

The implications of natural heritage values and listings in the environmental impact assessment process

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September 2012



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Concept of Values

Natural Values are recognized and assessed at different scales for environmental impact assessments:

- Common values
- Different values
- Interpretation of values
- Consideration of values at local, regional, state, national and international levels
- Differences in significance of values
- Related cultural and indigenous values

The concept of Natural Heritage Values relies on many of these underlying values and the assessment of those values.



Concept of Values

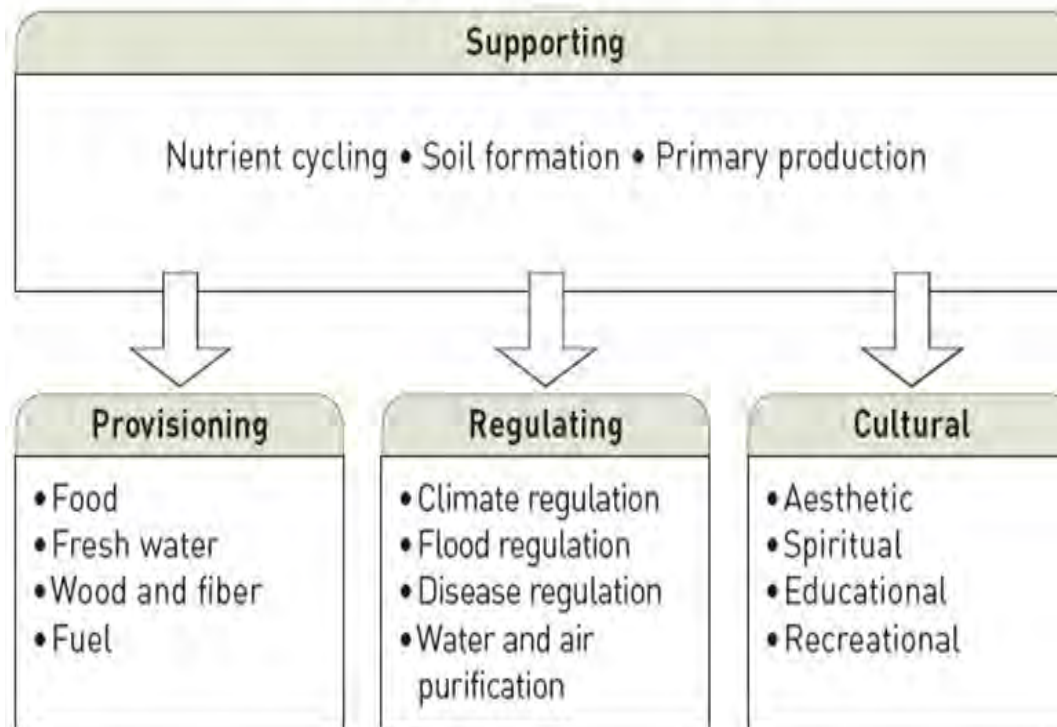
Biodiversity

“the variability among living organisms from all sources including inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species, and of ecosystems”

United Nations Convention on Biological Diversity, Rio de Janeiro 1992

Concept of Values

ecosystem services



Approximately **60% of ecosystem services** are being degraded or used unsustainably.

Key Significant Natural Values

State Significance (EPA 2012 and DEC 2012 for Western Australia), National and International Significance (DSEWPaC 2012) - (EPBC Act 1999 - *Environment Protection and Biodiversity Conservation Act 1999*, WC Act 1950 - *Wildlife Conservation Act 1950*, EP Act 1986 – *Environmental Protection Act 1986*)

World Heritage Areas (*EPBC Act 1999*)

National Heritage Areas (*EPBC Act 1999*)

Wetlands of International Importance (*EPBC Act 1999*)

Listed Threatened Species and Other Specially Protected Species (*EPBC Act 1999*, *WC Act 1950*)

Listed Threatened Ecological Communities (*EPBC Act 1999*, *WC Act 1950*)

Listed Migratory Species (*EPBC Act 1999*)

Listed Terrestrial and Marine Environments (*EPBC Act 1999*, *WC Act 1950*, *Terrestrial and Marine Parks – DEC and others*)

Listed Species - Priority Flora and Fauna Species – DEC 2012

Listed Communities – Priority Ecological Communities – DEC 2012

Other Environmentally Sensitive Areas – *EPA Act 1986*, EPA 2012 and DEC 2012

Other Values recognized by State and Federal Agencies – e.g. species or values recognized for their cultural and indigenous values, new species and communities, range extensions and refugia and relictual areas

Criteria for Values and Significance of those Values (National)

Environment Protection and Biodiversity Conservation Act 1999, EPBC Act 1999; Para 10.01A(2) ; Amend. Reg. 2003 (No 1) National Heritage Criteria for a place are any or all of the following:

The place has outstanding heritage value to the nation because of the place' s.....

- a) importance in the course, or pattern, of Australia' s natural or cultural history;
- b) possession of uncommon, rare or endangered aspects of Australia' s natural or cultural history;
- c) potential to yield information that will contribute to an understanding of Australia' s natural or cultural history;
- d) importance in demonstrating the principal characteristics of: (i) a class of Australia' s natural or cultural places; or (ii) a class of Australia' s natural or cultural environments;
- e) importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- f) importance in demonstrating a high degree of creative or technical achievement at a particular period;
- g) strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
- h) special association with the life or works of a person, or groups of persons, of importance in Australia' s natural or cultural history;
- i) importance as part of indigenous tradition

Multiple Layers of Listing Assessments

- International (WHA), National and Commonwealth (AHC), State (Heritage Councils), Local Heritage
- Values and processes for assessing places (e.g. TSSC, AHC) – consistency in underlying values
- Consultative and Scientific Inputs
- Provision of Advice
- Ministerial approvals for Listings



Photograph – Mallee Fowl Mound, Shark Bay region– provided by Libby Mattiske

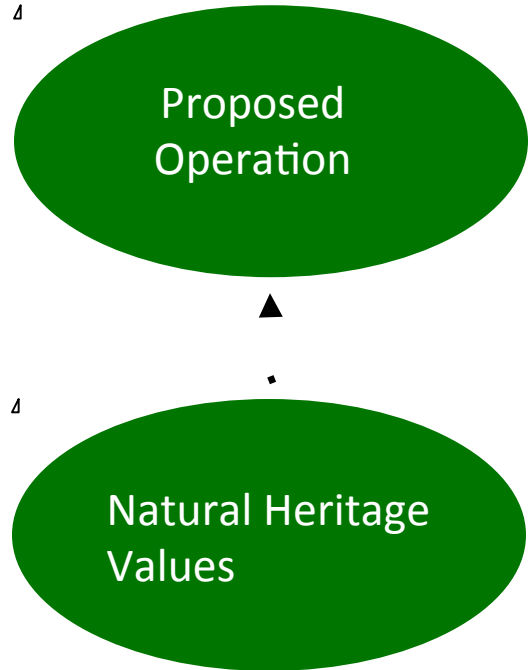
Environmental Impact Assessment Process – Natural Heritage Values

Many aspects to consider the viability and environmental impact of any proposed operation that will directly or indirectly impacts on the natural values and the natural heritage values

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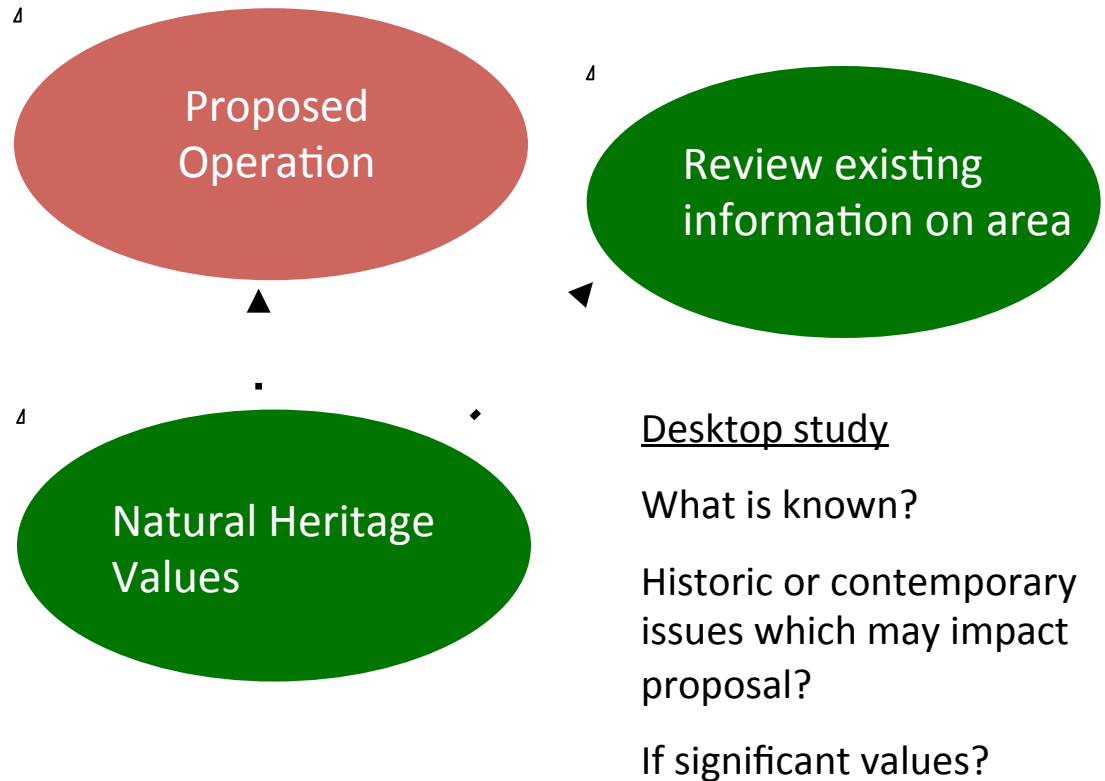


Environmental Impact Assessment Process – Natural Heritage Values

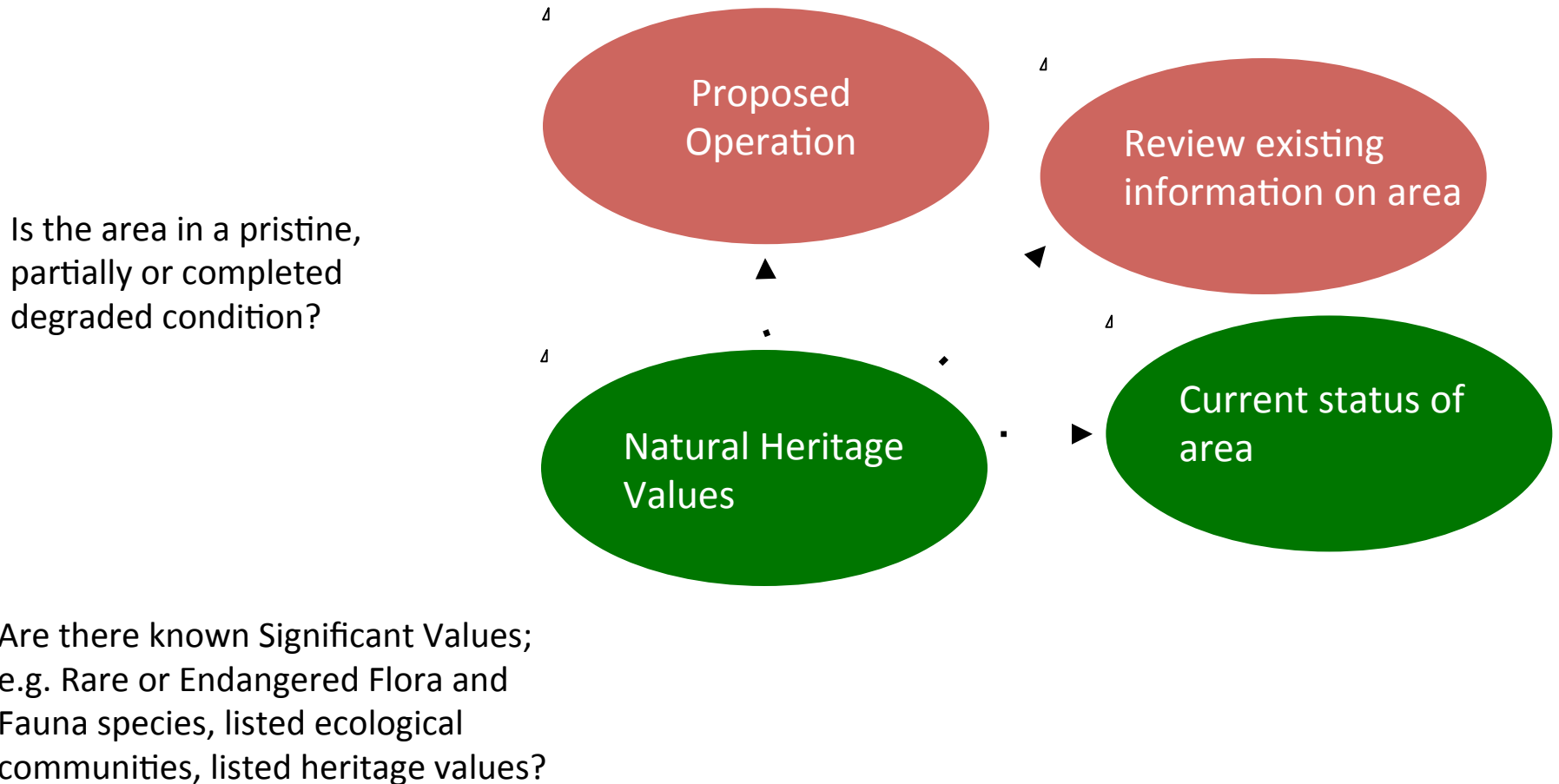


What are the objectives of the proposed Activities?

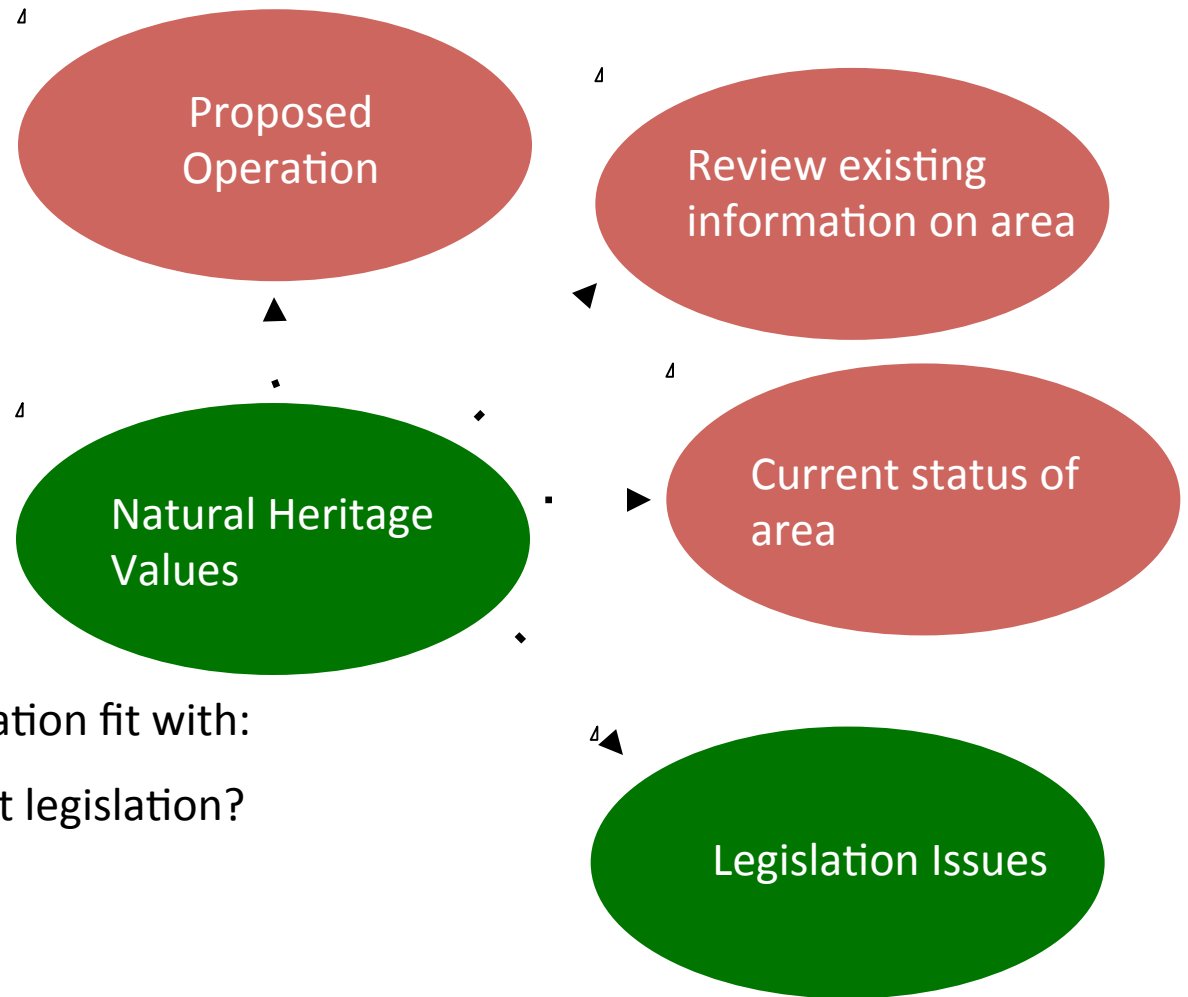
Environmental Impact Assessment Process – Natural Heritage Values



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Environmental Impact Assessment Process – Natural Heritage Values



How does the proposed operation fit with:

- State & Federal Government legislation?
- International legislation?
- Referrals?

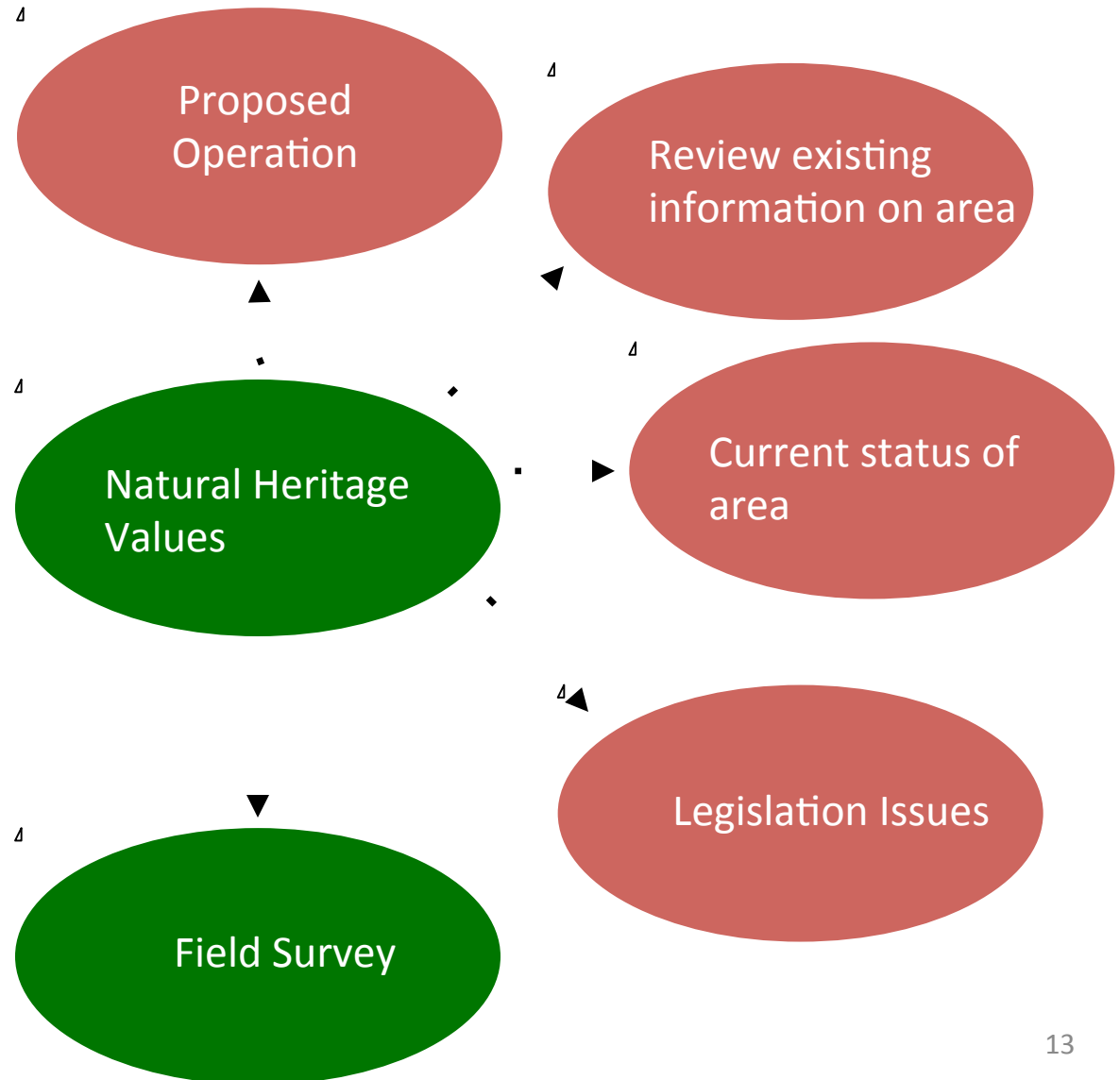
Environmental Impact Assessment Process – Natural Heritage Values

Is the field survey conducted during the most appropriate season to capture data?

Is the survey design appropriate to address the questions raised?

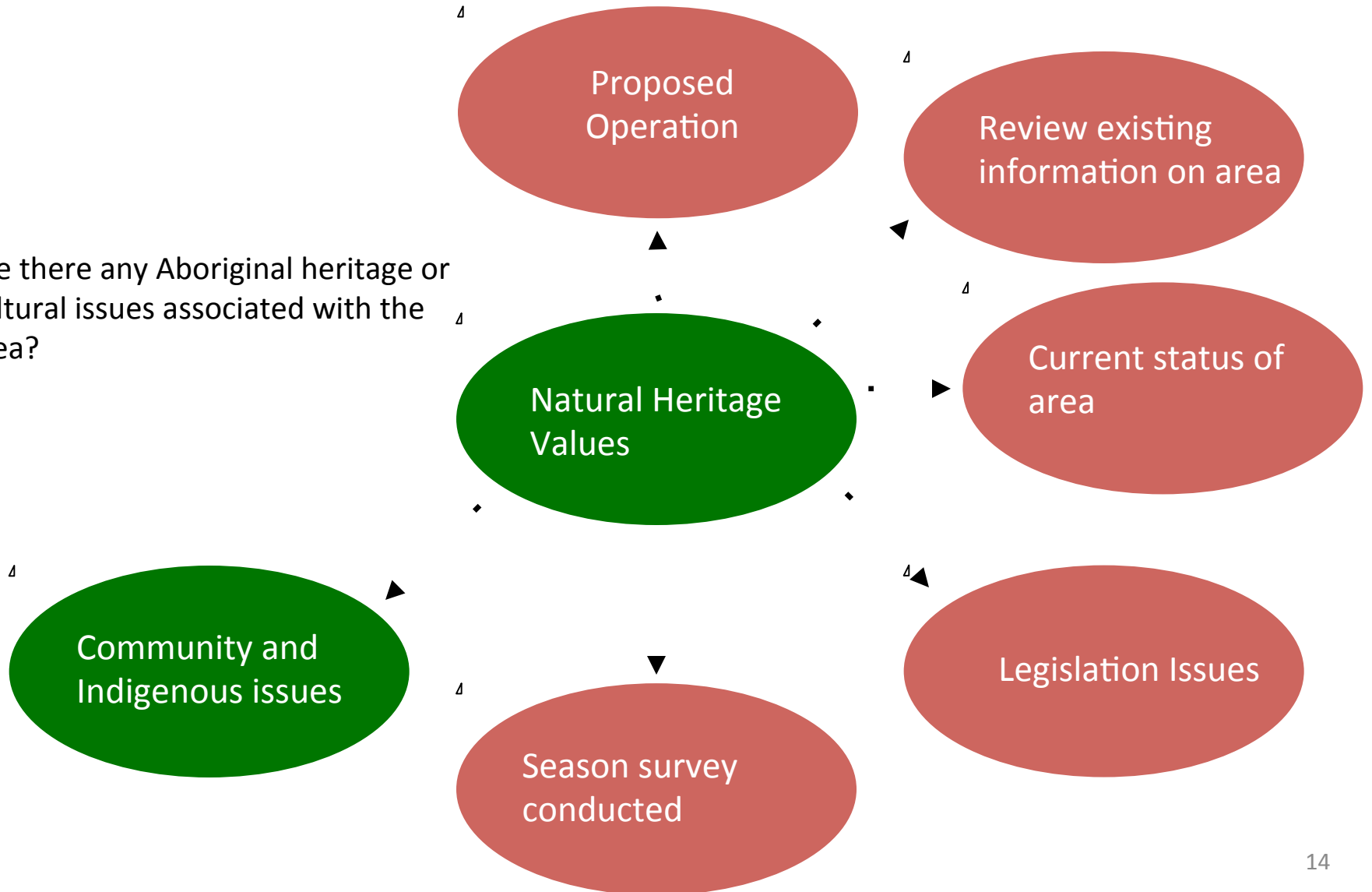
What values should be assessed and defined?

Are there additional targeted assessments needed of the project area and other reference areas?



Environmental Impact Assessment Process – Natural Heritage Values

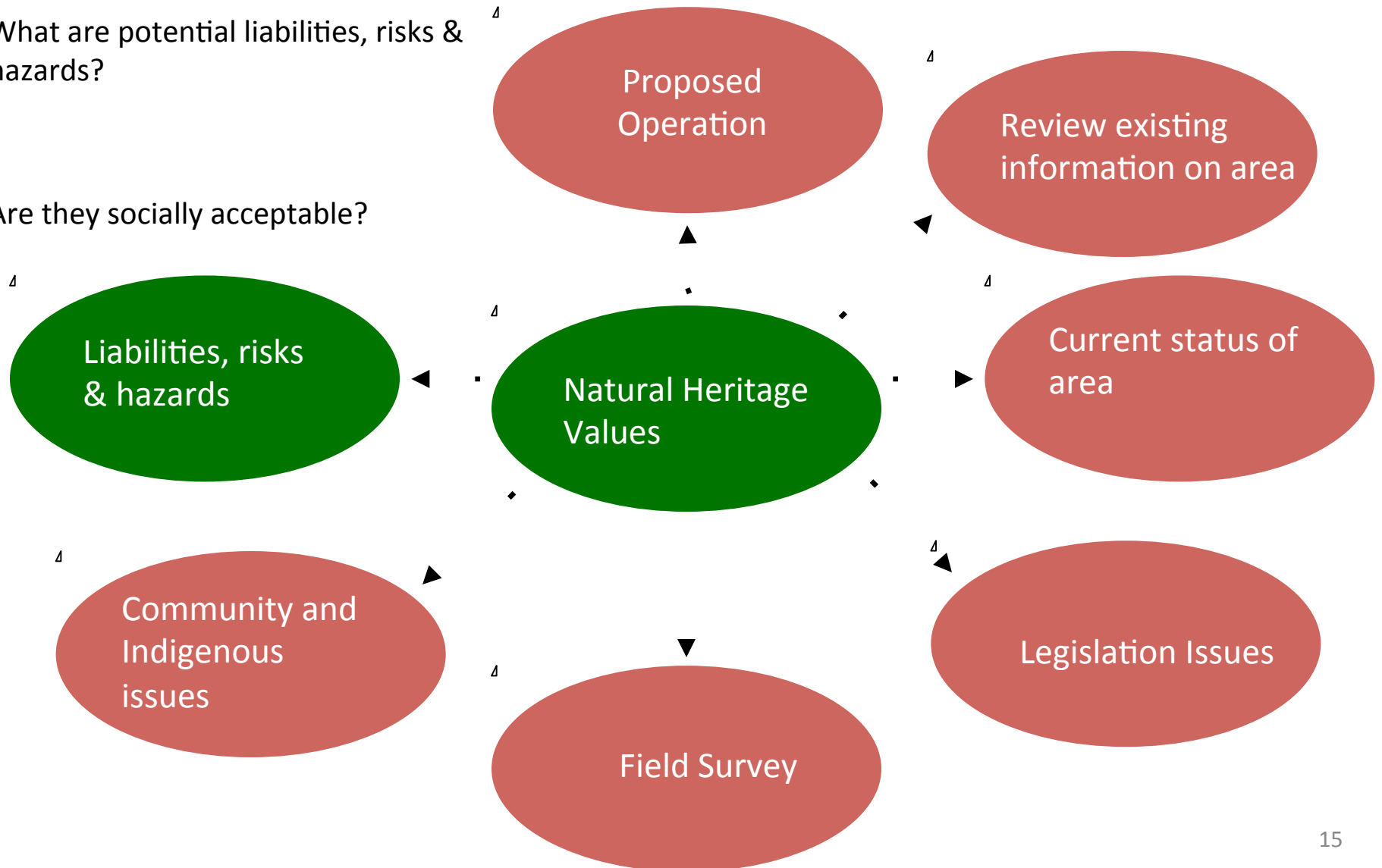
Are there any Aboriginal heritage or cultural issues associated with the area?



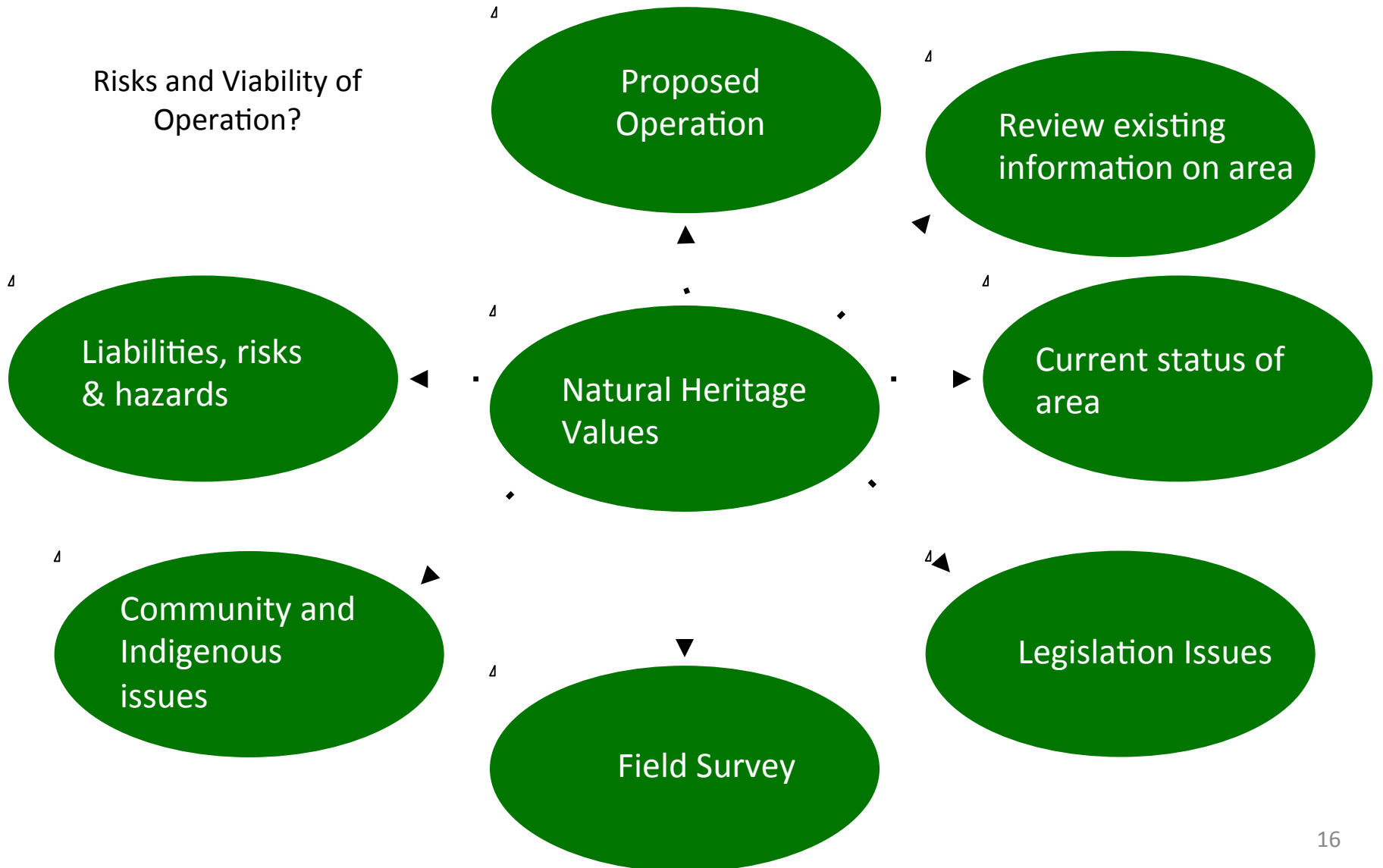
Environmental Impact Assessment Process – Natural Heritage Values

What are potential liabilities, risks & hazards?

Are they socially acceptable?



Environmental Impact Assessment Process – Natural Heritage Values



Shifts in Value Summaries for Assessment

Flora Data Types	1970's	1980's	1990's	2000's	2010's	Comments
Flora Lists	+/-	+/-	+/-	+/-	+/-	Early need to delineate occurrence continues
Vouchering	+/-	+/-	+/-	+/-	+/-	Increasing from vouchers to targeted collections
Indigenous Values of Flora				+/-	+/-	Increasing Needs
Threatened (Rare) and Priority Species	+/-	+/-	+/-	+/-	+/-	Increasing Needs, including population counts
Lifeforms				+/-	+/-	Increasing Needs
Range extensions	+/-	+/-	+/-	+/-	+/-	Increasing Needs
Sampling Regime			+/-	+/-	+/-	Increasing Needs to align with regional standards in terms of data collection, and analysis
Seasonal Sampling			+/-	+/-	+/-	Increasing Needs including Multiple seasons
Targeted Sampling (Rare and Priority)			+/-	+/-	+/-	Increasing Needs with multiple sampling in different seasons

Shifts in Value Summaries for Assessment

Vegetation Data Types	1970's	1980's	1990's	2000's	2010's	Comments
Vegetation Description	+/-	+/-	+/-	+/-	+/-	Need to delineate occurrence continues
Structural Formation	+/-	+/-	+/-	+/-	+/-	Increasing Needs
NVIS				+/-	+/-	Increasing Needs
Floristic Communities / Site-vegetation Types	+/-	+/-	+/-	+/-	+/-	Increasing Needs
Multiple Data Analysis				+/-	+/-	Increasing Needs to align with regional standards
Multiple Layer Presentations					+/-	Increasing Needs to align to local, regional and national standards
Representation Analysis					+/-	Increasing Needs to align to local, regional and national scales
Threatened Ecological Communities (TEC)			+/-	+/-	+/-	Increasing Needs to align to local, regional and national scales
Priority Ecological Communities (PEC)			+/-	+/-	+/-	Increasing Needs to align to local, regional and national scales

Shifts in Assessments and Processes

Data Types	1970' s	1980' s	1990' s	2000' s	2010' s	Comments
Point Data	+/-	+/-	+/-	+/-	+/-	Early need to delineate occurrence continues
Quadrat/Plot Data	+/-	+/-	+/-	+/-	+/-	Increasing Needs
Raster Data – Spatial				+/-	+/-	Increasing and more recently decreasing Needs
Polygon Data - Spatial				+/-	+/-	Increasing Needs
Functional Groups				+/-	+/-	Increasing Needs to align with regional standards
Relationship Data					+/-	Increasing Needs to align to local, regional and national standards
Data “Silos”				+/-	+/-	Developing integration and development of data formats and integration

Shifts in Assessments and Processes

Other Data Types	1970' s	1980' s	1990' s	2000' s	2010' s	Comments
Ecosystem Services				+/-	+/-	Early need to delineate occurrence continues
Threatening Processes			+/-	+/-	+/-	Increasing
Condition Values			+/-	+/-	+/-	Current state
Landscape Values				+/-	+/-	Increasing Needs
Aesthetic Values				+/-	+/-	Increasing and based on range of value judgments
Cultural and Historic Values				+/-	+/-	Increasing Needs
Sustainable Values				+/-	+/-	Increasing Needs
Offsets and Balancing Outcomes				+/-	+/-	Developing approaches to consideration of balancing outcomes
Cumulative Impacts				+/-	+/-	Developing approaches to consideration of cumulative impacts



Multiple Layers of EIA Assessments

- Ministerial Processes
- EIA Processes (Federal and State)
- AHC (Heritage values)
- Local Heritage Councils
- Consultative and Scientific Inputs
- Provision of Specialist Advice
- Input from Community Groups and wider public

Photograph – *Shark Bay* – taken by Kelly Mullen, Copyright DSEWPaC, permission by Australian Heritage Council

Issues Associated with Assessments and Processes

- **Reducing resources** in face of increasing pressures and public expectations
- **Increasing threats and pressures** on environmental values
- **Costs and delays** in assessments and processes
- **Overlap** with different levels and confusion over clear roles and responsibilities
- Assuming all matters **equally significant**
- **Proliferation** of information **rather than prioritization**, without key contextual information and key priorities on what are main values and threats are to natural values and natural heritage values
- **Shift to generalist** training rather than specialist training



Gaps and Challenges

1. Supporting scientists and specialists to maintain corporate knowledge in natural systems and heritage
2. Developing the balance between planning, social, environment, heritage and economic values
3. Need for forums discussing key values and intergenerational issues
4. Reliance on opinions rather than facts in environmental assessment process
5. Lack of awareness in environmental issues in wider community

Photograph –Jandamarra and the Aboriginal resistance, Kimberley – gorge photograph taken by Dr Libby Matiske



Future Challenges

1. Valuation of Heritage
2. Resources for managing values
3. Recognition of the importance of defining and understanding values
4. Integration of values – natural, indigenous and cultural
5. Understanding systems to allow continuous improvements in management
6. Re-assessing mechanisms to balance science/ specialist/ community inputs into environment assessments
7. Considering intergenerational matters
8. Reviewing changing pressures and threats (visitation , shifts in climate, invasive species, cumulative impacts)

Photograph – Stirling Ranges – taken by John Baker,
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Acknowledgements

Many thanks to the Australian Heritage Council and DSEWPaC for permission to use images of National Heritage areas



Photograph – Uluru – taken by Andrew Hutchinson, Copyright DSEWPaC, permission by Australian Heritage Council