Northern Agricultural Region Asset Identification and Filtering workshops; June 2012 Final Report

Prepared for NACC

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Background

Ecoedge was engaged by the Northern Agricultural Catchments Council ('NACC') in April 2012 to develop and facilitate an environmental 'asset' identification and prioritisation process for the Northern Agricultural Region (NAR) (Figure 1). This work was undertaken as part of NACC's process to update their existing Regional Natural Resource Management Strategy, which was released in 2005. The development of the comprehensive 2005 strategy involved significant community, agency and other stakeholder consultation and is a credit to the region.

The aim of the 2012 workshops was to identify significant environmental assets and generate a resulting 'asset list' for the NAR, consisting of places nominated for inclusion by representatives from the local community, government agencies, industry groups and other stakeholders. The workshops provided an opportunity for new information/assets that may not have been included in previous plans to be nominated for incorporation into the asset list, which will contribute to decision making around investment in natural resource management projects into the future.

Cover picture: INFFER workshop, Perenjori

Process

One workshop was held in each of the four subregions of Moore River (workshop held in Moora), West Midlands (workshop held in Jurien), Yarra Yarra (workshop held in Perenjori) and Greenough (workshop held in Geraldton), during the week of 11-14 June, 2012.

Steps 1 and 2 of the INFFER process (Investment Framework for Environmental Resources, see www.inffer.org) were used to help identify and filter assets.

The asset identification and filtering processes are usually undertaken separately, with identification workshops open to all members of the community and filtering workshops consisting of participants invited to attend based on their specific and technical knowledge of the assets in their area, with a month or more between the two events to allow thorough identification and documentation of assets by all parties. Participants at the NACC workshops were invited to attend based on their comprehensive knowledge and understanding of assets. In order to maximise the benefit of the expertise available, it was decided that both asset identification and filtering processes would be undertaken at the one workshop.

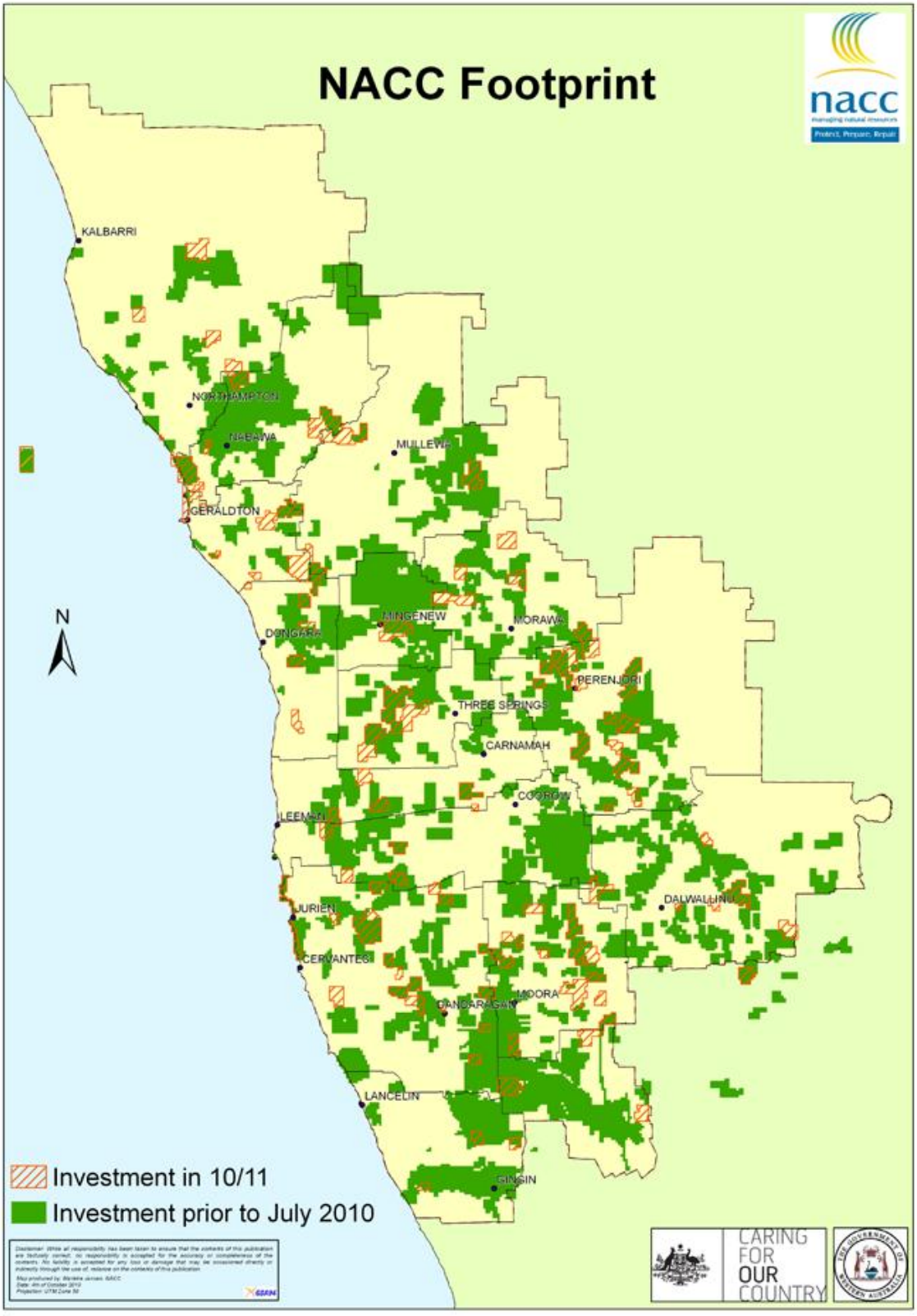

Figure 1. Northern Agricultural Catchments Council footprint map

Using INFFER Step 1, asset identification involves directly asking community members and stakeholders such as State Government agencies to describe and locate on a map the environmental assets that they feel are significant or important for environmental, cultural or economic reasons. In this context, assets can be highly productive agricultural land, wetlands, river systems or part thereof, native vegetation, individual plant and animal species, water resources such as reservoirs and aquifers, and so on. The only criteria used at this point in the process is one of spatial explicitness – if the asset can be drawn on a map, it is included in the list.

Step 2, asset filtering, involves people with good technical knowledge about assets in their area or subregion. This does not necessarily mean agency staff, although they can be and almost always are included; it is about gathering together the people who know the land, values, threats and socio-economic factors well. Assets that were identified in the previous step are run through a set of criteria by the filtering group. The criteria are shown in Table 1.

Table 1. Asset filtering criteria

Criteria	**Response**
Significance	E=Exceptional, VH=Very High, H=High, M=Moderate
Threat	VH=Very High, H=High, M=Moderate, L=Low
1. Can you clearly spatially identify the environmental or natural resource asset?	Y=Yes, N=No, P=Possible but requires more work
2. Is it possible to develop a 'SMART' goal for the asset?	Y=Yes, N=No, M = Maybe
3. Is there evidence to indicate that management actions can make a real difference, sufficient to achieve a worthwhile 'SMART' goal for the asset?	Express as a confidence level: H=High, M=Medium, L=Low
4. If the desired management actions are mainly on private land, is it likely that those actions would be reasonably attractive to fully informed land managers when adopted over the required scale?	Express as a confidence level: H=High, M=Medium, L=Low
5. If the project requires change by other institutions (e.g. local government, state government departments), is there a good chance that this will occur?	Express as a confidence level: H=High, M=Medium, L=Low

Note:

(i) Significance – How important or valuable is this asset? Specifically, how significant would it be if in good condition.

(ii) Degree of damage/threat to the asset. Without a major new project for this asset, how damaged will the asset be in 20 years time?

(iii) SMART goal - Will it be possible to define a goal for the asset that is "SMART" (specific, measurable, achievable, relevant and time-bound)?

To ensure that the most significant assets were filtered at the workshops, all assets were run through the first two criteria (significance and threat) first, and then those with highest ratings were assessed against the remaining criteria. Due to time restrictions, some assets with lower significance and/or threat were not able to be assessed against the remaining criteria.

It should be noted that while the workshops did not aim to identify specific cultural assets, cultural values were a key consideration when assessing asset significance.

Workshop participants

A total of forty one people attended the workshops, including three staff members from NACC. Participants are listed in Table 2.

Table 2. Workshop participants

Name	Organisation	Workshop attended
Clayton Lewis	Australian Government	All
Jeff Douglas	CarbonConscious	Jurien Bay
Stan Scott	CEO Shire of Perenjori	Perenjori
Gloria White	Cervantes Progress Association	Jurien Bay
Mark Chatwick	City of Greater Geraldton	Geraldton
Jill Wilson	Community	Moora
Anthea Kalajzich	Community	Geraldton
Jim Sorgiovanni	Community	Geraldton
Helen Manson	Community	Jurien Bay
Nick Dunlop	Conservation WA	Jurien Bay
Don Telfer	Dept Agriculture and Food WA	Moora
Angela Stuart-Street	Dept Agriculture and Food WA	Geraldton
Paul Findlater	Dept Agriculture and Food WA	Perenjori
Benson Todd	Dept of Environment and Conservation	Jurien Bay
Anthony Desmond	Dept of Environment Conservation	Geraldton
David Pongracz	Dept of Environment Conservation	Geraldton
Fleur Coaker	Dept of Water	Geraldton
Mike Johnson	Dept of Water	Jurien Bay
Heather Hatch	Friends of Lancelin Coast	Jurien Bay
Chris O'Callaghan	Liebe Group	Perenjori
Angela Mazur	Liebe Group	Perenjori
Casey Palmer	Mingenew Irwin Group	Geraldton
Donna Rayner	Mingenew Irwin Group	Geraldton
Helen Watkins	Moore Catchment Council	Moora
Ingrid Krockenberger	Moore Catchment Council	Moora

Name	Organisation	Workshop attended
Reginald Beale	Moore Catchment Council/ Shire of Gingin	Jurien Bay
Ashley Robb	NACC	Geraldton/Moora
Michael Payne	NACC	Geraldton/Jurien Bay
Wendy Payne	NACC	Geraldton/Jurien Bay
Mark Canny	NACC	Jurien Bay
Marieke Jansen	NACC	All
Pamela Southern	NACC	All
Shelley Spriggs	NACC	All
Greg Burrows	NACC	Geraldton
Shane Love	Shire of Dandaragan	Geraldton
Nicole Siemon	Shire of Chapman Valley	Geraldton
Jim Gales	Shire of Chapman Valley	Geraldton
Mike Sheppard	Shire of Dandaragan	Jurien Bay
Jan Court	Shire of Gingin	Jurien Bay
Stuart Chandler	Shire of Irwin	Geraldton
Fiona Gibson	UWA / MIG	Geraldton
Fiona Falconer	Waddi Forest LCDC	Moora
Anne Wilkins	West Midlands Group	Jurien Bay
Jennifer Bairstow	West Midlands Group	Moora
Dene Solomon	Yarra Yarra Catchment Management Group	Perenjori
Lizzie King	Yarra Yarra Catchment Management Group	Perenjori
Flora Danielzik	Yarra Yarra Catchment Management Group	Perenjori

Results

203 assets were identified during the workshops, with the following breakdown by subregion (Table 3) and levels of significance (Table 4):

Table 3. Number of assets nominated by subregion

Subregion (workshop location)	Number of assets#
West Midlands (Jurien)	46
Moore River (Moora)	37
Yarra Yarra (Perenjori)	40*
Greenough (Geraldton)	80

Due to the number of participants, participants worked in two or more groups to nominate assets. Minor overlap between maps resulted in some assets being nominated twice; this has been corrected for where possible.

*Based on suggestion and agreement by all participants, the three assets of White Wells Station, Karara Station and Lochada Station were aggregated to form one asset.

Table 4. Number of assets in each significance level

Asset significance	Number of assets#
Exceptional	8
Very High	46
High	69
Medium	43
Not filtered	33

The significance of four assets (Carnaby's Cockatoo, Freshwater Mussel, Mike Morrison high biodiversity value and Wilton Well) was recorded as a question mark; the significance of these assets is yet to be determined.

Table 5 contains a list of Exceptional assets. Appendix 1 contains the complete and filtered list of nominated assets. Assets have been listed according to their significance; note that within each significance class, assets are listed in no specific order.

Appendix 2 contains a complete list of all assets by subregion.

Table 5. Exceptional assets.

Asset code	Asset name	Significance	Threat
G86	Kalbarrai NP - Sandplain communities along river	E	H
G121	Abrolhos Islands	E	VH
G119	Seabird breeding islands of the Houtman Abrolhos	E	VH
J3/60	Pinnacles desert	E	L
J23/59	Lake Thetis	E	M
G7	Irwin Borefield	E	H
M21	Groundwater underlying area between Bindoon-Moora Rd and Brand hwy	E	M
J20/41	Lesueur National Park and surrounds	E	L

Workshop observations

The NAR workshops resulted in 203 assets being identified, which is consistent with results from most other asset identification workshops undertaken by the INFFER team within Australia, which have elicited between 200 and 500 assets.

It is likely that additional assets would have been identified had there been wider representation from local communities (particularly landowners), government agencies and traditional owners, however all workshops were well attended. Unfortunately, good rains fell in the week preceding the workshops, resulting in the majority of landowners needing to attend to on-farm demands instead of attending the workshops as planned.

Several participants requested the Asset Nomination forms after the workshop so that additional assets could be contributed to the list as they came to mind. No additional forms were received prior to the completion of this report.

Participants present at the workshop generally had good knowledge of values and threats associated with assets nominated and with actions needed to address those threats. They also had a good understanding of the likelihood of landholders being willing to undertake those actions.

The resulting asset list, which can be augmented over time, is a valuable outcome for NACC and the people of the Northern Agricultural Region.

Recommendations

- That NACC undertake a random survey of participants from each workshop to gain useful feedback on the workshops and approach used. A version previously used by the INFFER team has been provided as an attachment to this report for use by NACC should they wish to implement this recommendation.
- That NACC provide this report to workshop participants for their information and review, keep participants informed of subsequent actions taken towards next steps and any of investment that happens in the region
- That NACC continue to capture information about assets in the region through their normal work, using existing staff and processes. Information collected can then be added to the database for ease of data capture and retrieval, and for use in mapping programs. An access database developed by the INFFER team for this purpose has been provided to NACC as an attachment to this report. Alternatively, the information could be stored in an excel spreadsheet or other program.

- That NACC document and spatially identify any additional assets using the asset documentation form and maps.
- That NACC consider the potential priority assets and determine whether or not there is sufficient knowledge to develop project proposals. Consideration also needs to be given to decision processes which will be used to decide which assets will have projects developed at this time and which will not. This may be guided by potential funding investor's needs, availability of information, and may also involve consideration of additional criteria
- That NACC use INFFER's electronic Project Assessment Form (PAF Pro and/or PAF Lite) where appropriate or other project development process for chosen assets to develop detailed project assessments/proposals.
- That assets already documented in existing plan and datasets be incorporated into the asset register to ensure that it is comprehensive in its representation of the region's asset
- That NACC analyse asset data collected through the process to ensure that there is good coverage across the region and that no areas have been omitted, for example, agricultural landscapes were not covered during the Jurien Bay workshop
- The proposed technical reference group could review results from workshops and annually filter additional assets nominated for inclusion in the register
- The process has revealed assets at a range of scales and complexities and it is recommended that some work is done to classify, aggregate, etc. This may result in some smaller assets being nested within larger assets.
- The process has revealed some excellent candidate assets for both large and small scale projects suitable for investment; it is recommended that a small number of these be analysed using the Project Assessment Form in the development of investment proposals.
- Some asset boundaries were not able to be drawn onto the maps during the workshop, e.g. the Yarragadee aquifer and other artesian basins. These will need to be confirmed before digitisation can occur.

Appendix 1. Nominated assets by theme

Coastal

Asset Class and Asset ID	Asset name	Significance	Threat	Filtering Q1	Filtering Q2	Filtering Q3	Filtering Q4	Filtering Q5
Coastal								
J3/60	Pinnacles desert	E	L	Y	Y	H	N/A	H
G14	Primary and secondary coastal dunes	VH	H	Y	Y	H/M	M	H
J8	Wedge Island area	H	VH	Y	Y	H	N/A	L
G9	Southgates dune and nearshore environment	H	H	Y	Y	H	L	H
M23	Moore River Estuary	H	H	Y	Y	M	M (poss low)	M
M22	Coastal Dunes	H	H	Y	Y	H	M	H
M29	Guilderton to Seabird dunes and coastal vegetation	H	H	Y	Y	H	M	M
J130	Lancelin Foreshore dunes	H	H	Y	Y	H	N/A	L
J7	Lancelin Bay	H	H	Y	Y	H	N/A	L
J6	Lancelin Coastal dunes	H	H	Y	Y	H	N/A	L
G80	Zuytdorp cliffs	H	M		Y			
G87	Lucky Bay	M	VH	Y	Y	H	NA	L
G6	Grey's beach	M	VH	Y	Y	Y	N/A	L
G122	Horrocks	M	H		Y			
J9	Ledge Point (foreshore)	M	H	Y	Y	M	N/A	L
J22	Greenhead Townsite	M	L	Y	Y	H	N/A	M
G89	Bluff Point							
G84	Red Bluff							

Marine

Asset Class and Asset ID	Asset name	Significance	Threat	Filtering Q1	Filtering Q2	Filtering Q3	Filtering Q4	Filtering Q5
Marine								
G121	Abrolhos Islands	E	VH	Y	Y	Y	H	H
G119	Seabird breeding islands of the Houtman Abrolhos	E	VH	Y	y	L	NA	H
G18	Champion Bay seagrass (linked with G31)	VH	H	Y	Y	H	NA	L
G116	large continental islands of the Houtman Abrolhos	VH	H	Y	Y	H	H (but few)	H
J101	Lancelin Island nature reserve and fish habitat protection area	VH	H	Y	Y	M	N/A	H
J27	Turquoise coast Islands nature reserves	VH	M	Y	Y	M	N/A	H
J34/37	Jurien Bay Marine Park	VH	M	Y	Y	M	M	H
G31	Seagrass meadows	VH	L	Y	Y	H	H	M
M33	Offshore reefs	H	M	Y	Y	M	N/A	L
J33/49	Beagle, Buller and North Fisherman Islands (sealions)	H	M	Y	Y	M	M	H
M32	Lancelin islands	H						
M28	Seagrass meadows for the Moore Catchment	H	L	Y	Y	M	N/A	L
G26	Rock lobster recruitment monitoring reserve - Seven Mile beach	M	M	Y	Y	H	NA	H
G90	Coronation Island							
G83	Hutt Lagoon							
G115	Pupping and haulout islands for Australian sealion							
G91	Blueholes fish habitat protection area							

Biodiversity

Asset Class and Asset ID	Asset name	Significance	Threat	Filtering Q1	Filtering Q2	Filtering Q3	Filtering Q4	Filtering Q5
Biodiversity								
G86	Kalbarrai NP - Sandplain communities along river	E	H	Y	Y	M	NA	H
G7	Irwin Borefield	E	H	Y	Y	H	H	L
J20/41	Lesueur National Park and surrounds	E	L	Y	Y (break into components)	H	M	H
G23	Tallering Peak	VH	VH	Y	M	L	L	L
P2	Mallee Fowl	VH	VH	Y	Y	H	H	M
P9	Salmon Gums	VH	VH	Y	Y	H	M	NA
M27	Gingin Brook and riparian zone	VH	VH	Y	M	H	L	M
M1	Buntine Marchagee natural diversity recovery catchment	VH	VH	Y	Y	H	H	H
M7	Declared rare flora (DRF)	VH	VH	Y	N			
M24	Salmon Gums woodlands	VH	VH	Y	Y	M	H	M
P10	TECs across the region	VH	H	Y	Y	M	L	M
G12	East/west natual area corridor	VH	H	Y	Y	H	L	L
G5	Moresby Ranges	VH	H	Y	Y	H	L	H
G21	Carnaby's and Red-Tailed Black Cockatoos	VH	H	Y	Y	M	L	H
	Red-tailed Black Cockatoo	VH	H	Y	Y	H	H	H
J29	Eneabba sandplain	VH	H	Y	Y	M	N/A	L
G2	Greenough Flats	VH	M	Y	Y	H	M	H
G19	Wandana reserve and UCL	VH	M	Y	Y	H	M	M
G11/G98	East Yuna reserve	VH	M	Y	Y	H	H	H
G17	Coalseam Nature Reserve	VH	M	Y	Y	H	H	M
P43/ P44/ P49	Charles Darwin Reserve (former White Wells station), Karara Station and Lochada Station (aggregated)	VH	M	Y	Y	H	H	NA
P42	Koolanooka TEC/PEC	VH	M	Y	Y	M	H	M
M36	Rica Erickson Nature Reserve and Bindoon training camp	VH	M	Y	y	M	N/A	M
J57	Raffan and Coomallo Canaby's important breeding areas	VH	M	Y	Y	M	H	H

Biodiversity								
J45	Don Williams Hi-Vallee	VH	M	Y	Y	H	H	N/A
J27	Turquoise coast Islands nature reserves	VH	M	Y	Y	M	N/A	H
J28	Cataby Carnaby's Breeding area	VH	M	Y	Y	M	H	H
P16	Loam Soil (salmon gums/Tamma country)	VH	L	Y	Y	H	H	NA
G52	Little Three Springs and other GDEs	H	VH	Y				
P72	Iron Stone Ridge	H	VH	Y	Y	H	M	NA
M5	Alison Doley's Carnaby's breeding area	H	VH	Y	Y	H	H	N/A
M9	Mallee fowl	H	VH	Y	Y	H	H	L
M39	Karakin Lakes	H	VH	Y	MAYBE			
J31	South Eneabba nature reserve	H	VH	Y	Y	M	N/A	L
G97	Vegetation of the Northampton Block	H	H	Y				
G50	Coalseam National Park	H	H	Y				
P41	Koolanooka Hills	H	H	Y	Y	H	M	M
P51	Bellaranga Hills	H	H	Y	Y	H	H	H
P76	Marchagee Lake	H	H	Y	Y	L	M	NA
P8	Sandalwood communities	H	H	Y	Y	M	H	L
M6	Railway reserves	H	H	Y	Y	H	N/A	L
M17	Remnant vegetation containing Bentonite wetlands	H	H	Y	Y	M	M	N/A
G117	Yerina springs	H	M	Y				
G3/43	Canna Reserve	H	M	Y	Y	H	H	H
G27	Eradu sandplain	H	M	Y	Y	H	M	H
G94	York gum woodlands of Kalbarri NP and Eurardy and adjacent UCL	H	M	Y				
G28	Burma road reserve	H	M	Y	Y	H	H	H
	Mongers Lake Fringe	H	M	Y	Y	H	H	NA
P45	Caron reserve	H	M	Y	Y	H	NA	H
P50	Canna reserve	H	M	Y	Y	H	NA	M
P46	Latham Reserve	H	M	Y	Y	H	M	M
P59	Wreath flower	H	M	Y	Y	?	?	L

Biodiversity								
M2	Water reserves around all towns	H	M	Y	Y	H	N/A	H
M32	Nilgen Nature Reserve	H	M	Y	Y	H	N/A	H
M15	Waddy Forest catchment	H	M	Y	Y	H	H	N/A
M16	Buntine Nature Reserve	H	M	Y	Y	H	?	M
J47	Alexander Morrison National Park	H	M	Y	Y	H	M	M
J26	Mound springs of Three Springs area	H	M	Y	Y	M	M	M
P47	Unnamed remnant bush on Morawa-Yalgoo road	H	L	Y	Y	H	?	?
P1	Buntine Nature Reserve	H	L	Y	Y	H	NA	H
M40	DEC reserve where north and east arms of the Moore River meet	H	L	Y	Y	H	M	H
P56	Mount Springs TEC/PEC	H	?	Y	Y	M (threat not confirmed)	M	H
M35	Sappers Rd road verge link	M	VH	Y	Y	H	N/A	L
M70	Candy's scrub reserve (shire)	M	H	Y	Y	M	N/A	M
M14	Echidnas in the region	M	H	N	N			
J103	Badgingarra research station	M	H	Y	Y			
J129	Nilgen Nature reserve	M	H	Y	Y	M	L	M
G16	Remnant vegetation on Dindiloa Road	M	M	Y	Y	H	L	H
G15	Rum Jungle	M	M	Y	Y	M	L	H
M8	Designated Land for Wildlife sites	M	M	Y				
P48	Bowgada town and nature reserve	M	L	Y	Y	H	NA	M
P6	Mongers Lake	M	L	Y	Y	H	H	M
P15	Kalannie-Goodlands vegetation corridor	M	L	Y	Y	H	H	NA
P55	Warriedar town common	M	L	Y	Y	H	NA	H
P52	Bunjil town reserve	M	L	Y	Y	H	NA	M
P54	Winchester Cemetary and wetlands	M	L	Y	Y	H	NA	H
P67	North Latham Catchment	M	L	Y	Y	H	M	M
J30	Southern Beekeeper's Reserve	M	L	Y	Y	H	L	H
J21	Sandy Cape reserve and recreational park	M	L	Y	Y	H	N/A	H

Biodiversity								
J105	The North Stock Route	M	L	Y	Y	M	M	M
J51	Ray Faulkner (remnant vegetation)	M	?	Y				
P14	Freshwater Mussell	?	?	Y				
J53	Mike Morrison high biodiversity value	?	?	Y				
J52	Wilton Well	?	?	Y				
G120	Granite outcrop north of Nabawa							
G88	Nansom							
G53	Bundybunna A/C farm							
G114	Sandplain vegetation north of the northampton block							
G47	Allonooka borefield							
G44	Depot springs							
G101	Crown land along vermin proof fence between Zuytdorp and Northwest coastal hwy							
G6	Koolanooka Reserve							
G57	Beekeeper's / Mt Adams Reserve							
G103	Threatened mammals of Kalbarri NP							
G102	Endangered orchids of the Murchison River Gorge							
G124	Moresby proposed conservation park							
G100	Yuna/Tenindewa glacier							
G126	Oakajee							
G58	Endangered flora of the Tardun area							
G55	Zoe Campbell's block							
P17	Carnaby's Cockatoo	-	-					
P57	Spiny tailed skink							
M12	Threatened and priority fauna	Species need to be specified						

Water, Rivers and Wetlands

Asset Class and Asset ID	Asset name	Significance	Threat	Filtering Q1	Filtering Q2	Filtering Q3	Filtering Q4	Filtering Q5
Water, Rivers and Wetlands								
M21	Groundwater underlying area between Bindoon-Moora Rd and Brand hwy	E	M	Y	Y?	M	M	H
J23/59	Lake Thetis	E	M	Y	Y	L	?	?
M27	Gingin Brook and riparian zone	VH	VH	Y	M	H	L	M
M10	Moore River	VH	VH	Y	Y	Y	M	H
G82/G85	Murchison River	VH	H	Y	Y	M	L	H
G83	Hutt Lagoon	VH	H	Y	Y	M	M	M
G125	Kalbarri groundwater	VH	H	Y	Y	Y	H	H
M26	Deep aquifer under Swan Coastal Plain (e.g. Yarragadee)	VH	H	Y	Y	L	L	M
J43	Hill River	VH	H	Y	Y	H	L	L
J61	North Perth Basin (connects with 21)	VH	H	Y	MAYBE			
J19/38	Hill River Estuary	VH	H	Y	Y	H	H	M
P66	Yarra Yarra lake system	VH	M	Y	?	L	H	M
J10	Regans Ford (section of Moore river, large remnant)	VH	M	Y	Y	H	N/A	H
M25	Superficial aquifer under the Swan Coastal Plain	H	VH	Y	Y	M	M	H
M39	Karakin Lakes	H	VH	Y	MAYBE			
M20	Nabappie wetlands	H	VH	Y	Y	M	M	N/A
J25/54	Indoon/Logue Lake System	H	VH	Y	Y	L	N/A	L
J5	Lakes system at corner of Dandaragan and North West Rds	H	VH	Y	Y	H	H	N/A
G10	Greenough River Estuary	H	H	Y	Y	H	NA	
G22	Chapman river and tributaries	H	H	Y	Y	H	L	M
G29	Wetlands at Hicketty Chalmooka	H	H	Y	Y	H	M	H
P76	Marchagee Lake	H	H	Y	Y	L	M	NA
M4	Southeast end Latham Lakes (Buntine arm)	H	H	Y	Y	H	M	N/A
M3	Latham Lakes	H	H	Y	Y	H	M	N/A

Water, Rivers and Wetlands								
M23	Moore River Estuary	H	H	Y	Y	M	M (poss low)	M
M11	Lower reaches of Moore River - water quality	H	H	Y	Y	M	L	L
M18	Hodgson wetlands	H	H	Y	Y	M	M	N/A
M19	Gypsum wetlands	H	H	Y	Y	M	M	N/A
J55	Arrowsmith Lake	H	H	Y	Y	M	N/A	L
J56	Arrowsmith river	H	H	Y	Y	H	M	N/A
J1	Swamp where the north and south branches of the Gingin brook meet	H	H	Y	Y	H	L	L
J4	Lennard Brook / Bambun Lake	H	H	Y	Y	H	L	L
J18	Lake Garaga and surrounding wetland systems	H	H	Y	Y	H	N/A	M
P?	Mongers Lake Fringe	H	M	Y	Y	H	H	NA
J102	Moore River Estuary	H	M	Y	Y	H	M	M
J26	Mound springs of Three Springs area	H	M	Y	Y	M	M	M
J32	Leeman salt wetlands	H	M	Y	Y	M	N/A	L
G1	Irwin Rivermouth and Estuary	M	H	Y	Y	H	NA	M
G13	Upper Catchment Irwin River	M	H	Y	Y	M	L	H
J50	Bindoon and Arrendoon Creeks	M	H	Y	Y	H	?	N/A
J42	Minyulo Brook	M	H	Y	Y	H	L	N/A
J2	Wolba Wolba (Aggie's) lake	M	H	Y	Y	H	H	H
G4	Ellendale Pool	M	M	Y	Y	H	NA	H
G8	Chapman River estuary	M	M	Y	Y	H	NA	H
G30	Riverside	M	L	Y	Y	H	H	H
P6	Mongers Lake	M	L	Y	Y	H	H	M
P54	Winchester Cemetary and wetlands	M	L	Y	Y	H	NA	H
P11	Lake Goorly	M	L	Y	Y	H	H	M
P12	Lake De Courcy	M	L	Y	Y	H	H	M
P13	Lake Hilman	M	L	Y	Y	H	H	M
J52	Wilton Well	?	?	Y				
G127	Yarragadee Aquifer							

Water, Rivers and Wetlands								
G123	Bowes River							
G45	Yarra Yarra Lakes System							
G49	Regional groundwater sources i.e. Arrowsmith, Jurien, Gingin							
G96	Hutt River and tributaries							
G79-81	Three spring sites along the Greenough River							
G56	Aramal lakes							
G51	Milo Road Crossing Irwin River							

Land

Asset Class and Asset ID	Asset name	Significance	Threat	Filtering Q1	Filtering Q2	Filtering Q3	Filtering Q4	Filtering Q5
Land								
G2	Greenough Flats	VH	M	Y	Y	H	M	H
M34	High value broadacre agricultural land	VH	M	Y	Y	H	H	NA
G20	Chapman Valley Soils	VH	L	Y	Y	H	H	H
P4	Good agricultural soils	VH	L	Y	Y	H	H	NA
P16	Loam Soil (salmon gums/Tamma country)	VH	L	Y	Y	H	H	NA
P75	Valley floors	H	VH	Y	Y	M-H	H	L
G18	Galena	M	H	Y				
P5	Wadgil soils	M	H	Y	Y	H	H	NA
J103	Badgingarra research station	M	H	Y	Y			
P7	Poor performing agricultural soils	M	M	Y	Y	H	H	M
G99	Northampton-Chapman Valley highly fertile soils							
G48	Irwin Valley							

Cultural assets (not filtered)

Asset Class and Asset ID	Asset name	Significance	Threat	Filtering Q1	Filtering Q2	Filtering Q3	Filtering Q4	Filtering Q5
Cultural								
G118	Islands associated with the Batavia			Y				
P18	Indigenous fish traps and markings at Mongers Lake (incorporate into the Mongers Lake fringe asset)	M	L					
P53	State farm - (within Karara, historical/cultural asset)	M	L					

Appendix 2. Assets listed by subregion

Greenough

Asset Class and Asset ID	Asset name	Significance	Threat	Filtering Q1	Filtering Q2	Filtering Q3	Filtering Q4	Filtering Q5
G89	Bluff Point							
G90	Coronation Island							
G127	Yarragadee Aquifer							
G87	Lucky Bay	M	VH	Y	Y	H	NA	L
G120	Granite outcrop north of Nabawa							
G122	Horrocks	M	H					
G86	Kalbarrai NP - Sandplain communities along river	E	H		Y	M	NA	H
G84	Red Bluff							
G88	Nansom							
G123	Bowes River							
G16	Remnant vegetation on Dindiloa Road	M	M	Y	Y	H	L	H
G20	Chapman Valley Soils	VH	L	Y	Y	H	H	H
G18	Champion Bay seagrass (linked with G31)	VH	H		Y	H	NA	L
G14	Primary and secondary coastal dunes	VH	H	Y	Y	H/M	M	H
G116	large continental islands of the Houtman Abrolhos	VH	H		Y	H	high but few	H
G117	Yerina springs	H	M					
G15	Rum Jungle	M	M	Y	Y	M	L	H
G12	East/west natual area corridor	VH	H	Y	Y	H	L	L
G6	Grey's beach	M	VH	Y	Y	Y	N/A	L
G10	Greenough River Estuary	H	H	Y	Y	H	N/A	
G5	Moresby Ranges	VH	H	Y	Y	H	L	H
G7	Irwin Borefield	E	H	Y	Y	H	H	L
G9	Southgates dune and nearshore environment	H	H	Y	Y	H	L	H
G1	Irwin Rivermouth and Estuary	M	H	Y	Y	H	NA	M
G4	Ellendale Pool	M	M	Y	y	H	N/A	H
G80	Zuytdorp cliffs	H	M					

Asset Class and Asset ID	Asset name	Significance	Threat	Filtering Q1	Filtering Q2	Filtering Q3	Filtering Q4	Filtering Q5
G85	Murchison River	H	H					
G82	Murchison River	VH	H		y	m	L	h
G83	Hutt Lagoon	VH	H		y	m	m	m
G18	Galena	M	H					
G121	Abrolhos Islands	E	VH		y	y	h	h
G119	Seabird breeding islands of the Houtman Abrolhos	E	VH		y	L	na	h
G118	Islands associated with the Batavia		Y					
G2	Greenough Flats	VH	M	Y	Y	H	M	H
G3/43	Canna Reserve	H	M	Y	Y	H	H	H
G45	Yarra Yarra Lakes System							
G54	Seven Mile	H	M					
G97	Vegetation of the Northampton Block	H	H					
G49	Regional groundwater sources i.e. Arrowsmith, Jurien, Gingin							
G50	Coalseam National Park	H	H					
G27	Eradu sandplain	H	M	Y	Y	H	M	H
G8	Chapman River estuary	M	M	Y	Y	H	N/A	H
G22	Chapman river and tributaries	H	H	Y	Y	H	L	M
G53	Bundybunna A/C farm							
G19	Wandana reserve and UCL	VH	M	Y	Y	H	M	M
G114	sandplain vegetation north of the northampton block							
G11	East Yuna reserve	VH	M	Y	Y	H	H	H
G96	Hutt River and tributaries							
G52	Little Three Springs and other GDEs	H	VH					
G47	Allonooka borefield							
G44	Depot springs							
G29	Wetlands at Hicketty Chalmooka	H	H	Y	Y	H	M	H
G101	Crown land along vermin proof fence between Zuytdorp and Northwest coastal hwy							

Asset Class and Asset ID	Asset name	Significance	Threat	Filtering Q1	Filtering Q2	Filtering Q3	Filtering Q4	Filtering Q5
G94	York gum woodlands of Kalbarri NP and Eurardy and adjacent UCL	H	M		Y	M	L	M
G99	Northampton-Chapman Valley highly fertile soils							
G28	Burma road reserve	H	M	Y	Y	H	H	H
G79-81	Three spring sites along the Greenough River							
G56	Aramal lakes							
G51	Milo Road Crossing Irwin River							
G26	Rock lobster recruitment monitoring reserve - Seven Mile beach	M	M	Y	Y	H	N/A	H
G48	Irwin Valley							
G21	Carnaby's and Forest Red-Tailed Black Cockatoos	VH	H	Y	Y	M	L	H
G17	Coalseam Nature Reserve	VH	M	Y	Y	H	H	M
G13	Upper Catchment Irwin River	M	H	Y	Y	M	L	H
G6	Koolanooka Reserve							
G57	Beekeeper's / Mt Adams Reserve							
G103	Threatened mammals of Kalbarri NP							
G102	Endangered orchids of the Murchison River Gorge							
G30	Riverside	M	L	Y	Y	H	H	H
G31	Seagrass meadows	VH	L	Y	Y	H	H	M
G115	Pupping and haulout islands for Australian sealion							
G91	Blueholes fish habitat protection area							
G98	East Yuna reserve (duplicate)							
G125	Kalbarri groundwater	VH	H	Y	Y	Y	H	H
G124	Moresby proposed conservation park							
G100	Yuna/Tenindewa glacier							
G126	Oakajee							
G58	Endangered flora of the Tardun area							
G55	Zoe Campbell's block							

Asset Class and Asset ID	Asset name	Significance	Threat	Filtering Q1	Filtering Q2	Filtering Q3	Filtering Q4	Filtering Q5
G23	Tallering Peak	VH	VH	Y	M	L	L	L

Yarra Yarra

Asset Class and Asset ID	Asset name	Significance	Threat	Filtering Q1	Filtering Q2	Filtering Q3	Filtering Q4	Filtering Q5
P43	Charles Darwin Reserve (former White Wells station, part of the recommended aggregate)	VH	M	Y	Y	H	H	NA
P42	Koolanooka TEC/PEC	VH	M	Y	Y	M	H	M
P?	Mongers Lake Fringe	H	M	Y	Y	H	H	NA
P41	Koolanooka Hills	H	H	Y	Y	H	M	M
P7	Poor performing agricultural soils	M	M	Y	Y	H	H	M
P4	Good agricultural soils	VH	L	Y	Y	H	H	NA
P75	Valley floors	H	VH	Y	Y	M-H (dissent)	H	L
P5	Wadgil soils	M	H	Y	Y	H	H	NA
P48	Bowgada town and nature reserve	M	L	Y	Y	H	NA	M
P45	Caron reserve	H	M	Y	Y	H	NA	H
P44	Karara Station (part of the recommended aggregate)	VH	M	Y	Y	H	NA	M
P2	Mallee Fowl	VH	VH	Y	Y	H	H	M
P18	Indigenous fish traps and markings at Mongers Lake (incorporate into the Mongers Lake fringe asset)	M	L	Y	NOT CONTINUING - CULTURAL ASSET ONLY			
P14	Freshwater Mussel	?	?	Y	Not enough info to continue			
P50	Canna reserve	H	M	Y	Y	H	NA	M
P49	Lochada station (part of the recommended aggregate)	VH	M	Y	Y	H	NA	M
P47	Unnamed remnant bush on Morawa-Yalgoo road	H	L	Y	Y	H	?	?
P46	Latham Reserve	H	M	Y	Y	H	M	M

Asset Class and Asset ID	Asset name	Significance	Threat	Filtering Q1	Filtering Q2	Filtering Q3	Filtering Q4	Filtering Q5
P6	Mongers Lake	M	L	Y	Y	H	H	M
P15	Kalannie-Goodlands vegetation corridor	M	L	Y	Y	H	H	NA
P17	Carnaby's Cockatoo	-	-	Y				
	Red-tailed Black Cockatoo	VH	H	Y	Y	H	H	H
P66	Yarra Yarra lake system	VH	M	Y	?	L	H	M
P55	Warriedar town common	M	L	Y	Y	H	NA	H
P53	State farm - (within Karara, historical/cultural asset)	M	L	Y	NOT CONTINUING - CULTURAL ASSET ONLY			
P72	Iron Stone Ridge	H	VH	Y	Y	H	M	NA
P52	Bunjil town reserve	M	L	Y	Y	H	NA	M
P54	Winchester Cemetary and wetlands	M	L	Y	Y	H	NA	H
P51	Bellaranga Hills	H	H	Y	Y	H	H	H
P67	North Latham Catchment	M	L	Y	Y	H	M	M
P1	Buntine Nature Reserve	H	L	Y	Y	H	NA	H
P76	Marchagee Lake	H	H	Y	Y	L	M	NA
P56	Mount Springs TEC/PEC	H	?	Y	Y	M (threat not confirmed)	M	H
P59	Wreath flower	H	M	Y	Y	?	?	L
P16	Loam Soil (salmon gums/Tamma country)	VH	L	Y	Y	H	H	NA
P10	TECs across the region	VH	H	Y	Y	M	L	M
P8	Sandalwood communities	H	H	Y	Y	M	H	L
P11	Lake Goorly	M	L	Y	Y	H	H	M
P12	Lake De Courcy	M	L	Y	Y	H	H	M
P13	Lake Hilman	M	L	Y	Y	H	H	M
P9	Salmon Gums	VH	VH	Y	Y	H	M	NA
P57	Spiny tailed skink	Not filtered (late addition), not on backup copy						

Moore River

Asset Class and Asset ID	Asset name	Significance	Threat	Filtering Q1	Filtering Q2	Filtering Q3	Filtering Q4	Filtering Q5
M27	Gingin Brook and riparian zone	VH	VH	Y	M	H	L	M
M1	Buntine Marchagee natural diversity recovery catchment	VH	VH	Y	Y	H	H	H
M4	Southeast end Latham Lakes (Buntine arm)	H	H	Y	Y	H	M	N/A
M3	Latham Lakes	H	H	Y	Y	H	M	N/A
M23	Moore River Estuary	H	H	Y	Y	M	M (poss low)	M
M22	Coastal Dunes	H	H	Y	Y	H	M	H
M26	Deep aquifer under Swan Coastal Plain (e.g. Yarragadee	VH	H	Y	Y	L	L	M
M25	Superficial aquifer under the Swan Coastal Plain	H	VH	Y	Y	M	M	H
M2	Water reserves around all towns	H	M	Y	Y	H	N/A	H
M5	Alison Doley's Carnaby's breeding area	H	VH	Y	Y	H	H	N/A
M9	Mallee fowl	H	VH	Y	Y	H	H	L
M6	Railway reserves	H	H	Y	Y	H	N/A	L
M39	Karakin Lakes	H	VH	Y	MAYBE			
M34	High value broadacre agricultural land	VH	M	Y	Y	H	H	NA
M32	Lancelin islands	H	West Midlands					
M33	Offshore reefs	H	M	Y	Y	M	N/A	L
M29	Guilderton to Seabird dunes and coastal vegetation	H	H	Y	Y	H	M	M
M28	Seagrass meadows for the Moore Catchment	H	L	Y	Y	M	N/A	L
M32	Nilgen Nature Reserve	H	M	Y	Y	H	N/A	H

Asset Class and Asset ID	Asset name	Significance	Threat	Filtering Q1	Filtering Q2	Filtering Q3	Filtering Q4	Filtering Q5
M11	Lower reaches of Moore River - water quality	H	H	Y	Y	M	L	L
M35	Sappers Rd road verge link	M	VH	Y	Y	H	N/A	L
M7	Declared rare flora (DRF)	VH	VH	Y	N			
M8	Designated Land for Wildlife sites	M	M					
M15	Waddy Forest catchment	H	M	Y	Y	H	H	N/A
M12	Threatened and priority fauna	species need to be specified						
M16	Buntine Nature Reserve	H	M	Y	Y	H	?	M
M17	Remnant vegetation containing Bentonite wetlands	H	H	Y	Y	M	M	N/A
M18	Hodgson wetlands	H	H	Y	Y	M	M	N/A
M20	Nabappie wetlands	H	VH	Y	Y	M	M	N/A
M19	Gypsum wetlands	H	H	Y	Y	M	M	N/A
M21	Groundwater underlying area between Bindoon-Moora Rd and Brand hwy	E	M	Y	Y?	M	M	H
M70	Candy's scrub reserve (shire)	M	H	Y	Y	M	N/A	M
M40	DEC reserve where north and east arms of the Moore River meet	H	L	Y	Y	H	M	H
M10	Moore River	VH	VH	Y	Y	Y	M	H
M36	Rica Erickson Nature Reserve and Bindoon training camp	VH	M	Y	y	M	N/A	M
M24	Salmon Gums woodlands	VH	VH	Y	Y	M	H	M
M14	Echidnas in the region	M	H	N	N			

West Midlands

Asset Class and Asset ID	Asset name	Significance	Threat	Filtering Q1	Filtering Q2	Filtering Q3	Filtering Q4	Filtering Q5
J51	Ray Faulkner (remnant vegetation)	M	?	Y				
J47	Alexander Morrison National Park	H	M	Y	Y	H	M	M
J53	Mike Morrison high biodiversity value	?	?	Y				
J52	Wilton Well	?	?	Y				
J57	Raffan and Coomallo Canaby's important breeding areas	VH	M	Y	Y	M	H	H
J55	Arrowsmith Lake	H	H	Y	Y	M	N/A	L
J43	Hill River	VH	H	Y	Y	H	L	L
J61	North Perth Basin (connects with 21)	VH	H	Y	MAYBE			
J50	Bindoon and Arrendoon Creeks	M	H	Y	Y	H	?	N/A
J45	Don Williams Hi-Vallee	VH	M	Y	Y	H	H	N/A
J56	Arrowsmith river	H	H	Y	Y	H	M	N/A
J42	Minyulo Brook	M	H	Y	Y	H	L	N/A
J102	Moore River Estuary	H	M	Y	Y	H	M	M
J130	Lancelin Foreshore dunes	H	H	Y	Y	H	N/A	L
J101	Lancelin Island nature reserve and fish habitat protection area	VH	H	Y	Y	M	N/A	H
J1	Swamp where the north and south branches of the Gingin brook meet	H	H	Y	Y	H	L	L
J2	Wolba Wolba (Aggie's) lake	M	H	Y	Y	H	H	H
J3/60	Pinnacles desert	E	L	Y	Y	H	N/A	H
J4	Lennard Brook / Bambun Lake	H	H	Y	Y	H	L	L
J22	Greenhead Townsite	M	L	Y	Y	H	N/A	M
J19/38	Hill River Estuary	VH	H	Y	Y	H	H	M
J25/54	Indoon/Logue Lake System	H	VH	Y	Y	L	N/A	L
J23/59	Lake Thetis	E	M	Y	Y	L	?	?
J20/41	Lesueur National Park and surrounds	E	L	Y	Y (break into components)	H	M	H
J26	Mound springs of Three Springs area	H	M	Y	Y	M	M	M
J27	Turquoise coast Islands nature reserves	VH	M	Y	Y	M	N/A	H
J28	Cataby Carnaby's Breeding area	VH	M	Y	Y	M	H	H
J30	Southern Beekeeper's Reserve	M	L	Y	Y	H	L	H

Asset Class and Asset ID	Asset name	Significance	Threat	Filtering Q1	Filtering Q2	Filtering Q3	Filtering Q4	Filtering Q5
J29	Eneabba sandplain	VH	H	Y	Y	M	N/A	L
J103	Badgingarra research station	M	H	Y	Y			
J31	South Eneabba nature reserve	H	VH	Y	Y	M	N/A	L
J21	Sandy Cape reserve and recreational park	M	L	Y	Y	H	N/A	H
J129	Nilgen Nature reserve	M	H	Y	Y	M	L	M
J104	Lancelin desert dune	M	H	Y	Y	L	N/A	L
J32	Leeman salt wetlands	H	M	Y	Y	M	N/A	L
J11	Seabird (foreshore cliff face)	M	H	Y	Y	L	N/A	L
J10	Regans Ford (section of Moore river, large remnant)	VH	M	Y	Y	H	N/A	H
J5	Lakes system at corner of Dandaragan and North West rds	H	VH	Y	Y	H	H	N/A
J18	Lake Garaga and surrounding wetland systems	H	H	Y	Y	H	N/A	M
J8	Wedge Island area	H	VH	Y	Y	H	N/A	L
J9	Ledge Point (foreshore)	M	H	Y	Y	M	N/A	L
J7	Lancelin Bay	H	H	Y	Y	H	N/A	L
J6	Lancelin Coastal dunes	H	H	Y	Y	H	N/A	L
J105	The North Stock Route	M	L	Y	Y	M	M	M
J33/49	Beagle, Buller and North Fisherman Islands (sealions)	H	M	Y	Y	M	M	H
J34/37	Jurien Bay Marine Park	VH	M	Y	Y	M	M	H

Appendix 3. Photographs

Figure 2. Geraldton workshop

Figure 3. Geraldton workshop

Figure 4. Moora workshop

Figure 5. Perenjori workshop

Figure 6. Perenjori workshop

Figure 7. Jurien workshop

Figure 8. Jurien workshop