Victoria Bonaparte 1 *(VB1 – Victoria Bonaparte 1 subregion)*

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Subregional description and biodiversity values

Description and area

The Phanerozoic strata of the Bonaparte Basin in the north-western part are mantled by Quaternary marine sediments supporting Samphire - *Sporobolus* grasslands and mangal, and by red earth plains and black soil plains with an open savannah of high grasses. Plateau and abrupt ranges of Proterozoic sandstone, known as the Victoria Plateau, occur in the south and east, and are partially mantled by skeletal sandy soils with low tree savannahs and hummock grasslands. In the southeast are limited areas of gently undulating terrain on a variety of sedimentary rocks supporting low snappy gum over hummock grasslands and also of gently sloping floodplains supporting *Melaleuca minutifolia* low woodland over annual sorghums. The climate is dry hot tropical, semi-arid summer rainfall. There is no division into subregions in Western Australia. The northern part in WA comprises marine plains adjacent to the Arafura Sea with *Sporobolus* grasslands, mound springs with monsoon forest, and, on the seaward periphery, mangrove creeks and coastal dunes with vine thicket. In the south, red and black-soil plains with savannah woodlands, emergent quartz-sandstone ranges with tree-steppe over hummock grassland and limestone ranges with open-savannah vine thickets. The area of VB1 in Western Australia is 1, 932, 467ha.

Broadscale vegetation mapping of the area describes the following components:

- Mangroves.
- Saline tidal mudflats +/- samphire.
- Coastal dune communities.
- *Eucalyptus microtheca* (coolibah) and/or *Eucalyptus spp.* +/- *Excoecaria parvifolia* (gutta percha) grassy low woodland.
- Mixed species tussock grasslands or sedgelands +/- emergent *Pandanus spp.* (screw palm).
- *Eucalyptus tectifica* (Darwin box) and/or *Eucalyptus spp.* Woodland with *Sorghum spp.* (sorghum) and *Sehima nervosum* (white grass) tussock grasses.
- *Eucalyptus tetrodonta* (Darwin stringybark), *Eucalyptus miniata* (Darwin Northern woollybutt) +/- *Eucalyptus spp.* +/- *Livistona spp.* (fan palms) woodland with a ground layer of tussock grasses and *Triodia bitextura* (curly spinifex).
- *Eucalyptus terminalis* (desert bloodwood) low open-woodland with *Sehima nervosum* (white grass) and *Chrysopogon fallax* (golden beard grass) tussock grasses +/- *Triodia spp.* (spinifex).
- *Melaleuca spp.* (paperbark) and *Eucalyptus spp.* low woodland with *Triodia bitextura* (curly spinifex) hummock grasses.
- *Astrebla lappacea* (curly Mitchell grass) and/or *Astrebla pectinata* (barley Mitchell grass) tussock grassland sparsely wooded with *Acacia spp.* low trees.
- *Eucalyptus tetrodonta* (Darwin stringybark) and *Eucalyptus miniata* (Northern woollybutt) +/- *Eucalyptus bleeseri* (rusty-barked bloodwood) woodland with *Sorghum spp.* tall-grasses.
- *Eucalyptus spp., Eucalyptus miniata* (Darwin Northern woollybutt) +/- *Eucalyptus tetrodonta* (Darwin stringybark) open-woodland with *Triodia bitextura* (curly spinifex) and *Sorghum spp.* (sorghum) grasses.
- *Eucalyptus tectifica* (Darwin box) +/- *Eucalyptus spp.* woodland with *Chrysopogon spp.* (ribbon grass), *Sorghum spp.* (sorghum) and *Triodia bitextura* (curly spinifex) grassy understorey.
- *Eucalyptus brevifolia* (snappy gum) low open-woodland with *Triodia bitextura* (curly spinifex) hummock grasses +/- *Enneapogon spp.* (nine-awn grass) short-tussock grasses or sometimes a grassland without trees.

Dominant land use

The dominant land use in VB1 is (ix) Grazing – Native pastures (see Appendix B, key b), (xi) UCL and Crown reserves and (xiii) Conservation.

Continental Stress Class

The Continental Stress Class for VB1 is 4.

Known special values in relation to landscape, ecosystem, species and genetic values

Rare Features Include:

- Extensive mangrove community of the False Mouths of the Ord.
- Ramsar listed wetlands of the Ord Floodplain and Lake Kununurra.
- Cambridge Gulf and associated river systems.
- 'Wet' tropical river of the lower Ord River since damming.
- The man-made wetlands of Lake Kununurra.
- Alluvial plain systems of the Ord and Weaber Plains.
- Black butcherbird population associated with the mangrove communities of the False Mouths of the Ord.
- The Devonian reef system of Ningbing Range with its particular vegetation associations (rainforest patches) and extensive cave systems.
- The coastal plain heading from Cape Domett to Northern Territory border. This is comprised of salt flats, grasslands, coastal creeks, rainforests on dune

ridges and rainforests associated with mound springs.
- A large flatback turtle rookery at Cape Domett.
- Very large *Miniopterus schreibersii* roost site within the gorges of the Cockburn Range.
- Fox and rabbit free and essentially uninhabited.

Centres of Endemism Include:
- An endemic isopod is found in the waters of Zebedee Springs.
- Rainforest patches are particularly important to invertebrates such as Camaenid land snails and annelids. Camaenid land snails have a large number of endemic species and some endemic genera showing strongly localised patterns of endemism. All the rainforest patches studied to date have endemic earthworm species associated with them.

Refugia:
Poorly known. 'Dry' rainforest patches, as well as swamp rainforests provide dry season refuges. Mangroves occur through riparian zones and provide refugia. Further research is required to define the extent to which this may apply to sandstone country because of its ability to provide fire protection. It is known that cypress (*Callitris intratropica*) is found on the plateau of the Cockburn Range and it is clear that the cliff sides of this range provide protection from fire. Further studies of the flora of this range are warranted.

High Species and Ecosystem Diversity:
Rainforests are defined by their vegetation associations and are resource centres for a variety of faunal taxa that are either directly linked to rainforests or are more widely ranging species that are dependent on them. Examples include fruit pigeons and flying foxes.

Existing subregional or bioregional plans and/or systematic reviews of biodiversity and threats

The CTRC report in 1974 (System 7) formed the basis of the Department's publication "Nature Conservation Reserves in the Kimberley" (Burbidge *et al.* 1991) which has itself been incorporated in a Departmental Draft Regional Management Plan (Portlock *et al.* 2001). These reports were focused on non-production lands and those areas not likely to be prospective for minerals. Action statements and strategies in the draft regional management plan do not go to the scale of subregion or even bioregion. There is some limited, unpublished biological survey work for specific parcels of land (Cockburn Ranges, Lower Ord, Mirima National Park). Previous rainforest studies are applicable (McKenzie *et al.* 1991).

Apart from specific survey work there has been no systematic review of biodiversity but it is apparent that there are on-going changes to the status of fauna (particularly mammals) and plant taxa. There is reasonable evidence about continuing loss of species and changes to assemblages at the landscape level which are affecting vegetation structure (e.g. loss of shrub layer), composition (e.g. perennial vs. annual grasses), vegetation cover, leaf litter, and organics in the upper soil horizon. It is generally recognised that flow-on effects of changes in the physical components of the environment, vegetation structure changes and other factors (e.g. exotic predators) can have significant effects on fauna. Work to date has been of a general nature.

Research is underway through the CRC for Tropical Savannahs looking at the Ord River from the top of the catchment to the Cambridge Gulf. This work is systematically assessing the environmental characteristics of the riparian zone (Dr Tony Start). Whilst in its infancy the recently established Ord Bonaparte Project is expected to assess the sustainable development and management of this bioregion.

Wetlands

Wetlands of National significance (DIWA listings)

Name and Code	Description[1]	Condition[2]	Trend[3]	Reliability[4]	Threatening Processes[5]
Lake Kununurra WA098	C1	iii	iv	iii	vi (119 introduced species of plant identified (Salvinia, Neem, Wild Passionfruit))
Ord Estuary System WA099	A6	iii	iii	iii	iv, vi (extent to be determined), x (changed hydrology)
Parry Floodplain WA100	B4	iii	iii	iii	vi (extent to be determined (Parkinsonia)), x, vii

[1]Appendix B, key d; [2]Appendix C, rank 2; [3]Appendix C, rank 3; [4]Appendix C, rank 1; [5]Appendix B, key e

Wetlands of Subregional significance (in addition to the DIWA listed wetlands)

Name and Code	Location	Description[1]	Special Values[2]	Condition[3]	Trend[4]	Reliability[5]	Threatening Processes[6]
Freshwater wetlands on Carlton Hill Station adjacent to the Ord River Nature Reserve.	TBD	B17	ii	iii	vi	i	iv, vii
Mound Springs of the Bonaparte coastal land.	TBD	B14	ii	iii	vi	ii	iv
Wetlands at the junction of the sand soils at the northern end of the subregion and the Bonaparte coastal land.	TBD	B14	ii	iii	iv	iii	iv, vii

[1]Appendix B, key d; [2]Appendix B, key c; [3]Appendix C, rank 2; [4]Appendix C, rank 3; [5]Appendix C, rank 1; [6]Appendix B, key e

Riparian zone vegetation

Name	Condition[1]	Trend[2]	Reliability[3]	Threatening Processes[4]
All fringing vegetation of riparian zones	iii	iii	iii	vii, iv, v (feral herbivores), x, vi

[1]Appendix C, rank 2; [2]Appendix C, rank 3; [3]Appendix C, rank 1; [4]Appendix B, key e

Ecosystems at risk

Threatened ecological communities (TECs)

There are no Threatened Ecological Communities (TECs) in VB1.

Other ecosystems at risk

Community	Status	NVIS[1]	Condition[2]	Trend[3]	Reliability[4]	Threatening Processes[5]
Savannah communities of which *Callitris intratropica* is a component.	V	11	Unknown	iii	iii	vii
Rainforest patches of the Kimberley savannah generally. Example rainforest patches on the Mitchell Plateau and in the supratidal flats.	V	2	Unknown	iii	iii	iv, vii
Assemblages of permanent/ephemeral wetlands, damplands, and riparian habitat of the Kimberley region.	V	15, 38, 42	Unknown	iii	ii	iv, vii
Widespread vegetation types and widespread threats such as changed fire regimes.	V	11	Unknown	vi	ii	vii
Plant assemblages of sand plain seepage areas between/near sandstone ridges.	V	38	Unknown	vi	i	vii
Point Spring Rainforest	V (P1)	2	iii	v	iii	vi (wild passionfruit and grasses)
Rainforest and paperbark forest associated with mound springs and seepage areas of the Victoria Bonaparte coastal lands.	V (P1)	2	ii	iii	ii	iv, vi
Rainforest springs in False Mouths of the Ord. Carlton Hill Station/Ord River nature reserve.	V (P1)	2	ii	iii	ii	iv, vii
Vine thickets of limestone ranges: Ninbing Range	V	2	iii	iii	iii	vii
Oryza australiensis (wild rice) grasslands on alluvial flats of the Ord River	V	37	Unknown	vi	ii	vii, i
Invertebrate community of Zebedee Springs, El Questro Station	V	43	Unknown	vi	ii	xii

[1]Appendix B, key f; [2]Appendix C, rank 2; [3]Appendix C, rank 3; [4]Appendix C, rank 1; [5]Appendix B, key e

Species at risk

Fauna

Species	Status	Condition[1]	Trend[2]	Reliability[3]	Threatening Processes[4]
SCHEDULE 1; RARE/LIKELY TO BECOME EXTINCT, DIV 2 (BIRDS)					
Erythrura gouldiae	E	Unknown	iii	ii	vii
Falcunculus frontatus whitei	E	Unknown	vi	Unknown	Unknown threatening processes
Erythrotriorchis radiatus	V	Unknown	vi	Unknown	Unknown threatening processes
Malurus coronatus coronatus	V	Unknown	vi	ii	vii, iv
SCHEDULE 1; RARE/LIKELY TO BECOME EXTINCT, DIV 3 (REPTILES)					
Caretta caretta	E	Unknown	vi	Unknown	Unknown threatening processes
Lepidochelys olivacea	E	Unknown	vi	Unknown	Unknown threatening processes
Chelonia mydas	V	Unknown	vi	Unknown	Unknown threatening processes
Dermochelys coriacea	V	Unknown	vi	Unknown	Unknown threatening processes
Eretmochelys imbricata	V	Unknown	vi	Unknown	Unknown threatening processes
Natator depressus	V	Unknown	vi	Unknown	Unknown threatening processes
SCHEDULE 4; OTHER SPECIALLY PROTECTED FAUNA. DIVISION 2 (BIRDS)					
Crocodylus johnstoni	S4 (State)	Unknown	iv	iii	Unknown threatening processes
Crocodylus porosus	S4 (State)	Unknown	v	iii	Unknown threatening processes
OTHER SPECIES AT RISK WITHIN THE SUBREGION					
Ardeotis australis	Near threatened (Comm.)	Unknown	vi	Unknown	Unknown threatening processes
Dasyurus hallucatus	Near threatened (Comm.)	Unknown	iii	ii	Unknown threatening processes
Falco hypoleucos	Near threatened (Comm.)	Unknown	vi	Unknown	Unknown threatening processes
Heteromunia pectoralis	Near threatened (Comm.)	Unknown	vi	Unknown	Unknown threatening processes
Macroderma gigas	Near threatened (Comm.)	Unknown	vi	Unknown	Unknown threatening processes
Neochmia ruficauda subclarescens	Near threatened (Comm.)	Unknown	iii	iii	vii
Rhinonicteris aurantius	S1 (State)	Unknown	vi	Unknown	Unknown threatening processes
Chalcophaps indica yamashinai	S3 (State)	Unknown	vi	Unknown	Unknown threatening processes

[1]Appendix C, rank 2; [2]Appendix C, rank 3; [3]Appendix C, rank 1; [4]Appendix B, key e

Declared rare and priority flora

Species Name	Status	Condition[1]	Trend[2]	Reliability[3]	Threatening Processes[4]
PRIORITY 1					
Acacia setulifera	1	Unknown	vi	Unknown	Unknown threatening processes
Echinochloa kimberleyensis	1	Unknown	vi	Unknown	Unknown threatening processes
Fuirena nudiflora	1	Unknown	vi	Unknown	Unknown threatening processes
Goodenia durackiana	1	Unknown	vi	Unknown	Unknown threatening processes
Trachymene oleracea	1	Unknown	vi	Unknown	Unknown threatening processes
Species Name	Status	Condition[1]	Trend[2]	Reliability[3]	Threatening Processes[4]
PRIORITY 2					
Eucalyptus ordiana	2	Unknown	vi	Unknown	Unknown threatening processes
Fimbristylis laxiglumis	2	Unknown	vi	Unknown	Unknown threatening processes
Goodenia sepalosa	2	Unknown	vi	Unknown	Unknown threatening processes
Gossypium pilosum	2	Unknown	vi	Unknown	Unknown threatening processes
Livistona victoriae	2	Unknown	vi	Unknown	Unknown threatening processes
Myriophyllum callitrichoides	2	Unknown	vi	Unknown	Unknown threatening processes
Platysace rupestris	2	Unknown	vi	Unknown	Unknown threatening processes
Utricularia aurea	2	Unknown	vi	Unknown	Unknown threatening processes

[1]Appendix C, rank 2; [2]Appendix C, rank 3; [3]Appendix C, rank 1; [4]Appendix B, key e

Analysis of appropriate management scenarios

Reservation priorities of ecosystems

The following Victoria Bonaparte vegetation associations are not reserved anywhere within the bioregion:

Beard Veg Types	Description	Area (Ha.)
61	Grasslands, tall bunch grass savannah woodland, coolibah over ribbon grass (*Chrysopogon spp*).	3,164
73	Grasslands, short bunch grass savannah, grass; salt-water grassland (*Sporobolus virginicus*).	16,626
75	Grasslands, curly spinifex, low tree savannah woodland; scarlet gum (*Eucalyptus phoenicea*) and *Eucalyptus ferruginea* over *Triodia bitextura*.	520
126	Bare areas; freshwater lakes.	93,480
703	Hummock grasslands, low tree steppe; snappy gum (*Eucalyptus brevifolia*) over *Triodia intermedia*.	1,335
800	Grasslands, high grass savannah woodland; Darwin stringybark (*Eucalyptus tetrodonta*) and Northern woollybutt (*Eucalyptus miniata*) over (upland tall grass and) curly spinifex (*Triodia bitextura*).	16,534
808	Grasslands, curly spinifex, low tree savannah; snappy gum (*Eucalyptus brevifolia*) over curly spinifex (*Triodia bitextura*).	36,141
811	Grasslands, high grass savannah low tree; Mt House box (*Eucalyptus argillacea*) and bloodwood (*Eucalyptus terminalis*) over white grass (*Sehima nervosum*) on rolling basalt country.	11,069
812	Grasslands, high grass savannah woodland; bloodwood (*Eucalyptus terminalis*) and Northern woollybutt (*Eucalyptus miniata*) over upland tall grass and curly spinifex (*Triodia bitextura*).	263,327
813	Grasslands, high grass savannah sparse tree; bauhinia (*Bauhinia cunninghamii*) and coolibah over blue (*Bothriochloa spp*) and tall upland grasses on black soil plain.	10,647
816	Grasslands, short bunch grass savannah, low tree, Mt House box (*Eucalyptus argillacea*) and bloodwood (*Eucalyptus terminalis*) over arid short grass (*Enneapogon spp*).	45,416
817	Grasslands, high grass savannah low tree; Terminalia (*Terminalia spp*) over upland tall grass and blue grass (*Bothriochloa spp*).	6,192
819	Grasslands, tall bunch grass savannah low tree; cabbage gum (*Eucalyptus grandifolia*) and silver leaved box (*Eucalyptus pruinosa*) over *Aristida* and ribbon grass (*Chrysopogon spp.*) on sandy plains.	9,835
820	Grasslands, high grass savannah sparse low tree; snappy gum (*Eucalyptus brevifolia*) over upland tall grass and curly spinifex (*Triodia bitextura*) on granite.	55,860
825	Grasslands, high grass savannah woodland; cabbage gum (*Eucalyptus grandifolia*) and *Eucalyptus greeniana* over upland tall grass and curly spinifex (*Triodia bitextura*) on basalt.	42,330
826	Hummock grasslands, low tree steppe; snappy gum (*Eucalyptus brevifolia*) over curly spinifex (*Triodia bitextura*).	711
835	Grasslands, high grass savannah woodland; Darwin box (*Eucalyptus tectifica*) and *Eucalyptus greeniana* over spinifex and white grass (*Sehima nervosum*).	7,031
911	Grasslands, high grass savannah woodland; bloodwood (*Eucalyptus terminalis*) over upland tall grass and curly spinifex (*Triodia bitextura*).	43,183
915	Mosaic: Grasslands, high grass savannah woodland; Darwin box (*Eucalyptus tectifica*), *Eucalyptus confertiflora* and *E. greeniana* over spinifex, white (*Sehima nervosum*) and tall upland grass/Grasslands, high grass savannah low tree; terminalia and bauhinia (*Bauhinia cunninghamii*) over upland tall grass.	1,459
918	Hummock grasslands, low tree steppe; snappy gum (*Eucalyptus brevifolia*) over curly spinifex (*Triodia bitextura*).	1,503

Poorly represented ecosystems subject to threat:

Rainforest and paperbark forest associated with mound springs and seepage areas of the Victoria Bonaparte coastal lands.
Vine thickets of limestone ranges: Ninbing Range
Oryza australiensis (wild rice) grasslands on alluvial flats of the Ord River
Invertebrate community of Zebedee Springs, El Questro Station

Note: the lack of study in some areas precludes statements about the level of reservation required.

Subregional constraints in order of priority
(see Appendix B, key g)

Economic Constraints: Land prices for pastoral leases.

Competing Land Uses: Particularly for pastoral production.

Other: Our knowledge of biodiversity patterns across the subregion's landscape does not have enough resolution to accurately define all acquisition priorities on the ground.

Bioregional and subregional priority for reserve consolidation

The Victoria Bonaparte Bioregion has a ranking priority under the preliminary bioregional NRS priorities of 5 (see Appendix D, and Appendix C, rank 4). There are a number of significant outstanding reservation proposals that would move the priority toward 4 or further. These proposals would set aside significant areas of sandstone and quartzstone landscapes. The competing land use for pastoral activities also means that the reservation system has an inbuilt bias.

Reserve management standard
(see Appendix C, rank 5)

The bioregion is ranked at poor (i) to fair (ii). No feral animal control programmes are in place. Limited strategic aerial prescribed burning along with some opportunistic hand burns occur. The extent of other threatening processes, for example weeds, are yet to be determined. Due to uncontrolled stock access, changes are occurring within parks

Off reserve conservation

Priority species or groups

- Threatening processes operate from the species to landscape level.
- Little is known of the status of critical weight range mammals in the Victoria Bonaparte 1 subregion.
- Action is required to identify appropriate fire regimes.
- The effect of fire and cattle on critical weight range mammals, granivorous birds and savannah composition and structure are of concern.
- Action is required to identify what is at risk and components of the biota at most risk then recommend and research appropriate management.
- Little is known of the distribution, status and impact of weed species.
- Changed grassland structures are of concern.
- There is evidence that changes have, and continue, to occur for the balance between annual and perennial grasses.
- Landscape level threatening processes also bring about changes to the organic profile layer in soils, water infiltration rates and surface flow velocity after rain.
- Impacts on rainforest patches of inappropriate fire regimes and specifically rainforest fire / cattle interaction is of concern.
- Changes to riparian zones due to the impact of changed fire regimes, grazing and the indirect effects from changed hydrology.

Existing species recovery plans

The Action Plan for Australian Bats.
The Action Plan for Australian Birds 2000.
Action Plan for Australian Marsupials and Monotremes.
Gouldian Finch Recovery Plan.
Draft Kimberley Region Management Plan (various strategies).

Appropriate species recovery actions

Fire Management: Move to biodiversity driven approaches to fire management strategies. Avoid broadscale, hot, late dry-season burning in savannah.

Weed Control: Need to define weeds priorities both in an agricultural resource sense and an environmental sense. Resources required for already identified State and regional weed strategies.

Capacity Building: There is a need for organisational responsibility in coordinating management efforts across tenure and management responsibilities. Local adoption of strategies is necessary. Capacity building in pastoral industry to optimise biodiversity and savannah productivity. Minimise loss of the mineral A horizon and protection of organic layers.

Feral Animal Control: Removal of feral stock from conservation estate and management of stock on other lands. E.g. close order husbandry of cattle herds to prevent overgrazing. Eradication of feral animals especially cattle, donkeys and pigs.

Ecosystems

This is a general savannah issue and fire is the main driver in addressing this. The next most important, and linked, issue is grazing. Actions that are required are linked to management research and better coordinated efforts between Government agencies, the pastoral grazing industry, Traditional owners and the broader community.

Existing ecosystem recovery plans

There are no current recovery plans for ecosystems at risk in VB1.

Appropriate ecosystem recovery actions

For example, mound springs the recovery actions would be (ix) fire management, (vii) feral animals control, and (vi) weed control.

Subregion priority for off reserve conservation

The subregional priority for off park conservation is (ii) fair (see Appendix C, rank 6), where a large off park effort needed, resource constraints and limited community capacity.

Conservation actions as an integral part of NRM

Existing NRM actions

Legislation: Pastoral lease inspections are undertaken by the Department of Agriculture and lease holders notified of any problems via the Pastoral Lands Board. Final scenario is that the Commissioner for Soil Conservation can institute formal proceedings if issues are not being addressed, though this step is rarely undertaken.

Threat Abatement Planning as Part of NRM: Concerted and coordinated effort by the Department of Agriculture in the control of donkeys.

Capacity Building Required with Community, Landholders, Industry and Institutions: Land Conservation District Committees established and provide a venue for discussion on conservation matters.

Integration with Property Management Planning, Catchment Planning and Landcare: Land Conservation District Committees provide an opportunity for integration of land management activities.

Feasible opportunities for NRM

Capacity Building Required with Community, Landholders, Industry and Institutions: Research is needed on the mechanism and impacts of threatening processes. Outputs of this should assess potential cost / effective solutions. Coordination of multiple research initiatives and communication of this.

Legislation: Improved implementation of existing legislation.

Environment Management Systems and Ecologically Sustainable Product Marketing: Environmental planning across tenure (weeds, fire and feral animals) coordinated through Land Conservation District Committee.

Capacity Building Required with Community, Landholders, Industry and Institutions: Improved communication required between all stakeholders and an acknowledgement of differing land management objectives.

Other Planning Opportunities: Shire plan incorporating biodiversity objectives incorporating an acknowledgement of the worth of the natural environment e.g. tourism including the cost of management (e.g. making national parks accessible).

Integration With Property Management Planning, Catchment Planning and Landcare: Development of catchment and regional plans involving all stakeholders.

Impediments or constraints to opportunities

A limited financial resource is a major constraint. The number of people available to implement strategies is a constraint. There is a need to increase awareness of conservation values throughout the community.

Subregions where specific NRM actions are a priority to pursue

A more coordinated approach to land management is a priority for the Victoria Bonaparte 1 subregion. This is due to differing and potentially competing land uses, the increase in multiple land uses and landscape threats. Whilst still important, the subregion has fewer stakeholders to deal with, however research into issue identification for this subregion may change the priority. The NRM rank for VB1 is (ii) (see Appendix C, rank 7), indicating that significant constraints exist to integrate conservation as part of production or development system.

Data gaps

Gaps in data needed for the identification of biodiversity values and management responses

Vegetation and Regional Ecosystem Mapping: Much finer scale (at 100,000:1 or better) vegetation and regional ecosystem mapping required for most of the widespread surfaces. This needs to align with soil maps and environmental geology maps and these do not yet exist at better than 1:250 000 scale.

Systematic Fauna Survey: No systematic quadrat based fauna and / or flora sampling programme across the subregion to provide a basis for modeling species distribution and status.
Floristic Data: Data is sparse. Some potential for adapting WARMS monitoring methodology.

Ecological and Life History Data: Data is lacking on the habitat requirements of fauna species.

Other Priority Data Gaps:

- Further research is required on the conservation status of many fauna and flora taxa as well as the

effects of threatening processes such exotic predators (cats), stock (cattle, donkeys and pigs), fire and weeds.

- A better understanding is required of coastal and near coastal hydrological processes. This is of particular significance for the Ord Floodplain Ramsar site.

Sources

References cited

No.	Author	Date	Title	Publication Details	Pub. Type
132	Burbidge, A.A., McKenzie, N.L. and Kenneally, K.F.	(1991).	Nature Conservation Reserves in the Kimberley Western Australia.	Department of Conservation and Land Management.	R
714	Dostine, Peter	(1998).	Gouldian finch recovery plan, Erythrura gouldiae	Parks & Wildlife Commission of the Northern Territory, Darwin	R
258	Duncan, A., Barry Baker, G. and Montgomery, N.	(1999).	The Action Plan for Australian Bats.	Environment Australia.	R
298	Garnett, S.T. and Crowley, G.M.	(2000).	The Action Plan for Australian Birds.	Environment Australia, Canberra.	R
483	Maxwell, S., Burbidge, A.A. and Morris, K. (eds).	(1996).	The 1996 Action Plan for Australian Marsupials and Monotremes. Wildlife Australia Endangered Species Program Project Number 50.	Environment Australia, Canberra.	R
495	McKenzie, N.L., Johnston, R.B. and Kendrick, P.G. (Eds.)	(1991).	Kimberley Rainforests of Australia.	Surrey Beatty and Sons.	B
556	Portlock, C., Graham, G., Done, C., Gilmour, J. and Williamson, J.	(2001).	Kimberley Region Draft Regional Management Plan. (Unpubl)	Department of Conservation and Land Management.	R

R = Report; J = Journal article; O = Other.

Other relevant publications

See reference numbers 018, 094, 100, 118, 132, 173, 258, 268, 418, 455, 492, 519, 551, 595, 619, 626, 634, 635, 636, 637, 648, 674, 692, 693 and 702 in Appendix A.