Part 629 – Glossary of Landform and Geologic Terms

Subpart B – Exhibits

629.10 Lists of Landscape, Landform, Microfeature, and Anthropogenic Feature Terms Contained in the Glossary

(Subset lists arranged by geomorphic process or other groups.) Geomorphic process is a framework for the *Geomorphic Description System* (Schoeneberger and Wysocki, 2012).

Note: Words enclosed in brackets are considered part of the name of a term such as "bay [coast]". Words enclosed in parentheses are only accessory information and are not part of the name of a term such as "(water body; also Landform)". Following the terms are italicized letters for the corresponding shorthand code such as *BO* for the landscape term "bolson").

A. **ALPHABETICAL LISTS** (Landscapes, Landforms, Microfeatures, Anthropogenic Features).

(1) LANDSCAPES (broad or unique regional groups of spatially-associated landforms).

alluvial plain	*AP*
alluvial plain remnant	*AR*
badlands	*BA*
bajada (also Landform)	*BJ*
barrier island (also Landform)	*BI*
basin	*BS*
basin floor (also Landform)	*BC*
batholith	*BL*
bay [coast] (water body; also Landform)	*BY*
bolsón	*BO*
breached anticline (also Landform)	*BD*
breaklands	*BR*
breaks (also Landform)	*BK*
caldera (also Landform)	*CD*
canyonlands	*CL*
coastal plain (also Landform)	*CP*
cockpit karst	*CPK*
cone karst	*CK*
continental glacier	*CG*
coppice dune field	*CDF*
delta plain (also Landform)	*DP*
dissected breaklands	*DB*
dissected plateau	*DI*
drumlin field	*DF*
dune field (also Landform)	*DU*
estuary (water body; also Landform)	*ES*
everglades	*EG*
fan piedmont (also Landform)	*FP*
fault-block mountains	*FM*

fluviokarst	*FK*
fluviomarine terrace (also Landform)	*FT*
fold-thrust hills	*FTH*
foothills	*FH*
glaciokarst	*GK*
gulf (water body; also Landform)	*GU*
hills (singular = Landform)	*HI*
ice-margin complex	*IC*
intermontane basin (also Landform)	*IB*
island (also Landform)	*IS*
karst	*KR*
kegel karst	*KK*
lagoon (water body; also Landform)	*LG*
lake plain (also Landform)	*LP*
lava field (also Landform)	*LF*
lava plain (also Landform)	*LV*
lava plateau (also Landform)	*LL*
lowland	*LW*
marine terrace (also Landform)	*MT*
meander belt	*MB*
mountain range	*MR*
mountain system	*MS*
mountains (singular = Landform)	*MO*
ocean (water body)	*OC*
outwash plain (also Landform)	*OP*
peninsula	*PE*
piedmont	*PI*
piedmont slope	*PS*
plains (singular = Landform)	*PL*
plateau (also Landform)	*PT*
rift valley	*RF*
river valley (also Landform)	*RV*
sand plain	*SP*
sandhills	*SH*
scabland	*SC*
sea (water body; also Landform)	*SEA*
semi-bolson	*SB*
shield volcano (also Landform)	*SV*
shore complex (also Landform)	*SX*
sinkhole karst	*SK*
sound (water body; also Landform)	*SO*
strait (water body; also Landform)	*ST*
tableland	*TB*
thermokarst	*TK*
till plain (also Landform)	*TP*
tower karst	*TW*
upland	*UP*
valley (also Landform)	*VA*
volcanic field (also Landform)	*VF*

(2) LANDFORMS (natural, individual, earth-surface features mappable at soil survey scales).

aa lava flow	*ALF*
alas	*AA*
alluvial cone	*AC*
alluvial fan	*AF*
alluvial flat	*AP*
alpine glacier	*AG*
anticline	*AN*
arete	*AR*
arroyo	*AY*
ash field	*AQ*
ash flow	*AS*
atoll	*AT*
avalanche chute	*AL*
axial stream	*AX*
back-barrier beach	*BBB*
back-barrier flat	*BBF*
backshore	*AZ*
backswamp	*BS*
bajada (also Landscape)	*BJ*
ballena	*BL*
ballon	*BV*
bar	*BR*
barchan dune	*BQ*
barrier beach	*BB*
barrier beach [relict]	*BBR*
barrier cove	*BAC*
barrier flat	*BF*
barrier island (also Landscape)	*BI*
basin floor (also Landscape)	*BC*
basin-floor remnant	*BD*
bay [coast] (water body; also Landscape)	*BAY*
bay [geom.]	*BYG*
bay bottom	*BOT*
bayou (water body)	*WC*
beach	*BE*
beach plain	*BP*
beach ridge	*BG*
beach terrace	*BT*
berm	*BM*
beveled base	*BVB*
blind valley	*VB*
block field	*BW*
block glide	*BLG*
block lava Flow	*BLF*
block stream	*BX*
blowout	*BY*
bluff	*BN*
bog	*BO*
box canyon	*BOX*

braided stream	*BZ*
breached anticline (also Landscape)	*BRL*
breaks (also Landscape)	*BK*
broad interstream divide	*BID*
butte	*BU*
caldera (also Landscape)	*CD*
canyon	*CA*
canyon bench	*CYB*
canyon wall	*CW*
Carolina Bay	*CB*
channel (also Microfeature)	*CC*
chenier	*CG*
chenier plain	*CH*
cinder cone	*CI*
cirque	*CQ*
cirque floor	*CFL*
cirque headwall	*CHW*
cirque platform	*CPF*
cliff	*CJ*
climbing dune	*CDU*
closed depression (also Microfeature)	*CLD*
coastal plain (also Landscape)	*CP*
cockpit	*COC*
col	*CL*
collapse sinkhole	*CSH*
collapsed ice-floored lakebed	*CK*
collapsed ice-walled lakebed	*CN*
collapsed lake plain	*CS*
collapsed outwash plain	*CT*
colluvial apron	*COA*
complex landslide	*CLS*
coral island	*COR*
coulee	*CE*
cove	*CO*
cove [water] (water body)	*COW*
crag and tail	*CAT*
creep	*CRE*
crevasse filling	*CF*
cuesta	*CU*
cuesta valley	*CUV*
cutoff	*CV*
debris avalanche	*DA*
debris fall	*DEF*
debris flow	*DF*
debris slide	*DS*
debris spread	*DES*
debris topple	*DET*
deflation basin	*DB*
deflation flat	*DFL*
delta	*DE*
delta plain (also Landscape)	*DC*

depression	*DP*
diapir	*DD*
diatreme	*DT*
dike	*DK*
dip slope	*DL*
disintegration moraine	*DM*
distributary	*DIS*
divide	*DN*
dome	*DO*
drainageway	*DQ*
drainhead complex	*DRC*
draw	*DW*
drumlin	*DR*
drumlinoid ridge	*DRR*
dune	*DU*
dune field (also Landscape)	*DUF*
dune lake (water body)	*DUL*
dune slack (also Microfeature)	*DUS*
earth spread	*ESP*
earth topple	*ETO*
earthflow	*EF*
end moraine	*EM*
ephemeral stream (also Microfeature)	*EPS*
eroded fan remnant	*EFR*
eroded fan remnant sideslope	*EFS*
erosion remnant	*ER*
escarpment	*ES*
esker	*EK*
estuary (water body; also Landscape)	*WD*
faceted spur	*FS*
fall	*FB*
falling dune	*FDU*
fan	*FC*
fan apron	*FA*
fan collar	*FCO*
fan piedmont (also Landscape)	*FG*
fan remnant	*FH*
fan skirt	*FI*
fanhead trench	*FF*
fault block	*FAB*
fault zone	*FAZ*
fault-line scarp	*FK*
fen	*FN*
fissure vent	*FIV*
fjord (water body)	*FJ*
flat	*FL*
flatwoods	*FLW*
flood plain	*FP*
flood-plain playa	*FY*
flood-plain splay	*FM*
flood-plain step	*FO*

flood-tidal delta	*FTD*
flood-tidal delta flat	*FTF*
flood-tidal delta slope	*FTS*
flow	*FLO*
flute (also Microfeature)	*FU*
fluviomarine bottom	*FMB*
fluviomarine terrace (also Landscape)	*FMT*
fold	*FQ*
foredune	*FD*
fosse	*FV*
free face (also Geom. Component – Hills, Mountains)	*FW*
fringe-tidal marsh	*FTM*
gap	*GA*
geyser	*GE*
geyser basin	*GEB*
geyser cone	*GEC*
giant ripple	*GC*
glacial drainage channel	*GD*
glacial lake (water body)	*WE*
glacial lake [relict]	*GL*
glacial-valley floor	*GVF*
glacial-valley wall	*GVW*
glacier	*GLA*
gorge	*GO*
graben	*GR*
ground moraine	*GM*
gulch	*GT*
gulf (water body; also Landscape)	*GU*
gut [channel] (water body; also Microfeature)	*WH*
gut [valley]	*GV*
half graben	*HG*
hanging valley	*HV*
headland	*HE*
head-of-outwash	*HD*
headwall	*HW*
high hill	*HH*
highmoor bog	*HB*
hill (plural=Landscape)	*HI*
hillslope	*HS*
hogback	*HO*
homoclinal ridge	*HCR*
homocline	*HC*
horn	*HR*
horst	*HT*
hot spring	*HP*
ice pressure ridge	*IPR*
ice-contact slope	*ICS*
ice-marginal stream	*IMS*
ice-pushed ridge	*IPU*
inlet	*IL*

inselberg	*IN*
inset fan	*IF*
interdrumlin	*IDR*
interdune (also Microfeature)	*ID*
interfluve (also Geom. Component - Hills)	*IV*
interior valley	*INV*
intermittent stream (also Microfeature)	*INT*
intermontane basin (also Landscape)	*IB*
island (also Landscape)	*IS*
kame	*KA*
kame moraine	*KM*
kame terrace	*KT*
karst cone	*KC*
karst lake	*KAL*
karst tower	*KTO*
karst valley	KVA
karstic marine terrace	*KMT*
kettle	*KE*
kipuka	*KIP*
knob	*KN*
knoll	*KL*
lagoon (water body; also Landscape)	*WI*
lagoon bottom	*LBO*
lagoon channel	*LCH*
lagoon [relict]	*LAR*
lahar	*LA*
lake (water body)	*WJ*
lake plain (also Landscape)	*LP*
lake terrace	*LT*
lakebed (water body)	*LB*
lakebed [relict]	*LBR*
lakeshore	*LF*
landslide	*LK*
lateral moraine	*LM*
lateral spread	*LS*
lava dome	*LD*
lava field (also Landscape)	*LFI*
lava flow	*LC*
lava flow unit (also Microfeature)	*LFU*
lava plain (also Landscape)	*LN*
lava plateau (also Landscape)	*LL*
lava trench (also Microfeature)	*LTR*
lava tube	*LTU*
ledge	*LE*
levee	*LV*
loess bluff	*LO*
loess hill	*LQ*
longitudinal dune	*LDU*
longshore bar	*LON*
longshore bar [relict]	*LR*
louderback	*LU*

low hill	*LH*
lowmoor bog	*LX*
maar	*MAA*
main scarp (also Microfeature)	*MAS*
mainland cove	*MAC*
mangrove swamp	*MAN*
marine lake (water body)	*ML*
marine terrace (also Landscape)	*MT*
marsh	*MA*
mawae	*MAW*
meander	*MB*
meander scar	*MS*
meander scroll	*MG*
meandering channel	*MC*
medial moraine	*MH*
mesa	*ME*
meteorite crater	*MEC*
mogote	*MOG*
monadnock	*MD*
monocline	*MJ*
moraine	*MU*
mountain (plural = Landscape)	*MM*
mountain slope	*MN*
mountain valley	*MV*
mud pot	*MP*
mudflow	*MW*
muskeg	*MX*
natural levee	*NL*
nearshore zone	*NZ*
nearshore zone [relict]	*NZR*
notch	*NO*
nunatak	*NU*
open depression (also Microfeature)	*ODE*
outwash delta	*OD*
outwash fan	*OF*
outwash plain (also Landscape)	*OP*
outwash terrace	*OT*
overflow stream channel	*OSC*
oxbow	*OX*
oxbow lake (water body)	*WK*
paha	*PA*
pahoehoe lava flow	*PAF*
paleoterrace	*PTR*
parabolic dune	*PB*
parna dune	*PD*
partial ballena	*PF*
patterned ground	*PG*
pavement karst	*PAV*
peak	*PK*
peat plateau	*PJ*
pediment	*PE*

perennial stream (water body; also Microfeature)	*PS*
pillow lava flow	*PIF*
pingo	*PI*
pinnacle (also Microfeature)	*PIN*
pitted outwash plain	*PM*
pitted outwash terrace	*POT*
plain (plural = Landscape)	*PN*
plateau (also Landscape)	*PT*
playa	*PL*
playa dune (also Microfeature)	*PDU*
playa floor (also Microfeature)	*PFL*
playa lake (water body)	*WL*
playa rim (also Microfeature)	*PRI*
playa slope (also Microfeature)	*PSL*
playa step (also Microfeature)	*PST*
plug dome	*PP*
pluvial lake (water body)	*PLL*
pluvial lake [relict]	*PQ*
pocosin	*PO*
point bar	*PR*
point bar [coastal]	*PRC*
pothole (also Microfeature)	*PH*
pothole lake (water body)	*WN*
proglacial lake (water body)	*WO*
proglacial lake [relict]	*PGL*
pyroclastic flow	*PCF*
pyroclastic surge	*PCS*
raised beach	*RA*
raised bog	*RB*
ravine	*RV*
recessional moraine	*RM*
reef	*RF*
ribbed fen	*RG*
ridge	*RI*
rim	*RJ*
rise (also Microfeature; also Geom. Component – Flat Plains)	*RIS*
river (water body)	*RIV*
river valley (also Landscape)	*RVV*
roche moutonnée (also Microfeature)	*RN*
rock glacier	*RO*
rock pediment	*ROP*
rock spread	*ROS*
rock topple	*ROT*
rockfall (also Microfeature)	*ROF*
rockfall avalanche	*RFA*
rotational debris slide	*RDS*
rotational earth slide	*RES*
rotational rock slide	*RRS*
rotational slide	*RTS*
sabkha	*SAB*

saddle	*SA*
sag (also Microfeature)	*SAG*
sag pond (water body; also Microfeature)	*SGP*
salt marsh	*SM*
salt pond (water body; also Microfeature)	*WQ*
sand flow (also Microfeature)	*RW*
sand ramp	*SAR*
sand sheet	*RX*
scarp	*RY*
scarp slope	*RS*
scree slope	*SCS*
sea (water body; also Landscape)	*SEA*
sea cliff	*RZ*
seep (also Microfeature)	*SEE*
seif dune	*SD*
semi-open depression	*SOD*
shield volcano (also Landscape)	*SHV*
shoal (water body)	*WR*
shoal [relict]	*SE*
shore	*SHO*
shore complex (also Landscape)	*SHC*
sill	*RT*
sinkhole	*SH*
slackwater (water body)	*WS*
slickrock (also Microfeature)	*SLK*
slide	*SJ*
slot canyon	*SLC*
slough (water body)	*SL*
slump block	*SN*
snowfield	*SNF*
soil fall	*SOF*
solution platform	*SOP*
solution sinkhole	*SOS*
sound (water body; also Landscape)	*SO*
spit	*SP*
spur	*SQ*
stack [coast]	*SRC*
stack [geom.]	*SR*
star dune	*SDU*
steptoe	*ST*
stock	*STK*
stoss and lee	*SAL*
strait (water body; also Landscape)	*STT*
strand plain	*SS*
strath terrace	*SU*
stratovolcano	*SV*
stream (water body)	*STR*
stream terrace	*SX*
strike valley	*STV*
string bog	*SY*
structural bench	*SB*

submerged back-barrier beach	*SBB*
submerged mainland beach	*SMB*
submerged point bar [coast]	*SPB*
submerged wave-built terrace	*SWT*
submerged wave-cut platform	*SWP*
submerged-upland tidal marsh	*STM*
swale (also Microfeature)	*SC*
swallow hole	*TB*
swamp	*SW*
syncline	*SZ*
talus cone	*TC*
talus slope	*TAS*
tarn (water body; also Microfeature)	*TAR*
terminal moraine	*TA*
terrace	*TE*
terrace remnant	*TER*
thermokarst depression (also Microfeature)	*TK*
thermokarst lake (water body)	*WV*
tidal flat	*TF*
tidal inlet	*TI*
tidal inlet [relict] (water body)	*TIR*
tidal marsh	*TM*
till plain (also Landscape)	*TP*
till-floored lake plain	*TLP*
toe (also Microfeature)	*TOE*
tombolo	*TO*
topple	*TOP*
tor	*TQ*
Toreva block	*TOR*
translational debris slide	*TDS*
translational earth slide	*TES*
translational rock slide	*TRS*
translational slide	*TS*
transverse dune	*TD*
trough	*TR*
tunnel valley	*TV*
tunnel-valley lake (water body)	*TVL*
underfit stream	*US*
U-shaped valley	*UV*
valley (also Landscape)	*VA*
valley flat	*VF*
valley floor	*VL*
valley side	*VS*
valley train	*VT*
valley-border surfaces	*VBS*
valley-floor remnant	*VFR*
volcanic cone	*VC*
volcanic crater	*CR*
volcanic dome	*VD*
volcanic field (also Landscape)	*VOF*
volcanic neck	*VON*

volcanic pressure ridge (also Micro.)	*PU*
volcano	*VO*
V-shaped valley	*VV*
wash	*WA*
washover fan	*WF*
washover-fan flat	*WFF*
washover-fan slope	*WFS*
water-lain moraine	*WM*
wave-built terrace	*WT*
wave-cut platform	*WP*
wave-worked till plain	*WW*
wind gap	*WG*
window	*WIN*
wind-tidal flat	*WTF*
yardang (also Microfeature)	*YD*
yardang trough (also Microfeature)	*YDT*

(3) MICROFEATURES (discrete, natural, earth-surface features too small to delineate at common survey scales).

(i) Common microfeatures (not used in association with the landform "patterned ground")

bar	*BA*
channel (also Landform)	*CH*
closed depression (also Landform)	*CD*
corda	*CO*
cutter	*CU*
dune slack (also Landform)	*DS*
dune traces	*DT*
earth pillar	*EP*
ephemeral stream (also Landform)	*ES*
finger ridge	*FR*
flute (also Landform)	*FL*
frost boil	*FB*
glacial groove	*GG*
groove	*GR*
gully	*GU*
gut [channel] (water body; also Landform)	*WH*
hillock	*HI*
hoodoo	*HO*
ice wedge	*IWD*
ice wedge cast	*IWC*
interdune (also Landform)	*ID*
intermittent stream (water body; also Landform)	*INT*
karren	*KA*
lava flow unit (also Landform)	*LFU*
lava trench (also Landform)	*LT*
main scarp (also Landform)	*MAS*
minor scarp	*MIS*

mound	*MO*
nivation hollow	*NH*
open depression (also Landform)	*OP*
perennial stream (water body; also Landform)	*PS*
pinnacle (also Landform)	*PI*
playa dune (also Landform)	*PD*
playa floor (also Landform)	*PF*
playa rim (also Landform)	*PR*
playa slope (also Landform)	*PSL*
playa step (also Landform)	*PST*
playette	*PL*
pond (water body)	*PON*
pool (water body)	*POO*
pothole (also Landform)	*PH*
rib	*RB*
rill	*RL*
ripple mark	*RM*
rise (also Landform; ; also Geom. Component – Flat Plains)	*RIS*
roche moutonnée (also Landform)	*POC*
rockfall (also Landform)	*ROF*
sag (also Landform)	*SAG*
sag pond (water body; also Landform)	*SP*
salt pond (water body; also Landform)	*WQ*
sand boil	*SB*
sand flow (also Landform)	*RW*
seep (also Landform)	*SE*
shoreline	*SH*
shrub-coppice dune	*SCD*
slickrock (also Landform)	*SLK*
slip face	*SF*
solifluction lobe	*SOL*
solifluction sheet	*SS*
solifluction terrace	*ST*
solution chimney	*SCH*
solution corridor	*SCO*
solution fissure	*SOF*
solution pipe	*SOP*
spatter cone	*SPC*
spiracle	*SPI*
strandline	*SL*
swale (also Landform)	*SW*
swash zone	*SZ*
tank (water body)	*TA*
tarn (water body; also Landform)	*TN*
terracettes	*TER*
thermokarst depression (also Landform)	*TK*
toe (also Landform)	*TOE*
tree-tip mound	*TTM*
tree-tip pit	*TTP*
tumulus (tumuli = plural)	*TU*

vernal pool (seasonal water body)	*VP*
volcanic pressure ridge (also Landform)	*VPR*
yardang (also Landform)	*YD*
yardang trough (also Landform)	*YDT*
zibar	*ZB*

(ii) ***Periglacial*** patterned ground microfeatures (used in association with the landform "patterned ground"; singular forms (e.g., circle) are used for a single feature at point data scale whereas plural forms (e.g., circles) are used for map unit components).

circle	*CI*
earth hummock	*EH*
high-center polygon	*HCP*
ice wedge polygon	*IWP*
low-center polygon	*LCP*
nonsorted circle	*NSC*
palsa (= peat hummock)	*PA*
polygon	*PYG*
sorted circle	*SCI*
stripe	*STR*
turf hummock	*TH*

(iii) ***Other*** patterned ground microfeatures (used in association with the landform "patterned ground"; singular forms (e.g., hummock) are used for a single feature at point data scale whereas plural forms (e.g., hummocks) are used for map unit components).

bar and channel	*BC*
circular gilgai	*CG*
elliptical gilgai	*EG*
gilgai	*GI*
hummock	*HU*
linear gilgai	*LG*
mima mound	*MM*
pimple mound	*PM*
puff	*PU*

(4) ANTHROSCAPES (large, discrete areas of artificial (human-made or extensively modified) "landscapes")

anthroscape	*ANT*
agricultural anthroscape	*AGT*
hillslope terrace anthroscape	*HAT*
reclaimed mineland anthroscape	*RCT*
resource extraction anthroscape	*RXT*
suburban anthroscape	*SAT*
urban anthroscape	*UAT*

(5) ANTHROPOGENIC LANDFORMS (discrete, artificial (human-made or extensively modified), earth-surface features).

artificial collapsed depression	*ACD*
artificial levee *(also Anthro Micro)*	*AL*
bioswale *(also Anthro Micro)*	*BS*
borrow pit	*BP*
burial mound *(also Anthro Micro)*	*BM*
conservation terrace (modern)	*CT*
cut (railroad, etc.)	*CUT*
cutbank	*CB*
dredge-deposit shoal	*DDS*
dredge spoil bank	*DSB*
dredged channel	*DC*
dump	*DU*
fill	*FI*
filled marshland *(also Anthro Micro)*	*FM*
floodway	*FW*
gravel pit	*GP*
headwall (anthro) *(also Anthro Micro)*	*HW*
hillslope terrace (ancient)	*HT*
landfill *(see sanitary landfill)*	--
leveled land	*LVL*
midden *(also Anthro Micro)*	*MI*
openpit mine	*OM*
polder	*POL*
quarry	*QU*
railroad bed	*RRB*
reclaimed land	*RL*
rice paddy *(also Anthro Micro)*	*RP*
road cut	*RC*
sand pit	*SP*
sanitary landfill	*SL*
scalped area *(also Anthro Micro)*	*SA*
sewage lagoon	*SWL*
spoil bank *(also Anthro Micro)*	*SB*
spoil pile *(also Anthro Micro)*	*SPP*
surface mine	*SM*
truncated soil *(also Anthro Micro)*	*TS*

(6) ANTHROPOGENIC MICROFEATURES (discrete, artificial (human-made or extensively modified), earth surface features too small to delineate at normal mapping scales).

artificial levee	*AL*
beveled cut	*BC*
bioswale *(also Anthro LF)*	*BS*
borrow pit	*BP*
burial mound *(also Anthro LF)*	*BM*
conservation terrace (*modern*)	*CT*
cut *(railroad, etc.)*	*CUT*

cutbank	*CB*
ditch	*DI*
double-bedding mound *(i.e. bedding mound for timber; Lower Coastal Plain)*	*DBM*
drainage ditch	*DD*
dredged channel *(also Anthro LF)*	*DC*
fill	*FI*
filled marshland *(also Anth LF)*	*FM*
floodway	*FW*
furrow	*FR*
gravel pit *(also Anthro LF)*	*GP*
headwall [anthro] *(also Anth LF)*	*HW*
hillslope terrace *(ancient)*	*HT*
impact crater	*IC*
interfurrow	*IF*
log landing	*LL*
midden *(also Anthro LF)*	*MI*
pond *(human-made)*	*PO*
railroad bed	*RRB*
reclaimed land	*RL*
rice paddy *(also Anthro LF)*	*RP*
road bed	*RB*
road cut	*RC*
sand pit	*SP*
scalped area *(also Anthro LF)*	*SA*
sewage lagoon	*SWL*
skid trail	*ST*
spoil bank *(also Anthro LF)*	*SB*
spoil pile *(also Anthro LF)*	*SPP*
tillage mound	*TM*
truncated soil *(also Anthro LF)*	*TS*

B. **GEOMORPHIC PROCESS AND OTHER GROUPS** (Landscape, Landform, and Microfeature terms grouped by geomorphic process (e.g., Fluvial) or by common settings (e.g., Water Bodies). These lists are not mutually exclusive so some features occur in more than one group, particularly generic terms).)

(1) COASTAL MARINE and ESTUARINE (wave or tidal control or near-shore / shallow marine).

Landscapes:

barrier island (also Landform)	*BI*
bay [coast] (water body; also Landform)	*BY*
coastal plain (also Landform)	*CP*
delta plain (also Landform)	*DP*
estuary (water body; also Landform)	*ES*
fluviomarine terrace (also Landform)	*FT*
gulf (water body; also Landform)	*GU*

island (also Landform)	*IS*
lagoon (water body; also Landform)	*LG*
lowland	*LW*
marine terrace (also Landform)	*MT*
ocean (water body)	*OC*
peninsula	*PE*
sea (water body; also Landform)	*SEA*
shore complex (also Landform)	*SX*
sound (water body; also Landform)	*SO*
strait (water body; also Landform)	*ST*

Landforms:

atoll	*AT*
back-barrier beach	*BBB*
back-barrier flat	*BBF*
backshore	*AZ*
bar	*BR*
barrier beach	*BB*
barrier cove	*BAC*
barrier flat	*BF*
barrier island (also Landscape)	*BI*
bay [coast] (water body; also Landscape)	*BAY*
bay bottom	*BOT*
beach	*BE*
beach plain	*BP*
beach ridge	*BG*
beach terrace	*BT*
berm	*BM*
bluff	*BN*
chenier	*CG*
chenier plain	*CH*
coastal plain (also Landscape)	*CP*
coral island	*COR*
cove [water] (water body)	*COW*
delta	DE
delta plain (also Landscape)	*DC*
drainhead complex	*DRC*
estuary (water body; also Landform)	*WD*
flat	*FL*
flatwoods	*FLW*
fluviomarine terrace (also Landscape)	*FMT*
foredune	*FD*
fringe-tidal marsh	*FTM*
gulf (water body; also Landscape)	*GU*
gut [channel] (also Microfeature)	*WH*
headland	*HE*
island (also Landscape)	*IS*
lagoon (water body; also Landscape)	*WI*
lagoon [relict]	*LAR*
longshore bar	*LON*

longshore bar [relict]	*LR*
mangrove swamp	*MAN*
marine lake (water body)	*ML*
marine terrace (also Landscape)	*MT*
nearshore zone	*NZ*
nearshore zone [relict]	*NZR*
point bar [coastal]	*PRC*
raised beach	*RA*
reef	*RF*
sabkha	*SAB*
salt marsh	*SM*
sea (water body; also Landscape)	*SEA*
sea cliff	*RZ*
semi-open depression	*SOD*
shoal [relict]	*SE*
shore	*SHO*
shore complex (also Landscape)	*SHC*
sound (water body; also Landscape)	*SO*
spit	*SP*
stack [coast]	*SRC*
strait (water body; also Landscape)	*STT*
strand plain	*SS*
submerged-upland tidal marsh	*STM*
tidal flat	*TF*
tidal inlet	*TI*
tidal inlet [relict]	*TIR*
tidal marsh	*TM*
tombolo	*TO*
washover fan	*WF*
wave-built terrace	*WT*
wave-cut platform	*WP*
wind-tidal flat	*WTF*

Microfeatures:

gut [channel] (also Landform)	*WH*
ripple mark	*RM*
shoreline	*SH*
swash zone	*SZ*

(2) LACUSTRINE (related to inland water bodies).

Landscapes:

bay [coast] (also Landform)	*BY*
delta plain (also Landform)	*DP*
island (also Landform)	*IS*
lake plain (also Landform)	*LP*
peninsula	*PE*
shore complex (also Landform)	*SX*

Landforms:

backshore	*AZ*
bar (also Microfeature)	*BR*
barrier beach	*BB*
barrier flat	*BF*
barrier island	*BI*
bay [coast] (water body; also Landscape)	*BAY*
beach	*E*
beach plain	*BP*
beach ridge	*BG*
beach terrace	*BT*
berm	*BM*
bluff	*BN*
delta	*DE*
delta plain (also Landscape)	*DC*
flat	*FL*
flood-plain playa	*FY*
foredune	*FD*
headland	*HE*
island (also Landscape)	*IS*
karst lake	*KAL*
lagoon	*WI*
lagoon [relict]	*LAR*
lake (water body)	*WJ*
lake plain (also Landscape)	*LP*
lake terrace	*LT*
lakebed	*LB*
lakebed [relict]	*LBR*
lakeshore	*LF*
longshore bar	*LON*
longshore bar [relict]	*LR*
oxbow lake	*WK*
playa	*PL*
playa floor (also Microfeature)	*PFL*
playa lake	*WL*
playa rim (also Microfeature)	*PRI*
playa slope (also Microfeature)	*PSL*
playa step (also Microfeature)	*PST*
pluvial lake	*PLL*
pluvial lake [relict]	*PQ*
raised beach	*RA*
sabkha	*SAB*
salt marsh	*SM*
shoal [relict]	*SE*
shore	*SHO*
shore complex (also Landscape)	*SHC*
spit	*SP*
stack [coast]	*SRC*
strand plain	*SS*

till-floored lake plain	*TLP*
tombolo	*TO*
water-lain moraine	*WM*
wave-built terrace	*WT*
wave-cut platform	*WP*
wave-worked till plain	*WW*

Microfeatures:

bar (also Landform)	*BA*
playa floor (also Landform)	*PF*
playa rim (also Landform)	*PR*
playa slope (also Landform)	*PSL*
playa step (also Landform)	*PST*
playette	*PL*
ripple mark	*RM*
shoreline	*SH*
strandline	*SL*
swash zone	*SZ*
vernal pool	*VP*

(3) FLUVIAL (dominantly related to concentrated water flow (channel flow); includes erosional and depositional features, but excluding glaciofluvial landforms (see Glacial), and permanent water features (see Water Bodies)).

Landscapes:

alluvial plain	*AP*
alluvial plain remnant	*AR*
badlands	*BA*
bajada (also Landform)	*BJ*
breaks	*BK*
breaklands	*BR*
canyonlands	*CL*
delta plain (also Landform)	*DP*
dissected breaklands	*DB*
fan piedmont	*FP*
meander belt	*MB*
river valley (also Landform)	*RV*
scabland	*SC*

Landforms:

alluvial cone	*AC*
alluvial fan	*AF*
alluvial flat	*AP*
arroyo	*AY*
axial stream (water body)	*AX*
backswamp	*BS*
bajada (also Landscape)	*BJ*

bar (also Microfeature)	*BR*
basin-floor remnant	*BD*
block stream	*BX*
box canyon	*BOX*
braided stream	*BZ*
canyon	*CA*
channel	*CC*
coulee	*CE*
cutoff	*CV*
delta	*DE*
delta plain (also Landscape)	*DC*
drainageway	*DQ*
drainhead complex	*DRC*
draw	*DW*
ephemeral stream (also Microfeature)	*EPS*
fan apron	*FA*
fan collar	*FCO*
fan remnant	*FH*
fan skirt	*FI*
fanhead trench	*FF*
flood plain	*FP*
flood-plain playa	*FY*
flood-plain splay	*FM*
flood-plain step	*FO*
giant ripple	*GC*
gorge	*GO*
gulch	*GT*
gut [valley]	*GV*
inset fan	*IF*
intermittent stream (also Microfeature)	*INT*
levee	*LV*
meander scar	*MS*
meander scroll	*MG*
meandering channel	*MC*
natural levee	*NL*
overflow stream channel	*OSC*
oxbow	*OX*
paleoterrace	*PTR*
point bar	*PR*
ravine	*RV*
river valley (also Landscape)	*RVV*
semi-open depression	*SOD*
slot canyon	*SLC*
strath terrace	*SU*
stream terrace	*SX*
terrace remnant	*TER*
valley flat	*VF*
valley-border surfaces	*VBS*
valley-floor remnant	*VFR*
wash	*WA*
wind gap	*WG*

Microfeatures:

bar (also Landform)	*BA*
bar and channel	*BC*
channel	*CH*
ephemeral stream (also Landform)	*ES*
groove	*GR*
gully	*GU*
intermittent stream (also Landform)	*INT*
ripple mark	*RM*
swash zone	*SZ*

(4) SOLUTION (dominated by dissolution, and commonly, subsurface drainage).

Landscapes:

cockpit karst	*CPK*
cone karst	*CK*
fluviokarst	*FK*
glaciokarst	*GK*
karst	*KR*
kegel karst	*KK*
sinkhole karst	*SK*
thermokarst	*TK*
tower karst	*TW*

Landforms:

blind valley	*VB*
cockpit	*COC*
collapse sinkhole	*CSH*
interior valley	*INV*
karst cone	*KC*
karst lake (water body)	*KAL*
karst tower	*KTO*
karst valley	*KVA*
karstic marine terrace	*KMT*
mogote	*MOG*
pavement karst	*PAV*
pinnacle	*PIN*
sinkhole	*SH*
solution platform	*SOP*
solution sinkhole	*SOS*
swallow hole	*TB*
thermokarst depression (also Microfeature)	*TK*
yardang (also Microfeature)	*YD*
yardang trough (also Microfeature)	*YDT*

Microfeatures:

cutter	*CU*
karren	*KA*
solution chimney	*SCH*
solution corridor	*SCO*
solution fissure	*SOF*
solution pipe	*SOP*
thermokarst depression (also Landform)	*TK*
yardang (also Landform)	*YD*
yardang trough (also Landform)	*YDT*

(5) EOLIAN (dominantly wind-related erosion or deposition).

Landscapes:

coppice dune field	*CDF*
dune field (also Landform)	*DU*
sand plain	*SP*
sandhills	*SH*

Landforms:

barchan dune	*BQ*
blowout	*BY*
climbing dune	*CDU*
deflation basin	*DB*
deflation flat	*DFL*
dune	*DU*
dune field (also Landscape)	*DUF*
dune lake (water body)	*DUL*
dune slack (also Microfeature)	*DUS*
falling dune	*FDU*
foredune	*FD*
interdune (also Microfeature)	*ID*
loess bluff	*LO*
loess hill	*LQ*
longitudinal dune	*LDU*
paha	*PA*
parabolic dune	*PB*
parna dune	*PD*
playa dune (also Microfeature)	*PDU*
sabkha	*SAB*
sand ramp	*SAR*
sand sheet	*RX*
seif dune	*SD*
slickrock (also Microfeature)	*SLK*
star dune	*SDU*
transverse dune	*TD*
yardang (also Microfeature)	*YD*
yardang trough (also Microfeature)	*YDT*

Microfeatures:

dune slack (also Landform)	*DS*
dune traces	*DT*
interdune (also Landform)	*ID*
playa dune (also Landform)	*PD*
playette	*PL*
shrub-coppice dune	*SCD*
slickrock (also Landform)	*SLK*
slip face	*SF*
yardang (also Landform)	*YD*
yardang trough (also Landform)	*YDT*
zibar	*ZB*

(6) GLACIAL (directly related to glaciers; includes glaciofluvial, glaciolacustrine, glaciomarine, and outwash features).

Landscapes:

continental glacier	*CG*
drumlin field	*DF*
glaciokarst	*GK*
hills	*HI*
ice-margin complex	*IC*
outwash plain (also Landform)	*OP*
till plain (also Landform)	*TP*

Landforms:

alpine glacier	*AG*
arete	*AR*
cirque	*CQ*
cirque floor	*CFL*
cirque headwall	*CHW*
cirque platform	*CPF*
col	*CL*
collapsed ice-floored lakebed	*CK*
collapsed ice-walled lakebed	*CN*
collapsed lake plain	*CS*
collapsed outwash plain	*CT*
crag and tail	*CAT*
crevasse filling	*CF*
disintegration moraine	*DM*
drumlin	*DR*
drumlinoid ridge	*DRR*
end moraine	*EM*
esker	*EK*
fjord (water body)	*FJ*
flute (also Microfeature)	*FU*
fosse	*FV*

giant ripple	*GC*
glacial drainage channel	*GD*
glacial lake (water body)	*WE*
glacial lake [relict]	*GL*
glacial-valley floor	*GVF*
glacial-valley wall	*GVW*
glacier	*GLA*
ground moraine	*GM*
hanging valley	*HV*
head-of-outwash	*HD*
ice pressure ridge	*IPR*
ice-contact slope	*ICS*
ice-marginal stream	*IMS*
ice-pushed ridge	*IPU*
interdrumlin	*IDR*
kame	*KA*
kame moraine	*KM*
kame terrace	*KT*
kettle	*KE*
lateral moraine	*LM*
medial moraine	*MH*
moraine	*MU*
nunatak	*NU*
outwash delta	*OD*
outwash fan	*OF*
outwash plain (also Landscape)	*OP*
outwash terrace	*OT*
paha	*PA*
pitted outwash plain	*PM*
pitted outwash terrace	*POT*
pothole (also Microfeature)	*PH*
pothole lake (intermittent water)	*WN*
proglacial lake (water body)	*WO*
proglacial lake [relict]	*PGL*
recessional moraine	*RM*
roche moutonnée (also Microfeature)	*RN*
rock glacier	*RO*
snowfield	*SNF*
stoss and lee	*SAL*
swale (also Microfeature)	*SC*
tarn (water body; also Microfeature)	*TAR*
terminal moraine	*TA*
till plain (also Landscape)	*TP*
till-floored lake plain	*TLP*
tunnel valley	*TV*
tunnel-valley lake (water body)	*TVL*
underfit stream	*US*
U-shaped valley	*UV*
valley train	*VT*
water-lain moraine	*WM*
wave-worked till plain	*WW*

Microfeatures:

flute (also Landform)	*FL*
glacial groove	*GG*
ice wedge	*IWD*
ice wedge cast	*IWC*
nivation hollow	*NH*
pothole (also Landform)	*PH*
roche moutonnée (also Landform)	*POC*
swale (also Landform)	*SW*
tarn (water body; also Landform)	*TN*

(7) PERIGLACIAL (related to nonglacial, cold climate (modern or relict), including periglacial forms of patterned ground. Note: consider "patterned ground" as a Landform, but treat specific types of patterned ground, (singular or plural), as Microfeatures.)

Landscapes:

coastal plain	*CP*
hills	*HI*
plains	*PL*
thermokarst	*TK*

Landforms:

alas	*AA*
block field	*BW*
muskeg	*MX*
patterned ground	*PG*
peat plateau	*PJ*
pingo	*PI*
rock glacier	*RO*
string bog	*SY*
thermokarst depression (also Microfeature)	*TK*
thermokarst lake (water body)	*WV*

Microfeatures:

circle	*CI*
earth hummock	*EH*
frost boil	*FB*
high-center polygon	*HCP*
ice wedge	*IWD*
ice wedge cast	*IWC*
ice wedge polygon	*IWP*
low-center polygon	*LCP*
nivation hollow	*NH*
nonsorted circle	*NSC*
palsa (= peat hummock)	*PA*
polygon	*PYG*

solifluction lobe	*SOL*
solifluction sheet	*SS*
solifluction terrace	*ST*
sorted circle	*SCI*
stripe	*STR*
thermokarst depression (also Landform)	*TK*
turf hummock	*TH*

(8) MASS MOVEMENT (MASS WASTING) (dominated by gravity, including creep forms).

Landscapes: (these generic landscapes are not mass movement features per say, but are commonlymodified by, and include localized areas of, mass movement).

breaklands	*BR*
dissected breaklands	*DB*
foothills	*FH*
hills	*HI*
mountain range	*MR*
mountains	*MO*

Landforms:

ash flow	*AS*
avalanche chute	*AL*
block glide	*BLG*
block stream	*BX*
colluvial apron	*COA*
complex landslide	*CLS*
creep	*CRE*
debris avalanche	*DA*
debris fall	*DEF*
debris flow	*DF*
debris slide	*DS*
debris spread	*DES*
debris topple	*DET*
earth spread	*ESP*
earth topple	*ETO*
earthflow	*EF*
fall	*FB*
flow	*FLO*
lahar	*LA*
landslide	*LK*
lateral spread	*LS*
main scarp (also Microfeature)	*MAS*
mudflow	*MW*
rock glacier	*RO*
rock spread	*ROS*
rock topple	*ROT*
rockfall (also Microfeature)	*ROF*
rockfall avalanche	*RFA*

rotational debris slide	*RDS*
rotational earth slide	*RES*
rotational rock slide	*RRS*
rotational slide	*RTS*
sag (also Microfeature)	*SAG*
sag pond (water body; also Micro.)	*SGP*
sand flow	*RW*
scree slope	*SCS*
slide	*SJ*
slump block	*SN*
soil fall	*SOF*
talus cone	*TC*
talus slope	*TAS*
toe (also Microfeature)	*TOE*
topple	*TOP*
Toreva block	*TOR*
translational debris slide	*TDS*
translational earth slide	*TES*
translational rock slide	*TRS*
translational slide	*TS*

Microfeatures:

main scarp (also Landform)	*MAS*
minor scarp	*MIS*
rockfall (also Landform)	*ROF*
sag (also Landform)	SAG
sag pond (water body; also Landform)	SP
sand boil	SB
solifluction lobe	SOL
solifluction sheet	SS
solifluction terrace	ST
terracette	TER
toe (also Landform)	TOE

(9) VOLCANIC and HYDROTHERMAL

Landscapes:

caldera (also Landform)	*CD*
foothills	*FH*
hills	*HI*
lava field (also Landform)	*LF*
lava plain (also Landform)	*LV*
lava plateau (also Landform)	*LL*
mountains	*MO*
shield volcano (also Landform)	*SV*
volcanic field (also Landform)	*VF*

Landforms:

aa lava flow	*ALF*
ash field	*AQ*
ash flow	*AS*
block lava flow	*BLF*
caldera (also Landscape)	*CD*
cinder cone	*CI*
diatreme	*DT*
dike	*DK*
fissure vent	*FIV*
geyser	*GE*
geyser basin	*GEB*
geyser cone	*GEC*
hot spring	*HP*
kipuka	*KIP*
lahar	*LA*
lava dome	*LD*
lava field (also Landscape)	*LFI*
lava flow	*LC*
lava flow unit (also Microfeature)	*LFU*
lava plain (also Landscape)	*LN*
lava plateau (also Landscape)	*LL*
lava trench (also Microfeature)	*LTR*
lava tube	*LTU*
louderback	*LU*
maar	*MAA*
mawae	*MAW*
mud pot	*MP*
pahoehoe lava flow	*PAF*
pillow lava flow	*PIF*
plug dome	*PP*
pyroclastic flow	*PCF*
pyroclastic surge	*PCS*
shield volcano (also Landscape)	*SHV*
steptoe	*ST*
stratovolcano	*SV*
volcanic cone	*VC*
volcanic crater	*CR*
volcanic dome	*VD*
volcanic field (also Landscape)	*VOF*
volcanic neck	*VON*
volcanic pressure ridge (also Micro.)	*PU*
volcano	*VO*

Microfeatures:

corda	*CO*
lava flow unit (also Landform)	*LFU*
lava trench (also Landform)	*LT*
spatter cone	*SPC*
spiracle	*SPI*

tumulus (tumuli = plural)	*TU*
volcanic pressure ridge (also Landform)	*VPR*

(10) TECTONIC and STRUCTURAL (related to regional or local bedrock structures, or crustal movement. In soil survey information, tectonic and structural features are only recognized if they have some expression at or near the land surface).

Landscapes:

basin floor	*BC*
batholith	*BL*
bolson	*BO*
breached anticline (also Landform)	*BD*
dissected plateau	*DI*
fault-block mountains	*FM*
fold-thrust hills	*FTH*
foothills	*FH*
hills	*HI*
intermontane basin	*IB*
mountain range	*MR*
mountain system	*MS*
mountains	*MO*
piedmont slope	*PS*
plateau	*PT*
rift valley	*RF*
semibolson	*SB*
tableland	*TB*
valley	*VA*

Landforms:

anticline	*AN*
breached anticline (also Landscape)	*BRL*
canyon bench	*CYB*
cuesta	*CU*
cuesta valley	*CUV*
diapir	*DD*
dike	*DK*
dip slope	*DL*
dome	*DO*
fault block	*FAB*
fault zone	*FAZ*
fault-line scarp	*FK*
fold	*FQ*
graben	*GR*
half graben	*HG*
hogback	*HO*
homoclinal ridge	*HCR*
homocline	*HC*
horst	*HT*

louderback	*LU*
meteorite crater	*MEC*
monocline	*MJ*
rock pediment	*ROP*
scarp slope	*RS*
sill	*RT*
stock	*STK*
strike valley	*STV*
structural bench	*SB*
syncline	*SZ*
window	*WIN*

Microfeatures:

sand boil	*SB*

(11) SLOPE (generic terms or those that describe slope form, geometry, or arrangement of land features, rather than any particular genesis or process).

Landscapes:

badlands	*BA*
breached anticline (also Landform)	*BD*
breaklands	*BR*
breaks	*BK*
canyonlands	*CL*
dissected breaklands	*DB*
dissected plateau	*DI*
fault-block mountains	*FM*
foothills	*FH*
hills (singular = Landform)	*HI*
mountain range	*MR*
mountain system	*MS*
mountains	*MO*
piedmont	*PI*
piedmont slope	*PS*
plains (singular = Landform)	*PL*
plateau (also Landform)	*PT*
tableland	*TB*
upland	*UP*

Landforms:

beveled base	*BVB*
block stream	*BX*
bluff	*BN*
breached anticline (also Landscape)	*BRL*
broad interstream divide	*BID*
butte	*BU*
canyon bench	*CYB*

canyon wall	*CW*
cliff	*CJ*
colluvial apron	*COA*
cuesta	*CU*
dome	*DO*
escarpment	*ES*
faceted spur	*FS*
fault block	*FAB*
fault-line scarp	*FK*
free face (also Geom. Component – Hills, Mountains.)	*FW*
gap	*GA*
headwall	*HW*
high hill	*HH*
hill (plural = Landscape)	*HI*
hillslope	*HS*
hogback	*HO*
interfluve (also Geom. Component - Hills)	*IV*
knob	*KN*
knoll	*KL*
ledge	*LE*
low hill	*LH*
mesa	*ME*
mountain (plural = Landscape)	*MM*
mountain slope	*MN*
mountain valley	*MV*
notch	*NO*
paha	*PA*
peak	*PK*
pediment	*PE*
plain (plural = Landscape)	*PN*
plateau (also Landscape)	*PT*
ridge	*RI*
rim	*RJ*
rock pediment	*ROP*
scarp	*RY*
scarp slope	*RS*
scree slope	*SCS*
slickrock (also Microfeature)	*SLK*
spur	*SQ*
stack [geom.]	*SR*
structural bench	*SB*
talus cone	*TC*
talus slope	*TAS*
tor	*TQ*
valley	*VA*
valley-floor remnant	*VFR*
wind gap	*WG*

Microfeatures:

finger ridge	*FR*
mound	*MO*
rib	*RB*
rill	*RL*
slickrock (also Landform)	*SLK*

(12) EROSIONAL (related dominantly to water erosion but excluding perennial, concentrated channel flow (i.e., fluvial, glaciofluvial) or eolian erosion).

Landscapes:

badlands	*BA*
breached anticline (also Landform)	*BD*
breaklands	*BR*
breaks	*BK*
canyonlands	*CL*
dissected breaklands	*DB*
dissected plateau	*DI*
foothills	*FH*
hills	*HI*
mountain range	*MR*
mountains	*MO*
piedmont	*PI*
piedmont slope	*PS*
plateau (also Landform)	*PT*
tableland	*TB*

Landforms:

ballena	*BL*
ballon	*BV*
basin-floor remnant	*BD*
beveled base	*BVB*
breached anticline (also Landscape)	*BRL*
canyon bench	*CYB*
canyon wall	*CW*
col	*CL*
colluvial apron	*COA*
cuesta	*CU*
cuesta valley	CUV
eroded fan remnant	*EFR*
eroded fan-remnant sideslope	*EFS*
erosion remnant	*ER*
free face (also Geom. Comp. – Hills, Mountains)	*FW*
gap	*GA*
hogback	*HO*
inselberg	*IN*
monadnock	*MD*
notch	*NO*

paha	*PA*
partial ballena	*PF*
peak	*PK*
pediment	*PE*
plateau (also Landscape)	*PT*
rock pediment	*ROP*
sabkha	*SAB*
saddle	*SA*
scarp slope	*RS*
slickrock (also Microfeature)	*SLK*
stack [geom.]	*SR*
strike valley	*STV*
structural bench	*SB*
terrace remnant	*TER*
tor	*TQ*
valley-border surfaces	*VBS*
valley-floor remnant	*VFR*
wind gap	*WG*
window	*WIN*

Microfeatures:

earth pillar	*EP*
finger ridge	*FR*
groove	*GR*
gully	*GU*
hoodoo	*HO*
pinnacle	*PI*
rib	*RB*
rill	*RL*
slickrock (also Landform)	*SLK*
swale	*SW*

(13) DEPRESSIONAL (low area or declivity features, excluding permanent water bodies).

Landscapes:

basin	*BS*
basin floor (also Landform)	*BC*
bolson	*BO*
breached anticline (also Landform)	*BD*
breaklands	*BR*
dissected breaklands	*DB*
semi-bolson	*SB*
valley	*VA*

Landforms:

alluvial flat	*AP*
basin floor (also Landscape)	*BC*

basin-floor remnant	*BD*
box canyon	*BOX*
breached anticline (also Landscape)	*BRL*
canyon	*CA*
Carolina Bay	*CB*
closed depression (also Microfeature)	*CLD*
col	*CL*
coulee	*CE*
cove	*CO*
cuesta valley	*CUV*
depression	*DP*
drainageway	*DQ*
drainhead complex	*DRC*
gap	*GA*
gorge	*GO*
gulch	*GT*
gut [valley]	*GV*
intermontane basin	*IB*
kettle	*KE*
mountain valley	*MV*
open depression (also Microfeature)	*ODE*
playa	*PL*
playa floor (also Microfeature)	*PFL*
playa rim (also Microfeature)	*PRI*
playa slope (also Microfeature)	*PSL*
playa step (also Microfeature)	*PST*
pothole (also Microfeature)	*PH*
pothole lake (intermittent water)	*WN*
ravine	*RV*
sabkha	*SAB*
saddle	*SA*
sag (also Microfeature)	*SAG*
semi-open depression	*SOD*
slot canyon	*SLC*
strike valley	*STV*
swale (also Microfeature)	*SC*
trough	*TR*
U-shaped valley	*UV*
valley	*VA*
valley floor	*VL*
V-shaped valley	*VV*

Microfeatures:

closed depression (also Landform)	*CD*
open depression (also Landform)	*OP*
playa floor (also Landform)	*PF*
playa rim (also Landform)	*PR*
playa slope (also Landform)	*PSL*
playa step (also Landform)	*PST*
playette	*PL*

pothole (also Landform)	*PH*
sag (also Landform)	*SAG*
swale (also Landform)	*SW*
tree-tip pit	*TTP*

(14) WETLANDS (related to vegetated and/or shallow wet areas, and wet soils. (Provisional list: conventional, geologic definitions; not legalistic or regulatory usage)).

Landscapes:

estuary (also Landform)	*ES*
everglades	*EG*

(Generally, there is no appropriate Landscape term for wetlands; by default, choose the most appropriate Landscape term from another Process Environment or Other Grouping)

Landforms:

alas	*AA*
backswamp	*BS*
bog	*BO*
Carolina Bay	*CB*
dune slack (also Microfeature)	*DUS*
ephemeral stream (also Microfeature)	*EPS*
estuary (also Landscape)	*WD*
fen	*FN*
flood-plain playa	*FY*
fringe-tidal marsh	*FTM*
highmoor bog	*HB*
intermittent stream (also Microfeature)	*INT*
lowmoor bog	*LX*
mangrove swamp	*MAN*
marsh	*MA*
muskeg	*MX*
oxbow lake (intermittent water)	*WK*
peat plateau	*PJ*
playa (intermittent water)	*PL*
pocosin	*PO*
pothole (also Microfeature)	*PH*
pothole lake (intermittent water)	*WN*
raised bog	*RB*
ribbed fen	*RG*
sabkha	*SAB*
salt marsh	*SM*
slough (intermittent water)	*SL*
string bog	*SY*
swamp	*SW*
tidal flat	*TF*
tidal marsh	*TM*

Microfeatures:

dune slack (also Landform)	*DS*
ephemeral stream (also Landform)	*ES*
intermittent stream (also Landform)	*INT*
playette	*PL*
pothole (also Landform)	*PH*
vernal pool (seasonal water)	*VP*

(15) WATER BODIES (Discrete "surface water" features, primarily permanent open water, which in soil survey reports are commonly treated as the generic map unit "water" (e.g., lake), or as a spot or line symbol (e.g., perennial stream)). Several water body"landscape" and "landform" terms are obviously not terrestrial, but are Earth surface features (e.g., ocean).

Landscapes:

bay [coast] (also Landform)	*BY*
estuary (also Landform)	*ES*
gulf (also Landform)	*GU*
lagoon (also Landform)	*LG*
ocean	*OC*
sea (also Landform)	*SEA*
sound (also Landform)	*SO*
strait (also Landform)	*ST*

Landforms:

axial stream	*AX*
bay [coast] (also Landscape)	*BAY*
bayou	*WC*
cove [water]	*COW*
dune lake	*DUL*
estuary (also Landscape)	*WD*
fjord	*FJ*
glacial lake	*WE*
gulf (also Landscape)	*GU*
gut [channel] (also Microfeature)	*WH*
ice-marginal stream	*IMS*
inlet	*IL*
lagoon (also Landscape)	*WI*
lagoon channel	*LCH*
lake	*WJ*
lakebed	*LB*
marine lake	*ML*
nearshore zone	*NZ*
oxbow lake	*WK*
perennial stream (also Microfeature)	*PS*
playa lake	*WL*
pluvial lake	*PLL*
pothole lake	*WN*

proglacial lake	*WO*
river	*RIV*
sag pond (also Microfeature)	*SGP*
salt pond (also Microfeature)	*WQ*
sea (also Landscape)	*SEA*
shoal	*WR*
slackwater	*WS*
slough	*SL*
sound (also Landscape)	*SO*
strait (also Landscape)	*STT*
stream (permanent water)	*STR*
tarn (also Microfeature)	*TAR*
thermokarst lake	*WV*
tidal inlet	*TI*
tidal inlet [relict]	*TIR*
tunnel-valley lake	*TVL*

Microfeatures:

channel (permanent water)	*CH*
gut [channel] (also Landform)	*WH*
perennial stream (also Landform)	*PS*
pond	*PON*
pool	*POO*
sag pond (also Landform)	*SP*
salt pond (also Landform)	*WQ*
tank	*TA*
tarn (also Landform)	*TN*

(16) SUBAQUEOUS FEATURES (Discrete, relatively shallow underwater features that commonly can support rooted plants, and adjacent features, ordinarily found below permanent open water. Historically, in Soil Survey Reports these underwater features have been included in the generic map unit "water"). Subaqueous "landscape" terms are obviously not terrestrial, but are Earth surface features.

Landscapes:

bay [coast] (water body; also Landform)	*BY*
estuary (water body; also Landform)	*ES*
gulf (water body; also Landform)	*GU*
lagoon (water body; also Landform)	*LG*
ocean (water body)	*OC*
sea (water body; also Landform)	*SEA*
sound (water body; also Landform)	*SO*
strait (water body; also Landform)	*ST*

Landforms:

barrier cove	*BAC*
bay [coast] (water body; also Landscape)	*BAY*

bay bottom	*BOT*
cove [water] (water body)	*COW*
estuary (water body; also Landscape)	*WD*
flood-tidal delta	*FTD*
flood-tidal delta flat	*FTF*
flood-tidal delta slope	*FTS*
fluviomarine bottom	*FMB*
gulf (water body; also Landscape)	*GU*
inlet	*IL*
lagoon (water body; also Landscape)	*WI*
lagoon bottom	*LBO*
lagoon channel	*LCH*
lake	*WJ*
lakebed (water body)	*LB*
longshore bar	*LON*
mainland cove	*MAC*
marine lake	*ML*
nearshore zone	*NZ*
reef	*RF*
sea (water body; also Landscape)	*SEA*
shoal	*WR*
sound (water body; also Landscape)	*SO*
strait (water body; also Landscape)	*STT*
submerged back-barrier beach	*SBB*
submerged mainland beach	*SMB*
submerged point bar [coast]	*SPB*
submerged wave-built terrace	*SWT*
submerged wave-cut platform	*SWP*
tidal inlet	*TI*
tidal inlet [relict]	*TIR*
washover-fan flat	*WFF*
washover-fan slope	*WFS*

Microfeatures:

channel (permanent water)	*CH*
gut [channel] (water body)	*WH*

Anthropogenic Features:

dredged channel	*DC*
dredge-deposit shoal	*DDS*

629.11 List of Materials or Material-Related, Structure, or Morphological-Feature Terms Contained in the Glossary

(**NR** – terms that are NOT RECOMMENDED; **NP** – terms that are NOT PREFERRED)

aa lava
ablation till - NP
alluvium
andesitic lahar deposit
anticline
aquiclude
aquifer
aquitard
artifact
ash (volcanic)
ash flow - NP
backswamp deposit
basal till - NP
bauxite
beach sands
bed
bedded
bedding plane
bedrock
block lava
block field
block glide deposit
block stream
blue rock (volcanic)
boulder field - NR
bowl
breccia
buried soil
caliche
caprock
chert
chimney
cinders
clast
clastic
coastal marl
colluvium
complex landslide deposit
conglomerate
continuous permafrost
coprogenous earth
coprogenous material
country rock
craton
creep deposit
cross-bedding

cross-lamination
cross-stratification
cryptogamic crust
cryoturbate
cyclothem
dead-ice - NR
debris
debris avalanche deposit
debris fall deposit
debris flow deposit
debris slide deposit
debris spread deposit
debris topple deposit
deposit
desert pavement
desert varnish - NP
detritus (geology)
diamictite
diamicton
diatomaceous earth
diatomite
dike
dip
discontinuity
discontinuous permafrost
dropstone
dolomite (mineral)
dolomite (rock)
dolostone - NR
dome
dredge spoils
drift (glacial geology)
earthflow deposit
eolian deposit
epiclastic
erosional pavement
erratic
estuarine deposit
facies (stratigraphy)
fanglomerate
felsenmeer - NP
felsic rock
fill
fly ash
flow till
fluviomarine deposit
fold
formation (stratigraphy)
freshwater marl
glacial drift - NR
glacial outwash - NR

glacial till - NR
glaciofluvial deposits
glaciolacustrine deposits
glaciomarine deposits
glauconite pellets
graben
granitoid
greensands
ground soil
grus
gypsite
herbaceous peat
horst
human-transported material
ice-pushed ridge
ice wedge
ice wedge cast
igneous rock
interbedded
intrusive
lacustrine deposit
lagoonal deposit
lahar deposit
lamella
lamina
lamination - NR
lapilli
lateral spread deposit
lava
limestone
limonite
lithologic
lodgment till
loess
louderback
mafic rock
marine deposit
marl
mass movement deposit
melt-out till
metamorphic rock
metasediment
microbiotic crust
mine spoil, coal extraction
mine spoil, metal-ore extraction
mine spoil or earthy fill
moraine
moss peat
muck
mucky peat
mudstone

mudflow deposit
novaculite
nuée ardente
outcrop
outwash
overbank deposit
overburden
overthrust
paleosol
pahoehoe lava
parna
peat
pedisediment
permafrost
pillow lava
pitted outwash
plow pan
pluton
plutonic
porcellanite
puff
pumice
pyroclastic
pyroclastic flow
pyroclastic surge
regolith
relict soil
residuum
rhythmite
rockfall deposit
rockfall avalanche deposit
rock varnish
rotational debris slide deposit
rotational earth slide deposit
rotational rock slide deposit
rotational slide deposit
rubble
sand flow deposit
sand sheet
sandstone
saprolite
scoria
scree
sediment
sedimentary peat
sedimentary rock
shale
siltstone
sill
siltite
slide

slip face
slip surface
slope alluvium
sloughed till - NR
slump - NR
slump block
slump till- NR
soil fall deposit
solifluction deposit
solifluction sheet
spoil bank
spoil pile
sporadic permafrost
stagnant ice
stone line
strandline
subglacial flow till
subglacial melt-out till
subglacial till
supraglacial debris-flow sediment - NP
supraglacial flow till
supraglacial melt-out till
supraglacial till
syncline
talus
tephra
thaw-sensitive permafrost
thaw-stable permafrost
till (glacial)
tombolo
topple deposit
tor
translational debris slide deposit
translational earth slide deposit
translational rock slide deposit
translational slide deposit
tuff
valley fill
valley side alluvium
varve
ventifact
vitric
volcanic block
volcanic bomb
volcanic breccia
volcaniclastic
welded soil
welded tuff
woody peat

629.12 Genesis-Process Terms and Geologic Time Terms Contained in the Glossary

(**NR** – terms that are NOT RECOMMENDED; **NP** – terms that are NOT PREFERRED)

aeolian - NR
accretion
active layer
active slope - NR
aggradation
alluvial
angle of repose
avalanche
avulsion
backwearing
block glide
buried
bypassed
cat clay - NR
colluvial
competence
complex landslide
conformity
congelifraction - NP
congeliturbation - NR
constructional (geomorphology)
corrosion
creep
cryoplanation
cryoturbation
cut and fill
debris avalanche
debris flow (mudflow)
debris slide
deflation
degradation
deposition
destructional (geomorphology)
dip (structural geology)
discontinuity
distal
earthflow
Eocene
eolian
erosion
erosional (geomorphology)
exfoliation
exhumed
extramorainic - NP
extramorainal
extrusive

fall
flow
fluvial
frost bursting - NR
frost churning - NR
frost riving - NR
frost shattering
frost splitting - NR
frost stirring - NR
frost weathering - NR
frost wedging - NR
geomorphology
gelifraction - NR
gelivation - NR
glacial
glacial epoch
glacial marine sedimentation
glacial outburst flood (see *jokulhlaup*)
glaciation
Holocene
ice age - NR
ice-rafting
ice segregation
intramorainal
joint
knickpoint
landslide
lateral spread
lithification
mass movement
mass wasting - NP
metastable slope - NR
Miocene
mudflow
nivation
Oligocene
Paleocene
pedoturbation
periglacial
Pleistocene
Pliocene
postglacial - NP
proximal
Quaternary
recent
relict
rockfall
rockfall avalanche
rotational landslide
sand flow
scour

scour and fill
slide
slope wash
slump - NP
soil creep - NP
soil fall
solifluction
strike (structural geology)
storm surge
stratified
stratigraphy
stream order
subaerial
subaqueous
subglacial
superglacial - NR
supraglacial
Tertiary
topple
translation slide
volcanic
weathering
welding

629.13 North American Glacial Episodes and General Geologic Time Scale [1, 2]

(Schoeneberger et al., 2012)

Era	Geologic Period		Geologic Epoch	Sub-Division	O Isotope Stage	Years (BP)
CENOZOIC	*QUATERNARY*		**Holocene**		(1)	0 to 10-12 ka*
			Late Pleistocene	Late Wisconsin	(2)	10-12 to 28 ka
				Middle Wisconsin	(3, 4)	28 to 71 ka
				Early Wisconsin	(5a - 5d)	71 to 115 ka
				Late Sangamon Sangamon	(5e)	115 to128 ka
			Pleistocene	Late – Mid Pleistocene *(Illinoisan)*	(6 - 8)	128 to 300 ka
			Middle Pleistocene	Middle – Mid Pleistocene	(9 - 15)	300 to 620 ka
				Early – Mid Pleistocene	(16 - 19)	620 to 770 ka
			Early Pleistocene			770 ka to 2.6 Ma**
	TERTIARY	**Neo-gene**	**Pliocene**			2.6 to 5.3 Ma
			Miocene			5.3 to 23.0 Ma
		Paleo-gene	**Oligocene**			23.0 to 33.9 Ma
			Eocene			33.9 to 55.8Ma
			Paleocene			55.8 to 65.5 Ma
MESOZOIC	*CRETACEOUS*		*Late Cretaceous*			65.5 to 99.6 Ma
			Early Cretaceous			99.6 to 145.5 Ma
	JURASSIC					145.5 to 201.6 Ma
	TRIASSIC					201.6 to 251.0 Ma
	PERMIAN					251.0 to 299.0 Ma
PALEOZOIC	*PENNSYLVANIAN*					299.0 to 318.0 Ma
	MISSISSIPPIAN					318.0 to 359.0 Ma
	DEVONIAN					359.0 to 416.0 Ma
	SILURIAN					416.0 to 444.0 Ma
	ORDIVICIAN					444.0 to 488.0 Ma
	CAMBRIAN					488.0 to ≈ 542.0 Ma
	PRECAMBRIAN					> ≈ 542.0 Ma

* ka = x 1,000; ** Ma = x 1,000,000

≈ = "approximately"

[1] Modified from Morrison, 1991; Sibrava et al., 1986; and Harland et al., 1990.

[2] Modified from Walker and Geidman, 2009.

REFERENCES

Harland, W.B., R.L. Armstrong, L.E. Craig, A.G. Smith, and D.G. Smith. 1990. A geologic time scale. Press Syndicate of University of Cambridge, Cambridge, UK. 1 sheet.

Morrison, R.B. (ed.). 1991. Quaternary nonglacial geology: Conterminous United States. Geological Society of America, Decade of North American Geology, Geology of North America, Vol. K-2.

Schoeneberger, P.J., D.A. Wysocki, E.C. Benham, and Soil Survey Staff. 2012. Field book for describing and sampling soils, version 3.0. Natural Resources Conservation Service, USDA, National Soil Survey Center, Lincoln, NE.

Sibrava, V., D.Q. Bowen, and D.Q. Richmond (eds.). 1986. Quaternary glaciations in the Northern Hemisphere: Final report of the International Geological Correlation Programme, Project 24. Quaternary Science Reviews, Vol. 5, Pergamon Press, Oxford.

Walker, J.D., and J.W. Geidman. 2009. Geologic time scale. Geologic Society America.

629.14 Till Terms

TILL TERMS

Genetic classification and relationships of till terms commonly used in soil survey. (Schoeneberger et al., 2012; adapted from Goldthwaite and Matsch, 1988)

Location (Facies of tills grouped by position at deposition)	**Till Types**	
	Terrestrial	**Waterlaid**
Proglacial Till (at the front of, or in front of a glacier)	proglacial **flow till**	waterlaid **flow till**
Supraglacial Till (on top of, or within upper part of a glacier)	supraglacial **flow till** [1, 3] supraglacial **melt-out till** [1] (ablation till - NP) [1] (lowered till - NP) [2] (sublimation till - NP) [2]	----------
Subglacial Till (within the lower part of, or beneath a glacier)	lodgment **till** [1] subglacial **melt-out till** subglacial **flow till** (= "squeeze till" [2, 3]) (basal till - NP) [1] (deformation till - NP) [2] (gravity flow till - NP) [2]	waterlaid **melt-out till** waterlaid **flow till** iceberg till (= "ice-rafted")

[1] *Ablation till* and *basal till* are generic terms that only describe "relative position" of deposition and have been widely replaced by more specific terms that convey both relative position and process. *Ablation till* (any comparatively permeable debris deposited within or above stagnant ice) is replaced by *supraglacial melt-out till* and *supraglacial flow till*. *Basal till* (any dense, nonsorted subglacial till) is replaced by *lodgment till*, *subglacial melt-out till*, and *subglacial flow till*.

[2] Additional (proposed) till terms that have not gained wide acceptance, and are therefore considered to be *Not Preferred*, and should not be used (shown for completeness).

[3] Also called *gravity flow till* (Not Preferred).

REFERENCES

Goldthwaite, R.P., and C.L. Matsch (eds.). 1988. Genetic classification of glacigenic deposits: Final report of the commission on genesis and lithology of glacial quaternary deposits of the International Union for Quaternary Research (INQUA). A.A. Balkema, Rotterdam.

Jackson, J.A. (ed.). 1997. Glossary of geology, 4th edition. American Geological Institute, Alexandria, VA.

Schoeneberger, P.J., D.A. Wysocki, E.C. Benham, and Soil Survey Staff. 2012. Field book for describing and sampling soils, version 3.0. USDA Natural Resources Conservation Service, National Soil Survey Center, Lincoln, NE.

629.15 Pyroclastic Terms

PYROCLASTIC TERMS: Size and compositional relationships of pyroclastic terms commonly used in soil survey. (Schoeneberger et al., 2012; adapted from Fisher, 1989)

<table>
<tr><th colspan="4">Pyroclasts and Pyroclastic Deposits (Unconsolidated)</th></tr>
<tr><td colspan="4">Size Scale: 0.062 mm [1] 2 mm 64 mm [1]</td></tr>
<tr><td colspan="4"><–––––––––––––––––––– tephra ––––––––––––––––––––––>
(<i>all pyroclastic deposits</i>)</td></tr>
<tr><td colspan="2"><––––– ash –––––></td><td rowspan="2"><– cinders [2] –>
(<i>specific gravity > 1.0 & < 2.0</i>)</td><td rowspan="2"><–– bombs [2] ––>
(<i>fluid-shaped fragments</i>)</td></tr>
<tr><td><––––––>
fine ash</td><td><––––––––>
coarse ash</td></tr>
<tr><td colspan="2" rowspan="3"></td><td><–– lapilli [2] –>
(<i>specific gravity >2.0</i>)</td><td><–– blocks [2] ––>
(<i>angular-shaped fragments</i>)</td></tr>
<tr><td colspan="2"><––––––––––– scoria [2] ––––––––––>
(<i>slightly to moderately vesicular fragments; specific gravity > 2.0</i>)</td></tr>
<tr><td><––––––––>
pumiceous ash [3]</td><td colspan="2"><––––––––– pumice [2] –––––––––>
(<i>highly vesicular fragments; specific gravity < 1.0</i>)</td></tr>
<tr><th colspan="4">Associated Lithified (Consolidated) Rock Types</th></tr>
<tr><td><––––––>
fine tuff [1]</td><td><––––––––>
coarse tuff [1]</td><td>< lapillistone [1] >
(sp. gr. > 2.0)</td><td>< –pyroclastic breccia–></td></tr>
<tr><td colspan="2"><–– welded tuff ––></td><td colspan="2"><––––––––– agglomerate –––––––––>
(<i><u>rounded</u>, volcanic fragments</i>)</td></tr>
<tr><td colspan="2"><–– ignimbrite ––>
(<i>ash-dominated flows and nuée ardente</i>)</td><td colspan="2"><–––––––– volcanic breccia ––––––––>
(<i><u>angular</u>, volcanic fragments</i>)</td></tr>
</table>

[1] These size breaks are taken from geologic literature (Fisher, 1989) and based on the modified Wentworth scale. The 0.062 mm break is very close to the USDA's 0.05 mm break between *coarse silt* and *very fine sand* (Soil Survey Division Staff, 1993). The 64 mm "geologic" break is relatively close to the USDA's 75 mm break between *coarse gravel* and *cobbles*. (See the chart "Comparison of Particle Size Classes in Different Systems" in the "Profile / Pedon Description Section" under "Soil Texture" in the Field Book for Describing and Sampling Soils (Schoeneberger et al., 2012).)

[2] A minimum size limit of 2 mm is required for volcanic fragments (i.e., rock and pararock) in Soil Taxonomy (Soil Survey Staff, 1999), but is <u>not</u> required in geologic usage (Fisher, 1989). Soil Taxonomy also defines the term "pumicelike fragments" for vesicular pyroclastic materials other than pumice that have an apparent specific gravity (including vesicles) of less than 1.0 g/cm^3.

[3] The general descriptor for pumiceous pyroclasts smaller than 2 mm. Geologic usage is based solely upon composition and does <u>not</u> include any size restrictions.

REFERENCES

Fisher, R.V. 1989. Pyroclastic sediments and rocks. AGI Data Sheet 25.2. In: J.T. Dutro, R.V. Dietrich, and R.M. Foose (eds.) AGI data sheets for geology in the field, laboratory, and office, 3rd edition. American Geological Institute, Washington, D.C.

Jackson, J.A. (ed.). 1997. Glossary of geology, 4th edition. American Geological Institute, Alexandria, VA.

Schoeneberger, P.J., D.A. Wysocki, E.C. Benham, and Soil Survey Staff. 2012. Field book for describing and sampling soils, version 3.0. USDA Natural Resources Conservation Service, National Soil Survey Center, Lincoln, NE.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service, U.S. Department of Agriculture Handbook No. 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436.