luxury uptake The absorption of nutrients by plants in excess of that quantity needed for optimum growth. Luxury concentrations during early growth may be utilized in later growth.

lysimeter (a) A device for measuring percolation and leaching losses from soil under controlled conditions.
(b) A device for measuring gains (irrigation, precipitation, and condensation) and losses (evapotranspiration) from soil. (Refer to Weihermuller et al., 2007).

suction cup - porous tube containing a small tube to extract water from soil under vacuum
suction plate - separate porous extraction plates inserted into a frame connected to a tube for water extraction under a vacuum.

pan lysimeter (zero tension) - passive water samplers that freely collect percolating soil water.
wick sampler - sampling devices which sample unsaturated soil water by the gravitational potential using an inert wick material, and pulling water from the wick by hanging a water column that maintains the lower soil boundary at a pressure less than atmospheric.
column lysimeter - containers of disturbed or undisturbed soil to represent natural crop production, may be free drainage or drain under suction to collect leachate.

maar A low relief, broad volcanic crater formed by multiple, shallow explosive eruptions. It is surrounded by a crater ring in the form of low ramparts of gently dipping (i.e., < 25 degrees), well-bedded ejecta; may be partially or completely filled by water (maar lake; Jackson, 1997; Schoeneberger and Wysocki, 2013).

macronutrient A plant nutrient found at relatively high concentrations (>500 mg kg⁻¹) in plants. Usually refers to N, P, and K but may include Ca, Mg, and S.

macropore Large pores responsible for preferential flow and rapid, far-reaching transport. Refer to Table 3.

macropore flow The tendency for water applied to the soil surface at rates exceeding the upper limit of unsaturated hydraulic conductivity, to move into the soil profile mainly via saturated flow through macropores, thereby bypassing micropores and rapidly transporting any solutes to the lower soil profile. Compare preferential flow.

made land Areas filled with earth, with or without earth and trash mixed, usually by or under the control of human-kind. Compare miscellaneous areas.

mafic rock A general term for igneous rock composed chiefly of one or more ferromagnesian, dark-colored minerals; also said of those minerals (Jackson, 1997). Compare felsic rock.

magnetite Fe₃O₄ A black, magnetic iron oxide mineral usually inherited from igneous rocks. Often found in soils as black magnetic sand grains.

mainland cove A subaqueous area adjacent to the mainland or a submerged mainland beach that forms a minor recess or embayment within the larger basin (Subaqueous Soils Subcommittee, 2005). Compare cove, barrier cove.

main scarp The steep surface on undisturbed ground at the upper edge of a landslide, caused by movement of displaced material away from the undisturbed ground; it is visible a part of the surface of rupture (slip surface; Cruden and Varnes, 1996). Compare minor scarp, toe.

maintenance application Application of fertilizer materials in amounts and at intervals to maintain available soil nutrients at levels necessary to produce a desired yield.

mangan A cutan composed of manganese oxide or hydroxide.

manganese oxides A group term for oxides of manganese. They are typically black and frequently occur in soils as nodules and coatings on ped faces usually in association with iron oxides. Birnessite and lithiophorite are common manganese oxide minerals in soils.

mangrove swamp A tropical or subtropical marine swamp formed in a silty, organic, or occasionally a coralline substratum and characterized by abundant mangrove trees along the seashore in a low area of salty or brackish water affected by daily tidal fluctuation but protected from violent wave action by reefs or land; dominated by saturated soils, commonly sulfaquents (Jackson, 1997; Schoeneberger and Wysocki, 2013).

manifold Refer to irrigation, manifold.

manure The excreta of animals, with or without an admixture of bedding or litter, fresh or at various stages of further decomposition or composting. In some countries, may denote any fertilizer material.

map, large-scale A map having a scale of 1:100,000 or larger.

map, medium-scale A map having a scale from 1:100,000, exclusive, to 1:1,000,000, inclusive.


<table>
<thead>
<tr>
<th>Class</th>
<th>Subclass</th>
<th>Class limits equivalent diameter (μm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Macropores</td>
<td>Coarse</td>
<td>&gt;5000</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>2000–5000</td>
</tr>
<tr>
<td></td>
<td>Fine</td>
<td>1000–2000</td>
</tr>
<tr>
<td></td>
<td>Very Fine</td>
<td>75–1000</td>
</tr>
<tr>
<td>Mesopores</td>
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<td>30–75</td>
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<tr>
<td>Micropores</td>
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<td>5–30</td>
</tr>
<tr>
<td>Ultramicropores</td>
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<td>0.1–5</td>
</tr>
<tr>
<td>Cryptopores</td>
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<td>&lt;0.1</td>
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Glossary of Soil Science Terms