ENVIRONMENTAL PROTECTION AUTHORITY

SUMMARY OF PROCEEDINGS

of a Workshop convened by the EPA concerning

STANDARD PROTOCOLS FOR TERRESTRIAL BIOLOGICAL SURVEYS: GUIDANCE STATEMENT 51

7 JULY 2000

Please note that the views expressed within this document do not necessarily represent the views of all Workshop participants, or their respective departments.

Session 1

1. *Welcome (Bernard Bowen)*

- Welcome
- Role of the EPA
- What does the EPA expect of proponents
- EPA needs to give guidance to proponents
- Thanked participants for their time at the Workshop today
- Quick introduction around the room by each participant (see Attachment 1 for list of attendees)

2. *Introduction (Libby Mattiske)*

- Thanked participants
- Will be asking questions to keep everyone participating
- Quick overview of the day (see Attachment 2 for Agenda)
- Thanks to people that have helped out so far – Bev Walker (unfortunately not able to attend due to illness), Melinda Macleod, Ben Carr, Angus Hopkins, Steve van Leeuwen, Jan Henry
- Participants are invited to submit their written thoughts on matters discussed at the workshop following the workshop

3. *EPA Position in relation to terrestrial biological surveys (Libby Mattiske)*

(as stated in EPA Position Statement # 3)

- The Environmental Protection Authority (EPA) adopts the definition of Biodiversity and the principles as defined in The National Strategy for the Conservation of Australia's Biological Diversity (Commonwealth of Australia, 1996) and will have regard for these in undertaking its role.
- The EPA requires proponents to demonstrate in assessments that all reasonable measures have been undertaken to avoid the loss of biodiversity.
- The EPA aims to ensure that the information gathered for environmental impact assessment in Western Australia meets State, National, and International Standards and Agreements in regard to biodiversity conservation.
- The EPA requires that the quality of information and scope of the field surveys meets the standards, requirements and protocols determined by the EPA.
- In the absence of information that could provide the EPA with certainty that biodiversity will be protected, the EPA will adopt the precautionary principle.

4. *Aims of Guidance Statement #51 (Libby Mattiske)*

- clarify the EPA objectives in regard to biodiversity, for the purposes of EIA and reporting under Part IV of the Environmental Protection Act (1986);
- provide an easy-to-use decision-making tree on the level of biological survey required, recognising that the significance of the impact will vary according to the scale and nature of the impact, and its location within the State. To this end, the EPA has adopted the biogeographic regions as per the Interim Biogeographic Regionalisation of Australia (IBRA) as the largest unit for decision making;
- provide a checklist of the factors that will be required to be reported on, once the potential significance of the impact has been determined;
- provide a reference inventory to ensure desktop information is derived from standard sources;
- provide additional references and data sources (including web sites, institutions, etc) which may provide additional information outside minimum requirements;
- define the preferred methodology for field surveys, including timing and frequency;
- describe the format for data collection to allow ease of assessment at the local, regional and national levels, and establish protocols to facilitate transfer of quality information into public biological databases;
- set expectations for the reporting of all biological survey data;
- identify the need for a limitations section to be included in each biological survey report; and
- identify the EPA as one of the intended users of the report.

5. *Discussion of Guidance Statements (Warren Tacey)*

- Guidance Statements are not mandatory
- Mandatory: Act head powers, EPP's, Regulations
- Not mandatory: Positions Statements, Guidance Statements, Codes of Practice
- Process of producing Guidance Statements has been simplified. Now produce a draft which goes out for public review, then submissions are incorporated into the final.

6. *Desired outcomes of this Workshop (Libby Mattiske)*

- Best practice for EIA
- Greater certainty
- A look at positives and negatives of biological surveys in WA (comment by all participants – round the room)

7. *Discussion of the current approach*

a) Negative aspects or weaknesses of the current arrangements for biological surveys for EIA in WA

i) Data

- Integration of research needed – metadata needed on all data – standard minimum metadata critical
- Report on how subsets of all data was obtained – can make 10 % difference
- Data not current, not available, location and date unknown, not published
- Lost opportunity from not adopting uniform standards to 'use other peoples data'
- Not enough time available to collect up-to-date data
- Regional data used for spot site information
- Lack of comprehensive and reliable data
- No mechanism for quality control and pressure for decrease in standards
- No standards – costs of data, costs of extraction of data, costs of utilizing
- Same data used for a range of projects, with little primary data collection
- Accessing information from previous work – better system needed (flora better)
- Coordination of data
- Basic data being lost, not compiled
- Composite database needed (to manage and retrieve data)
- Geology business analogy of data collection, accuracy, retrieval
- Ownership of biological survey data
- Roles and responsibility of data management
- Proponents to push Government for data management and coordination
- Private sector data – willing to be provided for regional datasets
- No analysis of data once collected
- Consistency of data
- Management / collection of existing datasets
- Lack of National biological survey data

ii) Education / political

- High community expectations without adequate Government funding, eg. Systems areas in Perth
- Knowledge limits political flexibility – to motivate to knowledge
- Pressure to carry out work in the wrong season

iii) Data & Process & People

- No mechanism for quality control and pressure for decrease in standards
- Projects still get approval with poor data – no incentive to do better work
- Peer review of Environmental Review document (proponents and Government value for money)

iv) Political

- Some 'no-go' areas need to be defined. Need to identify people for quality control
- Not adequate funding and support for Herbarium (vouchers, taxonomic work)
- Balance between quality and cost
- Hard to justify to proponents need for work

v) Process/Reporting/Standards

- Definition of 'significance' – needs to reflect full range of issues, measures of significance
- Major impacts not assessed as proposal fragmented – cumulative impacts
- Poor scoping of proposal impacts – both footprint and context (outside of footprint)
- Reporting fully on method and results – full reporting of results

vi) Education/Training/People

- Accreditation of people undertaking survey (expertise)
- Information on the people who actually did the field work (to assess competency)
- Focus on site without relation to region – context information
- Make survey work relevant to the actual site
- Context – mechanism for assessment of 'significance'
- Information on who is expert on which area and which part of the biota
- No integrated ecosystem process context presented
- Need to understand ecosystem drivers
- Too many presumptions

vii) Research

- Capacity of vegetation to revegetate needs to be investigated

b) Positive aspects and strengths of the current arrangements for biological surveys for EIA in WA

i) Data

- Not just concentrate on rare/threatened flora/fauna – look at communities, systems now (in some areas)
- WALIS and GIS provide good first contact point for data
- DEP has Library with EIA documents – gives potential to prepare data
- Recognition of the need for primary data gathering
- Standard of work much better now
- Good quality data exists
- WA people need to know how to collect good data
- Proposals to generate biological surveys (potential)
- Technology – computing to analyse complicated data quickly and spatial data – statistical and numerical
- Databasing of specimens with WA Herbarium and WA Museum gives understanding of distribution
- Other vegetation datasets will be available very soon (Angus Hopkins)
- Sampling tools for many organisms powerful
- Environmental Geology mapping still underway
- WA Museum also involved with databasing
- EIA sampling supplement to Government work
- Literature available to compare methods of EIS/EIA

ii) Political Process

- EP Act potentially provides good framework (public process)
- Continual raise of general benchmark
- Potential to explore past EIA to help direct future – include indicators
- Legislative framework at State, National and International levels
- Government motivated to restrict non-sustainable land uses, eg. some potential leases

iii) Values

- Rich biota

iv) People

- Many good skilled people – resource
- People in the field are still permitted to take vouchers
- Good networking of people/proponents in this area
- Level of knowledge is very good
- Access to 'experts' is good for identifications
- Community (groups) involved in setting standards, collecting data
- Indigenous communities still dominate most of WA – gives opportunity to identify processes
- Recognition of field biologists and ecologists in own right as professionals
- Ecologists work with other professionals

v) Context

- Development of IBRA regions gives regional context

vi) Political / people

- Good relationship between proponents and regulators
- Catchment groups involved
- Good quality people, i.e. skills are good
- Not overly regulated in WA

Session 2

1. **Factors for biodiversity assessment – discussion led by Libby Mattiske**

   Comments from participants:

   - Firstly need to identify the biodiversity components
   - Local experts useful
   - Overall checklist (large) useful
   - Scoping is a useful tool
   - Guidelines process is useful
   - Peer review (or peer group for each IBRA region, to scope factors)
   - Costs for peer review need to be met – proponents
   - Interaction between the identified factors are often the most important issues and impacts
   - Once scoped, need a very good review of all the data available by an ecologist
   - Structure change needed to achieve this

2. **Environmental Factors related to Biodiversity – Libby Mattiske**

   a) Species and genetic diversity

   - terrestrial flora
   - vegetation communities
   - declared Rare and Priority flora
   - terrestrial fauna
   - specially protected (Threatened) fauna

   b) Ecosystem function

   - landscape protection (what is the smallest unit of consideration? eg. catena?)
   - habitat protection (type, quality, condition and intactness, dissection)
   - wetlands
   - karst
   - bioregions
   - wilderness
   - corridors
   - minimum viable reserve size/dissection

c) Other factors related to protection of ecosystem function

- hydrological processes
- soil resources
- feral animals
- weeds
- disease
- pollution and nutrients
- fire regimes

3. Key issues related to this Guidance Statement – Libby Mattiske

1. What are the Environmental Factors which the EPA should consider and report on to ensure that biodiversity is not affected?
2. What are the Environmental Objectives for each factor?
3. What information should the EPA have before it when considering biodiversity (Table 1)?
4. What are the key databases/reference mapping or information sources, etc. that should be used (for each bioregion) (Table 2)?
5. What is the most appropriate survey methodology for gathering information for biodiversity?
6. What formal should the information be presented in?
7. What other types of quality standards should be EPA consider? eg. training of field operators, terminology, verification and vouchering

The above 7 questions were discussed and it was decided to focus on three key questions in mini-workgroups after lunch (Session 3):

Group 1: Delineate minimum standards for field surveys, while addressing quality and appropriateness

Group 2: Define key minimum data/information needed for terrestrial biological surveys in EIA and "common" database, including types, standards, accessibility and quality

Group 3: What "process" should be put in place to address integration of skills and experience into EIA/Biodiversity considerations

Session 3

Group 1 – Delineate minimum standards for field surveys

a) Discussion

- techniques in use – standing, tried and tested (good – locally, better – region, best – inter-regional)
- scale
- replication/pseudo-replication
- structure and intent of project (local, regional, etc), circularity can be a problem for inexperienced
- context – biophysical, ecosystem
- "natural boundaries" – conceptualisation / interzones corollary / gradients (organism, population, community, bioregion, biophysical/climactic factors)
- standardising
- open architecture – flexibility
- open architecture – in data collected (may not be used for original purpose)
- verification – people (accreditation), biota (sampler)
- qualitative versus quantitative (observation?)
- presence / absence – robust, but doesn't contribute information on processes
- intelligent design and interpretation – understanding of processes
- target taxa – indicators are useful when taxa and environment known to some degree, effort for information on system gained

b) Summary

- Review, context, scoping
- Point based sampling
- Integrate flora and fauna
- Provide a sampling menu – minimum robust set, framework, allow for expansion and additions
- Techniques should be fully described and effort expended, people identified
- Bioregion prescriptions – collated from proved sources, tailored for purpose
- Limitations – eg. local conditions at the time, lack of regional information for comparison, untried techniques
- Peer review / audit
- Scale

Group 2 – Key minimum data/information needed for terrestrial biological surveys in EIA and "common" database

a) Discussion

- Elements of a database include: scale, source, custodianship, whether verified or not, primary or secondary data, date of work
- Data must have metadata with it
- Pre-survey data – Guidance statement should identify broad/generic databases, that probably would be relevant to the whole state
- Accessibility – need to accept that there is a cost for obtaining data, therefore define a certain amount of data as a minimum requirement and people will just have to wear the cost
- Cost – DEP/EPA could flag to Government that there needs to be consistency of costs (eg. datasets can cost different amounts when bought from different sources), and a need to generally keep costs of data down
- Technology – implications on quality of data, need to look at changes in technology, information needs to be managed so that it is applicable in the long-term
- Quality – need to know who did what (person specific), who did the fieldwork, who did the identification, how much time was spent in the area and at what time of the year.

b) Outcome

Three issues/levels of information were identified – 1. Preliminary scoping reference list/bibliography, 2. Primary databases holding detailed research information, 3. Storage of information generated by EIA.

1. Bibliography (with DEP)

- a GIS reference list based on spatial coordinates
- could be established and maintained by a librarian-type role (DEP maintained)
- everything should go on it, not make any assessment of the quality of information (up to the user to make value judgement)
- should contain five or six keywords, eg. flora, vertebrate fauna, invertebrate fauna, vegetation, wetlands, IBRA region
- the information should be located as specifically as possible (ie. not just lumped into an IBRA region, although the IBRA region could be a keyword)

2. Detailed research information (with Custodians)

- a very general database would refer the user to the custodian of the information being sought (eg. CALM for Rare and Priority flora)
- the detailed research information that would go to the custodians would probably not be rigorously tested or verified (take too long), therefore need for caution with handing out the information
- the database would merely identify the relevant custodian, then the custodian could use their judgement as to what/how much information would be released

3. Information generated by EIA (primary data and report)

- certain custodians could be identified that would want information from the EIA process
- recognition that we're not at a stage to have a wholly integrated database where all data gatherers are ready to hand over their information
- need to prescribe to proponents format of information (may depend on individual custodian as to whether hard copy and/or electronic)
- proponent could be required by EPA to submit a metadata file with their Environmental Review document
- also a digital copy of the report and figures in PDF format could be useful as could be included in bibliography database, and the common format would be viewable by all
- metadata should be in a standardised format (eg. ANZLIC) – this would need a whole of government approach

Group 3 – What "process" should be put in place to integrate skills and experience into EIA/Biodiversity considerations

a) DEP filtering process

Needs to be more sophisticated to include:

- context of the proposal (local / regional)
- potential impact on ecological / landscape processes
- incremental impacts of proposals
- greater use of GIS / spatial information in setting level of assessment
- careful consideration of proposals on the border between formal and informal assessment

Audit – reassess small proportion of proposals through a wider group / external to review / assess the appropriateness of the outcomes / adequacy of all environmental factors identified.

Develop skills training program for DEP staff in Biodiversity and Ecological / Landscape processes. That can be applied at filtering and assessment.

b) Environmental factors used in assessments

- reference group for key projects to identify factors. List by regions or specialist skills
- DEP needs adequate staff with skills and experience to know which issues are relevant and also who and what to ask for further information
- need to consider role of Environment Protection and Biodiversity Conservation Act 1999 (Cth) (Note: bilateral agreements EPA/DEP – EIA accreditation. CALM/EA – data availability)
- information exchange between DEP, CALM, WA Museum needs to be streamlined – need for MOU
- how to access information and who to approach
- protocols for data collection, lodgment and access to data are required (between agencies, consultants, public)

c) Review of environmental factors

- criteria within factors such as 'flora' need to be further developed
- periodic formal review of factors (new information/issues) – stakeholder review
- link to Guidelines for Biological Survey – regionally specific, local context specific
- workshop – expert group to define intelligent decision tree – process for identification of factors
- quality of information
- presentation of data / format makes it interpretable – include raw data
- expectation that data needs to meet standards or it will be rejected

d) Assessment process

- reference group option to consider complex projects to assist EPA through workshops
- adequacy of staff resources, skills, experience in DEP to be able to understand expert advice

Session 4

Ideas for future workshops – Libby Mattiske

1. Education – for everyone:
    - government,
    - consultants,
    - proponent,
    - industry

2. Data
    - field surveys and general data
    - post development monitoring data
    - need to set sampling structure at IBRA level
    - set some minimum standards (i.e. levels 2 & 3 only)
    - sell data acquisition idea to government
    - scales of data, i.e. general over whole state, vs IBRA

3. Process
    - look at decision tree
    - look at process
    - integrate agencies (MOU?)

Outcomes from this workshop

1. Notes will be circulated to participants
2. Any further written input gratefully received

CLOSE OF WORKSHOP

Attachment 1

Workshop attendees

Dr Libby Mattiske	EPA, Deputy Chairman
Mr Bernard Bowen	EPA, Chairman
Dr Ken Aplin	WA Museum
Dr Ken Atkins	CALM Wildlife Protection
Dr Marion Blackwell	NPNCA
Dr Nick Casson	DEP Conservation Branch
Mr Ben Carr	DEP Catchment Branch
Mr Garry Connell	Ecologia Environmental Consultants
Mr John Dell	DEP Conservation Branch
Ms Sonia Finucane	URS
Dr Stuart Halse	CALMScience, Woodvale
Ms Jan Henry	Ninox Wildlife Consulting
Mr Angas Hopkins	CALM Nature Conservation
Ms Bronwyn Keighery	DEP Conservation Branch
Dr Greg Keighery	CALMScience, Woodvale
Ms Melinda Macleod	DEP Land Use Branch
Prof. Jonathan Majer	Curtin University
Dr Peter Mawson	CALM Wildlife Conservation
Mr Norm McKenzie	CALMScience, Woodvale
Dr Owen Nichols	Hamersley Iron Pty Ltd
Mr Ben Noonan	DRD
Mr Warren Tacey	Assistant Director, DEP Evaluation Division
Mr Kim Taylor	Director, DEP Evaluation Division
Dr Steve van Leeuwen	CALM Karratha Regional Office
Mr Gary Whisson	DEP Conservation Branch
Mr Allan White	CAD Resources

Attachment 2

Agenda

Session 1: **9:00 – 10:00 am**

Welcome
Objectives of the Workshop and Agenda
Background/Framework:

- EIA (Reporting on factors as per the Act such they meet EPA Objectives)
- EPA Position Statement
- What is Guidance?

Expectations as to outcomes of this Workshop

10:00 – 10:30 am – Morning Tea

Session 2: **10:30 am – 12:00 pm**

Presentation of draft Guidance

DISCUSSION
Factors which should be considered in Biodiversity
Where are quality standards needed?

- *Suggestions*
- *Training of field operators*
- *Terminology*
- *Requirements (level of survey required)*
- *Methodology*
- *Data presentation (information for the EPA)*
- *Database design custodianship & management*
- *Verification and Vouchering*

12:00 – 1:00 pm – Lunch

Session 3: **1:00 – 3:00 pm**

WORKSHOP specific concepts in smaller groups

3:00 - 3:20 pm – Afternoon Tea

Session 4: **3:20 – 4:20 pm**

Integration
Outstanding points which were not considered

CLOSE