32.	1603.	2028.	41.	787.	100.
14	0.	0.	0.	0.	0.	0.	4.	0.	4.	9581.	30.	1607.	2000.	41.	730.	100.
15	0.	0.	0.	0.	0.	0.	5.	0.	5.	9586.	26.	1612.	1789.	41.	784.	100.
16	0.	0.	0.	0.	0.	0.	4.	0.	4.	9590.	21.	1616.	2000.	41.	873.	100.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	9590.	17.	1616.	0.	41.	970.	100.
18	0.	0.	0.	0.	0.	0.	2.	0.	2.	9592.	17.	1618.	2028.	41.	970.	99.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	9592.	15.	1618.	0.	41.	1033.	99.
20	0.	0.	0.	0.	0.	0.	5.	0.	5.	9597.	15.	1623.	1789.	41.	1033.	99.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	9597.	10.	1623.	0.	41.	1269.	99.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	9597.	10.	1623.	0.	41.	1269.	99.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	9597.	10.	1623.	0.	41.	1269.	99.
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	9597.	10.	1623.	0.	41.	1269.	99.
25	0.	0.	0.	0.	0.	0.	4.	0.	4.	9601.	10.	1627.	2000.	41.	1269.	99.
26	0.	0.	0.	0.	0.	0.	0.	0.	0.	9601.	6.	1627.	0.	41.	1633.	99.
27	0.	0.	0.	0.	0.	0.	2.	0.	2.	9603.	6.	1629.	2028.	41.	1633.	99.
28	0.	0.	0.	0.	0.	0.	0.	0.	0.	9603.	4.	1629.	0.	41.	2000.	99.
29	0.	0.	0.	0.	0.	0.	0.	0.	0.	9603.	4.	1629.	0.	41.	2000.	99.
30	0.	0.	0.	0.	0.	0.	2.	0.	2.	9605.	4.	1631.	2028.	41.	2000.	99.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	9605.	2.	1631.	0.	41.	2028.	99.
32	0.	0.	0.	0.	0.	0.	0.	0.	0.	9605.	2.	1631.	0.	41.	2028.	99.
33	0.	0.	0.	0.	0.	0.	2.	0.	2.	9607.	2.	1633.	2028.	41.	2028.	99.

(Continued)

Table 315 (Concluded)

STEM DIAM (CM)	NUMBER OF STEMS IN EACH HEIGHT CLASS 1	2	3	4	5	6	7	8	TOTAL NUMBER OF STEMS OF GIVEN DIAM	OF GIVEN DIAM AND LESS	OF GIVEN DIAM AND GREATER	OF GIVEN DIAM AND LESS (OMIT DIAM 1.0)	SPACING OF STEMS (CM) OF GIVEN DIAM	OF GIVEN DIAM AND LESS	OF GIVEN DIAM AND GREATER	OF GIVEN DIAM AND LESS (OMIT DIAM 1.0)
1	2560.	2303.	990.	1344.	1699.	0.	0.	0.	7700.	7700.	9600.	0.	49.	49.	41.	0.
2	0.	0.	0.	1216.	227.	0.	0.	0.	1443.	9232.	1819.	0.	109.	48.	94.	0.
3	0.	0.	0.	64.	124.	0.	0.	0.	188.	9420.	376.	188.	292.	49.	296.	292.
4	0.	0.	0.	0.	21.	64.	0.	0.	85.	9505.	188.	273.	484.	49.	292.	248.
5	0.	0.	0.	0.	0.	19.	0.	0.	19.	9524.	103.	292.	1433.	49.	294.	236.
6	0.	0.	0.	0.	0.	28.	0.	0.	28.	9549.	66.	320.	804.	49.	426.	220.
7	0.	0.	0.	0.	0.	9.	0.	0.	9.	9545.	66.	313.	1700.	49.	409.	220.
8	0.	0.	0.	0.	0.	9.	0.	0.	9.	9558.	63.	318.	1700.	49.	904.	224.
9	0.	0.	0.	0.	0.	4.	0.	0.	4.	9558.	58.	318.	0.	49.	989.	224.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	9558.	58.	318.	0.	49.	989.	224.
11	0.	0.	0.	0.	0.	4.	0.	0.	4.	9555.	58.	323.	1790.	49.	989.	223.
12	0.	0.	0.	0.	0.	10.	2.	0.	12.	9567.	53.	339.	1195.	49.	940.	219.
13	0.	0.	0.	0.	0.	0.	2.	0.	2.	9569.	41.	337.	2020.	49.	689.	218.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	9569.	39.	337.	0.	49.	641.	218.
15	0.	0.	0.	0.	0.	0.	2.	0.	2.	9571.	39.	339.	2020.	49.	641.	217.
16	0.	0.	0.	0.	0.	0.	2.	0.	2.	9573.	37.	341.	2020.	49.	696.	217.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	9573.	35.	341.	0.	49.	676.	217.
18	0.	0.	0.	0.	0.	5.	0.	0.	5.	9578.	35.	344.	1789.	49.	676.	219.
19	0.	0.	0.	0.	0.	0.	2.	0.	2.	9580.	30.	340.	2020.	49.	730.	214.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	9580.	28.	340.	0.	49.	730.	214.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	9580.	28.	340.	0.	49.	734.	214.
22	0.	0.	0.	0.	0.	0.	2.	0.	2.	9582.	28.	338.	2020.	49.	734.	214.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	9582.	28.	338.	0.	49.	734.	214.
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	9582.	28.	338.	0.	49.	734.	214.
25	0.	0.	0.	0.	0.	5.	5.	0.	10.	9592.	26.	348.	1269.	49.	734.	211.
26	0.	0.	0.	0.	0.	0.	2.	0.	2.	9594.	16.	342.	2020.	49.	1089.	210.
27	0.	0.	0.	0.	0.	0.	0.	0.	0.	9594.	14.	342.	0.	49.	1960.	210.
28	0.	0.	0.	0.	0.	0.	0.	0.	0.	9594.	14.	342.	0.	49.	1960.	210.
29	0.	0.	0.	0.	0.	0.	0.	0.	0.	9594.	14.	342.	0.	49.	1960.	210.
30	0.	0.	0.	0.	0.	0.	2.	0.	2.	9596.	14.	344.	2020.	49.	1960.	210.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	9596.	12.	344.	0.	49.	1199.	210.
32	0.	0.	0.	0.	0.	0.	0.	0.	0.	9596.	12.	344.	0.	49.	1199.	210.
33	0.	0.	0.	0.	0.	0.	0.	0.	0.	9596.	12.	344.	0.	49.	1199.	210.
34	0.	0.	0.	0.	0.	0.	0.	0.	0.	9596.	12.	344.	0.	49.	1199.	210.
35	0.	0.	0.	0.	0.	0.	2.	0.	2.	9598.	12.	346.	2020.	49.	1199.	209.
36	0.	0.	0.	0.	0.	0.	0.	0.	0.	9598.	10.	346.	0.	49.	1769.	209.
37	0.	0.	0.	0.	0.	0.	0.	0.	0.	9598.	10.	346.	0.	49.	1769.	209.
38	0.	0.	0.	0.	0.	0.	0.	0.	0.	9598.	10.	346.	0.	49.	1769.	209.
39	0.	0.	0.	0.	0.	0.	0.	0.	0.	9598.	10.	346.	0.	49.	1769.	209.
40	0.	0.	0.	0.	0.	0.	2.	0.	2.	9600.	10.	348.	2020.	49.	1769.	209.
41	0.	0.	0.	0.	0.	0.	0.	0.	0.	9600.	8.	348.	0.	49.	1414.	209.
42	0.	0.	0.	0.	0.	0.	0.	0.	0.	9600.	8.	348.	0.	49.	1414.	209.
43	0.	0.	0.	0.	0.	0.	0.	0.	0.	9600.	8.	348.	0.	49.	1414.	209.
44	0.	0.	0.	0.	0.	0.	0.	0.	0.	9600.	8.	348.	0.	49.	1414.	209.
45	0.	0.	0.	0.	0.	4.	4.	0.	8.	9604.	8.	372.	2020.	49.	1414.	207.
46	0.	0.	0.	0.	0.	0.	0.	0.	0.	9604.	4.	372.	0.	49.	2020.	207.
47	0.	0.	0.	0.	0.	0.	0.	0.	0.	9604.	4.	372.	0.	49.	2020.	207.
48	0.	0.	0.	0.	0.	0.	0.	0.	0.	9604.	4.	372.	0.	49.	2020.	207.
49	0.	0.	0.	0.	0.	0.	0.	0.	0.	9604.	4.	372.	0.	49.	2020.	207.
50	0.	0.	0.	0.	0.	0.	0.	0.	0.	9604.	4.	372.	0.	49.	2020.	207.
51	0.	0.	0.	0.	0.	0.	0.	0.	0.	9604.	4.	372.	0.	49.	2020.	207.
52	0.	0.	0.	0.	0.	0.	0.	0.	0.	9604.	4.	372.	0.	49.	2020.	207.
53	0.	0.	0.	0.	0.	0.	0.	0.	0.	9604.	4.	372.	0.	49.	2020.	207.
54	0.	0.	0.	0.	0.	0.	0.	0.	0.	9604.	4.	372.	0.	49.	2020.	207.
55	0.	0.	0.	0.	0.	0.	0.	0.	0.	9604.	4.	372.	0.	49.	2020.	207.
56	0.	0.	0.	0.	0.	0.	0.	0.	0.	9604.	4.	372.	0.	49.	2020.	207.
57	0.	0.	0.	0.	0.	0.	0.	0.	0.	9604.	4.	372.	0.	49.	2020.	207.
58	0.	0.	0.	0.	0.	0.	4.	0.	4.	9608.	4.	396.	2020.	49.	2020.	206.

Table B16

Plant Height and Stem Spacing at WES Data Collection Point P4-01

WES DATA COLLECTION POINT P4-01, BALBOA FOREST SITE, PANAMA CANAL ZONE
GEOGRAPHIC COORD LAT 09 DEG 04 MIN 17 SEC N,LONG 079 DEG 44 MIN 22 SEC W
EXPANDED AREA = 1257. SQUARE METERS

	NUMBER OF STEMS IN EACH HEIGHT CLASS							PLANT HEIGHT	TOTAL NUMBER OF STEMS				SPACING OF STEMS (CM)			
PLANT HEIGHT (M)	1	2	3	4	5	6	7	8	OF GIVEN HT.	OF GIVEN HT. AND LESS	OF GIVEN HT. AND GREATER	OF GIVEN HT. AND LESS(OMIT HT. 0.1)	OF GIVEN HT.	OF GIVEN HT. AND LESS	OF GIVEN HT. AND GREATER	OF GIVEN HT. AND LESS (OMIT HT. 0.1)
0	0.	978.	979.	0.	0.	0.	0.	0.	1993.	1993.	9660.	0.	102.	102.	93.	0.
1	0.	3.	0.	3244.	0.	0.	0.	0.	3244.	4797.	4107.	0.	79.	98.	82.	0.
2	0.	0.	0.	0.	246.	0.	0.	0.	246.	5043.	863.	246.	299.	96.	156.	299.
3	0.	0.	0.	0.	340.	0.	0.	0.	340.	5383.	617.	586.	217.	99.	161.	169.
4	0.	3.	0.	0.	97.	0.	0.	0.	97.	5440.	277.	623.	539.	94.	240.	190.
5	0.	0.	0.	0.	0.	23.	0.	0.	23.	5463.	220.	660.	834.	94.	270.	159.
6	0.	0.	0.	0.	0.	93.	0.	0.	93.	5516.	197.	719.	540.	94.	289.	149.
7	0.	3.	0.	0.	0.	30.	0.	0.	30.	5546.	144.	749.	739.	94.	333.	146.
8	0.	0.	0.	0.	0.	30.	0.	0.	30.	5576.	114.	779.	739.	94.	379.	143.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	5576.	84.	779.	0.	94.	436.	143.
10	0.	3.	0.	0.	0.	23.	0.	0.	23.	5599.	84.	802.	834.	93.	436.	141.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	5599.	61.	802.	0.	93.	512.	141.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	5599.	61.	802.	0.	93.	512.	141.
13	0.	0.	0.	0.	0.	0.	9.	0.	9.	5608.	61.	811.	1333.	93.	512.	140.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	5608.	52.	811.	0.	93.	599.	140.
15	0.	0.	0.	0.	0.	0.	9.	0.	9.	5617.	52.	820.	1333.	93.	599.	140.
16	0.	0.	0.	0.	0.	0.	22.	0.	22.	5639.	43.	842.	853.	93.	610.	138.
17	0.	0.	0.	0.	0.	0.	4.	0.	4.	5643.	21.	846.	2000.	93.	873.	138.
18	0.	0.	0.	0.	0.	0.	4.	0.	4.	5647.	17.	850.	2000.	93.	970.	137.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	5647.	13.	850.	0.	93.	1109.	137.
20	0.	0.	0.	0.	0.	0.	9.	0.	9.	5656.	13.	859.	1333.	93.	1109.	136.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	5656.	4.	859.	0.	93.	2000.	136.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	5656.	4.	859.	0.	93.	2000.	136.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	5656.	4.	859.	0.	93.	2000.	136.
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	5656.	4.	859.	0.	93.	2000.	136.
25	0.	0.	0.	0.	0.	0.	4.	0.	4.	5660.	4.	863.	2000.	93.	2000.	136.

(Continued)

Table F16 (Concluded)

STEM DIAM (CM)	NUMBER OF STEMS IN EACH HEIGHT CLASS								STEM DIAMETER TOTAL NUMBER OF STEMS			SPACING OF STEMS (CM)			
	1	2	3	4	5	6	7	8	OF GIVEN DIAM	OF GIVEN DIAM AND LESS	OF GIVEN DIAM AND GREATER	OF GIVEN DIAM AND LESS (UNIT DIAM 1.2)	OF GIVEN DIAM	OF GIVEN DIAM AND LESS	OF GIVEN DIAM AND GREATER	OF GIVEN DIAM AND LESS (UNIT DIAM 1.2)
1	0.	970.	575.	3244.	227.	0.	0.	0.	5024.	9824.	9607.	0.	96.	96.	53.	0.
2	0.	0.	0.	0.	246.	0.	0.	0.	246.	9578.	633.	0.	295.	99.	150.	0.
3	0.	0.	0.	0.	99.	19.	0.	0.	118.	9388.	387.	178.	301.	99.	203.	301.
4	0.	0.	0.	0.	71.	93.	0.	0.	120.	9980.	277.	230.	395.	94.	240.	299.
5	0.	0.	0.	0.	0.	49.	0.	0.	49.	9954.	148.	284.	598.	94.	329.	237.
6	0.	0.	0.	0.	0.	19.	0.	0.	19.	9969.	108.	299.	1033.	94.	394.	231.
7	0.	0.	0.	0.	0.	19.	4.	0.	19.	9588.	88.	318.	910.	94.	426.	224.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	9588.	69.	318.	0.	94.	482.	224.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	9588.	69.	318.	0.	94.	482.	224.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	9588.	69.	318.	0.	94.	482.	224.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	9588.	69.	318.	0.	94.	482.	224.
12	0.	0.	0.	0.	0.	0.	9.	0.	9.	9597.	69.	327.	1333.	93.	482.	221.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	9597.	60.	327.	0.	93.	516.	221.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	9597.	60.	327.	0.	93.	516.	221.
15	0.	0.	0.	0.	0.	19.	4.	0.	19.	9616.	60.	346.	910.	93.	516.	219.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	9616.	41.	346.	0.	93.	629.	215.
17	0.	0.	0.	0.	0.	0.	4.	0.	4.	9620.	41.	350.	2000.	93.	629.	214.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	9620.	37.	350.	0.	93.	650.	214.
19	0.	0.	0.	0.	0.	0.	4.	0.	4.	9624.	37.	344.	2000.	93.	650.	213.
20	0.	0.	0.	0.	0.	0.	4.	0.	4.	9628.	33.	350.	2000.	93.	694.	211.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	9628.	29.	350.	0.	93.	743.	211.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	9628.	29.	350.	0.	93.	743.	211.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	9628.	29.	350.	0.	93.	743.	211.
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	9628.	29.	350.	0.	93.	743.	211.
25	0.	0.	0.	0.	0.	0.	0.	0.	0.	9628.	29.	350.	0.	93.	743.	211.
26	0.	0.	0.	0.	0.	0.	13.	0.	13.	9641.	29.	371.	1110.	93.	743.	208.
27	0.	0.	0.	0.	0.	0.	4.	0.	4.	9645.	16.	375.	2000.	93.	1088.	207.
28	0.	0.	0.	0.	0.	0.	4.	0.	4.	9649.	12.	379.	2000.	93.	1199.	205.
29	0.	0.	0.	0.	0.	0.	0.	0.	0.	9649.	8.	379.	0.	93.	1414.	205.
30	0.	0.	0.	0.	0.	0.	4.	0.	4.	9653.	8.	383.	2000.	93.	1414.	204.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	9653.	4.	383.	0.	93.	2000.	204.
32	0.	0.	0.	0.	0.	0.	0.	0.	0.	9653.	4.	383.	0.	93.	2000.	204.
33	0.	0.	0.	0.	0.	0.	0.	0.	0.	9653.	4.	383.	0.	93.	2000.	204.
34	0.	0.	0.	0.	0.	0.	0.	0.	0.	9653.	4.	383.	0.	93.	2000.	204.
35	0.	0.	0.	0.	0.	0.	0.	0.	0.	9653.	4.	383.	0.	93.	2000.	204.
36	0.	0.	0.	0.	0.	0.	0.	0.	0.	9653.	4.	383.	0.	93.	2000.	204.
37	0.	0.	0.	0.	0.	0.	0.	0.	0.	9653.	4.	383.	0.	93.	2000.	204.
38	0.	0.	0.	0.	0.	0.	0.	0.	0.	9653.	4.	383.	0.	93.	2000.	204.
39	0.	0.	0.	0.	0.	0.	0.	0.	0.	9653.	4.	383.	0.	93.	2000.	204.
40	0.	0.	0.	0.	0.	0.	0.	0.	0.	9653.	4.	383.	0.	93.	2000.	204.
41	0.	0.	0.	0.	0.	0.	0.	0.	0.	9653.	4.	383.	0.	93.	2000.	204.
42	0.	0.	0.	0.	0.	0.	0.	0.	0.	9653.	4.	383.	0.	93.	2000.	204.
43	0.	0.	0.	0.	0.	0.	0.	0.	0.	9653.	4.	383.	0.	93.	2000.	204.
44	0.	0.	0.	0.	0.	0.	0.	0.	0.	9653.	4.	383.	0.	93.	2000.	204.
45	0.	0.	0.	0.	0.	0.	0.	4.	0.	4.	9657.	4.	387.	2000.	93.	2000.	203.

Table B17

Plant Height and Stem Spacing at WES Data Collection Point P4-06

WES DATA COLLECTION POINT P4-06, BALBOA FOREST SITE, PANAMA CANAL ZONE
GEOGRAPHIC COORD LAT 09 DEG 04 MIN 10 SEC N,LONG 079 DEG 44 MIN 23 SEC W
EXPANDED AREA = 1257. SQUARE METERS

PLANT HEIGHT (M)	NUMBER OF STEMS IN EACH HEIGHT CLASS 1	2	3	4	5	6	7	8	PLANT HEIGHT OF GIVEN HT.	TOTAL NUMBER OF STEMS OF GIVEN HT. AND LESS	OF GIVEN HT. AND GREATER	SPACING OF STEMS (CM) OF GIVEN HT. AND LESS(OMIT HT. 0.1)	OF GIVEN HT.	OF GIVEN HT. AND LESS	OF GIVEN HT. AND GREATER	OF GIVEN HT. AND LESS (OMIT HT- 0.1)
0	0.	3911.	686.	0.	0.	0.	0.	0.	4597.	4597.	5670.	0.	59.	59.	53.	0.
1	0.	0.	0.	417.	0.	0.	0.	0.	417.	5014.	1001.	0.	196.	96.	122.	0.
2	0.	0.	0.	0.	173.	0.	0.	0.	173.	5187.	664.	173.	306.	75.	159.	384.
3	0.	0.	0.	0.	110.	0.	0.	0.	110.	5297.	491.	283.	381.	59.	181.	238.
4	0.	0.	0.	0.	94.	0.	0.	0.	94.	5391.	381.	377.	413.	54.	205.	206.
5	0.	0.	0.	0.	0.	78.	0.	0.	78.	5469.	287.	455.	453.	54.	236.	188.
6	0.	0.	0.	0.	0.	44.	0.	0.	44.	5513.	209.	499.	693.	54.	277.	179.
7	0.	0.	0.	0.	0.	33.	0.	0.	33.	5546.	165.	542.	696.	54.	311.	173.
8	0.	0.	0.	0.	0.	11.	0.	0.	11.	5557.	132.	923.	1206.	54.	340.	172.
9	0.	0.	0.	0.	0.	11.	0.	0.	11.	5568.	121.	944.	1206.	54.	364.	170.
10	0.	0.	0.	0.	0.	33.	0.	0.	33.	5601.	110.	947.	696.	53.	381.	165.
11	0.	0.	0.	0.	0.	22.	0.	0.	22.	5623.	77.	689.	893.	53.	456.	162.
12	0.	0.	0.	0.	0.	11.	0.	0.	11.	5634.	55.	698.	1206.	53.	539.	161.
13	0.	0.	0.	0.	0.	0.	3.	0.	3.	5637.	44.	623.	2309.	53.	603.	160.
14	0.	0.	0.	0.	0.	0.	11.	0.	11.	5648.	41.	634.	1206.	53.	629.	159.
15	0.	0.	0.	0.	0.	0.	8.	0.	8.	5656.	30.	642.	1414.	53.	730.	158.
16	0.	0.	0.	0.	0.	0.	8.	0.	3.	5664.	22.	650.	1414.	53.	853.	157.
17	0.	0.	0.	0.	0.	0.	5.	0.	5.	5669.	14.	655.	1789.	53.	1069.	156.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	5669.	9.	655.	0.	53.	1333.	156.
19	0.	0.	0.	0.	0.	0.	3.	0.	3.	5672.	9.	658.	2309.	53.	1333.	156.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	5672.	6.	658.	0.	53.	1633.	156.
21	0.	0.	0.	0.	0.	0.	3.	0.	3.	5675.	6.	661.	2309.	53.	1633.	156.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	5675.	3.	661.	0.	53.	2309.	156.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	5675.	3.	661.	0.	53.	2309.	156.
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	5675.	3.	661.	0.	53.	2309.	156.
25	0.	0.	0.	0.	0.	0.	3.	0.	3.	5678.	3.	664.	2309.	53.	2309.	155.

(Continued)

Table B17 (Concluded)

STEM DIAM (CM)	NUMBER OF STEMS IN EACH HEIGHT CLASS								TOTAL NUMBER OF STEMS				SPACING OF STEMS (CM)			
	1	2	3	4	5	6	7	8	OF GIVEN DIAM	OF GIVEN DIAM AND LESS	OF GIVEN DIAM AND GREATER	OF GIVEN DIAM AND LESS (UNIT DIAM 1.2)	OF GIVEN DIAM	OF GIVEN DIAM AND LESS	OF GIVEN DIAM AND GREATER	OF GIVEN DIAM AND LESS (UNIT DIAM 1.2)
STEM DIAMETER																
1	0.	3911.	686.	191.	78.	0.	0.	0.	4866.	4866.	9674.	0.	97.	97.	98.	0.
2	0.	0.	0.	0.	188.	0.	0.	0.	188.	5054.	888.	0.	292.	96.	141.	0.
3	0.	0.	0.	0.	94.	11.	0.	0.	105.	5159.	620.	105.	306.	96.	101.	300.
4	0.	0.	0.	17.	16.	78.	0.	0.	111.	5270.	519.	210.	388.	98.	176.	272.
5	0.	0.	0.	0.	0.	44.	0.	0.	44.	5314.	404.	240.	403.	98.	199.	240.
6	0.	0.	0.	208.	0.	33.	0.	0.	241.	5555.	360.	901.	250.	96.	211.	170.
7	0.	0.	0.	0.	0.	11.	0.	0.	11.	5566.	119.	912.	1206.	96.	367.	177.
8	0.	0.	0.	0.	0.	33.	0.	0.	33.	5599.	108.	945.	696.	93.	305.	171.
9	0.	0.	0.	0.	0.	11.	5.	0.	16.	5615.	75.	961.	1988.	93.	462.	169.
10	0.	0.	0.	0.	0.	22.	0.	0.	22.	5637.	59.	983.	853.	93.	521.	166.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	5637.	37.	983.	0.	93.	650.	166.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	5637.	37.	983.	0.	93.	650.	166.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	5645.	37.	991.	1414.	93.	650.	165.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	5645.	29.	991.	0.	93.	743.	165.
15	0.	0.	0.	0.	0.	0.	5.	0.	5.	5650.	29.	996.	1789.	93.	743.	164.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	5650.	24.	996.	0.	93.	816.	164.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	5650.	24.	996.	0.	93.	816.	164.
18	0.	0.	0.	0.	0.	0.	3.	0.	3.	5653.	24.	999.	2389.	93.	816.	163.
19	0.	0.	0.	0.	0.	0.	5.	0.	5.	5658.	21.	684.	1789.	93.	873.	163.
20	0.	0.	0.	0.	0.	0.	5.	0.	5.	5663.	16.	689.	1789.	93.	1000.	162.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	5663.	11.	689.	0.	93.	1206.	162.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	5663.	11.	689.	0.	93.	1206.	162.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	5663.	11.	689.	0.	93.	1206.	162.
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	5663.	11.	689.	0.	93.	1206.	162.
25	0.	0.	0.	0.	0.	0.	3.	0.	3.	5666.	11.	692.	2389.	93.	1206.	162.
26	0.	0.	0.	0.	0.	0.	0.	0.	0.	5666.	8.	692.	0.	93.	1414.	162.
27	0.	0.	0.	0.	0.	0.	0.	0.	0.	5666.	8.	692.	0.	93.	1414.	162.
28	0.	0.	0.	0.	0.	0.	0.	0.	0.	5666.	8.	692.	0.	93.	1414.	162.
29	0.	0.	0.	0.	0.	0.	0.	0.	0.	5666.	8.	692.	0.	93.	1414.	162.
30	0.	0.	0.	0.	0.	0.	0.	0.	0.	5666.	8.	692.	0.	93.	1414.	162.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	5666.	8.	692.	0.	93.	1414.	162.
32	0.	0.	0.	0.	0.	0.	0.	0.	0.	5666.	8.	692.	0.	93.	1414.	162.
33	0.	0.	0.	0.	0.	0.	0.	0.	0.	5666.	8.	692.	0.	93.	1414.	162.
34	0.	0.	0.	0.	0.	0.	0.	0.	0.	5666.	8.	692.	0.	93.	1414.	162.
35	0.	0.	0.	0.	0.	0.	0.	0.	0.	5666.	8.	692.	0.	93.	1414.	162.
36	0.	0.	0.	0.	0.	0.	0.	0.	0.	5666.	8.	692.	0.	93.	1414.	162.
37	0.	0.	0.	0.	0.	0.	0.	0.	0.	5666.	8.	692.	0.	93.	1414.	162.
38	0.	0.	0.	0.	0.	0.	0.	0.	0.	5666.	8.	692.	0.	93.	1414.	162.
39	0.	0.	0.	0.	0.	0.	0.	0.	0.	5666.	8.	692.	0.	93.	1414.	162.
40	0.	0.	0.	0.	0.	0.	0.	0.	0.	5666.	8.	692.	0.	93.	1414.	162.
41	0.	0.	0.	0.	0.	0.	0.	0.	0.	5666.	8.	692.	0.	93.	1414.	162.
42	0.	0.	0.	0.	0.	0.	0.	0.	0.	5666.	8.	692.	0.	93.	1414.	162.
43	0.	0.	0.	0.	0.	0.	0.	0.	0.	5666.	8.	692.	0.	93.	1414.	162.
44	0.	0.	0.	0.	0.	0.	0.	0.	0.	5666.	8.	692.	0.	93.	1414.	162.
45	0.	0.	0.	0.	0.	0.	0.	0.	0.	5666.	8.	692.	0.	93.	1414.	162.
46	0.	0.	0.	0.	0.	0.	3.	0.	3.	5669.	8.	695.	2389.	93.	1414.	161.
47	0.	0.	0.	0.	0.	0.	0.	0.	0.	5669.	5.	695.	0.	93.	1789.	161.
48	0.	0.	0.	0.	0.	0.	0.	0.	0.	5669.	5.	695.	0.	93.	1789.	161.
49	0.	0.	0.	0.	0.	0.	0.	0.	0.	5669.	5.	695.	0.	93.	1789.	161.
50	0.	0.	0.	0.	0.	0.	0.	0.	0.	5669.	5.	695.	0.	93.	1789.	161.
51	0.	0.	0.	0.	0.	0.	0.	0.	0.	5669.	5.	695.	0.	93.	1789.	161.
52	0.	0.	0.	0.	0.	0.	0.	0.	0.	5669.	5.	695.	0.	93.	1789.	161.
53	0.	0.	0.	0.	0.	0.	0.	0.	0.	5669.	5.	695.	0.	93.	1789.	161.
54	0.	0.	0.	0.	0.	0.	0.	0.	0.	5669.	5.	695.	0.	93.	1789.	161.
55	0.	0.	0.	0.	0.	0.	0.	0.	0.	5669.	5.	695.	0.	93.	1789.	161.
56	0.	0.	0.	0.	0.	0.	0.	0.	0.	5669.	5.	695.	0.	93.	1789.	161.
57	0.	0.	0.	0.	0.	0.	0.	0.	0.	5669.	5.	695.	0.	93.	1789.	161.
58	0.	0.	0.	0.	0.	0.	5.	0.	5.	5674.	5.	698.	1789.	93.	1789.	161.

Table B18

Plant Height and Stem Spacing at MBB Data Collection Point P4-07

MBB DATA COLLECTION POINT P4-07, BALBOA FOREST SITE, PANAMA CANAL ZONE
GEOGRAPHIC COORD LAT 09 DEG 04 MIN 17 SEC N,LONG 079 DEG 44 MIN 23 SEC W
EXPANDED AREA = 1257. SQUARE METERS

PLANT HEIGHT

PLANT HEIGHT (M)	NUMBER OF STEMS IN EACH HEIGHT CLASS 1	2	3	4	5	6	7	8	TOTAL NUMBER OF STEMS OF GIVEN HT.	OF GIVEN HT. AND LESS	OF GIVEN HT. AND GREATER	SPACING OF STEMS (CM) OF GIVEN HT. AND LESS(OMIT HT. 0.1)	OF GIVEN HT.	OF GIVEN HT. AND LESS	OF GIVEN HT. AND GREATER	OF GIVEN HT. AND LESS (OMIT HT. 0.1)
0	2206.	978.	1302.	0.	0.	0.	0.	0.	4486.	4486.	5486.	0.	60.	60.	93.	0.
1	0.	0.	0.	997.	0.	0.	0.	0.	997.	5977.	1146.	0.	104.	94.	110.	0.
2	0.	0.	0.	0.	296.	0.	0.	0.	296.	6333.	949.	296.	290.	95.	171.	290.
3	0.	0.	0.	0.	99.	0.	0.	0.	99.	6432.	793.	345.	426.	94.	234.	219.
4	0.	0.	0.	0.	44.	0.	0.	0.	44.	6466.	284.	389.	603.	94.	288.	283.
5	0.	0.	0.	0.	0.	10.	0.	0.	10.	6476.	166.	399.	1269.	94.	316.	288.
6	0.	0.	0.	0.	0.	35.	0.	0.	35.	6511.	159.	434.	676.	94.	327.	192.
7	0.	0.	0.	0.	0.	19.	0.	0.	19.	6986.	115.	449.	1633.	94.	373.	189.
8	0.	0.	0.	0.	0.	15.	0.	0.	15.	6541.	100.	444.	1633.	94.	400.	186.
9	0.	0.	0.	0.	0.	29.	0.	0.	29.	6564.	69.	489.	600.	94.	434.	181.
10	0.	0.	0.	0.	0.	10.	0.	0.	10.	6576.	60.	499.	1269.	94.	516.	179.
11	0.	0.	0.	0.	0.	9.	0.	0.	9.	6581.	50.	504.	1700.	94.	564.	178.
12	0.	0.	0.	0.	0.	9.	0.	0.	9.	6586.	40.	509.	1700.	94.	596.	177.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	6586.	40.	509.	0.	94.	632.	177.
14	0.	0.	0.	0.	0.	0.	10.	0.	10.	6596.	40.	519.	1269.	93.	632.	176.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	6596.	30.	519.	0.	93.	730.	176.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	6596.	30.	519.	0.	93.	730.	176.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	6604.	30.	527.	1414.	93.	730.	174.
18	0.	0.	0.	0.	0.	0.	2.	0.	2.	6606.	22.	529.	2020.	93.	853.	174.
19	0.	0.	0.	0.	0.	0.	4.	0.	4.	6612.	20.	535.	1633.	93.	894.	173.
20	0.	0.	0.	0.	0.	0.	2.	0.	2.	6614.	14.	537.	2020.	93.	1169.	173.
21	0.	0.	0.	0.	0.	0.	2.	0.	2.	6616.	12.	539.	2020.	93.	1197.	172.
22	0.	0.	0.	0.	0.	0.	2.	0.	2.	6618.	10.	541.	2020.	93.	1269.	172.
23	0.	0.	0.	0.	0.	0.	2.	0.	2.	6620.	8.	543.	2020.	93.	1414.	172.
24	0.	0.	0.	0.	0.	0.	2.	0.	2.	6622.	6.	545.	2020.	93.	1633.	171.
25	0.	0.	0.	0.	0.	0.	0.	0.	0.	6622.	4.	545.	0.	93.	2000.	171.
26	0.	0.	0.	0.	0.	0.	0.	0.	0.	6622.	4.	545.	0.	93.	2000.	171.
27	0.	0.	0.	0.	0.	0.	2.	0.	2.	6624.	4.	547.	2020.	93.	2000.	171.
28	0.	0.	0.	0.	0.	0.	2.	0.	2.	6626.	2.	549.	2020.	93.	2000.	171.

(Continued)

Table 318 (Concluded)

STEM DIAM (CM)	NUMBER OF STEMS IN EACH HEIGHT CLASS: 1	2	3	4	5	6	7	8	TOTAL NUMBER OF STEMS: OF GIVEN DIAM	OF GIVEN DIAM AND LESS	OF GIVEN DIAM AND GREATER	SPACING OF STEMS (CM): OF GIVEN DIAM AND LESS THAN DIAM 1.2	OF GIVEN DIAM	OF GIVEN DIAM AND LESS	OF GIVEN DIAM AND GREATER	OF GIVEN DIAM AND LESS THAN DIAM 1.2
1	2289.	978.	1302.	398.	22.	0.	0.	0.	4989.	4989.	9429.	0.	97.	97.	98.	0.
2	0.	0.	0.	114.	233.	0.	0.	0.	347.	9847.	7289.	0.	219.	99.	149.	0.
3	0.	0.	0.	69.	108.	9.	0.	0.	190.	9637.	378.	108.	290.	94.	206.	298.
4	0.	0.	0.	0.	33.	10.	0.	0.	43.	9480.	188.	233.	613.	94.	208.	262.
5	0.	0.	0.	0.	0.	39.	0.	0.	39.	9919.	149.	268.	676.	94.	330.	244.
6	0.	0.	0.	0.	0.	9.	0.	0.	9.	9920.	110.	278.	1700.	94.	301.	242.
7	0.	0.	0.	0.	0.	9.	0.	0.	9.	9929.	109.	278.	1700.	94.	398.	240.
8	0.	0.	0.	0.	0.	10.	0.	0.	10.	9939.	100.	288.	1265.	94.	488.	236.
9	0.	0.	0.	0.	0.	10.	0.	0.	10.	9950.	90.	303.	1133.	94.	422.	230.
10	0.	0.	0.	0.	0.	10.	0.	0.	10.	9960.	79.	318.	1269.	94.	462.	226.
11	0.	0.	0.	0.	0.	9.	2.	0.	7.	9967.	69.	329.	1912.	94.	496.	224.
12	0.	0.	0.	0.	0.	9.	0.	0.	9.	9972.	58.	329.	1700.	94.	529.	222.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	9972.	53.	329.	0.	94.	549.	222.
14	0.	0.	0.	0.	0.	0.	2.	0.	2.	9974.	53.	327.	2020.	94.	549.	221.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	9974.	51.	327.	0.	94.	560.	221.
16	0.	0.	0.	0.	0.	0.	2.	0.	2.	9976.	51.	329.	2020.	94.	560.	221.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	9976.	49.	329.	0.	94.	571.	221.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	9976.	49.	329.	0.	94.	571.	221.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	9976.	49.	329.	0.	94.	571.	221.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	9976.	49.	329.	0.	94.	571.	221.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	9976.	49.	329.	0.	94.	571.	221.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	9976.	49.	329.	0.	94.	571.	221.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	9976.	49.	329.	0.	94.	571.	221.
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	9976.	49.	329.	0.	94.	571.	221.
25	0.	0.	0.	0.	0.	0.	0.	0.	0.	9976.	49.	329.	0.	94.	571.	221.
26	0.	0.	0.	0.	0.	0.	0.	0.	0.	9976.	49.	329.	0.	94.	571.	221.
27	0.	0.	0.	0.	0.	0.	2.	0.	2.	9983.	49.	336.	1912.	94.	571.	218.
28	0.	0.	0.	0.	0.	0.	0.	0.	0.	9983.	42.	341.	1700.	94.	617.	217.
29	0.	0.	0.	0.	0.	0.	2.	0.	2.	9990.	37.	343.	2020.	94.	650.	216.
30	0.	0.	0.	0.	0.	0.	0.	0.	0.	9990.	39.	343.	0.	94.	676.	216.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	9990.	39.	343.	0.	94.	676.	216.
32	0.	0.	0.	0.	0.	0.	2.	0.	2.	9992.	35.	349.	2020.	93.	676.	215.
33	0.	0.	0.	0.	0.	0.	0.	0.	0.	9997.	33.	350.	1700.	93.	696.	214.
34	0.	0.	0.	0.	0.	0.	0.	0.	0.	9997.	28.	350.	0.	93.	736.	214.
35	0.	0.	0.	0.	0.	0.	0.	0.	0.	9997.	28.	350.	0.	93.	736.	214.
36	0.	0.	0.	0.	0.	0.	2.	0.	2.	9999.	28.	348.	2020.	93.	736.	213.
37	0.	0.	0.	0.	0.	0.	2.	0.	2.	9401.	26.	354.	2020.	93.	784.	213.
38	0.	0.	0.	0.	0.	0.	0.	0.	0.	9401.	24.	344.	0.	93.	816.	213.
39	0.	0.	0.	0.	0.	0.	10.	0.	10.	9411.	24.	344.	1269.	93.	816.	210.
40	0.	0.	0.	0.	0.	0.	0.	0.	0.	9411.	14.	344.	0.	93.	1069.	210.
41	0.	0.	0.	0.	0.	0.	2.	0.	2.	9413.	14.	346.	2020.	93.	1069.	209.
42	0.	0.	0.	0.	0.	0.	2.	0.	2.	9415.	12.	348.	2020.	93.	1199.	209.
43	0.	0.	0.	0.	0.	0.	0.	0.	0.	9415.	10.	348.	0.	93.	1269.	209.
44	0.	0.	0.	0.	0.	0.	0.	0.	0.	9415.	10.	348.	0.	93.	1269.	209.
45	0.	0.	0.	0.	0.	0.	2.	0.	2.	9417.	10.	378.	2020.	93.	1269.	208.
46	0.	0.	0.	0.	0.	0.	2.	0.	2.	9419.	8.	378.	2020.	93.	1414.	207.
47	0.	0.	0.	0.	0.	0.	0.	0.	0.	9419.	6.	378.	0.	93.	1633.	207.
48	0.	0.	0.	0.	0.	0.	0.	0.	0.	9419.	6.	378.	0.	93.	1633.	207.
49	0.	0.	0.	0.	0.	0.	0.	0.	0.	9419.	6.	378.	0.	93.	1633.	207.
50	0.	0.	0.	0.	0.	0.	0.	0.	0.	9419.	6.	378.	0.	93.	1633.	207.
51	0.	0.	0.	0.	0.	0.	0.	0.	0.	9419.	6.	378.	0.	93.	1633.	207.
52	0.	0.	0.	0.	0.	0.	2.	0.	2.	9421.	6.	376.	2020.	93.	1633.	207.
53	0.	0.	0.	0.	0.	0.	0.	0.	0.	9421.	4.	376.	0.	93.	2088.	207.
54	0.	0.	0.	0.	0.	0.	0.	0.	0.	9421.	4.	376.	0.	93.	2088.	207.
55	0.	0.	0.	0.	0.	0.	0.	0.	0.	9421.	4.	376.	0.	93.	2088.	207.
56	0.	0.	0.	0.	0.	0.	0.	0.	0.	9421.	4.	376.	0.	93.	2088.	207.
57	0.	0.	0.	0.	0.	0.	0.	0.	0.	9421.	4.	376.	0.	93.	2088.	207.
58	0.	0.	0.	0.	0.	0.	4.	0.	4.	9429.	4.	378.	2020.	93.	2088.	206.

Table B19

Plant Height and Stem Spacing at WES Data Collection Point V0450

WES DATA COLLECTION POINT V0450, PRAN BURI FOREST SITE, THAILAND
GEOGRAPHIC COORD LAT 12 DEG 29 MIN 53 SEC N, LONG 99 DEG 46 MIN 23 SEC E
EXPANDED AREA = 1297. SQUARE METERS

PLANT HEIGHT

PLANT HEIGHT (M)	NUMBER OF STEMS IN EACH HEIGHT CLASS 1	2	3	4	5	6	7	8	TOTAL NUMBER OF STEMS OF GIVEN HT.	OF GIVEN HT. AND LESS	OF GIVEN HT. AND GREATER	OF GIVEN HT. AND LESS (OMIT HT. 0.1)	SPACING OF STEMS (CM) OF GIVEN HT.	OF GIVEN HT. AND LESS	OF GIVEN HT. AND GREATER	OF GIVEN HT. AND LESS (OMIT HT. 0.1)
0	0.	0.	4132.	0.	0.	0.	0.	0.	4132.	4132.	8327.	0.	62.	62.	44.	0
1	0.	0.	0.	2995.	0.	0.	0.	0.	2995.	7091.	4195.	0.	74.	48.	42.	0.
2	0.	0.	0.	0.	704.	0.	0.	0.	704.	7795.	1236.	704.	191.	45.	114.	191.
3	0.	0.	0.	0.	128.	0.	0.	0.	128.	7923.	532.	832.	354.	45.	173.	139.
4	0.	0.	0.	0.	32.	0.	0.	0.	32.	7955.	404.	864.	707.	45.	199.	136.
5	0.	0.	0.	0.	0.	4.	0.	0.	4.	7959.	372.	868.	2400.	45.	207.	136.
6	0.	0.	0.	0.	0.	32.	0.	0.	32.	7991.	368.	900.	707.	45.	209.	133.
7	0.	0.	0.	0.	0.	16.	0.	0.	16.	8007.	336.	916.	1000.	45.	218.	132.
8	0.	0.	0.	0.	0.	12.	0.	0.	12.	8019.	320.	928.	1155.	45.	224.	131.
9	0.	0.	0.	0.	0.	44.	0.	0.	44.	8063.	308.	972.	603.	45.	228.	128.
10	0.	0.	0.	0.	0.	112.	0.	0.	112.	8175.	264.	1084.	378.	44.	246.	121.
11	0.	0.	0.	0.	0.	100.	0.	0.	100.	8275.	152.	1184.	400.	44.	324.	116.
12	0.	0.	0.	0.	0.	20.	0.	0.	20.	8295.	52.	1204.	894.	44.	959.	119.
13	0.	0.	0.	0.	0.	0.	4.	0.	4.	8299.	32.	1208.	2000.	44.	707.	119.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	8299.	28.	1208.	0.	44.	794.	119.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	8299.	28.	1208.	0.	44.	794.	119.
16	0.	0.	0.	0.	0.	0.	4.	0.	4.	8303.	28.	1212.	2400.	44.	794.	119.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	8303.	24.	1212.	0.	44.	816.	119.
18	0.	0.	0.	0.	0.	0.	8.	0.	8.	8311.	24.	1220.	1414.	44.	816.	119.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	8311.	16.	1220.	0.	44.	1000.	119.
20	0.	0.	0.	0.	0.	0.	4.	0.	4.	8315.	16.	1224.	2000.	44.	1000.	114.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	8315.	12.	1224.	0.	44.	1199.	114.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	8315.	12.	1224.	0.	44.	1199.	114.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	8315.	12.	1224.	0.	44.	1199.	114.
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	8315.	12.	1224.	0.	44.	1199.	114.
25	0.	0.	0.	0.	0.	0.	0.	0.	0.	8315.	12.	1224.	0.	44.	1199.	114.
26	0.	0.	0.	0.	0.	0.	0.	0.	0.	8315.	12.	1224.	0.	44.	1199.	114.
27	0.	0.	0.	0.	0.	0.	0.	0.	0.	8315.	12.	1224.	0.	44.	1199.	114.
28	0.	0.	0.	0.	0.	0.	0.	0.	0.	8315.	12.	1224.	0.	44.	1199.	114.
29	0.	0.	0.	0.	0.	0.	0.	0.	0.	8315.	12.	1224.	0.	44.	1199.	114.
30	0.	0.	0.	0.	0.	0.	8.	0.	8.	8323.	12.	1232.	1414.	44.	1199.	114.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	8323.	4.	1240.	0.	44.	2000.	114.
32	0.	0.	0.	0.	0.	0.	0.	0.	0.	8323.	4.	1240.	0.	44.	2000.	114.
33	0.	0.	0.	0.	0.	0.	4.	0.	4.	8327.	4.	1236.	2000.	44.	2000.	114.

(Continued)

Table B19 (Concluded)

STEM DIAM (CM)	NUMBER OF STEMS IN EACH HEIGHT CLASS								STEM DIAMETER	TOTAL NUMBER OF STEMS			SPACING OF STEMS (CM)		
	1	2	3	4	5	6	7	8	OF GIVEN DIAM	OF GIVEN DIAM AND LESS	OF GIVEN DIAM AND GREATER	OF GIVEN DIAM AND LESS (OMIT DIAM 1.2)	OF GIVEN DIAM	OF GIVEN DIAM AND LESS	OF GIVEN DIAM AND GREATER	OF GIVEN DIAM AND LESS (OMIT DIAM 1.2)
1	0.	0.	4432.	2188.	144.	0.	0.	0.	6469.	6469.	8256.	0.	50.	50.	44.	0.
2	0.	0.	0.	760.	688.	0.	0.	0.	1497.	7922.	1801.	0.	105.	49.	93.	0.
3	0.	0.	0.	0.	4.	0.	0.	0.	4.	7926.	484.	4.	2000.	49.	199.	2000.
4	0.	0.	0.	0.	32.	0.	0.	0.	32.	7958.	488.	36.	797.	49.	200.	667.
5	0.	0.	0.	0.	0.	4.	0.	0.	4.	7962.	368.	40.	2000.	49.	200.	632.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	7962.	364.	40.	0.	49.	210.	632.
7	0.	0.	0.	0.	0.	4.	0.	0.	4.	7966.	364.	44.	2000.	49.	210.	603.
8	0.	0.	0.	0.	0.	36.	0.	0.	36.	8002.	360.	80.	667.	49.	211.	447.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	8002.	324.	80.	0.	49.	222.	447.
10	0.	0.	0.	0.	0.	40.	0.	0.	40.	8042.	324.	120.	577.	49.	222.	354.
11	0.	0.	0.	0.	0.	28.	0.	0.	28.	8070.	276.	148.	467.	44.	241.	312.
12	0.	0.	0.	0.	0.	40.	0.	0.	40.	8110.	248.	188.	432.	44.	258.	280.
13	0.	0.	0.	0.	0.	4.	0.	0.	4.	8130.	208.	208.	2000.	44.	283.	277.
14	0.	0.	0.	0.	0.	44.	0.	0.	44.	8174.	194.	252.	400.	44.	286.	258.
15	0.	0.	0.	0.	0.	100.	0.	0.	100.	8274.	192.	352.	400.	44.	324.	213.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	8274.	92.	352.	0.	44.	999.	213.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	8274.	92.	352.	0.	44.	999.	213.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	8274.	92.	352.	0.	44.	999.	213.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	8274.	92.	352.	0.	44.	999.	213.
20	0.	0.	0.	0.	0.	28.	0.	0.	28.	8304.	92.	364.	737.	44.	995.	204.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	8304.	28.	364.	0.	44.	804.	204.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	8310.	28.	368.	2000.	44.	804.	203.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	8310.	16.	368.	0.	44.	1700.	203.
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	8310.	16.	368.	0.	44.	1000.	203.
25	0.	0.	0.	0.	0.	0.	0.	0.	0.	8310.	16.	368.	0.	44.	1000.	203.
26	0.	0.	0.	0.	0.	4.	0.	0.	4.	8314.	16.	368.	2000.	44.	1700.	202.
27	0.	0.	0.	0.	0.	0.	0.	0.	0.	8314.	12.	368.	0.	44.	1199.	202.
28	0.	0.	0.	0.	0.	0.	0.	0.	0.	8314.	12.	368.	0.	44.	1199.	202.
29	0.	0.	0.	0.	0.	0.	0.	0.	0.	8314.	12.	368.	0.	44.	1199.	202.
30	0.	0.	0.	0.	0.	0.	0.	0.	0.	8314.	12.	368.	0.	44.	1199.	202.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	8314.	12.	368.	0.	44.	1199.	202.
32	0.	0.	0.	0.	0.	0.	0.	0.	0.	8314.	12.	368.	0.	44.	1199.	202.
33	0.	0.	0.	0.	0.	0.	0.	0.	0.	8314.	12.	368.	0.	44.	1199.	202.
34	0.	0.	0.	0.	0.	0.	0.	0.	0.	8314.	12.	368.	0.	44.	1199.	202.
35	0.	0.	0.	0.	0.	0.	0.	0.	0.	8314.	12.	368.	0.	44.	1199.	202.
36	0.	0.	0.	0.	0.	0.	0.	0.	0.	8314.	12.	368.	0.	44.	1199.	202.
37	0.	0.	0.	0.	0.	0.	0.	0.	0.	8314.	12.	368.	0.	44.	1199.	202.
38	0.	0.	0.	0.	0.	0.	0.	0.	0.	8314.	12.	368.	0.	44.	1199.	202.
39	0.	0.	0.	0.	0.	0.	0.	0.	0.	8314.	12.	368.	0.	44.	1199.	202.
40	0.	0.	0.	0.	0.	4.	0.	0.	4.	8318.	12.	368.	2000.	44.	1199.	202.
41	0.	0.	0.	0.	0.	0.	0.	0.	0.	8318.	8.	368.	0.	44.	1414.	201.
42	0.	0.	0.	0.	0.	0.	0.	0.	0.	8318.	8.	368.	0.	44.	1414.	201.
43	0.	0.	0.	0.	0.	0.	0.	0.	0.	8318.	8.	368.	0.	44.	1414.	201.
44	0.	0.	0.	0.	0.	0.	0.	0.	0.	8318.	8.	368.	0.	44.	1414.	201.
45	0.	0.	0.	0.	0.	4.	0.	0.	4.	8322.	8.	408.	2000.	44.	1414.	200.
46	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
47	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
48	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
49	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
50	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
51	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
52	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
53	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
54	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
55	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
56	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
57	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
58	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
59	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
60	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
61	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
62	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
63	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
64	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
65	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
66	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
67	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
68	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
69	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
70	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
71	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
72	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
73	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
74	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
75	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
76	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
77	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
78	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
79	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
80	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
81	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
82	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
83	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
84	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
85	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
86	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
87	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
88	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
89	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
90	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
91	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
92	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
93	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
94	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
95	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
96	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
97	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	0.	44.	2000.	200.
98	0.	0.	0.	0.	0.	0.	0.	0.	0.	8322.	4.	408.	2000.	44.	2000.	100.

Table B20

Plant Height and Stem Spacing at MFB Data Collection Point V1619

MFB DATA COLLECTION POINT V1619, CHANTHABURI RUBBER PLANTATION SITE, THAILAND
GEOGRAPHIC COORD LAT 12 DEG 36 MIN 35 SEC N, LONG 102 DEG 10 MIN 32 SEC E
EXPANDED AREA = 1297. SQUARE METERS

PLANT HEIGHT (M)	NUMBER OF STEMS IN EACH HEIGHT CLASS 1	2	3	4	5	6	7	8	PLANT HEIGHT OF GIVEN HT.	TOTAL NUMBER OF STEMS OF GIVEN HT. AND LESS	OF GIVEN HT. AND GREATER	SPACING OF STEMS (CM) OF GIVEN HT. AND LESS THAN HT. 0.11	OF GIVEN HT.	OF GIVEN HT. AND LESS	OF GIVEN HT. AND GREATER	OF GIVEN HT. AND LESS THAN HT. 0.11
0	0.	0.	46667.	0.	0.	0.	0.	0.	46667.	46667.	46712.	0.	10.	10.	10.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	46667.	45.	0.	0.	10.	990.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	46667.	45.	0.	0.	10.	990.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	46667.	45.	0.	0.	10.	990.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	46667.	45.	0.	0.	10.	990.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	46667.	45.	0.	0.	10.	990.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	46667.	45.	0.	0.	10.	990.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	46667.	45.	0.	0.	10.	990.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	46667.	45.	0.	0.	10.	990.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	46667.	45.	0.	0.	10.	990.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	46667.	45.	0.	0.	10.	990.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	46667.	45.	0.	0.	10.	990.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	46667.	45.	0.	0.	10.	990.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	46667.	45.	0.	0.	10.	990.	0.
14	0.	0.	0.	0.	0.	0.	2.	0.	2.	46669.	45.	2.	2020.	10.	990.	2020.
15	0.	0.	0.	0.	0.	0.	2.	0.	2.	46671.	43.	4.	2020.	10.	610.	2000.
16	0.	0.	0.	0.	0.	0.	7.	0.	7.	46678.	41.	11.	1919.	10.	629.	1200.
17	0.	0.	0.	0.	0.	0.	4.	0.	4.	46682.	34.	15.	2100.	10.	606.	1033.
18	0.	0.	0.	0.	0.	0.	9.	0.	9.	46687.	30.	24.	1700.	10.	730.	894.
19	0.	0.	0.	0.	0.	0.	7.	0.	7.	46694.	25.	27.	1919.	10.	888.	779.
20	0.	0.	0.	0.	0.	0.	9.	0.	9.	46703.	18.	36.	1333.	10.	943.	667.
21	0.	0.	0.	0.	0.	0.	7.	0.	7.	46710.	9.	43.	1919.	10.	1333.	610.
22	0.	0.	0.	0.	0.	0.	2.	0.	2.	46712.	2.	45.	2020.	10.	2020.	995.

(Continued)

Table 2BD (Concluded)

STEM DIAM (CM)	NUMBER OF STEMS IN EACH HEIGHT CLASS								STEM DIAMETER: TOTAL NUMBER OF STEMS				SPACING OF STEMS (CM)			
	1	2	3	4	5	6	7	8	OF GIVEN DIAM	OF GIVEN DIAM AND LESS	OF GIVEN DIAM AND GREATER	OF GIVEN DIAM AND LESS (OMIT DIAM 1.2)	OF GIVEN DIAM	OF GIVEN DIAM AND LESS	OF GIVEN DIAM AND GREATER	OF GIVEN DIAM AND LESS (OMIT DIAM 1.2)
1	0.	0.	46667.	0.	0.	0.	0.	0.	46667.	46667.	46714.	0.	10.	10.	10.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	46667.	47.	0.	0.	10.	503.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	46667.	47.	0.	0.	10.	503.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	46667.	47.	0.	0.	10.	503.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	46667.	47.	0.	0.	10.	503.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	46667.	47.	0.	0.	10.	503.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	46667.	47.	0.	0.	10.	503.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	46667.	47.	0.	0.	10.	503.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	46667.	47.	0.	0.	10.	503.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	46667.	47.	0.	0.	10.	503.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	46667.	47.	0.	0.	10.	503.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	46667.	47.	0.	2.	2020.	503.	2020.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	46667.	47.	0.	2.	0.	503.	2020.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	46667.	47.	0.	2.	0.	503.	2020.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	46667.	47.	0.	2.	0.	503.	2020.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	46667.	47.	0.	2.	0.	503.	2020.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	46667.	47.	0.	2.	0.	503.	2020.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	46667.	47.	0.	2.	0.	503.	2020.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	46667.	47.	0.	2.	0.	503.	2020.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	46671.	47.	4.	2020.	10.	503.	2000.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	46671.	47.	4.	0.	10.	503.	2000.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	46671.	47.	4.	0.	10.	503.	2000.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	46671.	47.	4.	0.	10.	503.	2000.
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	46673.	43.	6.	2020.	10.	503.	1633.
25	0.	0.	0.	0.	0.	0.	0.	0.	0.	46679.	41.	8.	2020.	10.	503.	1414.
26	0.	0.	0.	0.	0.	0.	0.	0.	0.	46677.	39.	10.	2020.	10.	503.	1269.
27	0.	0.	0.	0.	0.	0.	0.	0.	0.	46677.	37.	10.	0.	10.	503.	1269.
28	0.	0.	0.	0.	0.	0.	0.	0.	0.	46677.	37.	10.	0.	10.	503.	1269.
29	0.	0.	0.	0.	0.	0.	0.	0.	0.	46677.	37.	10.	0.	10.	503.	1269.
30	0.	0.	0.	0.	0.	0.	0.	0.	0.	46682.	37.	15.	1700.	10.	503.	1233.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	46689.	32.	22.	1912.	10.	707.	893.
32	0.	0.	0.	0.	0.	0.	0.	0.	0.	46693.	29.	26.	2061.	10.	866.	784.
33	0.	0.	0.	0.	0.	0.	0.	0.	0.	46695.	31.	28.	2020.	10.	873.	756.
34	0.	0.	0.	0.	0.	0.	0.	0.	0.	46695.	19.	28.	0.	10.	918.	756.
35	0.	0.	0.	0.	0.	0.	0.	0.	0.	46703.	19.	35.	1512.	10.	918.	676.
36	0.	0.	0.	0.	0.	0.	0.	0.	0.	46704.	12.	37.	2020.	10.	1199.	658.
37	0.	0.	0.	0.	0.	0.	0.	0.	0.	46704.	10.	37.	0.	10.	1269.	658.
38	0.	0.	0.	0.	0.	0.	0.	0.	0.	46706.	10.	39.	2020.	10.	1269.	641.
39	0.	0.	0.	0.	0.	0.	0.	0.	0.	46708.	8.	41.	2020.	10.	1414.	625.
40	0.	0.	0.	0.	0.	0.	0.	0.	0.	46708.	6.	41.	0.	10.	1633.	625.
41	0.	0.	0.	0.	0.	0.	0.	0.	0.	46708.	6.	41.	0.	10.	1633.	625.
42	0.	0.	0.	0.	0.	0.	0.	0.	0.	46708.	6.	41.	0.	10.	1633.	625.
43	0.	0.	0.	0.	0.	0.	0.	0.	0.	46708.	6.	41.	0.	10.	1633.	625.
44	0.	0.	0.	0.	0.	0.	0.	0.	0.	46708.	6.	41.	0.	10.	1633.	625.
45	0.	0.	0.	0.	0.	0.	0.	0.	0.	46708.	6.	41.	0.	10.	1633.	625.
46	0.	0.	0.	0.	0.	0.	0.	0.	0.	46710.	6.	43.	2020.	10.	1633.	610.
47	0.	0.	0.	0.	0.	0.	0.	0.	0.	46710.	4.	43.	0.	10.	2000.	610.
48	0.	0.	0.	0.	0.	0.	0.	0.	0.	46710.	4.	43.	0.	10.	2000.	610.
49	0.	0.	0.	0.	0.	0.	0.	0.	0.	46710.	4.	43.	0.	10.	2000.	610.
50	0.	0.	0.	0.	0.	0.	0.	0.	0.	46712.	4.	45.	2020.	10.	2000.	596.
51	0.	0.	0.	0.	0.	0.	0.	0.	0.	46712.	2.	45.	0.	10.	2020.	596.
52	0.	0.	0.	0.	0.	0.	0.	0.	0.	46714.	2.	47.	2020.	10.	2020.	583.

Table A11

Plant Height and Stem Spacing at MRB Data Collection Point V1A10

MRB Data Collection Point V1A10, Chantaburi Durian and Pineapple Plantation Site, Thailand
Geographic Coord Lat 12 DEG 42 MIN 17 SEC N, Long 102 DEG 09 MIN 20 SEC E
Expanded Area = 1257. Square Meters

Plant Height (cm)	Number of Stems in Each Height Class							Total Number of Stems				Spacing of Stems (cm)				
	1	2	3	4	5	6	7	8	Of Given Ht.	Of Given Ht. and Less	Of Given Ht. and Greater	Of Given Ht. and Less(Omit Ht. 0.1)	Of Given Ht.	Of Given Ht. and Less	Of Given Ht. and Greater	Of Given Ht. and Less (Omit Ht. 0.1)
0	2000+0.	..	70.	0.	0.	0.	0.	0.	2000[illegible].	2000[illegible].	2000[illegible].	0.	0.	0.	0.	0.
1	0.	..	0.	449.	0.	0.	0.	0.	449.	2000949.	920.	0.	1[illegible].	0.	174.	0.
2	0.	..	0.	0.	0.	0.	0.	0.	0.	2000949.	99.	0.	0.	0.	921.	0.
3	0.	..	0.	0.	0.	0.	0.	0.	0.	2000949.	99.	0.	0.	0.	921.	0.
4	0.	..	0.	0.	0.	0.	0.	0.	0.	2000949.	99.	0.	0.	0.	921.	0.
5	0.	..	0.	0.	0.	0.	0.	0.	0.	2000949.	99.	0.	0.	0.	921.	0.
6	0.	..	0.	0.	0.	0.	0.	0.	0.	2000949.	99.	0.	0.	0.	921.	0.
7	0.	..	0.	0.	0.	0.	0.	0.	0.	2000949.	99.	0.	0.	0.	921.	0.
8	0.	..	0.	0.	0.	0.	0.	0.	0.	2000949.	99.	0.	0.	0.	921.	0.
9	0.	..	0.	0.	0.	0.	0.	0.	0.	2000949.	99.	0.	0.	0.	921.	0.
10	0.	..	0.	0.	0.	2.	0.	0.	2.	2001947.	99.	2.	2030.	0.	921.	2930.
11	0.	..	0.	0.	0.	0.	0.	0.	0.	2000956.	97.	11.	1333.	0.	930.	1206.
12	0.	..	0.	0.	0.	48.	0.	0.	48.	2000804.	60.	90.	977.	0.	977.	921.

(Continued)

Table [illegible] (Concluded)

STEM DIAM (CM)	NUMBER OF STEMS IN EACH HEIGHT CLASS								STEM DIAMETER					SPACING OF STEMS (CM)			
									TOTAL NUMBER OF STEMS								
	1	2	3	4	5	6	7	8	OF GIVEN DIAM	OF GIVEN DIAM AND LESS	OF GIVEN DIAM AND GREATER	OF GIVEN DIAM AND LESS THAN DIAM 1.27	OF GIVEN DIAM	OF GIVEN DIAM AND LESS	OF GIVEN DIAM AND GREATER	OF GIVEN DIAM AND LESS THAN DIAM 1.27
1	200109.	0.	47.	0.	0.	0.	0.	0.	200047.	200047.	200000.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	200047.	957.	0.	0.	0.	160.	0.
3	0.	0.	20.	377.	0.	0.	0.	0.	397.	200400.	937.	360.	213.	0.	160.	213.
4	0.	0.	0.	114.	0.	0.	0.	0.	114.	200914.	284.	467.	379.	0.	200.	189.
5	0.	0.	0.	4.	0.	0.	0.	0.	4.	200918.	98.	471.	2100.	0.	422.	184.
6	0.	0.	0.	5.	0.	0.	0.	0.	5.	200923.	84.	440.	1700.	0.	431.	183.
7	0.	0.	0.	2.	0.	0.	0.	0.	2.	200925.	81.	470.	2020.	0.	444.	183.
8	0.	0.	0.	18.	0.	0.	0.	0.	18.	200943.	79.	466.	943.	0.	450.	180.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	200943.	61.	466.	0.	0.	918.	180.
10	0.	0.	0.	0.	0.	2.	0.	0.	2.	200945.	61.	468.	2020.	0.	918.	179.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	200945.	59.	468.	0.	0.	921.	179.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	200945.	59.	468.	0.	0.	921.	179.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	200945.	59.	468.	0.	0.	921.	179.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	200945.	59.	468.	0.	0.	921.	179.
15	0.	0.	0.	0.	0.	11.	0.	0.	11.	200956.	59.	929.	1286.	0.	921.	177.
16	0.	0.	0.	0.	0.	11.	0.	0.	11.	200967.	48.	929.	1200.	0.	977.	175.
17	0.	0.	0.	0.	0.	14.	0.	0.	14.	200981.	37.	934.	1600.	0.	990.	173.
18	0.	0.	0.	0.	0.	12.	0.	0.	12.	200993.	23.	946.	1199.	0.	1044.	171.
19	0.	0.	0.	0.	0.	9.	0.	0.	9.	200998.	11.	991.	1700.	0.	1200.	170.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	200998.	6.	991.	0.	0.	1633.	170.
21	0.	0.	0.	0.	0.	2.	0.	0.	2.	201000.	4.	993.	2020.	0.	1633.	170.
22	0.	0.	0.	0.	0.	2.	0.	0.	2.	201002.	4.	995.	2020.	0.	2000.	171.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	201002.	2.	995.	0.	0.	2020.	170.
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	201002.	2.	995.	0.	0.	2020.	170.
25	0.	0.	0.	0.	0.	0.	0.	0.	0.	201002.	2.	995.	0.	0.	2020.	170.
26	0.	0.	0.	0.	0.	0.	0.	0.	0.	201002.	2.	995.	0.	0.	2020.	170.
27	0.	0.	0.	0.	0.	0.	0.	0.	0.	201002.	2.	995.	0.	0.	2020.	170.
28	0.	0.	0.	0.	0.	0.	0.	0.	0.	201002.	2.	995.	0.	0.	2020.	170.
29	0.	0.	0.	0.	0.	0.	0.	0.	0.	201002.	2.	995.	0.	0.	2020.	170.
30	0.	0.	0.	0.	0.	0.	0.	0.	0.	201002.	2.	995.	0.	0.	2020.	170.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	201002.	2.	995.	0.	0.	2020.	170.
32	0.	0.	0.	0.	0.	0.	0.	0.	0.	201002.	2.	995.	0.	0.	2020.	170.
33	0.	0.	0.	0.	0.	0.	0.	0.	0.	201002.	2.	995.	0.	0.	2020.	170.
34	0.	0.	0.	0.	0.	0.	0.	0.	0.	201002.	2.	995.	0.	0.	2020.	170.
35	0.	0.	0.	0.	0.	0.	0.	0.	0.	201002.	2.	995.	0.	0.	2020.	170.
36	0.	0.	0.	0.	0.	0.	0.	0.	0.	201002.	2.	995.	0.	0.	2020.	170.
37	0.	0.	0.	0.	0.	0.	0.	0.	0.	201002.	2.	995.	0.	0.	2020.	170.
38	0.	0.	0.	0.	0.	0.	0.	0.	0.	201002.	2.	995.	0.	0.	2020.	170.
39	0.	0.	0.	0.	0.	0.	0.	0.	0.	201002.	2.	995.	0.	0.	2020.	170.
40	0.	0.	0.	0.	0.	0.	0.	0.	0.	201002.	2.	995.	0.	0.	2020.	170.
41	0.	0.	0.	0.	0.	0.	0.	0.	0.	201002.	2.	995.	0.	0.	2020.	170.
42	0.	0.	0.	0.	0.	0.	0.	0.	0.	201002.	2.	995.	0.	0.	2020.	170.
43	0.	0.	0.	0.	0.	0.	0.	0.	0.	201002.	2.	995.	0.	0.	2020.	170.
44	0.	0.	0.	0.	0.	0.	0.	0.	0.	201002.	2.	995.	0.	0.	2020.	170.
45	0.	0.	0.	0.	0.	0.	0.	0.	0.	201002.	2.	995.	0.	0.	2020.	170.
46	0.	0.	0.	0.	0.	0.	0.	0.	0.	201002.	2.	995.	0.	0.	2020.	170.
47	0.	0.	0.	0.	0.	0.	0.	0.	0.	201002.	2.	995.	0.	0.	2020.	170.
48	0.	0.	0.	0.	0.	0.	0.	0.	0.	201002.	2.	995.	0.	0.	2020.	170.
49	0.	0.	0.	0.	0.	0.	0.	0.	0.	201002.	2.	995.	0.	0.	2020.	170.
50	0.	0.	0.	0.	0.	0.	0.	0.	0.	201002.	2.	995.	0.	0.	2020.	170.
51	0.	0.	0.	0.	0.	0.	0.	0.	0.	201002.	2.	995.	0.	0.	2020.	170.
52	0.	0.	0.	0.	0.	0.	0.	0.	0.	201002.	2.	995.	0.	0.	2020.	170.
53	0.	0.	0.	0.	0.	0.	0.	0.	0.	201002.	2.	995.	0.	0.	2020.	170.
54	0.	0.	0.	0.	0.	0.	0.	0.	0.	201002.	2.	995.	0.	0.	2020.	170.
55	0.	0.	0.	0.	0.	0.	0.	0.	0.	201002.	2.	995.	0.	0.	2020.	170.
56	0.	0.	0.	0.	0.	0.	0.	0.	0.	201002.	2.	995.	0.	0.	2020.	170.
57	0.	0.	0.	0.	0.	0.	0.	0.	0.	201002.	2.	995.	0.	0.	2020.	170.
58	0.	0.	0.	0.	0.	0.	0.	0.	0.	201002.	2.	957.	2020.	0.	2020.	140.

Table B22

Plant Height and Stem Spacing at WES Data Collection Point V0640

WES DATA COLLECTION POINT V0640, CHANTHABURI FOREST SITE, THAILAND
GEOGRAPHIC COORD LAT 12 DEG 44 MIN 30 SEC N, LONG 102 DEG 09 MIN 02 SEC E
EXPANDED AREA = 1257. SQUARE METERS

PLANT HEIGHT (M)	NUMBER OF STEMS IN EACH HEIGHT CLASS 1	2	3	4	5	6	7	8	PLANT HEIGHT TOTAL NUMBER OF STEMS OF GIVEN HT.	OF GIVEN HT. AND LESS	OF GIVEN HT. AND GREATER	SPACING OF STEMS (CM) OF GIVEN HT. AND LESS (OMIT HT. 0.1)	OF GIVEN HT.	OF GIVEN HT. AND LESS	OF GIVEN HT. AND GREATER	OF GIVEN HT. AND LESS (OMIT HT. 0.1)
0	0.	7200.	1467.	0.	0.	0.	0.	0.	8667.	8667.	12589.	0.	43.	43.	36.	0.
1	0.	0.	0.	1822.	0.	0.	0.	0.	1822.	10489.	3830.	0.	94.	39.	69.	0.
2	0.	0.	0.	0.	1867.	0.	0.	0.	1867.	11956.	2816.	1867.	122.	37.	89.	122.
3	0.	0.	0.	0.	267.	0.	0.	0.	267.	11823.	949.	1334.	249.	37.	130.	110.
4	0.	0.	0.	0.	578.	0.	0.	0.	578.	12401.	682.	1912.	184.	36.	193.	91.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	12489.	184.	1998.	1414.	36.	392.	91.
6	0.	0.	0.	0.	0.	17.	0.	0.	17.	12426.	96.	1937.	970.	36.	488.	91.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	12434.	79.	1945.	1414.	36.	458.	91.
8	0.	0.	0.	0.	0.	11.	0.	0.	11.	12449.	71.	1996.	1286.	36.	479.	98.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	12493.	60.	1964.	1414.	36.	916.	98.
10	0.	0.	0.	0.	0.	14.	0.	0.	14.	12467.	92.	1978.	1069.	36.	599.	98.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	12467.	38.	1978.	0.	36.	649.	98.
12	0.	0.	0.	0.	0.	3.	0.	0.	3.	12470.	38.	1981.	2300.	36.	649.	98.
13	0.	0.	0.	0.	0.	0.	4.	0.	4.	12474.	35.	1945.	2000.	36.	676.	98.
14	0.	0.	0.	0.	0.	0.	5.	0.	5.	12479.	31.	1998.	1789.	36.	710.	98.
15	0.	0.	0.	0.	0.	0.	1.	0.	1.	12480.	26.	1901.	4000.	36.	784.	98.
16	0.	0.	0.	0.	0.	0.	3.	0.	3.	12483.	25.	1904.	2300.	36.	800.	98.
17	0.	0.	0.	0.	0.	0.	2.	0.	2.	12485.	22.	1906.	2828.	36.	853.	98.
18	0.	0.	0.	0.	0.	0.	3.	0.	3.	12488.	20.	1909.	2300.	36.	894.	89.
19	0.	0.	0.	0.	0.	0.	3.	0.	3.	12491.	17.	2002.	2300.	36.	970.	89.
20	0.	0.	0.	0.	0.	0.	2.	0.	2.	12493.	14.	2004.	2828.	36.	1069.	89.
21	0.	0.	0.	0.	0.	0.	7.	0.	7.	12500.	12.	2011.	1912.	36.	1199.	89.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	12500.	5.	2011.	0.	36.	1789.	89.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	12500.	5.	2011.	0.	36.	1789.	89.
24	0.	0.	0.	0.	0.	0.	1.	0.	1.	12501.	5.	2012.	4000.	36.	1789.	89.
25	0.	0.	0.	0.	0.	0.	1.	0.	1.	12502.	4.	2013.	4000.	36.	2000.	89.
26	0.	0.	0.	0.	0.	0.	2.	0.	2.	12504.	3.	2015.	2828.	36.	2309.	89.
27	0.	0.	0.	0.	0.	0.	0.	0.	0.	12504.	1.	2015.	0.	36.	4000.	89.
28	0.	0.	0.	0.	0.	0.	0.	0.	0.	12504.	1.	2015.	0.	36.	4000.	89.
29	0.	0.	0.	0.	0.	0.	0.	0.	0.	12504.	1.	2015.	0.	36.	4000.	89.
30	0.	0.	0.	0.	0.	0.	0.	0.	0.	12504.	1.	2015.	0.	36.	4000.	89.
31	0.	0.	0.	0.	0.	0.	1.	0.	1.	12505.	1.	2016.	4000.	36.	4000.	89.

(Continued)

Table XXX (Concluded)

STEM DIAM 10TH	NUMBER OF STEMS IN EACH HEIGHT CLASS								STEM DIAMETER	TOTAL NUMBER OF STEMS			SPACING OF STEMS (DM)			
	1	2	3	4	5	6	7	8	OF GIVEN DIAM	OF GIVEN DIAM AND LESS	OF GIVEN DIAM AND GREATER	OF GIVEN DIAM AND LESS (UNIT DIAM 1.8)	OF GIVEN DIAM	OF GIVEN DIAM AND LESS	OF GIVEN DIAM AND GREATER	OF GIVEN DIAM AND LESS (UNIT DIAM 1.8)
1	0.	7200.	1333.	1733.	444.	0.	0.	0.	10710.	10710.	12904.	0.	0.	30.	36.	0.
2	0.	1.	133.	89.	1111.	0.	0.	0.	1333.	12043.	1794.	0.	110.	36.	94.	0.
3	0.	0.	0.	0.	311.	0.	0.		311.	12394.	461.	311.	227.	36.	186.	227.
4	0.	0.	0.	0.	44.	3.	0.		47.	12401.	150.	351.	903.	36.	327.	211.
5	0.	0.	0.	0.	0.	17.	0.		17.	12418.	103.	329.	970.	36.	394.	207.
6	0.	0.	0.	0.	0.	6.	0.	0.	6.	12424.	86.	301.	1433.	36.	431.	200.
7	0.	0.	0.	0.	0.	33.	2.	0.	35.	12459.	80.	416.	676.	36.	447.	196.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	12459.	45.	416.	0.	36.	506.	196.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	12459.	45.	416.	0.	36.	506.	196.
10	0.	0.	0.	0.	0.	3.	1.	0.	4.	12463.	45.	498.	2000.	36.	506.	189.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	12463.	41.	498.	0.	36.	629.	195.
12	0.	0.	0.	0.	0.	6.	1.	0.	7.	12470.	41.	427.	1512.	36.	629.	194.
13	0.	0.	0.	0.	0.	3.	0.	0.	3.	12473.	34.	438.	2300.	36.	686.	193.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	12473.	31.	438.	0.	36.	718.	193.
15	0.	0.	0.	0.	0.	3.	0.	0.	4.	12479.	31.	438.	1633.	36.	718.	192.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	12485.	27.	442.	1633.	36.	806.	190.
17	0.	0.	0.	0.	0.	0.	1.	0.	1.	12486.	19.	423.	4000.	36.	910.	190.
18	0.	0.	0.	0.	0.	0.	2.	0.	2.	12488.	18.	445.	2020.	36.	943.	190.
19	0.	0.	0.	0.	0.	0.	1.	0.	1.	12489.	16.	446.	4000.	36.	1000.	189.
20	0.	0.	0.	0.	0.	0.	1.	0.	1.	12490.	15.	447.	4000.	36.	1033.	189.
21	0.	0.	0.	0.	0.	0.	2.	0.	2.	12492.	14.	449.	2020.	36.	1069.	189.
22	0.	0.	0.	0.	0.	0.	1.	0.	1.	12493.	12.	450.	4000.	36.	1155.	189.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	12493.	11.	450.	0.	36.	1206.	189.
24	0.	0.	0.	0.	0.	0.	1.	0.	1.	12494.	11.	451.	4000.	36.	1206.	188.
25	0.	0.	0.	0.	0.	0.	1.	0.	1.	12495.	10.	452.	4000.	36.	1269.	188.
26	0.	0.	0.	0.	0.	0.	2.	0.	2.	12497.	9.	444.	2020.	36.	1333.	188.
27	0.	0.	0.	0.	0.	0.	0.	0.	0.	12497.	7.	444.	0.	36.	1512.	188.
28	0.	0.	0.	0.	0.	0.	1.	0.	1.	12498.	7.	455.	4000.	36.	1512.	188.
29	0.	0.	0.	0.	0.	0.	0.	0.	0.	12498.	6.	455.	0.	36.	1633.	188.
30	0.	0.	0.	0.	0.	0.	1.	0.	1.	12499.	6.	456.	4000.	36.	1633.	187.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	12499.	5.	456.	0.	36.	1789.	187.
32	0.	0.	0.	0.	0.	0.	0.	0.	0.	12499.	5.	456.	0.	36.	1789.	187.
33	0.	0.	0.	0.	0.	0.	0.	0.	0.	12499.	5.	456.	0.	36.	1789.	187.
34	0.	0.	0.	0.	0.	0.	0.	0.	0.	12499.	5.	456.	0.	36.	1789.	187.
35	0.	0.	0.	0.	0.	0.	2.	0.	2.	12501.	5.	458.	2020.	36.	1789.	187.
36	0.	0.	0.	0.	0.	0.	2.	0.	2.	12503.	3.	460.	2020.	36.	2389.	187.
37	0.	0.	0.	0.	0.	0.	0.	0.	0.	12503.	1.	460.	0.	36.	4000.	187.
38	0.	0.	0.	0.	0.	0.	0.	0.	0.	12503.	1.	460.	0.	36.	4000.	187.
39	0.	0.	0.	0.	0.	0.	0.	0.	0.	12503.	1.	460.	0.	36.	4000.	187.
40	0.	0.	0.	0.	0.	0.	0.	0.	0.	12503.	1.	460.	0.	36.	4000.	187.
41	0.	0.	0.	0.	0.	0.	0.	0.	0.	12503.	1.	460.	0.	36.	4000.	187.
42	0.	0.	0.	0.	0.	0.	0.	0.	0.	12503.	1.	460.	0.	36.	4000.	187.
43	0.	0.	0.	0.	0.	0.	0.	0.	0.	12503.	1.	460.	0.	36.	4000.	187.
44	0.	0.	0.	0.	0.	0.	0.	0.	0.	12503.	1.	460.	0.	36.	4000.	187.
45	0.	0.	0.	0.	0.	0.	0.	0.	0.	12503.	1.	460.	0.	36.	4000.	187.
46	0.	0.	0.	0.	0.	0.	0.	0.	0.	12503.	1.	460.	0.	36.	4000.	187.
47	0.	0.	0.	0.	0.	0.	0.	0.	0.	12503.	1.	460.	0.	36.	4000.	187.
48	0.	0.	0.	0.	0.	0.	0.	0.	0.	12503.	1.	460.	0.	36.	4000.	187.
49	0.	0.	0.	0.	0.	0.	0.	0.	0.	12503.	1.	460.	0.	36.	4000.	187.
50	0.	0.	0.	0.	0.	0.	1.	0.	1.	12504.	1.	461.	4000.	36.	4000.	186.

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13. ABSTRACT

A mission of the Degradation Effects Program (DEP), formerly Joint Environmental Effects Program (JEEP), is to extrapolate estimates of lethality and munition effectiveness in DEP test environments to Southeast Asian environments. If these extrapolations are to be reliable it is imperative that the environmental conditions of the test areas be similar to those of Southeast Asia. Accordingly, objective comparisons must be made of DEP test environments and Southeast Asian environments. This report describes and compares some significant vegetation structural characteristics of two selected DEP sites in the Piña and Balboa forests in the Panama Canal Zone (CZ) and four selected sites in two forests and two rubber plantations in Thailand. The vegetation structural characteristics considered herein include stem diameter, spacing, height, and number. Detailed ground measurements were available from seven data collection points in the CZ and four points in Thailand. Location maps, air and ground photographs, and the personal knowledge of the field survey personnel were used to provide a general description of each site. Site comparisons were made from an analysis of a series of graphs and histograms illustrating the number and cumulative number of stems and spacing and cumulative spacing of stems included in each 1-cm-stem-diameter class and each 1-m-stem-height class. Results revealed the CZ and Thailand forests to be remarkably similar when comparing number of stems in each stem diameter class; however, when comparing spacing of stems in each diameter class and in each height class the forests were somewhat dissimilar. The larger trees in the CZ Piña forest and the two Thailand forests were generally of the same height and were taller than the trees in the CZ Balboa forest. The structural characteristics of the rubber plantations were very unlike those of the forests. The procedures used in sampling vegetation physiognomy are included as Appendix A. Computer print-outs of the vegetation data and results obtained from manipulation of these data are included as Appendix B.

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