

This directory contains composite digital elevation model grids for the River Murray Corridor AEM Survey area. The mosaic datasets have a 10 meter horizontal resolution (pixel size) and are stored as raster grids of elevation in meters relative to the Australian Height Datum (AHD)

For a complete description of the methods used to compile this data please refer to:

Brodie, Ross C., 2008. *Merging of elevation datasets for the River Murray Corridor AEM Project*. Geoscience Australia report for the Bureau of Rural Sciences. Bureau of Rural Sciences, Canberra.

The following table shows the structure of the directories and data files.

Directory	File name	Directory / file description
ERMapper_Rasters		ER MAPPER 7.1 format rasters of elevation, stored as 32 bit real numbers. Elevation in meters AHD.
	rmc_a_elevation_merge_10m.ers	Elevation for sub area A, which encompasses the AEM survey area for Lindsay-Wallpolla and Lake Victoria-Darling Anabranch.
	rmc_b_elevation_merge_10m.ers	Elevation for sub area B, which encompasses the AEM survey areas for Nangiloc-Colignan, Liparoo-Robinvale, Robinvale-Boundary Bend, Boundary Bend-Nyah and Speewa.
	rmc_c_elevation_merge_10m.ers	Elevation for sub area C, which encompasses the AEM survey area for Barr Creek-Gunbower.
ESRI_Grids		ESRI format rasters of elevation, stored as 32 bit real numbers. Elevation in meters AHD.
	rmc_a_z_10m	Elevation for sub area A, as described above
	rmc_b_z_10m	Elevation for sub area B, as described above
	rmc_c_z_10m	Elevation for sub area C, as described above

Only the relevant sub area (A, B or C) elevation data is included in each of GIS data disks for the River Murray Corridor AEM Salinity Mapping Project (RMC AEM Project).

A brief extract describing the data sources used can be found below.

The elevation data used in the compilation were derived from the following acquisition methods;

- airborne light detection and ranging (LIDAR) surveys,
- airborne electromagnetic (AEM) surveys, and
- the shuttle radar topography mission (SRTM) survey.

The LIDAR data were provided to the CRCLEME group at Geoscience Australia by the Murray Darling Basin Commission, SunRise 21, and the Mallee CMA. The LIDAR data have the greatest horizontal resolution at either 1 m or 2 m grid cell (pixel) sizes. The suppliers of the LIDAR datasets typically state the vertical accuracy to be of the order of ± 0.10 m. Details of the origin of the LIDAR datasets can be found in the reports Clarke et. al., 2007 a–f.

The elevation data resulting from the AEM surveys were the next most reliable source of data. These data were derived from three GPS units and a profiling laser altimeter instrument mounted on the acquisition bird of the RESOLVE AEM system (Farquhar, 2008). The data were acquired at intervals of ~ 3.5 m along flight lines spaced at either 200 m or 250 m apart. These point located data were then interpolated onto regular grids with cell (pixel) sizes of 40 m.

The SRTM data are derived from synthetic aperture radar measurements taken on board NASA's Space Shuttle Endeavour during 2000. The data were available at a horizontal grid resolution of 3 seconds of arc (~ 90 m). SRTM data have a stated 90% accuracy of 6.0 ± 4.7 m over continental Australia (Rodriguez et al, 2005). Assuming Gaussian random errors, this means the standard deviation of the relative errors would be 2.87 m (i.e. 4.7 m / 1.64 standard deviations).

Figure 1 outlines the extent of the source datasets in relation to the location of the River Murray Corridor (RMC) AEM survey blocks. Table 1 lists the acquisition method for each of the datasets corresponding to the legend in the key of Figure 1.

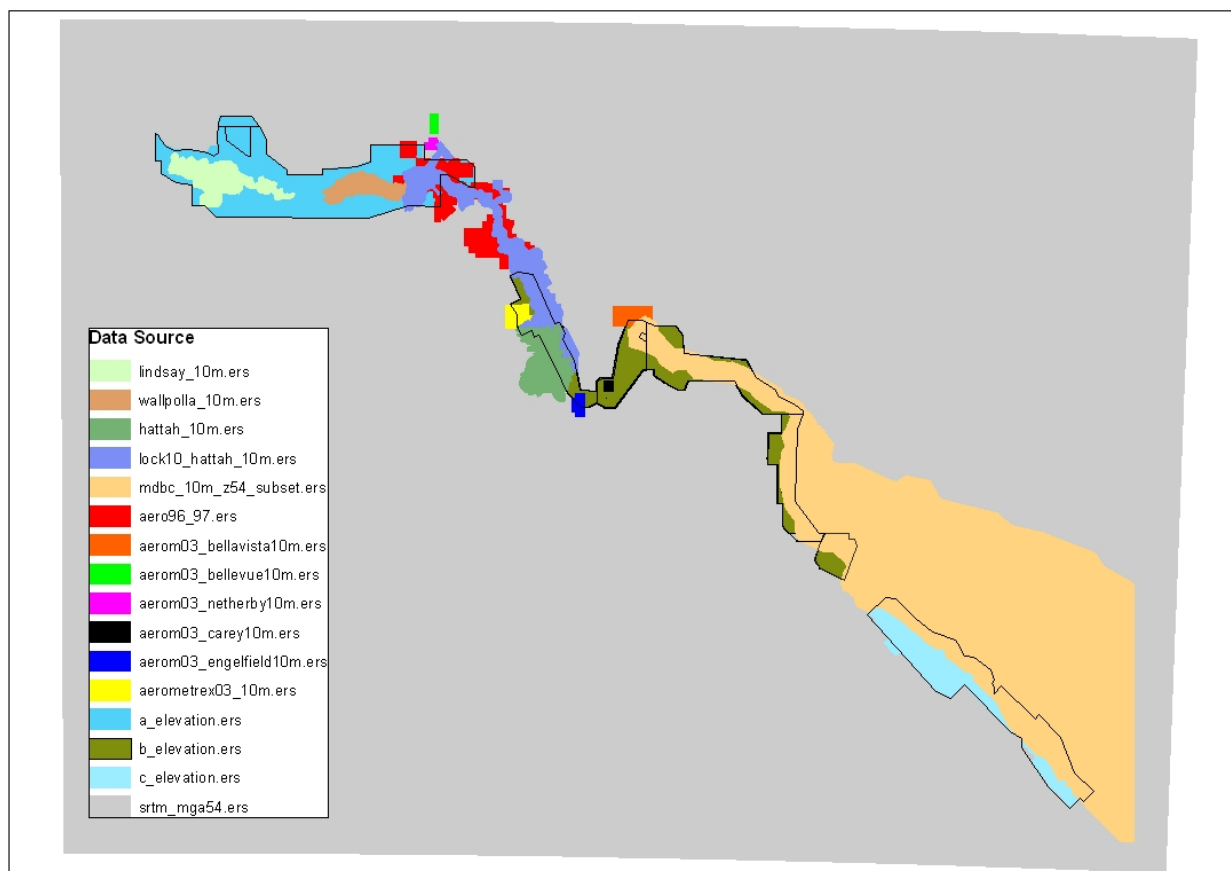


Figure 1 **Extent of source datasets used in the merge of elevation data.**