
CORAL SEA
COOLOOLA
NOOSA
MAROOCHY
CITY OF CALOUNDRA
CABOOLTURE
CITY OF REDCLIFFE
PINE RIVERS
SOUTH PACIFIC OCEAN
MORETON BAY
Lake Cootharaba
Lake Cooroibah
Lake Weyba
Laguna Bay
Deception Bay
Pumicestone Passage
Kin Kin
Teewah
Boreen
Cooran
Pomona
Noosa Heads
Tewantin
Noosaville
Sunshine Beach
Cooroy
Mount Cooroy
Eumundi
Peregian Beach
North Arm
Coolum Beach
Point Arkwright
Yandina
Kulangoor
Marcoola
Mudjimba
Mapleton
Nambour
Woombye
Maroochydore
Mooloolabah
Point Cartwright
Palmwoods
Buderim
Buddina
Warana
Eudlo
Mount Sippy
Maleny
Mooloolah
Caloundra
Landsborough
Peachester
Coochin Creek
Beerwah
Mount Beerwah
Glass House Mountains
Woodford
Beerburrum
ISLANDS NOT SURVEYED
Delaneys Creek
Donnybrook
Elimbah
Toorbul
Wamuran
Wamuran Basin
Banksia Beach
Bellara
Woorim
Bongaree
Hornes Corner
Moodlu
Cambells Pocket
Mount Mee
Caboolture
Bootawa
Bellmere
Dobsons Crossing
Godwin Beach
Ningi
Rocksberg
Litherlands Crossing
Upper Caboolture
Morayfield
Zillmans Crossing
Beachmere
Mount Pleasant
Burpengary
Narangba
Rush Creek
Armstrong Creek
Mango Hill
Deception Bay
Scarborough
Rothwell
Redcliffe
Cape Moreton
Bulwer
Cowan Cowan
Mount Tempest
Tangalooma
BRUCE HIGHWAY
153°00′
153°30′
26°30′
27°00′
SEE ADJOINING MAP A0 3260
THIS MAP IS SUBJECT TO FINAL AMENDMENTS

Queensland Government
Natural Resources and Mines

ACID SULFATE SOILS

REDCLIFFE TO TEEWAH

MAP 2

SCALE 1 : 100 000

Projection: Universal Transverse Mercator (MGA Zone56)
Horizontal Datum: GEOCENTRIC DATUM OF AUSTRALIA (GDA94)
Note: This map is GDA94 compliant

REFERENCE

ACID SULFATE SOILS (ASS)[1] ON RELATIVELY UNDISTURBED LAND

S — Land where ASS occurs within 5m of the surface. Virtually all land in this category has at least one 'potential acid sulfate soil' layer[3] and some of this land will have an 'actual acid sulfate soil' layer[2].

NOTE: S^P - indicates sediments of Pleistocene age[1].

S_W — Areas associated with *Melaleuca sp.* wetlands and occasionally *Casuarina glauca* communities. Oxidisable sulfur % in surface layers may be highly variable and often exceeds the 'Action Criteria[4]'. This may include sulfur from organic compounds and modern accretion of sulfides in a wet, organic rich environment. ASS typically occurs at depth.

S_{LA} — Limited field assessment but occurs in a landscape position where there is a reasonable probability of ASS occurrence. This is usually land where the present use precludes any disturbance eg. National Parks, Reserves etc., or land where accessibility is severely restricted.

ACID SULFATE ON DISTURBED LAND[5]

S_{DL} — Disturbed land, eg. Canal estate, Marina, Aquaculture, Quarry, Urban, Industrial likely to contain ASS. (In some cases partial or full treatment may have been undertaken.). Limited field investigation.

5m AHD[6] CONTOUR - NORMAL LIMIT OF FIELD INVESTIGATION

The 5m contour line delineates the normal limit of field investigation of Holocene, estuarine sulfidic sediments[7] which form ASS. Holocene ASS has not been found in this study on land above 5m elevation. In some cases, the limit of Holocene ASS[8] is at the 5m contour. In other cases, the limit is <5m AHD. In the latter case, the land between the ASS limit and the 5m contour is designated LP explained below.

LAND WITH A LOW PROBABILITY OF ACID SULFATE SOIL OCCURRENCE

LP — Land between the 5m AHD contour and the outer limit[8] of Holocene, estuarine ASS (ie land <5m AHD) as mapped at this scale, with low probability of ASS occurrence.[9] Limited field investigation.

LP5 — Land >5m AHD with low or negligible probability of ASS occurrence.[9] Limited field assessment.

LAND NOT ASSESSED

NA — Land not assessed for ASS as part of this survey. It may include non ASS land beyond the boundary established as the limit of Holocene, estuarine, sulfidic sediments[8] but insufficient or no field testing was carried out.[9]

[1] **Acid sulfate soil** is the generic term used to define soils derived from estuarine sediments containing iron sulfides (pyrite) or containing the acidic products of the oxidation of sulfides. The term includes actual[2] and potential[3] acid sulfate soils. Unless used with the superscript P, the code 'S' implies sulfidic sediments of Holocene age. The superscript P implies sediments of Pleistocene age[7].

[2] **Actual Acid Sulfate Soils (AASS):** soils a field pH of ≤4.0 and mobile acidity in the form of ionic hydrogen, aluminium, iron or acid salts. Extensive areas with high actual acidity derived from sulfide oxidation may constitute a significant environmental hazard. Some soils with high organic matter may have low pH from organic acids.

[3] **Potential Acid Sulfate Soils (PASS):** soils with an oxidisable sulfur percentage of sulfidic origin which exceeds the prescribed 'action criteria[4]' at which treatment is required if disturbed. Laboratory testing for Oxidisable sulfur is carried out using the Total Oxidisable Sulfur (TOS) method, the Chromium Reducible Sulfur (S_{CR}) method or the Peroxide Oxidisation - Combined Acidity and Sulfate method (S_{POS}).

[4] Oxidisable sulfur 'Action criteria' that trigger treatment are currently: Sands, 0.03 S%; Loams to light clays, 0.06 S%; Medium to heavy clays, 0.1 S%.

[5] Limited or no field checking has been carried out in disturbed lands.

[6] The reliability of elevation data is variable across the study area.

[7] The primary focus of ASS investigation in this study are the sulfidic sediments that were deposited in the Holocene epoch, that is, during the last 10 000 years. Experience in coastal stratigraphic mapping shows that similar, but much older sulfidic sediments of Pleistocene age can occur, still in a reduced (anaerobic) state, being buried under either cemented sands or old, consolidated alluvium. They are far less common than the Holocene equivalents, and have been found beneath land whose surface is both above and below 5m AHD. Generally, Pleistocene sediments will be found at greater depths below the surface than equivalent Holocene sediments.

[8] The outer boundary of Holocene estuarine ASS commonly occurs at the intersection with hard rock or other materials of non estuarine origin. It is either at the 5m contour or at lower elevation. This boundary is established using limited field checking at the boundary itself, together with the use of contour lines and geological map boundaries. There is no field assessment beyond the 5m AHD contour level. It should be noted, however, that certain lithologies on land above 5m AHD may contain sulfidic material of non estuarine/Holocene origin. Additionally, much older, estuarine, sulfidic sediments may occur at depth on land >5m AHD, as discussed in footnote 7 above.

[9] CAUTION: It is not possible to accurately map the distribution of ASS adjacent to rivers and streams at the current mapping scale eg mangrove fringes. ASS may also be buried below alluvium of past and present stream channels some distance upstream of mapped areas.

• Borehole locations where profiles were described in detail and samples taken for analysis

PROJECT MANAGEMENT
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ACCURACY STATEMENT:
Due to varying sources of data sets, spatial locations may not coincide when overlaid.

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INTENSITY DIAGRAM

1:25 000 scale - Generally 8 to 16 boreholes per km²
1:50 000 scale - Generally 2 to 7 boreholes per km²
1:100 000 scale - Broad scale mapping, generally one borehole per km²
Mapping Units interpreted from geomorphology, elevation and aerial photography; limited or no field investigation conducted

LOCALITY MAP

LEGEND

Rivers and Creeks
Roads
Railway
Local Authority Boundary
Local Authority Name — MAROOCHY

Workspace STARSHIP: Cdata3/jobs/job16138

ACID SULFATE SOILS
REDCLIFFE TO TEEWAH
MAP 2
Ref. No. NR&M-SEA-I-A0 3261
This map supersedes A0 3235

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