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Extended legend of soil mop of Stewart Island (Rakiura)

d (Rakiura)

SBmop 99

EXTENDED LEGEND OF SOIL MAP OF STEWART ISLAND (RAKIURA), NEW ZEALAND: SUMMARY OF PROPERTIES OF SOIL MAPPING UNITS by M. L. LEAMY (For explanation of Notes 1-2, see accompanying Explanatory Notes) Part of N.Z. Soil Survey Report 22 APPROXIMATE PRINCIPAL SOIL PROFILE VARIATION WITHIN CRITERIA FOR PARENT BRIFE DESCRIPTION OF REFERENCE IDENTIFICATION² AREA MATERIAL OR ROCK SOIL NAME VEGETATION REPRESENTATIVE REFERENCE LANDFORM SOIL PROFILES (hectares, acres) NO. LOCATION SOUTHERN PODZOLISED YELLOW-BROWN EARTHS Thick peaty A horizon; sandy subsoil textures; iron-rich B horisobserved.

No significant variations were Fan landform; iron-rich B horizons but lack distinct iron Undulating and sloping surfaces, of dissected fans on valley probably of Pleistocene Kamahi, manuka, 2135 (5285) Waipikaho soils zons but lack distinct iron pans; well drained. age, derived from dio-rite and granite 40 cm dark greyish brown peaty sandy floors; flanks of Freshwater and Rakeahua Valleys 40 cm + yellowish red cemented heavy sandy loam. Silty and clayey textures; in- Solum thickness varies from 30 Lowland situation; podocarp/ Kamahi, rimu, rata, fern, 9 cm dusky red humic silt loam, Rolling dissected lowland: 2H Schist Hapuatuna soils 23 cm dusky red humic silt loam, 15 cm dark reddish grey silty chay loam, distinct colour differentiation; cm to greater than 90 cm, but dicotylous forest; schist parent on moderately steep slopes; a Hapuatuna hill soils narrow strip along the southern shore of Paterson Inlet, and iron-rich B horizons lacking a not necessarily in response to rock; iron-rich B horizons change of slope. lacking iron pans; clayey sub-8 cm brown silty clay loam, distinct iron pan. south-west of the Freshwater on weathered schist. Valley. Below 300 m elevation Thick A horizon; iron-rich B horizon with distinct iron pan; yellowish brown or olive yellowish yellowish yellowish brown or olive yellowish yellowish yellowish yellow Rimu, rata, kamahi, fern 5 cm 15 cm dark reddish brown peaty silt loam, 6 cm 5 cm very dusky red and yellowish red, Rolling dissected lowland: 3H Diorite Rakiura soils Rakiura hill soils on moderately steep slopes; north of Paterson Inlet. Below brown subsoil colours; silty (1 cm) iron pans occur; hill development; thick dark redabout 350 m elevation soils were observed near Half dish brown A horizons; and sandy clay textures; moderately developed strucundulating, strongly cemented Moon Bay with sola about yellowish brown or olive iron pan,
28 cm pale olive brown mottled gravelly tures; thick solum (90-150 | 150 cm thick; unit includes a | brown subsoil colours. sandy clay loam,
18 cm pale olive brown mottled sandy cm) even on moderately small area of soils formed on amphibolite, near Saddle Point on the north-east coast. steep slopes in central part of clay loam, on weathered diorite. Thick A horizons; iron-rich B South of Paterson Inlet, hill soils Lowland situation; podocarp/ horizons with distinct iron do not have well developed dicotylous forest; granite Rimu, kamahi, rata, fern 1 cm litter, 9 cm dusky red humic silt loam, Rolling dissected lowland: 4H Granite Paterson soils Paterson hill soils on moderately steep slopes; pan, except in some places on 30 cm very dusky red humic silt loam, west of Freshwater Valley and south of Paterson Inlet. 23 cm greyish brown gravelly silt loam,
5 cm dark reddish brown hard iron pan, moderately steep slopes south of Paterson Inlet; yellowish zolised yellow-brown earths; development in most soils yellowish brown and yellow sub-Below about 300 m elevation 15 cm strong brown gravelly silty clay brown and yellow subsoil some profiles similar to those soils; gravelly textures; incolours and gravelly textures; characteristic of Waianiwa solum 60-120 cm thick; in-soils are inclusions in this unit. loam, 18 cm+ yellowish brown very gravelly cipient A₂ horizon developed Rolling dissected coastal bench | Dioritic sediments, prob- | Rata, kamahi, rimu Peaty A horizon; silty and clayey In some profiles A horizon is Coastal bench situation; podo-5 cm litter. Yankee soils remnants; north coast of Island textures; thin, discontinuous dark brown silt loam, and carp/dicotylous forest; dioritic iron pan; yellowish brown iron pan is incipient and iden-20 cm very dark brown peaty loam,
18 cm dark brown peaty silt loam,
15 cm pale olive brown gritty silt loam, tified only by abundant veloped iron pan. 0.5 cm thin, discontinuous iron pan, mottles. on vellowish brown clay loam Thick peaty A horizon; thin iron | Under manuka stands, A hori- | Coastal bench situation; vegeta-Rolling dissected coastal bench Granitic sediments, probremnants; east coast, south of ably of Pleistocene age lum spp., manuka 6 cm litter, dark reddish brown loamy peat, 6 Kaihuka soils pan; strong brown to yellow sandy C horizons.

zons are not peaty and profile consists of dark brown silt loam separated from yellow
zons are not peaty and profile tion dominated by Senecio sp. or manuka; granitic parent material; distinct thin iron remnants; east coast, south of Pleistocene age lum spp., manuka Paterson Inlet 20 cm very dark brown peaty silt loam, 8 cm dark brown humic silt loam, ish brown fine sandy clay pan; peaty A horizon. I cm yellowish red iron pan, on yellowish brown sandy loam. loam by a distinct thin iron STEEPLAND SOILS RELATED TO SOUTHERN PODZOLISED YELLOW-BROWN EARTHS Profile characteristics similar to those of Profile characteristics similar to Profile characteristics similar to Steep slopes; lowland situation; 2135 (5285) Steep slopes; along southern Schist shore of Paterson Inlet. Kamahi, rimu, rata Hapuatuna and Hapuatuna hill soils (2, 2H). those of Hapuatuna and Hapuatuna and Hapuatuna hill soils (2, 2H). Hapuatuna hill soils (2, 2H). Schist parent rock. Below 300 m elevation 2560 (6345) Similar to Rakiura and Rakiura | Iron pan not present in all pro- | Steep slopes; lowland situation; | Rimu, rata, kamahi, fern 30 cm brown peaty silt loam, Steep slopes on dissected low-lands; north of Paterson Inlet. Below about 350 m elevation 3**S** Bungaree steepland 15 cm brown heavy silt loam, 3 cm yellowish red weakly cemented iron files; solum commonly 120–150 cm thick. podocarp/dicotylous forest; hill soils (3, 3H). diorite parent rock. 60 cm yellowish brown silty clay loam, 15 cm yellowish brown gravelly heavy silt on weathered diorite 5875 (14 535) Rimu, kamahi, rata, fern Profile characteristics similar to those of Profile characteristics similar to Profile characteristics similar to Steep slopes; lowland situation; Pikaroro steepland soils Steep slopes on dissected low- Granite those of Paterson and Pater- those of Paterson and Pater- podocarp/dicotylous forest; lands; west of Freshwater Valley, and south of Paterson Paterson and Paterson hill soils (4, 4H). granite parent rock; distinct profile differentiation. Inlet. Below about 300 m INTERGRADES BETWEEN SUBALPINE PODZOLISED YELLOW-BROWN EARTHS AND ORGANIC SOILS Weakly differentiated, shallow Profiles in which iron pan and High country (subalpine) situa-Leatherwood, bog pine, 20 cm loamy peat litter, dark brown peaty silt loam, Rolling dissected high country: Diorite profiles; high content of organic matter; weakly developed iron pan near base of were recorded near summit of differentiated profiles with 2455 (6080) 7H on moderately steep slopes; north of Paterson In-Anglem hill soils on brittle iron pan on the surface of let. Above about 350 m eleva-Mt Anglem (about 980 m | high content of organic decomposing diorite. elevation), under subalpine matter; silty textures; thin dary with underlying rock; diorite parent rock. STEEPLAND SOILS RELATED TO INTERGRADES BETWEEN SUBALPINE PODZOLISED YELLOW-BROWN EARTHS AND ORGANIC SOILS Leatherwood, bog pine, Profile characteristics similar to those of Profile characteristics similar to Profile characteristics similar to Steep slopes; high country (sub-Murray steepland soils | Steep slopes on dissected high | Diorite those of Anglem and Anglem hill soils (7, 7H).

those of Anglem and Anglem hill soils (7, 7H).

alpine) situation; leather-wood/manuka vegetation; di-Anglem and Anglem hill soils (7, 7H). country; north of Paterson Inmanuka let. Above about 350 m elevaorite parent rock. INTERGRADES BETWEEN SUBANTARCTIC TO SOUTHERN PODZOLISED YELLOW-BROWN EARTHS AND ORGANIC SOILS Thick reddish peaty litter; peaty In some places there is a thin Lowland situation; podocarp/ Rolling dissected lowland: 8H or moderately steep slopes; south-west of Paterson Inlet. Tin Range, possibly moss Substitute of Paterson Inlet. South-west of Paterson Inlet. Tin Range, possibly moss Substitute of Paterson Inlet. Substitute of Pate A horizon textures; silty or yellowish brown gritty silt or dicotylous forest; granite sandy subsoils; little colour sandy loam horizon im- parent rock; thick peaty litter Waianiwa hill soils differentiation throughout mediately above the granite; horizons; little colour differen-10 cm dark brown humic sandy loam, in the vicinity of Port Pegasus, tiation throughout profiles; Below about 300 m elevation granitic alluvium thick peaty A horizons are profiles with dark reddish developed; litter horizons are brown and dark brown and humus-enriched weathered thinner in hill soil profiles. colours are predominant: STEEPLAND SOILS RELATED TO INTERGRADES BETWEEN SUBANTARCTIC TO SOUTHERN PODZOLISED YELLOW-BROWN EARTHS AND ORGANIC SOILS Kamahi, rimu, totara, Coprosma spp., fern, moss

Kamahi, rimu, totara, Coprosma spp., fern, moss

Profile characteristics similar to those of Waianiwa and Waianiwa hill soils (8, 8H).

Profile characteristics similar to those of Waianiwa and Waianiwa hill soils (8, 8H).

Steep slopes; lowland situation; podocarp/dicotylous forest; grante parent rock; indistinct Steep slopes on dissected low- Granite lands: south-west of Paterson Inlet. Below about 300 m INTERGRADES BETWEEN SUBANTARCTIC TO SOUTHERN YELLOW-BROWN EARTHS AND ORGANIC SOILS | Dracophyllum spp., Hebe | 13 cm | dark reddish brown fine sandy | Shallow profile; dark reddish brown 15 | brown and dark brown to 40 cm. veloped horizons; valley floor Low knolls about 1.5 m above tussock, Gaultheria 10 cm dark brown sandy loam, colours and sandy textures; weathered granite at shallow spp., fern, moss on granite. over very weakly weathered INTERGRADES BETWEEN SUBALPINE YELLOW-BROWN EARTHS AND ORGANIC SOILS Manuka, leatherwood, Dracophyllum spp., 10 cm wery dark brown peaty fine sandy high organic content; sandy lies a horizon of dark greyish tion; manuka/leatherwood Manuka, leatherwood, Rolling and undulating dissected. Granite high country: 10H on modermoss, sedges textures. 70 cm+ very dark brown fine sandy loam. tiated profiles with high con-Paterson Inlet. Above about tent of organic matter; sandy location and above about 250 lacks an iron pan. m in south STEEPLAND SOILS RELATED TO INTERGRADES BETWEEN SUBALPINE YELLOW-BROWN EARTHS AND ORGANIC SOILS Manuka, leatherwood, Dracophyllum spp., moss, sedges

Menuka, leatherwood, Dracophyllum spp., moss, sedges

Profile characteristics similar to those of Kopeka and Kopeka hill soils (10, 10H).

Profile characteristics similar to those of Kopeka and Kopeka hill soils (10, 10H).

Steep slopes; high country (subthose of Kopeka and Kopeka hill soils (10, 10H). granite parent rock. Inlet. Above about 350 m elevation in north and above about 250 m in south ORGANIC SOILS—SUBANTARCTIC TO SOUTHERN BLANKET PEATS Manuka, Dracophyllum spp., Hebe spp., tussock, Carex spp., flax, Cassinia spp.

Manuka, Dracophyllum 13 cm very dusky red loamy peat, dark reddish brown peaty loam, brown peaty loam, About 60 cm of dusky red and In associated wetter depressions | Lowland situation in southern Undulating, dissected lowland; Organic material 11**H** dark reddish brown loamy peat and peaty loam; over unfrom 60 to more than 120 cm
to underlying reach
to underlying reach
to underlying reach
to underlying reach 11H on moderately hilly Pegasus hill soils slopes; coastal location in vicinity of Port Pegasus weathered granite. to underlying rock. Cassinia spp. ORGANIC SOILS—SUBALPINE BLANKET PEATS Weakly differentiated peat pro-files.

In some places, north of Pater-son Inlet, there is an iron pan between the peat and the sand; peat thickness varies from 25

High country (subalpine) situa-tions; peat texture; weakly differentiated profiles; sandy lower horizons. Flat to undulating, weakly dis- Organic material over Moss, Senecio spp., tus-sock, manuka, sedge, 65 cm dark reddish brown loamy peat, Dracophyllum spp., 15 cm pale grey sand, sected high country: 12H on granite, diorite, quartmoderately steep slopes; on mountain crests. Above about to 120 cm with the thinner 450 m elevation in north and peat commoner on moderately above about 330 m in south steep slopes. ORGANIC SOILS—BASIN PEATS Juncus spp., Phormium spp., Carex spp., moss, manuka

25 cm black peat; weakly decomposed, most places; lower horizons are more decomposed than location; peat to considerable about 3 m.

Peat is at least 150 cm thick in most places; lower horizons are more decomposed than location; peat to considerable depths. 13 Gently undulating surface of Organic material raised bog; in Scott Burn Valley upper horizons. Flat; swampy hollows on flood plains; Rakeahua Valley; floors of small valleys; in Deceit Peaks region and Conserve September 19 and Deceit Peaks region and Conserve September 19 and Deceit Peaks region and Conserve September 19 and Conserve September Kini soils 14 strongly and very strongly de-composed. Deceit Peaks region, and Coprosma spp., tuson compact horizon, possibly sand. YELLOW-BROWN SANDS Marram grass, bidibidi, toetoe, Juncus spp., 75 cm dark grey slightly loamy sand, brown sand, Weakly differentiated profiles; These soils include raw mobile Dune landform; sandy textures; Indulating and rolling fixed or Wind-blown sand sand that is sparsely vegetated well drained. Riverton hill soils stabilised sand dunes; 15H on greyish brown sand. and adjacent to the coast, insands, yellow-brown sands particularly in Mason Bay intergrades to sand podzols included are soils comprising wind-blown sand over schist or diorite, along the north coast, and soils on loess, near The Neck. STEEPLAND SOILS RELATED TO YELLOW-BROWN SANDS Marram grass, bidibidi, toetoe, muttonwood Riverton and Riverton hill soils (15, 15H).

Profile characteristics similar to those of Riverton and Riverton hill soils (15, 15H).

Steep slopes; dune landform; those of Riverton and Riverton hill soils (15, 15H). 15S Kilbride steepland soils | Steep slopes on sand dunes; | Wind-blown sand along west and north coasts, INTERGRADES BETWEEN YELLOW-BROWN SANDS AND PODZOLS Flat to rolling; uneven, hummocky surface of flattened
dunes; in Freshwater and
Scott Burn Valleys, and parts

Flat to rolling; uneven, hummocky surface of flattened
dunes; in Freshwater and
Scott Burn Valleys, and parts

Flat to rolling; uneven, hummocky surface of flattened
dunes; in Freshwater and
Scott Burn Valleys, and parts

Flat to rolling; uneven, hummocky surface of flattened
dunes; in Freshwater and
Scott Burn Valleys, and parts

Flat to rolling; uneven, hummocky surface of flattened
dunes; in Freshwater and
Scott Burn Valleys, and parts

Flat to rolling; uneven, humably modified by alluvial processes

Mind-blown sand, probsand; crumb structure,
sand; crumb structure,
brown firm sand; blocky structure,
dark reddish brown firm sand;
brown sand and podzols; a
colours; intricate of low relief; on
terraces; sandy textures;
brown and and podzols; a
colours; intricate pattern of
dark brownish grey friable loamy
sand; crumb structure,
dark reddish brown firm sand;
brown sand and podzols; a
colours; intricate pattern of
dark brownish grey friable loamy
sand; crumb structure,
sandyloam A horizons in more
strongly developed soils; brown, reddish brown, and yellowish brown colours pre- than that of the representative in most places. blocky structure, 8 cm brown firm sand; blocky structure. dominate. Unit includes yellow-brown sands, podzols, and intergrades between these 33 cm dark reddish brown silt 13 cm strong brown firm sand; blocky 25 cm + brownish yellow friable sand. groups in complex associations. loam, 1 cm dark reddish brown ironhumus pan, 38 cm yellowish red iron pan, 25 cm strong brown sand. ALPINE SOILS Predominantly bare rock with No significant variations were Bare rock. Moss, cushion plants, but Thin sandy A horizons on bare rock. Rolling surfaces of exfoliating Granite or diorite 6000 (14 855) 17**H** Benbecula hill soils scattered angular blocks. domes: 17H on moderately mainly bare of vegetasteep slopes of domes STEEPLAND SOILS RELATED TO ALPINE SOILS 17S Mainly bare of vegetation | Predominantly bare rock. Predominantly bare rock. No significant variations were | Steep slopes; bare rock. Alpine steepland soils On steep mountain slopes. Granite or diorite Above about 750 m elevation levels near Frazer Peaks GLEY SOILS Little colour differentiation; Peaty loam textures occur in the with dark greyish brown and dark brown colours predark brown colours 4365 (10.810) Flat, low-lying flood plains and Alluvium derived pre- Red tussock, Dracophyl-6 cm pale brown peat, Freshwater soils low terraces; Freshwater Valley and small valleys along rite, with contributions manuka, moss 22 cm very dark greyish brown slightly manuka, moss very dark greyish brown slightly rite, with contributions manuka, moss dominant; peaty silt loam over silty clay loam textures; loam and silty clay loam drained, having swamp vegeta-tion; textures predominantly 18 cm dark brown slightly sticky and southern shore of Paterson from granite and schist plastic humic silt loam, 23 cm+ dark greyish brown slightly sticky underlain in some places by throughout. silty in upper horizons; lacks distinct profile differentiation: and plastic coarse sand. sand; consistences sticky and predominantly dioritic alplastic throughout; up to 8 cm of peaty litter commonly Thick peaty A horizon; under-lain by gleyed horizons; silty and clayey textures; little

Poor drainage, possibly induced by a hard, 30 cm thick iron-humus pan occurring about poorly drained.

Terrace landform; lack of dis-tinct profile differentiation; poorly drained. Flat and gently undulating, dis- Pleistocene alluvium de- Manuka, Dracophyllum 30 cm dusky red peaty silt loam, Scott Burn soils sected terraces; Freshwater rived from diorite 53 cm very dark greyish brown humic silty clay loam, 2.5 m below the surface; in 30 cm very dark grey silty clay loam, colour differentiation. 28 cm + dark grey silt loam to silty clay better drained locations, there is a thick dark reddish brown humic silt loam A horizon, over pale yellowish brown sand; yellow-brown sands occur on the steep dissected terrace scarps. RECENT SOILS Flat and gently undulating, flood plains and low terraces; Alluvium derived predominantly from diorite flood plains and low terraces; Alluvium derived predominantly from diorite flood plains and low terraces; Alluvium derived predominantly from diorite flood plain from silt loam; blocky structure.

Thick brown and dark brown silt loam to silt clay loam from silt loam to silt clay loam from silt loam; blocky structure. Topeheti soils Coprosma spp., fern, upper horizons; firm; with strongly developed blocky structure; over yellowish textures are sandy and consis-18 cm dark brown firm silty clay loam; Freshwater Valley, Scott Burn, small valleys along north and blocky structure. 50 cm+ yellowish brown silty clay loam. east coasts brown silt loam to clay loam tences are friable.

subsoils.

Flat and gently undulating, Alluvium derived pre- Rata-kamahi forest, with 3 cm very dark brown silt loam,

fern understory

flood plains and low terraces: dominantly from

eastern part of island south granite

supplejack and crown 23 cm very dark greyish brown sandy

silt loam,
on brown sandy loam becoming sandier with depth.

Tikotatahi soils

Very dark brown or dark brown silt loam A horizons; over-horizons, over heavy silt loam, Flood plain—low terrace situation; brown and yellowish

brown subsoils; well drained

in most places; granitic al-

luvium; textures predominantly silty; lacks B horizon.

lying brown or yellowish are common in poorly drained

brown weakly compact C hori- locations.

zons of heavy silt loam or