

Acid sulfate soil risk maps

Acid sulfate soils (ASS) are widespread in low-lying coastal areas of Western Australia. Urban and infrastructure development in these areas may disturb ASS.

The Department of Environment and Conservation (DEC) has compiled maps of ASS risk areas for several coastal regions of Western Australia. These provide a broad-scale indication of the areas where ASS are most likely to exist.

The ASS risk maps are available at <http://www.dec.wa.gov.au/ass> and have been specifically developed to assist developers, environmental scientists and planners in identifying areas where ASS may be present so that disturbance of ASS is avoided where possible.

Where development cannot be redesigned to avoid ASS risk areas, the maps are used to trigger site-specific investigations and management strategies for ASS soil disturbance and/or lowering of the water table.

No distinction is made in the risk maps between actual and potential ASS because the risks associated with inappropriate soil disturbing activities are similar.

The classification scheme used by DEC is consistent with approaches taken by the Queensland Acid Sulfate Soils Investigation Team and NSW Department of Land and Water Conservation. ASS occurrence has been partially verified by limited ground investigations carried out by DEC.

The maps will continue to be refined and updated.

The ASS risk maps were developed based on existing 1:50,000 urban (1997-1982) and environmental geology (1984 – 1991) mapping series published by Geological Survey of WA. These maps form the initial base maps of expected shallow (<3m below ground level) and deeper (>3m below ground level) ASS layers by identifying the geological units where ASS materials are expected to occur.

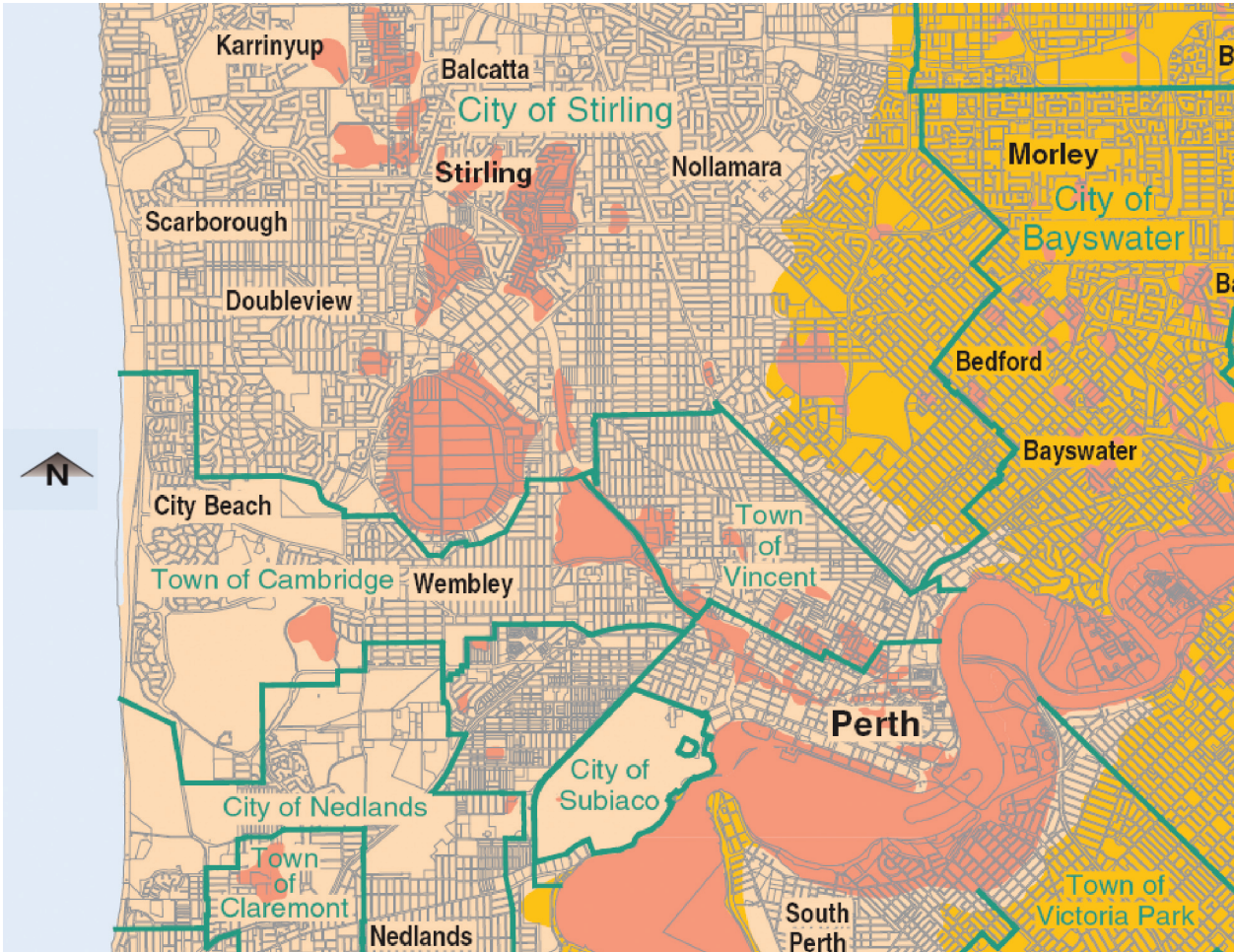
Use of ASS risk maps

The ASS risk maps are not intended to provide site specific ASS information but rather a broad scale identification of where the ASS layers are present. Limited features such as roads and major towns have been included to help locate a particular area.

The data derived from the maps cannot be used to determine whether a specific property is affected by ASS.

The ASS risk maps should only be used at the scale at which they are published. Enlarging the maps will produce distortions so that boundaries on the map bear little resemblance to the occurrence of ASS material on the ground.





Example of Central Metropolitan Region Scheme Acid Sulfate Soil Map

Using the map legend

The map legend defines the probability of ASS occurrence using three distinct colours as outlined below:

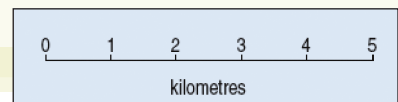
- High to moderate risk of ASS occurring within 3m of natural soil surface**
 ASS in these environments can be widespread or sporadic. They may be very close to the surface or buried by many metres of alluvium or windblown sand. Base sediments of estuaries, rivers, creeks and lakes are also considered areas of high risk of ASS occurrence. Soil materials are mostly Holocene in age.

- Moderate to low risk of ASS occurring within 3m of natural soil surface**
 Where environments have not generally been suitable for ASS formation or ASS are highly localised or sporadic, they have been classed as having a moderate to low risk of occurrence. Where ASS is present, it may be close to the surface or buried by many metres of alluvium or windblown sand. Most of these landforms are not expected to contain ASS. Soil materials are often Pleistocene in age.

- No known risk of ASS occurring within 3m of natural soil surface (or deeper)**
 ASS are not known or expected to occur in these environments.

- No data available**

- Local government boundary**



The ASS risk maps are provided as a guide to the location of ASS layers occurring at different depths in the area of coverage. They have been prepared on the basis of origin of the geological units present, depth to groundwater and partial “ground truthing” or onsite investigation.

When using the ASS risk maps, remember:

- Extreme variations in the nature and distribution of ASS can be expected.
- Depth to the ASS layer can be highly variable. The depths given in the key on the maps should be used as a guide only and not used for a specific assessment of development potential.
- Soil investigations and site specific management plans are recommended before undertaking any land use activities likely to disturb ASS in high to moderate risk areas or in moderate to low risk areas where groundwater may be disturbed.

The maps have been prepared by DEC and the Department for Planning and Infrastructure to serve as a broad-scale land use planning tool in good faith, exercising all due care and attention. Users of these maps should satisfy themselves concerning the application to their situation and where necessary seek expert advice.

More information

DEC has published a series of fact sheets and guidelines to assist with the identification, investigation and management of ASS in Western Australia. These are available by going to <http://www.dec.wa.gov.au/ass>

More information is available by mail from the address below or by calling the Acid Sulfate Soils Section on 1300 762 982.

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