LAND UNIT DESCRIPTIONS

PLATEAUX

3.a Prominent mesas with relief of 100m. Very steep scarps and scree slopes. Shallow lithosols and rock outcrop (Leptic Rudosols). Sparse open shrubs, grasses and spinifex.

4.a Tertiary sandstone mesas less than 30m. Tops may be gently inclined, Lithosols or outcrop (Leptic Rudosols). Low sparse shrubland or scattered shrubs of *Acacia aneura* and *Eremophila* sp. and sparse short grasses.

5.a Low mesas, gently sloping surfaces or rounded remnants. Lithosols or outcrop (Leptic Rudosols). *Acacia aneura* with *Eremophila* sp. sparse shrubland to open shrubland over *Enneapogon* sp. and *Aristida contorta* grasses.

SIDESLOPES

3.b Mid slopes below high scarps with well developed drainage network. Moderately saline red texture contrast soils (Chromosols/Sodosols) with areas of solonised brown soils (Calcarosols). *Acacia aneura* sparse open shrubland with *Enneapogon* sp. and *Digitaria* sp.; *Tecticornia* sp. and *Sclerolaena* sp. also present indicating saline condition of soils.

3.b/7.3 Mid slopes below high scarps with well developed drainage network. Moderately saline red texture contrast soils (Chromosols/Sodosols) with areas of solonised brown soils (Calcarosols). *Acacia aneura* sparse open shrubland with *Enneapogon* sp. and *Digitaria* sp.; *Tecticornia* sp. and *Sclerolaena* sp. also present indicating saline condition of soils. 7.3 component present.

4.b Colluvial slopes and drainage areas, lying below low sandstone mesas. Deep red texture contrast soils (Red Chromosols), some uniform fine textured clay soils (Dermosols) where soil mantle has been lost. Open chenopod shrubland of *Atriplex nummularia* and *Halosarcia* sp. on gravel mantle or grassland of *Enneapogon* sp. and *Digitaria* sp. on residual areas.

4.b/2.a Colluvial slopes and drainage areas, lying below low sandstone mesas. Deep red texture contrast soils (Red Chromosols), some uniform fine textured clay soils (Dermosols) where soil mantle has been lost. Open chenopod shrubland of *Atriplex nummularia* and *Halosarcia* sp. on gravel mantle or grassland of *Enneapogon* sp. and *Digitaria* sp. on residual areas. 2.a component present.

4.b/4.a Colluvial slopes and drainage areas, lying below low sandstone mesas. Deep red texture contrast soils (Red Chromosols), some uniform fine textured clay soils (Dermosols) where soil mantle has been lost. Open chenopod shrubland of *Atriplex nummularia* and *Halosarcia* sp. on gravel mantle or grassland of *Enneapogon* sp. and *Digitaria* sp. on residual areas. 4.a component present.

4.b/4.c Colluvial slopes and drainage areas, lying below low sandstone mesas. Deep red texture contrast soils (Red Chromosols), some uniform fine textured clay soils (Dermosols) where soil mantle has been lost. Open chenopod shrubland of *Atriplex nummularia* and *Halosarcia* sp. on gravel mantle or grassland of *Enneapogon* sp. and *Digitaria* sp. on residual areas. 4.c component present.

5.b Gentle to moderate silcrete slopes. Deep red texture contrast soils with calcareous subsoils (Red Chromosols), some uniform fine textured clay soils (Dermosols) where soil mantle has been lost. Variable; *Aristida contorta*, *Sporobolus actinocladus* and *Enneapogon* sp. sparse to open grassland and areas with *Sclerolaena* spp. and samphires.

5.b/5.c Gentle to moderate silcrete slopes. Deep red texture contrast soils with calcareous subsoils (Red Chromosols), some uniform fine textured clay soils (Dermosols) where soil mantle has been lost. Variable; *Aristida contorta*, *Sporobolus actinocladus* and *Enneapogon* sp. sparse to open grassland and areas with *Sclerolaena* spp. and samphires. 5.c component present.

5.b/7.4 Gentle to moderate silcrete slopes. Deep red texture contrast soils with calcareous subsoils (Red Chromosols), some uniform fine textured clay soils (Dermosols) where soil mantle has been lost. Variable; *Aristida contorta*, *Sporobolus actinocladus* and *Enneapogon* sp. sparse to open grassland and areas with *Sclerolaena* spp. and samphires. 7.4 component present.

HILLS

1 Deeply dissected hilly to mountainous terrain. Lithosols; very shallow, gravelly or stony (Leptic Rudosols). Low Acacia shrubland with scattered *Corymbia aparrerinja*.

1/2.b Deeply dissected hilly to mountainous terrain. Lithosols; very shallow, gravelly or stony (Leptic Rudosols). Low Acacia shrubland with scattered *Corymbia aparrerinja*. 2.b component present.

LOW HILLS

2.a Stokes terraces, level to gently sloping with prominent terrace faces 10-15m high. Stony red texture contrast soils, which may be alkaline and contain carbonate (Red Chromosols) and stony red earths (Red Kandosols). *Acacia aneura* open shrubland or open grassland dominated by *Enneapogon* sp. and *Digitaria* sp. with scattered *A. aneura*, *Senna* sp. and *Eremophila* sp.

2.a/2.b Stokes terraces, level to gently sloping with prominent terrace faces 10-15m high. Stony red texture contrast soils, which may be alkaline and contain carbonate (Red Chromosols) and stony red earths (Red Kandosols). *Acacia aneura* open shrubland or open grassland dominated by *Enneapogon* sp. and *Digitaria* sp. with scattered *A. aneura*, *Senna* sp. and *Eremophila* sp. 2.b component present.

6.a Prominent strike ridge crests and steep upper slopes south of Hugh River. Stoney skeletal soils (Leptic Rudosols) and rock outcrop. *Eremophila* sp. and *Senna* sp. low sparse shrubland; small areas of *Enneapogon* sp. and *Sclerolaena* sp. and *Triodia* sp. on pockets of trapped sand.

6.a/10.3 Prominent strike ridge crests and steep upper slopes south of Hugh River. Stoney skeletal soils (Leptic Rudosols) and rock outcrop. *Eremophila* sp. and *Senna* sp. low sparse shrubland; small areas of *Enneapogon* sp. and *Sclerolaena* sp. and *Triodia* sp. on pockets of trapped sand. 10.3 component present.

RISES

2.b Gently to moderately sloping lands in strike valleys and flanking the edges of the range. Desert loams (Chromosols) and calcareous red earths (Red Calcarosols), *Acacia aneura* open shrubland with *Atalaya hemiglauca* or *Acacia kempeana* dominant in areas. Some areas support grasslands or sparse chenopod shrublands.

2.b/10.3 Gently to moderately sloping lands in strike valleys and flanking the edges of the range, Desert loams (Chromosols) and calcareous red earths (Red Calcarosols), *Acacia aneura* open shrubland with *Atalaya hemiglauca* or *Acacia kempeana* dominant in areas, Some areas support grasslands or sparse chenopod shrublands, 10.3 component present.

2.b/2.a Gently to moderately sloping lands in strike valleys and flanking the edges of the range. Desert loams (Chromosols) and calcareous red earths (Red Calcarosols), *Acacia aneura* open shrubland with *Atalaya hemiglauca* or *Acacia kempeana* dominant in areas, Some areas support grasslands or sparse chenopod shrublands, 2.a component present.

2.b/2.c Gently to moderately sloping lands in strike valleys and flanking the edges of the range. Desert loams (Chromosols) and calcareous red earths (Red Calcarosols), *Acacia aneura* open shrubland with *Atalaya hemiglauca* or *Acacia kempeana* dominant in areas, Some areas support grasslands or sparse chenopod shrublands, 2.c component present.

2.b/7.3 Gently to moderately sloping lands in strike valleys and flanking the edges of the range. Desert loams (Chromosols) and calcareous red earths (Red Calcarosols), *Acacia aneura* open shrubland with *Atalaya hemiglauca* or *Acacia kempeana* dominant in areas. Some areas support grasslands or sparse chenopod shrublands. 7.3 component present.

6.b Mid slopes below prominent strike ridges. Moderately deep red texture contrast soils (Red Chromosols), some uniform fine textured clay soils (Dermosols) where soil mantle has been lost. *Maireana astrotricha*, *M. aphylla*, and *Sclerolaena* sp. low sparse to open chenopod shrubland.

PLAINS

6.c Footslopes and drainage floors below colluvial slopes. Deep red texture contrast soils with calcareous subsoils (Red Chromosols), some uniform fine textured clay soils (Dermosols) where soil mantle has been lost. Profiles can be highly saline with areas of salt efflorescence. Variable; *Enneapogon* sp., *Digitaria* sp. and *Sida* sp. sparse to open grassland; areas with open chenopod shrubland of *Sclerolaena* spp. and samphires.

6.c/10.3 Footslopes and drainage floors below colluvial slopes, Deep red texture contrast soils with calcareous subsoils (Red Chromosols), some uniform fine textured clay soils (Dermosols) where soil mantle has been lost. Profiles can be highly saline with areas of salt efflorescence, Variable; *Enneapogon* sp., *Digitaria* sp. and *Sida* sp. sparse to open grassland; areas with open chenopod shrubland of *Sclerolaena* spp. and samphires, 10.3 component present.

7.1 Low rises occurring south of the ranges, gently rounded in form with slopes < 9%. Shallow Lithosols (Leptic Rudosols) with minor areas of shallow red texture contrast soils (Red Chromosols). *Acacia aneura* and *A. kempeana* low open shrubland or sparse grassland of *Enneapogon* sp. and *Sclerolaena* spp.

7.2 Gently rolling plains with surface gravel. Deep red texture contrast soils with calcareous subsoils (Red Chromosols), some uniform fine textured clay soils (Dermosols), Low open woodland/shrubland of *Acacia aneura*, *A. kempeana* and *Atalaya hemiglauca*.

7.3 Rolling plains with banded grey limestone outcrops. Solonised brown soils (Calcarosols). Surface crust soft to slightly hard; high proportion of free carbonate and highly calcareous throughout, Low open grassland of *Enneapogon* sp. and *Sclerolaena* sp. Occassional stands of *Acacia kempeana*.

7.4 Gently undulating gravelly calcareous plains. Moderately deep to deep gradational sandy clay loams over clays, profiles can be calcareous throughout (Calcarosols) or become highly calcareous with depth (Calcic Kandosols). Low open shrubland of *Acacia kempeana* with *Acacia aneura* over grasses of *Enneapogon* sp.

7.5 Cobbly plains of low relief, May have a gilber surface of gravel and cobble sized gravels, Red texture contrast soils (Red Chromosols); moderately to highly saline. Generally devoid of vegetation. May include sparse *Sclerolaena* sp.

7.6 Gravelly gently sloping plains of low relief with dark red ferruginised surface gravel, Red texture contrast soils (Red Chromosols) and uniform non-cracking clays (Dermosols) occur; profiles alkaline throughout and clay subsoils contain moderate to high salinity levels. Chenopod shrubland of *Halosarcia* spp. and *Sclerolaena* spp. and minor grassland of *Sporobolus actinocladus* and *Astrebla pectinata*.

7.7 Gently undulating plains of low relief with a mosaic pattern of sand mantled areas covering up to 30% of the unit, Red texture contrast types with a sandy loam surface soil overlying sandy clay (Red Chromosols); sand mantled areas have coarse, uniform textured loamy sand soils (Tenosols/Kandosols). *Acacia aneura* shrubland with scattered *Atalaya hemiglauca* and Cassia sp. and ground cover of *Eragrostis eriopoda* and *Aristida contorta*.

7.8 Gravelly plains of moderate relief dissected by a moderately well developed reticulate drainage network. Deep red texture contrast soils (Chromosols) and gradational calcareous types (Calcarosols). Low open woodland of *Acacia aneura*, *A. kempeana* and *Atalaya hemiglauca* with *Enneapogon* sp., *Aristida contorta* and *Digitaria coenicola* ground cover.

7.9 Plains of low relief, Red earths (Kandosols) and calcareous soils (Calcarosols). Tall open shrubland of *Acacia aneura* and *Acacia kempeana*.

7.10 Plains of low relief. Red earths (Kandosols) and sandy soils (Tenosols). *Acacia aneura* tall open shrubland.

ALLUVIAL PLAINS

11.1 Braided alluvial plains and old channel beds. Alluvial soils ranging from course textured river bank material to sandy loams (Fluvic Rudosols/ Tenosols). Tall open *Eucalyptus camaldulensis* woodland on coarse river gravels. *Acacia victoriae* and *A. murrayana* open shrublands with lignums on sandy plains.

11.2 Broad drainage floors with slight channel development in places. Sandy red earths (Red Kandosols), earthy sands (Tenosols) and patches of calcareous red earths (Calcarosols). Profiles are deep and free drainling with soft surface crust. *Acacia aneura* closed shrubland with *Aristida contorta*, *Aristida holathera* and *Enneapogon avenaceus* sparse to open grassland. Scattered *Atalaya hemiglauca* and *Acacia kempeana* in some areas.

11.2/10.1 Broad drainage floors with slight channel development in places. Sandy red earths (Red Kandosols), earthy sands (Tenosols) and patches of calcareous red earths (Calcarosols). Profiles are deep and free drainling with soft surface crust. *Acacia aneura* closed shrubland with *Aristida contorta*, *Aristida holathera* and *Enneapogon avenaceus* sparse to open grassland. Scattered *Atalaya hemiglauca* and *Acacia kempeana* in some areas. 10.1 component present.

SAND PLAINS

9.1 Sand Plains with minor calcareous areas (<30% calcareous soil). Clayey sands and massive red earths (Red Tenosols/Kandosols). Small areas of calcareous red earths (Calcarosols). *Allocasuarina decaisneana* low sparse to open woodland on sand plains; *Acacia aneura* dominates in drainage areas.

9.1/10.2 Sand Plains with minor calcareous areas (<30% calcareous soil). Clayey sands and massive red earths (Red Tenosols/Kandosols). Small areas of calcareous red earths (Calcarosols). *Allocasuarina decaisneana* low sparse to open woodland on sand plains; *Acacia aneura* dominates in drainage areas. 10.2 component present.

9.1/11.2 Sand Plains with minor calcareous areas (<30% calcareous soil). Clayey sands and massive red earths (Red Tenosols/Kandosols). Small areas of calcareous red earths (Calcarosols). *Allocasuarina decaisneana* low sparse to open woodland on sand plains; *Acacia aneura* dominates in drainage areas. 11.2 component present.

9.2 Level to gently undulating sand plains with moderate to large calcareous areas (30-50% calcareous soil). Clayey sands and massive red earths (Red Tenosols/Kandosols). Moderate to large areas of calcareous red earths (Calcarosols). *Allocasuarina decaisneana* low sparse to open woodland on sand plains; *Acacia aneura* dominates in drainage areas.

9.2/11.2 Level to gently undulating sand plains with moderate to large calcareous areas (30-50% calcareous soil). Clayey sands and massive red earths (Red Tenosols/Kandosols). Moderate to large areas of calcareous red earths (Calcarosols). *Allocasuarina decaisneana* low sparse to open woodland on sand plains; *Acacia aneura* dominates In drainage areas. 11.2 component present.

10.1 Flat gently sloping sand plains without dunes and are stone free. Deep uniform sands and loamy sands (Tenosols). Tall shrubland of *Acacia aneura* with *Eragrostis eriopoda* and *Aristida* sp. understorey.

10.1/10.3 Flat gently sloping sand plains without dunes and are stone free. Deep uniform sands and loamy sands (Tenosols). Tall shrubland of *Acacia aneura* with *Eragrostis eriopoda* and *Aristida* sp. understorey. 10.3 component present.

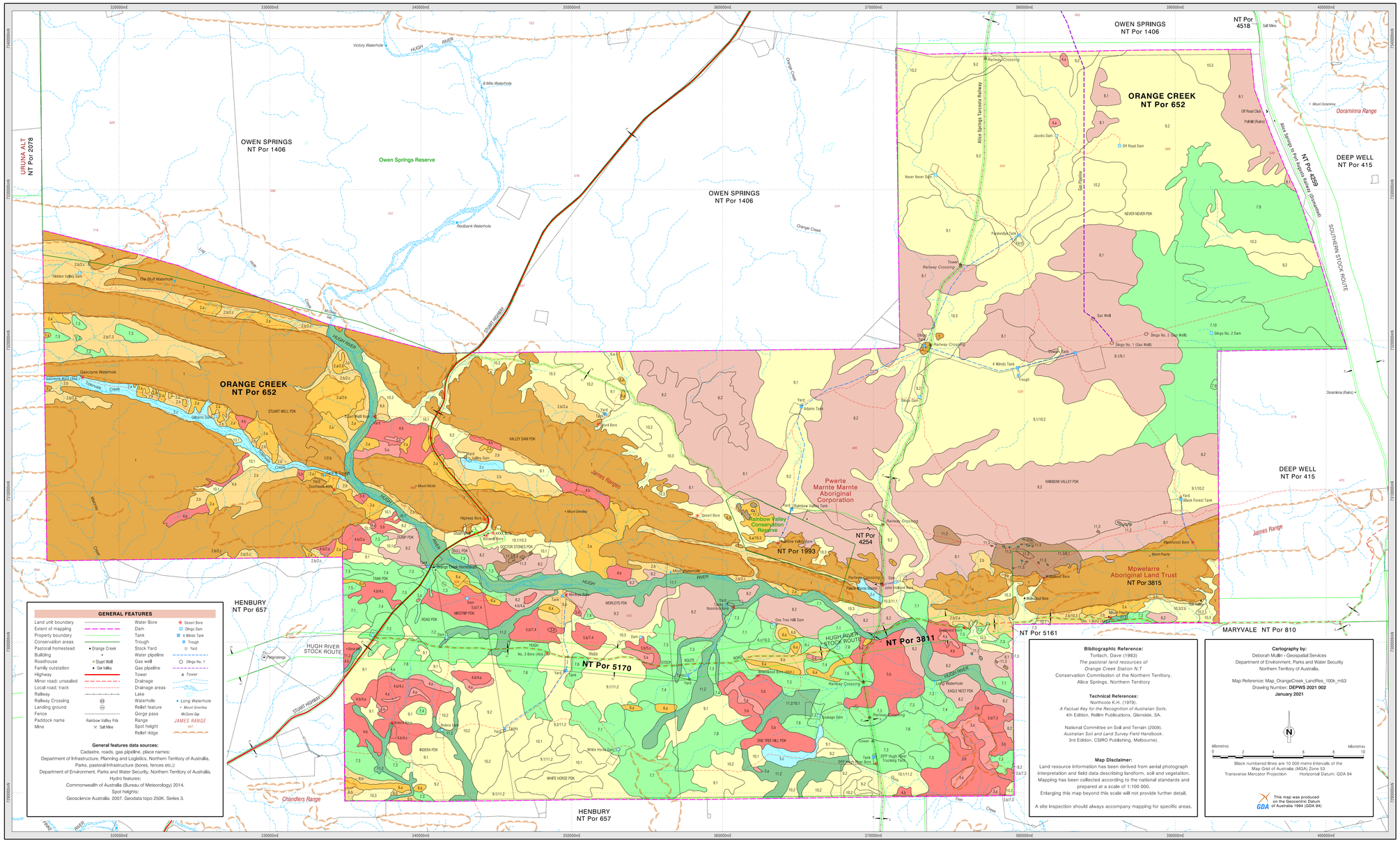
10.1/11.2 Flat gently sloping sand plains without dunes and are stone free. Deep uniform sands and loamy sands (Tenosols). Tall shrubland of *Acacia aneura* with *Eragrostis eriopoda* and *Aristida* sp. understorey. 11.2 component present.

10.2 Flat to gently undulating sand plains with scattered dunes. Deep uniform sands and loamy sands (Tenosols). Tall shrubland of *Acacia aneura* with *Allocasuarina decaisneana* and *Triodia* sp., *Eragrostis eriopoda* and *Aristida* sp. understorey.

10.3 Flat to gently undulating broad sand plains with drainage depressions and minor watercourses. Deep uniform loamy sands (Tenosols) and massive red earths (Red Kandosols). *Acacia kempeana*, *Atalaya hemiglauca* and *Acacia aneura* tall shrubland with *Triodia* sp. and mixed grass understorey. Dense stands of *Acacia murrayana* occur throughout.

10.3/11.1 Flat to gently undulating broad sand plains with drainage depressions and minor watercourses. Deep uniform loamy sands (Tenosols) and massive red earths (Red Kandosols). *Acacia kempeana*, *Atalaya hemiglauca* and *Acacia aneura* tall shrubland with *Triodia* sp, and mixed grass understorey. Dense stands of *Acacia murrayana* occur throughout. 11.1 component present.

10.3/2.b Flat to gently undulating broad sand plains with drainage depressions and minor watercourses. Deep uniform loamy sands (Tenosols) and massive red earths (Red Kandosols). *Acacia kempeana*, *Atalaya hemiglauca* and *Acacia aneura* tall shrubland with *Triodia* sp. and mixed grass understorey. Dense stands of *Acacia murrayana* occur throughout. 2.b component present.



GENERAL FEATURES

Land unit boundary
Extent of mapping
Property boundary
Conservation areas
Pastoral homestead
Building
Homestead
Family outstation
Highway
Minor road: unsealed
Local road; track
Railway
Railway Crossing
Landing ground
Fence
Paddock name
Mine
Orange Creek
Stuart Well
Oak Valley
Rainbow Valley Pdk
Salt Mine

General features data sources:

Cadastre, roads, gas pipeline, place names:
Department of Infrastructure, Planning and Logistics, Northern Territory of Australia, Parks, pastoral/infrastructure (bores, fences etc.);
Department of Environment, Parks and Water Security, Northern Territory of Australia.
Hydro features:
Commonwealth of Australia (Bureau of Meteorology) 2014,
Spot heights;
Geoscience Australia. 2007. Geodata topo 250K. Series 3.

DUNE FIELDS

8.1 Scattered dunes with ill-defined drainage ways. Uniform deep sands (Tenosols), *Allocasuarina decaisneana* open woodland with occasional *Acacia aneura* over *Triodia* sp. hummock grassland understorey.

8.1/9.1 Scattered dunes with ill-defined drainage ways. Uniform deep sands (Tenosols). *Allocasuarina decaisneana* open woodland with occasional *Acacia aneura* over *Triodia* sp, hummock grassland understorey. 9.1 component present.

8.2 Reticulate or parallel (minor) dunes and swales with no surface drainage pattern. Uniform deep sands on dunes and deep uniform loamy sands in swales (Tenosols). *Allocasuarina decaisneana* open woodland with ocassional *Acacia aneura* over *Triodia* sp. hummock grassland understorey.

PLAYAS

11.3 Claypan areas. Flat bottomed depressions with sand plain or dune surrounds. Structured non-cracking clay. Desert loams with surface soil removed through erosion. Highly saline and may contain carbonate and gypsum (Dermosols). Floors devoid of vegetation. *Eucalyptus microtheca* stands are frequently seen around the fringes and clumps of *Melaleuca glomerata* may occur.

11.3/8.1 Claypan areas. Flat bottomed depressions with sand plain or dune surrounds. Structured non-cracking clay. Desert loams with surface soil removed through erosion. Highly saline and may contain carbonate and gypsum (Dermosols). Floors devoid of vegetation. *Eucalyptus microtheca* stands are frequently seen around the fringes and clumps of *Melaleuca glomerata* may occur. 8.1 component present.

11.3/8.2 Claypan areas. Flat bottomed depressions with sand plain or dune surrounds. Structured non-cracking clay. Desert loams with surface soil removed through erosion. Highly saline and may contain carbonate and gypsum (Dermosols). Floors devoid of vegetation. *Eucalyptus microtheca* stands are frequently seen around the fringes and clumps of *Melaleuca glomerata* may occur. 8.2 component present.

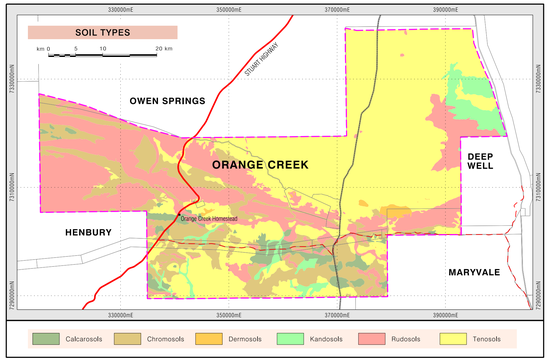
DRAINAGE SYSTEMS

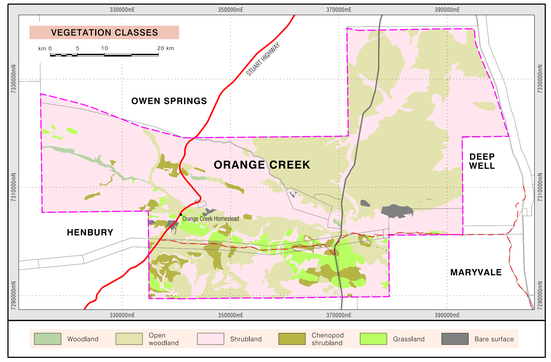
2.c Valley flats and drainage ways associated with strike valleys. Flat to very gently sloping (0-1%) lands with single or braided drainage. Predominately red texture contrast soils (Red Chromosols) on footslopes with course textured alluvial soills in braided areas (Red Kandosols). Mostly *Atalaya hemiglauca*, *Acacia estrophiolata* and *Eucalyptus camaldulensis* tall woodland on drainage channels; *Acacia aneura* shrublands in some areas.

5.c Footslopes and drainage ways below silcrete outcrops. Red texture contrast soils with highly saline subsoills (Red Chromosols/Sodosols). *Maireana aphylla*, *Tecticornia* sp. and *Sclerolaena* sp. low sparse to open chenopod shrubland. Some areas with *Enneapogon* sp. and *Digitaria* sp. grassland.

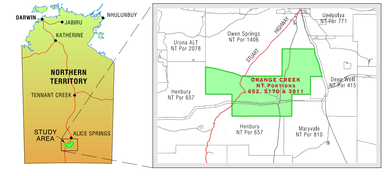
Example of Land Unit Descriptions

Landform
Landform description
PLAINS
7.2
Gently rolling plains with surface gravel. Deep red texture contrast soils with calcareous subsoils (Red Chromosols), some uniform fine textured clay soils (Dermosols). Low open woodland/shrubland of *Acacia aneura*, *A. kempeana* and *Atalaya hemiglauca*.
Land unit
Soil description
Vegetation description





MAP LOCALITY



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Map Disclaimer:

Land resource information has been derived from aerial photograph interpretation and field data describing landform, soil and vegetation. Mapping has been collected according to the national standards and prepared at a scale of 1:100 000.

Enlarging this map beyond this scale will not provide further detail.

A site inspection should always accompany mapping for specific areas,

Cartography by:

Deborah Mullin - Geospatial Services
Department of Environment, Parks and Water Security
Northern Territory of Australia.

Map Reference: Map_OrangeCreek_LandRes_100k_m53
Drawing Number: **DEPWS 2021 002**
January 2021

Kilometres 0 2 4 6 8 10

Black numbered lines are 10 000 metre intervals of the Map Grid of Australia (MGA) Zone 53
Transverse Mercator Projection Horizontal Datum: GDA 94

This map was produced on the Geocentric Datum of Australia 1994 (GDA 94)

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Geospatial Information: https://nrmaps.nt.gov.au

NORTHERN TERRITORY GOVERNMENT

LAND RESOURCES of ORANGE CREEK STATION