

## SHOWING RELIEF ON MAPS

*Relief* is a general term used to describe the shape of the land, including its height above sea level (asl) and the steepness of its slopes.

Because maps are usually drawn on flat sheets of paper it has been necessary for cartographers to develop ways of showing what the landscape is like. These techniques include spot heights, shading, colour layering and contour lines.

A *spot height* is usually shown on a map as a black dot with the height written next to it. It gives the exact elevation (or height) above sea level of a particular location or feature. Major spot heights are sometimes shown as trigonometric (trig) stations. These are usually found on the top of prominent landform features and are normally marked with a structure of some kind, for example a block of concrete.

While spot heights and trig stations are useful in determining the elevation of prominent landform features, they do not

tell us much about the shape of the land. Contour lines and shading are much more effective.

*Shading* is a very effective method of highlighting landform features. The shading makes the landform features 'stand out' from the map, creating a three-dimensional effect.

*Colour layering* is used on some maps to distinguish between different elevations. The legends of these maps include a graded colour scale that enables the user to interpret the map. (See Figure 1.5a.)

*Contour lines* join places of equal height above sea level. Below sea level the lines are referred to as marine contours (or *bathymeters*). Being able to interpret contour lines provides geographers with information about:

- the *shape* of the land
- the *slope* of the land
- the *height* of features above sea level.

Each contour line represents a particular height above sea level. Therefore, every point along a contour line has the same value. The spacing of

the contour lines on a map indicates the steepness of slopes. Areas where contour lines are close together have steep slopes, and areas where there are only a few widely spaced contour lines are very flat. (See Figure 1.5b.)

The spacing of the contour lines also gives us an idea of the slope's shape. Evenly spaced contours indicate a uniform slope. When the spacing between contour lines (reading from high to low) decreases, the slope is *convex*. When spacing between contour lines (reading from high to low) increases, the slope is *concave*. (See Figure 1.5c.)

A skilled user of topographic maps can visualise the shape of particular features by studying the patterns created by the contour lines. Some examples of common landform features and their associated contour patterns are shown in Figure 1.5d.

The *contour interval* is the difference in height between two adjacent contour lines. This interval is always constant on any particular map.

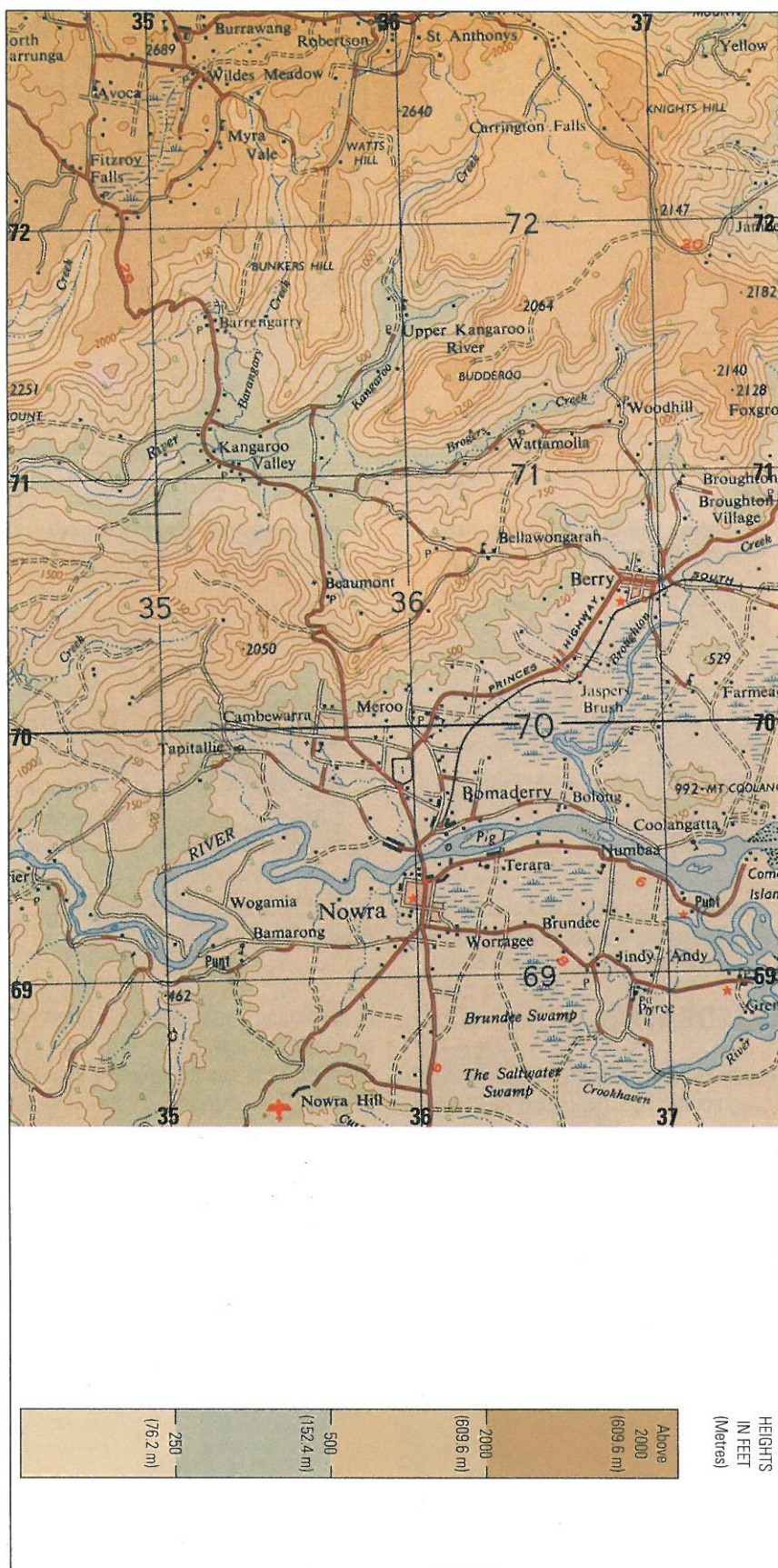


Figure 1.5a Wollongong topographic map extract, 1959.

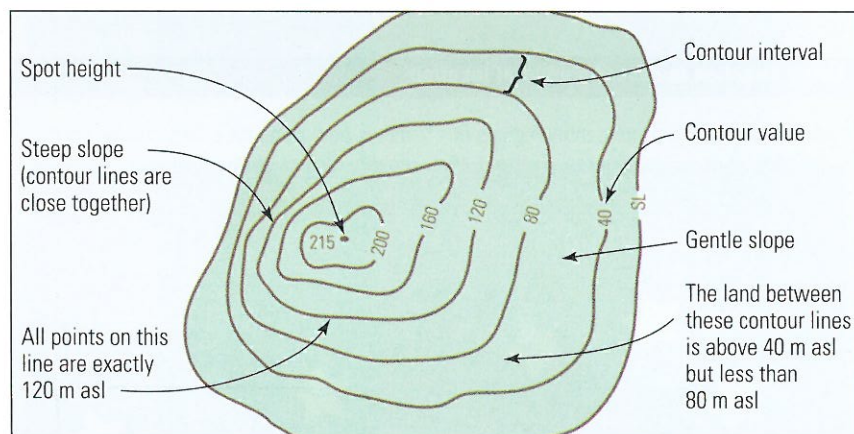


Figure 1.5b Features of contour lines.

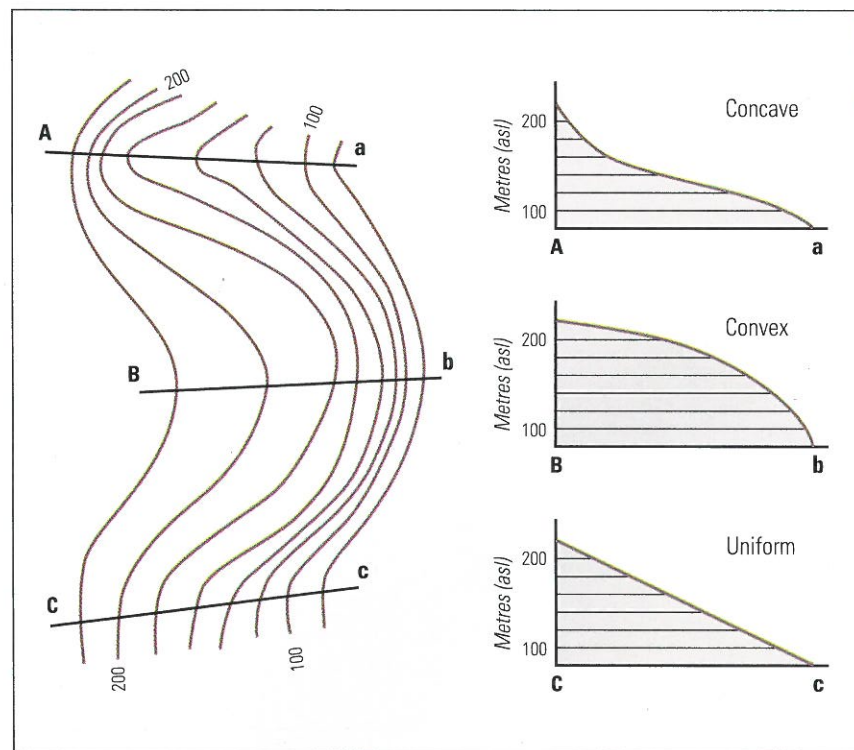
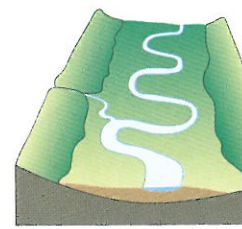


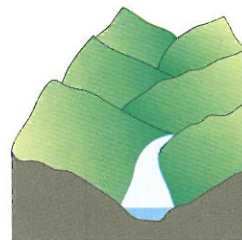
Figure 1.5c Contour patterns and the shape of slopes.



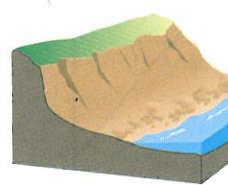
Floodplain



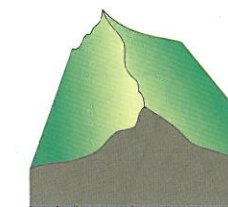
Drowned coastline



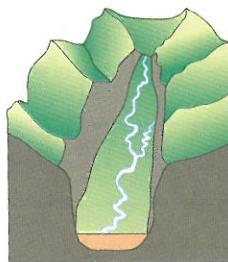
Interlocking spurs



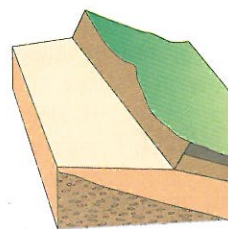
Cliffed beach



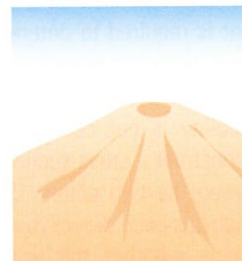
Ridge



Truncated spurs



Scarp



Conical mountain

Figure 1.5d Common landform features