



## A revised area taxonomy of phytogeographical regions within the Australian Bioregionalisation Atlas

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### Abstract

The phytogeographical regions and sub-regions of Australia are revised in light of new data from a recent analysis by González-Orozco, Ebach *et al.* (2014). The new revision includes two new regions, Northern *regio nova* and Northern Desert *regio nova*, and five new sub-regions, Nullarbor *sub-regio nova*, Central Desert *sub-regio nova*, Great Sandy Desert Interzone *sub-regio nova*, Central Queensland *sub-regio nova* and, Southwestern *sub-regio nova*. This new revised version of the phytogeographical regions and sub-regions of Australia's land plants provides an updated classification based on historical nomenclature. The analysis by González-Orozco, Ebach *et al.* (2014) is a biogeographically centered classification that generated the first exclusively taxonomic regionalisation of Australia's land plants, used here to update the ABA phytogeographical regions.

**Key words:** area nomenclature, Central Desert, Central Queensland, Great Sandy Desert Interzone Northern, Northern Desert, Nullarbor, Southwestern

### Introduction

Australian phytogeographical regionalisation has its beginnings in the work of Ferdinand Mueller (1825–1896), who served as the Victorian Government botanist for over 40 years (Home 1995). Mueller was the first to propose a regionalisation for the Australian vegetation, which he divided into seven groups “Plants of the dense coast-forests [...] the Brigalow scrub [...] the open downs [...] the desert [...] the sandstone table-land [...] the sea-coast [and;] the banks and valleys of rivers” (Mueller 1858: 146).

Since Mueller, there have been several different area taxonomies that may be classified into three distinct groups: vegetations (e.g., Mueller 1858; Diels 1906; Beard 2001), biomes (Byrne *et al.* 2008), and taxonomic/endemic areas or bioregions (Tate 1889, Burbidge 1960, Crisp *et al.* 1995; 1999; Ladiges *et al.* 2011 González-Orozco *et al.* 2011, 2013, González-Orozco, Ebach *et al.* 2014, González-Orozco, Thornhill *et al.* 2014; Stevenson *et al.* 2012; see Ebach 2012 for a detailed history). Of these, the bioregions are of interest as they pertain purely to taxonomic distributions and endemism, which can be quantified independently to other data such as climate and topography using spatial analysis (e.g., Laffan *et al.* 2010). A recent study by González-Orozco, Ebach *et al.* (2014) has used taxonomic distributions to test existing phytogeographical areas, which have been classified into six regions within the *Australian Bioregionalisation Atlas* (ABA, Ebach *et al.* 2013). The study by González-Orozco, Ebach *et al.* (2014) used a diverse set of major land plant groups including bryophytes, ferns and several of the largest angiosperm genera and families in Australia (Table 1). The analysis revealed a 65% overlap between their six phytogeographical regions and those of the ABA regions. González-Orozco, Ebach *et al.* (2014), however, established that the analysis had also resolved evidence for smaller sub-regions and provinces that were not formally described in Ebach *et al.* (2013); these will be defined and described here.