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| New Project Application – Guidelines for Applicants  DPIRD Wildlife Animal Ethics Committee |

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## Purpose

Under Part 2 of the Western Australian Animal Welfare Act 2002 (AW Act), the Department of Primary Industries and Regional Development (DPIRD) Scientific Licensing Unit (SLU) requires that any person or organisation that uses animals for scientific purposes needs to obtain a Scientific Use Licence (SUL) and seek approval for their projects from an animal ethics committee (AEC). The Wildlife Animal Ethics Committee (WAEC) was established in February 2022 to provide an animal ethics assessment and approval service to institutions and environmental scientists who do not have access to an institutional AEC to obtain approvals for their projects.

If an individual or institution requires approval from the WAEC to use animals for scientific purposes, they are required to have a Formal Agreement (FA) with the WAEC to undertake this process. Once a FA has been signed off by the institution and WAEC, the applicant’s institution must obtain a SUL from the SLU within DPIRD. Once this has been obtained, the applicant (Chief Investigator) can prepare a new project application (NPA) for review and assessment. The WAEC cannot assess or approve projects from institutions that do not have a FA with the WAEC and do not hold a SUL. Please refer to DPIRD for more information on the requirements and process for obtaining a SUL.

This document is intended to provide guidance to applicants and scientific institutions as to the expectations of the WAEC when assessing new project applications (NPA) from environmental scientists to use animals for scientific purposes. It covers some of the more common matters where clarification may be required by the Chief Investigator / applicant. It does not replace the requirement for applicants to understand their responsibilities under the conditions of a SUL or the *Australian code for the care and use of animals for scientific purposes 8th Edition 2013* (the Code). It is a guide only and does not necessarily provide all the information required to complete the NPA satisfactorily. Please contact the WAEC Executive Officer or the Chair at [wildlifeaec@dpird.wa.gov.au](mailto:wildlifeaec@dpird.wa.gov.au) if you require assistance with completing the NPA. This guidance document will be revised as required, please ensure that the most current version is used.

The definition of scientific purposes is:

*‘All activities conducted with the aim of acquiring, developing or demonstrating knowledge or techniques in all areas of science, including teaching, field trails, environmental studies, research, diagnosis, product testing and the production of biological products’* (the Australian Code).

The WAEC regards any project that involves handling or observing fauna and is collecting new knowledge and / or has a monitoring component as using animals for scientific purposes. For environmental scientists, projects that require AEC approval before they can commence include, but not limited to, the development of new survey techniques, use of remote cameras with lures and / or flashes to detect fauna; undertaking fauna surveys for Environmental Impact Assessment, or other purposes; fauna translocations for conservation; bird and bat surveys over regular periods; marine mammal surveys; and fauna relocation / salvage with a monitoring component.

Some animal use is not for scientific purposes, and these do not require WAEC approval. These include projects to relocate fauna where there is no monitoring component, use of remote cameras to survey fauna without the use of lures or flashes, and the operational control of introduced pests with no monitoring component. Note that under Part 3 of the AW Act, animals still must be treated humanely even if they are not being used for scientific purposes.

Please refer to DPIRD for more information on what type of project requires WAEC approval and those that do not.

## Applying for Approval to Use Animals for Scientific Purposes

The WAEC is required to meet its responsibilities in accordance with AW Act and the Australian code. The governing principles (Section 1 of the Australian Code), including replacement, reduction and refinement (the 3Rs) must be considered. The WAEC requires detailed information to ensure an understanding of what will happen to the animals and how any known or potential impacts to animal wellbeing will be managed throughout the duration of the proposed animal use. The WAEC must be satisfied that the scientific use of animals is justified and that any impact on the animals is necessary to achieve the intended outcome, and that this impact is minimised. The benefits of the intended must outweigh the impact to the animals. Section 2.7.4 of the Australian Code provides details on what information is required for an AEC to make an informed decision. The use of animals for scientific purposes cannot commence until it has been approved by the WAEC.

For additional information applicants are directed to the:

* [Australian code for the care and use of animals for scientific purposes 8th Edition 2013 (updated 2021).](https://www.nhmrc.gov.au/about-us/publications/australian-code-care-and-use-animals-scientific-purposes)
* [NHMRC guide to the care and use of Australian native mammals in research and teaching.](https://www.nhmrc.gov.au/about-us/publications/guide-care-and-use-australian-native-mammals-research-and-teaching)
* [NHMRC Best practice methodology in the use of animals for scientific purposes (2017) (updated July 2018).](https://www.nhmrc.gov.au/about-us/publications/best-practice-methodology-use-animals-scientific-purposes)

## Language and Content

The WAEC represents the views of society and the broader community and comprises members with diverse backgrounds and expertise. NPAs should be written in plain and grammatically correct English, and each section and all questions need to be completed. Scientific jargon should be avoided. The NPA form is based on a table within MS Word so boxes can be expanded for additional text and lines can be added. If a question is not applicable to your proposal provide a brief justification as to why this is the case. The WAEC is not an editorial committee and should not be expected to correct grammatical errors. Apply the same rigor to preparing an application to the WAEC as you would in preparing a scientific paper or report to a client.

The WAEC requires the NPA to be a standalone document and all the information required for assessment needs to be included in the application, not in attachments, or referenced elsewhere. WAEC members will not search references for the necessary information. Superficial and inflammatory answers are not acceptable. Applications will be deferred or not approved and returned to the CI for revision if there is not adequate information provided.

Section 2.7.4 of the Australian Code provides guidance on what information is to be provided to an animal ethics committee for a project. It must be possible, through reading the application for the WAEC to fully understand:

* how the principles of replacement, reduction and refinement have been applied
* what will happen to the animals at all stages (sufficient detail is required to ensure an accurate understanding of all actual and potential impacts to the animal)
* that proposed activities and procedures are consistent with current best practice (or justification provided where this is not possible)
* who is responsible for the animal at each stage, and this person’s competency
* what will be done to minimise the impact to animals, all potential and actual impact should be considered
* how and when the animals will be monitored, the criteria used for assessment of wellbeing and what action will be taken if abnormalities are identified
* how animals will be assessed as suitable to commence and continue within a project.
* time between procedures, and consideration for provision of rest and recovery.
* the cumulative impact to the animal throughout the use.

Definitions for terms used are shown on pp 3-6 of the Australian Code.

Information within the NPA must be accurate, concise and consistent throughout. If not, the application will be returned for correction, prior to the WAEC considering the proposal, resulting in delays in the approval process. Words such as ‘should’, ‘may’, ‘maybe’ or ‘ideally’ are not to be used as they imply an action could be optional. The WAEC want to know what the CI ‘will do’ or ‘must be doing’, not what they might do. Examples of this are:

* *‘Traps should not be set when temperatures are forecast to reach 360C or higher’ is not acceptable. The alternate of ‘Traps will not be set when temperatures are forecast to reach 360C or higher’ is appropriate.*
* *‘Traps left open during the day may be checked twice daily’ is not acceptable. The alternate of ‘Traps left open during the day will be checked twice daily’ is appropriate.*

More specific guidance on completing a NPA is shown in Section 7 below. Once completed, please email the NPA as a MS Word document to the WAEC Executive Officer at: [wildlifeaec@dpird.wa.gov.au](mailto:wildlifeaec@dpird.wa.gov.au).

## Standard Operating Procedures

A standard operating procedure (SOP) is a step-by-step, repeatable process for any routine task. SOPs are based on best practice and reduce the chance of misunderstanding, errors or accidents. When followed they ensure reliability, efficiency, and a quality standard in regular work activities. SOPs should be peer – reviewed prior to use by researchers.

Section 2.2.33 of the Australian Code provides information on how SOPs should be used. Approved SOPs can be referred to however the relevant information from the SOP pertaining to that method, technique or procedure needs to be included in the NPA. The most up to date SOP must be used (SOPs are reviewed every three years), and the title of the SOP needs to be included in the NPA.

The Department of Biodiversity, Conservation and Attractions (DBCA) has a series of peer reviewed SOPs that cover most of the activities undertaken by environmental scientists in WA, and the WAEC has endorsed (and encourages) their use in the preparation of NPAs where appropriate. For activities not covered by the DBCA SOPs, other institutions’ approved SOPs may be used and referenced once they are endorsed by the WAEC. The WAEC will also prepare SOPs for activities not covered by the DBCA SOPs or where variations to the DBCA SOP are required. The WAEC regard approved SOPs as the minimum standard to be used and with some techniques, such as trapping, require additional measures to be adopted as best practice. Institutions are informed of these additional requirements through regular stakeholder updates.

Another useful source of information on the best practices for use of wildlife is *Wildlife Research in Australia* by Smith, Waudby, Alberthsen and Hampton 2022.

## Regional Environmental Impact Assessment Fauna Surveys

To streamline the project approval process, the WAEC will accept applications that cover several Environmental Impact Assessment (EIA) fauna surveys and / or monitoring projects undertaken within a biogeographical region providing they have the same aims, involve the same personnel, and employ the same methodologies at the different sites. Each study site does not require a separate NPA. Changes and additions to the study site details, dates and personnel can be dealt with promptly through the project amendment process.

Terrestrial fauna surveys would be expected to follow the technical guidance provided by the Environmental Protection Authority (Environmental Protection Authority 2020). This guidance identifies three types of fauna survey to satisfy EIA criteria – Basic, Detailed and Targeted. The WAEC requires that regional project applications that follow the EPA technical guidance procedures clearly show what type of survey(s) is to be undertaken (basic, detailed, targeted), what the aims / objectives are for the survey type, what methodologies will be used for each survey type and their mitigation measures, and what fauna species will be handled / observed. This could be provided in one comprehensive application, or in three separate applications if all three survey types are being implemented.

Surveying for short-range endemic (SRE) invertebrate fauna may also impact on vertebrate fauna. Where the method(s) used to survey for SRE invertebrate may reasonably be expected to capture small vertebrates, a NPA should be submitted for assessment. Rational and methodology for SRE surveys should follow the Environmental Protection Authority’s technical guidance (Environmental Protection Authority 2016). Currently this guidance does not consider the use of wet-pit traps as a standard component of SRE surveys, however this may be reviewed in the future. Chief Investigators wishing to use wet-pit traps should contact the WAEC Executive Officer in the first instance.

The WAEC prefer that the 26 bioregions in WA as identified in the Interim Biogeographical Regionalisation for Australia (IBRA) (Thackway and Cresswell 1995, and more recent versions) be used as the basis for regional applications. The broader climatic regions and botanical provinces as shown in the EPA technical guidance (Environmental Protection Authority 2020) may be used providing adequate information on the variation of biota within these broader regions is included in the application. Where applicants are submitting several regional applications, please ensure that the differences in the fauna between bioregions are recognised and adequately covered in the applications. For example, northern quolls are only likely to be trapped in some of the IBRA regions, so explicit techniques for the trapping of this species, following the Commonwealth guidelines (DSEWPAC 2011) need to be included for these regions only. Similarly, only list the methods and techniques you will actually be using for surveys in that bioregion. Some bioregional surveys may include aquatic species in the species list, some may not, so only list the techniques used for capturing aquatic species such as Fyke traps and nets in those applications dealing with aquatic species. Please do not just cut and paste between applications.

## WAEC Review and Approval Process

The WAECs Terms of Reference and Operating instructions are available on the WAEC website. The WAEC will review and assess NPAs usually in the order they are received by the Executive Officer. It is the CIs responsibility to submit applications in a timely fashion and to ensure WAEC approval has been obtained before the scientific use of animals commences. NPAs should be submitted to the WAEC Executive Officer at least three months before the project is due to commence. Project assessments may be fast tracked in situations where genuine urgency is required, or an emergency situation occurs.

Projects will be assessed based on the adequacy of the information provided in the NPA. The following outcomes are possible:

**Approved** – the WAEC consider that the information provided demonstrates that the benefits outweigh the impacts, that the principles of replacement, reduction, and refinement have been adequately considered and will be implemented, and that animal welfare will be a priority for animal handlers at all stages of the project. The CI will be issued with an approval letter containing the permit number and an indication of the level of impact on the animals handled. The letter may also contain conditions that are directly applicable to that project as well as standard conditions applicable to all projects. Some minor changes or amendments to the NPA may be requested.

**Provisional Approval** – the WAEC consider that the project can proceed but that some changes and / or additional information is required before an approval permit can be issued. The changes and additional information required are listed for the CIs response. Providing these responses are satisfactory the project will be approved, and an approval permit issued.

**Deferred** – the WAEC consider that insufficient and / or inaccurate information has been provided and a decision cannot be made. The NPA requires significant change and revision before being resubmitted for review and assessment.

**Not Approved** – the WAEC considers that the project cannot be undertaken in a manner that satisfies the Code and will not be approved in its current form. The WAEC may also not approve a project if it is not able to be modified to a satisfactory level within a reasonable time period.

## Specific Guidance for Completing a New Project Application Form

### Application details

**SECTION 1 – PROJECT TITLE**

Make this relatively short (10-12 words maximum), descriptive and concise.

**SECTION 2 – CHIEF INVESTIGATOR**

The Chief Investigator (CI) has ultimate responsibility for the care and use of animals in the project and ensuring that all project personnel understand their responsibilities. See also Section 32 of the NPA for CI Declaration.

Biodiversity Conservation Regulations licence / authority – identify the licence / authority issued by DBCA and held by the CI allowing the use and take of native fauna.

Previous AEC approvals for this project – has this project had previous AEC approval from either the WAEC or another AEC? If so, list the permit numbers and institution / AEC.

**SECTION 3 - GLOSSARY**

The application must be written in plain English, and the use of scientific language and jargon should be avoided. Provide a list of keywords, technical terms, acronyms or abbreviations and a lay explanation to assist the WAEC to understand the technical aspects of this project. Alternatively for abbreviations and acronyms, provide an explanation of the term or spell out in full within the text the first time it is used as you would do in a scientific paper.

**SECTION 4 – PROJECT PERSONNEL**

Use the drop-down box for project roles (animal handler etc). Most personnel should be listed as animal handlers. CI’s must maintain records demonstrating that project personnel are appropriately trained or experienced to competently perform all procedures and techniques identified in the project. Personnel who are not competent with the project fauna and techniques are to be supervised. Volunteers or project personnel who will not be handling fauna (for example, data recorders) do not need to be listed.

Briefly describe your experience with handling the species involved, and the techniques / methods being used. If you do not have experience with the species or techniques briefly describe how your skills are transferable to this project. Identify who is competent with the euthanasia methods proposed. If applicable provide a list of any AEC project approval numbers that identify your experience with the species and techniques in this project.

**SECTION 5 – OTHER INSTITUTIONS**

Only include other institutions if they or their personnel are actively involved in the project and their role is necessary to achieve the project aims. Examples: A collaboration between an environmental consultancy and a government department; animal handlers from other institutions included in the NPA. Do not include the opportunistic associations that may occur during a project. If these develop into a more formal collaboration during the project, the NPA can be amended through the submission of a project amendment form.

**SECTION 6 - TIMEFRAME**

A starting date and completion date must be provided. These dates refer to when animal use starts and is completed. Ongoing data analysis and report preparation can occur outside of these dates. The start date for animal use must not be before the project has been approved by the WAEC. Projects will be approved for a maximum of three years with an extension of up to one year possible following the submission of a project amendment form. Projects continuing beyond this timeframe will need to submit another NPA.

**SECTION 7 – LOCATION OF FIELDWORK**

Describe as clearly and precisely as possible where the animals will be used.

**a) Biogeographical / geographical region** – the broad area in which the study is to be undertaken. For an EIA fauna survey at a regional scale this should be the relevant IBRA region. For other studies a local government area may be appropriate.

**b) Distance and direction from nearest town(s) or feature** – for example, the Timbuktoo minesite is located 10km north-east of the town of Black Stump, and 1 km east of the Gunbarrel Hwy.

**c) Number of sites at each location** – for example, trapping will be undertaken at 6 sites at 2 locations within the Timbuktoo minesite.

**d) Insert (preferably) or attach a map** showing study locations with key locational information provided, (e.g., nearest towns, major roads or infrastructure etc). If undertaking an EIA fauna survey at a regional scale, use a map of the IBRA region with study sites or potential sites shown (See 6. Regional Environmental Impact Assessment Fauna Surveys above).

### Benefits of the Project

**SECTION 8 - PURPOSE**

Select one option from the drop-down list. Most projects will be Research: Environmental studies.

**SECTION 9 – KEY AIMS**

Describe clearly and concisely what the project expects to achieve. The aims must cover all the activities proposed in this application. Dot points are useful here. For example:

* *To undertake a Targeted fauna survey to confirm the presence of bilby and northern quoll at the Timbuktoo mine site.*
* *To undertake acoustic surveys to determine the use of Pilbara caves by ghost bats.*
* *To determine the diet of waders using mudflat habitat at Roebuck Bay.*
* *To determine the movements of pelicans utilising refuse sites in the Rockingham area.*

**SECTION 10 – JUSTIFICATION FOR ANIMAL USE**

The application must demonstrate that the project has scientific or educational merit, and has potential benefit for humans, animals, or the environment.

**a) Relevance**: Why is this project important? What is the context in relation to species or site / area management plans? Are threatened species being used? For example:

* *This study is being undertaken as part of the Timbuktoo nickel mine development and will provide information to the EPA that mitigates the impact of mine development on the purple-breasted warbler.*
* *This study will contribute to achieving the aims of the chuditch recovery plan through establishing another three populations of this vulnerable species.*

**b) Merit**: Is the study scientifically sound? How will the results contribute to scientific knowledge?

**c) Benefit:** What are the benefits of this project and how do they justify the potential impacts of the animal use? How will this project contribute to the conservation of wildlife? How will it improve knowledge and understanding of biodiversity, ecosystems and processes? Will the community and the population at large benefit from this study?

**d) Guidance documents:** Refer to any relevant documents that guide how this project should be implemented and support why this project is required, for example, EPA guidance documents, conservation offset provisions, environmental management plans, species recovery plans etc.

**SECTION 11 – SHARING RESULTS**

Describe how the results from this study will be made available to the public, peers and land managers. For example: *Fauna survey results are reported to the client / published in peer reviewed journals / uploaded to Atlas of Living Australia / Australian Bird and Bat Banding Scheme database / DBCA databases / Danjoo Biodiversity Data Platform etc.*

### Study Design

**SECTION 12 - DESCRIPTION OF PROJECT**

**a) Project design**: How will this study achieve its aims? Describe any relevant context such as EPA technical guidance documents or environmental management plans that will guide how the study is undertaken.

**b) Field work months and duration**: State how long the fieldwork will be undertaken for and in what months of the year. Include the expected minimum and maximum temperatures during fieldwork. For example:

* *Trapping will be undertaken for seven nights in each of April and September for three years. Fieldwork temperatures are expected to range between 50C to 400C.*
* *The project involves trapping at three sites, which will be monitored once per year for each site, and traps will be run for four consecutive nights. Fieldwork temperatures are expected to be 150C to 290C.*

**c) Methodology**: Describe the trapping and / or observational methods to be used, the methods for tracking animals, and the methods for marking animals. Explain why these procedures are necessary to achieve the aims of the project, and how they will be implemented. Describe how you will refine the capture, tracking and marking methods in Sections 19, 20, 21 and 22. Identify here if you are proposing to take voucher specimens or biological samples and if so, complete the details in Section 23.

* *This project will use a 20km transect of 50 baited Sheffield cage traps, set at 200m intervals along tracks, to target medium-sized mammals.*
* *The project will also use a grid of 16 pitfall traps, 8 funnel traps, and 8 Elliott traps to target small mammals, reptiles, and amphibians.*
* *The grid will have four lines of four pitfall buckets with two funnel traps per line, and one Elliott trap at each end of the four pitfall lines.*

**d) Data to be collected**: Describe the data to be collected from the animals handled. Attach a field datasheet where possible. For example: *sex, weight, head length, pes length, reproductive status.*

**SECTION 13 – ANIMALS USED**

Complete the table showing the animals to be used, including the species and common names, and the number known or estimated to be used over the course of the study. Use the current WA Museum taxonomy and common names. All columns must be completed. An Excel spreadsheet can be attached but it must contain the same information as requested in Section 13 The animal number is the maximum number of individual animals to be used across the project. Species, and likely numbers to be encountered, can be based on CI’s experience. Provide a realistic estimate of species and numbers based on the site(s) you expect to work at. Do not just provide a region wide species list which includes many species you will not capture or observe. If the project is a targeted survey list the species of conservation significance that you expect to encounter. Do not list locally extinct species.

### Replacement of Animals, Methods or Equipment

*Refer to sections 1.18 – 1.20 of the Code.*

**SECTION 14 – HANDLING / OBSERVING ANIMALS IS NECESSARY**

Explain why the use of animals is necessary to achieve the projects aims.

For example: *The handling or observation of animals in their natural environment is necessary to achieve the aims of this project because distributional and abundance information on live animals is required to assess the potential impact on them from the proposed development.*

**SECTION 15 – LESS INVASIVE OR LOWER IMPACT METHODS ARE AVAILABLE**

Methods that replace or partially replace the use of animals must be investigated, considered and where applicable implemented. Explain what alternative techniques were investigated and why they were not suitable for use. Alternative techniques to capturing animals could include using remote camera traps, e DNA methods, epidemiology data, physical and chemical analysis, mathematical models, inanimate synthetic models, simulations, in vitro systems, non-sentient organisms, and museum specimens.

### Reduction of Numbers and/or Effort

*Refer to sections 1.21 – 1.27 of the Code.*

**SECTION 16 – STATISTICAL RIGOUR**

Explain how the number of animals used will be minimised while ensuring good statistical and experimental design. Consider whether the length (number of continuous days’ trapping) and number of survey sessions are appropriate to achieve the outcomes of your project while also minimising the impact on animals. If appropriate, please include comments or advice from a biostatistician regarding the sample size to be used. If the project is not endorsed by a statistician / biometrician for wildlife studies in the field the most current state or Commonwealth regulator survey guidelines must be referred to.

**SECTION 17 – REPETITION OF STUDY**

Are there any previous similar studies? If so, briefly describe these and justify why it needs to be repeated.

**SECTION 18 – RECURRENT USE**

Consider the potential impact of recurrent use of animals (multiple trappings / capture of the same individual). Explain how recurrent captures of animals will be reduced in the study. Are the number of trapping days appropriate for the aims of the project?

### Refinement of Techniques

*Refer to sections 1.28 – 1.30 of the Code.*

**SECTION 19 – METHOD OF CAPTURE / OBSERVATION**

Complete the table if you are capturing or observing animals. If not, put ‘not applicable because no animals will be captured or observed during this study’ or similar.

Steps must be always taken to support and safeguard animal welfare. All capture / observation methods to be used in the project must be included in the table. Use the drop-down list to select the capture method. If the method you are intending to use is not listed, select ‘Other’ and list the method. The potential welfare impact(s) for each must be listed, together with the steps to be taken to minimise and mitigate the impact(s). Do not include methods that are not to be used in this project. The use of, and reference to, the relevant DBCA SOPs is strongly encouraged.

Some specific points to take account of:

* The use of wet pitfall traps is not encouraged by the WAEC but will be assessed on a case-by-case basis. The CI will need to provide strong evidence that the risk to by-catch vertebrates is low and is outweighed by the benefit to conservation.
* The timing and frequency of checking dry pitfall, aluminium box and cage traps should broadly follow DBCA SOPs SC 22-04, SC 22-06 and SC 22-07 (February 2023 and subsequent revisions). In addition, the WAEC require that if these traps are left open during the day targeting diurnal species, they must be checked twice a day, once within 3 hours of sunrise and again just after peak reptile activity. Traps must be closed during the day if the ambient temperature is forecast to be 360C or greater. Traps left open during the day in cooler climates / winter when day-time temperatures are forecast to be < 25oC only require once daily checking within 3 hours of sunrise, unless diurnal reptiles are trapped when twice daily trap checking is required.
* When surveying for northern quolls, the Commonwealth referral guidelines (DSEWPAC 2011) and DBCA advice (Cook et al. 2014) must be followed.
* The risk of predation and ant / centipede / scorpion attack of captured animals needs to be considered and the risk mitigated. Elliott traps with a front door latch (Johnson 1996) can reduce the incident of northern quoll predation of captured prey such as native rodents. The appropriate use of pyrethrin based insecticide powders should be used where ant attack is possible.
* The impacts of repeated capture on lactating mammals (including bats) and their dependent offspring must be mitigated. Terrestrial mammal traps should be closed or shifted if a lactating mammal is trapped on two consecutive nights. If harp trapping for bats during the breeding season, the trap should be checked every two hours for pregnant/lactating females, and the trap closed before dawn so that no pregnant/lactating females are held during the day to be released the following evening.
* Identify the area(s) (both as ha. and % of total available) of habitat to be sampled by active searching and how this will be undertaken, e.g., rock/log rolling, raking etc.
* If surveying fauna using unmanned aerial vehicle (UAVs) or drones, please identify and include information from the protocol or SOP you are following and list the qualifications and competence of the operator. If surveying cetaceans and dugongs, please refer to: Murdoch University AEC SOP 0100-07: Use of unmanned aerial vehicles to study cetaceans and dugongs (2021).
* Include biosecurity considerations and best practice mitigation measures with species where disease spread is a risk, for example where the handling of frogs and the spread of chytrid fungus is possible, or the spread of sarcoptic mange in quenda populations. There is also the potential risk of Avian Influenza when it reaches Australia (WHA 2023). The following links are useful: Wildlife Health Australia website: High pathogenicity avian influenza information (wildlifehealthaustralia.com.au) or the DAFF website: Avian influenza (bird flu) - DAFF (agriculture.gov.au). Please refer also to DBCA SOP SC23-06 *Managing disease risk and biosecurity in wildlife management June 2023* and subsequent revisions).

**SECTION 20 – METHODS OF TRACKING**

Complete the table if you are tracking animals. If not put ‘not applicable because no animals will be tracked during this study’ or similar.

**a) Radio / satellite transmitter specifications**: The size and bulk of the collar and transmitter package should be appropriate for the weight of the animal and not impede normal movement of the animal. The weight of the collar and transmitter package should not exceed 3-5% of the body weight for mammals and reptiles, and 3% for birds.

**b) Collar / transmitter removal time**: This should be no more than 75% of the manufacturers estimated minimum battery life. This provides a buffer to prevent losing collar signals before the animal has been located for collar removal.

**c) Re-trapping to replace or remove the transmitter**: Explain the process for re-trapping the animals and removing or replacing the transmitter.

**SECTION 21 – METHODS OF MARKING**

Complete the table if you are marking animals for identification. If not, put ‘not applicable because no animals will be marked during this study’ or similar. Refer to the following DBCA SOPs:

* *SC22-18 Permanent marking of vertebrates using passive integrated transponders (PIT) tags (2022).*
* *SC22-17 Permanent marking of mammals using ear notching (2022).*
* *SC23-03 Temporary marking of mammals, reptiles and birds (2023).*
* *Permanent marking of reptiles by scale marking (2017).*

The use of pit tags for marking mammals is preferable to using ear tags, as the ear tag attachment site often becomes infected. Ear tags are also often accidentally pulled out of mammal ears losing the ability to identify the individual and disfiguring the ear pinna which may affect hearing ability.

**SECTION 22 – OTHER REFINEMENT MEASURES**

Identify any other measures you will be implementing to support and safeguard animal welfare during this study.

### Voucher Specimens and Biological Samples

**SECTION 23– VOUCHER SPECIMENS**

Is this project collecting voucher specimens? If yes, include the justification for this in Section 10 and the collection methodology in Section 12. Refer to: DBCA SOP SC23-01 *Vouchering of vertebrate fauna specimens (2023)* and complete Section 23.

**SECTION 24 – BIOLOGICAL SPECIMENS**

Is this project collecting biological samples such as ear notch tissue, tail tips, blood samples, scale notching, cloacal swabs etc.? If yes, include the justification for this in Section 10 and the collection methodology in Section 12. Complete Section 23. If working with crocodiles refer to DBCA SOP SC22-24 *Biopsy tissue sample collection for crocodiles*. If requiring tissue samples from mammals for analysis refer to DBCA SOP SC22-17 *Permanent marking of mammals using ear notching (2022)*, and DBCA SOP *Tissue sample collection and storage for mammals (2017).*

### Animal Handling Timeline

**SECTION 25 – ANIMAL HANDLING TIMELINE**

Provide a sequential description of what happens to the animals from the time of commencement of animal handling until the animal is released. A flowchart is useful in assisting the WAEC to understand the impact to animals.

For example: *Animals will be removed from the trap and held in a calico handling bag. They will be weighed and morphometrics recorded, then released near point of capture. On average handling time will be no more than 5 minutes per individual.*

### Transportation and Holding

**SECTION 26 – TRANSPORTATION AND HOLDING OF ANIMALS**

Describe why transportation is necessary and how the animals will be transported (vehicle, aircraft etc)? Describe the type of containers use to hold the animals, including the dimensions and what shelter / bedding and food / water will be provided. How many animals will be held per container, and how will they be protected from temperature extremes? How long will they be held?

For example: *Reptiles that cannot be identified in the field will be taken to base camp in an airconditioned vehicle. Animals will be house individually in a small calico bag inside a small esky with air holes. Animals will be held for a maximum of 24 hours in an airconditioned room while they are positively identified, then returned to the site of capture. No food will be provided; however. a moist tissue will be placed in the calico bag in hot conditions as a water source.*

### Adverse Events and Euthanasia

**SECTION 27 – MANAGEMENT OF ANIMAL WELL BEING**

**a) Assess and monitor animal well-being** – Describe how you will you monitor animal welfare and manage any adverse impacts such as signs of elevated stress, ejected pouch young (refer to DBCA SOP SC22-16 *Care of ejected pouch young (2022)*), injuries, and death. This section must be filled out if euthanasia may be required in unlikely but reasonably foreseeable circumstances. Refer to the DBCA SOP SC23-10 *Euthanasia of animals under field conditions* (2023 and subsequent revisions). If there is no-one listed on the project, who will be present to kill the animal competently and humanely, provide details of the process for seeking timely veterinary assistance. All adverse events must be reported to the WAEC Executive Officer within 24 hours of the event occurring. This can be via an email or phone call initially followed by the completion of the adverse event report form.

**b) Describe any project-derived adverse events that may occur** - Based on previous experience or consultation with other researchers, indicate the number and proportion of animals captured and/or handled that may be injured or accidentally killed, and how these events may be mitigated. Express this as a number for the project and a % of the total number of animals handled.

**c) Euthanasia decision-making** - It should be expected that some injured wildlife requiring euthanasia will be encountered with projects in the field. All listed animal handlers must be aware of the decision-making processes involved with euthanasia. At least one animal handler must also be competent to manage adverse events and euthanasia, and this person(s) needs to be identified in Section 4 – Project personnel.

**d) Euthanasia of voucher specimens** – Describe how voucher specimens will be euthanised considering the need to provide a specimen that is useful for positive identification or DNA analysis. Follow DBCA SOP 23-01 *Vouchering vertebrate fauna specimens* (June 2023) and advice from the WA Museum.

**e) Criteria for death** - Describe the criteria animal handlers will use to confirm that death has occurred. Follow the DBCA SOP SC23-10 *Euthanasia of animals under field conditions* (July 2023).

**f) Management of introduced and pest animals** – Describe how introduced and pest animals will be handled and what their outcome will be. Note that not all introduced animals (for example, black rats, house mice) are declared pest animals. For a full list of declared pest animals go to: agric.wa.gov.au/amphibians-and-reptiles/declared-animal-pests. If declared pests are trapped as part of a wildlife trapping/monitoring program it is illegal under the *Biosecurity and Agriculture Management Act 2007* for them to be released. Trapped declared pests should be euthanised, however the appropriate method for doing this humanely must be available to the competent animal handler. If this is not the case the declared pest should be released. If you are planning to work in an area where it is reasonably likely you will trap a declared pest, then you should be prepared to euthanise that species. For example, if working in the Kimberley, particularly during the wet season you should be prepared to euthanise cane toads. Non-declared introduced animals can also be euthanised providing the appropriate methods are available, otherwise they can be released.

**SECTION 28 - METHODS OF EUTHANASIA**

Complete this table even if you do not expect to have to euthanise animals. Unlikely events may require euthanasia to be undertaken. Only include the methods that are relevant to the fauna listed in Section 13, or any other fauna you expect to encounter. For example, do not include euthanasia methods for turtles if you are not working with these. The methods and procedures for euthanasia must be humane and appropriate for the species, use the DBCA SOP SC23-10 *Euthanasia of animals under field conditions* (July 2023) to provide the relevant information. The WAEC has derived a table from this SOP to assist with completing this Section, and this is available on the WAEC website or from the Executive Officer. Be clear if you are using a one or two step process. When a euthanasia method causes unconsciousness but not death, a second step (method) is necessary to quickly and efficiently ensure death.

**SECTION 29 – ADMINISTERED SUBSTANCES**

List any substances that will or may be administered to animals you are handling. These include euthanasia drugs, sedatives, and vitamin injections. If the drug or substance you plan to use is not in the drop-down list select ‘other’ and insert the name of the drug.

**SECTION 30 – FATE OF ANIMALS AT END OF STUDY**

Describe what happens to the animals at the end of the study. For most field surveys, animals should be released at site of capture.

### References and Sources of Information

**SECTION 31 – SOURCES OF INFORMATION**

Use of references including relevant SOPs is encouraged. However, these must not replace the provision of all relevant information within the application but can be useful in providing support and background information for your application. Attach any further information which may support your application and list references used. For example: *Environmental Management Plans, Translocation Proposals, DBCA SOPs, scientific literature, institutional protocols etc.*

### Chief Investigator Declaration

**SECTION 32 – CHIEF INVESTIGATOR DECLARATION**

Signed by the CI and acknowledging that they understand they have the ultimate responsibility for the welfare of animals used in the project. See section 2.5.4 of the Australian Code.

## References

1. Department of Primary Industries and Regional Development, DPIRD 2021. Scientific use licences for environmental scientists in Western Australia – interim policy and frequently asked questions.

2. Department of Sustainability, Environment, Water, Population, and Communities, DSEWPAC 2011. Environment Protection and Biodiversity Conservation Act 1999 referral guidelines for the endangered northern quoll *Dasyurus hallucatus*. EPBC Act policy statement 3.25. Commonwealth of Australia.

3. Dunlop J, Cook A and Morris K 2014. Pilbara northern quoll project – surveying and monitoring *Dasyurus hallucatus* in the Pilbara Western Australia. Department of Parks and Wildlife, Western Australia

4. Environmental Protection Authority EPA 2016. Technical Guidance – Sampling of short-range endemic invertebrate fauna. Environmental Protection Authority, Western Australia.

5. Environmental Protection Authority EPA 2020. Technical Guidance – Terrestrial vertebrate fauna surveys for Environmental Impact Assessment. Environmental Protection Authority, Western Australia.

6. Johnson BW 1996. A locking mechanism for Elliott mammal traps to improve capture efficiency. *Wildlife Research* 23; 119-120.

7. Smith BP, Waudby HP, Alberthsen C and Hampton JO (eds) 2022, Wildlife Research in Australia – practical and applied methods. CSIRO Publishing, Clayton South, Victoria 3169. 628pp.

8. Thackway R and Cresswell ID (eds) 1995. An Interim Biogeographic Regionalisation for Australia: a framework for establishing the national system of reserves, version 4.0. Australian Nature Conservation Agency, Canberra.

9. Wildlife Health Australia 2023. High pathogenicity Avian Influenza and wild birds. WHA Avian Influenza Disease Advice v3.1 December 2023.