SOIL MAP UPOLU SHEET 4 1:50,000

WESTERN SAMOA LAND RESOURCES PLANNING PROJECT 1989

GENERAL MAP INFORMATION

SCALE

KILOMETRES 1 0 1 2 3 4 5 6 7

MILES 0 1 2 3 4 5

INDEX TO SHEETS: 1 2 3 SAVAII; 4 5 6 UPOLU

TOPOGRAPHICAL LEGEND
Populated Places: Town .... APIA
Villages ..... Savaia
Roads
Coastline, Rivers and Streams
Contours 50
General features .... Cape Tulivae

Note: The contour interval varies to improve definition of coastal lowlands. First contour : 50 feet. Second contour : 150 feet. Third contour : 250 feet. Thereafter every 250 feet to 2000 feet. Over 2000 feet: every 500 feet (UPOLU). every 250 feet (SAVAII).

GENERAL NOTES

This map is a digital product derived from the Western Samoa Geographical Information System (GIS) database, which is available in plotout format at other scales and sheet-lines.
Topographical data for this map has been digitised from the NZMS 174 1:20000 Topographical series of Western Samoa and generalised to a prime operational scale of 1:50000.
The sheetlines and grid conform to the new 1:50000 Topographical Series under production in the Department of Lands & Survey, Apia.

Projection: Cassini-Soldner. Grid: UTM.

TRUE MAGNETIC

MEAN MAGNETIC VARIATION FOR WESTERN SAMOA 12°30'E WITH ANNUAL INCREASE 2'

This map is published under the authority of Lealiifano J.T. Soon, Director of Lands & Survey, Government of Western Samoa as part of the Asian Development Bank and United Nations Development Programme jointly funded Land Resource Planning Project carried out by ANZDEC Ltd in association with the Division of Land and Soil Science, Department of Scientific and Industrial Research, New Zealand.

Cartographic Consultant D.D. McCormack
GIS Consultant D.J. Giltrap

Printed by V.R. Ward, Government Printer, New Zealand 1989

CLASSIFICATION OF SOIL SERIES ACCORDING TO SOIL TAXONOMY

Order	Group	Subgroup	Soil series	Soil families included in the series	Map symbols
Histosols	Tropofibrists	Hydric	Lalovi	dysic, isohyperthermic	7
		Fluvaquentic	Latalua	euic, isohyperthermic	8
Andisols	Fulvudand	Lithic	Sataua	medial-skeletal, amorphic, isohyperthermic	24,24a,24H
		Lithic	Samoa	medial-skeletal, amorphic, isothermic	77
		Hydric Pachic	Maugamoa	medial-skeletal, amorphic, isothermic	75, 75H
		Hydric Pachic	Savai'i	hydrous-skeletal, amorphic, isothermic	78S
		Hydric Pachic	Salega	hydrous-skeletal, amorphic, isothermic hydrous-amorphic, isothermic	79, 79H
		Pachic	Vaisala	medial-skeletal, amorphic, isohyperthermic	23, 23H
		Pachic	Mafane	medial-skeletal, amorphic, isothermic	76S
		Pachic	Lanuto'o	medial-skeletal, amorphic, isothermic medial, amorphic, isothermic	84H, 84S, 84V 84H
		Eutric	Olo	medial-skeletal, amorphic, isohyperthermic	43H,43S,43V
		Eutric	Fa'amasa	medial-skeletal, amorphic, isohyperthermic	44H, 44S, 44V
		Acric	Atua	medial-skeletal, amorphic, isohyperthermic	42, 42H
		Acric	Gaegae	medial-skeletal, amorphic, isohyperthermic	49, 49a, 49H
		Acric	Mata'ana	medial, amorphic, isothermic	86S
		Typic	Olomanu	medial, amorphic, isohyperthermic	30H, 30S
		Typic	Lefaga	medial-skeletal, amorphic, isohyperthermic	40, 40a, 40H
	Hapludand	Lithic	Togitogiga	medial-skeletal, amorphic, isohyperthermic medial over fragmental, amorphic, isohyperthermic	35, 35a, 35H
			Tanumalala	medial-skeletal, amorphic, isohyperthermic	41a, 41b, 41H
		Alic	Puna	medial-skeletal, amorphic, isohyperthermic	38, 38H
		Hydric	Tanutala	medial-skeletal, amorphic, isohyperthermic	39H, 39S
			Sili	hydrous-skeletal, amorphic, isothermic	81
			Maugasili	hydrous-skeletal, amorphic, isothermic	82H, 82S
		Eutric	Alataua	medial-skeletal, amorphic, isohyperthermic	22H, 22S
			Neiafu	medial-skeletal, amorphic, isohyperthermic	26H, 26S
			Tafua	medial, amorphic, isohyperthermic	52, 52H
			Folu	medial over fragmental, amorphic, isohyperthermic	53S
		Acric	Tanumalala	medial-skeletal, amorphic, isohyperthermic	41
		Oxic	Tiotala	medial over clayey-skeletal, amorphic, isohyperthermic	57H, 57S, 57V
			Fagapolo	medial over clayey-skeletal, amorphic, isohyperthermic	56
		Typic	Mulifanua	medial-skeletal, amorphic, isohyperthermic	27H, 27S, 27V
			Magia	medial-skeletal, amorphic, isohyperthermic	28, 28a
			Tapuele	medial over skeletal, amorphic, isohyperthermic	45
			Upolu	medial-skeletal, amorphic, isohyperthermic (lithic subgroups on very steep slopes)	69H, 69S, 69V
			Elietoga	medial-skeletal, amorphic, isothermic	80H, 80S
Oxisols	Acroperox	Anionic	Fagaga	coarse silty, ferruginous, isohyperthermic	65
		Anionic, humic	Tuave	clayey, ferruginous, isohyperthermic	70, 70H
	Haploperox	Humic	Papaloa	clayey, kaolinitic, isohyperthermic	66H, 66S, 66V
		Typic	Luatuanu'u	clayey, kaolinitic, isohyperthermic	68, 68a, 68H
	Acrudox	Anionic	Vaipouli	clayey, gibbsitic, isohyperthermic	33
Mollisols	Hapludoll	Cumulic	Apia	fine, oxidic, isohyperthermic	5
		Fluventic	Sauniatu	fine loamy over sandy, oxidic, isohyperthermic	9, 9a, 9b
		Andic	Sasina	medial-skeletal, oxidic, isohyperthermic	21, 21H
		Lithic	Aopo	fragmental, mixed, isohyperthermic sandy-skeletal, mixed, isohyperthermic	18, 18H
			Falealupu	loamy-skeletal, oxidic, isohyperthermic	19, 19a
		Lithic (andic)	Pulea	clayey-skeletal, mixed (amorphic) isohyperthermic	20
		Lithic	Vaipapa	fine, oxidic, isohyperthermic	34H, 34S
			Mataoleafi	sandy-skeletal, mixed, isothermic	73, 73a, 73H
			Mu	fragmental, mixed, isothermic	74, 74H
Inceptisols	Tropaquept	Lithic	Namoa	clayey-skeletal, mixed, nonacid, isohyperthermic	6b
		Typic	Namoa	fine, mixed, nonacid, isohyperthermic	6a
			Vaigafa	fine, mixed, nonacid, isohyperthermic	13
			Lano	fine silty, mixed, nonacid, isohyperthermic	14
			Palapala	fine, ferritic, acid, isothermic	16
	Humitropept	Andic	Ma'asina	medial-skeletal, oxidic, isohyperthermic	12,12a,12b,12H
			Aleisa	medial-skeletal, oxidic, isohyperthermic	47, 47a, 47H
			Fagaga	medial-skeletal, oxidic, isohyperthermic	65a, 65b, 65H
			Tiavi	medial-skeletal, oxidic, isothermic	85, 85a, 85b, 85H
		Fluventic (Andic)	Vaiola	fine, oxidic, isohyperthermic	10
		Fluventic	Falevao	fine, oxidic, isohyperthermic	11, 11a
		Lithic	A'ana	clayey-skeletal, oxidic, isohyperthermic	29c
		Oxic	A'ana	clayey-skeletal, oxidic, isohyperthermic fine, oxidic, isohyperthermic	29a, 29b, 29H 29
			Vailele	fine, oxidic, isohyperthermic	31
			Moamoa	clayey-skeletal, oxidic, isohyperthermic	32
			Asoleilei	clayey-skeletal, gibbsitic, isohyperthermic	37, 37H
			Tafatafa	fine, oxidic, isohyperthermic clayey-skeletal, oxidic, isohyperthermic (also Lithic subgroups)	46 46a, 46b, 46H
			Avele	clayey over loamy-skeletal, gibbsitic, isohyperthermic clayey-skeletal, gibbsitic, isohyperthermic	59 59a, 59b, 59H
			Solosolo	fine, gibbsitic, isohyperthermic	60, 60a
			Etemuli	fine, gibbsitic, isohyperthermic clayey-skeletal, gibbsitic, isohyperthermic	62 62a, 62b, 62H
			Aleipata	loamy-skeletal, oxidic, isohyperthermic	63H, 63S, 63V
			Falealili	clayey-skeletal, oxidic, isohyperthermic	64,64a,64b,64H
			Afiamalu	clayey-skeletal, gibbsitic, isothermic	83, 83H
		Typic	Papauta	fine, oxidic, isohyperthermic clayey-skeletal, oxidic, isohyperthermic	58 58a, 58b, 58H
	Eutropept	Typic	Vini	fine, smectitic, isohyperthermic	50, 50H
			Nu'utele	fine, smectitic, isohyperthermic (also Lithic subgroups)	51H, 51S, 51V
			Mulimaauga	fine, oxidic, isohyperthermic	54H, 54S
			Olomauga	fine, oxidic, isohyperthermic	55, 55H
	Dystropept	Andic	Salailua	medial-skeletal, oxidic, isohyperthermic	48, 48a, 48H
			Lata	medial-skeletal, oxidic, isohyperthermic (also Lithic subgroups)	71H, 71S, 71V
		Oxic	Saleimoa	coarse loamy, gibbsitic, isohyperthermic clayey-skeletal, gibbsitic, isohyperthermic	25 25a, 25H
			Sauaga	fine, halloysitic, isohyperthermic	67, 67H
			Uafato	fine, mixed, isohyperthermic	72, 72H
		Typic	Afuiva	loamy-skeletal, oxidic, isohyperthermic	36, 36H
			Salani	fine, gibbsitic, isohyperthermic	61H, 61S, 61V
Entisols	Sulfaquent	Typic	Loga	fine, mixed nonacid, isohyperthermic	1, 1a
	Tropopsamment	Aquic	Mutiatele	carbonatic, isohyperthermic	4, 4a
		Typic	Lufi	mixed, isohyperthermic	2, 2a
			Fusi	carbonatic, isohyperthermic (also Lithic subgroups)	3, 3a 3b
	Troporthent	Lithic	Matavanu	fragmental, mixed, nonacid, isohyperthermic	17, 17a, 17H

Soil Taxonomy interpreted from recent and existing data by W.C. Rijkse, 1989

SOIL MAPPING UNITS ARRANGED PHYSIOGRAPHICALLY

SOILS OF THE COASTLANDS, VALLEY FLOORS AND THEIR MARGINS

from saline estuarine sand and clay
Loga sandy clay .. 1
Loga peaty sand .. 1a
from basaltic beach sand
Lufi sand .. 2
Lufi gravelly sand .. 2a
from calcerous sand
Fusi sand .. 3
Fusi shallow grey sand over basalt .. 3a
Fusi stony and bouldery sand and stony clay .. 3b
Mutiatele mottled sand .. 4
Mutiatele peaty loamy sand and sandy peat .. 4a
from estuarine sediments and organic residue
Apia silty clay .. 5
Namoa clay loam .. 6
Namoa peaty silt loam .. 6a
Namoa shallow peaty clay over basalt .. 6b
from organic residues
Lalovi peat .. 7
Latalua loamy peat .. 8
from basic alluvium
Sauniatu gravelly sandy clay loam .. 9
Sauniatu silty clay loam .. 9a
Sauniatu loamy sand .. 9b
Vaiola silty clay loam and gravelly loam .. 10
Falevao silty clay loam .. 11
Falevao slightly mottled silty clay loam .. 11a
from basic colluvium
Ma'asina stony clay .. 12
Ma'asina stony and bouldery clay .. 12a
Ma'asina very bouldery clay .. 12b
Ma'asina hill soils .. 12H
Vaigafa silty clay loam .. 13
Lano silty clay loam and peaty clay loam .. 14
from any parent material
Man made soils .. 15
from recent alluvium, colluvium and organic residue
Palapala peaty loam .. 16

SOILS OF THE LOWLANDS AND FOOTHILLS

(i) with weak to strong dry season (udic moisture regime)
1. Soils of the very slightly dissected landscapes
from mainly pahoehoe basalt of the Aopo Volcanics
Matavanu sandy and fine gravel .. 17
Matavanu stony gravel .. 17a
Matavanu hill soils .. 17H
from mixed pahoehoe and aa basalt of the Aopo Volcanics
Aopo loamy sand .. 18
Aopo hill soils .. 18H
from mainly pahoehoe basalt of the Puapua Volcanics
Falealupo very bouldery silty clay loam .. 19
Falealupo very bouldery silty clay loam, peaty phase .. 19A
Pulea very bouldery silt loam .. 20
Sasina very stony and bouldery silty clay loam .. 21
Sasina hill soils .. 21H
from mainly scoria of the Puapua volcanics
Alataua hill soils .. 22H
Alataua steepland soils .. 22S
2. Soils of the slightly dissected landscapes
from aa, scoria and pahoehoe basalt of the Mulifanua Volcanics
Vaisala very stony silt loam .. 23
Vaisala hill soils .. 23H
Sataua very stony silty clay loam .. 24
Sataua very bouldery silty clay loam .. 24a
Sataua hill soils .. 24H
Saleimoa very stony silty clay loam .. 25
Saleimoa very bouldery silty clay loam .. 25a
Saleimoa hill soils .. 25H
from scoria and basalt of the Mulifanua Volcanics
Neiafu hill soils .. 26H
Neiafu steepland soils .. 26S
Mulifanua hill soils .. 27H
Mulifanua steepland soils .. 27S
Mulifanua steepland soils, very steep phase .. 27V
from mixed aa and pahoehoe basalt of the Mulifanua Volcanics
Magia stony clay loam .. 28
Magia bouldery clay loam .. 28a
A'ana stony silty clay .. 29
A'ana very stony silty clay loam .. 29a
A'ana bouldery silty clay .. 29b
A'ana shallow bouldery silty clay loam .. 29c
A'ana hill soils .. 29H
3. Soils of the moderately dissected landscapes
from scoria basalt of the Salani Volcanics
Olomanu hill soils .. 30H
Olomanu steepland soils .. 30S
from mixed pahoehoe and aa basalt of the Salani Volcanics
Vailele stony silty clay loam .. 31
from mainly pahoehoe basalt of the Salani Volcanics
Moamoa stony clay .. 32
4. Soils of the strongly dissected landscapes
from pahoehoe, aa, scoria and dykes of basalt of the Fagaloa Volcanics
Vaipouli silty clay loam .. 33
Vaipapa hill soils .. 34H
Vaipapa steepland soils .. 34S
(ii) without dry season (perudic moisture regime)
1. Soils of the very slightly dissected landscapes
from mainly pahoehoe basalt of the Puapua Volcanics
Togitogiga very bouldery silty clay loam .. 35
Togitogiga very stony humic silt loam .. 35a
Togitogiga hill soils .. 35H
Afuiva very bouldery silt loam .. 36
Afuiva hill soils .. 36H
Asoleilei stony silt loam .. 37
Asoleilei hill soils .. 37H
from mainly scoria basalt of the Puapua Volcanics
Puna gravelly clay loam .. 38
Puna hill soils .. 38H
Tanutala hill soils .. 39H
Tanutala steepland soils .. 39S
2. Soils of the slightly dissected landscapes
from aa, scoria and pahoehoe basalt of the Lefaga Volcanics
Lefaga stony silty clay loam .. 40
Lefaga bouldery silty clay loam .. 40a
Lefaga hill soils .. 40H
Tanumalala stony silty clay loam .. 41
Tanumalala very stony silty clay loam .. 41a
Tanumalala very bouldery silt loam .. 41b
Tanumalala hill soils .. 41H
Atua very bouldery silty clay loam .. 42
Atua hill soils .. 42H
from scoria basalt of the Mulifanua Volcanics
Olo hill soils .. 43H
Olo steepland soils .. 43S
Olo steepland soils, very steep phase .. 43V
Fa'amasa hill soils .. 44H
Fa'amasa steepland soils .. 44S
Fa'amasa steepland soils, very steep phase .. 44V
Tapuele silty clay .. 45
from mixed aa and pahoehoe basalt of the Mulifanua Volcanics
Tafatafa very stony silty clay loam .. 46
Tafatafa bouldery silty clay loam .. 46a
Tafatafa very bouldery silty clay loam .. 46b
Tafatafa hill soils .. 46H
Aleisa very stony silty clay loam .. 47
Aleisa very bouldery silty clay loam .. 47a
Aleisa hill soils .. 47H
Salailua very stony silty clay loam .. 48
Salailua bouldery silty clay .. 48a
Salailua hill soils .. 48H
Gaegae very stony silty clay loam .. 49
Gaegae very bouldery silty clay loam .. 49a
Gaegae hill soils .. 49H
3. Soils of the moderately dissected landscapes
from calcareous lithic tuffs of the Vini Volcanics
Vini clay .. 50
Vini hill soils .. 50H
Nu'utele hill soils .. 51H
Nu'utele steepland soils .. 51S
Nu'utele steepland soils, very steep phase .. 51V
from lithivitric tuffs and ash of the Vini Volcanics
Tafua silty clay loam .. 52
Tafua hill soils .. 52H
Folu steepland soils .. 52S
from scoria of the Mulifanua and Salani Volcanics
Mulimauga hill soils .. 54H
Mulimauga steepland soils .. 54S
Olomauga stony silty clay .. 55
Olomauga hill soils .. 55H
Fagapolo silty clay .. 56
Tiotala hill soils .. 57H
Tiotala steepland soils .. 57S
Tiotala steepland soils, very steep phase .. 57V
from mixed pahoehoe and aa of the Salani Volcanics
Papauta silty clay .. 58
Papauta stony silty clay .. 58a
Papauta bouldery silty clay .. 58b
Papauta hill soils .. 58H
Avele stony silty clay loam .. 59
Avele very stony silty clay loam .. 59a
Avele bouldery silty clay loam .. 59b
Avele hill soils .. 59H
Solosolo silty clay loam .. 60
Solosolo stony and bouldery clay .. 60a
Salani hill soils .. 61H
Salani steepland soils .. 61S
Salani steepland soils, very steep phase .. 61V
Etemuli silty clay loam .. 62
Etemuli very stony silty clay loam .. 62a
Etemuli very bouldery silty clay loam .. 62b
Etemuli hill soils .. 62H
from mainly pahoehoe of the Salani Volcanics
Aleipata hill soils .. 63H
Aleipata steepland soils .. 63S
Aleipata steepland soils, very steep phase .. 63V
Falealili silty clay loam .. 64
Falealili stony silty clay loam .. 64a
Falealili very stony silty clay loam .. 64b
Falealili hill soils .. 64H
Fagaga silty clay loam .. 65
Fagaga stony silty clay loam .. 65a
Fagaga very stony silty clay loam .. 65b
Fagaga hill soils .. 65H
4. Soils of the strongly dissected landscapes
from pahoehoe, aa, scoria and dykes of basalt of the Fagaloa Volcanics
Papaloa hill soils .. 66H
Papaloa steepland soils .. 66S
Papaloa steepland soils, very steep phase .. 66V
Sauaga clay .. 67
Sauaga hill soils .. 67H
Luatuanu'u clay .. 68
Luatuanu'u clay, eroded phase .. 68a
Luatuanu'u hill soils .. 68H
Upolu hill soils .. 69H
Upolu steepland soils .. 69S
Upolu steepland soils, very steep phase .. 69V
Tuave clay .. 70
Tuave hill soils .. 70H
from pahoehoe, aa, and dykes of basalt of the Fagaloa volcanics
Lata hill soils .. 71H
Lata steepland soils .. 71S
Lata steepland soils, very steep phase .. 71V
Uafato silty clay .. 72
Uafato hill soils .. 72H

SOILS OF THE UPLANDS

1. Soils of the very slightly dissected landscapes
from mainly pahoehoe basalt of the Aopo Volcanics
Mataoleafi gravelly sand .. 73
Mataoleafi gravel .. 73a
Mataoleafi hill soils .. 73H
from mixed aa and pahoehoe basalt of the Aopo Volcanics
Mu gravel .. 74
Mu hill soils .. 74H
from scoria and pahoehoe basalt of the Puapua Volcanics
Maugamoa very bouldery peaty silt loam .. 75
Maugamoa hill soils .. 75H
Mafane steepland soils .. 76S
Samoa gravelly bouldery loam .. 77
Savai'i steepland soils .. 78S
2. Soils of the slightly dissected landscapes
from aa, scoria and pahoehoe basalt of the Mulifanua Volcanics
Salega humic stony silt loam .. 79
Salega hill soils .. 79H
Elitoga hill soils .. 80H
Elitoga steepland soils .. 80S
Sili stony loam .. 81
Maugasili hill soils .. 82H
Maugasili steepland soils .. 82S
3. Soils of the moderately dissected landscapes
from scoria basalt of the Salani Volcanics
Afiamalu silt loam .. 83
Afiamalu hill soils .. 83H
Lanuto'o hill soils .. 84H
Lanuto'o steepland soils .. 84S
Lanuto'o steepland soils, very steep phase .. 84V
from mixed aa and pahoehoe basalt of the Salani Volcanics
Tiavi silty clay loam .. 85
Tiavi stony silty clay loam .. 85a
Tiavi stony and bouldary silty clay loam .. 85b
Tiavi hill soils .. 85H
from scoria, pahoehoe and aa basalt of the Salani Volcanics
Mata'ana peaty loam .. 86S

Soil information on this map is based on surveys by A.C.S. Wright (N.Z. D.S.I.R. Soil Bulletin 22, 1963) and subsequent surveys by W.C. Rijkse and M. McLeod 1989.