



Fauna Management Guideline

DMS-SD-113/6.0

Supporting Document – Applicable to Infrastructure & Place

Divisional Management System

Status:	Approved
Version:	6.0
Section:	Safety, Environment and Regulation
Branch:	Environment & Sustainability
Business unit:	Environmental Management
Date of issue:	12 July 2021
Review date:	12 July 2022
Audience:	Project Delivery/External TSR
Asset classes:	<input checked="" type="checkbox"/> Heavy Rail; <input checked="" type="checkbox"/> Light Rail; <input checked="" type="checkbox"/> Multi Sites; <input checked="" type="checkbox"/> Systems; <input checked="" type="checkbox"/> Fleets
Project delivery model:	IP Project/Alliance/Novo
Rail Project type:	All projects
Project lifecycle:	<input type="checkbox"/> Feasibility; <input type="checkbox"/> Scoping; <input type="checkbox"/> Definition; <input checked="" type="checkbox"/> Construction readiness; <input checked="" type="checkbox"/> Implementation; <input checked="" type="checkbox"/> Finalisation; Not applicable
Process owner:	Director Planning, Environment & Sustainability

Document history

Version	Date of approval	Doc. control no.	Summary of change
1.0	11 Jul 14	3144722_2	First issue
2.0	14 Apr 15	3144722	Updated to be published to TfNSW website
3.0	28 Apr 16	3144722_9	Updated to reflect changes in organisation structure.
4.0	27 Sep 2017	3144722_11	Duplicate wording deleted and wrong spellings corrected.
5.0	20 June 2018	3144722_13	Updated Table 1 – The Biodiversity Conservation Act began on 25 August 2017 and replaces the Threatened Species Conservation Act 1995
5.1	16 Jan 2019		Rebranded to Infrastructure and Place (IP).
5.2	23 August 2019	3144722	DMS update
6.0	12 July 2021		Reference to Environmental Incident Procedure updated.

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1. Purpose

The purpose of this document is to provide guidance with regard to the effective management of native fauna encountered on Infrastructure & Place (IP) project sites.

Given the disturbance to the local habitat which often occurs during site construction activities, there is potential for native fauna to traverse onto or across project worksites. In such circumstances, there is a high risk of harm to native fauna (e.g. being struck by plant, tools or vehicles) or contact with fauna including species which may pose a threat to human safety such as venomous snakes and spiders.

In New South Wales, there are strict laws to protect native fauna. The harming of native fauna is an offence. Accordingly appropriate control measures are required to minimise this risk.

2. Scope

This guideline is designed to provide personnel working on IP project sites with an understanding of how to:

- avoid and/or minimise construction-related impacts on fauna and fauna habitat
- manage occurrences involving fauna on or adjacent to IP worksites

Some case studies of encounters with fauna on IP sites are also provided (ref. Appendix A).

This guideline includes references to some of the legislative and regulatory requirements and industry guidelines but is not intended to replace them. It is not intended to replace any requirements for fauna management identified as part of the environmental impact assessment process.

3. Definitions

All terminology in this document is taken to mean the generally accepted or dictionary definition with the exception of the following terms which have a specifically defined meaning:

ECM	Environmental controls map
EIA	Environmental impact assessment
EMR	Environmental management representative commissioned by IP to provide independent expert advice on issues related to environmental management and compliance
Environment manager	The alliance or contractor environment manager
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth)
POEO Act	<i>Protection of the Environment Operations Act 1997</i> (NSW)
TfNSW	Transport for NSW
TSR	TfNSW Standard Requirement

4. Accountabilities

The Director Planning, Environment & Sustainability is accountable for this document including authorising the document, monitoring its effectiveness and performing a formal document review.

Project directors are accountable for ensuring the requirements of this document are implemented within their area of responsibility.

Project directors who are accountable for specific projects/programs are accountable for ensuring associated contractors follow this document to the extent they are required under the TfNSW Standard Requirements (TSR).

Contractors are accountable for following this document, where this guideline forms a part of their contract.

5. Legislative requirements

Table 1 identifies some of the relevant legislation and regulations for the protection and management of fauna in NSW. It should be noted that significant penalties exist for breaches of relevant legislation as a result of unauthorised impacts on fauna and associated habitats. Contractors/alliances will need to ensure that they undertake their own due diligence to identify any other legislative requirements that may apply for a given project.

To avoid breaches of legislation, it is important that IP and its contractors are aware of their legislative obligations and that appropriate management measures are in place to avoid impacts on fauna and habitats during construction.

Table1: Legislation and guidelines for management of fauna and habitats

Relevant requirement	Objectives and offences
<p>Biodiversity Conservation Act 2016 (NSW) (BC Act)</p>	<p>The BC Act has replaced the Threatened Species Conservation Act 1995, the Nature Conservation Trust Act 2001 and parts of the National Parks and Wildlife Act 1974.</p> <p>The BC Act also sets out a new framework and procedures for the listing of threatened species and ecological communities in NSW as well as a process for declaring and protecting areas of outstanding biodiversity value. Listings of all preliminary and final determinations under the TSCA can be found on the NSW <i>Threatened Species website</i>.</p> <p>Part 7, Division 2 of the BC Act specifies the requirements for biodiversity assessment for:</p> <ul style="list-style-type: none"> • applications for development consent under Part 4, • environmental assessment of an activity under Part 5, or • approval of State significant infrastructure under Part 5.1 of the EP&A Act.

Relevant requirement	Objectives and offences
<p><i>Environmental Protection and Biodiversity Conservation Act 1999 (Commonwealth) (EPBC Act)</i></p>	<ul style="list-style-type: none"> Seeks to protect the environment, especially those aspects of the environment that are matters of national environmental significance (MNES). Listed threatened species and ecological communities is one of the MNES identified in the EPBC Act. A person who proposes to take action that will have, or is likely to have a significant impact on a MNES must refer that action to the Minister for a decision on whether assessment and approval is required under the EPBC Act. It is an offence to take such an action without approval. Depending on the specific offence, penalties can include 7 years imprisonment (for an individual) and up to \$5.5 million civil penalty for a corporation.
<p><i>National Parks and Wildlife Act 1974</i></p>	<ul style="list-style-type: none"> Seeks to conserve nature, including habitat, biological diversity and species. It is an offence to harm native fauna (as listed in Schedule 11 of the Act). The maximum penalty for doing so is \$11,000 plus \$1,100 in respect of each whole plant affected by the action, and/or 6 month imprisonment. Offences do not apply if the action has been authorised under another Act (e.g. licence granted under the TSC Act).
<p><i>Fisheries Management Act 1994</i></p>	<ul style="list-style-type: none"> Seeks to conserve fish stocks and key fish habitats, threatened species, populations and ecological communities of fish and marine vegetation, and promotes ecologically sustainable development, including the conservation of biological diversity. It is an offence for a person to be in possession of fish which were illegally taken. Maximum penalty is: for an individual, \$22,000 and/or 6 months imprisonment for the first offence, or \$44,000 plus and/or 12 months imprisonment, and for a corporation, \$110,000 for a first offence, or \$220,000 plus a subsequent offence.

Additional requirements and/or industry guidelines (e.g. best practice guidelines, policies and strategies, scientific reports, brochures and fact sheets) have been published by relevant agencies, which can generally be accessed from the relevant departmental websites.

A detailed list of threatened species publications can be found on the [Office of Environment and Heritage website](#)¹, and includes:

- endangered and vulnerable species profiles

¹ <http://www.environment.nsw.gov.au>

- pest management plans
- threat abatement plans
- policies and guidelines
- brochures, newsletters and fact sheets.

To avoid breaches of legislation, it is important that IP and its contractors are aware of their legislative obligations under relevant legislation and that fauna impacts assessed as part of an IP project are clearly understood and appropriate management measures are in place prior to commencement of construction. Contractors/alliances will need to ensure that they undertake their own due diligence to identify any other legislative requirements that apply for a given project.

6. Managing fauna

6.1. Prior to construction

Prior to the commencement of construction the following fauna management measures should be implemented:

- review the EIA to identify the location of potential fauna habitat and fauna sightings on or adjacent to the site
- incorporate construction fauna management measures identified in the EIA into the site induction, toolbox talk and pre-start meetings
- incorporate fauna management measures identified in the EIA into the project design (refer to section 6.1.1), environmental management plans and environmental controls maps (refer to the [Guide to Environmental Control Map DMS-SD-015](#))
- establish contracts with external specialists/agencies that can attend site and remove or relocate fauna. This may be a local suitably qualified fauna handler or an agency such as WIRES.
- protect vegetation, which may provide habitat for fauna species, in accordance with [Vegetation Management \(Protection and Removal\) Guidelines DMS-SD-111](#)
- install signs clearly identifying areas of potential fauna habitat
- plan construction works with consideration to habitat corridors (connectivity), fauna mobility and nesting times
- undertake fauna pre-clearance survey with the assistance of an ecologist where required (refer to section 6.1.2).

6.1.1. Design considerations

Considering how the temporary and permanent design may affect fauna can significantly reduce detrimental impacts and provide benefits to fauna. Incorporation of 'fauna friendly' features into the design is considered in the EIA and may include:

- maintenance of habitat corridors to allow fauna movement
- provision of habitat via landscaping species selection, retention of logs, drainage design
- protection of riparian zones
- maintenance of waterways to allow fish passage
- features to facilitate fauna movement across, over or under sites
- minimising impacts of lighting.

Incorporating fauna management principles into the design of permanent structures, in consultation with relevant environment agencies, provides benefits for a large number of native fauna species, avoids potential retrospective works, and adds value to the project legacy of contractors, alliances and IP.

6.1.2. Pre-clearance surveys

Where required by the EIA a survey of the area to be cleared should be carried out by an ecologist, prior to clearing any vegetation. The ecologist is to identify and mark (e.g. with coloured tape or spray paint) any vegetation with fauna habitat potential within the clearing boundary, and provide recommendations on how to minimise potential impacts to fauna. Such recommendations may include:

- retaining or partially retaining the habitat
- knock tree trunks 24 hours prior to removal to encourage fauna to escape
- provision of nest boxes in alternative location
- removal and relocation of fauna
- the need for the ecologist to be present during vegetation clearing and/or trimming, or during construction activities within or adjacent to sensitive habitat areas
- listing any threatened species or habitat trees that are to be protected and retained on an appropriate project register.

The time period between the completion of these surveys and the commencement of works in and around the survey area should be kept to a minimum to ensure that the results of the survey accurately represent the habitat profile of the area at the time of the works.

6.2. During construction

Measures to minimise potential impacts to fauna and fauna habitat as a result of construction activities are identified in the EIA and through the processes outlined above in pre-construction. Typical measures include:

- managing the site to minimise trap hazards and potential burrow/nest areas for fauna. For example, covering trenches, open pits and excavations, covering/stabilising unconsolidated materials and reducing gradient of uncovered slopes
- implementing a protocol for encounters with fauna to minimise the potential of harm to fauna and site personnel (refer to section 6.2.1)
- avoid contact with poisonous fauna and ensure first aid kits are available to all personnel
- providing photographs and information on site notice boards showing local fauna and pests known to occur in the area
- managing the site to discourage pests (refer to section 6.2.2)
- managing the site to minimise adverse impacts on fauna habitat (refer to section 6.2.3)
- salvaging potential fauna habitat i.e. hollow logs from clearing where possible and reinstate in appropriate locations
- regularly inspecting the site to monitor implementation and compliance with fauna protection measures
- providing ongoing training (e.g. toolbox talks and pre-start briefings) in response to fauna sightings, fauna related incidents, or as a result of changing project conditions.

6.2.1. Management of encounters with fauna

Encounters with fauna should be managed to minimise the potential for harm to the fauna and site personnel. A site protocol should be established and consider the following actions:

- contact the environment manager and site supervisor immediately
- where an animal is traversing the worksite avoid any contact and it may exit the site without the need for further action
- if there is potential for site activities to cause harm to the animal, cease activities in the vicinity
- if the animal is potentially dangerous (e.g. poisonous snake or spider) cease activities and advise all personnel to leave area
- if the animal is trapped, injured or shows signs of disease, or is potentially dangerous, contact the fauna handler or WIRES to remove and/or treat the animal
- any harm caused to an animal by construction activities or personnel, and in particular threatened species, is an environmental incident that requires reporting and investigation (refer to [Environment Incident Procedure EMF-13-PR-0001](#)).

6.2.2. Pest management

Pests compete with native fauna for food sources and habitat, may cause direct harm to native fauna through predation, and can cause health risks for humans. Early detection of pest incursions and rapid

response is the most energy and cost-effective form of pest control. There are a number of initiatives that can help to control the occurrence and impacts associated with pests. These include:

- ensure site is maintained free from food waste, food containers and construction waste that may attract pests
- implementing pest management programs around site offices and compounds
- monitoring for presence of pests and introduced fauna and contacting relevant specialists / agency (e.g. local council) for removal of pests
- maintaining a register to track the types and locations of pests encountered across the project.

6.2.3. Habitat management

Native habitat, whether aquatic or terrestrial, provides shelter, food, protection from predators and breeding areas for native fauna. Effective management and protection of these habitats is fundamental to the survival of native fauna within and surrounding project sites. The management of habitats extends beyond minimising direct impacts on fauna, and includes:

- protection and management of vegetation, which may provide habitat for fauna species (refer to the [Vegetation Management \(Protection and Removal\) Guidelines DMS-SD-111](#))
- management of weed species that may affect fauna (refer to the [Weed Management and Disposal Guideline DMS-SD-110](#))
- locating hazardous material storage away from environmentally sensitive areas and waters and ensuring effective spill response (refer to the [Chemical Storage and Spill Response Guidelines DMS-SD-066](#) and [Concrete Washout Guidelines DMS-SD-112](#))
- preventing land pollution and contamination through rigorous plant and equipment inspections, refuelling and maintenance in designated areas
- regularly testing water quality of catchments within or adjacent to project boundaries
- preventing water pollution through effective erosion and sediment controls in accordance with *Managing Urban Stormwater: Soils and Construction* (Landcom 2004) and water discharges in accordance with [Water Discharge and Reuse Guideline DMS-SD-024](#)
- manage bushfire risk by minimising potential fuel sources such as timber/ flammable waste and excessive undergrowth in high-risk areas on construction sites (refer to the bushfire management plan, where applicable).

6.3. Record keeping and reporting

Records of significant fauna occurrences should be documented using the appropriate incident reports and project registers. A significant sighting/occurrence could be discovery of an injured animal, dangerous animal (e.g. snake) or other fauna observation (e.g. discovery of threatened/endangered species within or adjacent to the project footprint) which may warrant

further investigation and/or notification to site personnel or external agencies.

Records of all surveys and fauna management measures should also be kept, for example on site- specific environmental inspection checklists and other relevant document(s) (e.g. site supervisor's diary).

Copies of all relevant records shall be provided to the EMR and/or IP upon request.

7. Related documents and references

Related documents and references

[Environment Incident Procedure EMF-13-PR-0001](#)

[Guide to Environmental Control Map DMS-SD-015](#)

[Chemical Storage and Spill Response Guidelines DMS-SD-066](#)

[Water Discharge and Reuse Guideline DMS-SD-024](#)

[Weed Management and Disposal Guideline DMS-SD-110](#)

[Vegetation Management \(Protection and Removal\) Guidelines DMS-SD-111](#)

[Concrete Washout Guidelines DMS-SD-112](#)

Managing Urban Stormwater: Soils and Construction (Landcom 2004)

Appendix 1 Case Studies

Case Study 1

A case study from the South West Rail Link Project (SWRL Stage1) illustrates the need to apply caution and conduct detailed inspections of all areas planned for construction prior to the works being undertaken.

In the case of SWRL Stage 1, ground preparation work commenced in a field with short grass formerly used for grazing cattle. No significant vegetation coverage was identified in the area, and it was not considered as a potential fauna habitat. When an excavator began loosening an old timber fence post for removal, a number of endangered micro-bats flew out. The works ceased and on closer inspection, the fence post was found to be hollow in the centre, allowing just enough room for a group of micro- bats to inhabit.

On another occasion in a similar location, a small Spotted Gum (*Corymbia maculata*) needed to be removed due to safety concerns. An ecologist had previously inspected the area as part of a broader site inspection and the tree was cleared for removal by a qualified arborist. The arborist inspected the tree prior to works commencing, and did not identify any hollows or potential habitat. Whilst the tree was being cut into sections with a chainsaw, a number of micro bats flew out, with a number remaining in the cut sections on the ground.

These bats are registered as 'vulnerable' under the *Threatened Species Conservation Act 1995* and are known to exist in the region. Harming such fauna could attract a fine or possible jail term.

Fortunately, no bats were injured in either scenario, and an ecologist was called for immediate advice and arrived in time to tend to the bats and ensure a successful release. It is clear from these examples that fauna habitats range in size and shape and a precautionary approach should be adopted for all construction work involving contact with elements of the natural and built environment.

Cases such as this demonstrate the benefits of undertaking pre-clearance surveys and registering significant fauna habitats and sightings within key project documents such as ECMs, which should be readily available and placed in visible locations for maximum exposure to all project personnel.



Figure 2 Section of dead tree with hollow centre providing habitat for micro bats (right)

Case Study 2

A case study from the Auburn Stabling Project demonstrates the need for awareness of the potential harm that clearing and pre-construction works can have on native fauna, and the development of appropriate mitigation strategies to manage the risk.

During installation of temporary fencing on the Auburn Stabling Project a dead blue-tongue lizard was found by site staff. Work was halted temporarily and control measures implemented for subsequent works to minimise potential harm to other fauna, including using spotters and undertaking pre-clearance surveys to check areas proposed for clearing. These control measures were communicated to site staff during tool box talks and incorporated into a mitigation strategy in the Safe Work Method Statement.

Despite these control measures another blue-tongue lizard was killed during subsequent vegetation clearing works. An ecologist was immediately engaged to review the control measures and provide advice. Although the ecologist considered that the current processes and control measures were appropriate, work was halted until an updated mitigation strategy for clearance works was developed and communicated to site staff during a tool box talk. The updated strategy involved the following requirements:

- Walk through checking logs, rocks, grass/shrubs, and other debris for lizards:
 - prior to clearing
 - intermittently during clearing.
- Work is to be staged to ensure the vegetation corridors are maintained where feasible to provide cover for animals and avenues for escaping impact.
- Relocate uninjured animals.

The ecologist advised that blue-tongue lizards favoured particular grasses that were to be checked if identified on site:

- Common Wallaby Grass (*Danthonia caespitosa*)
- Kangaroo Grass (*Themeda Australia*)
- Tussock Grass (*Pos labillardieri*)
- Wallaby Grass (*Danthonia tenuior*).

A map of preferred blue-tongue lizard habitat was provided during a toolbox talk, showing areas of Tussock Grass and other native vegetation that had been identified on site.

This case demonstrates the need for:

- obtaining ecological advice with regard to potential fauna habitat at an early stage in the works
- developing appropriate mitigation strategies to avoid or minimise impact to fauna habitat areas

- modifying mitigation strategies where they are not effective in preventing impacts to fauna.