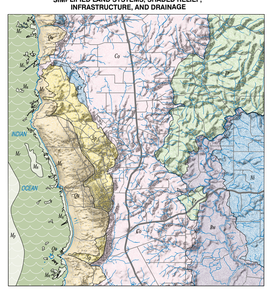
KARRIDALE—TOOKER

WESTERN AUSTRALIA 1 : 50 000 REGOLITH–LANDFORM RESOURCES SERIES

GEOLOGICAL SURVEY OF WESTERN AUSTRALIA

SHEET 1929-IV, AND PART OF 1829-I FIRST EDITION 2002

SIMPLIFIED LAND SYSTEMS, SHADED RELIEF, INFRASTRUCTURE, AND DRAINAGE



The Karridale–Tooker Regolith-Landform Resources map provides information on the regolith (soils) and underlying rocks, on the landforms (landscapes), topography, infrastructure, and on the mineral and construction material resources of the Karridale–Tooker area. This map will be of value in landuse planning, the sustainable development of resources, and in identifying natural hazards, both onshore and in shallow nearshore areas.

The map also delineates land systems, which are areas of discrete recurring patterns of landform, regolith, materials, and vegetation. These patterns are related to geological and hydrogeological units, and form the basis of identifying landuse, including mineral resource potential.

M_1	N_1	N_2	M_4	M_5

M_1 Marine shoreface
M_2 Marine nearshore
M_3 Marine offshore
M_4 Marine channel
M_5 Marine reef

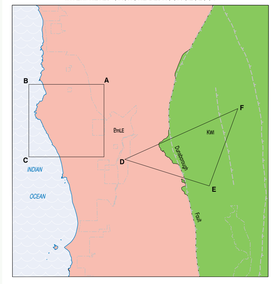
- Qw — Quindalup System — beach and dunefields
- Bw — Blackwood System — estuary and river system
- Sp — Spearwood System — deflated dunes
- Ni — Nilup System — low hills and rises underlain by Cretaceous rocks
- Cr — Coves Road System — shelf underlain by Proterozoic rocks
- Tr — Treeton System — low hills underlain by Cretaceous rocks
- Co — Cowaramup System — low hills underlain by Proterozoic rocks

SCALE 1:250 000
0 5 10 15
Kilometres

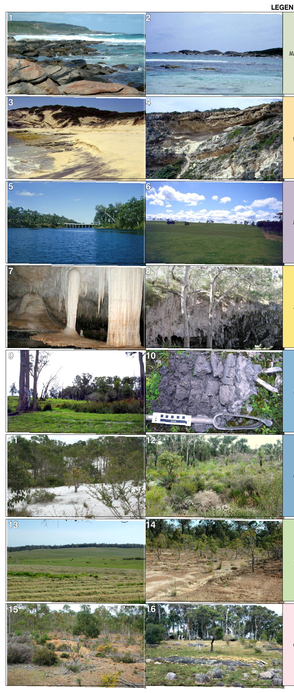
LANDSAT TM IMAGE WITH FIELD SITE LOCATIONS

Date of imagery: 13 March 1996

INTERPRETED ONSHORE BEDROCK GEOLOGY



LEGEND



1 — Marine — MARINE — 12 181 ha 17%
Level to gently inclined nearshore, and level to very gently inclined shoreface. Formed dominantly of submerged rocky platforms and reefs (1), small emergent rock reefs, stacks and islands in the nearshore environment, minor patches of nearshore and shoreface sand. Palaeochannels infilled with reworked sand. Level offshore plain.
Sand deposits are composed mostly of shell fragments and quartz grains. Rocky reefs and platforms are formed from Leeuwin Complex (2) or calcarenite of eolian and beach origin
Possible source of limestone for agricultural applications, and sand and limestone for construction.
Active processes include erosion and deposition by tides, currents and wave action. The rocky coastline and shallow reefs are a hazard to boats. Rapid deposition and erosion of coastal deposits can occur during storms.
Primarily used for fishing and recreation.
Sand of Holocene age mostly underlain by Leeuwin Complex rocks.

3 — Qw — QUINDALUP SYSTEM — 7197 ha 10%
Mostly parabolic dunes (3), swales, and blowouts. Gently to steeply inclined slopes, occasionally very steep to precipitous. Older deflated dunes are eroded to form cliffs and rocky headlands (4). Multiple overlapping dune formations with intervening paleosols.
Dominantly calcareous eolian sand composed of shell fragments, quartz, and minor garnet and other heavy minerals (3), overlying weakly lithified calcarenite. Organic sandy soils occur in swales.
Source of limestone, sand, and limestone. Some potential for heavy mineral sands within the beach and dune sands.
Eolian processes active in the dunes, and coastal processes on the beaches. Major hazards are collapse or subsidence of calcarenite, particularly from overhanging cliffs. Migrating sand from blowouts and steeper dune forces is a minor hazard.
Landuses include conservation, recreation and tourism, and minor urban development and grazing.
Overlies older dunes of the Spearwood System, and the Proterozoic rocks of the Leeuwin Complex.

5 — Bw — BLACKWOOD SYSTEM — 6 820 ha 9%
Includes the Blackwood River (5), and its associated adjacent terrace that forms a level to very gently inclined plain with oxbow lakes and swampy hollows. Low hills and rises of a former land surface lie above the terrace (6). The river has cut down through the Leederville Formation in places to form steep sided banks.
Sand and gravel common on the alluvial terraces. Ferruginous gravel on hillcrests. Low-lying swampy areas are filled with organic sandy soils.
Source of yellow sand and ferruginous gravel. Some potential for heavy mineral sands.
Active processes include channel erosion, and flooding and waterlogging along the river.
Used for grazing and conservation. Natural vegetation remains along much of the Blackwood River and in nature reserves
Fluvial materials of the Blackwood System overlie Cretaceous and Proterozoic rocks.

7 — Sp — SPEARWOOD SYSTEM — 4 252 ha 6%
Ridge composed of a series of deflated parabolic dunes and swales. Gently to moderately inclined slopes, with rare steep to precipitous slopes or cliffs that overlying in places. Hosts karstic features such as caves (7), dolines (8), and subsurface drainage systems formed during an earlier, wetter period.
Red to brown residual quartz sand over calcrete-surfaced calcarenite. Organic sandy soils occur in swales.
Source of limestone and building sand.
Steep rocky slopes and karstic features may be prone to subsidence or collapse, and are a hazard to people, stock and machinery. Cleared westerly slopes are prone to erosion by prevailing southwesterly winds.
Uses include conservation, tourism, and recreation. Small areas have been cleared for grazing and urban development.
Overlain by the dunes of the Quindalup System, and overlies Leeuwin Complex rocks. Formed by eolian processes during the Pleistocene, and modified by surface water and groundwater leaching and precipitation.

9 — Ni — NILLUP SYSTEM — 5 191 ha 7%
Level to gently undulating shelf with rises and shallow swampy drainage depressions (9).
Deep leached sands (10) overlying ferruginous gravel and weathered rocks of the Leederville Formation. Hillcrests are sometimes capped with ferruginous duricrust. Swampy areas are filled with sandy organic soils.
Possible source of ferruginous gravel for roads, and white quartz sand. Some potential for heavy mineral sands.
Cleared areas are susceptible to erosion by heavy rainfall, and winter waterlogging is common.
Landuse is mainly agriculture, with some forestry, conservation, and recreational areas.
The shelf is formed in the underlying Leederville Formation, and has a thin layer of residual deposits associated with a higher sea level.

11 — Cr — CAVES ROAD SYSTEM — 559 ha 1%
Level to gently inclined, gently undulating plain with shallow hollows and slight rises. Swamps and poorly drained depressions are common.
Thick, residual leached quartz sand (11) underlain by ferruginous duricrust over Early Coniacsic sediments and Leeuwin Complex.
Source of sand for roadbase and landfill. Potential source of gravel and heavy mineral sands.
Poor drainage leads to seasonal waterlogging. Erosion can occur on cleared slopes.
Landuses include conservation, urban development, sand and gravel extraction, and forestry. A large proportion of the system remains naturally vegetated (12).
Formed by weathering and erosion of Early Coniacsic sediments deposited adjacent to a paleoshoreline. Overlies Leeuwin Complex rocks.

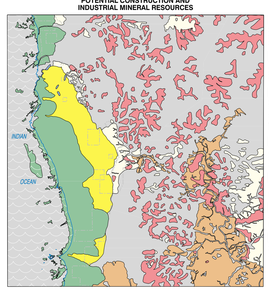
13 — Tr — TREETON SYSTEM — 11 037 ha 15%
Prominent low hills (13) and rises with very gently to moderately inclined slopes and broad swampy drainage depressions. Formed from weathering and erosion of the Leederville Formation. Ferruginous duricrust and gravel are common on hillcrests. Hillslopes of colluvium ranging from gravelly sand to sand or silty sand over mottled soil downslope.
Source of gravel (14), sand, and cemented-earth building materials. Potential source for heavy mineral sands. Underlain by Permian coal at depth.
Areas adjacent to fluvial channels and drainage depressions can become waterlogged during winter.
Extensively cleared of vegetation for landuses including viticulture, grazing, orchards, forestry, tourism, and recreation.
Large areas of state forest include both regrowth and native forest.
Underlain by Cretaceous sedimentary rocks that have been weathered and eroded to form a dissected plateau of Coniacsic age.

15 — Co — COWARAMUP SYSTEM — 35 480 ha 35%
Low hills to rises with gently to moderately inclined slopes and swampy drainage depressions. Slopes can be steep to precipitous, locally forming cliffs, strong deeply incised waterways and on the coast.
Residual materials (15) and colluvial deposits overlie weathered rocks of the Leeuwin Complex. Hillcrests are commonly capped by ferruginous gravel or duricrust, and leached quartz sand. Exposures of granulite (16) are common.
Waterlogging occurs during winter in areas of low slope angle, and erosion can occur in cleared areas during heavy rain.
Source of gravel and quartz sand. Potential source of cemented-earth building materials, hard rock aggregate, and dimension stone.
Landuses include viticulture, grazing, urban development, and recreation and tourism.
Overlain by the materials of the Quindalup and Spearwood Systems. Underlain by Leeuwin Complex rocks. To the east, the Leeuwin Complex is outcropped in places by the Leederville Formation.

REFERENCE

Age / Land System	Phanerozoic: Cainozoic: Holocene	Cainozoic: Pleistocene	Cainozoic: undivided	Mesozoic: Cretaceous		Proterozoic		Description
	M_1			M_1		EmbE	M_1	Marine. Shoreface; shell and quartz sand; minor rock platform
	N_1						N_1	Marine. Nearshore sandplain and sandy hollows; shell and quartz sand; minor rock ridges and flats
	M_2			M_2			M_2	Marine. Offshore sandplain; shell and quartz sand
							M_4	Marine. Channel; sand-filled palaeochannel in shoreface and nearshore
	M_5						M_5	Marine. Reef or rock flat; undivided eolian calcarenite and **Leeuwin Complex**
							EmbE	**Leeuwin Complex**; undivided felsic granulite and granite; minor mafic granulite and orthofelsite; fresh to weathered
Quindalup (Qw)	Qwbk	Qwb				EmbE	Qwbk	Alluvial. Drainage depression; includes seasonally active channels; silty sand; formed in eolian deposits and weathered bedrock
	Qwb	Qwbf					Qwb	Coastal. Beach; commonly includes foreshore; marine shell and quartz sand; eolian in part
	Qwbb						Qwbb	Coastal. Foreshore; eolian shell and quartz sand
		Qwbf					Qwbf	Eolian. Remobilised; undivided shell and quartz sand
	Qwbs						Qwbs	Eolian. Undivided; consolidated shell and quartz sand
		Qwcb					Qwcb	Eolian. Lithified dunefield; calcareous eolianite; weakly lithified shell and quartz sand; includes coastal rock platform
	Qwb					EmbE		**Leeuwin Complex**; undivided felsic granulite and granite; minor mafic granulite and orthofelsite; fresh to weathered
Blackwood (Bw)	Bwk			Bwk	Kwi +		Bwk	Alluvial. Stream channel; includes stream bed and banks; silty sand
	Bwka			Bwk			Bwka	Alluvial. Swamp; waterlogged organic sand and silt
	Bwkc						Bwkc	Alluvial. Drainage depression; includes seasonally active channels; formed in slope and terrace deposits, and weathered bedrock; silty sand
	Bwkb			Bwkb			Bwkb	Alluvial. Channel bench adjacent to channel, subject to occasional flooding effected by tides
				Bwkt			Bwkt	Alluvial. Terrace; silty sand and gravel; quartz-rich
	Bwka			Bwka			Bwka	Alluvial. Oxbow; cut-off channel depression; commonly water-filled or swampy
				BwC			BwC	Colluvial. Undivided slopes; silty gravelly sand over mottled sandy clay
				Bwtf			Bwtf	Residual. Low hills and rises; ferruginous duricrust and gravel overlying mottled soil (weathered **LEEDERVILLE FORMATION**)
							Kwi	**LEEDERVILLE FORMATION**; interbedded sandstones, siltstones, claystones, shales, and conglomerates; quartz-rich; weathered; **Wombro Group**
Spearwood (Sp)	Spfc		Spfz	Spfz			Spfc	Eolian. Swampy swale; waterlogged organic soil over brown residual quartz sand
							Spfz	Eolian. Deflated undivided dunefield; brown residual quartz sand over calcarenite
							Spfz	Residual. Drainage depression; karst drainage features eroded by solution; formed in well-lithified eolian calcarenite (**TAMALA LIMESTONE**)
Nilup (Ni)	Nika			Nic	Kwi +		Nika	Alluvial. Swamp; waterlogged organic silty sand
				Nik			Nika	Alluvial. Drainage depression; includes seasonally active channels
				Nic			Colluvial. Undivided slope; gravelly silty sand over mottled sandy clay	
	Nik			Nic			Nic	Colluvial. Undivided slope; leached quartz sand over mottled sandy clay
				Nitf			Nitf	Residual. Low hills and rises; leached quartz sand overlying ferruginous duricrust
				Nitf			Kwi	Residual. Low hills and rises; ferruginous duricrust overlying mottled soil (weathered **LEEDERVILLE FORMATION**)
								LEEDERVILLE FORMATION; interbedded sandstones, siltstones, claystones, shales, and conglomerates; quartz-rich; weathered; **Wombro Group**
Coves Road (Cr)	Cra			Cra			Cra	Alluvial. Swamp; waterlogged silty sand
				Crtg			Crtg	Residual. Sandplain; leached quartz sand
Treeton (Tr)	Trk			Trk	Kwi +		Trk	Alluvial. Stream channel; includes stream bed and banks; silty sand
				Trka			Trka	Alluvial. Plain; silty sand
	Trkc			Trkc			Trkc	Alluvial. Drainage depression; includes seasonally active channels; formed in weathered bedrock and slope deposits; silty sandy clay
	Trkb			Trkb			Trkb	Alluvial. Terrace; silty sand and gravel; quartz-rich
				TrC			TrC	Colluvial. Undivided slopes; gravelly silty sand over mottled sandy clay
				Trtg			Trtg	Residual. Low hills and rises; leached quartz sand overlying ferruginous duricrust
				Trtf			Trtf	Residual. Low hills and rises; ferruginous duricrust and gravel overlying mottled soil (weathered **LEEDERVILLE FORMATION**)
							Kwi	**LEEDERVILLE FORMATION**; interbedded sandstones, siltstones, claystones, shales, and conglomerates; quartz-rich; weathered; **Wombro Group**
Cowaramup (Co)	Cok			Cok		P	Cok	Alluvial. Stream channel; includes stream bed and banks; silty sand
							Cok	Alluvial. Swamp; waterlogged organic silty sand
	Cok			CoC		EmbE	Cok	Alluvial. Drainage depression; includes seasonally active channels; formed in weathered bedrock and slope deposits; silty clayey sand
							Cok	Alluvial. Terrace; silty sand and gravel
				CoC			CoC	Colluvial. Undivided slopes; gravelly silty sand
	Cokf			Cokfg			Cokfg	Residual. Low hills and rises; leached quartz sand
				Cokf			Cokf	Residual. Low hills and rises; ferruginous duricrust overlying mottled soil (weathered **Leeuwin Complex**); includes leached quartz sand
				Czs			Czs	Alluvial. Undivided coastal or fluvial sediments; local heavy mineral enrichment (subsurface only; overlain by CoC)
						P		**Leeuwin Complex**; pegmatite vein
						EmbE		**Leeuwin Complex**; undivided felsic granulite and granite; minor mafic granulite and orthofelsite; fresh to weathered

POTENTIAL CONSTRUCTION AND INDUSTRIAL MINERAL RESOURCES



- Ferruginous gravel — *BwK, CoK, KWI, TrW*
  Cemented ferruginous nodular duricrust forming coppings on hillcrests, locally concealed by residual quartz sand. Potential source of aggregate for road construction.
- Red and yellow sand — *SpKc, SpKw*
  Loose, red or yellow, quartz-rich eolian sand, formed as a weathered residuum over limestone. Potential source of sand for building pads, other construction purposes, and landfill.
- Limestone — *QwKb, SpKc*
  Calcrete and calcarenite formed by weathering of carbonate-rich sand dunes. Rock varies in strength from moderately weak to very strong, and may be excavated as aggregate or boulders. Overlain by variable thickness of red and yellow sand. Low-grade limestone may be used for road base, landfill, and for construction purposes.
- Limesand — *M1, M2, M3, QwKb, QwKc, QwKw, QwKf, QwKz*
  Loose, shell-rich sand of eolian or marine origin, with calcium carbonate contents up to 90%. May be suitable for agricultural applications and construction purposes.
- Sand and gravel — *BwK, CoK, TrK*
  Fluvial sediments ranging from silty clay to sandy gravel. Potential source of sand and gravel for building and fill.
- White sand — *CoKg CrKg NiKg TrKg*
  Podsolised, subrounded to rounded, medium to coarse quartz sand. Potential source of sand for concrete and landfill.
- *BwK, BwKa, BwKb, BwKc, BwKt, BwC, CoK, CoKg, CoC, CrKa, NiK, NiKa, NiKg, NiC, EmbE, QwKa, TrK, TrKa, TrKc, TrC*
  Colluvial sand and gravel, alluvium and associated hardpans, weathered bedrock, and recentcore rocky seafloor; limited potential.

KARRIDALE—TOOKER MINERAL OCCURRENCES

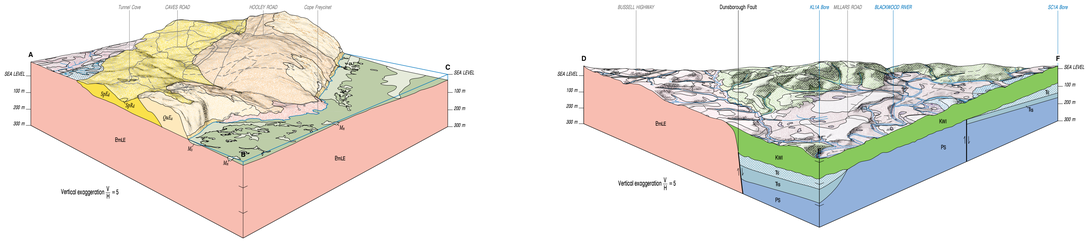
NUMBER*	COMMODITY	EASTING	NORTHING
	PRECIOUS METAL — Au		
	◇ Vein and hydrothermal — undivided		
242	Au	336810	6255045
243	Au	328375	6229466
	SPECIALITY METAL — HM, Ilm, Rt, Zrn		
	Regolith — eluvial to beach placers		
Ilm	HM	333300	6214300
Ilm	HM Ilm 2m Rt	328600	6234300
Ilm	HM Ilm 2m	335200	6218600
Ilm	HM Ilm 2m	334600	6216400
Ilm	HM Ilm 2m	336000	6220100
Ilm	HM	315900	6230400
Zrn	HM Rt 2m	328000	6213700
Tbld	HM Ilm	327900	6222700
	Regolith — residual to eluvial placers		
Rt	HM	328600	6234300
	ENERGY MINERAL — C		
	Sedimentary — basin		
Inf	C	337300	6225900
Inf	C	336000	6218900
	CONSTRUCTION MATERIAL — Grvl, Lmd, Lst, Rr		
	▽ Undivided		
7761	Sn	336020	6222130
8547	Lmd	316800	6235915
8549	Grvl	318835	6230980
8554	Sn	317585	6226692
8557	Sn	319185	6228145
8558	Grvl	324330	6233935
8559	Sn	329480	6234730
8560	Grvl	323575	6236135
8562	Sn	320555	6234085
8563	Lmd	316960	6232465
8564	Lmd	316750	6229955
8568	Grvl	332750	6218015
8566	Grvl	334205	6205760
8569	Grvl	330600	6213575
8572	Grvl	324530	6229825
8578	Lmd	321015	6220810
8577	Grvl	324540	6231535
8579	Grvl	324825	6229925
8579	Grvl	334000	6227805
8580	Grvl	332570	6226990
8581	Grvl	331080	6231600
8583	Grvl	331150	6232465
8587	Grvl	332350	6233460
8588	Grvl	324960	6232100
8580	Grvl	324960	6232015
8582	Grvl	328805	6233545
8583	Sn	329420	6234940
8584	Grvl	329320	6235415
8585	Grvl	328730	6235640
8586	Grvl	331910	6233750
8587	Grvl	330805	6233965
8588	Grvl	330835	6233555
8589	Grvl	330540	6233865
8590	Grvl	330820	6233845
8591	Grvl	327070	6227315
8592	Grvl	333940	6237870
8593	Sn	335365	6235435
8594	Sn	330340	6225500
8595	Sn	335440	6227115
8596	Grvl	328850	6234540
8597	Grvl	324540	6226850
8611	Grvl	323425	6224240
8612	Grvl	323600	6224210
8613	Grvl	323995	6223925
8614	Grvl	324045	6224255
8615	Lst	319705	6222850
8616	Lst	319940	6223355
8617	Lst	320010	6218766
8622	Grvl	334775	6220700
8623	Grvl	324765	6220565
8624	Grvl	324740	6221070
8625	Grvl	324565	6221110
8626	Grvl	324720	6221415
8627	Sn	325960	6220570
8628	Lst	322790	6215540
8631	Sn	322915	6210640
8632	Grvl	334290	6218055
8633	Grvl	333080	6217860
8635	Grvl	331310	6213325
8636	Grvl	330020	6213810
8638	Sn	327280	6212675
8639	Lmd	320605	6211200
8664	Grvl	335560	6234760
8665	Grvl	335955	6234575
8666	Grvl	335240	6234030
8671	Grvl	331780	6229740
8672	Grvl	331545	6229920
8673	Grvl	327065	6229955
8674	Grvl	336870	6229855
8675	Grvl	325705	6232090
8676	Grvl	330000	6231960
8677	Grvl	334075	6227845
8678	Grvl	329955	6229645
8680	Grvl	339115	6229910
8681	Grvl	330525	6212115
8682	Grvl	333750	6229060
8688	Grvl	329280	6225560
8686	Lst	321005	6205785

* KEY TO OPERATING STATUS

Bold numbers (i.e. *7761*) — Operating quarry
Bold and Italic numbers (i.e. 8548) — Abandoned mine or quarry
Plain numbers (i.e. 94) — Mineral deposit
Italic numbers (i.e. 242) — Mineral occurrence or prospect

Numbers refer to GSWA MAMIN mineral occurrence database

BLOCK DIAGRAMS

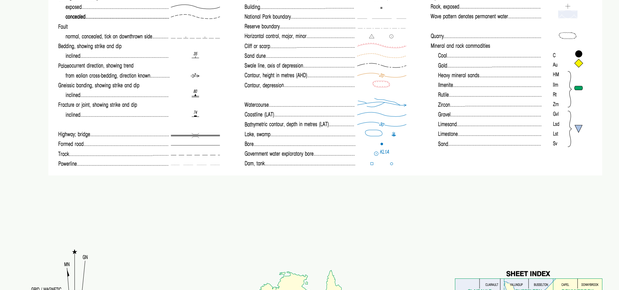


BEDROCK GEOLOGY

CRETACEOUS	KWI	LEEDERVILLE FORMATION (Wombro Group)
TRIASSIC	Ts	LESUEUR SANDSTONE
	Tb	SABINA SANDSTONE
PERMIAN	Ps	Sue Group
PROTEROZOIC	EmbE	Leeuwin Complex

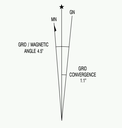
Normal fault, showing relative displacement

SYMBOLS



Geological boundary — exposed; concealed
Fault — normal, concealed, tick on downthrown side
Bedding, showing strike and dip — inclined
Palaeocurrent direction, showing trend — from eolian cross-bedding; direction known
Gneissic banding, showing strike and dip — inclined
Fracture or joint, showing strike and dip — inclined
Highway; bridge
Formed road
Track
Powerline
Locality — Bonnap
Building
National Park boundary
Reserve boundary
Horizontal control, major, minor
Cliff or scarp
Sand dune
Swale line, axis of depression
Contour, height in metres (AHD); Contour, depression
Watercourse
Coastline (LAT)
Bathymetric contour, depth in metres (LAT)
Lake, swamp
Bore
Government water exploratory bore — RC14
Dam, tank
Lighthouse
Rock, exposed
Wave pattern denotes permanent water
Quarry
Mineral and rock commodities — Coal; Gold; Heavy mineral sands; Ilmenite; Rutile; Zircon; Gravel; Limesand; Limestone; Sand

TRUE NORTH, GRID AND MAGNETIC NORTH



True north, grid north and magnetic north are shown diagrammatically for the centre of the map. Magnetic north is correct for 2002 and moves easterly by about 0.1° in 1 year.

SHEET INDEX

KARRIDALE—TOOKER

Geology by J. Mamtomn and G. Holt, 1998–2000

Subsurface geology by:
BACCOCK, L. J., 1994. Geology and hydrogeology of the Korrobide Bore Line, Perth Basin: Western Australia Geological Survey Report 37, Professional Papers, p. 1–18.
BACCOCK, L. J., 1996. Geology and hydrogeology of the South Coastal Plain, Perth Basin: Western Australia Geological Survey Record 1996/7, 56p.
WGKH, R. P., 1965. A structural study of the Southern Perth Basin, Western Australia: Western Australia Geological Survey Report 31, 56p.

Edited by C. Strong and G. Loon

Cartography by S. Colclough, M. Visentin, and K. Greenberg

Mineralisation and rock commodity information from non-confidential data held in the MAMIN database, GSWA, at 31 July 2001.

Topography from the Department of Land Administration Sheet SI 50-9, 1929 and part of 1829, with modifications from geological field survey

Landsat imagery supplied by Remote Sensing Services, Department of Land Administration

Bathymetric data supplied by the Department of Transport. This map is not intended for marine navigation

Bore and well data supplied by the Water and Rivers Commission

Published by the Geological Survey of Western Australia. Digital and hard copies of this map are available from the Information Centre, Department of Mineral and Petroleum Resources, 100 Plain Street, East Perth, WA, 6004. Phone (08) 9222 3459. Fax (08) 9222 3444. Web: www.mpr.wa.gov.au Email: geological_survey@mpr.wa.gov.au

Plotted by the Geological Survey of Western Australia

The recommended reference for this map is:
MARKHAM, J. and HALL, G., 2002, Karridale—Tooker, W.A. Sheet 1929 IE and part of 1829 I: Western Australia Geological Survey, 1:50 000 Regolith—Landform Resources Series

Department of Mineral and Petroleum Resources
CLIVE BROWN, M.L.A. MINISTER FOR STATE DEVELOPMENT

Geological Survey of Western Australia
JIM LIMERICK DIRECTOR GENERAL
TIM GRIFFIN DIRECTOR

SCALE 1:50 000
1000 500 0 1 2 3 4 5
Metres Kilometres

UNIVERSAL TRANSVERSE MERCATOR PROJECTION
HORIZONTAL DATUM: GEOCENTRIC DATUM OF AUSTRALIA 1994
TOPOGRAPHIC DATUM: AUSTRALIAN HEIGHT DATUM (AHD)
HYDROGRAPHIC DATUM: LOWEST ASTRONOMICAL TIDE (LAT)

Grid lines indicate 1000 metre interval of the Map Grid Australia Zone 50

GDA — The Map Grid Australia (MGA) is based on the Geocentric Datum of Australia 1994 (GDA94). GDA94 positions are compatible within one metre of the datum WGS84 positions

WESTERN AUSTRALIA 1 : 50 000 REGOLITH–LANDFORM RESOURCES SERIES

KARRIDALE—TOOKER

SHEET 1929-IV, AND PART OF 1829-I FIRST EDITION 2002

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