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Vegetation Survey of Rota, Tinian, and Saipan, Commonwealth of the Northern Mariana Islands

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The vegetation of Rota, Tinian, and Saipan in the Commonwealth of the Northern Mariana Islands is described and mapped. The survey, intended for land-use planning and forest resource management, is based on vegetation types identified on 1976 aerial photographs. Descriptions emphasize native limestone forest types and are based on field reconnaissance. The maps indicate that native forest and introduced trees cover approximately 29,278 acres (11,848 ha), secondary vegetation covers an estimated 24,986 acres (10,111 ha), and some 16,500 acres (6,678 ha) are unforested.

Retrieval Terms: vegetation survey, vegetation maps, forest resources, Rota, Tinian, Saipan, Commonwealth of the Northern Mariana Islands

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INTRODUCTION

The islands of Rota, Tinian, and Saipan are the largest and southernmost islands in the Commonwealth of the Northern Mariana Islands (CNMI). Knowledge of the extent and composition of their vegetation, including forest land, is needed for land-use planning. To fill this need, cooperative agreements were drawn up between the CNMI, the U.S. Fish and Wildlife Service, and the Forest Service, U.S. Department of Agriculture, to map the vegetation of the three islands. The vegetation maps were prepared by the Forest Service in cooperation with the Commonwealth Government and are intended to serve as a working tool for land-use planning and forest resource management.

This bulletin presents 13 vegetation maps for Rota, Tinian, and Saipan, and describes the various vegetation types, their ecological function, and uses. A breakdown of nonforest types is also provided.

GEOGRAPHY AND CLIMATE

Rota, Tinian, and Saipan are located in the Mariana Islands (lat. $14^{\circ}01'$ to $15^{\circ}20' N$, long. $145^{\circ}00'$ to $145^{\circ}50' E$), between Guam and Farallon de Medinilla (fig. 1). In general, the islands are raised limestone terraces on extinct volcanic peaks and slopes, with limited areas of volcanic soils protruding through limestone. The smallest of the three islands is Rota, which is approximately 33 mi^2 (86 km^2) and has a maximum elevation of 1612 ft (490 m). Saipan, the largest of the islands, is 47 mi^2 (122 km^2) and has an elevation of 1554 ft (472 m). Tinian, the least mountainous of the islands, has a maximum elevation of 557 ft (169 m) and is 39 mi^2 (102 km^2) in total area (Douglas 1969).

The climate of the CNMI is warm and humid throughout the year. Data collected for the island of Saipan gives a mean temperature of $78^{\circ} F$ ($25.6^{\circ} C$) with a mean annual relative humidity of 82 percent. Mean annual rainfall recorded at Garapan, Saipan, is about 85 inches (2159 mm). The dry season extends from

Figure 1—The islands of Rota, Tinian, and Saipan, Commonwealth of the Northern Mariana Islands, are located in the southern Mariana chain at the western end of Micronesia.

January to April, and the rainy season from mid-July to mid-November (Perry 1984). The Mariana Islands are located in the northeast trade wind belt and are frequently affected by typhoons, the most recent being Typhoon Roy, which caused major damage to Rota on January 12, 1988. This bulletin represents the vegetation of the CNMI before this storm.

SURVEY METHODS

Vegetation types of the Northern Mariana Islands were identified and delineated on black and white aerial photographs taken in 1976 at a nominal scale of 1:8,000.

Vegetation differences can often be recognized by examining photographs stereoscopically for differences in tone, texture, and image patterns. In some cases, individual species may be recognized by their distinctive shape. Thus, after comparing photoimagery with ground conditions in the field, a skilled interpreter can become fairly proficient at recognizing vegetative types on aerial photos. Overall accuracy will depend on the scale, age, and quality of the photographs; the skill of the interpreter; degree to which the vegetative types differ in image characteristics; and the amount of ground checking by the interpreter.

Before vegetation typing could begin, a vegetation mapping scheme was needed. Instead of devising an entirely new classification system for the Marianas, the system developed for use in the Caroline Islands was used to interpret the vegetation for Rota, Saipan, and Tinian (Cole and others 1987, Falanruw and others 1987a, 1987b; MacLean and others 1986; Whitesell and others 1986).

The vegetation of the three major islands was classified into types that could be identified on black and white aerial photographs without intensive ground checking, and which would be useful to foresters and land-use planners. Types were delineated on the photographs after stereoscopic examination and ground checking along roads and trails, in 1984. The photos were then edited and sent to the Engineering Geometrics Section of the Forest Service's Pacific Southwest Regional Office for transfer to base maps and measurements of type areas.

TYPE CLASSIFICATIONS

For mapping purposes, the islands of Rota, Tinian, and Saipan were divided into four broad land classes: forest, secondary vegetation, agroforest, and nonforest (table 1 and fig. 2):

Forest—The forest class includes five primary types of areas vegetated with trees (fig. 3):

- Native limestone forest (LI)
- Introduced trees (IF)
- Mangrove forest (MN)
- Casuarina forest (CA)
- Atoll forest (AT)

Secondary vegetation (SV)—Secondary vegetation includes fast growing shrubs, small trees and vines on recently disturbed areas.

Agroforest (AG)—The agroforest class consists of areas with trees cultivated for food crops, fruit, wood, and other products. Coconut plantations are coded as CO.

Table 1—Area of three islands of the Commonwealth of the Northern Mariana Islands, by land class and type, 1984

Land class and type	Symbol	Saipan	Rota	Tinian	Total
acres (hectares)					
Forest					
Limestone forest	LI	1,182	12,147	1,714	15,043 (6,088)
Introduced trees	IF	7,888	292	2,478	10,658 (4,313)
Casuarina thickets	CA	1,137	465	1,865	3,467 (1,403)
Atoll forest	AT	11	82	-	93 (37)
Mangrove forest	MN	17	-	-	17 (7)
Total forest		10,235	12,986	6,057	29,278 (11,848)
Secondary vegetation	SV	8,651	2,719	13,616	24,986 (10,111)
Agroforest					
Agroforest	AG	9	6	2	17 (7)
Agroforest with coconuts	AG.CO	84	31	3	118 (48)
Coconut plantation	CO	2,979	1,075	284	4,338 (1,755)
Total agroforest		3,072	1,112	289	4,473 (1,810)
Nonforest					
Marsh, fresh	M.F	363	-	41	404 (164)
Savanna/grassland	G	3,237	3,125	2,872	9,234 (3,737)
Strand	S	1,112	683	1,212	3,007 (1,217)
Cropland	C	223	130	468	821 (332)
Urban	U	1,841	213	206	2,260 (915)
Barren	B	314	40	370	724 (293)
Water	W	45	-	5	50 (20)
Total nonforest		7,135	4,191	5,174	16,500 (6,678)
Total area		29,093	21,008	25,136	75,237 (30,447)

Nonforest—Nonforest areas include marshes, savanna/grasslands, and areas developed for urban use. The seven primary types in this class are:

- Marsh (M)
- Savanna/Grassland (G)
- Strand (S)
- Cropland (C)
- Urban (U)
- Barren (B)
- Water (W)

The forest types are further subdivided into size and density classes identified by these codes:

Code	Size class
0	Short, shrub-like stands less than 5 inches (<12.5 cm) diameter at breast height (d.b.h.).
1	Trees averaging less than 12 inches (<30 cm) in d.b.h. but larger than or equal to 5 inches (>12.5 cm) in d.b.h.
2	Trees averaging 12 or more inches (>30 cm) in d.b.h.
Code	Density class
H	High—crown closure of main canopy over 70 percent.
M	Medium—crown closure of main canopy between 30 and 70 percent.
L	Low—crown closure of main canopy less than 30 percent.

Figure 2—Four major land classes were mapped on Rota, Tinian, and Saipan, Commonwealth of the Northern Mariana Islands. Although forest is the largest land class, much of this area on Tinian and Saipan is composed of introduced trees (IF).

Figure 3—The forest land class was broken down into five types on Rota, Tinian, and Saipan, Commonwealth of the Northern Mariana Islands. Only three types are shown here because the mangrove and atoll types contain less than 1 percent of the total area.

On the folded maps, the vegetative areas are numbered and identified by symbols in the legends. In each symbol, the vegetation type code (table 2) is shown first, followed by the size class and crown density class given above. For example, LI1H would indicate a limestone forest with trees ranging between 5 and 12 inches (12.5 and 30 cm) in diameter and a high density crown

closure. Where possible, dominant species are identified. In such cases, the density class is followed by a period, then by one or two letters of the genus name, for example: IF1M.D as when *Delonix regia* makes up at least 20 percent of an introduced forest stand. Occasionally, mixed stands are identified by a slash between the primary vegetation type and a second type, with density and size classes given only for the primary type. For example, IF2L/SV.L would indicate scattered introduced trees 12 inches (30 cm) or greater in d.b.h., with inclusions or patches of secondary vegetation having *Leucaena leucocephala* as its major component.

The minimum type area mapped during photo interpretation was 1 acre (0.4 ha).

Table 2—Vegetation type codes used for mapping the vegetation of the Commonwealth of the Northern Mariana Islands, by land class, 1984

Vegetation codes	Vegetation types, subtypes, and components
Land class: Forest	
LI	Native limestone forest, various size and density classes apply
LI.CA	Native limestone forest, <i>Casuarina</i> component
LI.CO	Native limestone forest, coconut component
LI/S	Native limestone forest, strand understory
LI/SV	Native limestone forest, secondary vegetation
LI/SV.G	Native limestone forest, tall grass
LI/SV.G.S	Native limestone forest, tall grass and shrubs
LI/SV.P	Native limestone forest, <i>Pandanus</i> understory
LI/SV.S	Native limestone forest, shrub understory
IF	Thickets of introduced trees, various size and density classes apply
IF.D	Introduced trees with <i>Delonix</i> component
IF/SV	Introduced trees with secondary vegetation understory
IF/SV.B	Introduced trees with bamboo
IF/SV.G	Introduced trees with tall grass understory
IF.D/SV.G	Introduced trees, <i>Delonix</i> , with tall grass
IF/SV.L	Introduced trees, with <i>Leucaena</i>
IF.D/SV.L	Introduced trees, <i>Delonix</i> , with <i>Leucaena</i>
IF.D/SV.S	Introduced trees, <i>Delonix</i> , with shrubs
IF/SV.L.C	Introduced trees with <i>Leucaena</i> and <i>Casuarina</i> inclusions
IF/SV.L.G	Introduced trees with <i>Leucaena</i> and tall grass
IF/SV.S	Introduced trees with shrub understory
CA	<i>Casuarina</i> thicket, various size and density classes apply
CA.AT	<i>Casuarina</i> thicket, atoll forest component
CA.LI	<i>Casuarina</i> thicket, native limestone forest component
CA/G.G	<i>Casuarina</i> thicket, short grasses
CA/M.F	<i>Casuarina</i> thicket, freshwater marsh
CA/M.F.P	<i>Casuarina</i> thicket, freshwater marsh with <i>Phragmites</i>
CA/SV	<i>Casuarina</i> thicket, secondary vegetation understory
CA/SV.G	<i>Casuarina</i> thicket, tall grass
CA/SV.L	<i>Casuarina</i> thicket with <i>Leucaena</i>
CA/SV.L.G	<i>Casuarina</i> thicket with <i>Leucaena</i> and tall grass
CA/SV.S	<i>Casuarina</i> thicket, shrub understory
CA/U	<i>Casuarina</i> thicket in urban areas
AT	Atoll forest, various size and density classes apply
AT.LI	Atoll forest, native limestone forest component
AT/S	Atoll forest, strand understory
MN	Mangrove forest, various size and density classes apply
MN/SV.H	Mangrove with <i>Hibiscus</i>

(continued)

Table 2—Vegetation type codes used for mapping the vegetation of the Commonwealth of the Northern Mariana Islands, by land class, 1984 (continued)

Vegetation codes	Vegetation types, subtypes, and components
Land class: Secondary Vegetation	
SV	Secondary vegetation, size and density classes do not apply
SV.AS	Secondary vegetation, agri-scrub component
SV.AS.L	Secondary vegetation, agri-scrub and <i>Leucaena</i> components
SV.B	Secondary vegetation, bamboo component
SV.B.G	Secondary vegetation, bamboo and tall grass components
SV.B.S	Secondary vegetation with bamboo and shrubs
SV.G	Secondary vegetation, tall grass component
SV.G.C	Secondary vegetation, tall grass and <i>Casuarina</i> components
SV.G.C.L	Secondary vegetation, tall grass, <i>Casuarina</i> , and <i>Leucaena</i> components
SV.G/C	Secondary vegetation, tall grass, pasture land
SV.G.L	Secondary vegetation, tall grass and <i>Leucaena</i> components
SV.G.L.S	Secondary vegetation, tall grass, <i>Leucaena</i> , and shrub components
SV.G.S	Secondary vegetation, tall grass and shrub components
SV.H.L	Secondary vegetation, <i>Hibiscus</i> and <i>Leucaena</i> components
SV.L	Secondary vegetation, <i>Leucaena</i> component
SV.L.C	Secondary vegetation, <i>Leucaena</i> and <i>Casuarina</i> components
SV.L/C	Secondary vegetation, <i>Leucaena</i> pasture land
SV.L.S	Secondary vegetation, <i>Leucaena</i> and shrub components
SV.L.S.C	Secondary vegetation, <i>Leucaena</i> , shrub, and <i>Casuarina</i> components
SV.L.S.G	Secondary vegetation, <i>Leucaena</i> , shrub, and tall grass components
SV.S	Secondary vegetation, shrub component
SV.S.C	Secondary vegetation, shrub and <i>Casuarina</i> components
SV.S/C	Secondary vegetation, shrub, pasture land
SV.S/B.D	Secondary vegetation, shrub component, with disturbed understory
Land class: Agroforest	
AG	Agroforest
AG.CI	Agroforest, <i>Citrus</i> component
AG.CO	Agroforest, coconut component
AG.CO/SV	Agroforest, coconut component with secondary vegetation
AG.CO/SV.L	Agroforest, coconut component with <i>Leucaena</i>
CO	Coconut plantation, various size and density classes apply
CO.AT	Coconut plantation, atoll forest component
CO.LI	Coconut plantation, native forest component
CO.IF	Coconut plantation with introduced trees
CO/C	Coconuts growing in pasture land
CO/G.G	Coconut plantation, short grass understory
CO/S	Coconut plantation, strand understory
CO/SV	Coconut plantation, secondary vegetation understory
CO/SV.G	Coconut plantation, tall grass understory
CO/SV.G.S	Coconut plantation, tall grass and shrub understory
CO/SV.L	Coconut plantation, <i>Leucaena</i> understory
CO/SV.L.G	Coconut plantation, <i>Leucaena</i> and tall grass components
CO/SV.S	Coconut plantation, shrub understory
CO/U	Coconut trees in urban areas

(continued)

Vegetation codes	Vegetation types, subtypes, and components
Land class: Nonforest	
M.F	Freshwater marsh
M.F.P	<i>Phragmites</i> marsh
M.F.P/W.F	<i>Phragmites</i> marsh with open water inclusions
G.CA.S	Savanna/grassland, abandoned cropland with shrub component
G.G	Savanna/grassland, short grass component
G.G.B	Savanna/grassland, short grass and bamboo components
G.G.C	Savanna/grassland, short grass and <i>Casuarina</i> trees
G.G.C.D	Savanna/grassland, short grass and <i>Casuarina</i> components with disturbance
G.G.C.L	Savanna/grassland, short grass, <i>Casuarina</i> , and <i>Leucaena</i> components
G.G.C.S	Savanna/grassland, short grass, <i>Casuarina</i> , and shrub components
G.G/C	Savanna/grassland, short grass pasture land
G.G.D	Savanna/grassland, short grass, disturbed
G.G.S	Savanna/grassland, short grass and shrub components
G.G/S	Savanna/grassland, short grass with strand inclusions
G.G.S/C	Savanna/grassland, short grass and shrub pasture land
G.S	Savanna/grassland, shrub component
G.S/C	Savanna/grassland, shrub pasture land
S	Low strand
S.P	Low strand with <i>Pandanus</i> component
S.S	Tall strand
S.S.P	Tall strand with <i>Pandanus</i> component
S/B.L	Low strand with limestone outcrops
S/DV	Low strand with dwarf vegetation inclusions
S.S/DV	Tall strand with dwarf vegetation inclusions
C	Cropland
U	Urban land
B	Barren land
B.D	Disturbed land
B.L	Limestone outcrops
B.S	Beach sand
B/S	Strand inclusions
W.F	Water, fresh

NOTES:

Size classes and density codes are used only with the forest class and with the coconut plantation type.

All components, inclusions, or understory species must be present on at least 20 percent of the mapped area.

VEGETATION TYPE DESCRIPTIONS

Land classes and primary types are described by habitat and major overstory and understory species. Full species citations, families, and Chamorro names of plants mentioned in the text are given in table 3.

The vegetation descriptions for the island of Rota are summaries based on descriptions and species lists made at approximately 45 stations during two visits to Rota, totaling about 12 days of field and lab work. Field work on Tinian and Saipan was less extensive. Fosberg (1960) described the geology and terrain of Rota, Tinian, and Saipan, and provided a general history and description of vegetation changes. This bulletin updates those descriptions and includes information on a number of uncommon to potentially endangered endemic limestone forest species.

Table 3—Plant species mentioned in text¹

Genus, species, and author	Chamorro name	Family
<i>Abrus precatorius</i> L.	kulales halom tano	Fabaceae
<i>Acacia confusa</i> Merr.	sosigi	Mimosaceae
<i>Aglaia mariannensis</i> Merr.	mapuñao	Meliaceae
<i>Aidia cochinchinensis</i> Lour.	sumac	Rubiaceae
<i>Albizia lebeck</i> (L.) Benth.	kalaskas	Mimosaceae
<i>Alyxia torresiana</i> Gaud.	nanagu	Apocynaceae
<i>Angiopteris evecta</i> (Forst. f.) Hoffm.		Marattiaceae
<i>Annona muricata</i> L.	laguaná	Annonaceae
<i>Annona reticulata</i> L.	anonas	Annonaceae
<i>Annona squamosa</i> L.	ates	Annonaceae
<i>Antigonon leptopus</i> H. & A.	cadena de amor	Polygonaceae
<i>Araucaria</i> sp.		Araucariaceae
<i>Areca catechu</i> L.	puguá	Palmae
<i>Artocarpus altilis</i> (Park.) Fosb.	lemmai	Moraceae
<i>Artocarpus mariannensis</i> Tréc.	dokdok	Moraceae
<i>Asplenium nidus</i> L. sensu lato	galak	Polypodiaceae
<i>Averrhoa bilimbi</i> L.	kamis (pickle tree)	Oxalidaceae
<i>Averrhoa carambola</i> L.	bilembines	Oxalidaceae
<i>Barringtonia asiatica</i> (L.) Kurz	puteng	Lecythidaceae
<i>Bauhinia monandra</i> Kurz	flores mariposa	Caesalpiniaceae
<i>Benincasa hispida</i> (Thunb.) Cogn.	kodót	Cucurbitaceae
<i>Bidens</i> spp.		Compositae
<i>Bikkia tetrandra</i> (L. f.) A. Rich.	gausali	Rubiaceae
<i>Blechnum orientale</i> L.		Polypodiaceae
<i>Bruguiera gymnorhiza</i> (L.) Lam.	mangle machu	Rhizophoraceae
<i>Caesalpinia major</i> (Medic.) Dandy & Exell	pakao	Caesalpiniaceae
<i>Capparis cordifolia</i> Lam.	atkaparas	Capparidaceae
<i>Carica papaya</i> L.	papaya	Caricaceae
<i>Cassytha filiformis</i> L.	agasi	Lauraceae
<i>Casuarina litorea</i> L.	gagu	Casuarinaceae
<i>Catharanthus roseus</i> (L.) G. Don	chuchurika	Apocynaceae
<i>Ceiba pentandra</i> (L.) Gaertn.	atagodon	Bombacaceae
<i>Centrosema pubescens</i> Benth.		Fabaceae
<i>Cerbera dilatata</i> Mgf.	chuti	Apocynaceae
<i>Chrysophyllum cainito</i> L.	star apple	Sapotaceae
<i>Citrus</i> spp.	kahat/limon	Rutaceae
<i>Claoxylon marianum</i> Muell.-Arg.	panao	Euphorbiaceae

(continued)

Genus, species, and author	Chamorro name	Family
<i>Clerodendrum</i> spp.	lódigao	Verbenaceae
<i>Cocos nucifera</i> L.	niyog	Palmae
<i>Codiaeum variegatum</i> (L.) Bl.	leston puyitos	Euphorbiaceae
<i>Coelogyne guamensis</i> Ames		Orchidaceae
<i>Coix lacryma-jobi</i> L.	bilén	Gramineae
<i>Colocasia esculenta</i> (L.) Schott	suní agaga	Araceae
<i>Cordia subcordata</i> Lam.	niyoron	Boraginaceae
<i>Cordyline fruticosa</i> (L.) Chev.	baston San Jose	Liliaceae
<i>Crinum asiaticum</i> var. not determined	pigá palayi	Amaryllidaceae
<i>Crotalaria retusa</i> L.		Fabaceae
<i>Cucurbita</i> spp.	kalamasa	Cucurbitaceae
<i>Cycas circinalis</i> L.	fadang	Cycadaceae
<i>Cynometra ramiflora</i> L.	gulos	Caesalpiniaceae
<i>Cyrtosperma chamissonis</i> (Schott) Merr.	baba	Araceae
<i>Davallia solida</i> (Forst. f.) Sw.	puguá machena	Polypodiaceae
<i>Delonix regia</i> (Boj.) Raf.	atbot	Caesalpiniaceae
<i>Discocalyx</i> sp.	ottot	Myrsinaceae
<i>Dodonaea viscosa</i> (L.) Jacq.	lampuaye	Sapindaceae
<i>Dioscorea alata</i> L.	dagu	Dioscoreaceae
<i>Elaeocarpus joga</i> Merr.	yoggá	Tiliaceae
<i>Erythrina variegata</i> var. <i>orientalis</i> (L.) Merr.	gaogao	Fabaceae
<i>Eugenia palumbis</i> Merr.	agatélang	Myrtaceae
<i>Eugenia</i> spp.		Myrtaceae
<i>Eupatorium odoratum</i> L.	masigsig	Compositae
<i>Euphorbia milii</i> var. <i>splendens</i> (Bojer) Ursch & Leandri	crown of thorns	Euphorbiaceae
<i>Ficus prolixa</i> Forst. f.	nunu	Moraceae
<i>Ficus</i> spp.		Moraceae
<i>Ficus tinctoria</i> var. <i>neo-ebudarium</i> (Summerh.) Fosb.	hoda	Moraceae
<i>Flagellaria indica</i> L.	bejuco halom tano	Flagellariaceae
<i>Freycinetia reineckei</i> Warb.	fianiti	Pandanaceae
<i>Gardenia</i> spp.		Rubiaceae
<i>Geniostoma micranthum</i> A. DC.	maholok hayu	Loganiaceae
<i>Gleichenia linearis</i> (Burm. f.) C.B.Cl	mana	Gleicheniaceae
<i>Guamia mariannae</i> (Safford) Merr.	paipai	Annonaceae
<i>Guettarda speciosa</i> L.	panao	Rubiaceae
<i>Hedychium coronarium</i> Koen.		Zingiberaceae
<i>Heritiera littoralis</i> Dry.	ufa	Sterculiaceae
<i>Heritiera longipetiolata</i> Kaneh.	ufa halom tanó	Sterculiaceae
<i>Hernandia labyrinthica</i> Tuyama		Hemandiaceae
<i>Hernandia sonora</i> L.	nonak	Hemandiaceae
<i>Hibiscus rosa-sinensis</i> L.		Malvaceae
<i>Hibiscus tiliaceus</i> L.	pago	Malvaceae
<i>Histiopteris incisa</i> (Thunb.) J. Sm.		Polypodiaceae
<i>Inocarpus fagifer</i> (Park.) Fosb.	budu (buoy)	Fabaceae
<i>Intsia bijuga</i> (Colebr.) O. Ktze.	ifil/ifit	Caesalpiniaceae
<i>Ipomoea batatas</i> (L.) Lam.	kamute	Convolvulaceae
<i>Ipomoea pes-caprae</i> ssp. <i>brasiliensis</i> (L.) v. Ooststr.	alalak tasi	Convolvulaceae
<i>Ipomoea</i> spp.		Convolvulaceae
<i>Ixora casei</i> Hance	santana	Rubiaceae
<i>Ixora</i> sp.		Rubiaceae
<i>Jasminum marianum</i> DC.	hasmin	Oleaceae
<i>Jatropha gossypifolia</i> L.		Euphorbiaceae
<i>Jatropha</i> sp.		Euphorbiaceae
<i>Laportea interrupta</i> (L.) Chew	palilolia	Urticaceae
<i>Laurentia longiflora</i> (L.) Endl.	star of Bethlehem	Lobeliaceae
<i>Leucaena insularum</i> var. <i>guamensis</i> Fosb. & Stone		Mimosaceae
<i>Leucaena leucocephala</i> (Lam.) de Wit	tangantangan	Mimosaceae
<i>Lycopodium cernuum</i> L.		Lycopodiaceae
<i>Lycopodium phlegmaria</i> var. <i>longifolium</i> Spring	kotdon di San Francisco	Lycopodiaceae

(continued)

Table 3—Plant species mentioned in text¹ (continued)

Genus, species, and author	Chamorro name	Family
<i>Macaranga thompsonii</i> Merr.	pengua	Euphorbiaceae
<i>Maesa</i> sp.		Myrsinaceae
<i>Mammea odorata</i> (Raf.) Kosterm.	chopak	Guttiferae
<i>Mangifera indica</i> L.	mangga	Anacardiaceae
<i>Manihot esculenta</i> Crantz	mendioka	Euphorbiaceae
<i>Maytenus thompsonii</i> (Merr.) Fosb.	luluhot	Celastraceae
<i>Medinilla medinilliana</i> (Gaud.) Fosb. & Sachet (ined.)	gafos	Melastomataceae
<i>Melanolepis multiglandulosa</i> var. <i>glabrata</i> (Muell.-Arg.) Fosb.	alom	Euphorbiaceae
<i>Melochia</i> spp.	sayafi	Sterculiaceae
<i>Merrilliodendron megacarpum</i> (Hemsl.) Sleumer	faniok	Icacinaceae
<i>Mikania scandens</i> (L.) Willd.		Compositae
<i>Mimosa invisa</i> Mart.	singbiguin sasa	Mimosaceae
<i>Miscanthus floridulus</i> (Labill.) Warb. ex K. Schum. & Lauterb.	nette	Gramineae
<i>Momordica charantia</i> L.	atmagosu	Cucurbitaceae
<i>Morinda citrifolia</i> L.	lada	Rubiaceae
<i>Moringa oleifera</i> Lam.	malungay (katdes)	Moringaceae
<i>Mucuna</i> spp.		Fabaceae
<i>Musa</i> spp.	choda	Musaceae
<i>Myrtella bennigseniana</i> (Volk.) Diels		Myrtaceae
<i>Neisosperma oppositifolia</i> (Lam.) Fosb. & Sachet	fagot	Apocynaceae
<i>Nephrolepis</i> spp.		Polypodiaceae
<i>Ochrosia mariannensis</i> A. DC.	langiti	Apocynaceae
<i>Ochrosia mariannensis</i> var. <i>crassicaarpa</i> Fosb. & Falanruw		Apocynaceae
<i>Operculina ventricosa</i> (Bert.) Peter	alalag	Convolvulaceae
<i>Osmoxylon mariannense</i> (Kaneh.) Fosb. & Sachet (ined.)		Araliaceae
<i>Pandanus dubius</i> Spreng.	pahong	Pandanaceae
<i>Pandanus tectorius</i> Park.	kafu	Pandanaceae
<i>Passiflora foetida</i> var. <i>hispida</i> (DC.) Killip	dulce	Passifloraceae
<i>Pemphis acidula</i> Forst.	nigas	Lythraceae
<i>Pennisetum</i> spp.	boksu	Gramineae
<i>Persea americana</i> Mill.	alageta	Lauraceae
<i>Phragmites karka</i> (Retz.) Trin. ex Steud.	karisu	Gramineae
<i>Phyllanthus acidus</i> (L.) Skeels	ibba	Euphorbiaceae
<i>Piper betle</i> L.	pupulu	Piperaceae
<i>Piper guahamense</i> C. DC.	pupulon aniti	Piperaceae
<i>Pipturus argenteus</i> (Forst. f.) Wedd.	amahadyan	Urticaceae
<i>Pisonia grandis</i> R. Br.	amumo	Nyctaginaceae
<i>Pisonia umbellifera</i> (Forst.) Seem.		Nyctaginaceae
<i>Pithecellobium dulce</i> (Roxb.) Benth.	kamachile	Mimosaceae
<i>Plumeria</i> spp.	flores mayo	Apocynaceae
<i>Polypodium scolopendria</i> Burm. f.		Polypodiaceae
<i>Polyscias grandifolia</i> Volk.		Araliaceae
<i>Pouteria obovata</i> (R. Br.) Baehni	lala	Sapotaceae
<i>Premna obtusifolia</i> R. Br.	ahgao	Verbenaceae
<i>Psidium guajava</i> L.	abas	Myrtaceae
<i>Psychotria</i> spp.	aplokating	Rubiaceae
<i>Saccharum officinarum</i> L.	tupu (sugarcane)	Gramineae
<i>Saccharum spontaneum</i> L.		Gramineae
<i>Scaevola taccada</i> (Gaertn.) Roxb.	nanasu	Goodeniaceae
<i>Sechium edule</i> (Jacq.) Sw.	chayote	Cucurbitaceae
<i>Serianthes nelsonii</i> Merr.	tronkon guafi	Mimosaceae
<i>Spathoglottis</i> sp.		Orchidaceae

(continued)

Genus, species, and author	Chamorro name	Family
<i>Stachytarpheta</i> spp.		Verbenaceae
<i>Swietenia</i> sp.		Meliaceae
<i>Tarenna sambucina</i> (Forst.) Dur.	sumak	Rubiaceae
<i>Terminalia catappa</i> L.	talisai	Combretaceae
<i>Thespesia populnea</i> (L.) Sol. ex Correa	banalo	Malvaceae
<i>Thevetia peruviana</i> (Pers.) K. Schum.		Apocynaceae
<i>Tournefortia argentea</i> L. f.	hunig	Boraginaceae
<i>Triphasia trifolia</i> (Burm. f.) P. Wils.	limon china	Rutaceae
<i>Vigna marina</i> (Burm.) Merr.	akankang manulasa	Fabaceae
<i>Wikstroemia elliptica</i> Merr.	gapetatayaki	Thymelaeaceae
<i>Xanthosoma</i> spp.	sun-i-Honolulu	Araceae
<i>Xylocarpus moluccensis</i> (Lam.) Roem.	lalanyok	Meliaceae
<i>Zoysia matrella</i> (L.) Merr.	chaguan hapon	Gramineae

¹Scientific names of Dicotyledonae are from Fosberg and others (1979), of Pteridophyta and Gymnospermae from Fosberg and others (1982), and of Monocotyledonae from Fosberg and others (1987). Common names are from Stone (1970) and Topping and others (1975).

Forest Class

The native forests of the Marianas are a unique natural heritage, being rich in endemic species. Native forest has however been altered by agricultural and wartime activities, bulldozing, animals, and replacement by introduced species such as *Leucaena leucocephala* and *Acacia confusa*. Because of their threatened status, descriptions of native limestone forests are the most detailed.

Native Limestone Forest (LI)

The species composition of limestone forest varies with habitat conditions and the amount of previous disturbance. The forests of Rota (figs. 4, 5) and southwest Tinian (figs. 6, 7) are the best examples of native forest, while the forests of Saipan (figs. 8, 9) show the greatest effects of wartime and other human activities. A generalized description of the native limestone forests of each island are given below.

Rota—A number of phases of limestone forest occur within this type. Forests located at Sabana are often shrouded in clouds and mist. Occurring in patches in the formerly mined Sabana area is an association of the endemic *Hernandia labyrinthica* and *Elaeocarpus joga* interspersed with *Pandanus* thickets. Mixed in with the *Elaeocarpus/Hernandia* are a few *Ficus* spp., *Artocarpus* spp., *Hibiscus tiliaceus*, and *Osmoxylon mariannense*. Understory species include *Macaranga thompsonii* and *Pipturus argenteus*. Epiphytes are abundant and include *Freycinetia reineckei*, *Asplenium nidus*, *Davallia solida* and other ferns; *Coelogyne guamensis* and other orchids; and mosses.

In general the native forests of the interior Sabana terrace are shorter than those nearer the cliffs on the southern border of the area. The cloud forest on the rocky southern edge of the plateau consists of widely spaced trees of medium height, covered with a luxuriant growth of epiphytes. There is little undergrowth other than herbaceous ground cover and mosses growing over the limestone boulders.

Figure 4—Rota, Commonwealth of the Northern Mariana Islands, is the least disturbed of the mapped islands. The forest class is by far the largest land class.

Figure 5—The native limestone forest type on Rota, Commonwealth of the Northern Mariana Islands, is the major forest type. The atoll forest type contains less than 1 percent of the total forest area and is not included here.

Figure 6—Tinian, Commonwealth of the Northern Mariana Islands, is the most heavily disturbed island mapped, with secondary vegetation being the largest land class.

Figure 7—Three forest types were mapped on Tinian, Commonwealth of the Northern Mariana Islands. As on Saipan, the native forests of Tinian are limited.

Figure 8—Four land classes were mapped on Saipan, Commonwealth of the Northern Mariana Islands. Although the forest land class is the largest, it consists mostly of thickets of introduced trees.

Figure 9—Five forest vegetation types were mapped on Saipan, Commonwealth of the Northern Mariana Islands. Both the mangrove and atoll forest types are excluded due to their small total area. Saipan is in a state of constant change, and there are few remnants of native forest.

Forests on the western and northern slopes of the Sabana terrace are a rich mix of species including in the overstory: *Artocarpus* spp., *Elaeocarpus joga*, *Hernandia labyrinthica*, *Pisonia* spp., *Guettarda speciosa*, *Neisosperma oppositifolia*, *Claoxylon marianum*, *Ficus prolixa*, and *Serianthes nelsonii*. Understory species include these: *Barringtonia asiatica*, *Discocalyx* sp., *Guamia mariannae*, *Annona reticulata*, *Aglaiia mariannensis*, *Melanolepis multiglandulosa* var. *glabrata*, *Morinda citrifolia*, *Triphasia trifolia*, *Maytenus thompsonii*, *Cycas circinalis*, *Polyscias grandifolia*, *Psychotria* sp., *Eugenia palumbis*, *Pandanus* spp., *Ficus tinctoria* var. *neo-ebudarium*, *Pipturus argenteus*, *Laportea interrupta*, *Macaranga thompsonii*, *Pisonia umbellifera*, *Maesa* sp., *Premna obtusifolia*, *Tarennia sambucina*, herbs such as *Piper guahamense*, and many ferns. Climbers and vines include *Freycinetia reineckei*, *Alyxia torresiana*, *Mucuna* sp., and *Flagellaria indica*.

Of the two species of *Hernandia* found in the native forests of Rota, *H. labyrinthica* occurs mainly in the Sabana area while *H. sonora* is more common in coastal areas and higher parts of interior cliffs. *Elaeocarpus joga* is especially abundant in upper areas.

Stands of the endangered tree *Serianthes nelsonii*, endemic to the southern Mariana Islands, occur about the Gayaugan cliffs in the Isang area and on steep slopes in the Uyulan hulo area to the northwest and west of the Sabana terrace. At one time, only two specimens of this tree were known to exist, both on Guam. The population on Rota is now known to include at least 84 trees with diameters estimated to range from 6 inches to 47 inches (15 cm to 120 cm). One tree we measured had a diameter of 41 inches (103.5 cm) and a height of 77 feet (23.4 m). There were few seedlings and no saplings of *Serianthes* in the areas we visited. A patch of *Merrilliodendron megacarpum* occurs at the base of Mananana cliffs between the Santa Cruz and Inayan areas.

Native forest with larger trees (coded LI2) are generally located on steep areas or where the terrain is especially rocky and uneven. Overstory species common to these forests include *Artocarpus mariannensis*, especially in the interior, with *A. altilis* more commonly located on the coast.

In the drier forests of northeast Rota, where the terrain is more level and less rocky, small to medium size *Intsia bijuga* are common. Some of these forests are relatively low and scrubby with *Hibiscus tiliaceus* and *Pandanus* spp. being common. Other species include *Guamia mariannae*, *Guettarda speciosa*, *Eugenia* spp., *Morinda citrifolia*, *Maytenus thompsonii*, *Triphasia trifolia*, *Polyscias grandifolia*, *Cycas circinalis*, *Flagellaria indica*, and *Caesalpinia major*.

Taller forests with canopies from 22- to 45-feet (7- to 14-m) high include *Intsia bijuga*, *Guamia mariannae*, and larger trees such as *Artocarpus* spp., *Ficus prolixa*, *Elaeocarpus joga*, *Hernandia sonora*, and *Pisonia grandis*. In more coastal forests, *Neisosperma oppositifolia*, *Cynometra ramiflora*, *Pouteria obovata*, *Cordia subcordata*, *Erythrina variegata* var. *orientalis*, *Hernandia sonora*, and *Casuarina litorea* are more common.

Tinian—The only limestone forest remaining on Tinian occurs on the steep cliffsides. A remnant forest occurs about Mt. Lassu, mixed with secondary vegetation including *Leucaena leucocephala* at its edges. A small forest dominated by *Cynometra ramiflora* trees occurs along cliffs to the southeast of the Lassu shrine. Other species include large *Erythrina variegata* var. *orientalis* trees,

Neisosperma oppositifolia, *Cerbera dilatata*, *Psychotria* sp., *Eugenia* sp., *Guamia mariannae*, *Pandanus* spp., and *Terminalia catappa*.

Native forest is also found on the lower, drier, and narrower terraces of Laderan Lasu and consists of *Cynometra ramiflora* and *Pisonia grandis*. Smaller trees and shrubs in these dry forests include *Pouteria obovata*, *Pandanus* spp., *Erythrina variegata* var. *orientalis*, *Aglaiia mariannensis*, *Melanolepis multiglandulosa* var. *glabrata*, and *Morinda citrifolia*. There is little undergrowth on the dry rocky ground. The forests along the Mahalang and Manapang cliffs are similar with the addition of some *Ficus* trees.

Aerial photographs show an extensive forest with a distinctive texture of light colored crowns amid darker vegetation occurring southeast of the Kastiyu terrace of southern Tinian. Most of this area now consists of weedy grasses and tangantangan (*Leucaena*). A remnant of the type occurs near the gate of the Bar K Ranch. This forest is dominated by large *Pisonia grandis* trees with huge gnarled compound trunks. This tree is adapted to typhoons in that its weak limbs are easily broken off by high winds. The trees then regrow repeatedly from their massive trunks. The light colored crowns on the aerial photos appear to be the once emergent crowns of *P. grandis*. The forest texture was not seen elsewhere in the CNMI, and the small patch of *Pisonia* forest may be a remnant of a once more extensive native forest type.

This remnant forest consists of large *Pisonia* with an understory of *Guamia mariannae*, some *Intsia bijuga*, *Neisosperma oppositifolia*, *Pandanus* spp., *Psychotria* spp., *Premna obtusifolia*, *Ficus* sp., *Eugenia* sp., *Melanolepis multiglandulosa* var. *glabrata*, the climbing shrub *Jasminum marianum* and climbing vines, *Flagellaria indica* and *Abrus precatorius*.

Limestone forest occurs along cliffs around the Kastiyu and Pina plateaus in southeast Tinian. One area of this forest, along the cliffs east of the Kastiyu pasture area, consists of a low forest, approximately 33 ft (10 m) high, growing on a substrate of clay and bare rock. Common species include *Ochrosia mariannensis*, *Psychotria* sp., *Neisosperma oppositifolia*, *Guamia mariannae*, *Pandanus* spp., *Cynometra ramiflora*, *Maytenus thompsonii*, *Pisonia grandis*, *Aidia cochinchinensis*, *Aglaiia mariannensis*, *Erythrina variegata* var. *orientalis*, *Polyscias grandifolia*, *Capparis cordifolia*, *Ficus prolixa*, *Jasminum marianum*, and *Abrus precatorius*. At the edge of the cliff a crevasse shelters a large specimen of *Heritiera longipetiolata* with a d.b.h. of about 28 inches (70 cm), and height of 76 ft (23 m). A native forest also occurs on the narrow terrace below.

Saipan—The native limestone forest type is very limited and disturbed on Saipan. A few areas remain in scattered pockets on the Bañadero cliffs, Kagman plateau and peninsula, near Mt. Tagpochau, on small plateau terraces along the east coast, and mixed with secondary vegetation along the cross island road.

Most of the remaining stands of limestone forest are largely scrubby. Common species include *Pandanus dubius* and *P. tectorius*, *Ochrosia mariannensis*, *Guamia mariannae*, *Psychotria* sp., *Hibiscus tiliaceus*, *Premna obtusifolia*, *Morinda citrifolia*, *Pouteria obovata*, *Cynometra ramiflora*, *Ficus* spp., *Claoxylon marianum*, *Ixora* sp., *Aglaiia mariannensis*, *Polyscias grandifolia*, and *Flagellaria indica*. *Capparis cordifolia* occurs on exposed coastal areas and *Bikkia tetrandra* on exposed cliffs.

Remnant limestone forests along roads and in protected inland areas are dominated by *Artocarpus mariannensis*. The major large species in the Kagman plateau forest is *Pisonia grandis* with diameters from 41 to 47 inches (105 to 120 cm). *Guamia* growing to 30 ft (9 m) tall can also be seen in this forest. Other trees include *Erythrina variegata* var. *orientalis*, *Ficus* spp., *Melanolepis multiglandulosa* var. *glabrata*, *Barringtonia asiatica*, and *Cynometra ramiflora* with admixtures of introduced trees.

Trees growing in forests nearer the coast include: *Neisosperma oppositifolia*, *Barringtonia asiatica*, *Terminalia catappa*, *Heritiera longipetiolata*, *Cynometra ramiflora*, *Cordia subcordata*, and *Casuarina litorea*.

Introduced Trees (IF)

A number of trees have been introduced to the CNMI and have become naturalized including: *Acacia confusa*, flame tree (*Delonix regia*), *Albizia lebbeck*, and *Pithecellobium dulce*. In places, these trees form thickets and are dense enough to be classified as forests. Such stands are given the designation IF for introduced trees to distinguish them from native limestone forest. The type is most common on Saipan and Tinian.

Rota—The highest point in the Sabana area of Rota is “a knoll of volcanic material protruding up through the limestone terrace” (Fosberg 1960, p. 51). In this misty area is a dense low forest of the introduced tree *Acacia confusa*. A number of native and endemic species grow in the understory or as epiphytes in this forest. They include the giant fern *Angiopteris evecta*, the magenta flowered *Medinilla medinilla*, pendant *Lycopodium phlegmaria* var. *longifolium*, and *Coelogyne guamensis*—an orchid with large white blossoms. The large fern *Histiopteris incisa* also occurs in this area.

Other areas of the introduced forest type on Rota include thickets of *Delonix regia* especially in cleared areas along the road in the Sinapalu area where dense stands of saplings occur.

Tinian—On Tinian, the Introduced Tree type includes low forests of *Acacia confusa* on volcanic soils between the Banaderon Lemmai and Banaderon Nunu areas. These forests consist of a single story of *Acacia* trees with d.b.h. generally not over 18 inches (45 cm), growing over weedy growth including the noxious *Eupatorium odoratum* and *Mimosa invisa*, as well as *Mikania scandens*, *Momordica charantia*, *Passiflora foetida* var. *hispida*, *Centrosema pubescens*, and *Stachytarpheta* spp. Adjacent open areas are filled with tall *Pennisetum* grass.

Other components of the IF type include groves of *Delonix regia*, especially along the road between Taga Beach and Bar K Ranch. Throughout the island, especially the northern two-thirds, groves of *Acacia confusa*, *Albizia lebbeck*, *Casuarina litorea*, *Delonix regia*, *Ceiba pentandra*, and *Bauhinia monandra* occur amid thickets of secondary vegetation, mostly *Leucaena leucocephala*.

Saipan—On Saipan, the IF type is extensive, including groves of *Acacia confusa* and patches of *Albizia lebbeck* mixed in with other vegetation, especially *Leucaena*. *Delonix regia* is common along roads and grows in stands in many areas. *Pithecellobium dulce* is also common.

Mangrove Forest (MN)

Mangroves are marine forests with specialized roots inundated at least periodically by sea water. The mangrove type is represented by very small patches of *Bruguiera gymnorrhiza*, *Heritiera littoralis*, and *Xylocarpus moluccensis*. While the only mappable mangrove stands were on Saipan, Fosberg (1979) does list mangroves occurring on Tinian and Rota.

Casuarina Thickets (CA)

Casuarina litorea trees are fairly distinctive on aerial photographs and easily identified. *Casuarina* typically occurs along the coast, in bands too narrow to be separately delineated, in which case they are often typed with strand (S) or atoll forest (AT). They are also common in quarry sites and areas of secondary vegetation where they are classified as CA/SV, or mixed in with limestone forest vegetation (CA.LI), with atoll forest vegetation (CA.AT), or scattered in grassy areas (CA/G.G). Stands of *Casuarina* are common on all three islands.

Atoll Forest (AT)

Along the coast, the strand type merges with the atoll forest type. Rota has the most extensive stands of atoll forest, the type is quite limited on Saipan and Tinian. Dominant canopy species in these coastal forests on Rota are large *Hernandia sonora* and *Artocarpus* sp. Generally, the understory consists of *Guettarda speciosa*, *Neisosperma oppositifolia*, *Pandanus* spp., and occasionally *Mammea odorata*. The “fadang” (*Cycas circinalis*) may occur in the lower understory and the fern *Polypodium scolopendria* is quite common. *Casuarina* trees are often associated with the atoll forest type and where they predominate the type is coded as CA.

Secondary Vegetation Class

The secondary vegetation land class is intermediate between forest and nonforest. Secondary vegetation occurs in areas where the natural vegetation has been disturbed and replaced by fast-growing weedy species. The most common species in this class is the introduced *Leucaena leucocephala*, which forms dense thickets and is typed as SV.L. Extensive stands of *Leucaena* occur on Saipan and Tinian.

Introduced trees common in areas of secondary vegetation include *Albizia lebbeck*, *Acacia confusa*, *Delonix regia*, and *Pithecellobium dulce*. Tall grasses include *Pennisetum* spp. and *Saccharum spontaneum*. The noxious climbing shrubs *Mimosa invisa* and *Eupatorium odoratum* were common. Other woody secondary species include *Dodonaea viscosa*, *Jatropha* sp., and *Melochia* spp. Vines include *Mikania scandens*, *Momordica charantia*, *Mucuna* sp., *Operculina ventricosa*, *Ipomoea* spp., and *Passiflora foetida* var. *hispida*. *Bidens* spp. and other herbaceous weeds also occur.

Agroforest Class

Agroforest (AG)

The agroforest land class category is applied to areas of mixed growth including trees, managed for fruit, food, wood, and other products such as formerly occurred in Chamorro "ranches" and villages. The area along the road to Lake Susupe on Saipan approaches this definition of the agroforest type. The agroforest type, at this writing, is quite limited in the Mariana Islands. Major food tree species in this area include the following: coconut (*Cocos nucifera*), breadfruit (*Artocarpus altilis*), tropical almond (*Terminalia catappa*), mango (*Mangifera indica*), *Citrus* spp., betel nut (*Areca catechu*), buoy nuts (*Inocarpus fagifer*), "apples" (*Eugenia* spp.), papaya (*Carica papaya*), custard apple (*Annona reticulata*), sour sop (*Annona muricata*), sweet sop (*Annona squamosa*), bananas (*Musa* spp.), star fruit (*Averrhoa carambola*), pickle fruit (*Averrhoa bilimbi*), iba fruit (*Phyllanthus acidus*), guava (*Psidium guajava*), star apple (*Chrysophyllum cainito*), horse-radish tree (*Moringa oleifera*), and avocado (*Persea americana*).

Other food plants growing in the understory include these: sugar cane (*Saccharum officinarum*), taro (*Cyrtosperma chamissonis*, *Colocasia esculenta*, and *Xanthosoma* spp.), cassava (*Manihot esculenta*), bittermelon (*Momordica charantia*), pumpkin (*Cucurbita* spp.), wax gourds (*Benincasa hispida*), "chayote" (*Sechium edule*), yam (*Dioscorea alata*), and sweet potato (*Ipomoea batatas*). Common ornamentals include *Hibiscus rosa-sinensis* and other species and hybrids of hibiscus, *Plumeria* spp., *Clerodendrum* spp., croton (*Codiaeum variegatum*), chain-of-love vine (*Antigonon leptopus*), ti plant (*Cordyline fruticosa*), *Araucaria* sp., white ginger (*Hedychium coronarium*), Job's tears (*Coix lacryma-jobi*), bush *Ipomoea*, kapok tree (*Ceiba pentandra*), crown of thorns (*Euphorbia milii* var. *splendens*), gardenia (*Gardenia* spp.), mahogany (*Swietenia* sp.), ornamental aroids, *Thevetia peruviana*, *Catharanthus roseus*, *Ixora casei*, and a number of semi-wild species useful for medicinals, cordage and other purposes, such as "lada" *Morinda citrifolia*, "pago" (*Hibiscus tiliaceus*), *Piper betle*, and *Ficus* spp. When there are at least 20 percent coconuts, the area is typed as AG.CO. The designation AG.CI is used when at least 20 percent *Citrus* trees are present.

Coconut Plantations (CO)

Dense groves of coconut trees that were originally planted for commercial reasons are designated as CO. When mixed with secondary vegetation, they are typed as CO/SV, with elements of limestone forest (CO.LI), atoll forest (CO.AT), and introduced forest (CO.IF).

Nonforest Class

Strand (S)

Strand vegetation is common along coasts of all three islands but is generally too narrow to be separately demarcated and is often included with Atoll Forest, Native Limestone Forest, or other types. Species characteristic of beach strand include the small trees *Tournefortia argentea*, *Thespesia populnea* and *Scaevola*

taccada. Vines such as *Ipomoea pes-caprae* ssp. *brasiliensis*, *Vignamarina*, and *Cassytha filiformis* may be present. Patches of *Crinum asiaticum* occasionally occur in more open areas. *Pemphis acidula* occurs in rocky areas along with normal and dwarfed *Scaevola taccada*. The native species *Leucaena insularum* var. *guamensis* is occasionally present, and further back from the shore, *Ochrosia mariannensis* var. *crassicaarpa*, *Barringtonia asiatica*, *Pandanus dubius*, *Neisosperma oppositifolia*, *Erythrina variegata* var. *orientalis*, and *Cordia subcordata* may be present.

When *Pandanus* is a dominant feature, strand vegetation is typed as S.P. The type S/DV characterizes the dwarfed windswept vegetation of exposed coastal areas. Denser stands of *Mammea odorata* occur on rocky windswept coasts and stands of dwarfed *Scaevola taccada* also occur in such areas on Rota and Saipan. There are also open patches of *Zoysia matrella* occurring in flat areas.

Savanna/Grasslands (G)

Areas dominated by grassy and low herbaceous vegetation occur on both limestone and volcanic soils. Open areas in the formerly mined Sabana area of Rota are covered with herbaceous growth which is meadowlike and quite different in aspect and species composition from the vegetation of volcanic savanna areas of other parts of Micronesia. *Pennisetum* spp. are common, as well as patches of *Eupatorium odoratum* and areas of mixed ferns with *Gleichenia linearis*, *Nephrolepis* sp., and *Blechnum orientale* being prominent. Often mixed in with the ferns is the ground orchid *Spathoglottis* sp. and the morning-glory vine, *Ipomoea* spp. *Miscanthus floridulus* occurs on both limestone and volcanic soils on Saipan. On Rota, the savanna/grassland type on volcanic slopes was reported to include species characteristic of the savanna/grasslands of southern Guam such as *Gleichenia linearis*, *Lycopodium cernuum*, *Myrtella bennigseniana*, *Geniostoma micranthum*, *Wikstroemia elliptica*, and *Scaevola taccada* (Fosberg 1960). In the limited area of volcanic soils on Tinian, these species have been replaced by introduced weeds such as *Pennisetum* spp. and *Mimosa invisa*.

On Tinian, the savanna/grassland type includes some pastures planted to *Panicum* at the Bar K Ranch. Other pastures consist of *Leucaena leucocephala* which had been bulldozed to form a dense low forage. A number of toxic weedy species seen in pastures included *Jatropha gossypifolia*, *Laurentia longiflora*, *Crotalaria retusa*, and *Abrus precatorius*.

Subtypes of the savanna/grassland type include:

- G.G — grasses or sedges
- G.S — shrubs
- G.B — areas of exposed (bare) soil
- G.P — *Pandanus*
- G.CA — abandoned agricultural areas
- G.C — *Casuarina* trees
- G/C — pasture land

Marsh (M)

Marshes are areas of grasses, sedges, and herbs growing in standing water most of the year. Marshes occur in the area of Lake Susupe on Saipan and Lake Hagoi on Tinian.

Barren Areas (B)

The designation, barren areas, is applied to areas that lack natural vegetation, because of factors such as rocks, sterile soil, and bulldozing.

Cropland (C)

Croplands are areas of cultivated lands without tree cover. Many areas in the Northern Marianas under cultivation are below the minimal size to be typed and are included with the agroforest or secondary vegetation classes.

Urban (U)

Towns, villages, and other inhabited areas are classified as urban.

Water (W)

Lake Susupe and Lake Hagoi in northeast Tinian are the only mappable bodies of freshwater on the surveyed islands. They are coded W.F.

GLOSSARY

Agroforest: An area of mixed growth including trees, cultivated for fruit, food, wood, and other products.

D.b.h.: Diameter at breast height. Tree diameter outside bark measured at breast height, 4.5 ft (1.3 m) above the ground.

Forest land: Land at least 10 percent stocked by live trees or land formerly having such tree cover and not currently developed for nonforest use.

Land area: Land area includes dry land and land temporarily or partially covered by water, such as marshes, swamps, and river flood plains; streams or sloughs.

Land class: A classification of land by major use or major vegetative characteristics, i.e., forest, secondary vegetation, agroforest, and nonforest.

Nonforest land: Land that has never supported forests or was formerly forested and is currently developed for nonforest use.

Secondary vegetation: A vegetative type characterized by small, fast-growing trees, shrubs, and vines: usually weedy invaders.

Vegetative type: An area delineated on the maps as having similar plant composition to one of the types described in the section on type classification.

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Falanruw, Marjorie C.; Cole, Thomas G.; Ambacher, Alan H. 1989. **Vegetation Survey of Rota, Tinian, and Saipan, Commonwealth of the Northern Mariana Islands.** Resour. Bull. PSW-27. Berkeley, CA: Pacific Southwest Forest and Range Experiment Station, Forest Service, U.S. Department of Agriculture. 11p. + 13 maps.

TINIAN

VEGETATION LEGEND

For explanation of vegetation type codes, see Table 2.

AREA			AREA			AREA		
ITEM	LABEL	AREA	ITEM	LABEL	AREA	ITEM	LABEL	AREA
1	B.L.	43 17.4	277	CAH	7 2.8	518	SV.G.S	23 9.3
2	O.S.	22 8.0	278	CAH	1 4	519	SV.A.S.L	10 4.0
3	S.V.	9 3.8	279	FIH	6 2.4	520	SV.S	25 22.3
4	S.V.	2156 872.5	280	FIH.S.V.L	5 2.0	521	B.L.	9 3.8
5	S.V.	2 8	281	CAH	1 4	522	SV.L	2 8
6	S.V.	1 4	282	B.L.	8 2.4	523	SV.G.S	2 8
7	S.V.	1 4	283	CAH	3 1.2	524	SV.S	1 4
8	S.V.	1 4	284	CAH	1 4	525	SV.S	10 4.0
9	S.V.	1 4	285	CAH	2 8	526	SV.S	2 8
10	S.V.	1 4	286	CAH	1 4	527	B.V.L	2 8
11	CAH.S.V.L	14 5.7	287	CAH	1 4	528	SV.G.S	10 4.0
12	SV.S	32 13.0	288	CAH.S.V.L	2 8	529	SV.S	2 8
13	O.S.	5 2.0	289	O.G.	3 1.2	530	O.G.S	6 3.2
14	S.V.	2 8	290	CAH.S.V.L	1 4	531	C	3 1.2
15	FIH.S.V.L	2 8	291	O.G.	1 4	532	C	4 1.8
16	FIH.S.V.L	2 8	292	CAH	18 6.5	533	SV.S	4 1.8
17	O.G.	4 1.8	293	SV.L	742 300.3	534	SV.G.S	1 4
18	FIH.S.V.L	2 8	294	SV.S	20 11.7	535	SV.G	4 1.8
19	S.V.	1 4	295	SV.L.S	12 1.2	536	SV.L.C.L	2 8
20	S.V.	1 4	296	SV.S	4 1.8	537	SV.S	3 1.2
21	SV.G.S	4 1.8	297	CAH.S.V.L	5 2.0	538	SV.G.S	2 8
22	SV.L	4 1.8	298	FIH	1 4	539	SV.S	2 8
23	CAH	4 1.8	299	CAH	3 1.2	540	SV.G.S	2 8
24	FIH.S.V.L	22 8.8	300	CAH	3 1.2	541	O.G.	2 8
25	S.V.	1 4	301	SV.L.S	11 4.5	542	SV.L	9 3.8
26	SV.S	11 4.5	302	SV.L	1 4	543	LIH.S.V.S	21 8.8
27	S.V.	5 2.0	303	FIH	1 4	544	SV.G	1 4
28	SV.S	11 4.5	304	CAH	3 1.2	545	O.G.	3 1.2
29	S.V.	5 2.0	305	SV.L.S	11 4.5	546	SV.L	9 3.8
30	SV.G.S	11 4.5	306	SV.L	1 4	547	SV.G	1 4
31	S.V.	5 2.4	307	FIH.S.V.L	3 1.2	548	SV.S	1 4
32	SV.L	1 4	308	SV.G.S	20 11.7	549	FIH	2 8
33	SV.L	2 8	309	FIH.S.V.L	2 8	550	CAH.S.V.L	4 1.8
34	FIH	6 2.4	310	CAH.S.V.L	2 8	551	SV.L	9 3.8
35	O.G.	2 8	311	CAH	4 1.8	552	O.G.	3 1.2
36	SV.S	1 4	312	FIH	4 1.8	553	SV.S	2 8
37	O.G.	2 8	313	FIH	4 1.8	554	SV.L	9 3.8
38	SV.S	1 4	314	FIH	4 1.8	555	O.G.	3 1.2
39	O.G.	2 8	315	SV.G.S	9 3.8	556	SV.L	9 3.8
40	SV.G.S	8 2.4	316	CAH	5 2.0	557	O.G.	5 2.0
41	SV.S	20 8.1	317	CAH.S.V.L	4 1.8	558	O.G.S	1 4
42	FIH	4 1.8	318	FIH.S.V.L	4 1.8	559	SV.L	15 6.1
43	SV.S	20 8.1	319	CAH.S.V.L	1 4	560	SV.L	1 4
44	CAH.S.V.L	2 8	320	CAH.S.V.L	1 4	561	SV.L	1 4
45	LIH	1 4	321	CAH.S.V.L	1 4	562	SV.L	1 4
46	SV.L	1 4	322	CAH.S.V.L	1 4	563	SV.L	1 4
47	SV.L	1 4	323	CAH.S.V.L	1 4	564	SV.L	1 4
48	SV.L	1 4	324	CAH.S.V.L	1 4	565	SV.L	1 4
49	SV.L	1 4	325	CAH.S.V.L	1 4	566	SV.L	1 4
50	SV.L	1 4	326	CAH.S.V.L	1 4	567	SV.L	1 4
51	O.G.S	2 8	327	CAH.S.V.L	1 4	568	SV.L	1 4
52	SV.L	1 4	328	CAH.S.V.L	1 4	569	SV.L	1 4
53	SV.L	1 4	329	CAH.S.V.L	1 4	570	SV.L	1 4
54	SV.L	1 4	330	CAH	2 8	571	SV.L	1 4
55	CAH.S.V.L	5 2.0	331	SV.S	3 1.2	572	O.G.S	7 2.8
56	SV.G.S	1 4	332	SV.L.S	3 1.2	573	O.G	8 1.2
57	SV.G.S	1 4	333	LIH	15 6.1	574	LIH	15 6.1
58	CAH.S.V.L	8 2.4	334	SV.L	8 2.4	575	O.G.S	21 8.8
59	SV.L	5 2.0	335	SV.L	15 6.1	576	SV.L	2 8
60	CAH	1 4	336	SV.S	3 1.2	577	SV.G	1 4
61	SV.L	1 4	337	SV.S	3 1.2	578	LIH	1 4
62	CAH	1 4	338	CAH.S.V.L	3 1.2	579	LIH	1 4
63	CAH	1 4	339	CAH.S.V.L	6 2.4	580	SV.S	9 3.8
64	CAH	1 4	340	CAH.S.V.L	2 8	581	SV.G	2 8
65	SV.L	351	341	SV.G	2 8	582	SV.G	2 8
66	SV.S	8 1.2	342	SV.G	2 8	583	CAH.S.V.L	17 6.9
67	SV.S	8 1.2	343	SV.G	2 8	584	O.G.S	13 1.8
68	O.G.S	13 1.8	344	SV.L	24 9.7	585	SV.S	1 4
69	SV.S	13 1.8	345	CAH	12 4.0	586	CAH.S.V.L	2 8
70	SV.S	13 1.8	346	SV.S	32 13.0	587	FIH.S.V.L	1 4
71	SV.S	13 1.8	347	SV.S	18 7.3	588	SV.L	2 8
72	SV.S	13 1.8	348	O.G.S	2 8	589	SV.S	7 2.8
73	FIH	1 4	349	O.G.S	2 8	590	SV.L	1 4
74	CAH	1 4	350	SV.S	1 4	591	SV.S	1 4
75	FIH	1 4	351	SV.S	1 4	592	SV.S	1 4
76	FIH	1 4	352	SV.S	1 4	593	SV.S	1 4
77	SV.S	1 4	353	SV.S	1 4	594	SV.S	1 4
78	SV.S	1 4	354	SV.S	1 4	595	SV.S	1 4
79	SV.S	1 4	355	SV.S	1 4	596	SV.S	1 4
80	SV.S	1 4	356	SV.S	1 4	597	SV.S	1 4
81	SV.S	1 4	357	SV.S	1 4	598	SV.S	1 4
82	SV.S	1 4	358	SV.S	1 4	599	SV.S	1 4
83	SV.S	1 4	359	SV.S	1 4	600	SV.S	1 4
84	SV.S	1 4	360	SV.S	1 4	601	SV.S	1 4
85	SV.S	1 4	361	SV.S	1 4	602	SV.S	1 4
86	SV.S	1 4	362	SV.S	1 4	603	SV.S	1 4
87	SV.S	1 4	363	SV.S	1 4	604	SV.S	1 4
88	SV.S	1 4	364	SV.S	1 4	605	SV.S	1 4
89	SV.S	1 4	365	SV.S	1 4	606	SV.S	1 4
90	SV.S	1 4	366	SV.S	1 4	607	SV.S	1 4
91	SV.S	1 4	367	SV.S	1 4	608	SV.S	1 4
92	SV.S	1 4	368	SV.S	1 4	609	SV.S	1 4
93	SV.S	1 4	369	SV.S	1 4	610	SV.S	1 4
94	SV.S	1 4	370	SV.S	1 4	611	SV.S	1 4
95	SV.S	1 4	371	SV.S	1 4	612	SV.S	1 4
96	SV.S	1 4	372	SV.S	1 4	613	SV.S	1 4
97	SV.S	1 4	373	SV.S	1 4	614	SV.S	1 4
98	SV.S	1 4	374	SV.S	1 4	615	SV.S	1 4
99	SV.S	1 4	375	SV.S	1 4	616	SV.S	1 4
100	SV.S	1 4	376	SV.S	1 4	617	SV.S	1 4
101	SV.S	1 4	377	SV.S	1 4	618	SV.S	1 4
102	SV.S	1 4	378	SV.S	1 4	619	SV.S	1 4
103	SV.S	1 4	379	SV.S	1 4	620	SV.S	1 4
104	SV.S	1 4	380	SV.S	1 4	621	SV.S	1 4
105	SV.S	1 4	381	SV.S	1 4	622	SV.S	1 4
106	SV.S	1 4	382	SV.S	1 4	623	SV.S	1 4
107	SV.S	1 4	383	SV.S	1 4	624	SV.S	1 4
108	SV.S	1 4	384	SV.S	1 4	625	SV.S	1 4
109	SV.S	1 4	385	SV.S	1 4	626	SV.S	1 4
110	SV.S	1 4	386	SV.S	1 4	627	SV.S	1 4
111	SV.S	1 4	387	SV.S	1 4	628	SV.S	1 4
112	SV.S	1 4	388	SV.S	1 4	629	SV.S	1 4
113	SV.S	1 4	389	SV.S	1 4	630	SV.S	1 4
114	SV.S	1 4	390	SV.S	1 4	631	SV.S	1 4
115	SV.S	1 4	391	SV.S	1 4	632	SV.S	1 4
116	SV.S	1 4	392	SV.S	1 4	633	SV.S	1 4
117	SV.S	1 4	393	SV.S	1 4	634	SV.S	1 4
118	SV.S	1 4	394	SV.S	1 4	635	SV.S	1 4
119	SV.S	1 4	395	SV.S	1 4	636	SV.S	1 4
120	SV.S	1 4	396	SV.S	1 4	637	SV.S	1 4
121	SV.S	1 4	397	SV.S	1 4	638	SV.S	1 4
122	SV.S	1 4	398	SV.S	1 4	639	SV.S	1 4
123	SV.S	1 4	399	SV.S	1 4	640	SV.S	1 4
124	SV.S	1 4	400	SV.S	1 4	641	SV.S	1 4
125	SV.S	1 4	401	SV.S	1 4	642	SV.S	1 4
126	SV.S	1 4	402	SV.S	1 4	643	SV.S	1 4
127	SV.S	1 4	403	SV.S	1 4	644	SV.S	1 4
128	SV.S	1 4	404	SV.S	1 4	645	SV.S	1 4
129	SV.S	1 4	405	SV.S	1 4	646	SV.S	1 4
130	SV.S	1 4	406	SV.S	1 4	647	SV.S	1 4
131	SV.S	1 4	407	SV.S	1 4	648	SV.S	1 4
132	SV.S	1 4	408	SV.S	1 4	649	SV.S	1 4
133	SV.S	1 4	409	SV.S	1 4	650	SV.S	1 4
134	SV.S	1 4	410	SV.S	1 4	651	SV.S	1 4
135	SV.S	1 4	411	SV.S	1 4	652	SV.S	1 4
136	SV.S	1 4	412	SV.S	1 4	653	SV.S	1 4
137	SV.S	1 4	413	SV.S	1 4	654	SV.S	1 4
138	SV.S	1 4	414	SV.S	1 4	655	SV.S	1 4
139	SV.S	1 4	415	SV.S	1 4	656	SV.S	1 4
140	SV.S	1 4	416	SV.S	1 4	657	SV.S	1 4
141	SV.S	1 4	417	SV.S	1 4	658	SV.S	1 4
142	SV.S	1 4	418	SV.S	1 4	659	SV.S	1 4
143	SV.S	1 4	419	SV.S	1 4	660	SV.S	1 4
144	SV.S	1 4	420	SV.S	1 4	661	SV.S	1 4
145	SV.S	1 4	421	SV.S	1 4	662	SV.S	1 4
146	SV.S	1 4	422	SV.S	1 4	663	SV.S	1 4
147	SV.S	1 4	423					

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Falanruw, Marjorie C.; Cole, Thomas G.; Ambacher, Alan H. 1989. **Vegetation Survey of Rota, Tinian, and Saipan, Commonwealth of the Northern Mariana Islands.** Resour. Bull. PSW-27, Berkeley, CA: Pacific Southwest Forest and Range Experiment Station, Forest Service, U.S. Department of Agriculture. 11p. + 13 maps.

TINIAN

VEGETATION LEGEND
For explanation of vegetation type codes, see Table 2.

ITEM	LABEL	AREA (ACRES)	PERCENT	ITEM	LABEL	AREA (ACRES)	PERCENT	ITEM	LABEL	AREA (ACRES)	PERCENT
1	CAIH	1	4	171	IFIMISV	4	1.6	351	SVL	15	6.1
2	LIH	6	2.4	172	SVG	3	1.2	352	SVS	2	.8
3	LIHISVS	7	2.8	173	CAIUSVL	10	4.0	353	SVG	1	.4
4	IFIMISVL	130	52.5	174	S/L	2	.8	354	IFIH	1	.4
5	SVLS	8	3.2	182	SVS	10	4.0	356	SVL	1	.4
7	SVL	10	4.0	188	SVS	1	.4	358	IFIH D	1	.4
9	SVLS	58	23.5	187	IFIMISVL	1	.4	359	SVG	5	2.0
11	IFIH	1	.4	188	CAIH	12	4.9	360	SVG	24	9.7
12	SVL	2	.8	189	SVG	2	.8	361	SVS	1	.4
13	CAIH	4	1.6	190	SVLS	76	30.8	362	SVS	1	.4
14	IFIMISVL	9	3.6	191	SV	6	2.4	363	CAIMISVL	3	1.2
15	G/GIC	8	3.2	192	IFIH	8	3.2	365	SVG	1	.4
16	G/GIC	49	19.6	193	SVL	71	28.7	366	SVG.S	1	.4
17	SVLS	2	.8	194	SVS	3	1.2	368	SVG	1	.4
18	G/GIC	2	.8	196	COIH	5	2.0	372	SVG.S	1	.4
19	SVS	1	.4	197	SVG	1	.4	373	IFIH	2	.8
20	S/L	20	8.1	200	SVL	25	10.1	374	LIH	6	2.4
21	SV.S.G	3	1.2	201	S/L	1	.4	375	COIH	1	.4
22	SVL	3	1.2	202	IFIMISVL	8	3.2	376	SVG.S	1	.4
23	SVL	1	.4	203	SV	4	1.6	377	SVL	3	1.2
25	SVL	1	.4	204	SVG.S	1	.4	378	IFIMISVL	3	1.2
27	SVL	3	1.2	205	IFIMISVS	3	1.2	380	SVG.S	1	.4
28	SVLS	2	.8	206	CAIMISVL	1	.4	381	SVG.S	1	.4
29	COIHISVL	2	.8	207	SVG.S	1	.4	382	SVS	2	.8
30	G/GIC	5	2.0	209	IFIH	1	.4	383	CAIMISVL	4	1.6
32	S/P	8	3.2	209	CAIMISVL	34	13.8	387	IFIM	9	3.6
33	SVL	9	3.6	210	SVL	1	.4	387	IFIM	2	.8
34	IFIMISVL	2	.8	211	IFIH.D	3	1.2	385	SVL	1	.4
35	LIH	2	.8	212	CAIH	1	.4	391	SVG.S	14	5.7
36	IFIMISVL	1	.4	215	C	2	.8	391	SVG.S	4	1.6
37	COIH	2	.8	217	SVS	1	.4	390	SVG	1	.4
38	SVL	6	2.4	219	IFIMISVS	2	.8	392	SVG	10	4.0
39	SV.S.G	2	.8	220	SVG	3	1.2	392	SVG	1	.4
40	SVL	1	.4	221	SVS	1	.4	393	CAIUSVL	1	.4
41	COIH	8	3.2	222	SVLS	29	11.7	395	SVS	1	.4
42	G/GIC	6	2.4	225	C	2	.8	397	CAIM	1	.4
43	SVL	17	6.9	226	IFIMISVL	100	40.5	398	SVLS.G	14	5.7
44	SVG.S	2	.8	228	SVG	1	.4	402	SVLS	3	1.2
45	G/G	2	.8	229	SVG.S	1	.4	403	SVS	7	2.8
46	SVL	8	3.2	231	SVG	1	.4	404	SVG	3	1.2
47	IFIMISVL	9	3.6	232	CAIMISVL	4	1.6	406	IFIMISVL	4	1.6
48	SVL	5	2.0	233	IFIMISVL	2	.8	407	SVL	10	4.0
49	IFIMISVL	11	4.5	234	IFIMISVL	2	.8	408	SVG	19	7.7
50	IFIMISVL	3	1.2	235	IFIH.D	1	.4	409	SVL	1	.4
51	LIH	10	4.0	238	SVG.S	4	1.6	410	SVLS	5	2.0
52	COIHISV	24	9.6	243	C	1	.4	411	SVG	1	.4
53	CAIMISV	1	.4	244	SVS	1	.4	411	SVG	3	1.2
55	G/G	1	.4	245	IFIH.D	1	.4	413	IFIH	4	1.6
56	SVS	1	.4	246	SVS	1	.4	415	SVL	1	.4
57	SVL	1	.4	247	IFIH.D	1	.4	416	SVG	1	.4
59	IFIMISVL	11	4.5	248	SVG	4	1.6	417	SVS	2	.8
61	COIH	6	2.4	249	SVL	2	.8	418	SVG.S	1	.4
62	G/G	2	.8	250	SVL	2	.8	419	SVS	1	.4
63	G/GS	2	.8	251	SVG.S	8	3.2	420	IFIMISVLG	12	4.9
66	CAIH	2	.8	252	SVLS	2	.8	421	SVS	3	1.2
67	SVLS	2	.8	253	SVS	1	.4	422	SVLS	34	13.8
68	SVS	1	.4	254	CAIUSVL	7	2.8	424	SVG	1	.4
71	SVS	1	.4	255	SVG.S	35	14.2	425	SVG.S	8	3.2
73	G/G	1	.4	256	SVGIC	5	2.0	426	SVG	1	.4
74	SVLS	3	1.2	257	C	5	2.0	428	SVG.S	2	.8
76	SVLS	3	1.2	258	SVS	3	1.2	429	G/GIC	4	1.6
77	COIH	1	.4	259	SVG	2	.8	430	CAIMISV	1	.4
78	SVG	1	.4	260	SVG	3	1.2	431	SVG.S	1	.4
79	G/G	1	.4	261	CAIH	3	1.2	432	SVS	1	.4
80	IFIH	1	.4	262	SVG	2	.8	433	S	13	5.3
81	C	1	.4	264	SVLS	12	4.9	435	CAIMISVL	6	2.4
82	SVG.S	7	2.8	265	SVL	3	1.2	436	G/GIC	5	2.0
83	G/GIC	3	1.2	266	C	3	1.2	437	IFIH	12	4.9
84	IFIMISVL	79	32.0	267	SVL	2	.8	438	SVG	1	.4
85	SVL	2	.8	268	COIH	2	.8	439	SVG	1	.4
86	SVG.S	8	3.2	269	SVS	3	1.2	440	IFIMISVL	7	2.8
87	SVG.S	3	1.2	270	SV.S.L	3	1.2	441	SVS	5	2.0
88	G/G	1	.4	271	SVG	1	.4	443	SVL	1	.4
89	IFIH	1	.4	272	SVG	2	.8	444	SVS	2	.8
90	COIMISVL	5	2.0	273	CAIUSVL	5	2.0	445	SVG	8	3.2
91	SVS	4	1.6	274	CAIUSVL	5	2.0	446	SVL	4	1.6
93	G/G	3	1.2	275	SVS	4	1.6	447	G/GIC	6	2.4
94	S.S	24	9.6	276	COIUS	17	6.9	448	S/L	1	.4
95	CAIUSVL	17	7.1	277	SVL	329	133.1	449	G/GIC	2	.8
96	SVLS	1	.4	278	SVL	3	1.2	450	COIMISV	2	.8
97	SVS	1	.4	279	CAIMISVL	3	1.2	451	LIH	7	2.8
98	SVL	25	10.1	280	SVG	3	1.2	452	S.S.P	35	14.2
99	SVL	109	43.6	281	SVS	9	3.6	453	SVL	1	.4
100	SVL	8	3.2	282	SVG.S	1	.4	454	CAIMISVS	2	.8
101	G/GIC	6	2.4	283	SVS	2	.8	455	SVG	1	.4
102	SVS	3	1.2	284	SVL	3	1.2	456	SVL	1	.4
103	CAIH	6	2.4	285	SVG.S	1	.4	457	SVG	1	.4
104	G/G	2	.8	286	SVG	1	.4	458	CAIH	4	1.6
105	SV.S.G	1	.4	288	SVL	9	3.6	459	LIHIS	15	5.3
106	SVS	3	1.2	289	C	13	5.3	460	SVS	1	.4
107	IFIMISVL	117	47.3	290	SVL	5	2.0	461	SV.S	0	.0
108	IFIH.D	1	.4	291	SVG	2	.8				
110	IFIMISV	13	5.3	292	SVS	2	.8				
111	SVG.S	7	2.8	293	SVG	9	3.6				
112	SVG	5	2.0	294	CAIUSVS	5	2.0				
113	SVL	21	8.5	295	C	2	.8				
115	SVL	21	8.5	297	S/L	26	10.5				
116	SVG.S	4	1.6	298	IFIMISV	1	.4				
117	SVL	2	.8	299	COIH	3	1.2				
120	COIH	1	.4	300	SVS	4	1.6				
121	SV.GIC	4	1.6	301	SVG	1	.4				
123	LIH	1	.4	304	SVL	26	10.5				
125	SVL	3	1.2	305	C	1	.4				
126	IFIH.D	1	.4	306	SVG	1	.4				
127	SVS	1	.4	307	SVS	1	.4				
128	S/L	8	3.2	308	SVS	1	.4				
131	COIMISVL	11	4.5	310	SVS	3	1.2				
133	SVS	1	.4	311	SVG.S	5	2.0				
134	G/G	1	.4	312	C	6	2.4				
136	G/G	2	.8	314	SVG.S	43	17.1				
137	SVL	7	2.8	315	SVL	3	1.2				
138	CAIH	5	2.0	316	SVS	1	.4				
139	S/P	7	2.8	318	CAIUSVS	4	1.6				
141	SVG	3	1.2	320	SVS	3	1.2				
142	SVS	4	1.6	321	SVG	24	9.7				
143	SVG.S	2	.8	322	SVG.S	5	2.0				
144	CAIMISVL	5	2.0	323	SVL	2	.8				
145	SV	2	.8	324	CAIUSVL	2	.8				
146	SVL	2	.8	325	SVLS	25	10.1				
147	SVL	72	29.1	327	SVL	1	.4				
148	SVL	48	18.6	331	SVL	1	.4				
151	CAIMISVL	5	2.0	333	SVG	1	.4				
152	SVG	3	1.2	334	SVL	1	.4				
153	SV.S	1	.4	337	SVG.S	5	2.0				
155	SVG	1	.4	341	SVL	18	6.5				
156	SVG	1	.4	342	SVL	1	.4				
157	SVG	3	1.2	343	IFIMISV	9	3.6				
158	SVL	7	2.8	345	LIHISVS	3	1.2				
159	SVG.S	10	4.0	346	LIH	1	.4				
161	SVS	1	.4	347	SVG.S	1	.4				
163	SVS	1	.4	348	IFIMISVL	2	.8				
164	SVL	5	2.0	349	SVG	1	.4				
165	SVG	2	.8	350	SVL	3	1.2				
166	SVG	2	.8								
167	CAIH	2	.8								
168	SVG	2	.8								
170	SVL	2	.8								

Produced by the United States Geological Survey
in cooperation with the Territory of the Pacific Islands
Compiled by the Pacific Southwest Forest and Range
Experiment Station and Pacific Northwest Forest and Range Experiment
Station, Forest Service, U.S. Department of Agriculture. Cartography by
Alan H. Ambacher, USDA - Forest Service, Pacific Southwest Region,
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ISLAND OF TINIAN

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Sheet 3 of 4

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SCALE 1:20,000

CONTOUR INTERVAL 10 METERS
SUPPLEMENTARY CONTOUR INTERVAL 5 METERS
DATUM IS MEAN SEA LEVEL

Vegetation map compiled by Pacific Southwest Forest and Range
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TINIAN

VEGETATION LEGEND

For explanation of vegetation type codes, see Table 2.

ITEM	LABEL	AREA (ACRES)	ITEM	LABEL	AREA (ACRES)	ITEM	LABEL	AREA (ACRES)
1	C	1	166	SV/LC	38	321	SV/L	59
2	SV/AS	1	167	G.G.S	1	322	S	8
3	G.G	1	168	G.G	2	323	G.S	8
4	SV/S	1	169	C	2	324	SV/L	5
5	SV/L	1	170	C	2	325	LI/H	18
6	SV/L	1	171	SV/L	2	326	SV/S	4
7	SV/L	1	172	CA/H	1	327	IF/H	2
8	SV/L	1	173	G.G.S	4	328	CA/H	3
9	SV/L	1	174	G.G.S	4	329	SV/L	3
10	SV/L	1	175	G.G.S	4	330	SV/L	3
11	SV/L	1	176	SV/L	1	331	SV/L	3
12	LI/H	2	177	SV/S	1	332	SV/L	3
13	LI/H	2	178	IF/H	1	333	SV/L	3
14	SV/G	1	179	IF/H	1	334	SV/L	3
15	SV/L	1	180	SV/L	1	335	SV/L	3
16	C	2	181	SV/L	1	336	SV/L	3
17	CO/LU	83	182	SV/L	1	337	SV/L	3
18	SV/L	1	183	G.G.S	2	338	SV/L	3
19	SV/L	2	184	S	2	339	SV/L	3
20	B.D	2	185	C	16	340	SV/L	3
21	SV/G	7	186	SV/G	16	341	SV/L	3
22	IF/H	20	187	IF/H	14	342	SV/L	3
23	G.G	13	188	IF/H	12	343	SV/L	3
24	SV/L	12	189	SV/L	12	344	SV/L	3
25	C	1	190	SV/L	12	345	SV/L	3
26	CA/H	3	191	SV/L	12	346	SV/L	3
27	SV/L	41	192	C	1	347	SV/L	3
28	CA/H	1	193	S	1	348	SV/L	3
29	IF/H	3	194	C	6	349	SV/L	3
30	IF/H	1	195	C	3	350	SV/L	3
31	U	1	196	SV/L	3	351	SV/L	3
32	SV/L	1	197	CO/H	2	352	SV/L	3
33	U	14	198	CA/H	1	353	SV/L	3
34	G.G	4	199	SV/S	4	354	SV/L	3
35	S.S	1	200	SV/LC	118	355	SV/L	3
36	S.S	1	201	LI/H	28	356	SV/L	3
37	U	1	202	SV/L	4	357	SV/L	3
38	G.G	3	203	G.G.S	4	358	SV/L	3
39	G.G	1	204	G.G.S	3	359	SV/L	3
40	C	1	205	LI/H	6	360	SV/L	3
41	S.S	8	206	G.G.S/C	13	361	SV/L	3
42	SV/S	5	207	SV/LC	1	362	SV/L	3
43	SV/L	1	208	G.G	12	363	SV/L	3
44	SV/L	3	209	G.G/C	58			
45	IF/H	2	210	SV/S	4			
46	SV/L	401	211	SV/LC	24			
47	U	1	212	SV/L	12			
48	U	1	213	SV/L	2			
49	SV/L	8	214	IF/H	1			
50	IF/H	11	215	G.G.S	9			
51	SV/S	11	216	SV/L	1			
52	SV/S	2	217	G.G/S	6			
53	SV/S	10	218	IF/H	2			
54	SV/S	10	219	G.G	5			
55	SV/L	8	220	SV/S	5			
56	IF/H	2	221	SV/S	2			
57	G.G	1	222	SV/L	1			
58	SV/L	1	223	SV/L	1			
59	CA/H	8	224	SV/L	1			
60	SV	2	225	SV/L	1			
61	G.G	10	226	SV/L	1			
62	IF/H	1	227	SV/L	1			
63	IF/H	23	228	SV/L	1			
64	G.G	1	229	SV/L	1			
65	G.G	1	230	SV/L	1			
66	G.G	6	231	CA/H	3			
67	SV	1	232	SV/L	3			
68	G.G	9	233	SV/L	3			
69	SV/G	2	234	SV/L	3			
70	SV/G	2	235	SV/L	3			
71	SV/G	1	236	SV/L	3			
72	SV/G	1	237	SV/L	3			
73	SV/G	1	238	SV/L	3			
74	SV/G	1	239	SV/L	3			
75	SV/G	1	240	SV/L	3			
76	SV/G	1	241	SV/L	3			
77	SV/G	1	242	SV/L	3			
78	SV/G	1	243	SV/L	3			
79	SV/G	1	244	SV/L	3			
80	SV/G	1	245	SV/L	3			
81	SV/G	1	246	SV/L	3			
82	SV/G	1	247	SV/L	3			
83	SV/G	1	248	SV/L	3			
84	SV/G	1	249	SV/L	3			
85	SV/G	1	250	SV/L	3			
86	SV/G	1	251	SV/L	3			
87	SV/G	1	252	SV/L	3			
88	SV/G	1	253	SV/L	3			
89	SV/G	1	254	SV/L	3			
90	SV/G	1	255	SV/L	3			
91	SV/G	1	256	SV/L	3			
92	SV/G	1	257	SV/L	3			
93	SV/G	1	258	SV/L	3			
94	SV/G	1	259	SV/L	3			
95	SV/G	1	260	SV/L	3			
96	SV/G	1	261	SV/L	3			
97	SV/G	1	262	SV/L	3			
98	SV/G	1	263	SV/L	3			
99	SV/G	1	264	SV/L	3			
100	SV/G	1	265	SV/L	3			
101	SV/G	1	266	SV/L	3			
102	SV/G	1	267	SV/L	3			
103	SV/G	1	268	SV/L	3			
104	SV/G	1	269	SV/L	3			
105	SV/G	1	270	SV/L	3			
106	SV/G	1	271	SV/L	3			
107	SV/G	1	272	SV/L	3			
108	SV/G	1	273	SV/L	3			
109	SV/G	1	274	SV/L	3			
110	SV/G	1	275	SV/L	3			
111	SV/G	1	276	SV/L	3			
112	SV/G	1	277	SV/L	3			
113	SV/G	1	278	SV/L	3			
114	SV/G	1	279	SV/L	3			
115	SV/G	1	280	SV/L	3			
116	SV/G	1	281	SV/L	3			
117	SV/G	1	282	SV/L	3			
118	SV/G	1	283	SV/L	3			
119	SV/G	1	284	SV/L	3			
120	SV/G	1	285	SV/L	3			
121	SV/G	1	286	SV/L	3			
122	SV/G	1	287	SV/L	3			
123	SV/G	1	288	SV/L	3			
124	SV/G	1	289	SV/L	3			
125	SV/G	1	290	SV/L	3			
126	SV/G	1	291	SV/L	3			
127	SV/G	1	292	SV/L	3			
128	SV/G	1	293	SV/L	3			
129	SV/G	1	294	SV/L	3			
130	SV/G	1	295	SV/L	3			
131	SV/G	1	296	SV/L	3			
132	SV/G	1	297	SV/L	3			
133	SV/G	1	298	SV/L	3			
134	SV/G	1	299	SV/L	3			
135	SV/G	1	300	SV/L	3			
136	SV/G	1	301	SV/L	3			
137	SV/G	1	302	SV/L	3			
138	SV/G	1	303	SV/L	3			
139	SV/G	1	304	SV/L	3			
140	SV/G	1	305	SV/L	3			
141	SV/G	1	306	SV/L	3			
142	SV/G	1	307	SV/L	3			
143	SV/G	1	308	SV/L	3			
144	SV/G	1	309	SV/L	3			
145	SV/G	1	310	SV/L	3			
146	SV/G	1	311	SV/L	3			
147	SV/G	1	312	SV/L	3			
148	SV/G	1	313	SV/L	3			
149	SV/G	1	314	SV/L	3			
150	SV/G	1	315	SV/L	3			
151	SV/G	1	316	SV/L	3			
152	SV/G	1	317	SV/L	3			
153	SV/G	1	318	SV/L	3			
154	SV/G	1	319	SV/L	3			
155	SV/G	1	320	SV/L	3			
156	SV/G	1	321	SV/L	3			
157	SV/G	1	322	SV/L	3			
158	SV/G	1	323	SV/L	3			
159	SV/G	1	324	SV/L	3			
160	SV/G	1	325	SV/L	3			
161	SV/G	1	326	SV/L	3			
162	SV/G	1	327	SV/L	3			
163	SV/G	1	328	SV/L	3			
164	SV/G	1	329	SV/L	3			
165	SV/G	1	330	SV/L	3

CONTOUR INTERVAL 10 METERS
SUPPLEMENTARY CONTOUR INTERVAL 5 METERS
DATUM IS MEAN SEA LEVEL

VEGETATION SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN SEA LEVEL
THE MEAN RANGE OF TIDE IS APPROXIMATELY 1 METER

ISLAND OF ROTA

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ROTA

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SHEET 1 OF 3

VEGETATION LEGEND
For explanation of vegetation type codes, see Table 2.

ITEM	LABEL	AREA (ACRES) (HECTARES)	ITEM	LABEL	AREA (ACRES) (HECTARES)
1	AT2M LI	12 4.9	117	L1H	12 4.9
2	COIH	2 8	118	COIM/SV.G	2 8
3	COIH	2 8	119	C	2 8
4	COIMAT	5 2.0	120	SV.G	30 12.1
5	L1H	15 8.1	121	L1H	2 8
6	L1H	484 195.9	122	L1H	388 157.0
7	L1H/SV.G	2 8	123	L1H	1 4
8	L1H	10 4.0	124	CAIM LI	20 8.1
9	COIH	1 4	125	SV.G	15 6.1
10	SVL	2 8	126	L1H	7 2.8
11	SVS	2 8	127	FIH D	1 4
12	S	25 10.1	128	L1H	5 2.0
13	COIMAT	5 2.0	129	G.G.S	2 8
14	L1H	272 110.1	130	SV.G	7 2.8
15	L1H	219 85.0	131	L1H	2 8
16	SV.G.S	2 8	132	SV.G	5 2.0
17	SV.G.S	2 8	133	C	2 8
18	SV.G.S	2 8	134	COIM	5 2.0
19	L1H/SV.G	5 2.0	135	SV.G	5 2.0
20	L1H/SV.S	7 2.8	136	SV.G.S	12 4.9
21	L1H	2 8	137	SV.G	1 4
22	L1H	32 12.9	138	SV.S	7 2.8
23	SV.S	7 2.8	139	SV.G	22 8.9
24	SV.S	1 4	140	L1H/SV.G	5 2.0
25	G.G	7 2.8	141	L1H/SV.G	7 2.8
26	L1H	180 76.9	142	SV.G.S	17 6.9
27	G.G.S	10 4.0	143	L1H	10 4.0
28	G.G	7 2.8	144	SV.G.S	1 4
29	SV.S	2 8	145	SV.G.S	5 2.0
30	COIMAT	15 6.1	146	SV.G	15 6.1
31	AT1H	5 2.0	147	SV.G	7 2.8
32	COIH	5 2.0	148	SV.G.S	7 2.8
33	G.G	2 8	149	L1H	5 2.0
34	SVL	1 4	150	SV.G	10 4.0
35	COIM/SV.L	15 6.1	151	SVL	1 4
36	L1H/SV.G	7 2.8	152	L1H/SV.G	15 6.1
37	SV.G.S	1 4	153	SV.G	2 8
38	L1H	10 4.0	154	L1H	7 2.8
39	SV.G	2 8	155	C	2 8
40	G.G.S	17 6.9	156	C	1 4
41	L1H	7 2.8	157	COIL/SV	10 4.0
42	G.G.S	7 2.8	158	C	1 4
43	G.G	7 2.8	159	C	1 4
44	SV.G.S	5 2.0	160	SV.G	10 4.0
45	L1H	20 8.1	161	FIH/SV.L	7 2.8
46	COIM	2 8	162	C	1 4
47	SV.G	25 10.1	163	SV.G.S	10 4.0
48	L1H	15 6.1	164	L1H	2 8
49	COIH	2 8	165	SV.L	2 8
50	SV.S	7 2.8	166	L1H	69 27.9
51	G.G.S	12 4.9	167	C	1 4
52	COIH	1 4	168	SV.G	5 2.0
53	SV.S	5 2.0	169	SV.S	5 2.0
54	AT1H/S	7 2.8	170	L1H/SV.G.S	35 14.2
55	COIMAT	2 8	171	COIM/SV.G	12 4.9
56	AT1H	7 2.8	172	L1H	2 8
57	L1H	2 8	173	L1H	2 8
58	L1H	66 34.8	174	G.G	4 0
59	G.G	2 8	175	L1H/SV.G.S	10 4.0
60	G.G	1 4	176	L1H	7 2.8
61	L1H	7 2.8	177	SV.G.S	5 2.0
62	L1H	175 70.8	178	SV.G.S	7 2.8
63	SV.G	2 8	179	COIL/SV.G	7 2.8
64	C	2 8	180	CAIH	1 4
65	SV.S	10 4.0	181	L1H	22 8.9
66	CAIM	7 2.8	182	CAIM LI	22 8.9
67	G.G.S	5 2.0	183	SV.G	2 8
68	SV.G.S	25 10.1	184	G.G.S	25 10.1
69	COIL/SV.G	2 8	185	G.G	2 8
70	C	2 8	186	COIM/G.G	2 8
71	G.G/C	520 214.1	187	G.G	7 2.8
72	L1H	12 4.9	188	L1H	7 2.8
73	S.S/DV	10 4.0	189	CAIM LI	30 12.1
74	S	5 2.0	190	L1H	114 46.1
75	S/B.L	7 2.8	191	SV.G	5 2.0
76	G.G	17 6.9	192	G.G	2 8
77	S.S/DV	67 27.1	193	SVL	1 4
78	S/B.L	17 6.9	194	COIH	1 4
79	L1H	2 8	195	FIH D	7 2.8
80	L1H	10 4.0	196	COIH	2 8
81	SV.S	7 2.8	197	G.G.S	7 2.8
82	L1H	2 8	198	COIL/G.G	15 6.1
83	L1H	10 4.0	199	G.G	5 2.0
84	SV.G	10 4.0	200	L1H	5 2.0
85	CAIM	2 8	201	SV.G.S	10 4.0
86	SV.G	1 4	202	L1H	14 38.9
87	G.G	5 2.0	203	SV.L	1 4
88	COIH	7 2.8	204	C	2 8
89	G.G	1 4	205	SV.G	5 2.0
90	C	1 4	206	SV.S	1 4
91	SV.G	5 2.0	207	COIH	2 8
92	COIH	2 8	208	CAIL/G.G	5 2.0
93	G.G	2 8	209	G.G.S	7 2.8
94	L1H	67 27.1	210	L1H	1 4
95	G.G	7 2.8	211	CAIM LI	7 2.8
96	L1H	5 2.0	212	CAIM LI	22 8.9
97	L1H	7 2.8	213	CAIM LI	5 2.0
98	L1H	40 16.2	214	SV.G	2 8
99	S	22 8.9	215	C	5 2.0
100	L	7 2.8	216	CAIH	1 4
101	AT1H LI	20 8.1	217	C	1 4
102	COIH	2 8	218	C	1 4
103	AT1H	12 4.9	219	SV.G.S	20 8.1
104	COIH	2 8	220	G.G.S	10 4.0
105	S	2 8	221	L1H/SV.G.S	12 4.9
106	SV.S	2 8	222	G.G.S	1 4
107	L1H/SV.S	22 8.9	223	L1H	12 4.9
108	SV.G	1 4	224	L1H	7 2.8
109	L1H	2 8	225	L1H	2 8
110	FIH D	10 4.0	226	CAIM LI	37 15.0
111	COIH	1 4	227	SVL	1 4
112	C	15 6.1	228	SV.S	1 4
113	SV.G	5 2.0	229	L1H	15 6.1
114	SV.G	10 4.0	230	SV.S	5 2.0
115	L1H	2 8	231	L1H	7 2.8
116	L1H	5 2.0	232	COIL/SV.G	2 8
			233	G.G	15 6.1

SCALE 1:20,000

CONTOUR INTERVAL 10 METERS
DATUM IS MEAN SEA LEVEL

SHORELINE BREAKS REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER
THE MEAN RANGE OF THE IS APPROXIMATELY 1 METER

Vegetation map compiled by Pacific Southwest Forest and Range
Experiment Station and Pacific Northwest Forest and Range Experiment
Station, Forest Service, U.S. Department of Agriculture. Cartography by
Alan H. Ambacher, USDA - Forest Service, Pacific Southwest Region,
Engineering Geomorphics Section, 1987.

ROTA
Sheet 1 of 3

ISLAND OF ROTA

Index Map

Sheet 2 of 3

Falanruw, Marjorie C.; Cole, Thomas G.; Ambacher, Alan H. 1989. **Vegetation Survey of Rota, Tinian, and Saipan, Commonwealth of the Northern Mariana Islands.** Resour. Bull. PSW-27. Berkeley, CA: Pacific Southwest Forest and Range Experiment Station, Forest Service, U.S. Department of Agriculture. 11p. + 13 maps.

ITEM	LABEL	AREA (ACRES)	AREA (HECTARES)	ITEM	LABEL	AREA (ACRES)	AREA (HECTARES)	ITEM	LABEL	AREA (ACRES)	AREA (HECTARES)
1	AT2H	1	4	149	SV.G	7	2.8	296	SV.G	40	16.2
2	SV.S	5	2.0	150	SV.G	5	2.0	299	LHL/SV.G	7	2.8
3	L2H	2	8	151	G.G	5	2.0	300	S	7	2.8
4	LHL/SV.S	5	2.0	152	L1H	5	2.0	301	G.S	32	12.9
5	L1H	27	10.9	153	SV.G	12	4.9	302	L1H	7	2.8
6	SV.G	2	8	154	SV.S	4	1.6	303	SV.S	2	8
7	L2H	5	2.0	155	L1H	12	4.9	304	G.G	32	12.9
8	L1H	5	2.0	156	G.G	7	2.8	305	G.G	5	2.0
9	SV.G	1	4	157	L1H	5	2.0	306	G.G.S	17	6.9
10	CAIH	5	2.0	158	L1H	5	2.0	307	G.G	7	2.8
11	IFH.O	2	8	159	L2H	15	6.1	308	S	27	10.9
12	L1H	7	2.8	160	SV.G.S	7	2.8	309	L1H	2	8
13	SV.G	7	2.8	161	B.O	5	8	310	G.S	1	4
14	SV.S	7	2.8	162	SV.G	84	25.9	311	SV.G	10	4.0
15	COIH	2	8	163	SV.G.S	7	2.8	312	COIH/SV	17	6.9
16	SV.G	20	8.1	164	SV.G.S	7	2.8	313	G.G	7	2.8
17	COIH	1	4	165	C	1	4	314	C	1	4
18	SV.G	1	4	166	COIH/SV.G.S	12	4.9	315	L1H	5	2.0
19	SV.G	2	8	167	SV.G	5	2.0	316	L1H	1	4
20	SV.G	2	8	168	COIH/MSV.G	5	2.0	317	L1H/CO	5	2.0
21	G.G	5	2.0	170	C	10	4.0	318	COIH/SV.G.S	22	8.9
22	G.G.S	2	8	171	SV.S	2	8	319	S	20	8.1
23	COIH	2	8	172	G.G	1	4	320	SV.G.S	20	8.1
24	CAIH	2	8	173	SV.G	1	4	321	G.G	17	6.9
25	L2H	67	27.1	174	C	1	4	322	L1H	20	8.1
26	L1H	7	2.8	175	SV	1	4	323	C	1	4
27	G	1	4	176	SV.G	2	8	324	G.G	7	2.8
28	L1H	2	8	177	SV.S	12	4.9	325	C	1	4
29	C	1	4	178	SV.G	20	8.1	326	L1H	1	4
30	SV.G	5	2.0	179	SV.S	10	4.0	327	L1H	1	4
31	COIH	5	2.0	180	COIH/MSV.G	27	10.9	328	G.G	17	6.9
32	G.G	1	4	181	G.G	2	8	329	COIH/LI	10	4.0
33	L1H	2	8	182	L1H	492	199.1	330	L1H	5	2.0
34	SV.G.S	10	4.0	183	COIH/MSV.G	2	8	331	L1H	5	2.0
35	IFH.O	7	2.8	184	C	5	2.0	332	L1H	7	2.8
36	L1H	36	14.3	185	SV.S	20	8.1	333	SV.S	10	4.0
37	CAIH	2	8	186	L1H	20	8.1	334	G.G	59	23.9
38	SV.S	2	8	187	SV.G.S	42	17.0	335	COIL	1	4
39	L1H/CA	64	25.9	188	COIH/MSV	7	2.8	336	COIH/SV.G	1	4
40	SV.S	5	2.0	189	SV.L	2	8	337	L1H	91	36.6
41	SV.G.S	17	6.9	190	U	1	4	338	L1H	2	8
42	G.G	72	29.1	191	IFH.O	15	6.1	339	L1H	10	4.0
43	SV.G.S	12	4.9	192	SV.G.S	1	4	340	G.G	12	4.9
44	LHL/SV.G	17	6.9	193	SV.G	5	2.0	341	SV.G.S	7	2.8
45	SV.S	2	8	194	SV.G.S	5	2.0	342	COIH/SV.G	7	2.8
46	L1H	9	3.6	195	SV.L	2	8	343	G.G	2	8
47	L2H	1564	641.0	196	COIH/SV.G	7	2.8	344	L1H	2	8
48	SV.S	2	8	197	CAIM/LI	14	5.5	345	L1H	10	4.0
49	G.G.S	5	2.0	198	IFH.D	5	2.0	346	G.G	22	8.9
50	G.G	17	6.9	199	L1H	10	4.0	347	SV.S	10	4.0
51	SV.G	20	8.1	200	SV.G.S	10	4.0	348	SV.G.S	10	4.0
52	SV.G	17	6.9	201	CAIH	1	4	349	UOH	25	10.1
53	SV.G.S	25	10.1	202	SV.G	10	4.0	350	S	7	2.8
54	L1H	23	9.1	203	L1H	351	328.2	351	L2H	7	2.8
55	L2H	2	8	204	G.G	1	4	352	SV.S	84	25.9
56	U2H	5	2.0	205	IFH.O	1	4	353	SV.G	37	15.0
57	L1H	7	2.8	206	G.G	1	4	354	SV.S	2	8
58	COIH	12	4.9	207	SV.G.S	15	6.1	355	G.G	262	106.0
59	G.G	2	8	208	G.G	12	4.9	356	COIH/GG	10	4.0
60	SV.G	7	2.8	209	L1H	12	4.9	357	G.G.S	2	8
61	COIH	5	2.0	210	SV.G.S	15	6.1	358	L1H	17	6.9
62	CAIH	1	4	211	IFH.O	5	2.0	359	G.G	20	8.1
63	IFH.O	5	2.0	212	SV.G	1	4	360	C	1	4
64	L1H	7	2.8	213	COIH/SV.G	15	6.1	361	L1H	5	2.0
65	L1H	32	12.9	214	COIH/SV.G	5	2.0	362	IFH/SV.S	1	4
66	COIH/MSV.G	2	8	215	COIH	2	8	363	G.G	1	4
67	SV.S	2	8	216	SV.G	10	4.0	364	COIH	1	4
68	L1H	5	2.0	217	COIH/SV.G	2	8	365	G.G	2	8
69	SV.G	1	4	218	SV.G.S	5	2.0	366	COIH	1	4
70	L1H	5	2.0	219	SV.G.S	2	8	367	G.G	1	4
71	L2H	20	8.1	220	SV.G	54	21.9	368	COIH/G	5	2.0
72	CAIM/LI	27	10.9	221	L1H/MSV.G	2	8	369	G.G	5	2.0
73	L1H	17	6.9	222	G.G.S	12	4.9	370	G.G	1	4
74	SV.G.S	17	6.9	223	IFH.O	2	8	371	COIH/SV	1	4
75	L1H	1	4	224	CAIM/MSV.G	10	4.0	372	G.G	1	4
76	IFH.D	1	4	225	G.G	2	8	373	SV.G	5	2.0
77	SV.G.S	10	4.0	226	CAIH	7	2.8	374	COIH	1	4
78	G.G	22	8.9	227	CAIH	1	4	375	L1H	5	2.0
79	SV.G.S	5	2.0	228	G.G.S	15	6.1	376	G.G	1	4
80	L1H	5	2.0	229	CAIM/MSV	2	8	377	L1H	230	93.1
81	LHL/SV.G.S	54	21.9	230	G.G	27	10.9	378	C	1	4
82	COIL	2	8	231	COIH/MSV.S	2	8	379	C	1	4
83	CAIH	7	2.8	232	C	1	4	380	C	1	4
84	B.O	2	8	233	L1H	2	8	381	L1H/MSV.S	5	2.0
85	SV.G	5	2.0	234	SV.G	5	2.0	382	C	1	4
86	IFH.O/SV.G	5	2.0	235	C	1	4	383	G.G	1	4
87	L1H	7	2.8	236	G.G	5	2.0	384	G.C	1	4
88	L1H	1	4	237	L1H	15	6.1	385	G.G	2	8
89	G.G.S	17	6.9	238	L1H/MSV.G	22	8.9	386	SV.G.S	64	25.9
90	SV.S	7	2.8	239	G.G.S	7	2.8	387	C	1	4
91	C	5	2.0	240	IFH.D	2	8	388	L1H	17	6.9
92	C	1	4	241	SV.G	15	6.1	389	L1H	1	4
93	G.G.S	5	2.0	242	CAIH/SV.G	2	8	390	L2H	20	8.1
94	CAIM/MSV	17	6.9	243	G.G	2	8	391	SV.S	5	2.0
95	L1H	1	4	244	COIH/SV.G	2	8	392	SV.S	5	2.0
96	L1H	2	8	245	COIH/MSV.G	5	2.0	393	L1H	22	8.9
97	SV.G.S	69	27.8	246	G.G	5	2.0	394	G.G	2	8
98	L1H	17	6.9	247	L1H/MSV.G	7	2.8	395	SV.G.S	5	2.0
99	SV.G	42	17.0	248	C	5	2.0	396	C	5	2.0
100	L1H	27	10.9	249	LPH	5	2.0	397	L1H	5	2.0
101	SV.G.S	10	4.0	250	L1H	20	8.1	398	L1H	7	2.8
102	SV.G	17	6.9	251	SV.S	5	2.0	399	L2H	20	8.1
103	U	49	19.8	252	SV.S	1	4	400	L2H	20	8.1
104	SV.G.S	30	12.1	253	IFH.O	2	8	401	G.G	32	12.9
105	L1H	2	8	254	SV.L	1	4	402	SV.B	2	8
106	SV.S	5	2.0	255	L1H	35	14.2	403	SV.S	5	2.0
107	G.G	22	8.9	256	SV.G.S	12	4.9	404	G.G.D	2	8
108	L1H	20	8.1	257	G.G	178	12.0	405	SV.B	2	8
109	IFH.O	1	4	258	C	2	8	406	L1H	5	2.0
110	L1H/SV.S	12	4.9	259	COIH	1	4	407	SV.L	7	2.8
111	IFH.D	1	4	260	SV.L	1	4	408	SV.G	35	14.2
112	CAIH	5	2.0	261	C	1	4	409	L1H	2	8
113	L1H/CA	7	2.8	262	C	1	4	410	SV.S	1	4
114	G.G.S	2	8	263	SV.G.S	7	2.8	411	COIH	1	4
115	G.G	35	14.2	264	SV.L	1	4	412	G.G	10	4.0
116	L1H	2	8	265	COIH/MSV.G	7	2.8	413	AG.CI	1	4
117	SV.G.S	26	10.5	266	C	2	8	414	CAIH	1	4
118	COIH/SV.G	12	4.9	267	SV.G.S	10	4.0	415	G.C.G	1	4
119	SV.G	91	36.6	268	G.G.S	35	14.2	416	SV.L	1	4
120	L1H/SV.S	10	4.0	269	L1H/SV.G.S	2	8	417	C	5	2.0
121	L1H	12	4.9	270	L1H/SV.G.S	1	4	418	G.G	2	8
122	G.G.S	10	4.0	271	L1H	5	2.0	419	G.G.S	2	8
123	G.G	12	4.9	272	L2H	7	2.8	420	L1H	1	4
124	G.G.S	2	8	273	SV.G	22	8.9	421	G.G	1	4
125	G.G	1	4	274	G.G.C	59	33.9	422	SV.L	1	4
126	SV.S	2	8	275							

ISLAND OF SAIPAN

Index Map

Sheet of 1 of 6

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SAIPAN

SHEET 1 OF 6

VEGETATION LEGEND
For explanation of vegetation type codes, see Table 2.

ITEM	LABEL	AREA (ACRES)	(HECTARES)
1	CA1M/SV.L	2	.9
2	U	41	16.6
3	SV.L	34	13.7
4	C	3	1.3
5	CO1M	4	1.5
6	AG.CO	6	2.3
7	IF1M/SV.L	9	3.7
8	SV.L	13	5.3
9	CA1M/SV.L	13	5.3
10	CO1M	1	.2
11	CO1M/SV.L	48	19.3
12	SV.L	1	.6
13	SV.L	23	9.5
14	IF1M/SV.L	5	1.9
15	G.G	2	.9
16	G.G	3	1.1
17	M.F.P	10	4.1
18	CO1M/SV.L	8	3.1
19	SV.G.L	6	2.3
20	IF1H.D	5	1.9
21	LI1H	31	12.7
22	G.G.S	21	8.3
23	CA1L/SV.G	2	1.0
24	CO1H	2	.7
25	SV.L	20	7.9
26	CO1L/SV.L	1	.1
27	IF1M/SV.L	2	.8
28	CA1M	3	1.3
29	B.S	41	16.6
30	IF1M/SV.L	5	2.1
31	SV.L	12	4.7
32	C	3	1.4
33	CO1M/U	30	12.0
34	SV.L	9	3.5
35	IF1L/SV.L	7	2.8
36	CO1L/U	77	30.9
37	SV.L	125	50.6
38	M.F.P	12	4.8
39	CA1M/SV.L	15	6.1
40	LI1H	15	6.2
41	G.G	1	.3
42	M.F.P	21	8.4
43	IF2L/SV.L	24	9.6
44	CO1M/SV.L	230	93.0
45	LI1H	16	6.4
46	IF1M/SV.L	76	30.7
47	CA1L	9	3.6
48	G.G	9	3.8
49	G.G	17	7.0
50	SV.L	9	3.4
51	CA1L/SV.L	15	6.0
52	G.G	144	58.4
53	G.G.S	8	3.1
54	G.G	11	4.6
55	LI1H	15	6.2
56	CO1L	6	2.5
57	CA1M/SV.L	5	2.1
58	IF1M/SV.L	23	9.1
59	G.G.S	30	12.3
60	CA1M/SV.L	4	1.6
61	SV.L	12	4.8
62	G.G.C.S	8	3.1
63	CA1M	6	2.6
64	G.G.C.S	21	8.7
65	SV.L	4	1.5
66	CO1L/SV.L	14	5.6
67	IF1M/SV.L	18	7.1
68	G.D.G	31	12.6
69	CA1M/SV.L	23	9.5
70	CO1H	5	2.0
71	SV.L	3	1.1
72	CA1L/SV.L.G	11	4.4
73	CO1M/SV.L	4	1.8
74	SV.L	13	5.2
75	SV.L	3	1.3
76	IF1L/SV.L	2	.6
77	G.G.C	28	11.3
78	IF1M/SV.L	28	11.3
79	SV.L	2	.6
80	CA1M/SV.L	11	4.5
81	G.G	1	.3
82	G.G	1	.0
83	SV.L	4	1.7
84	G.G.S	4	1.7
85	IF1M/SV.L	14	5.5
86	IF1M/SV.L	33	13.4
87	G.G.S	52	20.9
88	G.G	1	.1
89	CO1M/SV.L	9	3.7
90	G.G.S	10	3.9
91	IF1M/SV.L	2	.9
92	SV.L	11	4.6
93	IF1M/SV.L	1	.5
94	SV.L	5	2.1
95	U	11	4.2
96	CA1M/SV.L	15	6.0
97	M.F.P	17	6.7
98	U	116	47.0
99	MN1M/SV.H	15	5.9
100	SV.H.L	14	5.3
101	U	10	4.1
102	MN1H	2	.8
103	IF1M/SV	2	.9
104	SV.L	1	.4
105	SV.L	9	3.7
106	U	1	.1
107	CO1M/SV.L	3	1.1
108	SV.L	1	.6
109	G.G.S	3	1.2
110	CO1H	4	1.6
111	U	9	3.6
112	IF1M/SV.L	31	12.4
113	CO1H	8	3.4
114	SV.L	16	6.4
115	CO1M/SV	3	1.3
116	IF1L/SV.L	11	4.4
117	CO1M/SV.L	4	1.5
118	LI1H	60	24.1
119	G.G.C.L	137	55.6
120	SV.L	9	3.8
121	IF1M/SV.L	1	.5
122	G.G.C	2	.9
123	CO1M/SV.L	1	.1

Produced by the United States Geological Survey
in cooperation with Trust Territory of the Pacific Islands
Compiled by the United States Geological Survey
from 1:50,000 scale maps and other sources
Revised 1987
This information is not intended for navigational purposes
Proportion and survey data are for reference only
(Not for use in navigation)

SCALE 1:20,000

CONTOUR INTERVAL 30 METERS
SUPPLEMENTARY CONTOUR INTERVAL 5 METERS
WATER TO MEAN SEA LEVEL
DEPTH CURVES IN FATHOMS
SHORTEST WAGON ATTEMPTS THE APPROXIMATE LINE OF MEAN HIGH WATER
THE MEAN RANGE OF TIDE IS APPROXIMATELY 1 METER

Vegetation map compiled by Pacific Southwest Forest and Range
Experiment Station and Pacific Northwest Forest and Range Experiment
Station, Forest Service, U.S. Department of Agriculture, Cartography by
Alan H. Ambacher, USDA, Forest Service, Pacific Southwest Region,
Engineering Geomorphics Section, 1987.

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Falanruw, Marjorie C.; Cole, Thomas G.; Ambacher, Alan H. 1989. **Vegetation Survey of Rota, Tinian, and Saipan, Commonwealth of the Northern Mariana Islands.** Resour. Bull. PSW-27. Berkeley, CA: Pacific Southwest Forest and Range Experiment Station, Forest Service, U.S. Department of Agriculture. 11p. + 13 maps.

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VEGETATION LEGEND
For explanation of vegetation type codes, see Table 2.

ITEM	LABEL	AREA (ACRES)	AREA (HECTARES)	ITEM	LABEL	AREA (ACRES)	AREA (HECTARES)
1	B.L.	25	10.1	80	B.S.	2	.9
2	S.P.	27	11.1	81	CA1M/SV.L	3	1.2
3	G.G.S	2	.9	82	CO1H	1	.5
4	G.G	14	5.6	83	AG	8	3.3
5	SV.L	1317	533.1	84	IF1M/SV.L	4	1.6
6	CA1L/SV.L	12	4.8	85	C	2	.8
7	S	138	56.0	86	IF1M/SV.L	1	.1
8	CA1M/SV.L	13	5.3	87	CO1M/SV.L	21	8.6
9	S.S.S	11	4.4	88	CA1M	2	.9
10	IF1M/SV.L	2	.8	89	SV.L	4	1.6
11	IF1M/SV.L	6	2.2	90	CO1M/SV.L	1	.5
12	B.D	6	2.4	91	IF1M/SV.L	1	.5
13	IF1L/SV.L	91	36.7	92	U	11	4.4
14	U	2	.6	93	IF1M/SV.L	7	2.8
15	U	2	.6	94	B.D	2	.7
16	CA1M/SV.L	4	1.5	95	G.G	2	.9
17	LI1H	191	77.2	96	IF1L/SV.L	4	1.7
18	LI1M	20	8.0	97	IF1M/SV.L	6	2.6
19	IF1M/SV.L	2	1.0	98	IF1M/SV.L	3	1.2
20	CA1L/SV.L	11	4.5	99	G.G	3	1.3
21	IF1M/SV.L	10	4.2	100	G.G	16	6.3
22	IF1M/SV.L	7	2.9	101	LI1M	6	2.2
23	SV.S	32	13.0	102	G.G	6	2.4
24	IF1M/SV.L	14	5.8	104	G.G	6	2.4
25	G.G	2	.6	105	LI1H	52	21.1
26	IF1M/SV.L	5	2.1	106	G.G	4	1.6
27	SV.L	2	.7	107	CA1L/SV.G	3	1.2
28	CA1M/SV.L	8	3.4	108	G.G.S	1	.4
29	LI1H	43	17.3	109	G.G.S	5	2.1
30	IF1M/SV.L	12	5.0	110	SV.L	381	154.3
31	G.G	14	5.5	111	CO1L/SV.L	2	.8
32	LI1M/SV.S	34	13.6	112	CA1M	1	.1
33	S.S.P	8	3.2	113	CO1H	11	4.3
34	IF1L/SV.L	9	3.7	114	IF1M/SV.L	217	87.9
35	LI1H	5	2.1	115	G.G.S	2	1.0
36	IF1L/SV.L	9	3.8	116	G.G	4	1.6
37	CA1H	3	1.2	118	IF1H	4	1.5
38	G.G.S	5	2.2	119	G.G	1	.5
39	S.P	17	6.9	120	G.G.S	26	10.4
40	G.G	1	.6	121	G.G	1	.5
41	G.G	2	.9	122	SV.S	3	1.2
42	G.G	1	.6	123	B.D	2	.9
43	G.G	8	3.0	124	LI1H	3	1.4
44	IF1M/SV.L	9	3.8	125	G.S	3	1.1
45	G.G	1	.5	126	G.G.S	2	.8
46	G.G	5	2.1	127	CA1M/SV.L	4	1.5
47	G.G	199	80.7	128	G.G	15	6.0
48	IF1M/SV.L	25	10.2	129	G.G	1	.5
49	IF1M/SV.L	10	4.0	130	CA1M/SV.L	8	3.1
50	G.G	15	6.0	131	S.P	56	22.6
51	SV.G	13	5.3	132	CA1M/SV.L	14	5.5
52	LI2H	12	4.8	133	S	46	18.6
53	SV.L	148	59.8	134	G.G.C.S	144	58.2
54	G.G.S	18	7.1	135	CA1M/SV.L	4	1.6
55	LI1H	26	10.6	136	G.G	2	1.0
56	IF1H	5	1.9	137	CA1M/SV.L	17	6.8
57	IF1H	82	33.1	138	SV.S	4	1.5
58	IF1M/SV.L	70	28.2	139	IF1M/SV.L	71	28.6
59	SV.S	3	1.2	140	G.G.S	1	.3
60	IF1M/SV.L	35	14.0	141	G.G	4	1.8
61	SV.S	8	3.3	142	IF1M/SV.L	22	8.9
62	IF1L/SV.L	8	3.3	143	CO1M/SV.L	16	6.3
63	S	5	2.0	144	SV.L	3	1.1
64	B.S	13	5.4	145	SV.L	18	7.2
65	S	4	1.6	146	IF1M/SV.L	1	.1
66	IF1L/SV.L	16	6.6	147	IF1M/SV.L	1	.1
67	G.G.S	13	5.1	148	G.G.S	1	.2
68	IF1L/SV.L	10	3.9	149	G.G	2	.8
69	G.G	2	.6	150	CA1L/SV.L	1	.6
70	G.G	1	.4	151	SV.L	26	10.6
71	G.G.S	2	.9	152	IF1M/SV.L	13	5.2
72	IF1M/SV.L	3	1.0	153	S	9	3.6
73	IF1M/SV.L	162	65.7	154	G.G.S	9	3.6
74	IF1M/SV.L	284	114.8	155	SV.L	37	14.7
75	SV.L	30	12.1	156	CA1M/SV.L	2	.8
76	G.G.S	16	7.3	157	SV.L	174	70.5
77	S	31	12.4	158	LI1H	24	9.7
78	SV.L	1	.3	159	CA1M/SV.L	14	5.8

SCALE 1:20,000

CONTOUR INTERVAL 10 METERS
SUPPLEMENTARY CONTOUR INTERVAL 5 METERS
DATUM IS MEAN SEA LEVEL
DEPTH CURVES IN CATHODS
SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER
THE MEAN HIGHER OF TIDE IS APPROXIMATELY 1 METER

Vegetation map compiled by Pacific Southwest Forest and Range Experiment Station and Pacific Northwest Forest and Range Experiment Station, Forest Service, U.S. Department of Agriculture, Cartography by Alan H. Ambach, USDA - Forest Service, Pacific Southwest Region, Engineering Geomatics Section, 1987.

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VEGETATION LEGEND
For explanation of vegetation type codes, see Table 2.

AREA			AREA			AREA		
ITEM	LABEL	HOPES	ITEM	LABEL	HOPES	ITEM	LABEL	HOPES
1	SVL	17	161	G.G	2	322	IFIMSVL	2
2	COIMSVL	17	162	G.G	3	322	SVL	2
3	SVL	3	163	SVL	4	324	COIMSVL	15
4	G.G.S	8	164	COIMSVL	27	325	SVL	14
5	U	3	165	COIMSVL	4	326	SVL	5
6	IFIMSVL	308	166	G.G.S	4	327	COIMSVL	2
7	G.G	2	167	COIMSVL	6	328	SVL	46
8	IFIMSVL	5	168	IFIMSVL	6	329	IFIMSVL	15
9	C	5	169	G.G	2	330	G.G.S	70
10	COIMSVL	4	170	SVL	10	331	G.G	2
11	IFIMSVL	7	171	G.G.S	5	332	COIMSVL	2
12	IFIMSVL	7	172	COIMSVL	2	333	COIH	4
13	SVL	5	173	COIMSVL	2	334	G.G	4
14	COIMSVL	112	174	IFIMSVL	12	335	G.G	8
15	G.G.S	3	175	G.G	2	336	G.G.S	1
16	COIMSVL	3	176	COIH	1	337	G.G	1
17	SVL	52	177	CAIMSVL	8	338	G.G	1
18	SVL	3	178	IFIMSVL	4	339	SVL	3
19	LITH	2	179	COIMSVL	4	340	COIMSVL	11
20	SVL	143	180	LITH	14	341	COIMSVL	11
21	SVL	20	181	IFIMSVL	2	342	G.G	3
22	CAIH	3	182	SVL	21	343	COIMSVL	3
23	G.G	16	183	CAIMSVL	23	344	G.G	1
24	IFIMSVL	4	184	IFIMSVL	153	345	COIMSVL	1
25	COIH	2	185	SVL	2	346	G.G	10
26	U	9	186	G.G.S	22	347	SVS	2
27	COIMSVL	72	187	G.G	7	348	SVL	2
28	CAIMSVL	19	188	CAIMSVL	2	349	G.G	9
29	U	1	189	G.G	1	350	COIMSVL	1
30	G.G	4	190	SVL	3	351	COIMSVL	2
31	CAIMSVL	2	191	C	3	352	COIMSVL	2
32	SVL	10	192	G.G	2	353	IFIMSVL	4
33	CAIMSVL	4	193	COIH	1	354	SVL	4
34	CAIMSVL	2	194	COIMSVL	3	355	G.G	1
35	COIH	4	195	SVL	3	356	G.G	1
36	U	5	196	C	7	357	G.G	4
37	CAIMSVL	4	197	G.G.S	3	358	G.G	1
38	COIH	4	198	COIH	7	359	IFIMSVL	34
39	LITH	14	199	G.G.S	5	360	SVL	6
40	IFIMSVL	12	200	C	3	361	SVL	6
41	G.G.S	12	201	G.G	1	362	COIMSVL	2
42	SVL	10	202	IFIMSVL	14	363	COIMSVL	2
43	SVL	3	203	G.G	1	364	G.G	1
44	COIMSVL	4	204	IFIMSVL	256	365	COIMSVL	26
45	SVL	2	205	G.G.S	9	366	COIMSVL	2
46	G.G.S	11	206	IFIMSVL	7	367	COIMSVL	2
47	COIH	11	207	COIMSVL	13	368	COIMSVL	2
48	G.G	52	208	G.G	2	369	G.G.S	2
49	G.G.S	5	209	COIMSVL	2	370	SVS	1
50	COIH	1	210	COIMSVL	52	371	G.G	2
51	G.G	11	211	G.G.S	5	372	G.G	2
52	G.G.S	16	212	G.G	2	373	COIH	17
53	SVL	18	213	COIMSVL	3	374	SVL	2
54	G.G	37	214	G.G	3	375	SVL	2
55	SVL	1	215	LITH	3	376	IFIMSVL	2
56	CAIMSVL	2	216	U	1	377	IFIMSVL	87
57	SVL	2	217	IFIMSVL	16	378	SVL	2
58	IFIMSVL	218	218	CAIMSVL	52	380	SVL	2
59	SVL	8	219	G.G	1	381	CAIH	3
60	G.G	3	218	G.G	15	383	SVL	285
61	SVL	7	220	G.G.S	8	384	COIH	2
62	G.G	1	221	SVS	1	385	SVL	2
63	SVL	15	222	SVL	4	386	C	78
64	COIH	4	223	G.G	3	387	G.G	1
65	COIMSVL	3	224	C	4	388	COIMSVL	3
66	SVL	15	225	SVL	125	389	G.G	2
67	CAIMSVL	10	226	COIMSVL	207	390	G.G	2
68	SVL	14	227	C	1	391	G.G	4
69	G.G.S	15	228	G.G	8	392	G.G	2
70	SVL	31	229	SVL	20	393	CAIH	3
71	SVL	1	230	IFIMSVL	18	394	IFIMSVL	3
72	SVL	1	231	SVL	5	395	G.G	1
73	SVL	1	232	COIH	1	396	IFIMSVL	3
74	SVL	3	233	IFIMSVL	22	397	SVL	1
75	IFIMSVL	17	234	G.G.S	7	398	SVL	15
76	IFIMSVL	4	235	SVL	18	399	SVL	1
77	SVL	50	236	COIH	3	400	G.G	2
78	SVL	39	237	SVL	8	401	SVL	2
79	SVL	12	238	SVL	2	402	SVL	4
80	CAIMSVL	6	239	COIMSVL	16	403	CAIMSVL	3
81	IFIMSVL	40	240	IFIMSVL	111	404	CAIMSVL	14
82	IFIMSVL	40	241	SVL	14	405	CAIMSVL	58
83	IFIMSVL	7	242	IFIMSVL	2	406	SVL	2
84	CAIMSVL	1	243	CAIMSVL	4	407	G.G.S	2
85	SVL	3	244	SVL	1	408	IFIMSVL	28
86	SVL	3	245	CAIMSVL	9	409	CAIMSVL	2
87	SVL	135	246	G.G	1	410	IFIMSVL	2
88	SVL	3	247	SVL	1	412	CAIH	1
89	SVL	1	248	G.G	1	413	G.G	1
90	COIMSVL	63	249	COIMSVL	11	414	CAIMSVL	1
91	G.G	8	250	IFIMSVL	5	415	SVL	1
92	G.G	4	251	CAIMSVL	11	416	IFIMSVL	168
93	SVL	1	252	SVL	1	417	SVL	1
94	IFIMSVL	20	253	S.S	27	418	SVL	1
95	SVL	3	254	IFIMSVL	127	419	IFIMSVL	1
96	G.G.S	113	255	C	10	420	SVL	1
97	COIMSVL	2	256	S.P	11	421	SVL	1
98	SVL	76	257	G.G	2	422	COIMSVL	12
99	SVL	19	258	SVL	6	423	U	1
100	S.S	13	259	CAIMSVL	7	424	SVL	2
101	CAIMSVL	19	260	IFIMSVL	27	425	COIMSVL	3
102	G.G	2	261	SVL	2	426	IFIMSVL	1
103	IFIMSVL	8	262	SVL	4	427	IFIMSVL	3
104	SVL	6	263	CAIH	1	428	SVL	1
105	S.S	2	264	IFIMSVL	18	429	SVL	1
106	IFIMSVL	41	265	C	2	430	IFIMSVL	9
107	IFIMSVL	110	266	IFIMSVL	2	431	G.G	1
108	CAIH	4	267	C	1	432	SVL	1
109	SVL	3	268	IFIMSVL	1	433	SVL	1
110	COIH	1	269	SVL	1	434	SVL	1
111	G.G.S	6	270	COIMSVL	4	435	CAIMSVL	1
112	SVL	3	271	CAIMSVL	2	436	SVL	1
113	G.G.S	2	272	IFIMSVL	4	437	SVL	1
114	CAIMSVL	9	273	SVL	1	438	SVL	1
115	G.G.S	231	274	C	1	439	G.G	1
116	IFIMSVL	9	275	LITH	104	440	IFIMSVL	1
117	IFIMSVL	23	276	SVS	4	441	SVL	1
118	CAIMSVL	4	277	IFIMSVL	9	442	U	1
119	G.G.S	2	278	COIMSVL	1	443	U	1
120	COIMSVL	11	279	G.G	1	444	U	1
121	SVL	1	280	IFIMSVL	3	445	IFIMSVL	1
122	IFIMSVL	24	281	CAIMSVL	1	446	IFIMSVL	1
123	SVL	34	282	G.G	1	447	SVL	1
124	SVL	34	283	G.G	6	448	SVL	1
125	IFIMSVL	14	284	SVL	17	449	IFIMSVL	1
126	SVL	2	285	CAIMSVL	1	450	S.P	1
127	COIMSVL	7	286	SVL	6	451	SVL	1
128	SVL	27	287	LITH	1	452	SVL	1
129	COIH	4	288	G.G.S	11	453	SVL	1
130	CAIMSVL	4	289	G.G	4	454	IFIMSVL	1
131	IFIMSVL	1	290	COIMSVL	50	455	IFIMSVL	1
132	S.G.S	5	291	SVL	2	456	SVL	1
133	G.G	3	292	SVL	1	457	SVL	1
134	SVL	3	293	G.G	2	458	SVL	1
135	SVL	2	294	G.G	1	459	SVL	1
136	C	2	295	C	2	460	SVL	1
137	G.G.S	14	296	SVL	2	461	SVL	1
138	SVL	3	297	U	2	462	IFIMSVL	1
139	SVL	3	298	SVL	2	463	IFIMSVL	1
140	G.G	12	299	G.G	6	464	SVL	1
141	SVL	63	300	G.G	6	465	IFIMSVL	1
142	COIMSVL	9	301	SVL	8	466	IFIMSVL	1
143	COIMSVL	9	302	IFIMSVL	1	467	IFIMSVL	1
144	CAIMSVL	5	303	IFIMSVL	61	468	IFIMSVL	1
145	CAIMSVL	6	304	COIH	6	469	IFIMSVL	1
146	SVL	8	305	SVL	14	470	IFIMSVL	1
147	G.G.S	10	306	SVL	4	471	IFIMSVL	1
148	SVL	17	307	SVL	1	472	IFIMSVL	1
149	IFIMSVL	9	308	CAIMSVL	32	473	SVL	1
150	SVL	2	309	COIMSVL	32	474	SVL	1
151	G.G.S	2	310	SVL	31	475	SVL	1
152	C	2	311	U	1	476	IFIMSVL	1
153	SVL	3	312	U	1	477	IFIMSVL	1
154	SVL	3	313	IFIMSVL	30	478	IFIMSVL	1
155	SVL	3	314	SVL	25	479	IFIMSVL	1
156	CAIMSVL	16	315	IFIMSVL	9	480	IFIMSVL	1
157	SVL	3	316	COIH	2	481	IFIMSVL	1
158	SVL	3	317	SVL	2	482	IFIMSVL	1
159	COIMSVL	17	318	SVL	2	483	IFIMSVL	1
160	CAIMSVL	6	319	SVL	2	484	IFIMSVL	1
161	CAIMSVL	7	320	SVL	2	485	IFIMSVL	1
162	CAIMSVL	7	321	CAIMSVL	2	486	IFIMSVL	1

Vegetation map compiled by Pacific Southwest Forest and Range Experiment Station and Pacific Northwest Forest and Range Experiment Station, Forest Service, U.S. Department of Agriculture. Cartography by Alan H. Ambacher, USDA - Forest Service, Pacific Southwest Region, Engineering Geomaterials Section; 1987.

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VEGETATION LEGEND
For explanation of vegetation type codes, see Table 2.

ITEM	LABEL	AREA		ITEM	LABEL	AREA	
		(ACRES)	(HECTARES)			(ACRES)	(HECTARES)
1	B.S.	5	1.8	115	SV.L	60	24.2
2	CA1M	31	12.6	116	SV.L	43	17.5
3	SV.L	1	.4	117	CA1M/SV.L	30	12.2
4	SV.L	11	4.2	119	IF1U/SV.L	22	8.7
5	U	273	110.6	120	CO1M/SV.L	27	11.1
6	SV.L	5	2.0	121	SV.L	6	2.4
7	AG.CO	8	3.3	122	IF1U/SV.L	12	4.8
8	SV.L	2	.6	123	IF1H.D	5	2.1
9	IF1M.D/SV.L	6	2.4	124	AG.CO	8	3.3
10	IF1U/SV.L	6	2.5	125	SV.L	41	16.5
11	IF1H	6	2.5	126	CA1M/SV.L	46	18.7
12	LI1H	3	1.3	127	CO1M/SV.L	150	60.6
13	G.G.S	66	26.8	128	SV.L	5	2.2
14	G.G.S	18	7.4	129	IF1M/SV.L	37	14.9
15	IF1M/SV.L	5	2.0	130	IF1U/SV.L	15	5.9
16	SV.G.L	36	14.7	131	SV.L	37	14.9
17	U	4	1.5	132	CO1H	8	3.4
18	SV.L	26	10.7	133	IF1U/SV.L	22	9.0
19	G.G	18	7.4	134	CO1U/SV.L	17	6.9
20	SV.L	7	2.8	135	LI1H	29	11.9
21	CA1M/SV.L	51	20.7	136	LI1H	2	.8
22	G.G	5	2.1	137	G.G	6	2.2
23	CA1H	2	.6	138	G.G	1	.3
24	SV.S	5	1.9	139	IF1M/SV.L	63	25.6
25	IF1M/SV	10	4.1	140	G.G	2	.8
26	CA1M/SV.L	6	2.5	141	SV.L	13	5.1
27	U	4	1.8	142	CO1M/SV.L	147	59.4
28	SV.L	8	3.3	143	G.G.S	7	2.7
29	B.D	3	1.3	144	IF1U/SV.L	46	18.7
30	SV.L	3	1.1	145	U	4	1.8
31	U	47	18.9	146	SV.L	26	10.4
32	SV.L	24	9.8	147	M.F.P	27	11.1
33	U	6	2.3	148	SV.L	62	25.2
34	SV.L	5	1.8	149	SV.L	7	3.0
35	U	1	.6	150	G.G	6	2.4
36	CO1H	15	5.9	151	U	54	21.9
37	SV.L	1	.5	152	CA1M/U	38	15.5
38	CO1H	6	2.4	153	IF1M/SV.L	31	12.4
39	IF1M/SV.L	43	17.5	154	CO1M/SV.L	61	24.8
40	U	26	10.4	155	CA1U/SV.L	1	.4
41	SV.L	5	1.9	156	CA1U/SV.L	15	5.9
42	CO1M/SV.L	6	2.4	157	U	59	24.0
43	SV.L	16	6.4	158	G.G	54	21.9
44	IF1U/SV.L	27	11.0	159	SV.L	14	5.8
45	G.G	1	.6	160	G.G	5	1.9
46	CO1M/SV.L	5	2.2	161	IF1M/SV.L	43	17.2
47	IF1M/SV.L	58	23.3	162	U	2	.8
48	G.G.S	8	3.1	163	SV.L	34	13.9
49	IF1M/SV.L	62	25.3	164	U	14	5.5
50	IF1U/SV.L	54	21.9	165	SV.L	27	10.7
51	CA1M/SV	6	2.6	166	M.F.P	38	15.2
52	CO1M/SV.L	10	3.9	167	CO1M/SV.L	9	3.7
53	SV.L	20	7.9	168	SV.L	4	1.6
54	IF1H.D	1	.1	169	CO1M/SV.L	8	3.1
55	LI1H	51	20.7	170	CO1M/SV.L	11	4.4
56	IF1H.D	9	3.5	171	SV.L	4	1.7
57	CO1M/SV.L	19	7.6	172	SV.L	14	5.7
58	SV.L	2	.8	173	IF1M/SV.L	95	38.4
59	CO1M/SV.L	5	1.8	174	G.G.S	2	.8
60	SV.L	38	15.2	175	CA1H	35	14.3
61	SV.L	16	6.6	176	IF1U/SV.L	67	27.1
62	G.S	6	2.5	177	IF1H	19	7.7
63	AG.CO	5	1.9	178	SV.S	5	1.9
64	SV.L	64	25.9	179	B.D	11	4.3
65	CA1H	7	3.0	180	IF1M/SV.L	1	.4
66	U	15	6.1	181	CA1M/SV.L	1	.5
67	SV.L	6	2.5	182	IF1M/SV.L	13	5.2
68	CO1H	1	.5	183	SV.L	5	2.0
69	U	1	.5	184	CO1M/LI	42	17.1
70	IF1U/SV.L	69	27.9	185	CO1L/SV.L	18	7.1
71	IF1U/SV.L	653	264.1	186	IF1U/SV.L	17	6.7
72	SV.L	3	1.2	187	CO1H	5	2.0
73	CO1M/SV.L	5	2.6	188	SV.L	38	15.4
74	IF1M/SV.L	12	4.7	189	SV.L	2	.8
75	IF1U/SV.L	95	38.7	190	G.G	7	2.6
76	CA1M/SV.L	13	5.3	191	IF1M/SV.L	22	8.7
77	G.G	7	2.8	192	CA1M/SV.L	8	3.4
78	IF1M/SV.L	9	3.6	193	IF1M/SV.L	102	41.1
79	IF1M/SV.B	4	1.6	194	SV.L	3	1.3
80	CO1M/SV.L	34	13.9	195	SV.L	4	1.7
81	SV.L	34	13.7	196	SV.L	11	4.3
82	CO1M/SV.L	14	5.6	197	SV.L	6	2.4
83	CO1M/SV.L	4	1.7	198	SV.L	3	1.0
84	CO1M/SV.L	14	5.6	199	SV.L	6	2.4
85	LI2H	4	1.8	200	G.G.S	33	13.4
86	CA1M/G.G	33	13.5	201	CO1M/SV.L	65	26.6
87	G.G	4	1.6	202	IF1M/SV.L	1	.5
88	CO1M/SV.L	36	14.5	203	G.G.S	277	112.0
89	G.G	1	.4	204	SV.G.S	5	1.9
90	G.G	3	1.1	205	IF1M/SV.L	154	62.2
91	G.G	9	3.7	206	SV.S	2	.6
92	G.G	2	.8	207	IF1M/SV.L	41	16.5
93	G.G	6	2.6	208	CA1M/SV.L	6	2.2
94	CA1M/SV.L	4	1.7	209	SV.L	1	.5
95	CO1H	17	6.9	210	CA1M/SV.L	5	1.9
96	G.G	3	1.1	211	CO1H	2	1.0
97	CO1H	7	2.9	212	IF1M/SV.L	7	2.9
98	IF1H	9	3.5	213	SV.L	28	11.1
99	CO1M/SV.L	19	7.5	214	CO1M/SV.L	5	2.1
100	LI1H	42	16.8	215	IF1U/SV.L	7	3.0
101	CO1M/SV.L	20	7.9	216	LI1M/SV.P	13	5.2
102	SV.L	2	.6	217	G.G.S	3	1.0
103	CO1M/SV.L	7	2.9	218	G.G.S	1	.1
104	CO1M.LI	25	10.1	219	IF1M/SV.L	11	4.6
105	AG.CO	10	3.9	220	G.G	16	6.5
106	SV.L	51	20.0	221	CO1H	2	.7
107	CA1H	2	.7	222	SV.L	13	5.2
108	G.G	7	2.7	223			
109	CO1H	3	1.1	224			
110	CO1H	16	6.3	225			
111	CO1H	6	2.4	226			
112	CA1M/SV.L	8	3.1	227			
113				228			
114							

SCALE 1:20,000

CONTOUR INTERVAL 10 METERS
SUPPLEMENTARY CONTOUR INTERVAL 5 METERS
DATUM: MEAN SEA LEVEL

DEPTH CURVES IN FATHOMS
SHORIELAND SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN LOW WATER
THE MEAN RANGE OF TIDE IS APPROXIMATELY 8 METERS

Produced by the United States Geological Survey
in cooperation with Trust Territory of the Pacific Islands
Surveyed by USGS and TPII
Compiled by photogrammetric methods from aerial photographs
taken 1946-47. Field checked 1950.
Control field checked 1950. Map Sheet 1402
Natural topographic data compiled from TPII
data 1947-51.
The information is not intended for navigational purposes.
Progress and metric grid scale. Saipan coordinate system
(Shall be adjusted to datum).

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ISLAND OF SAIPAN

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Falanruw, Marjorie C.; Cole, Thomas G.; Ambacher, Alan H. 1989. **Vegetation Survey of Rota, Tinian, and Saipan, Commonwealth of the Northern Mariana Islands.** Resour. Bull. PSW-27. Berkeley, CA: Pacific Southwest Forest and Range Experiment Station, Forest Service, U.S. Department of Agriculture. 11p. + 13 maps.

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VEGETATION LEGEND

For explanation of vegetation type codes, see Table 2.

ITEM	LABEL	AREA (ACRES)	ITEM	LABEL	AREA (ACRES)	ITEM	LABEL	AREA (ACRES)
1	B.L.	5.19	143	G.G.S.	51.20.5	316	IFIMSVL	19.7.6
2	1	4	161	G.G.S.	7.2.6	319	IFIMSVL	21.6.4
3	1	4	162	SVLS	11.4.4	320	IFIMSVL	36.14.6
4	CA1M/SVL	5.2.1	163	IFIMSVL	13.5.4	321	SVL	467.103.8
5	1	6	164	CA1M/SVL	3.1.1	322	B.D.	16.8.5
6	IFLUSVL	4.1.6	165	SVL	16.6.6	323	IFLUSVL	8.3.2
7	SVL	8.3.5	166	IFIMSVL	5.1.8	324	IFIMSVL	33.13.5
8	ATIH	10.3.9	167	SVGL	192.77.7	325	IFIMSVL	2.8.8
9	SVGS	16.6.6	168	SVG	27.10.7	326	CA1M/SVL	27.11.0
10	ATIH	1.5	170	CO1M/SVL	17.0.3	327	G.G.S.	7.2.6
11	CA1M	8.3.2	171	SVL	3.1.0	328	IFLUSVL	7.3.8
12	COIH	2.8	172	IFIMSVL	316.128.6	329	SVL	12.4.9
13	SVL	21.0	173	SVL	17.7.0	330	SVL	6.2.3
14	SVG	26.10.6	174	IFH	11.4.4	331	CA1M/SVL	3.1.3
15	COIH	2.9	176	IFIMSVL	16.6.6	332	B.S.	2.7
16	IFH	1.4	177	SVL	117.47.4	333	CA1M/SVL	6.2.2
17	SVL	1.4	178	IFIMSVL	19.7.5	334	IFIMSVL	7.2.8
18	CO1USVL	2.9	179	SVL	2.1.0	335	IFIMSVL	44.17.6
19	SVL	1.4	180	SVL	13.5.1	336	SVL	1.1
20	SVL	1.4	181	CA1M/SVL	5.2.0	337	SVL	3.1.3
21	CO1M/SVL	13.5.2	182	G.G.	8.3.2	338	SVGL	21.8.3
22	SVL	8.2.3	183	IFH	3.1.1	339	SVL	17.6.7
23	B.D.	102.41.3	184	SVL	6.2.4	340	SVLS	8.3.3
24	U	1.4	185	CO1USVL	9.3.6	341	COIH	1.8
25	SVG	17.6.9	186	SVL	13.5.1	342	SVS	1.4
26	CO1M/SVL	11.4.5	187	CO1USVL	13.5.1	343	SVG	4.1.6
27	SVL	15.6.0	188	U	14.5.6			
28	IFLUSVL	13.5.3	189	G.G.	5.1.8			
29	CAIH	10.1.1	190	G.G.S.	6.2.5			
30	G.G.	4.1.4	191	SVL	32.12.9			
31	U	3.1.1	192	CO1M/SVL	19.7.8			
32	G.G.	14.5.8	193	SVL	8.2.6			
33	U	9.3.8	194	IFIMSVL	51.20.5			
34	G.G.	2.9	195	U	4.1.8			
35	CO1USVL	3.1.1	196	SVS	1.1			
36	U	1.2	197	B.D.	7.2.8			
37	CO1MU	27.11.1	198	IFIMSVL	4.1.8			
38	SVS	2.6	199	CO1USVL	49.19.9			
39	CAIH	4.1.6	200	SVL	5.2.3			
40	SVG	8.3.3	201	CAIH	1.6			
41	SVS	3.1.0	202	G.G.	5.1.8			
42	SVL	22.8.9	203	U	11.4.2			
43	SVG	3.1.3	204	CO1USVL	37.14.8			
44	C	13.5.1	205	LIH.S	15.6.0			
45	U	1.4	206	G.G.S.	7.2.8			
46	U	2.8	207	C	2.8			
47	COIH	4.1.6	208	C	3.1.0			
48	SVL	3.1.2	209	COIH	3.1.2			
49	IFIMSVL	6.2.5	210	G.G.S.	18.7.3			
50	SVL	58.23.4	211	IFIMSVL	61.24.5			
51	IFIMSVL	2.1.2	212	U	5.1			
52	SVG	3.1.3	213	CA1M/SVL	61.24.5			
53	IFIMSVL	74.29.9	214	SVL	8.3.1			
54	COIH	3.1.2	215	IFIMSVL	10.4.1			
55	SVG	10.4.2	216	CO1MU	1.6			
56	SVS	2.6	217	CO1USVL	6.2.3			
57	SVL	34.13.6	218	IFLUSVL	4.1.8			
58	C	2.6	219	C	8.3.4			
59	SVG	3.1.3	220	CO1M/SVL	18.6.5			
60	CO1M/SVL	7.2.7	221	U	38.15.5			
61	SVLS	10.3.9	222	SVS	5.2.0			
62	G.G.	3.1.1	223	CO1MU	11.3			
63	U	51.20.5	224	IFIMSVL	40.16.1			
64	IFIMSVL	9.3.6	225	G.G.	6.2.2			
65	SVG	4.1.8	226	SVS	1.1			
66	U	15.5.9	227	COIH	3.1.1			
67	CO1MU	9.3.4	228	CO1M/SVL	15.6.0			
68	IFH	5.1.8	229	C	5.1			
69	CO1M/SVL	14.5.5	230	C	2.7			
70	G.G.	10.3.9	231	SVL	8.3.1			
71	CO1MU	18.7.1	232	G.G.O.	2.9			
72	SVG	7.2.7	233	G.G.	25.10.1			
73	IFH	2.7	234	COIH	1.3			
74	CO1MU	33.13.4	235	IFIMSVL	4.1.6			
75	U	229.92.5	236	COIH	1.4			
76	M.F.P.W.F.	18.7.1	237	COIH	2.9			
77	M.F.P.	221.89.5	238	CA1M/SVL	2.9			
78	CAIH	1.5	239	CO1M/SVL	1.2			
79	CA1M/F.P.	3.1.1	240	AG	1.5			
80	G.G.	2.9	241	SVG	2.9			
81	IFH	1.4	242	IFIMSVL	2.7			
82	COIH	2.9	243	CO1M/SVL	2.5			
83	COIH	2.9	244	G.G.	1.1			
84	IFIMSVL	3.1.1	245	CO1M/SVL	1.1			
85	G.G.	1.5	246	CO1UC	1.6			
86	CO1M/SVL	13.5.4	247	C	0			
87	SVL	5.2.2	248	C	2.10			
88	IFLUSVL	4.1.7	249	CA1M/SVL	3.1.1			
89	CO1M/SVL	9.3.6	250	G.G.	1.1			
90	SVG	25.1	251	SVL	4.1.7			
91	U	3.1.4	252	S.S.	4.1.7			
92	G.G.	3.1.1	253	S	8.2.4			
93	IFH	3.1.2	254	G.G.	3.2.2			
94	SVG	8.3.4	255	IFLUSVL	3.1.4			
95	SVS	5.1.9	256	SVGS	2.8			
96	COIH	20.8.2	257	COIH	1.2			
97	CO1MU	5.2.2	258	COIH	1.1			
98	CA1MU	32.12.7	259	C	2.8			
99	LIH	5.1.5	260	C	2.7			
100	CA1M/SVL	32.11.1	261	C	2.9			
101	AGCISVL	48.19.4	262	G.G.S.	14.5.6			
102	IFIMSVL	14.5.5	263	COIH	1.4			
103	CO1M/SVL	7.8	264	COIH	2.8			
104	IFIMSVL	3.1.1	265	IFIMSVL	2.8			
105	CA1USVL	7.2.6	266	U	2.10			
106	CO1M/SVL	2.9	267	G.G.S.	23.9.1			
107	CO1M/SVL	47.19.1	268	IFIMSVL	18.7.4			
108	W.F.	45.18.3	269	G.G.	1.5			
109	CA1M/F	22.8.9	270	IFH.D	2.7			
110	COIH	2.8	271	G.G.S.	7.2.8			
111	SVL	11.4.5	272	SVG	1.3			
112	CO1M/SVL	3.1.1	273	IFIMSVL	2.8			
113	SVL	3.1.3	274	IFIMSVL	3.1.3			
114	COIH	178.72.0	275	COIH	1.7			
115	COIH	1.5	276	G.G.S.	3.1.1			
116	C	5.2	277	G.G.S.	3.1.1			
117	COIH	9.3.7	278	IFIMSVL	7.3.9			
118	CO1M/SVL	54.22.0	279	IFIMSVL	54.22.0			
119	CO1M/SVL	5.2.1	280	IFIMSVL	101.49.8			
120	G.G.	14.5.6	281	SVG	4.1.5			
121	IFLUSVL	20.8.2	282	CO1M/F	4.1.5			
122	C	1.1	283	COIH	2.1.1			
123	SVL	7.3.0	284	C	2.6			
124	CA1M/SVL	5.2.0	285	S.S.	37.18.6			
125	SVL	6.3.1	286	CA1M/SVL	1.1			
126	SVG	3.1.7	287	IFLUSVL	11.6.6			
127	CO1USVL	83.30.6	288	SVL	2.9			
128	U	5.2.1	289	IFIMSVL	9.2.6			
129	SVL	17.7.0	290	IFLUSVL	6.1.5			
130	IFIMSVL	7.2.6	291	SVS	2.7			
131	CO1M/SVL	4.1.7	292	SVL	1.1			
132	SVL	598.399.9	293	SVS	1.1			
133	IFIMSVL	24.9.9	294	G.G.	3.4			
134	G.G.S.	10.3.9	295	IFIMSVL	8.3.4			
135	IFIMSVL	2.7	296	B.D.	1.2			
136	G.G.	1.5	297	IFIMSVL	3.4			
137	CO1USVL	6.2.4	298	CA1M/SVL	8.2.3			
138	G.G.	1.5	299	IFLUSVL	15.6.5			
139	COIH	15.6.6	300	COIH	2.7			
140	CO1USVL	3.1.2	301	COIH	1.6			
141	G.G.	3.1.3	302	C	9.1.5			
142	CO1M/SVL	3.1.4	303	IFIMSVL	4.1.4			
143	COIH	3.1.4	304	IFIMSVL	3.1.2			
144	COIH	4.1.4	305	IFIMSVL	4.1.1			
145	C	2.7	306	IFIMSVL	1.4			
146	U	1.4	307	COIH	1.5			
147	G.G.	1.4	308	COIH	1.4			
148	G.G.	1.4	309	COIH	1.4			
149	G.G.	1.4	310	U	451.182.3			
150	G.G.	1.4	311	G.G.	7.3.0			
151	G.G.	1.4	312	G.G.	7.3.0			
152	G.G.	1.4	313	CO1M/SVL	3.1.2			
153	G.G.	1.4	314	IFIMSVL	3.1.2			
154	G.G.	1.4	315	SVL	5.1.8			
155	G.G.	1.4	316	SVL	2.7			
156	G.G.	1.4	317	IFIMSVL	2.9			
157	G.G.	1.4						
158	G.G.	1.4						
159	G.G.	1.4						

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VEGETATION LEGEND
For explanation of vegetation type codes, see Table 2.

SAIPAN
Sheet 6 of 6

The Forest Service, U. S. Department of Agriculture, is responsible for Federal leadership in forestry. It carries out this role through four main activities:

- Protection and management of resources on 191 million acres of National Forest System lands
- Cooperation with State and local governments, forest industries, and private landowners to help protect and manage non-Federal forest and associated range and watershed lands
- Participation with other agencies in human resource and community assistance programs to improve living conditions in rural areas
- Research on all aspects of forestry, rangeland management, and forest resources utilization.

The Pacific Southwest Forest and Range Experiment Station

- Represents the research branch of the Forest Service in California, Hawaii, American Samoa and the western Pacific.
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