

## **Appendix 1**

### **Obsolete names and revised definitions**

#### **Pilbara Block (obsolete)**

First used by Ryan (1964) to refer to the northern exposed section of the Pilbara Craton. Name replaced by 'Pilbara Craton' (Trendall, 1990) in referring to both the Archean granite–greenstones of the Pilbara region and the overlying 'Hamersley Basin' ('Hamersley Basin' later subdivided into three basins). 'Pilbara Craton' redefined by Van Kranendonk et al. (2006) to refer only to the Archean granite–greenstones of the Pilbara region. That part of the Pilbara Craton previously referred to as the 'Pilbara Block' is now named the 'northern Pilbara Craton'.

#### **Pilbara Craton (revised)**

Trendall (1990) introduced the name 'Pilbara Craton' to refer to both the Archean granite–greenstones of the Pilbara region and the overlying 'Hamersley Basin' ('Hamersley Basin' later subdivided into three basins). This nomenclature continued until a major revision of the stratigraphy of the northern Pilbara Craton in which Van Kranendonk et al. (2006) used the name 'Pilbara Craton' to refer only to the Paleo–Mesoarchean granite–greenstones of the Pilbara region, thereby excluding the Neoarchean Hamersley Basin succession. Data obtained by GSWA and Geoscience Australia through the 1994–2005 Pilbara Craton Mapping Project established that final cratonization of the Pilbara Craton occurred at c. 2900 Ma (see Hickman et al., 2006).

#### **Hamersley Basin (revised)**

Trendall (1975) defined the 'Hamersley Basin' as the depositional basin of the Mount Bruce Supergroup, comprising the Fortescue, Hamersley, and Turee Creek Groups. In a reappraisal of the tectonic units of Western Australia, Tyler and Hocking (2008) assigned these three groups to separate basins. Accordingly, the Hamersley Basin was redefined as the depositional basin of only the Hamersley Group.

#### **East Pilbara Granite–Greenstone Terrane (obsolete)**

Named and briefly described by Williams and Hickman (2000) and Van Kranendonk and Hickman (2000). Later recognition of the tectonic significance of the East Pilbara Terrane Rifting Event means that this obsolete tectonic unit, which included Paleoarchean and Mesoarchean stratigraphy, is not equivalent to the 3530–3223 Ma East Pilbara Terrane

(Paleoarchean), named by Van Kranendonk et al. (2006). However, the same assemblage of tectonic units may be referred to the 'east Pilbara Craton' (this Report).

### **West Pilbara Granite–Greenstone Terrane (obsolete)**

Named by Williams and Hickman (2000) and Van Kranendonk and Hickman (2000), and described by Hickman (2001). Later recognition of the tectonic significance of the c. 3070 Ma Prinsep Orogeny means that this obsolete tectonic unit, which included the Mesoarchean De Grey Basin, is not equivalent to the 3280–3066 Ma West Pilbara Superterrane, first named and described by Van Kranendonk et al. (2006; 2010).

### **North Pilbara granite–greenstone terrane (obsolete)**

First used by (Griffin, 1990) to refer to the northern exposed section of the Pilbara Craton. Subsequently divided into western and eastern terranes separated by the Mallina Basin (Hickman, 1999). These terranes, the 'West Pilbara Granite–Greenstone Terrane' and 'East Pilbara Granite–Greenstone Terrane', were formally named and briefly described by Williams and Hickman (2000) and Van Kranendonk and Hickman (2000). The name 'North Pilbara granite–greenstone terrane' has been replaced by the name 'northern Pilbara Craton'.

### **Pilbara Supergroup (revised)**

The name 'Pilbara Supergroup' was first used and defined by Hickman (1980, 1983) to refer to the entire greenstone succession (Paleo–Mesoarchean) of the Pilbara Craton. Following more detailed stratigraphic information from the 1994–2005 Pilbara Craton Mapping Project, the Pilbara Supergroup was redefined to comprise only the four oldest groups of the craton (Warrawoona, Kelly, Sulphur Springs, and Soanesville; Van Kranendonk et al., 2006). The Soanesville Group was included based on an interpretation of a gradational contact between it and the underlying Sulphur Springs Group in the northern part of the Soanesville greenstone belt (Van Kranendonk, 2000, 2003). Alternatively, this contact has been interpreted as an unconformity (Hickman and Lipple, 1975; Eriksson, 1981; Hickman, 1983; Vearncombe et al., 1995; Vearncombe and Kerrich, 1999; Glikson, 2001; Buick et al., 2002). Recognition of 3220–3200 Ma continental breakup of the East Pilbara Terrane prior to deposition of the Soanesville Group (Van Kranendonk et al., 2010) required removal of this group from the Pilbara Supergroup (Hickman, 2011).

### **Gorge Creek Group (revised)**

Hickman and Lipple (1975) used the name 'Gorge Creek Group' to refer to the upper, mainly sedimentary part of the greenstone succession in the east Pilbara Craton. This was separated from the lower, mainly volcanic part of the greenstone succession which they

named the 'Warrawoona Group'. Both names were formally defined by (Lipple, 1975). In these definitions, the lower section of the Gorge Creek Group was named the 'Soanesville Subgroup'. The Cleaverville Formation of the northwest section of the Pilbara Craton (Ryan and Kriewaldt, 1964) was subsequently added to the Gorge Creek Group of the east Pilbara Craton (Hickman, 1980). Following the 1994–2005 Pilbara Craton Mapping Project, the 'Soanesville Subgroup' was upgraded to the Soanesville Group and a number of new formations were added (Van Kranendonk et al., 2006). In this revision, the Gorge Creek Group was redefined to comprise three formations. In ascending stratigraphic order: Farrel Quartzite, Cleaverville Formation, and Cundaline Formation. The Lalla Rookh Sandstone and Mosquito Creek Formation, originally assigned to the Gorge Creek Group (Lipple, 1975), had previously been re-assigned to younger groups.

### **Warrawoona Group (revised)**

The name Warrawoona Group was originally used to refer to the lower, mainly volcanic succession of the east Pilbara Craton (Lipple, 1975), the upper, mainly sedimentary succession being named the Gorge Creek Group. The Warrawoona Group has since been restricted to that part of the volcanic succession underlying the 3426–3350 Ma Strelley Pool Formation. Mainly volcanic successions no longer included in the Warrawoona Group are the Kelly Group and the Sulphur Springs Group. These three groups, which are separated by unconformities, collectively make up the Pilbara Supergroup.

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## Recommended reference:

- Hickman, AH 2021, Appendix 1 — Obsolete names and revised definitions, *in* East Pilbara Craton: a record of one billion years in the growth of Archean continental crust *by* AH Hickman: Geological Survey of Western Australia, Report 143, 4p.