GROUP/UNIT[1]	MATERIALS DESIGNATOR[2]	TOPOGRAPHY, LANDFORM GENESIS[3]	DRAINAGE, ACTIVE LAYER PROCESSES AND MICRORELIEF[4]	SURFICIAL MATERIALS[5]	GROUND ICE[6]	VEGETATION[7]	SENSITIVITY[8] Magnitude	Form	TRAFFICABILITY[9] Roughness	Traction
9		Altitude: 0-700' (0-210 m). Overall low rolling: gentle slopes, some level areas; locally moderate to steep and cliffed slopes to generally NE trending streams and on seaward margins of group above moderate to level zone of raised marine sediments. Surface noticeably less knobby below ca. 150 m, probably due to repeated marine submergence (see group 3). Material intermixed fine grained to bouldery residual and glacial deposits; below ca. 150 m reworked or washed by marine processes. Scattered outcrop of underlying clastics, particularly more indurated sandstones and siltstones. Small areas of coarse grained glacial or preglacial deposits. Underlain by folded, N/S striking poorly to well consolidated clastics. Coastal zone of modern and raised medium to coarse grained marine, deltaic and fluvial sediments. Zone from few metres to 1 km wide N of May Pt; much broader (to 4 km) S of May Pt.	Drainage varies from good to poor on level to moderately sloping residual and glacial deposits which cover most of the group. Drainage of level areas fair to poor, via wedge troughs, with ponding over ca. 5% of area of 9.2 and 9.3. Drainage via seepage lines and troughs on gentle to moderate slopes, with minor gullying adjacent to main streams. Masswasting chiefly in the form of solifluction on moderate and steeper slopes, though not generally active enough to obscure wedge troughs. Hummocks general over group, except raised marine sediments and outcrop. Ice-wedge networks general, with troughs shallow, low amplitude; locally thermally enlarged on flats where drainage impeded. Drainage of marine sediments fair to good via subsurface seepage to close-spaced stream network. Beach ridges where present rarely impede drainage. Active layer maximum thickness: 30-50 cm; to 70 cm on coarse beach sediments; to 20 cm or less where ponding occurs on surface.	Chiefly fines, sand, gravel including boulders, intermixed; relative ratio not known. Residual and glacial deposits marine washed or reworked below ca. 150 m. Thickness generally 2 m+; local areas of much thicker coarse grained glacial or pre-glacial deposits. Colluviated materials on moderate or steeper slopes. Coastal sediments chiefly sand, some silt, with gravel dominant where sediments adjacent to group 1. Underlain, at least at May Pt and to N, by fines. Mainly beach or nearshore sediments, with areas of similar textured deltaic and fluvial sediments. Underlain by generally poorly consolidated KTe, Kk, Kh, Kc clastics. Scattered outcrop of sandstone, siltstone, shale, on steep and cliffed slopes, and in areas above 150 m.	Ice-wedge network over most of group. Few observations of other excess ice. Probably 25-50% over much of group; higher where drainage impeded or slope base seepage continues through summer. Lower in coarse grained deposits.	a. Well drained materials: 1. Salix-Alopecurus barrens as in 8.a. on fine grained materials. 2. Salix-Saxifraga oppositifolia barrens similar to 5a on gravels, with Salix being more common. 3. Very dry & wind-blown areas devoid of vegetation. b. Moderately drained materials: Salix-Dryas dwarf shrub communities as in 3b. with shrub layer usually less than 20%. Moss layer is generally reduced (to <30%) as well. c. Poorly drained materials: sedge & grass wet meadows as in 3.c.	2	abc	2 Lower values on coastal sediments	3/2
9.1	fgb / s̸ M? + ? + RC / ^{KTe}R fgo? ^{KTe}CR	0-550' (0-165 m). Level, to gently sloping low rolling topography over half of unit; gentle to moderate slopes over much of remainder (mainly long >1 km valley slopes). Areas of moderate to steep cliffed concave slopes on seaward margins of unit; also adjacent to incised streams. Much of unit probably mantled by fine to coarse grained washed glacial deposits and glacially and marine reworked residual material over KTe clastics. Similar colluvially worked material on seaward slopes; some outcrop on steeper upper slopes and in deeper gullies. Discontinuous marine sediments, including beaches, at lower elevations.	Drainage fair, locally poor, over most of unit; see 9. On moderate to steep slopes, drainage good to fair; via shallow channels or seepage lines on moderate slopes, trending to close-spaced gullies as slope steepens. Solifluction lobes widespread, but not obviously active, as ice-wedge network over >25% of area.	Fine sand, silt, lesser clay intermixed, with up to 50% volume pebbles and boulders derived from a variety of clastic, igneous and carbonate rocks. Probably represents marine washed or reworked glacial and residual materials, >2m thick. Overlying inclined poorly to well consolidated KTe clastics. Colluvium on slopes thin (0-2m?) on upper segments, thick towards slope bases. Outcrop of sandstone and siltstone on upper slopes and in deeper stream incisions. Sand and silt fluvial sediments in lower elevation stream floors.	Ice-wedge network general, except on steep slopes. No other observations of excess ice; probably 25-50%. Higher values where drainage poor: i.e. flats, or in seepage areas at slope bases.	* 20% Salix-Dryas / 30% moss Local sedge-grass wet meadows on poorly drained materials.	3	Abc	2	3/2
9.2	fgb? $^{KTe-Kc}$RC + M? s̸or ^{KTe}RC, CR	0-700' (Chiefly >400') (0-210 m). Gentle slopes, some moderate, locally steep or cliffed; variable from long slopes (> 1km) to knobby terrain. Steep or cliffed slopes in part dissected by gullies, locally to 50 m deep. Fine to medium minor coarse residual and glacial material, colluvium; outcrop of sandstones, siltstones some shale and coal.	Drainage good to fair, locally poor, over most of unit; see 9. Drainage good to fair on steep and cliffed slopes, via deep gullies and ravines; seepage lines, runnels, local gullying on moderates slopes. Masswasting general, by solifluction; some talus slopes. Ice-wedge network over <20% unit.	Partially mantled by glacial deposits of fines, sand, pebbles and boulders. Outcrop in knobby terrain and in cliffs. Probably chiefly fines, sand residual material and colluvium 0-3 m thick; over poorly to partially consolidated Kc, Kh, Kk and KTe fine to medium grained clastics.	See 9.1	* 20% Salix-Dryas / 10% moss Local Salix-grass barrens on well drained materials. Very dry areas devoid of vegetation.	2	abc	2	3/2 2/1 (Over coarse to medium grained outcrop.)
9.3	sgf P? + M?	400-600' (120-180 m). Level to gently sloping, local steep bluffs to 5 m high. Chiefly medium to coarse-grained deposits thought to be pre-Pleistocene gravels and/or glacial deposits.	Drainage good to fair, generally unconfined or via wedge troughs; local seepage lines and ponding in troughs. Some solifluction lobes on slopes. Ice-wedge networks general, with shallow, narrow to wide, troughs.	Sand, gravel, boulders, lesser fines; intermixed; > 2m thick.	Ice-wedge network general. No other observations on excess ice.	* 5-10% Salix-Sax. opp. barrens. Local areas devoid of vegetation.	2	b	1	3/1
9.4	sg/fs, g, s ɱb, Fd	0-400' (0-120 m). Gentle sloping, locally level or moderate sloping, marine sediments. Crossed at 0.1 to 1 km intervals by streams incised 1-20 m. Chiefly flights of coarse or medium grained raised beaches, with ridges to 50 cm high, overlying finer nearshore sediments. Unit includes fluvial deltas, which merge laterally into marine sediments. Delta materials and stratigraphy similar to beaches.	Well drained by streams crossing from inland units, by some seepage lines, and by unconfined subsurface seepage. Beach ridges generally too low, and overall slope to shore too steep, for ponding to occur in swales. Masswasting (solifluction, some slumping or flowslides) confined to stream cuts, or to steep slopes at inland margins of unit. Ice wedges general; troughs shallow, narrow to broad.	Beaches and deltas chiefly sand, lesser gravel and silt. Where adjacent to group 1, predominantly gravel. Probably 0.5-2 m thick, overlying marine silts and clays. Little difference in texture between ridges and swales.	Ice wedges general. Other excess ice: probably 0-25% in coarse materials; 25-100% in fines.	* <10% Salix-Alopecurus barrens. Eolian modified communities as in 3.d. at coast. Some eolian areas devoid of vegetation.	1	bc	2	2-1/1
9.5	sf? ɱ + ɱb + Fp	0-200' (0-60 m). Gently inclined to level, smooth-surface marine nearshore sediments. Crossed by streams at 50-500 m intervals, either flowing flush with general surface, or incised not more than 2 m. Streams may expand into braided fans on entering the unit. Chiefly sand, possibly fines or gravel locally.	Drainage generally good to fair, by streams crossing unit, or by unconfined or ice-wedge trough seepage. Low beach ridges at N end of unit locally impede drainage, causing ponding in swales. Sand windblown near tidewater. Ice-wedge network general; narrow shallow troughs.	Marine nearshore sediments; chiefly sand, possibly areas of fines. Gravel and sand beach ridges locally, and gravel, sand, fines in channels of streams originating outside of this unit. Depth to and character of underlying sediments not known.	Ice-wedge network general. No observations of other excess ice.	* 10-20% Salix Dryas / 20% moss Local sedge-grass wet meadows where drainage is poor. Eolian areas devoid of vegetation.	2	ab	1	2/2-1

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10		Altitude: 0-4250' (0-1300 m). Mountain ridges trending N-S, and dissected uplands and plateaus. Generally rugged terrain, with a large proportion of moderate and steep slopes. Landforms are chiefly the result of subaerial erosion; locally glacial erosion, fluvial deposition. Residual material and colluvium dominant. Less than 1% of group below Holocene or earlier marine limit. Much of group developed on uniformly W-dipping Triassic clastics, with shale dominant in east, and sandstone to west, into which gabbro sills have intruded. Sills core the series of strike-trending homoclinal ridges; intervening clastics, particularly the shales, have been deeply eroded to provide local relief commonly >300 m. To W and SW of group, predominantly sand-size clastics are flat lying to gently dipping. Locally planed at ca. 500 m elevation, with discontinuous cover of Pleistocene or earlier gravels (see also group 5). The main strike-aligned and transverse valley systems have been enlarged and overdeepened by glacial erosion, and subsequently in part drowned (Whitsunday Bay, Mokka Fiord; Buchanan Lake is in a transverse valley). Valley sides are steep, often cliffed to 1000 m in height. Headward fluvial erosion (considerably aided by glacial meltwater) has incised tributary valleys, particularly into the plateau in W of the group. Major valleys/troughs have been partially infilled by fluvial sediments. This group includes several diapirs (unit 10.12), or evaporite injection domes, which stand out due to the ruggedness of relief, and the high albedo.	The group is generally well drained subsequent to general snowmelt, but note: a) Local gentle slopes to flats, on fine grained materials, may be imperfectly drained following extended rainfall. b) Seepage continues through the summer, at the base of the many long steep slopes c) Snowmelt period not synchronous over the group, due to: (i) range of elevation in the group (ii) cliffs provide shade (iii) deep snowdrifts common in gullies, as snow blows off ridges. Mass wasting active over a large proportion of the group a) on steep slopes, mass movement highly active. Colluvial fans and talus, rockslides. b) Coarse materials on moderate and some gentle slopes commonly formed into close spaced compact solifluction lobes (centred every 10-20 m). Little downslope elongation, therefore not highly active. Elongated solifluction lobes scattered - though not common - on finer materials. c) Featureless 'sheet' solifluction common elsewhere; usually seepage lines also. Rate variable, as ice-wedge networks able to develop locally. No data on depth of active layer. Cf. group 1	Chiefly residual material, lesser colluvium; colluvium and outcrop on steep slopes; fluvial sediments infilling main valleys. E half of group underlain by W-dipping well to poorly consolidated shale and siltstone, which weathers to platy fragments, lesser fines. Gabbro sills provide strike aligned bands of blocky rubble. W half of group underlain by W-dipping to flat-lying well to poorly consolidated sandstone, poorly consolidated shale, weathering to sand and rubble, sand, or fines. Unconsolidated mantle probably generally > 2m thick; fresh or slightly weathered outcrop is rare. Steep slopes transect the variety of lithologies already noted. Upper and mid slopes are usually a mixture of fresh to highly weathered outcrop, residual material, and colluvium. Lower slopes chiefly > 2m of colluvium (rubble to clay size) with areas of coarser fluvial sediments. Fluvial valley fill of sand and gravel or gravel.	Ice-wedge polygon network common on level to gently sloping surfaces of all textures with the exception of active channel zones. Discontinuous networks probably present over > 50% group. No observations of other excess ice. Values generally probably 0-25%. Higher values, 25-75%?, likely in fine grained materials, and in thick colluvial materials on lower segments of slopes.	* a. Much of the area, regardless of drainage, is devoid of vegetation, especially above an altitude of 250 m. * b. Saxifraga oppositifolia - herb & Saxifraga-grass barrens are the most common plant communities. Composition is similar to that of 14.b. At lower elevations (<180 m) Salix arctica may be present. c. On local, moderately drained, low level terraces, Salix-Dryas dwarf shrub communities such as in 5.b. occur. d. On poorly drained materials above 200-300 m, moss-liverwort bryophytic communities are found on seepage lines & adjacent to snowbeds. Vascular plants are rare. Below 300 m grasses, Ranunculus sp. Saxifraga sp. Oxyria digyna may be found regularly in the bryophytic community. e. On poorly drained terraces, sedge-grass wet meadows, similar (though less than 20% monocot) to 5.c. are found.	Great variation between units		2-3	
10.1	ro, rf $^{I-Tba}$RC, ^{Tba}CR	2000-4250' (610-1300 m). Narrow (2-4 km wide) N-S trending mountain belt with ca. 600 m of relief on which are superimposed ranks of similarly trending sharp-crested ridges commonly 100-200 m high. This belt is transected by valleys, cut below 600 m altitude, at ca. 15 km intervals. The superimposed ridges are transected by valleys at ca. 1-5 km intervals. Ridge slopes (50% unit?) are steep to moderate; lower slopes of intervening and transverse valleys generally gentle to moderate. A few small to (3 km^2) glaciers above 900 m altitude.	Drainage good, unconfined, on coarse ridge flanks; fair, poor for duration of snowmelt in valleys, via seepage lines and runnels. Compact solifluction lobes on coarse materials (see 1.) talus rare.	Unit developed on uniformly W-dipping Trba shale, lesser siltstone, intruded by gabbro sills totalling 10-20% of the thickness of the formation. Ridge flanks are residual material and colluvium, including gabbro rubble and shale fragments, lesser outcrop. Gentle to moderate intervening slopes mantled with colluvium, chiefly fine grained materials.	Ice wedges locally, on fine grained materials. Other excess ice See. 1.	* Most of area devoid of vegetation - especially mid to upper slopes and ridge crests. Local Saxifraga oppositifolia - herb barrens on some lower slopes. Seepage lines sometimes support bryophytic communities.	1 - ridges - c 3 - valleys abc		3 2	2/1 3/2
10.2	rfo ^{Tba,Tbl,I}CR, RC	700-3000' (210-910 m) Rolling to hilly terrain, partially dissected by broad deep valleys. Long gentle and moderate slopes, locally steep; local relief to 300 m.	Drainage fair to good, poor during snowmelt; via numerous seepage lines and runnels. Solifluction lobes, commonly elongated downslope, on fine grained moderate slopes. Local areas of compact lobes (see 1) on coarse material. Ice-wedge troughs rarely visable on air photos: probably quite common but subdued by solifluction.	Unit developed on W-dipping Trba and Trbl, shale, siltstone <5% gabbro sills. Colluvium, lesser residual material, of platy to blocky shale and siltstone fragments, plus fines which may be locally dominant. Gabbro blocks where sills outcrop (< 5% unit).	Ice wedges possibly over 25-50% unit. Other excess ice, see 1.	* Most of area devoid of vetetation. Local Saxifraga-Alopecurus barrens on lower slopes. Bryophytic communities occasionally on seepage lines.	3	AbC	2	3/2
10.3	rfo, rso, or, $^{Ki-Tbl,I}$CR, RC & CF	10-3000' (30-910 m). Long slopes, generally >300 m, locally to 1000 m high; steep, commonly cliffed over much of their length, however moderately inclined segments common at the base. Chiefly flanks of glacial troughs (see 10.), cut through a variety of lithologies. Deeply incised fluvially eroded tributary valleys to fiord system also included in unit. Much of unit fluted by gullies, ravines, with fresh to highly weathered outcrop alternating with talus, colluvial fans. Lower slopes usually mantled by thick unconsolidated materials, including coalescing fluvial fans, solifluctiing colluvium. Large areas are separated out as unit 10.4	Drainage good on upper slopes, via gullies, ravines, unconfined seepage. Drainage fair to good, locally poor, on lower slopes; seepage may continue locally through summer, below snowpatches, and in fan channels. Mass wasting highly active. Talus and colluvial fans common. Rockslides common adjacent to Buchanan Lake. Solifluction lobes on moderate slopes.	Unit developed chiefly on Triassic formations (Trba, Trbl, Trh). Includes well to poorly consolidated sandstone, siltstone, shale; also resistant gabbro sills. Fresh to highly weathered outcrop in upper slopes; otherwise colluvium, minor fluvial deposits, of rubble with sand or fines (see materials underlay).	No observations of excess ice, however values > 25% probable in thick colluvial mantle of lower slopes.	* Most of area devoid of vegetation. Local bryophytic communities on seepage lines.	3	AbC	3	2/2
10.4	fr, rf C + Ff	500-2000' (150-610 m). Gentle and moderate slopes, rectalinear to gently concave profile, 0.5-2 km long. Colluvial deposits and coalescing fans at base of slopes of unit 10.3, where toe of slope is not drowned, or under-cut by river channels.	Drainage fair, via seepage lines and runnels. Poor during snowmelt, and seepage from 10.3 often continues through summer. Mass wasting particularly active on moderate slopes. Solifluction lobes common on coarser materials (other than fluvial fans). Wedge troughs discontinuous on those gentle slopes which are well drained, and on which solifluction is not very active.	Platy shale and siltstone fragments, blocky gabbro rubble, and fines; derived from upslope Trba and Trbl Formations. Thickness generally >2m; minor outcrop.	Scattered ice-wedge polygon networks. Other excess ice values expected >25%.	* Most of area devoid of vegetation. Local bryophytic communities on seepage lines.	3	AbC	2	3/2
10.5	srfo ^{Trh}RC	1000-3000' (300-910 m). Rolling plateau, with long slopes (commonly >2 km), chiefly gently inclined. Moderate to steep slopes in scattered incised drainage lines, and on knobby gabbro- Unit generally residual material, lesser colluvium, underlain by W-dipping Trh Formation, chiefly sandstone.	Drainage good, locally fair to poor; generally via seepage lines, runnels. Solifluction lobes over 25-50% unit. Low amplitude wedge trough networks discontinuous.	Residual material and colluvium, generally 0-2 m thick. Lag rubble over sand, rubble (sandstone, gabbro, some shale fragments), minor silt and clay. Minor outcrop of well consolidated sandstone, and gabbro sills.	Ice-wedge network possibly over 50% unit. Other excess ice probably <25%	* <10% Saxifraga oppositifolia - herb barrens. Some areas devoid of vegetation.	2	abc	2	2/2
10.6	gs P	ca. 1500' (460 m). Level to gently rolling smooth mesa-like surfaces, commonly edged by steep slopes or cliffs. A few steep sided incised glacial drainage channels. Remnants of coarse grained Pleistocene or earlier fluvial sediments (see materials legend).	No organised drainage on flats; seepage lines on slopes. Generally well drained subsequent to snowmelt.	Gravel, boulders, sand, silt intermixed. Commonly > 5 m thick, overlying generally poorly lithified Jurassic and Cretaceous clastics.	Discontinuous ice wedge networks. No other observations of excess ice.	* <20% Saxifraga oppositifolia - herb barrens. Local bryophytic communities on seepage lines.	1	b	1	2/1
10.7	sfr, s? $^{Ki-Ja}$RC, R	ca. 1500' (460 m). Level to gently rolling smooth surfaces, partly bordered by steep slopes or cliffs. Residual poorly consolidated Mesozoic clastics, probably remnants of erosion surface underlying Pleistocene or older gravels (see 10.6).	Drainage good to fair, via wedge troughs, some seepage lines. Poor on extensive flats. Ice-wedge troughs general; enlarged by ponding and melting on flats.	Residual material, probably sand, lesser silt, minor clay, scattered gravel remnants. Overlying flat to gently inclined sandstone, lesser siltstone and shale.	Ice-wedge networks over >75% unit. No observations of other excess ice.	* Much of area devoid of vegetation. Local Saxifraga oppositifolia - grass barrens.	2	B	1	3/1
10.8	f, fs ^{KTe,Kc,JKd}CR	500-1500' (150-460 m). Gentle and moderate slopes, partially gullied. Fine grained colluvium and residual material derived from and overlying fine grained clastics.	Drainage fair, via seepage lines, runnels, some gully networks. Solifluction lobes locally. Discontinuous low amplitude wedge troughs.	Colluvium, residual material, chiefly fines. Overlying Jkd and Kc clastics - chiefly poorly consolidated shale.	Ice wedge networks over >50% unit. Other excess ice values probably 25-75%.	* <20% Saxifraga oppositifolia - Salix barrens. Local Salix-Dryas shrub community on some moderately drained, protected slopes. Grass-sedge wet meadows in polygon troughs.	3	AB	2	3/2
10.9	s̸r, s̸ro ^{KTe}RC	300-1000' (90-300 m). Gentle and moderate slopes, locally steep; generally featureless, but locally knobby or dissected. Chiefly silt and fine sand residual material and colluvium, over KTe clastics.	Drainage fair to good, chiefly via seepage lines, shallow runnels, wedge troughs, minor gullying. Mass wasting highly active locally: solifluction lobes and flows. Discontinuous wedge trough network, low to high amplitude.	Silt, fine sand; lesser sandstone and siltstone rubble; minor outcrop. Residual material and colluvium over generally poorly lithified KTe sandstone, siltstone, shale.	Ice wedge networks over >75% of unit. Other excess ice probably 25-50%.	* Most of area devoid of vegetation. Local Saxifraga - grass barrens. Bryophytic communities on some seepage lines.	2	aBc	2	3/2

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GROUP/UNIT	MATERIALS DESIGNATOR	TOPOGRAPHY, LANDFORM GENESIS	DRAINAGE, ACTIVE LAYER PROCESSES AND MICRORELIEF	SURFICIAL MATERIALS	GROUND ICE	VEGETATION	SENSITIVITY		TRAFFICABILITY	
10.10	sg, gs Fpt + Ff	0-500' (0-150 m). Fluvial sediments, infilling glacially eroded valleys, to provide level to very gently inclined broad valley floors. Much of valley width occupied by active channel zone (commonly two or more braided channels with few areas of terraces (see materials underlay). Tributary streams invariably debouch into the main valley via fans (again, terraces rare), which may exceed 1 km^2 in area. Near tidewater, there are a few flights of delta terraces, separated by steep bluffs (see materials underlay). Sediment generally sand size or coarser.	High amplitude wedge troughs on the small area of terraces.	Chiefly gravel, sand, platy shale fragments, or sandstone rubble; thick fluvial sediments. Deltas probably have fine sediments below 1-5 m of coarse materials.	A few ice wedges (on terraces).	* Much of area devoid of vegetation including active channels & well drained terraces. Local Dryas-Salix dwarf shrub communities & sedge-grass wet meadows on moderate to poorly drained materials.	1		1-2 (channel bluffs present a local difficulty).	2/1
10.11	s̸?, g?, r? Fd^{IA}	0-400' (0-120 m). Marine, fluvial, marine washed landforms, adjacent to tidewater. Include: sand or coarser deltaic topset sediments and beaches, fine grained littoral sediments, marine washed fine grained clastics. See materials underlay for distribution of these sub-units. Unit generally level, to moderately sloping, with short steep bluffs bordering delta terraces, and gullying in fine marine sediments.	Drainage fair on fine grained sediments, good where coarser.	Gravel, sand, deltas and beaches possibly underlain by fines. Fine grained materials elsewhere, probably silt dominant.	Ice-wedge networks over > 75% unit. No other observations of excess ice. Possibly high values (> 50%) in fine marine sediments.	* <20% Saxifraga oppositifolia - grass barrens. Salix arctica locally abundant. Coastal portion & beaches generally devoid of vegetation.	2-3	abc	2	2-3/1-2
10.12	ro ^{Col}R, RC	500-2500' (150-760 m). Unit comprised of independent, commonly dome-shaped massifs, ca. 1-5 km diameter, relief to 500 m. Overall slopes generally steep, though may be moderate to gentle on crown of dome. Macrorelief described as chaotic (see Col, in materials legend), fluted by ravines; microrelief extremely rough, due to solution and to concentrated erosion.	Drainage generally good, via unconfined seepage. Locally fair to poor in parts of unit (especially at head of Gibbs Fiord), where slopes gentle and seepage lines common.	Domes are diapirs of anhydrite and gypsum, with probable source in Otto Fiord Formation (see Col in materials legend). Surface materials chiefly large crystals to grains of gypsum, and solution pitted outcrop. Discontinuous veneer of sandstone and limestone pebbles.	No observations.	* Most of area devoid of vegetation. Local bryophytic communities on seepage lines.	1	a	3	2/1

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11		Altitude: 0-1200' (0-360 m). Lowland: low rolling to level; locally steep and dissected slopes where main drainage lines incised. Mainly thick fine to coarse grained fluvial, marine and glacial sediments. About half of the group lies below the 150 m altitude Holocene marine limit. Glacial deposits (units 11.6, 11.7), concentrated along the W shore of Eureka Sound and Mokka Fiord, are probably similar in age and genesis to the generally finer-grained deposits (in group 2) on the opposite shore. Fluvial sediments of units 11.4 and part of 11.3 cover an E-dipping Pleistocene or older pediment. Fluvial and marine or deltaic sediments of unit 11.1 and parts of 11.2 are Holocene and earlier in age. Extensive modern channel zones and deltas are mapped as unit 11.8. Residual and colluvial material, derived from underlying chiefly poorly consolidated clastics and commonly reworked by marine or glacial processes, are scattered throughout the group.	Drainage poor during snowmelt, fair to good subsequently, apart from poorly drained depressions which are scattered through the group. See also general comments for group 3. Lakes and ponds common on glacial deposits. Mass wasting not very active, other than in dissected terrain adjoing rivers, and on coastal cliffs. Solifluction lobes scattered in other parts of group, but they rarely disturb wedge troughs. Eolian processes probably active on fluvial sediments of units 11.1 and 11.8. Ice-wedge polygon networks over much of the group; variable trough amplitude. No observations of thickness of active layer; probably similar to group 3.	Unconsolidated materials over most of group probably > 2 m thick, possibly > 10 m. Few ground observations. Textures variable, see individual units.	Ice-wedge networks over much of group, apart from active channel zones. No information on other excess ice, other than scattered occurrence of flowslides in units 11.5, 6, 7 indicating at least local high ice content. Stratified sediments, including sand, common in group, thus conditions are conducive to development of ground ice.	a. Well drained materials: 1. Extremely well drained areas, active channels, and slopes at higher altitudes usually devoid of vegetation. 2. Salix-grass barrens common at lower elevations (similar to 3.a.). 3. Salix-Saxifraga oppositifolia barrens on coarser grained beach material (Similar to 3.b.). *b. Moderately drained materials: Salix-Dryas dwarf shrub communities are common (similar to 5.b.). Cassiope tetragona locally common on protected slopes where deep snow accumulates. c. Poorly drained materials: wet land vegetation Commonly sedge-grass wet meadows with Salix-arctica often a significant component (see 5.c.). Seepage areas of upper slopes support bryophytic communities.	2	ab	2	3/1-2
11.1	s̸ ɱ?, F?, ^{KTe}Rɱ	0-400' (0-120 m). Level to gently rolling; locally dissected moderate and steep slopes adjacent to main drainage lines. Chiefly thick unconsolidated sediments, probably either deltaic or marine littoral, in places residual, over planed KTe clastics. Possibly pre-Holocene in age.	Generally well drained; some depressions poorly drained Eolian processes possibly active. Discontinuous areas of ice-wedge networks. Troughs generally low amplitude (possibly wedges widespread but troughs infilled by eolian action ?). Local areas of high amplitude troughs.	Sand and (or) silt deltaic or marine sediments, commonly > 2 m thick, locally at least 10 m thick. Underlain at least locally by clay and silt.	Ice-wedge networks discontinuous; possibly widespread. Other excess ice, see 1	* Most of area devoid of vegetation.	2	b	1	3/1
11.2	s̸g, fg, f ^{K,J}CR, Rɱ	0-500' (0-150 m) Level to gently rolling, apart from dissected zone with moderate and steep slopes within 1 km of main river channels. Residual material overlying chiefly poorly consolidated clastics, modified by erosion and deposition of marine, fluvial, glacial and colluvial processes.	Drainage good to fair, via gullies in dissected terrain; fair via seepage lines, wedge troughs, on other slopes; fair to poor on level areas, with ponding in wedge troughs. Mass wasting active on slopes. Solifluction lobes widespread.	Chiefly silt and fine sand residual material, colluvium; possibly including fluvial and marine sediments similar to unit 11.1, and glacial deposits as in unit 11.6. Silty clay marine and deltaic sediments adjacent to unit 11.8. Thickness of unconsolidated deposits over the generally poorly consolidated sandstone siltstone shale bedrock unknown.	Ice-wedge networks widespread Other excess ice, see 1.	* <10% Salix grass barrens. Local sedge-grass wet meadows on poorly drained materials.	2	Abc	2	3/2
11.3	s̸, g? P, ^{KTe}RC, ɱ?, Ft	300 - 1200' (90-360 m) Gently rolling, locally level to hummocky (local relief <30 m), superimposed on overall gently E-dipping surface. Unit appears to be a complex of Pleistocene or older fluvial surfaces, relatively more recent fluvial sediments (see unit 11.4), glacial deposits, and residual material and colluvium over KTe clastics. Interfingered with, but predating, unit 11.4.	Drainage variable from good on coarse grained deposits, fair via seepage lines and wedge troughs over much of unit, and poor in depressions (5-10% of unit). Scattered lakes and ponds of thermokarst or glacial kettle origin. Wedge trough networks general.	Gravel and boulders, or gravel and fines. No ground observations.	Ice wedges general. Other excess ice, see 1	* 20% Salix-Dryas / 30-50% moss patina Low elevation, poorly drained materials: sedge-grass wet meadow. Higher elevation, poorly drained materials: bryophytic communities.	2	ab	2	3/2
11.4	gs̸? Ft$^{g?}$	300 - 1200' (90-360 m) Extensive level, to E-dipping at <1° surfaces, divided by bluffs, locally incised by modern drainage lines. Developed by massive fluvial deposition, with direction of transport W to E. Age of sediments unknown; possibly late-glacial. Unit interfingered with and postdates 11.3.	Drainage generally good, but some extensive areas where ponding in wedge troughs occurs. Local thermokarst or kettle lakes. Ice-wedge networks general; troughs broad, low to high amplitude.	Chiefly gravel, boulder (sandstone, gabbro), sand, silt fluvial sediments; 2 m to >10 m thick.	Ice wedges general. Other excess ice, see 1.	* Extensive ponding: 30% Carex stans - Eriophorum / 90% moss. Salix locally abundant. Moderately drained materials: Salix-Dryas dwarf shrub communities. Well drained, higher altitude sites often devoid of vegetation.	2	b	1	2/1
11.5	fro, f ^{KTe}CR, CR + ɱ	0-1100' (0-330 m) Moderate to steep slopes, rectalinear to concave, to 100 m high, 1 km in length. Coastal cliffs and river valley slopes, commonly fluted by gullying. Chiefly mantled by colluvium. Some fluvial fans on lower slopes.	Drainage fair, via close-spaced gullies. Mass wasting active: slumping, solifluction lobes and flows, possible flowslides.	Chiefly fine grained colluvium, derived from residual and underlying KTe clastics, and possibly morainal deposits. Minor outcrop.	Locally high ice content - possible flowslides. Values generally 25-75%?	* <20% Salix Alopecurus barrens. Above 150-250 m usually devoid of vegetation.	3	ABC	3	3/2
11.6	fg? M? + $^{KTe-J}$Rɱ	0 - 1000' (0-300 m) Gently rolling to level, minor moderate slopes, local incision of drainage lines originating in adjacent group 1. Unit developed on poorly consolidated clastics, mantled by thick unconsolidated deposits, including residual material, in part wave washed, and glacial sediments.	Drainage fair, via wedge troughs, some seepage lines. Scattered thermokarst or kettle lakes. Retrogressive thaw or detachment flowslide scars scattered through the unit. Ice-wedge network over whole of unit; troughs broad, high amplitude.	Morainal deposits? Chiefly fines, with intermixed and also discrete areas of gravel. Marine washed, possibly with marine deposits, below ca 150 m. Underlain by poorly consolidated clastics, chiefly of KTe formation.	Ice-wedge network over whole of unit. Presence of at least local high ice content indicated by flowslides. Other values, see 1.	* <20% Salix-grass barrens Local sedge-grass wet meadows & bryophytic communities on ponded areas & seepage lines.	2	aB	2 Difficulty: high amplitude wedge troughs.	3/1
11.7	s̸g (M + ɱ) / (P? + ^{KTe}R)	0 - 600' (0 - 180 m) Gently rolling to level; locally hummocky; moderate to steep banks where streams from group 1 cross this unit. Unit developed on KTe clastics or thick gravel to silt size Pleistocene or older fluvial sediments (P?). Overlain by morainal deposits, which have been reworked by marine processes below ca. 100 m elevation.	Drainage fair, chiefly via seepage lines, or by wedge troughs on level areas. Depressions over ca. 10% of the unit poorly drained, containing lakes or flooded wedge troughs. Solifluction lobes widespread, however so are wedge troughs, so mass wasting not particularly active. Scattered flowslides. Ice-wedge troughs over most of unit; low amplitude.	Morainal and marine-reworked deposits: Chiefly fine sand and (or) silt, with thin discontinuous gravel cover. Scattered hummocks or buttes of gravel. Underlain by interbedded gravel, sand, fines.	Ice-wedge network over most of unit. Other excess ice values at least locally high where flowslides occur. High values also expected below poorly drained depressions.	* 20-40% Salix-Dryas / 30% moss ponded areas: sedge-grass wet meadows. Upper slopes generally devoid of vegetation.	3	aBc	1	3/2
11.8	s̸, s̸g, gs̸ Fp, Ft	0 - 500' (0 - 150') Active channel zones, some fans, modern deltas. Level, with low bluffs (rarely > 1 m) between channels. Small areas of Holocene fluvial terraces, separated from channel zone by bluffs > 2 m high.	Ice-wedge polygon networks only on terraces. Broad, high amplitude troughs.	Fluvial sediments: chiefly fine sand and silt; interstratified with gravel at Gibbs Fiord (see materials underlay).	Ice wedges, and probably other excess ice, on terraces (only small proportion of unit).	* Most of area devoid of vegetation. Local Dryas-Salix dwarf shrub communities on moderately drained terraces.	1		1	3/1
11.9	ɱb, Fd	0 - 300' (0 - 90 m) Variety of modern and raised beaches and deltas. Few ground observations. Chiefly flights of low to high amplitude beach ridges on overall gentle to moderate slopes. Macro and microrelief low adjacent to unit 11.1. Higher parts of unit on E side of Mokka Fiord highly dissected.	Generally well drained via seepage through coarse materials, and via wedge troughs. Ponding in swales of beaches adjacent to 11.1. Local solifluction lobes. Ice-wedge networks general.	Beaches commonly sand and (or) gravel, probably underlain at 1-5 m by finer sediments. Beaches adjacent to unit 11.1 chiefly sand and silt. Beaches at N end of Schei Peninsula of sandstone and gabbro gravel and rubble.	Ice-wedge networks general. Possibly other excess ice where underlain by fines, or where swales poorly drained.	* <20% Salix-Saxifraga oppositifolia barrens. Coastal zone, active channels & some beach ridge crests devoid of vegetation. Grass & sedge-grass wet meadows in some swales.	2	ab	1	2/2

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