Appendix 10. New South Wales: Setting

MAP_SYMB	UFI	STRATNO	FORMATION_GROUP	CRUSTAL_ELEMENT	PROVINCE	COMP_BULK	SETTING	ROCKTYPE	ABUNDANCE	MODE_OCCURRENCE	THICKNESS	COUNTRYROCK	MIN_STYLE 1	MIN_STYLE 2	MIN_STYLE 3	GEOTECTONICS	REFERENCE	GAREF	REFERENCE	GAREF
Curnamona province																				
Lwb	1212	2617	Broken Hill Group, Broken Hill Suite, Willyama Supergroup (includes seven groups of undated Palaeoproterozoic–Neoproterozoic mafic rocks identified on Olary 1: 250 000 Sheet)	South Australian Element	Curnamona	Mafic	Extrusive, hypabyssal	Amphibolite (ortho and para), serpentinite, hornblendite	Minor	Massive and banded para-amphibolites intensely folded with enclosing sediments; orthoamphibolites as lava flows, sills, plugs, transgressive dykes		Metasediments, garnetiferous quartz-feldspathic gneiss, minor garnet and gahnite-rich rocks, BIF; includes Ettlewood Calc-Silicate Member, Hores Gneiss, and un-named equivalents						Crooks (2003)	63824
Lwb-Lwp	619	14860	Un-named Broken Hill Group and Paragon Group (only in South Australia)	South Australian Element	Curnamona	Mafic	Extrusive, hypabyssal	Amphibolite	Minor	Massive and banded para-amphibolites intensely folded with enclosing sediments; orthoamphibolites as lava flows, sills, plugs, transgressive dykes		Predominantly graphitic metasediments including phyllite, schist, psammite, and minor calc-silicate						Crooks (2003)	63824
Lwt	429	25749	Thackaringa Group, Willyama Supergroup (includes seven groups of undated Palaeoproterozoic–Neoproterozoic mafic rocks identified on Olary 1: 250 000 Sheet)	South Australian Element	Curnamona	Mafic	Extrusive, hypabyssal	Amphibolite (ortho and para), metadolerite, metadiorite, hornblendite, two-pyroxene mafic granulite, pillowed mafic rocks, minor ultramafic rocks	Minor	Massive and banded para-amphibolites intensely folded with enclosing sediments; orthoamphibolites as lava flows, sills, plugs, transgressive dykes		Composite gneiss, albite-rich rocks, granitic gneiss, minor quartz-magnetite rocks and garnet-quartz rocks				Iron-rich tholeiitic magmatism in continental rift environment	Forbes (1991)	42813	Forbes (1991)	42813
m	22	NA	Mafic Intrusives (only in South Australia)	South Australian Element	Curnamona	Mafic-intermediate	Intrusive	Intermediate (trachyandesite, monzonite, lamprophyre) dykes surrounding Nilpena Hill on Olary 1:250 000 geological sheet	Major	Three clusters of north-northeast-trending dykes	6	Siltstone, dolomite, quartzite, sandstone, ironstone, limestone (Wilyerpa Formation, Tapley Hill Formation), granite, adamellite, granodiorite (Anabama Granite), gneiss, migmatite (Paragon Group)						Crooks (2003)	63824
Mbh_gair	NA	31393	Little Broken Hill gabbro, near Huonville, ~20 km south-southeast of Broken Hill (location: Lat 32.1000000, Long 141.553333)	South Australian Element	Curnamona	Mafic	Intrusive	Gabbro, amphibolite, hornblendite, serpentinite (very minor)	Major	Tapered tear-drop shaped gabbroic body (~1 by 6 km); represents magma chamber that fed NW-striking mafic dykes at higher-crustal levels		Garnet quartzofeldspathic gneiss, mafic gneiss (Purnamoota Subgroup); plagioclase-quartz rocks, pyrite-bearing rocks, mafic gneiss (Himalaya Formation); granitic gneiss, mafic gneiss (Rasp Ridge Gneiss)						Wingate et al. (1998)	62664
Tasman province																				
Cp	261	35621	Ponto beds–Ponto Group (previously Wonominta Beds), Koonenberry Belt	Tasman	Tasman	Mafic	Extrusive, hypabyssal	Tholeiitic basaltic pillow lavas, tuff, dolerite	Minor	Pillowed basaltic lava flows, dolerite dykes, sills, and plugs; often fault-bounded		Associated rocks of the Ponto Group: strongly deformed phyllite, schist, silicic tuffs, quartzofeldspathic greywacke and quartzose pelite, silicic tuff; carbonate-bearing pelitic units, quartz-iron oxide lenses				Tholeiitic basalts with MORB affinities; Ponto beds emplaced during Delamerian thrusting; distal shelf or slope/basin facies with periods of bimodal felsic and mafic volcanism; active plate margin	Scheibner & Basden (1998)	8038	Buckley (2003)	63793
Nkv	11	12467	Intrusives within Kara beds (intrude and are related to 586 ± 7 Ma Mount Arrowsmith Volcanics–Kara beds), Koonenberry Belt	Tasman	Tasman	Mafic	Intrusive	Gabbro, leucogabbro, dolerite, diorite, syenite, ?therzolite intrude transitional alkaline to tholeiitic basaltic sequence	Major	Small intrusions, dykes, and sills associated with kaersutite lamprophyre and peridotite dykes; minor contact metamorphic effects; comagmatic with Mount Arrowsmith Volcanics		Associated Kara beds: carbonaceous slate, phyllite, pyritic siltstone, carbonate-bearing siltstone, quartzite, sandstone, minor conglomerate and carbonate rocks, alkaline basalt, trachybasalt, pillow basalt, tuff				Continental rift setting (similar compositions to alkali rhyolite lava piles in the Afar Rift, bordering the Red Sea); pillow lavas, hyaloclastites, amygdaloidal basalts and carbonate sediments indicate relative shallow-water submarine extrusion	Crawford et al. (1997)	6611	Mills (1992)	63789
u	324	NA	Ultramafics (Macs Tank ultramafic intrusion and Cliffs Tank (formerly Barrongie Tank) ultramafic intrusion on Nuchea 1:100 000 Sheet), Koonenberry Belt	Tasman	Tasman	Ultramafic	Intrusive	Pyroxene-olivine ultramafics, serpentinite, lherzolite, dolerite; sheared ultramafic rock melange	Major	Fault-bounded (associated with Mt Wright Fault) intrusive bodies containing clasts of tholeiitic dolerite, amphibolite, and sedimentary rocks		Associated rocks of the Ponto Group and Kara beds: phyllite, schist, quartzofeldspathic greywacke and quartzose pelite, siltstone, conglomerate, quartzite, basalt, tuff, carbonate-bearing pelitic units, quartz-iron oxide lenses	Elevated Cu, Ni, Cr (Macs Tank intrusion)	0.5% Ni, 0.45% Cu (Mount Arrowsmith East prospect: Sharp, 2006)		Ponto beds: tholeiitic basalts with MORB affinities; distal shelf or slope/basin facies with periods of bimodal felsic and mafic volcanism; active plate margin; tectonic setting of ultramafic intrusions are not described	Scheibner & Basden (1998)	8038	Buckley (2003)	63793
4sb	NA	NA	Mafic volcanics, basalt (likely to be part of northern extension of 586 ± 7 Ma Mount Arrowsmith Volcanics–Kara beds; see STRATNO 12467 above), Koonenberry Belt	Tasman	Tasman	Mafic	Extrusive	Basalt (Mount Arrowsmith Volcanics consist of alkali basalt, trachybasalt, trachyte, lavas, pyroclastics, sills, and related intrusives)	Major	Lava flows		?Associated Kara beds: carbonaceous slate, phyllite, pyritic siltstone, carbonate-bearing siltstone, quartzite, sandstone, minor conglomerate and carbonate rocks, alkaline basalt, trachybasalt, pillow basalt, tuff				Marine, shallow water	NSW Solid Geology Map Coverage	NA	Crawford et al. (1997)	6611
4sv	NA	NA	Mafic volcanics, andesite, basalt (likely to be part of northern extension of 586 ± 7 Ma Mount Arrowsmith Volcanics–Kara beds; see STRATNO 12467 above), Koonenberry Belt	Tasman	Tasman	Mafic	Extrusive	Basalt, andesite (Mount Arrowsmith Volcanics consist of alkali basalt, trachybasalt, trachyte, lavas, pyroclastics, sills, and related intrusives)	Major	Lava flows		?Associated Kara beds: carbonaceous slate, phyllite, pyritic siltstone, carbonate-bearing siltstone, quartzite, sandstone, minor conglomerate and carbonate rocks, alkaline basalt, trachybasalt, pillow basalt, tuff				Marine, shallow water	NSW Solid Geology Map Coverage	NA	Crawford et al. (1997)	6611
Curnamona province																				
NA	NA	NA	Un-named mafic intrusive rock in Thackaringa region, ~30 km southwest of Broken Hill (reference to large dark-coloured hills to the east; no locational data)	South Australian Element	Curnamona	Mafic	Intrusive	Amphibolite	Major	Mafic intrusion									Gibson et al. (1998)	63831
NA	NA	NA	Un-named amphibolite (sample 9618006) from Clevedale Migmatite and Thorndale Composite Gneiss in Clevedale region, ~10 km southeast of Broken Hill (location: Lat 31.979905, Long 141.568768)	South Australian Element	Curnamona	Mafic	Intrusive	Amphibolite	Major	Discordant deformed dyke		Migmatite and gneiss (Thorndale Composite Gneiss and Clevedale Migmatite)				Synextensional metabasites intruded into lower plate rocks indicate that extension and related bimodal magmatism peaked around 1670–1690 Ma	Gibson & Nutman (2004)	49943	Raetz et al. (2002)	24307
NA	NA	NA	Un-named gabbro (sample 94BH52) intruding Cues Formation–Thackaringa Group, top of Round Hill, ~5 km east of Broken Hill (location: 548297 E, 6466953 N; Lat 31.932167, Long 141.5108330)	South Australian Element	Curnamona	Mafic	Intrusive	Amphibolite (hornblende-plagioclase±garnet±orthopyroxene±clinopyroxene), metagabbro	Major	Small intrusion, apparent concordant contact with adjacent sillimanite-bearing paragneiss		Psammopelitic to psammitic gneisses with intercalated mafic gneiss, garnet-quartz and garnet-quartz-magnetite rocks; quartz-iron oxide-sulphide and quartz-magnetite rocks, calc-silicate rocks (Cues Formation–Thackaringa Group)							Nutman & Ehlers (1998)	6823
NA	NA	NA	Un-named amphibolite (sample 9618007) from Clevedale Migmatite and Thorndale Composite Gneiss in Clevedale region, ~10 km southeast of Broken Hill (location: Lat 31.961127, Long 141.576448)	South Australian Element	Curnamona	Mafic	Intrusive	Amphibolite	Major	Concordant mafic sheet		Migmatite and gneiss (Thorndale Composite Gneiss and Clevedale Migmatite)				Synextensional metabasites intruded into lower plate rocks indicate that extension and related bimodal magmatism peaked around 1670–1690 Ma	Gibson & Nutman (2004)	49943	Raetz et al. (2002)	24307
NA	NA	NA	Un-named mafic intrusive rock in Thackaringa region, ~30 km southwest of Broken Hill (reference to mafic intrusive into anatectic albitic metasediments; no locational data)	South Australian Element	Curnamona	Mafic	Intrusive	Amphibolite	Major	Mafic intrusion		Anatectic albitic metasediments							Gibson et al. (1998)	63831
NA	NA	NA	Un-named amphibolite (sample 9618008) from Clevedale Migmatite and Thorndale Composite Gneiss in Clevedale region, ~10 km southeast of Broken Hill (location: Lat 31.795716, Long 141.585768)	South Australian Element	Curnamona	Mafic	Intrusive	Amphibolite	Major	Discordant deformed dyke		Migmatite and gneiss (Thorndale Composite Gneiss and Clevedale Migmatite)				Synextensional metabasites intruded into lower plate rocks indicate that extension and related bimodal magmatism peaked around 1670–1690 Ma	Gibson & Nutman (2004)	49943	Raetz et al. (2002)	24307
Tasman province																				
NA	NA	NA	Attunga Eclogite in the Woodsreef Mélange, southern part of New England Orogen (uncertain location: serpentinised ultramafic rocks in Peel Fault ~10 km northeast of Attunga at: ~Lat 30.850000, Long 150.925000)	Tasman	Tasman	Mafic	Uncertain origin	Mafic eclogite (high-pressure metamorphosed basaltic rock, such as a basalt or gabbro), metagabbro	Major	Small fault-bounded blocks and enclaves		Associated metagabbro, serpentinite				Mafic ophiolitic component in Peel Fault System associated with Palaeozoic subduction complex from an associated fore-arc basin	Watanabe et al. (1998)	NA	Watanabe et al. (1998)	NA
Curnamona province																				
NA	NA	29142	Wilangee Basalt (Wendalpa Subgroup, Poolamacca Group)	South Australian Element	Curnamona	Mafic	Extrusive	Vesicular basalt	Major	Lava flows; disconformable ?subaerial flows	160	Associated quartzite, limestone, and interflow sediments				Rift-related intraplate mafic volcanism; subaerial volcanism	Scheibner & Basden (1998)	8038	Scheibner & Basden (1998)	8038
NA	NA	70623	Montstephen Metabasalt–Ethiudna Subgroup (formerly called Weekeroo Amphibolite) (South Australia: location: Lat 32°13′ S, Long 139°56′ E)	South Australian Element	Curnamona	Mafic	Intrusive	Amphibolite, metabasalt (pillowed, amygdaloidal), fragmental mafic rocks	Major	Several pillowed and amygdaloidal mafic lavas intercalated with metasedimentary rocks of the Ethiudna Subgroup, sills and dyke swarms		Associated psammopelitic to psammitic gneisses, quartzite, carbonate psammite, calc-silicate rocks, albitic metasiltstone, chert, hydrothermal breccia, iron-rich chemical sediments				Tholeiitic volcanics extruded into water	Conor (2004)	63102	Conor (2004)	63102
NA	NA	NA	Un-named amphibolite intrusion in the Cues Formation (Thackaringa Group: location: 516517, 6446386)	South Australian Element	Curnamona	Mafic	Intrusive	Amphibolite	Major	Mafic intrusion									OZCHRON	NA
NA	NA	NA	Un-named gabbro intrusion, Broken Hill Syntform (location: 549999, 6464274)	South Australian Element	Curnamona	Mafic	Intrusive	Gabbro	Major	Mafic intrusion									OZCHRON	NA
NA	NA	NA	Un-named mafic intrusion, Allendale area (location: 545949, 6502803)	South Australian Element	Curnamona	Mafic	Intrusive	Amphibolite	Major	Mafic intrusion									OZCHRON	NA
NA	NA	NA	Un-named mafic intrusion, north of Hores Mine (location: 550888, 6498718)	South Australian Element	Curnamona	Mafic	Intrusive	Amphibolite	Major	Mafic intrusion									OZCHRON	NA
Tasman–Early Cambrian to ~Carboniferous: Not Applicable																				
NA	NA	NA	Several 'ophiolitic'-type bodies: (535 ± 10 Ma, 530 ± 6 Ma, 508 ± 16 Ma, 421 ± 10 Ma, 377 ± 8 Ma: Aitchison et al. (1992), Aitchison & Ireland (1995); 444.7 ± 2.4 Ma: Offler & Shaw (2006); 536 ± 38 Ma, Sano et al. (2004); various locations)	Tasman	Tasman															