

APPENDIX TABLE 1^a
 ELEVATION [MEAN (SE)] ON THE HAWAIIAN ISLANDS BY STRATUM, HABITAT, AND STUDY AREA

	Kau	Hamakua	Puna	Kipukas	Kona	Mauna Kea	Kohala	East Maui	West Maui	Molokai	Lanai	Kauai
<i>Elevation</i>												
100–300 m	...	...	290 (4)	...	240 (16)	...	...	...	...	259 (7)	300 (0)	...
300–500 m	...	471 (5)	413 (5)	...	437 (15)	...	490 (0)	481 (7)	...	425 (9)	456 (12)	...
500–700 m	680 (4)	616 (4)	616 (4)	...	634 (5)	...	615 (16)	616 (8)	656 (9)	611 (6)	582 (7)	...
700–900 m	829 (6)	802 (3)	815 (5)	...	805 (3)	...	796 (15)	818 (6)	792 (9)	801 (4)	730 (20)	...
900–1100 m	1008 (5)	1000 (3)	1004 (4)	1080 (20)	1008 (3)	...	1045 (11)	1004 (5)	1000 (9)	999 (5)	...	...
1100–1300 m	1202 (4)	1204 (3)	1130 (5)	1217 (9)	1207 (3)	...	1218 (7)	1206 (5)	1200 (9)	1190 (5)	...	1253 (4)
1300–1500 m	1408 (4)	1406 (3)	...	1420 (7)	1407 (2)	...	1355 (5)	1401 (5)	1382 (11)	1346 (7)	...	1350 (4)
1500–1700 m	1611 (5)	1598 (3)	...	1590 (6)	1592 (3)	...	1585 (7)	1603 (6)	1606 (15)	...	...	1510 (0)
1700–1900 m	1798 (5)	1791 (4)	...	1807 (5)	1799 (4)	...	...	1810 (5)	1730 (5)	...	...	...
1900–2100 m	1983 (7)	1977 (6)	...	1998 (5)	1993 (4)	2028 (5)	...	2008 (5)	...	...	...	...
2100–2300 m	2120 (6)	2160 (13)	...	2152 (9)	2176 (5)	2211 (9)	...	2208 (5)	...	...	...	...
2300–2500 m	...	...	...	...	2338 (6)	2411 (7)	...	2390 (9)	...	...	...	...
2500–2700 m	...	...	...	...	...	2601 (6)	...	2567 (14)	...	...	...	...
2700–2900 m	...	...	...	...	...	2787 (7)	...	2760 (23)	...	...	...	...
2900–3100 m	...	...	...	...	...	2972 (18)	...	...	...	...	...	...
<i>Habitat</i>												
Ohia	1370 (16)	1236 (8)	711 (9)	1842 (15)	1301 (11)	...	1185 (18)	1309 (17)	1083 (23)	903 (12)	...	1298 (5)
Koa-ohia	1456 (16)	1144 (15)	...	1484 (24)	1358 (9)	...	...	1148 (22)	...	...	...	...
Koa-mamane	...	1995 (16)	...	1671 (19)	1672 (13)	...	...	...	...	...	...	...
Mamane-naio	...	...	...	...	1880 (0)	2374 (21)	...	...	...	...	...	...
Mamane	...	...	...	...	1694 (31)	2593 (17)	...	2187 (16)	...	...	...	...
Other natives	...	...	...	...	1066 (42)	...	...	1819 (43)	...	904 (22)	516 (18)	...
Intro. trees	...	791 (26)	...	...	851 (47)	...	1065 (62)	1306 (65)	640 (0)	685 (27)	579 (11)	...
Treeless	1414 (35)	993 (18)	1005 (53)	1962 (91)	1656 (58)	...	...	2110 (21)	1337 (81)	...	492 (28)	1370 (0)

^a Values are given in meters; + indicates stratum value is positive but under 0.5; ... indicates stratum was not sampled in study area.

APPENDIX TABLE 2^a
 MOISTURE [MEAN (SE)] ON THE HAWAIIAN ISLANDS BY ELEVATION, HABITAT, AND STUDY AREA

	Kau	Hamakua	Puna	Kipukas	Kona	Mauna Kea	Kohala	East Maui	West Maui	Molokai	Lanai	Kauai
<i>Stratum</i>												
100–300 m	...	...	3 (+)	...	4 (0)	...	...	...	...	5 (+)	4 (0)	...
300–500 m	...	6 (0)	5 (+)	...	4 (+)	...	4 (0)	6 (0)	...	5 (+)	4 (+)	...
500–700 m	6 (0)	6 (+)	6 (+)	...	4 (+)	...	5 (+)	6 (0)	6 (+)	5 (+)	5 (+)	...
700–900 m	6 (+)	6 (+)	5 (+)	...	4 (+)	...	6 (+)	6 (+)	5 (+)	5 (+)	6 (0)	...
900–1100 m	6 (+)	6 (+)	4 (+)	2 (0)	5 (+)	...	6 (0)	6 (+)	5 (+)	5 (+)	...	...
1100–1300 m	6 (+)	6 (+)	4 (+)	2 (+)	4 (+)	...	6 (+)	6 (+)	6 (+)	6 (+)	...	6 (0)
1300–1500 m	6 (+)	6 (+)	...	2 (+)	3 (+)	...	6 (0)	5 (+)	6 (0)	6 (0)	...	6 (0)
1500–1700 m	5 (+)	5 (+)	...	2 (0)	3 (+)	...	6 (0)	5 (+)	6 (0)	...	...	6 (0)
1700–1900 m	4 (+)	4 (+)	...	2 (+)	2 (+)	...	...	4 (+)	6 (0)	...	...	...
1900–2100 m	2 (+)	3 (+)	...	2 (0)	2 (+)	2 (0)	...	3 (+)	...	...	...	...
2100–2300 m	2 (0)	2 (0)	...	2 (0)	2 (0)	2 (0)	...	2 (+)	...	...	...	...
2300–2500 m	...	...	...	...	2 (0)	2 (0)	...	2 (0)	...	...	...	...
2500–2700 m	...	...	...	...	...	2 (0)	...	2 (0)	...	...	...	...
2700–2900 m	...	...	...	...	...	2 (0)	...	2 (0)	...	...	...	...
2900–3100 m	...	...	...	...	...	2 (0)	...	...	...	...	...	...
<i>Habitat</i>												
Ohia	5 (+)	6 (+)	5 (+)	2 (+)	3 (+)	...	6 (+)	6 (+)	6 (+)	6 (+)	...	6 (0)
Koa-ohia	5 (+)	5 (+)	...	2 (+)	4 (+)	...	...	5 (+)	...	...	...	...
Koa-mamane	...	2 (+)	...	2 (0)	2 (+)	...	...	...	...	...	...	...
Mamane-naio	...	...	...	...	4 (0)	2 (0)	...	...	...	...	...	...
Mamane	...	...	...	...	2 (+)	2 (0)	...	2 (0)	...	...	...	...
Other natives	...	...	...	...	2 (0)	...	...	2 (+)	...	2 (+)	4 (+)	...
Intro. trees	...	6 (+)	...	...	3 (+)	...	6 (+)	4 (+)	2 (0)	3 (+)	5 (+)	...
Treeless	4 (+)	4 (0)	2 (+)	2 (0)	2 (+)	...	...	2 (+)	6 (0)	...	4 (+)	6 (0)

^a Values are given in mean moisture index (2 = dry, 4 = mesic, 6 = wet); + indicates stratum value is positive but under 0.5; ... indicates stratum was not sampled in study area.

APPENDIX TABLE 3^a
CROWN COVER [MEAN (SE)] ON THE HAWAIIAN ISLANDS BY ELEVATION, HABITAT, AND STUDY AREA

	Kau	Hamakua	Puna	Kipukas	Kona	Mauna Kea	Kohala	East Maui	West Maui	Molokai	Lanai	Kauai
<i>Stratum</i>												
100–300 m	...	...	48 (4)	...	56 (5)	...	...	...	...	95 (8)	81 (0)	...
300–500 m	...	66 (4)	58 (2)	...	96 (16)	...	110 (0)	99 (18)	...	93 (8)	33 (8)	...
500–700 m	75 (0)	63 (1)	83 (2)	...	73 (4)	...	95 (6)	68 (5)	59 (8)	53 (3)	25 (3)	...
700–900 m	58 (2)	57 (1)	83 (2)	...	63 (2)	...	82 (9)	86 (5)	61 (4)	43 (2)	40 (30)	...
900–1100 m	45 (2)	50 (1)	73 (2)	50 (10)	75 (2)	...	74 (5)	93 (3)	77 (8)	55 (3)	...	...
1100–1300 m	38 (2)	54 (1)	58 (7)	52 (8)	58 (2)	...	75 (4)	97 (3)	104 (5)	90 (3)	...	123 (3)
1300–1500 m	41 (1)	62 (1)	...	36 (3)	52 (1)	...	93 (4)	85 (4)	93 (6)	92 (6)	...	120 (3)
1500–1700 m	53 (2)	58 (1)	...	45 (3)	57 (1)	...	73 (4)	90 (4)	57 (9)	...	...	134 (0)
1700–1900 m	58 (2)	55 (2)	...	45 (3)	47 (2)	...	...	72 (4)	58 (11)	...	...	...
1900–2100 m	21 (2)	38 (2)	...	28 (2)	34 (2)	38 (2)	...	46 (4)	...	...	...	...
2100–2300 m	15 (0)	42 (0)	...	16 (3)	26 (2)	37 (2)	...	8 (1)	...	...	...	...
2300–2500 m	...	...	...	...	21 (4)	39 (1)	...	3 (1)	...	...	...	...
2500–2700 m	...	...	...	...	...	37 (1)	...	5 (3)	...	...	...	...
2700–2900 m	...	...	...	...	...	25 (2)	...	0	...	...	...	...
2900–3100 m	...	...	...	...	...	17 (5)	...	...	...	...	...	...
<i>Habitat</i>												
Ohia	42 (1)	51 (1)	76 (1)	35 (1)	55 (1)	...	80 (2)	89 (1)	82 (3)	64 (2)	...	123 (2)
Koa-ohia	52 (1)	64 (1)	...	45 (4)	68 (1)	...	...	117 (3)	...	...	...	...
Koa-mamane	...	32 (2)	...	41 (4)	52 (2)	...	...	...	...	...	...	...
Mamane-naio	...	...	...	...	50 (0)	38 (1)	...	...	...	...	...	...
Mamane	...	...	...	...	38 (2)	30 (1)	...	8 (3)	...	...	...	...
Other natives	...	...	...	...	27 (2)	...	...	26 (2)	...	21 (4)	23 (7)	...
Intro. trees	...	54 (2)	...	...	61 (6)	...	93 (6)	77 (4)	31 (0)	75 (4)	30 (3)	...
Treeless	54 (3)	0	21 (6)	0	8 (4)	...	...	6 (1)	18 (4)	...	24 (15)	0

^a Values are given in percent cover (and may exceed 100 due to multiple crown layers); + indicates stratum value is positive but under 0.5; ... indicates stratum was not sampled in study area.

APPENDIX TABLE 4^a
CANOPY HEIGHT [MEAN (SE)] ON THE HAWAIIAN ISLANDS BY ELEVATION, HABITAT, AND STUDY AREA

	Kau	Hamakua	Puna	Kipukas	Kona	Mauna Kea	Kohala	East Maui	West Maui	Molokai	Lanai	Kauai
<i>Stratum</i>												
100–300 m	...	...	7 (2)	...	25 (0)	...	...	...	...	5 (1)	17 (0)	...
300–500 m	...	20 (1)	6 (+)	...	19 (2)	...	17 (0)	16 (3)	...	5 (+)	7 (2)	...
500–700 m	17 (0)	17 (+)	12 (+)	...	15 (1)	...	9 (1)	6 (+)	4 (+)	5 (+)	8 (1)	...
700–900 m	17 (0)	19 (+)	9 (+)	...	16 (+)	...	8 (1)	7 (+)	4 (+)	5 (+)	4 (1)	...
900–1100 m	17 (+)	20 (+)	8 (+)	4 (1)	16 (+)	...	7 (1)	8 (+)	4 (+)	5 (+)	...	...
1100–1300 m	17 (+)	20 (+)	11 (2)	7 (1)	14 (+)	...	7 (1)	7 (+)	5 (+)	7 (+)	...	5 (+)
1300–1500 m	17 (+)	21 (+)	...	7 (1)	13 (+)	...	8 (1)	7 (+)	5 (+)	5 (1)	...	5 (+)
1500–1700 m	16 (+)	19 (+)	...	7 (+)	12 (+)	...	7 (1)	8 (1)	5 (+)	...	...	5 (0)
1700–1900 m	13 (+)	17 (1)	...	5 (+)	12 (+)	...	...	7 (1)	7 (1)	...	...	...
1900–2100 m	5 (1)	13 (1)	...	5 (+)	10 (+)	7 (+)	...	4 (+)	...	...	...	...
2100–2300 m	3 (0)	17 (0)	...	4 (1)	7 (+)	6 (+)	...	2 (+)	...	...	...	...
2300–2500 m	...	...	...	...	6 (+)	6 (+)	...	1 (+)	...	...	...	...
2500–2700 m	...	...	...	...	...	5 (+)	...	1 (+)	...	...	...	...
2700–2900 m	...	...	...	...	...	5 (+)	...	0	...	...	...	...
2900–3100 m	...	...	...	...	...	5 (1)	...	...	...	...	...	...
<i>Habitat</i>												
Ohia	15 (+)	19 (+)	10 (+)	5 (+)	13 (+)	...	7 (+)	6 (+)	5 (+)	5 (+)	...	5 (+)
Koa-ohia	17 (+)	21 (+)	...	8 (1)	14 (+)	...	...	9 (+)	...	...	...	...
Koa-mamane	...	17 (0)	...	8 (1)	14 (+)	...	...	...	...	...	...	...
Mamane-naio	...	...	...	...	17 (0)	6 (+)	...	...	...	...	...	...
Mamane	...	...	...	...	9 (+)	5 (+)	...	3 (1)	...	...	...	...
Other natives	...	...	...	...	10 (1)	...	...	6 (+)	...	3 (+)	4 (1)	...
Intro. trees	...	17 (+)	...	...	12 (1)	...	11 (2)	11 (1)	3 (0)	9 (1)	10 (1)	...
Treeless	14 (1)	0	5 (1)	0 (+)	2 (1)	...	...	1 (+)	3 (+)	...	5 (3)	1 (0)

^a Values are given in meters; + indicates stratum value is positive but under 0.5; ... indicates stratum was not sampled in study area.

APPENDIX TABLE 5^a
 FOLIAGE VOLUME (TREE BIOMASS INDEX) [MEAN (SE)] ON THE HAWAIIAN ISLANDS BY ELEVATION, HABITAT, AND STUDY AREA

	Kau	Hamakua	Puna	Kipukas	Kona	Mauna Kea	Kohala	East Maui	West Maui	Molokai	Lanai	Kauai
<i>Stratum</i>												
100–300 m	...	...	234 (16)	...	1378 (126)	...	...	...	...	716 (79)	1379 (0)	...
300–500 m	...	788 (44)	474 (36)	...	1712 (240)	...	1170 (0)	1887 (451)	...	728 (98)	385 (128)	...
500–700 m	969 (0)	858 (23)	978 (30)	...	1141 (79)	...	895 (109)	602 (84)	293 (49)	354 (43)	265 (38)	...
700–900 m	751 (28)	778 (18)	904 (36)	...	1014 (42)	...	977 (145)	804 (67)	315 (32)	277 (26)	226 (124)	...
900–1100 m	599 (26)	623 (19)	811 (35)	590 (190)	1113 (41)	...	694 (96)	966 (57)	497 (65)	404 (37)	...	...
1100–1300 m	520 (26)	682 (16)	706 (104)	653 (163)	836 (30)	...	639 (60)	986 (53)	711 (52)	669 (38)	...	1152 (41)
1300–1500 m	577 (18)	802 (15)	...	302 (44)	673 (19)	...	764 (67)	857 (49)	637 (66)	479 (36)	...	1215 (44)
1500–1700 m	725 (28)	788 (20)	...	311 (31)	688 (23)	...	449 (42)	864 (47)	393 (103)	...	...	1393 (0)
1700–1900 m	713 (33)	726 (28)	...	327 (34)	537 (26)	...	...	748 (57)	472 (117)	...	...	...
1900–2100 m	155 (33)	383 (25)	...	173 (18)	316 (24)	245 (13)	...	365 (39)	...	...	...	...
2100–2300 m	45 (0)	507 (0)	...	100 (25)	178 (15)	238 (18)	...	40 (7)	...	...	...	...
2300–2500 m	...	...	...	...	132 (33)	224 (12)	...	12 (6)	...	...	...	...
2500–2700 m	...	...	...	...	...	183 (10)	...	17 (8)	...	...	...	...
2700–2900 m	...	...	...	...	...	112 (9)	...	0	...	...	...	...
2900–3100 m	...	...	...	...	...	61 (13)	...	...	...	...	...	...
<i>Habitat</i>												
Ohia	519 (14)	591 (9)	830 (18)	205 (12)	782 (17)	...	683 (36)	795 (21)	529 (27)	391 (19)	...	1191 (29)
Koa-ohia	781 (17)	947 (9)	...	524 (69)	999 (20)	...	...	1317 (46)	...	...	...	...
Koa-mamane	...	375 (27)	...	300 (33)	551 (21)	...	...	...	...	...	...	...
Mamane-naio	...	...	...	...	396 (0)	224 (8)	...	...	...	...	...	...
Mamane	...	...	...	...	316 (17)	152 (8)	...	44 (19)	...	...	...	...
Other natives	...	...	...	...	251 (25)	...	...	168 (18)	...	105 (23)	167 (61)	...
Intro. trees	...	587 (31)	...	...	832 (96)	...	1068 (126)	1086 (97)	143 (0)	818 (50)	356 (51)	...
Treeless	725 (48)	0	151 (50)	6 (3)	72 (39)	...	...	27 (6)	85 (20)	...	282 (198)	24 (0)

^a Values are given in units of meters (height) times percent (cover); + indicates stratum value is positive but under 0.5; ... indicates stratum was not sampled in study area.

APPENDIX TABLE 6*
 KOA FOLIAGE VOLUME [MEAN (SE)] ON THE HAWAIIAN ISLANDS BY ELEVATION, HABITAT, AND STUDY AREA

	Kau	Hamakua	Puna	Kipukas	Kona	Mauna Kea	Kohala	East Maui	West Maui	Molokai	Lanai	Kauai
<i>Stratum</i>												
100–300 m	...	...	0	...	0	...	...	...	...	0	0	...
300–500 m	...	100 (24)	0	...	0	...	0	0	...	0	12 (8)	...
500–700 m	0	332 (15)	0	...	2 (2)	...	0	4 (3)	0	0	0	...
700–900 m	0	283 (12)	0	...	13 (4)	...	0	290 (53)	0	0	0	...
900–1100 m	70 (14)	135 (11)	0	102 (68)	74 (10)	...	0	231 (29)	0	0	...	...
1100–1300 m	119 (14)	18 (4)	0	112 (60)	83 (8)	...	0	216 (27)	0	0	...	0
1300–1500 m	132 (13)	117 (11)	...	150 (37)	111 (8)	...	0	103 (21)	0	0	...	0
1500–1700 m	178 (18)	249 (13)	...	89 (22)	184 (13)	...	0	34 (10)	0	...	...	0
1700–1900 m	87 (15)	283 (17)	...	45 (12)	115 (15)	...	...	14 (6)	0	...	...	...
1900–2100 m	23 (10)	162 (22)	...	10 (4)	37 (9)	0	...	5 (3)	...	...	...	...
2100–2300 m	0	357 (0)	...	0	1 (1)	0	...	0	...	...	...	...
2300–2500 m	...	...	...	...	0	...	...	0	...	...	...	...
2500–2700 m	...	...	...	...	...	0	...	0	...	...	...	...
2700–2900 m	...	...	...	...	...	0	...	0	...	...	...	...
2900–3100 m	...	...	...	...	...	0	...	...	...	...	...	...
<i>Habitat</i>												
Ohia	2 (1)	0	0	2 (2)	3 (1)	...	0	3 (1)	0	0	...	0
Koa-ohia	330 (10)	425 (4)	...	152 (31)	310 (10)	...	...	582 (32)	...	...	...	...
Koa-mamane	...	258 (19)	...	178 (31)	177 (15)	...	...	...	...	...	...	...
Mamane-naio	...	...	...	...	0	0	...	...	...	...	...	...
Mamane	...	...	...	...	12 (4)	0	...	0	...	...	...	...
Other natives	...	...	...	...	0	...	...	41 (11)	...	0	0	...
Intro. trees	...	14 (5)	...	...	5 (5)	...	0	94 (25)	0	0	4 (3)	...
Treeless	253 (25)	0	0	0	17 (17)	...	...	0	0	...	0	0

* Values are given in units of meters (height) times percent (cover); + indicates stratum value is positive but under 0.5; ... indicates stratum was not sampled in study area.

APPENDIX TABLE 7^a
OHIA FOLIAGE VOLUME [MEAN (SE)] ON THE HAWAIIAN ISLANDS BY ELEVATION, HABITAT, AND STUDY AREA

	Kau	Hamakua	Puna	Kipukas	Kona	Mauna Kea	Kohala	East Maui	West Maui	Molokai	Lanai	Kauai
<i>Stratum</i>												
100–300 m	...	...	163 (40)	...	1375 (125)	...	...	...	...	336 (51)	0	...
300–500 m	...	111 (28)	382 (23)	...	1418 (209)	...	680 (0)	89 (79)	...	352 (55)	25 (9)	...
500–700 m	765 (0)	377 (12)	798 (25)	...	815 (73)	...	607 (103)	230 (37)	183 (39)	105 (17)	36 (8)	...
700–900 m	592 (22)	396 (8)	788 (32)	...	821 (37)	...	835 (126)	224 (24)	220 (25)	63 (7)	6 (6)	...
900–1100 m	420 (17)	391 (10)	746 (31)	488 (258)	906 (36)	...	513 (92)	368 (24)	359 (49)	172 (17)	...	...
1100–1300 m	321 (15)	509 (12)	592 (83)	306 (49)	635 (25)	...	413 (47)	495 (30)	501 (45)	438 (29)	...	876 (37)
1300–1500 m	361 (10)	546 (10)	...	121 (19)	476 (15)	...	600 (57)	516 (38)	442 (56)	299 (28)	...	916 (38)
1500–1700 m	446 (17)	424 (11)	...	158 (25)	347 (16)	...	348 (42)	524 (40)	277 (88)	...	...	689 (0)
1700–1900 m	506 (25)	348 (18)	...	254 (25)	294 (22)	...	...	423 (37)	293 (61)	...	...	...
1900–2100 m	118 (23)	158 (21)	...	161 (18)	130 (13)	0	...	182 (28)	...	...	...	...
2100–2300 m	45 (0)	0	...	100 (25)	80 (10)	0	...	10 (4)	...	...	...	...
2300–2500 m	...	...	...	...	16 (6)	0	...	0	...	...	...	...
2500–2700 m	...	...	...	...	...	0	...	0	...	...	...	...
2700–2900 m	...	...	...	...	...	0	...	0	...	...	...	...
2900–3100 m	...	...	...	...	...	0	...	...	...	...	...	...
<i>Habitat</i>												
Ohia	408 (11)	472 (7)	705 (15)	198 (11)	684 (15)	...	521 (31)	513 (16)	369 (21)	239 (13)	...	899 (26)
Koa-ohia	381 (7)	430 (5)	...	265 (35)	585 (14)	...	...	448 (25)	...	...	...	...
Koa-mamane	...	0	...	26 (7)	54 (9)	...	...	...	...	...	...	...
Mamane-naio	...	...	...	...	0	0	...	...	...	...	...	...
Mamane	...	...	...	...	21 (6)	0	...	0	...	...	...	...
Other natives	...	...	...	...	29 (8)	...	...	52 (10)	...	52 (15)	49 (10)	...
Intro. trees	...	97 (7)	...	...	305 (66)	...	280 (104)	72 (21)	110 (0)	115 (19)	25 (5)	...
Treeless	400 (26)	0	151 (50)	6 (3)	55 (31)	...	...	14 (4)	52 (13)	...	49 (49)	12 (0)

^a Values are given in units of meters (height) times percent (cover); + indicates stratum value is positive but under 0.5; ... indicates stratum was not sampled in study area.

APPENDIX TABLE 8^a
 NAI0 FOLIAGE VOLUME [MEAN (SE)] ON THE HAWAIIAN ISLANDS BY ELEVATION, HABITAT, AND STUDY AREA

	Kau	Hamakua	Puna	Kipukas	Kona	Mauna Kea	Kohala	East Maui	West Maui	Molokai	Lanai	Kauai
<i>Stratum</i>												
100–300 m	...	...	0	...	0	...	...	...	...	0	0	...
300–500 m	...	0	0	...	0	...	0	0	...	0	0	...
500–700 m	0	0	0	...	+ (+)	...	0	0	0	0	0	...
700–900 m	0	0	0	...	0	...	0	0	0	+ (+)	0	...
900–1100 m	0	0	0	0	+ (+)	...	0	0	0	0	...	...
1100–1300 m	0	0	0	2 (2)	2 (1)	...	0	0	0	0	...	0
1300–1500 m	0	0	...	5 (3)	14 (2)	...	0	0	0	0	...	0
1500–1700 m	0	0	...	0	37 (3)	...	0	0	0	...	...	0
1700–1900 m	0	0	...	0	31 (4)	...	...	0	0	...	...	...
1900–2100 m	0	0	...	0	26 (4)	108 (9)	...	0	...	...	...	...
2100–2300 m	0	0	...	0	11 (3)	96 (13)	...	0	...	...	...	...
2300–2500 m	...	...	...	...	0	69 (10)	...	0	...	...	...	...
2500–2700 m	...	...	...	...	...	38 (7)	...	0	...	...	...	...
2700–2900 m	...	...	...	...	...	14 (3)	...	0	...	...	...	...
2900–3100 m	...	...	...	...	...	4 (2)	...	...	...	...	...	...
<i>Habitat</i>												
Ohia	0	0	0	0	4 (1)	...	0	0	0	0	...	0
Koa-ohia	0	0	...	4 (2)	11 (1)	...	...	0	...	...	...	...
Koa-mamane	...	0	...	0	70 (5)	...	...	...	...	...	...	...
Mamane-naio	...	...	...	...	30 (0)	110 (5)	...	...	...	...	...	...
Mamane	...	...	...	...	54 (5)	0	...	0	...	...	...	...
Other natives	...	...	...	...	10 (5)	...	...	0	...	+ (+)	0	...
Intro. trees	...	0	...	...	2 (2)	...	0	0	0	0	0	...
Treeless	0	0	0	0	0	...	...	0	0	...	0	0

^a Values are given in units of meters (height) times percent (cover); + indicates stratum value is positive but under 0.5; ... indicates stratum was not sampled in study area.

APPENDIX TABLE 9^a
 MAMANE FOLIAGE VOLUME [MEAN (SE)] ON THE HAWAIIAN ISLANDS BY ELEVATION, HABITAT, AND STUDY AREA

	Kau	Hamakua	Puna	Kipukas	Kona	Mauna Kea	Kohala	East Maui	West Maui	Molokai	Lanai	Kauai
<i>Stratum</i>												
100–300 m	...	...	0	...	0	...	...	...	...	0	0	...
300–500 m	...	0	0	...	0	...	0	0	...	0	0	...
500–700 m	0	0	0	...	8 (2)	...	0	0	0	0	0	...
700–900 m	0	0	+ (+)	...	4 (1)	...	0	0	0	+ (+)	0	...
900–1100 m	0	0	0	0	8 (3)	...	0	0	0	0	...	...
1100–1300 m	0	0	0	0	14 (2)	...	0	0	0	0	...	0
1300–1500 m	0	0	...	12 (5)	14 (2)	...	0	3 (2)	0	0	...	0
1500–1700 m	0	0	...	23 (5)	66 (5)	...	0	3 (1)	0	...	...	0
1700–1900 m	0	2 (1)	...	12 (4)	67 (8)	...	...	3 (1)	0	...	...	...
1900–2100 m	0	46 (8)	...	2 (1)	73 (8)	136 (9)	...	11 (3)	...	...	...	...
2100–2300 m	0	150 (0)	...	0	81 (14)	134 (14)	...	22 (4)	...	...	...	...
2300–2500 m	...	...	...	...	116 (38)	154 (10)	...	12 (6)	...	...	...	...
2500–2700 m	...	...	...	...	...	145 (9)	...	10 (5)	...	...	...	...
2700–2900 m	...	...	...	...	...	98 (8)	...	0	...	...	...	...
2900–3100 m	...	...	...	...	...	57 (13)	...	...	...	...	...	...
<i>Habitat</i>												
Ohia	0	0	+ (+)	1 (1)	4 (1)	...	0	0	0	0	...	0
Koa-ohia	0	0	...	4 (2)	15 (2)	...	...	2 (1)	...	...	...	...
Koa-mamane	...	107 (8)	...	52 (8)	184 (9)	...	...	...	...	...	...	...
Mamane-naio	...	...	...	...	44 (0)	112 (3)	...	...	...	...	...	...
Mamane	...	...	...	...	160 (10)	152 (8)	...	42 (19)	...	...	...	...
Other natives	...	...	...	...	40 (6)	...	...	31 (4)	...	0	0	...
Intro. trees	...	0	...	...	15 (5)	...	0	5 (3)	0	+ (+)	0	...
Treeless	0	0	0	0	+ (+)	...	...	2 (1)	0	...	0	0

^a Values are given in units of meters (height) times percent (cover); + indicates stratum value is positive but under 0.5; ... indicates stratum was not sampled in study area.

APPENDIX TABLE 10^a
 INTRODUCED TREES FOLIAGE VOLUME [MEAN (SE)] ON THE HAWAIIAN ISLANDS BY ELEVATION, HABITAT, AND STUDY AREA

	Kau	Hamakua	Puna	Kipukas	Kona	Mauna Kea	Kohala	East Maui	West Maui	Molokai	Lanai	Kauai
<i>Stratum</i>												
100–300 m	...	...	11 (11)	...	0	...	...	...	...	303 (79)	1379 (0)	...
300–500 m	...	452 (72)	26 (6)	...	223 (88)	...	490 (0)	1751 (442)	...	142 (36)	328 (132)	...
500–700 m	0	68 (13)	8 (2)	...	152 (28)	...	162 (88)	190 (57)	12 (9)	151 (38)	201 (37)	...
700–900 m	0	18 (3)	+ (+)	...	31 (7)	...	52 (52)	44 (22)	0	150 (27)	221 (129)	...
900–1100 m	0	5 (2)	1 (1)	0	6 (3)	...	46 (40)	117 (40)	0	153 (36)	...	...
1100–1300 m	0	24 (8)	0	0	10 (4)	...	49 (23)	13 (5)	0	61 (27)	...	0
1300–1500 m	0	1 (1)	...	0	4 (3)	...	0	1 (1)	0	0	...	0
1500–1700 m	0	22 (6)	...	0	0	...	0	67 (28)	0	...	...	0
1700–1900 m	0	0	...	0	0	...	...	130 (43)	57 (57)	...	...	...
1900–2100 m	0	0	...	0	37 (18)	0	...	84 (21)	...	...	...	...
2100–2300 m	0	0	...	0	0	0	...	6 (4)	...	...	...	...
2300–2500 m	...	...	...	...	0	0	...	0	...	...	...	...
2500–2700 m	...	...	...	...	...	0	...	0	...	...	...	...
2700–2900 m	...	...	...	...	...	0	...	0	...	...	...	...
2900–3100 m	...	...	...	...	...	0	...	...	...	...	...	...
<i>Habitat</i>												
Ohia	0	0	8 (1)	0	7 (1)	...	10 (4)	5 (2)	5 (4)	16 (4)	...	0
Koa-ohia	0	6 (1)	...	0	3 (1)	...	...	35 (13)	...	...	...	...
Koa-mamane	...	0	...	0	0	...	...	...	...	...	...	...
Mamane-naio	...	...	...	...	0	0	...	...	...	...	...	...
Mamane	...	...	...	...	3 (1)	0	...	0	...	...	...	...
Other natives	...	...	...	...	13 (9)	...	...	3 (2)	...	37 (13)	80 (58)	...
Intro. trees	...	392 (31)	...	...	457 (65)	...	712 (166)	854 (95)	33 (0)	658 (53)	308 (52)	...
Treeless	0	0	0	0	0	...	...	0	0	...	201 (198)	0

^a Values are given in units of meters (height) times percent (cover); + indicates stratum value is positive but under 0.5; ... indicates stratum was not sampled in study area.

APPENDIX TABLE 11^a
 TOTAL SHRUB COVER [MEAN (SE)] ON THE HAWAIIAN ISLANDS BY ELEVATION, HABITAT, AND STUDY AREA

	Kau	Hamakua	Puna	Kipukas	Kona	Mauna Kea	Kohala	East Maui	West Maui	Molokai	Lanai	Kauai
<i>Stratum</i>												
100–300 m	...	...	37 (13)	...	12 (9)	...	...	...	...	63 (9)	95 (0)	...
300–500 m	...	94 (3)	31 (3)	...	48 (10)	...	6 (0)	49 (12)	...	36 (4)	32 (5)	...
500–700 m	100 (0)	93 (1)	54 (3)	...	46 (4)	...	57 (10)	45 (5)	56 (6)	34 (3)	45 (3)	...
700–900 m	98 (2)	82 (1)	52 (3)	...	43 (2)	...	33 (6)	50 (3)	41 (3)	50 (3)	22 (8)	...
900–1100 m	90 (2)	79 (1)	43 (3)	40 (0)	46 (3)	...	37 (5)	59 (4)	45 (4)	56 (3)	...	...
1100–1300 m	97 (1)	93 (1)	48 (9)	34 (5)	41 (2)	...	50 (5)	49 (3)	61 (5)	74 (4)	...	53 (3)
1300–1500 m	99 (1)	95 (1)	...	47 (4)	33 (1)	...	61 (5)	50 (3)	68 (4)	73 (9)	...	56 (3)
1500–1700 m	93 (1)	72 (2)	...	47 (3)	25 (1)	...	50 (5)	56 (3)	48 (8)	...	...	65 (0)
1700–1900 m	86 (2)	55 (2)	...	49 (3)	38 (2)	...	...	50 (3)	60 (9)	...	...	...
1900–2100 m	62 (3)	50 (5)	...	43 (2)	47 (2)	29 (3)	...	43 (2)	...	...	...	...
2100–2300 m	50 (0)	0	...	34 (4)	40 (2)	32 (3)	...	40 (3)	...	...	...	...
2300–2500 m	...	...	...	...	24 (6)	31 (1)	...	48 (3)	...	...	...	...
2500–2700 m	...	...	...	...	...	36 (1)	...	54 (4)	...	...	...	...
2700–2900 m	...	...	...	...	...	35 (+)	...	45 (8)	...	...	...	...
2900–3100 m	...	...	...	...	...	35 (1)	...	...	...	...	...	...
<i>Habitat</i>												
Ohia	93 (1)	89 (1)	47 (2)	42 (2)	49 (1)	...	49 (3)	51 (1)	54 (2)	56 (2)	...	54 (2)
Koa-ohia	98 (1)	78 (1)	...	49 (3)	24 (1)	...	...	64 (3)	...	...	...	...
Koa-mamane	...	14 (4)	...	50 (3)	13 (1)	...	...	...	...	...	...	...
Mamane-naio	...	...	...	...	0	35 (1)	...	...	...	...	...	...
Mamane	...	...	...	...	24 (2)	31 (1)	...	21 (6)	...	...	...	...
Other natives	...	...	...	...	26 (2)	...	...	43 (3)	...	58 (5)	45 (5)	...
Intro. trees	...	72 (2)	...	...	37 (4)	...	49 (10)	36 (3)	110 (0)	39 (3)	43 (3)	...
Treeless	63 (4)	50 (0)	16 (6)	20 (6)	33 (4)	...	...	43 (2)	29 (8)	...	25 (8)	37 (0)

^a Values are given in percent cover; + indicates stratum value is positive but under 0.5; ... indicates stratum was not sampled in study area.

APPENDIX TABLE 12^a
 TOTAL GROUND COVER [MEAN (SE)] ON THE HAWAIIAN ISLANDS BY ELEVATION, HABITAT, AND STUDY AREA

	Kau	Hamakua	Puna	Kipukas	Kona	Mauna Kea	Kohala	East Maui	West Maui	Molokai	Lanai	Kauai
<i>Stratum</i>												
100–300 m	...	...	64 (25)	...	1 (1)	...	...	...	...	80 (12)	0	...
300–500 m	...	0	22 (3)	...	8 (3)	...	117 (0)	19 (7)	...	80 (10)	24 (9)	...
500–700 m	0	+ (+)	23 (2)	...	36 (4)	...	53 (11)	49 (6)	62 (9)	44 (4)	7 (2)	...
700–900 m	2 (2)	5 (1)	29 (2)	...	49 (2)	...	107 (5)	58 (5)	36 (6)	54 (3)	8 (8)	...
900–1100 m	8 (2)	9 (1)	44 (3)	82 (2)	41 (2)	...	64 (8)	50 (3)	52 (6)	45 (3)	...	...
1100–1300 m	3 (1)	4 (1)	33 (6)	49 (7)	57 (2)	...	50 (4)	61 (3)	60 (7)	56 (4)	...	68 (4)
1300–1500 m	0	3 (1)	...	68 (4)	50 (2)	...	46 (5)	72 (3)	87 (9)	71 (9)	...	75 (3)
1500–1700 m	4 (1)	19 (2)	...	52 (4)	51 (2)	...	61 (8)	75 (3)	75 (11)	...	...	89 (0)
1700–1900 m	5 (1)	41 (2)	...	35 (2)	44 (3)	...	...	79 (4)	99 (16)	...	...	...
1900–2100 m	6 (2)	49 (5)	...	21 (2)	38 (3)	69 (3)	...	73 (3)	...	...	...	...
2100–2300 m	0	99 (0)	...	11 (2)	21 (3)	54 (4)	...	62 (5)	...	...	...	...
2300–2500 m	...	...	...	...	20 (9)	50 (3)	...	77 (8)	...	...	...	...
2500–2700 m	...	...	...	...	...	40 (2)	...	45 (3)	...	...	...	...
2700–2900 m	...	...	...	...	...	40 (1)	...	17 (8)	...	...	...	...
2900–3100 m	...	...	...	...	...	40 (4)	...	...	...	...	...	...
<i>Habitat</i>												
Ohia	1 (+)	5 (+)	29 (1)	26 (2)	28 (1)	...	57 (3)	62 (2)	62 (3)	54 (2)	...	71 (3)
Koa-ohia	1 (1)	16 (1)	...	63 (4)	81 (1)	...	...	80 (3)	...	...	...	...
Koa-mamane	...	86 (4)	...	61 (3)	75 (2)	...	...	...	...	...	...	...
Mamane-naio	...	...	...	...	3 (0)	47 (1)	...	...	...	...	...	...
Mamane	...	...	...	...	49 (3)	49 (2)	...	43 (15)	...	...	...	...
Other natives	...	...	...	...	62 (5)	...	...	77 (3)	...	46 (4)	10 (6)	...
Intro. trees	...	4 (1)	...	...	52 (5)	...	63 (12)	51 (5)	83 (0)	58 (5)	9 (3)	...
Treeless	33 (4)	0	24 (10)	2 (2)	16 (4)	...	...	61 (3)	40 (11)	...	24 (12)	124 (0)

^a Values are given in percent cover; + indicates stratum value is positive but under 0.5; ... indicates stratum was not sampled in study area.

APPENDIX TABLE 13^a
 NATIVE SHRUB COVER [MEAN (SE)] ON THE HAWAIIAN ISLANDS BY ELEVATION, HABITAT, AND STUDY AREA

	Kau	Hamakua	Puna	Kipukas	Kona	Mauna Kea	Kohala	East Maui	West Maui	Molokai	Lanai	Kauai
<i>Stratum</i>												
100–300 m	...	...	26 (7)	...	11 (9)	...	...	...	...	3 (1)	0	...
300–500 m	...	29 (3)	17 (1)	...	8 (5)	...	3 (0)	4 (3)	...	7 (1)	23 (4)	...
500–700 m	40 (0)	42 (1)	19 (1)	...	15 (2)	...	13 (2)	22 (3)	35 (6)	20 (2)	31 (2)	...
700–900 m	39 (1)	43 (1)	25 (1)	...	12 (1)	...	18 (4)	32 (3)	27 (2)	36 (2)	15 (0)	...
900–1100 m	40 (1)	45 (1)	31 (2)	37 (0)	18 (1)	...	15 (2)	32 (2)	35 (3)	46 (2)	...	...
1100–1300 m	45 (1)	55 (1)	23 (4)	37 (4)	25 (1)	...	30 (3)	37 (2)	53 (4)	50 (2)	...	52 (2)
1300–1500 m	48 (1)	51 (1)	...	50 (4)	28 (1)	...	32 (3)	46 (3)	65 (4)	62 (4)	...	54 (3)
1500–1700 m	59 (2)	51 (1)	...	51 (3)	23 (1)	...	27 (3)	54 (3)	53 (7)	...	...	62 (0)
1700–1900 m	81 (2)	51 (2)	...	53 (2)	37 (2)	...	...	50 (3)	59 (9)	...	...	...
1900–2100 m	62 (3)	50 (5)	...	49 (2)	47 (2)	29 (3)	...	43 (2)	...	...	...	...
2100–2300 m	50 (0)	0	...	36 (4)	40 (2)	32 (3)	...	39 (3)	...	...	...	...
2300–2500 m	...	...	...	...	24 (6)	31 (1)	...	49 (3)	...	...	...	...
2500–2700 m	...	...	...	...	...	36 (1)	...	54 (4)	...	...	...	...
2700–2900 m	...	...	...	...	...	35 (+)	...	45 (8)	...	...	...	...
2900–3100 m	...	...	...	...	...	35 (1)	...	...	...	...	...	...
<i>Habitat</i>												
Ohia	52 (1)	55 (1)	23 (1)	49 (1)	34 (1)	...	26 (1)	46 (1)	45 (2)	37 (1)	...	53 (2)
Koa-ohia	56 (2)	43 (1)	...	50 (2)	13 (1)	...	...	38 (2)	...	...	...	...
Koa-mamane	...	14 (4)	...	50 (3)	13 (1)	...	...	...	...	...	...	...
Mamane-naio	...	...	...	...	0	35 (1)	...	...	...	...	...	...
Mamane	...	...	...	...	23 (2)	31 (1)	...	21 (6)	...	...	...	...
Other natives	...	...	...	...	18 (2)	...	...	35 (3)	...	55 (4)	37 (4)	...
Intro. trees	...	31 (1)	...	...	4 (1)	...	11 (4)	11 (2)	95 (0)	23 (2)	27 (2)	...
Treeless	58 (3)	50 (0)	15 (5)	20 (6)	33 (4)	...	...	45 (2)	23 (6)	...	16 (5)	37 (0)

^a Values are given in percent cover; + indicates stratum value is positive but under 0.5; ... indicates stratum was not sampled in study area.

APPENDIX TABLE 14^a
 INTRODUCED SHRUB COVER [MEAN (SE)] ON THE HAWAIIAN ISLANDS BY ELEVATION, HABITAT, AND STUDY AREA

	Kau	Hamakua	Puna	Kipukas	Kona	Mauna Kea	Kohala	East Maui	West Maui	Molokai	Lanai	Kauai
<i>Stratum</i>												
100–300 m	...	...	17 (5)	...	2 (1)	...	...	...	...	53 (10)	95 (0)	...
300–500 m	...	64 (5)	18 (2)	...	39 (9)	...	0	40 (13)	...	24 (4)	9 (3)	...
500–700 m	0	17 (2)	14 (1)	...	22 (2)	...	25 (7)	27 (3)	6 (2)	11 (2)	15 (3)	...
700–900 m	0	6 (1)	2 (+)	...	14 (1)	...	1 (1)	15 (2)	6 (2)	3 (1)	8 (8)	...
900–1100 m	0	1 (+)	5 (1)	3 (0)	4 (1)	...	1 (+)	12 (2)	4 (2)	3 (1)	...	...
1100–1300 m	0	1 (+)	6 (2)	6 (3)	2 (+)	...	+	6 (1)	3 (1)	+	...	2 (1)
1300–1500 m	0	0	...	2 (2)	+	...	+	4 (1)	2 (1)	0	...	+
1500–1700 m	0	0	...	+	+	...	0	4 (1)	+	...	...	0
1700–1900 m	0	+	...	0	0	...	...	3 (1)	0	...	...	...
1900–2100 m	0	0	...	0	0	...	...	3 (1)	...	...	...	...
2100–2300 m	0	0	...	0	0	...	...	3 (1)	...	...	...	...
2300–2500 m	...	...	...	...	0	0	...	1 (+)	...	...	...	...
2500–2700 m	...	...	...	...	...	0	...	0	...	...	...	...
2700–2900 m	...	...	...	...	...	0	...	0	...	...	...	...
2900–3100 m	...	...	...	...	...	0	...	...	...	...	...	...
<i>Habitat</i>												
Ohia	0	+	10 (1)	+	4 (+)	...	2 (1)	5 (1)	3 (1)	5 (1)	...	1 (1)
Koa-ohia	0	3 (+)	...	3 (1)	2 (+)	...	...	12 (1)	...	...	...	...
Koa-mamane	...	0	...	+	0	...	...	...	...	...	...	...
Mamane-naio	...	...	...	...	0	0	...	...	...	...	...	...
Mamane	...	...	...	...	1 (+)	0	...	1 (1)	...	...	...	...
Other natives	...	...	...	...	8 (2)	...	...	12 (2)	...	6 (3)	8 (3)	...
Intro. trees	...	41 (2)	...	...	33 (4)	...	8 (2)	22 (3)	15 (0)	15 (3)	18 (4)	...
Treeless	0	0	2 (1)	0	0	...	...	1 (1)	3 (2)	...	9 (4)	0

^a Values are given in percent cover; + indicates stratum value is positive but under 0.5; ... indicates stratum was not sampled in study area.

APPENDIX TABLE 15^a
GROUND FERN COVER [MEAN (SE)] ON THE HAWAIIAN ISLANDS BY ELEVATION, HABITAT, AND STUDY AREA

	Kau	Hamakua	Puna	Kipukas	Kona	Mauna Kea	Kohala	East Maui	West Maui	Molokai	Lanai	Kauai
<i>Stratum</i>												
100–300 m	...	...	20 (14)	...	0	...	...	...	...	34 (7)	0	...
300–500 m	...	0	3 (1)	...	4 (2)	...	0	10 (5)	...	30 (4)	0	...
500–700 m	0	0	4 (1)	...	7 (1)	...	10 (4)	15 (3)	11 (4)	14 (2)	0	...
700–900 m	0	0	5 (1)	...	5 (1)	...	3 (2)	15 (2)	9 (2)	12 (1)	0	...
900–1100 m	0	0	+ (+)	0	10 (1)	...	6 (1)	20 (2)	17 (2)	14 (2)	...	...
1100–1300 m	0	0	0	1 (+)	11 (1)	...	16 (2)	35 (2)	28 (4)	28 (3)	...	29 (2)
1300–1500 m	0	0	...	+ (+)	7 (1)	...	11 (2)	34 (3)	48 (5)	28 (6)	...	26 (2)
1500–1700 m	0	0	...	1 (+)	7 (1)	...	31 (4)	36 (3)	49 (7)	...	...	37 (0)
1700–1900 m	0	0	...	3 (1)	4 (1)	...	...	40 (3)	56 (10)	...	...	...
1900–2100 m	0	0	...	1 (+)	4 (1)	0	...	25 (2)	...	...	...	...
2100–2300 m	0	0	...	1 (+)	3 (1)	0	...	16 (2)	...	...	...	...
2300–2500 m	...	...	...	...	2 (1)	0	...	21 (2)	...	...	...	...
2500–2700 m	...	...	...	...	...	0	...	19 (3)	...	...	...	...
2700–2900 m	...	...	...	...	...	0	...	7 (4)	...	...	...	...
2900–3100 m	...	...	...	...	...	0	...	...	...	...	...	...
<i>Habitat</i>												
Ohia	0	0	3 (+)	2 (+)	6 (+)	...	12 (1)	36 (1)	27 (2)	20 (1)	...	28 (1)
Koa-ohia	0	0	...	1 (+)	14 (1)	...	...	32 (2)	...	...	...	...
Koa-mamane	...	0	...	1 (+)	1 (+)	...	...	...	...	...	...	...
Mamane-naio	...	...	...	...	0	0	...	...	...	...	...	...
Mamane	...	...	...	...	1 (+)	0	...	11 (3)	...	...	...	...
Other natives	...	...	...	...	0	...	...	15 (1)	...	5 (1)	0	...
Intro. trees	...	0	...	...	3 (1)	...	32 (8)	9 (2)	15 (0)	19 (2)	0	...
Treeless	0	0	0	1 (1)	4 (2)	...	...	14 (1)	17 (4)	...	0	0

^a Values are given in percent cover; + indicates stratum value is positive but under 0.5; ... indicates stratum was not sampled in study area.

APPENDIX TABLE 16^a
 MATTED FERN COVER [MEAN (SE)] ON THE HAWAIIAN ISLANDS BY ELEVATION, HABITAT, AND STUDY AREA

	Kau	Hamakua	Puna	Kipukas	Kona	Mauna Kea	Kohala	East Maui	West Maui	Molokai	Lanai	Kauai
<i>Stratum</i>												
100–300 m	...	...	44 (18)	...	64 (22)	...	...	...	...	27 (8)	0	...
300–500 m	...	6 (3)	58 (3)	...	37 (11)	...	0	25 (11)	...	34 (6)	15 (5)	...
500–700 m	0	6 (1)	23 (2)	...	7 (2)	...	30 (10)	35 (4)	39 (7)	40 (3)	44 (4)	...
700–900 m	0	13 (1)	30 (3)	...	9 (1)	...	1 (1)	33 (3)	56 (4)	15 (2)	15 (0)	...
900–1100 m	1 (1)	10 (1)	33 (3)	0	14 (2)	...	14 (4)	32 (3)	33 (5)	20 (2)	...	...
1100–1300 m	0	3 (1)	25 (7)	+	4 (1)	...	16 (3)	32 (3)	32 (7)	17 (3)	...	8 (2)
1300–1500 m	0	1 (+)	...	0	1 (+)	...	3 (1)	19 (2)	21 (6)	5 (3)	...	2 (1)
1500–1700 m	0	1 (+)	...	0	+	...	5 (3)	9 (2)	12 (4)	...	...	0
1700–1900 m	0	0	...	+	0	...	...	+	4 (2)	...	...	...
1900–2100 m	0	0	...	0	0	0	...	0	...	...	...	...
2100–2300 m	0	0	...	0	0	0	...	0	...	...	...	...
2300–2500 m	...	...	...	...	0	0	...	0	...	...	...	...
2500–2700 m	...	...	...	...	...	0	...	0	...	...	...	...
2700–2900 m	...	...	...	...	...	0	...	0	...	...	...	...
2900–3100 m	...	...	...	...	...	0	...	...	...	...	...	...
<i>Habitat</i>												
Ohia	+	6 (+)	34 (1)	+	6 (1)	...	12 (2)	28 (1)	36 (3)	27 (2)	...	6 (1)
Koa-ohia	0	3 (+)	...	+	4 (1)	...	...	16 (2)	...	...	...	...
Koa-mamane	...	0	...	0	0	...	...	...	...	...	...	...
Mamane-naio	...	...	...	...	0	0	...	...	...	...	...	...
Mamane	...	...	...	...	0	0	...	0	...	...	...	...
Other natives	...	...	...	...	0	...	...	0	...	2 (2)	26 (5)	...
Intro. trees	...	22 (1)	...	...	1 (1)	...	5 (4)	13 (3)	0	10 (2)	45 (5)	...
Treeless	0	0	17 (9)	0	0	...	...	0	9 (5)	...	0	0

^a Values are given in percent cover; + indicates stratum value is positive but under 0.5; ... indicates stratum was not sampled in study area.

APPENDIX TABLE 17^a
 TREE FERN COVER [MEAN (SE)] ON THE HAWAIIAN ISLANDS BY ELEVATION, HABITAT, AND STUDY AREA

	Kau	Hamakua	Puna	Kipukas	Kona	Mauna Kea	Kohala	East Maui	West Maui	Molokai	Lanai	Kauai
<i>Stratum</i>												
100–300 m	...	...	0	...	0	...	...	...	...	7 (3)	0	...
300–500 m	...	1 (1)	9 (1)	...	1 (+)	...	3 (0)	5 (3)	...	7 (2)	0	...
500–700 m	60 (0)	34 (2)	46 (2)	...	9 (2)	...	21 (5)	7 (1)	16 (4)	7 (1)	0	...
700–900 m	59 (1)	32 (1)	43 (3)	...	16 (2)	...	13 (4)	11 (1)	11 (2)	19 (2)	0	...
900–1100 m	50 (2)	33 (1)	18 (2)	0	24 (2)	...	25 (3)	17 (2)	6 (2)	11 (1)	...	...
1100–1300 m	52 (1)	38 (1)	20 (5)	+ (+)	15 (1)	...	29 (3)	11 (2)	5 (2)	27 (2)	...	3 (+)
1300–1500 m	51 (1)	44 (1)	...	0	5 (1)	...	33 (4)	3 (1)	2 (1)	16 (4)	...	3 (+)
1500–1700 m	34 (2)	21 (2)	...	0	2 (+)	...	27 (4)	1 (+)	0	...	...	3 (0)
1700–1900 m	5 (1)	4 (1)	...	1 (+)	+ (+)	...	...	+ (+)	1 (+)	...	...	...
1900–2100 m	0	0	...	0	0	0	...	0	...	...	...	...
2100–2300 m	0	0	...	0	0	0	...	0	...	...	...	...
2300–2500 m	...	...	...	...	0	0	...	0	...	...	...	...
2500–2700 m	...	...	...	...	0	0	...	0	...	...	...	...
2700–2900 m	...	...	...	...	0	0	...	0	...	...	...	...
2900–3100 m	...	...	...	...	0	0	...	0	...	...	...	...
<i>Habitat</i>												
Ohia	41 (1)	33 (1)	32 (1)	+ (+)	12 (1)	...	27 (2)	6 (+)	7 (1)	20 (1)	...	3 (+)
Koa-ohia	42 (2)	32 (1)	...	1 (+)	9 (1)	...	...	14 (2)	...	...	...	...
Koa-mamane	...	0	...	0	0	...	...	...	...	...	...	...
Mamane-naio	...	...	...	...	0	0	...	...	...	...	...	...
Mamane	...	...	...	...	0	0	...	0	...	...	...	...
Other natives	...	...	...	...	0	...	...	0	...	1 (1)	0	...
Intro. trees	...	0	...	...	1 (1)	...	30 (7)	4 (1)	0	2 (1)	0	...
Treeless	5 (2)	0	0	0	0	...	...	0	4 (2)	...	0	0

^a Values are given in percent cover; + indicates stratum value is positive but under 0.5; ... indicates stratum was not sampled in study area.

APPENDIX TABLE 18^a
 IEIE COVER [MEAN (SE)] ON THE HAWAIIAN ISLANDS BY ELEVATION, HABITAT, AND STUDY AREA

	Kau	Hamakua	Puna	Kipukas	Kona	Mauna Kea	Kohala	East Maui	West Maui	Molokai	Lanai	Kauai
<i>Stratum</i>												
100–300 m	...	...	0	...	0	...	...	...	...	2 (+)	0	...
300–500 m	...	0	0	...	6 (4)	...	0	0	...	2 (1)	1 (1)	...
500–700 m	0	0	2 (1)	...	4 (1)	...	0	1 (+)	3 (1)	1 (+)	+ (+)	...
700–900 m	0	0	+ (+)	...	7 (1)	...	0	1 (+)	3 (1)	0	0	...
900–1100 m	0	0	0	0	4 (1)	...	0	1 (+)	7 (2)	+ (+)	...	...
1100–1300 m	0	0	0	0	+ (+)	...	0	2 (+)	2 (1)	1 (+)	...	2 (+)
1300–1500 m	0	0	...	0	0	...	0	1 (+)	+ (+)	3 (1)	...	1 (+)
1500–1700 m	0	0	...	0	0	...	0	2 (+)	0	...	...	0
1700–1900 m	0	0	...	0	0	...	...	1 (+)	0	...	...	...
1900–2100 m	0	0	...	0	0	0	...	1 (+)	...	...	...	...
2100–2300 m	0	0	...	0	0	0	...	0	...	...	...	...
2300–2500 m	...	...	...	...	0	0	...	0	...	...	...	...
2500–2700 m	...	...	...	...	...	0	...	0	...	...	...	...
2700–2900 m	...	...	...	...	...	0	...	0	...	...	...	...
2900–3100 m	...	...	...	...	...	0	...	...	...	...	...	...
<i>Habitat</i>												
Ohia	0	0	1 (1)	0	2 (+)	...	0	2 (+)	3 (1)	1 (+)	...	1 (+)
Koa-ohia	0	0	...	0	1 (+)	...	...	1 (+)	...	...	...	...
Koa-mamane	...	0	...	0	0	...	...	...	...	...	...	...
Mamane-naio	...	...	...	...	0	0	...	...	...	...	...	...
Mamane	...	...	...	...	0	0	...	0	...	...	...	...
Other natives	...	...	...	...	0	...	...	0	...	0	1 (1)	...
Intro. trees	...	0	...	...	1 (1)	...	0	+ (+)	0	+ (+)	+ (+)	...
Treeless	0	0	0	0	0	...	...	0	0	...	0	0

^a Values are given in percent cover; + indicates stratum value is positive but under 0.5; ... indicates stratum was not sampled in study area.

APPENDIX TABLE 19^a
 PASSIFLORA COVER [MEAN (SE)] ON THE HAWAIIAN ISLANDS BY ELEVATION, HABITAT, AND STUDY AREA

	Kau	Hamakua	Puna	Kipukas	Kona	Mauna Kea	Kohala	East Maui	West Maui	Molokai	Lanai	Kauai
<i>Stratum</i>												
100–300 m	...	...	0	...	1 (1)	...	...	...	...	5 (2)	0	...
300–500 m	...	0	0	...	0	...	0	0	...	2 (1)	0	...
500–700 m	0	0	0	...	1 (+)	...	0	+	0	0	0	...
700–900 m	0	0	0	...	3 (+)	...	0	+	+	+	0	...
900–1100 m	0	0	0	0	1 (+)	...	0	+	0	0	...	...
1100–1300 m	0	0	0	0	1 (+)	...	0	+	0	0	...	0
1300–1500 m	0	1 (+)	...	0	1 (+)	...	+	0	0	0	...	0
1500–1700 m	0	6 (1)	...	0	2 (+)	...	0	0	0	...	...	0
1700–1900 m	0	3 (1)	...	0	2 (1)	...	...	0	0	...	...	...
1900–2100 m	0	0	...	0	1 (+)	0	...	0	...	...	...	...
2100–2300 m	0	0	...	0	0	0	...	0	...	...	...	...
2300–2500 m	...	...	...	...	0	0	...	0	...	...	...	...
2500–2700 m	...	...	...	...	...	0	...	0	...	...	...	...
2700–2900 m	...	...	...	...	...	0	...	0	...	...	...	...
2900–3100 m	...	...	...	...	...	0	...	...	...	...	...	...
<i>Habitat</i>												
Ohia	0	0	0	0	1 (+)	...	+	0	+	+	...	0
Koa-ohia	0	2 (+)	...	0	3 (+)	...	...	0	...	...	...	...
Koa-mamane	...	0	...	0	1 (1)	...	...	...	...	...	...	...
Mamane-naio	...	...	...	...	3 (0)	0	...	...	...	...	...	...
Mamane	...	...	...	...	1 (+)	0	...	0	...	...	...	...
Other natives	...	...	...	...	0	...	...	1 (+)	...	0	0	...
Intro. trees	...	1 (1)	...	...	4 (1)	...	0	+	0	1 (+)	0	...
Treeless	0	0	0	0	+	...	...	0	0	...	0	0

^a Values are given in percent cover; + indicates stratum value is positive but under 0.5; ... indicates stratum was not sampled in study area.

APPENDIX TABLE 20^a
 NATIVE HERB COVER [MEAN (SE)] ON THE HAWAIIAN ISLANDS BY ELEVATION, HABITAT, AND STUDY AREA

	Kau	Hamakua	Puna	Kipukas	Kona	Mauna Kea	Kohala	East Maui	West Maui	Molokai	Lanai	Kauai
<i>Stratum</i>												
100–300 m	...	...	21 (13)	...	0	...	...	...	...	1 (+)	0	...
300–500 m	...	0	+ (+)	...	0	...	0	2 (2)	...	4 (2)	0	...
500–700 m	0	0	5 (1)	...	0	...	0	1 (+)	2 (1)	2 (1)	0	...
700–900 m	0	0	1 (+)	...	0	...	5 (2)	2 (1)	3 (1)	8 (1)	0	...
900–1100 m	0	0	12 (1)	0	+ (+)	...	3 (1)	5 (1)	19 (4)	11 (2)	...	...
1100–1300 m	0	0	3 (1)	4 (1)	+ (+)	...	10 (2)	8 (1)	27 (5)	22 (2)	...	34 (3)
1300–1500 m	0	0	...	2 (1)	0	...	14 (4)	8 (1)	21 (3)	36 (8)	...	32 (3)
1500–1700 m	0	0	...	1 (+)	0	...	0	9 (1)	20 (2)	...	...	37 (0)
1700–1900 m	0	0	...	13 (2)	0	...	...	8 (1)	37 (8)	...	...	...
1900–2100 m	0	0	...	5 (1)	2 (1)	0	...	4 (1)	...	...	...	...
2100–2300 m	0	0	...	1 (+)	1 (1)	0	...	3 (1)	...	...	...	...
2300–2500 m	...	...	...	...	0	...	...	3 (1)	...	...	...	...
2500–2700 m	...	...	...	...	...	0	...	3 (1)	...	...	...	...
2700–2900 m	...	...	...	...	...	0	...	1 (1)	...	...	...	...
2900–3100 m	...	...	...	...	...	0	...	...	...	...	...	...
<i>Habitat</i>												
Ohia	0	0	5 (+)	5 (1)	+ (+)	...	8 (1)	8 (+)	18 (2)	13 (1)	...	33 (2)
Koa-ohia	0	0	...	8 (2)	+ (+)	...	...	4 (1)	...	...	...	...
Koa-mamane	...	0	...	1 (+)	0	...	...	...	...	...	...	...
Mamane-naio	...	...	...	...	0	0	...	...	...	...	...	...
Mamane	...	...	...	...	0	0	...	4 (3)	...	...	...	...
Other natives	...	...	...	...	0	...	...	2 (+)	...	6 (3)	0	...
Intro. trees	...	0	...	...	0	...	1 (+)	1 (+)	0	1 (+)	0	...
Treeless	0	0	1 (1)	0	0	...	...	4 (1)	8 (2)	...	0	62 (0)

^a Values are given in percent cover; + indicates stratum value is positive but under 0.5; ... indicates stratum was not sampled in study area.

APPENDIX TABLE 21^a
 INTRODUCED HERB COVER [MEAN (SE)] ON THE HAWAIIAN ISLANDS BY ELEVATION, HABITAT, AND STUDY AREA

	Kau	Hamakua	Puna	Kipukas	Kona	Mauna Kea	Kohala	East Maui	West Maui	Molokai	Lanai	Kauai
<i>Stratum</i>												
100–300 m	...	...	0	...	1 (1)	...	...	...	...	17 (5)	0	...
300–500 m	...	0	7 (1)	...	5 (2)	...	37 (0)	6 (3)	...	17 (3)	0	...
500–700 m	0	0	2 (1)	...	9 (2)	...	13 (4)	11 (2)	9 (3)	9 (2)	0	...
700–900 m	0	0	2 (+)	...	8 (1)	...	60 (9)	11 (1)	4 (1)	4 (1)	0	...
900–1100 m	0	0	1 (+)	2 (2)	4 (1)	...	33 (6)	5 (1)	3 (2)	3 (1)	...	...
1100–1300 m	0	0	0	6 (2)	5 (1)	...	11 (2)	4 (1)	2 (1)	1 (+)	...	1 (+)
1300–1500 m	0	0	...	7 (1)	3 (+)	...	9 (3)	6 (1)	4 (2)	0	...	+ (+)
1500–1700 m	0	0	...	4 (1)	5 (1)	...	7 (3)	5 (1)	+ (+)	...	...	0
1700–1900 m	0	0	...	1 (+)	1 (+)	...	...	7 (1)	0	...	...	...
1900–2100 m	0	0	...	1 (+)	4 (1)	0	...	11 (1)	...	...	...	...
2100–2300 m	0	0	...	1 (+)	1 (1)	0	...	11 (1)	...	...	...	...
2300–2500 m	...	...	...	...	1 (+)	0	...	12 (2)	...	...	...	...
2500–2700 m	...	...	...	...	...	0	...	7 (2)	...	...	...	...
2700–2900 m	...	...	...	...	...	0	...	3 (0)	...	...	...	...
2900–3100 m	...	...	...	...	...	0	...	...	...	...	...	...
<i>Habitat</i>												
Ohia	0	0	3 (+)	1 (+)	3 (+)	...	18 (2)	4 (+)	3 (1)	5 (1)	...	1 (+)
Koa-ohia	0	0	...	6 (1)	5 (1)	...	...	10 (1)	...	...	...	...
Koa-mamane	...	0	...	5 (1)	7 (1)	...	...	...	...	...	...	...
Mamane-naio	...	...	...	...	0	0	...	...	...	...	...	...
Mamane	...	...	...	...	5 (1)	0	...	9 (3)	...	...	...	...
Other natives	...	...	...	...	11 (3)	...	...	12 (1)	...	4 (2)	0	...
Intro. trees	...	0	...	...	13 (3)	...	20 (5)	13 (2)	3 (0)	6 (1)	0	...
Treeless	0	0	0	0	0	...	...	10 (1)	4 (3)	...	0	0

^a Values are given in percent cover; + indicates stratum value is positive but under 0.5; ... indicates stratum was not sampled in study area.

APPENDIX TABLE 22^a
 NATIVE GRASS COVER [MEAN (SE)] ON THE HAWAIIAN ISLANDS BY ELEVATION, HABITAT, AND STUDY AREA

	Kau	Hamakua	Puna	Kipukas	Kona	Mauna Kea	Kohala	East Maui	West Maui	Molokai	Lanai	Kauai
<i>Stratum</i>												
100–300 m	...	...	5 (3)	...	0	...	...	...	...	0	0	...
300–500 m	...	0	3 (1)	...	0	...	0	0	...	+ (+)	0	...
500–700 m	0	+ (+)	+ (+)	...	0	...	0	+ (+)	1 (+)	+ (+)	0	...
700–900 m	0	+ (+)	7 (1)	...	0	...	0	1 (+)	4 (1)	+ (+)	0	...
900–1100 m	0	2 (+)	7 (1)	0	+ (+)	...	1 (+)	3 (1)	6 (1)	1 (+)	...	...
1100–1300 m	0	+ (+)	4 (2)	3 (1)	1 (+)	...	5 (1)	8 (1)	3 (1)	2 (1)	...	8 (2)
1300–1500 m	0	0	...	17 (2)	2 (+)	...	9 (2)	15 (2)	8 (2)	7 (3)	...	15 (2)
1500–1700 m	+ (+)	+ (+)	...	27 (3)	5 (1)	...	21 (5)	15 (2)	11 (3)	...	...	15 (0)
1700–1900 m	+ (+)	3 (+)	...	18 (2)	7 (1)	...	...	16 (2)	6 (3)	...	...	...
1900–2100 m	2 (1)	3 (1)	...	15 (2)	4 (1)	0	...	14 (1)	...	...	...	...
2100–2300 m	0	0	...	7 (2)	2 (+)	0	...	19 (2)	...	...	...	...
2300–2500 m	...	...	...	...	2 (2)	0	...	24 (3)	...	...	...	...
2500–2700 m	...	...	...	...	...	0	...	14 (1)	...	...	...	...
2700–2900 m	...	...	...	...	...	0	...	6 (5)	...	...	...	...
2900–3100 m	...	...	...	...	...	0	...	...	...	...	...	...
<i>Habitat</i>												
Ohia	+ (+)	1 (+)	4 (+)	16 (1)	2 (+)	...	6 (1)	11 (1)	5 (1)	1 (+)	...	11 (1)
Koa-ohia	0	+ (+)	...	13 (2)	4 (1)	...	...	5 (1)	...	...	...	...
Koa-mamane	...	0	...	28 (3)	+ (+)	...	...	...	...	...	...	...
Mamane-naio	...	...	...	...	0	0	...	...	...	...	...	...
Mamane	...	...	...	...	1 (1)	0	...	12 (5)	...	...	...	...
Other natives	...	...	...	...	0	...	...	15 (2)	...	1 (1)	0	...
Intro. trees	...	0	...	...	+ (+)	...	0	1 (+)	3 (0)	+ (+)	0	...
Treeless	+ (+)	0	2 (2)	1 (1)	8 (2)	...	...	17 (1)	4 (2)	...	0	62 (0)

^a Values are given in percent cover; + indicates stratum value is positive but under 0.5; ... indicates stratum was not sampled in study area.

APPENDIX TABLE 23^a
INTRODUCED GRASS COVER [MEAN (SE)] ON THE HAWAIIAN ISLANDS BY ELEVATION, HABITAT, AND STUDY AREA

	Kau	Hamakua	Puna	Kīpukas	Kona	Mauna Kea	Kohala	East Maui	West Maui	Molokai	Lanai	Kauai
<i>Stratum</i>												
100–300 m	...	...	24 (15)	...	0	...	...	...	...	28 (5)	0	...
300–500 m	...	0	16 (2)	...	+ (+)	...	80 (0)	+ (+)	...	30 (4)	24 (9)	...
500–700 m	0	+ (+)	22 (1)	...	21 (3)	...	32 (7)	33 (4)	38 (6)	25 (3)	7 (2)	...
700–900 m	2 (2)	4 (1)	23 (2)	...	36 (2)	...	39 (8)	36 (4)	23 (4)	37 (2)	8 (8)	...
900–1100 m	8 (2)	7 (1)	35 (3)	80 (0)	27 (2)	...	28 (5)	20 (2)	6 (3)	21 (2)	...	...
1100–1300 m	3 (1)	3 (1)	27 (5)	47 (7)	40 (2)	...	15 (3)	13 (2)	+ (+)	5 (2)	...	3 (1)
1300–1500 m	0	3 (1)	...	48 (3)	38 (2)	...	6 (2)	15 (3)	7 (3)	2 (1)	...	4 (1)
1500–1700 m	3 (1)	19 (2)	...	25 (3)	35 (2)	...	7 (3)	16 (3)	1 (1)	...	...	0
1700–1900 m	5 (1)	39 (2)	...	3 (1)	32 (2)	...	...	15 (2)	0	...	...	...
1900–2100 m	4 (1)	46 (5)	...	1 (+)	25 (2)	69 (3)	...	24 (2)	...	...	...	...
2100–2300 m	0	99 (0)	...	+ (+)	14 (3)	54 (4)	...	16 (2)	...	...	...	...
2300–2500 m	...	...	...	...	16 (8)	50 (3)	...	17 (3)	...	...	...	...
2500–2700 m	...	...	...	...	...	40 (2)	...	2 (1)	...	...	...	...
2700–2900 m	...	...	...	...	...	40 (1)	...	0	...	...	...	...
2900–3100 m	...	...	...	...	...	40 (4)	...	...	...	...	...	...
<i>Habitat</i>												
Ohia	+ (+)	4 (+)	24 (1)	6 (1)	17 (1)	...	18 (2)	9 (1)	11 (2)	21 (1)	...	4 (1)
Koa-ohia	1 (1)	15 (1)	...	40 (3)	58 (1)	...	...	31 (3)	...	...	...	...
Koa-mamane	...	86 (4)	...	28 (4)	67 (2)	...	...	...	...	...	...	...
Mamane-naio	...	...	...	...	3 (0)	47 (1)	...	...	...	...	...	...
Mamane	...	...	...	...	41 (3)	49 (2)	...	16 (8)	...	...	...	...
Other natives	...	...	...	...	51 (4)	...	...	41 (3)	...	32 (4)	10 (6)	...
Intro. trees	...	4 (1)	...	...	36 (4)	...	10 (4)	31 (4)	62 (0)	32 (3)	9 (3)	...
Treeless	32 (4)	0	20 (10)	0	4 (2)	...	...	19 (1)	7 (5)	...	24 (12)	0

^a Values are given in percent cover; + indicates stratum value is positive but under 0.5; ... indicates stratum was not sampled in study area.

APPENDIX TABLE 24^a
OHIA FLOWER INDEX [MEAN (SE)] ON THE HAWAIIAN ISLANDS BY ELEVATION, HABITAT, AND STUDY AREA

	Kau	Hamakua	Puna	Kipukas	Kona	Mauna Kea	Kohala	East Maui	West Maui	Molokai	Lanai	Kauai
<i>Stratum</i>												
100–300 m	...	...	104 (53)	...	1238 (1238)	...	...	...	...	463 (81)	0	...
300–500 m	...	+ (+)	93 (14)	...	3117 (586)	...	0	2 (2)	...	728 (170)	16 (7)	...
500–700 m	0	15 (4)	165 (21)	...	1253 (161)	...	33 (18)	16 (5)	26 (17)	77 (24)	6 (2)	...
700–900 m	145 (40)	29 (4)	317 (37)	...	587 (49)	...	114 (68)	35 (8)	21 (10)	10 (3)	0	...
900–1100 m	99 (21)	88 (10)	329 (30)	144 (103)	507 (55)	...	26 (11)	72 (13)	69 (25)	80 (13)	...	...
1100–1300 m	21 (4)	49 (7)	103 (40)	39 (9)	350 (28)	...	8 (3)	23 (4)	77 (22)	32 (7)	...	970 (100)
1300–1500 m	13 (2)	79 (10)	...	12 (2)	231 (14)	...	21 (11)	25 (6)	26 (10)	4 (2)	...	329 (54)
1500–1700 m	56 (9)	92 (11)	...	11 (2)	155 (13)	...	13 (7)	66 (14)	23 (16)	...	...	68 (0)
1700–1900 m	94 (18)	53 (12)	...	4 (+)	75 (11)	...	...	127 (24)	6 (4)	...	...	...
1900–2100 m	31 (11)	12 (2)	...	7 (1)	47 (10)	0	...	67 (16)	...	...	...	...
2100–2300 m	0	0	...	6 (1)	14 (3)	0	...	1 (1)	...	...	...	...
2300–2500 m	...	...	...	...	0	0	...	0	...	...	...	...
2500–2700 m	...	...	...	...	...	0	...	0	...	...	...	...
2700–2900 m	...	...	...	...	...	0	...	0	...	...	...	...
2900–3100 m	...	...	...	...	...	0	...	...	...	...	...	...
<i>Habitat</i>												
Ohia	54 (8)	43 (4)	219 (14)	6 (1)	464 (24)	...	25 (6)	75 (8)	46 (9)	104 (20)	...	675 (65)
Koa-ohia	77 (9)	87 (6)	...	24 (4)	277 (14)	...	...	46 (7)	...	...	...	...
Koa-mamane	...	0	...	9 (+)	26 (8)	...	...	...	...	...	...	...
Mamane-naio	...	...	...	...	0	0	...	...	...	...	...	...
Mamane	...	...	...	...	12 (6)	0	...	0	...	...	...	...
Other natives	...	...	...	...	18 (6)	...	...	29 (10)	...	34 (12)	19 (7)	...
Intro. trees	...	6 (4)	...	...	474 (128)	...	0	22 (15)	0	153 (35)	5 (2)	...
Treeless	51 (10)	0	71 (39)	5 (3)	8 (4)	...	...	5 (3)	11 (5)	...	0	0

^a Values are given in units of foliage volume (meters heights × percent cover) times fraction of twigs in flower; + indicates stratum value is positive but under 0.5; ... indicates stratum was not sampled in study area.

APPENDIX TABLE 25^a
 OLAPA FRUIT INDEX [MEAN (SE)] ON THE HAWAIIAN ISLANDS BY ELEVATION, HABITAT, AND STUDY AREA

	Kau	Hamakua	Puna	Kipukas	Kona	Mauna Kea	Kohala	East Maui	West Maui	Molokai	Lanai	Kauai
<i>Stratum</i>												
100–300 m	...	...	0	...	0	...	...	...	...	0	0	...
300–500 m	...	0	+ (+)	...	0	...	0	0	...	+ (+)	0	...
500–700 m	0	+ (+)	+ (+)	...	0	...	0	+ (+)	0	+ (+)	0	...
700–900 m	+ (+)	+ (+)	+ (+)	...	0	...	+ (+)	1 (+)	+ (+)	+ (+)	0	...
900–1100 m	+ (+)	+ (+)	+ (+)	10 (0)	+ (+)	...	+ (+)	1 (+)	+ (+)	+ (+)	...	...
1100–1300 m	+ (+)	+ (+)	0	8 (1)	+ (+)	...	+ (+)	1 (+)	+ (+)	+ (+)	...	1 (+)
1300–1500 m	+ (+)	+ (+)	...	10 (+)	+ (+)	...	+ (+)	+ (+)	1 (+)	+ (+)	...	+ (+)
1500–1700 m	0	+ (+)	...	10 (+)	+ (+)	...	+ (+)	+ (+)	1 (+)	...	...	0
1700–1900 m	0	+ (+)	...	9 (+)	0	...	...	+ (+)	1 (+)	...	...	...
1900–2100 m	+ (+)	0	...	10 (0)	0	...	...	+ (+)	...	...	...	...
2100–2300 m	0	0	...	10 (0)	0	0	...	0	...	...	...	...
2300–2500 m	...	...	...	...	0	0	...	0	...	...	...	...
2500–2700 m	...	...	...	...	...	0	...	0	...	...	...	...
2700–2900 m	...	...	...	...	...	0	...	0	...	...	...	...
2900–3100 m	...	...	...	...	...	0	...	...	...	...	...	...
<i>Habitat</i>												
Ohia	+ (+)	+ (+)	+ (+)	10 (+)	+ (+)	...	+ (+)	1 (+)	+ (+)	+ (+)	...	+ (+)
Koa-ohia	+ (+)	+ (+)	...	9 (+)	+ (+)	...	...	1 (+)	...	...	...	...
Koa-mamane	...	0	...	10 (+)	0	...	...	...	...	...	...	...
Mamane-naio	...	...	...	...	0	0	...	...	...	...	...	...
Mamane	...	...	...	...	0	0	...	0	...	...	...	...
Other natives	...	...	...	...	0	...	...	0	...	0	0	...
Intro. trees	...	+ (+)	...	...	0	...	0	+ (+)	0	+ (+)	0	...
Treeless	0	0	0	10 (0)	+ (+)	...	...	0	+ (+)	...	0	1 (0)

^a Values are given in percent of twigs in fruit; + indicates stratum value is positive but under 0.5; ... indicates stratum was not sampled in study area.

APPENDIX TABLE 26*
MAMANE FLOWER [MEAN (SE)] ON THE HAWAIIAN ISLANDS BY ELEVATION, HABITAT, AND STUDY AREA

	Kau	Hamakua	Puna	Kipukas	Kona	Mauna Kea	Kohala	East Maui	West Maui	Molokai	Lanai	Kauai
<i>Stratum</i>												
100–300 m	...	...	0	...	0	...	...	...	...	0	0	...
300–500 m	...	0	0	...	0	...	0	0	...	0	0	...
500–700 m	0	0	0	...	0	...	0	0	0	0	0	...
700–900 m	0	0	0	...	0	...	0	0	0	0	0	...
900–1100 m	0	0	0	99 (0)	0	...	0	0	0	0	...	...
1100–1300 m	0	0	0	99 (0)	0	...	0	0	0	0	...	0
1300–1500 m	0	0	...	82 (5)	0	...	0	0	0	0	...	0
1500–1700 m	0	0	...	66 (5)	0	...	0	0	0	...	...	0
1700–1900 m	0	0	...	87 (4)	0	...	...	+ (+)	0	...	...	...
1900–2100 m	0	0	...	93 (2)	0	27 (3)	...	+ (+)	...	...	...	...
2100–2300 m	0	0	...	99 (0)	0	17 (3)	...	4 (2)	...	...	...	...
2300–2500 m	...	...	...	...	0	13 (2)	...	0	...	...	...	...
2500–2700 m	...	...	...	...	...	4 (1)	...	1 (1)	...	...	...	...
2700–2900 m	...	...	...	...	...	4 (1)	...	0	...	...	...	...
2900–3100 m	...	...	...	...	...	15 (5)	...	...	...	...	...	...
<i>Habitat</i>												
Ohia	0	0	0	98 (1)	0	...	0	0	0	0	...	0
Koa-ohia	0	0	...	87 (3)	0	...	...	0	...	...	...	...
Koa-mamane	...	0	...	30 (6)	0	...	...	...	...	...	...	...
Mamane-naio	...	...	...	...	0	18 (2)	...	...	...	...	...	...
Mamane	...	...	...	...	0	4 (+)	...	29 (15)	...	...	...	...
Other natives	...	...	...	...	0	...	...	+ (+)	...	0	0	...
Intro. trees	...	0	...	...	0	...	0	+ (+)	0	0	0	...
Treeless	0	0	0	99 (0)	0	...	...	1 (1)	0	...	0	0

* Values are given in units of foliage volume (meters height × percent cover) times percent of twigs in flower; + indicates stratum value is positive but under 0.5; ... indicates stratum was not sampled in study area.