

# Tasmanian Landslide Map Series

Extensive landslide research conducted by Mineral Resources Tasmania (MRT) over many years shows that large tracts of land throughout Tasmania are susceptible to various landslide processes, including parts of all the major urban areas.

An introduction to the types of landslides in Tasmania and the risks they pose is provided in the Landslides in Tasmania brochure.

The nature and magnitude of the known past landslides indicates that similar events occurring today could have significant consequences.

With the aim of improving landslide risk management in Tasmania, MRT has produced the Tasmanian Landslide Map Series. These maps identify slope areas that may be susceptible to land instability, i.e. zones where landslide movements may potentially occur at some time.

## An overview of the Tasmanian Landslide Map Series

The Tasmanian Landslide Map Series has been produced to provide a consistent information source to aid in the assessment and management of the risks posed by landslides.

The map series is designed to serve an advisory role to:

- Government regulators (particularly Local Government) in the preparation of land use planning schemes and requirements for use and development, so as to more effectively manage landslide risk;
- Geotechnical practitioners, providing background information in conducting site investigations and landslide risk assessments;
- Other parties and the general public to whom the information may also be of interest.

Sets of maps have been published for the Hobart, Glenorchy and Launceston areas and for areas from Devonport through to Boat Harbour Beach in northwest Tasmania. The Tamar Valley map series was released in 2013 and is replacing and superseding the various landslide maps produced before 2004.

For each of the mapped areas a set of themed maps has been produced (in varying combinations) at a scale of 1:25 000. These maps, and the associated data, are available in a variety of formats (paper maps, digital GIS layers and electronic images).

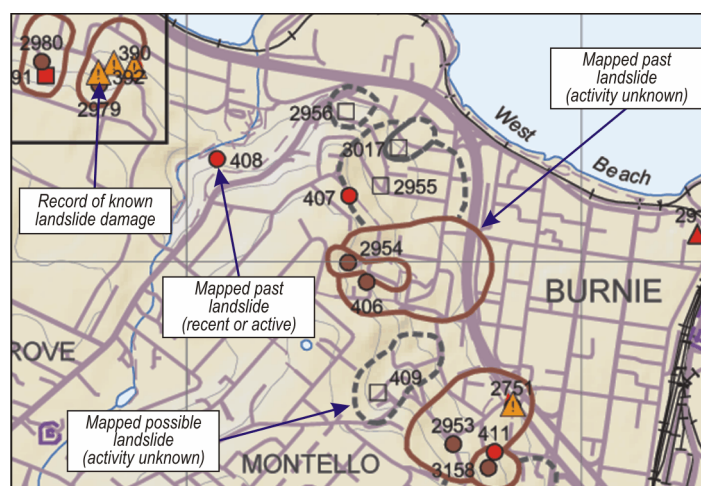
The images below are samples from the themed maps within each set. Not shown are the two technical information maps (Geology and Geomorphology) which form the basis on which the maps are derived.

**Landslide related damage can be avoided by understanding the ground conditions and the susceptibility to landslide of any particular site before the development proceeds.**

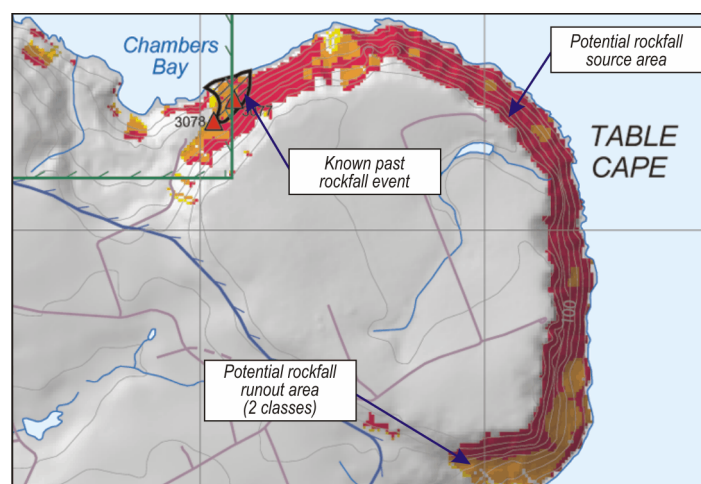
**Landslide susceptibility zones** identified within this map series indicate areas where further investigation is required to ensure that landslides do not pose a risk for any particular site. They do not necessarily indicate that landslides will occur at the site, nor do they necessarily indicate that landslides have occurred in the past.

These landslide susceptibility zones are identified through a regional assessment that outlines areas that, based on expert experience, have unfavourable combinations of slope and geology. These maps present modelled predictions about which slopes are potentially susceptible to each landslide process — either as first-time slope failures or reactivation of past instability.

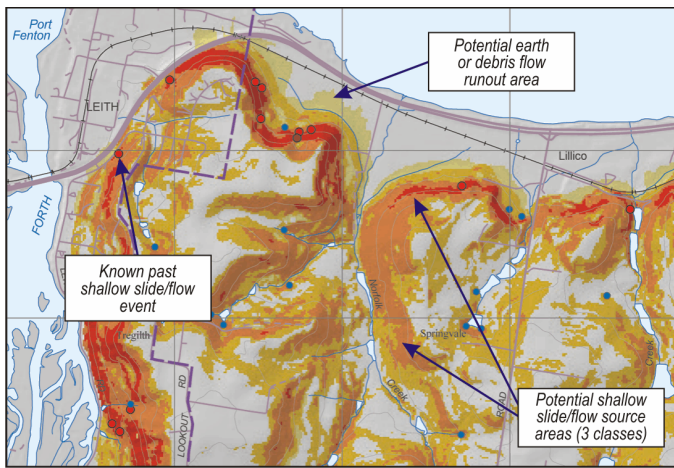
Development of sites within identified landslide susceptible zones usually requires a site investigation and a landslide risk assessment to be undertaken by a qualified geotechnical practitioner. At the scale of individual site investigations it may be found that the landslide susceptibility at the site differs from the regional assessment presented in the maps of the Tasmanian Landslide Map Series.



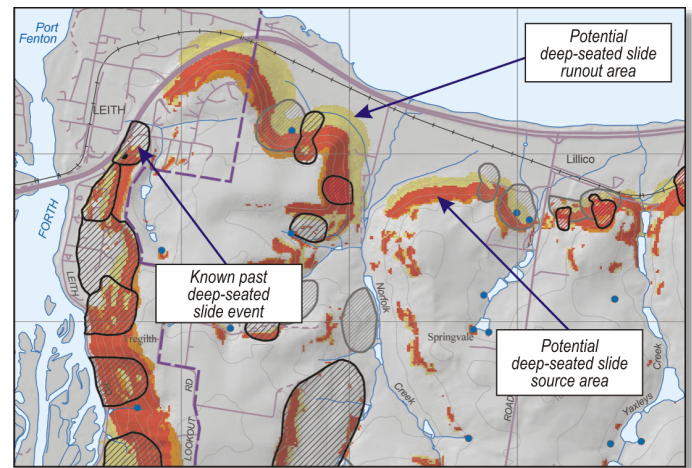
Landslide Inventory — mapped landslides and recorded damage



Rockfall Susceptibility — modelled susceptibility zones



Shallow Slide & Flow Susceptibility — modelled susceptibility zones



Deep-seated Slide Susceptibility — modelled susceptibility zones

A site investigation and landslide risk assessment will establish the likely level of risk and provide recommendations necessary to ensure the safety of people and property (both within the site and on the surrounding slopes and property). It is essential that these recommendations are adhered to and maintained so that the development does not adversely affect the stability of the slope.

The landslide susceptibility zones depicted on the maps reflect different landslide processes: rockfall (falls & topples); shallow slides and/or flows (debris or earth flows); and deep-seated slides. However these maps do not indicate the likelihood of a landslide at any given location.

The susceptibility zones predict where potential landslides may originate (source areas), where they may travel downslope (runout areas) and, in the case of deep-seated slides, what area upslope might also be affected (regression areas). The maps also show known past landslides that may potentially be reactivated, either by human disturbance or adverse natural conditions.

## Types of landslide zone

There are different types of 'landslide zone' encountered in Tasmania (these are not all 'planning zones'):

- **Zones on Advisory Maps:** These include the landslide susceptibility zones shown on the Susceptibility maps in the Tasmanian Landslide Map Series. Advisory maps are produced as a result of scientific study and make predictions about potential land instability. Previous advisory maps produced are superseded by the new map series where available.
- **Known Landslides (or Zones of Known Landslides):** Some landslide maps only show known landslides, or known zones of instability, e.g. the Landslide Inventory maps in this map series, and other earlier maps. These maps only indicate actual landslides and do not indicate slopes that have the potential for future slope failure.
- **Proclaimed Landslip A and B areas:** In exceptional cases the Tasmanian Government has proclaimed Landslip A and B areas. Only a small number of these legislated Areas exist, compared to the much greater area of landslide-susceptible land. In essence Landslip A areas are those where no more development is allowed, while Landslip B areas allow development with strict controls.
- **Landslide Hazard Bands:** A state-wide Landslide Planning Map has been produced by the Department of Premier and Cabinet (DPAC) that categorises the slopes over all of Tasmania into five 'landslide hazard bands' – it is intended that planning controls will be applied to these bands to manage landslide risk. The Landslide Planning Map is a simplification, for planning purposes, of MRT's regional advisory Landslide Map Series, where available, and otherwise represents general slope categories based on MRT research.

## Is my property within any of these zones?

Planning schemes will contain provisions intended to manage landslide risk, and property owners and developers should **consult the local Planning Scheme to determine whether a site investigation and landslide risk assessment are required**. Where available, the Tasmanian Landslide Map Series will then provide the background information for a more detailed site investigation by a qualified geotechnical practitioner. All maps have limitations in spatial accuracy and reliability, so conclusions should not be made based on a map alone. A geotechnical landslide expert and a surveyor will be required to determine property boundaries and the locations of any landslide zones or proclaimed Landslip Areas.

## Further Information

Further information is available on the Mineral Resources Tasmania web site ([www.mrt.tas.gov.au](http://www.mrt.tas.gov.au) — Geoscience — Engineering Geology — Landslides), or by contacting MRT directly. Available information includes:

- the complete maps of the **Tasmanian Landslide Map Series** (downloadable in PDF and geo-referenced formats);
- an **online map viewer** (choose *Database Search* then *Landslides — Browse Map*) provides summary information from the MRT landslide database and map images from the *Tasmanian Landslide Map Series*;
- the document **Tasmanian Landslide Map Series: User Guide and Technical Methodology** which highlights the need for landslide risk management, provides guidance on the use of the available information, and details the methodology used to create the maps;
- general information on landslides in Tasmania and copies of the landslide brochures.

The Australian Geomechanics Society web site ([www.australiangeomechanics.org](http://www.australiangeomechanics.org) — Resources — Public Resources) provides links to the Australian Geomechanics Society (2007) *Landslide Risk Management Guidelines*, which includes the *Australian GeoGuides* information sheets, and provides best practice for both geotechnical practitioners and regulators.

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