



# Pacific Highway Upgrade: Warrell Creek to Nambucca Heads

APPENDIX I: Fauna Handling and Rescue Procedure  
WC2NH-EN-FF-PRO\_H Fauna Handling and Rescue Rev 0

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### Terms and Abbreviations

<b>AADJV</b>	Arup and Aurecon Design Joint Venture
<b>ACCIONA</b>	ACCIONA Infrastructure Australia Pty Ltd
<b>AFJV</b>	ACCIONA and Ferrovial Joint Venture
<b>AS/NZS</b>	Australian and New Zealand Standard
<b>ASM</b>	Acid Sulfate Materials
<b>ASMMP</b>	Acid Sulfate Materials Management Plan
<b>CEMP</b>	Construction Environmental Management Plan
<b>D&amp;C</b>	Design and Construction
<b>DJV</b>	Design Joint Venture
<b>DoE</b>	Department of Environment (Commonwealth)
<b>EEC</b>	Endangered Ecological Communities
<b>EDMS</b>	Electronic Document Management System (TeamBinder)
<b>ENM</b>	Excavated Natural Materials
<b>EO</b>	Environmental Officer
<b>EPBC</b>	Environmental Protection and Biodiversity Conservation
<b>EPRM</b>	Excavated public road material
<b>EWMS</b>	Environmental Works Method Statement
<b>Ferrovial</b>	Ferrovial Agroman (Australia) Pty Ltd
<b>IMS</b>	Integrated Management System
<b>ISO</b>	International Standards Organisation
<b>KPI</b>	Key Performance Indicator
<b>MCoA</b>	Minister’s Conditions of Approval
<b>MNES</b>	Matters of National Environmental Significance
<b>NSW</b>	New South Wales
<b>O&amp;M</b>	Operations and Maintenance
<b>PCBU</b>	Person Conducting a Business or Undertaking



<b>PMT</b>	Project Management Team
<b>PV</b>	Project Verifier
<b>RMS</b>	Roads and Maritime Services
<b>FFMP</b>	Flora and Fauna Management Sub-plan (CEMP Appendix B2 Flora and Fauna Management Sub Plan)
<b>VENM</b>	Virgin Excavated Natural Materials
<b>WC2NH</b>	Warrell Creek to Nambucca Heads (the Project)

### Definitions

<b>Client</b>	An organisation inviting and receiving tenders and letting contracts. For the purposes of this project - Roads and Maritime Services
<b>Contractor</b>	An organisation that contracts with a client to carry out construction and related services. For the purposes of this Project - ACCIONA Ferrovial Joint Venture.
<b>Deed</b>	D&C Project Deed, IC-DC-C91-1, Pacific Highway Warrell Creek to Nambucca Heads
<b>Design Joint Venture</b>	Joint Venture consisting of Arup and Aurecon
<b>Government Agency</b>	NSW government department, authority, corporation or entity established by an Act of the NSW Parliament
<b>Persons Conducting a Business or Undertaking</b>	Is an employer, corporation, partnership, unincorporated association that has the primary duty of care for workplace health and safety - (AFJV and Contractors are a PCBU)
<b>Principal Contractor</b>	A person conducting a business or undertaking that commissions a construction project. For the purposes of this project - AFJV
<b>Project</b>	The design and construction of the upgrade to the Pacific Highway between Warrell Creek and Nambucca Heads
<b>Project Verifier</b>	For the purpose of the Project, this is Davis Langdon Australia Pty Ltd
<b>Subcontractor</b>	Organisation that contracts with a principal contractor as the client to carry out construction and related services
<b>Supplier</b>	Organisation that contracts with a client to provide a product and / or service.
<b>TeamBinder</b>	The project Electronic Document Management System software
<b>Worker</b>	Is anyone who carries out work for a PCBU and includes: an employee, contractor or sub-contractor or an employee of, labour hire personnel, apprentice or trainee, work experience student

## 1. Introduction

The Warrell Creek to Nambucca Heads Pacific Highway Upgrade project (the WC2NH Project) is being designed and constructed in a joint venture consisting of ACCIONA Infrastructures Pty Ltd (ACCIONA) and Ferrovial Agroman (Australia) Pty Ltd (Ferrovial), in liaison with various other pre-qualified construction contractors, with overall project management and site supervision of the project by Roads and Maritime Services (RMS).

### Project Background

The WC2NH project consists of the detailed design and construction of 19.6 km of new dual carriageway road on the Pacific Highway between the northern end of the existing Allgomer Deviation south of Warrell Creek and the southern end of the Nambucca Heads to Urunga Pacific Highway upgrade project west of Nambucca Heads. The project includes:

- 19.6 km of new divided dual carriageway;
- two grade separated interchanges at Warrell Creek and Bald Hill Road south of Macksville. Roads and Maritime is also investigating the provision of north facing ramps at North Macksville;
- longitudinal bridges across Upper Warrell Creek (including North Coast Railway Line), Williamson Creek, Warrell Creek, Nambucca River floodplain (2 of) and Nambucca River;
- overbridges on Rosewood Road, Albert Drive, Scotts Heads Quarry access road, Bald Hill Road, Old Coast Road South, Mattick Road and Old Coast Road North;
- an underpass at Cockburns Lane;
- local roads and drainage and fauna crossing structures; and
- associated infrastructure.

## 2. Purpose

This procedure explains the actions to be undertaken in the event fauna (including injured, shocked, juvenile or other animal) are discovered on the project site that require handling or rescue during vegetation and soil clearance and ongoing construction activities. Additionally this procedure explains the actions during the dewatering of dams and waterways where fish are present requiring relocation, taking into consideration relocation sites, euthanasia of pest species, logistics, etc.

## 3. Scope

This procedure is applicable to all native and introduced species that are found on the project site. Additionally, if it is suspected that there is the possibility of finding native and introduced aquatic species as the result of dewatering procedures this procedure is applicable.

## 4. Procedure

### 4.1 Non-Aquatic Fauna

If wildlife is discovered on the project site during site construction activities that may harm the animal or pose risk to site personnel, the following steps will be taken.

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1. Stop all work in the vicinity of the fauna and immediately notify project Superintendent who is then to notify the Environmental Manager or Project Ecologist if the latter is present onsite.
2. Preferably allow fauna to leave an area without intervention.
3. Use a licensed fauna ecologist or wildlife carer with specific animal handling experience to carry out any fauna handling.
4. Where necessary, to minimise stress to native fauna and/or remove the risk of further injury before a licensed fauna handler arrives onsite, the Environmental Officer shall:
  - a. Cover larger animals with a towel or blanket and place in a cardboard box and/or hessian bag;
  - b. Place smaller animals in a cotton bag, tied at the top;
  - c. Keep the animal quiet, warm, ventilated and in a dark location away from noisy construction activities; and
  - d. Aquatic fauna to be placed in plastic aquaria or plastic bag with sufficient amount of water. Frogs would be transported without water or debris in recognition of the risk of transporting disease and the minimal transport time.

*Note 1. Some animals require particular handling (e.g. venomous reptiles, raptors) and should only be handled by appropriately qualified personnel i.e. Project Ecologist or FAWNA / WIRES representative(s)*

*Note 2. If handling bats, the handler must be vaccinated against the Australian Bat Lyssavirus (ABL) which is a form of rabies.*

*Note 3. Any frog handling would be undertaken in accordance with the Hygiene Protocol for the Control of Disease in Frogs (DECC 2008). This protocol recommends onsite hygiene precautions be undertaken to minimise the transfer of disease between and within wild frog populations. Measures recommended include:*

- i) Thoroughly cleaning/disinfecting footwear and equipment when moving from one site to another;*
- ii) Where necessary in high risk areas, spraying/flushing vehicle tyres with a disinfecting solution;*
- iii) Cleaning/disinfecting hands between collecting samples/frogs (preference would be given to using bags, rather than bare hands to handle frogs); and*
- iv) Limiting one frog or tadpole to a bag. Bags should not be reused.*

5. If the animal cannot be handled (i.e. venomous reptiles);
  - a. Exclude all personnel from the vicinity with fencing and/or signage; and
  - b. The exact location of the animals is to be recorded and provided to the Project Ecologist or appropriate rescue agency (i.e. FAWNA / WIRES).
6. Call the appropriate rescue agency immediately and follow any advice provided by the agency. Once the rescue agency arrives at the site, they are responsible for the animal. Any decisions regarding the care of the animal will be made by the rescue agency. The relevant fauna rescue services and local veterinary surgeries contact details are as follow:

Agency/business	
<i>Project Ecologist</i>	<i>David Havilah 0407237985</i>
<i>FAWNA / WIRES</i>	<i>WIRES Nambucca and Mid North Coast 6564 8661</i>
<i>RSPCA/Council Depot</i>	<i>Nambucca Shire Council Ranger 6568 2555 or 0417 513 839 (Emergency Only)</i>

<i>Veterinary Services</i>	<i>Macksville Veterinary Clinic, 21 Pacific Highway, North Macksville 6568 1252</i>
<i>Port Macquarie Koala Hospital</i>	<i>02 6584 1522</i>

In the event the rescue service and/or local veterinary service cannot be contacted, the injured animal will be delivered to the relevant agency as soon as practically possible.

7. If the fauna species is identified as a threatened species that is not a species identified in the FFMP, the Environmental Officer or Environmental Manager must:
  - a. Immediately cease all work likely to affect the threatened species;
  - b. The Environmental Manager shall contact the RMS Representative to inform of the situation.
  - c. The Environmental Manger shall then contact the following stakeholders, in this order, to determine the appropriate corrective actions and additional safeguards to be undertaken:
    - i. Project Ecologist 0407237985
    - ii. EPA (131 555)
    - iii. Environmental Representative
    - iv. Others as instructed by the RMS Representative or EPA

The adequacy of existing safeguards are to be reviewed in consultation with the above stakeholders.

8. Environmental Manager to record find in RMS Environmental Incident Report where required following consultation with the RMS Representative. All relevant characteristics of the fauna find should be recorded to the extent practicable (i.e. visual signs of behaviour; habitat; health signs; sex, time date, weather etc).
9. Following consultation with all relevant stakeholders, the Environmental Manager shall implement any corrective actions and additional safeguards.
10. Following confirmation by the Environmental Manager that all appropriate safeguards have been implemented, construction works shall recommence.
  - a) Relocation of fauna along the footprint will be undertaken by the Project Ecologist or wildlife rescuer and will be recorded on the Weekly Environmental Inspection Checklist. If the animal is not injured or stressed, it may be released nearby in an area that is not to be disturbed by the project construction works, in accordance with the following procedures:
  - b) Sites identified as suitable release points by the Project Ecologist or wildlife rescuer;
  - c) Release site will contain similar habitat and occur as close to the original capture location as possible;
  - d) If the species is nocturnal, release will be carried out at dusk; and
  - e) Release would generally not be undertaken during periods of heavy rainfall.

The Project Ecologist will follow the relevant steps detailed below:

1. Surveys will be undertaken in accordance with the two stage clearing process
  - a) During Stage 1 (under-scrubbing and non habitat tree removal) all fauna that can be physically captured during targeted works (i.e. active searches) will be relocated into areas of suitable habitat adjacent to the Project site (i.e. normally adjacent to the clearing footprint). The species, number, sex, age, class and general health of each individual is to be recorded for later reporting. The handling procedures are described below.

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- b) During Stage 2 (habitat tree removal at least 24 hours after Stage 1) all fauna captured will be relocated into areas of suitable habitat adjacent to the Project site. The species, number, sex, age, class and general health of each individual is to be recorded for later reporting. The handling procedures are described below.
2. To minimise stress to native fauna and/or remove the risk of further injury the Project Ecologist shall:
- Cover larger animals with a towel or blanket and place in a cardboard box and/or hessian bag;
  - Place smaller animals in a cotton bag, tied at the top;
  - Place frogs/tadpoles in a plastic bag with a small amount of water and/or vegetation;
  - Fish and other aquatic life (i.e. turtles) place in plastic aquaria or plastic container with sufficient water; and
  - For terrestrial fauna keep the animal in a quiet, warm, ventilated and dark place away from noisy construction activities.
  - For aquatic fauna species ensure sufficient amount of water and ensure adequate aeration;
- Note 1. *Some animals require particular handling (e.g. venomous reptiles, raptors) and should only be handled by appropriately qualified personnel i.e. Project Ecologist or FAWNA / WIRES representative(s)*
- Note 2. *If handling bats, the handler must be vaccinated against the Australian Bat Lyssavirus (ABL) which is a form of rabies.*
- Note 3. *Any frog handling would be undertaken in accordance with the Hygiene Protocol for the Control of Disease in Frogs (DECC 2008).*
3. Habitat trees are to be felled carefully using equipment that allows habitat trees to be lowered to the ground with minimal impact (eg claw extension).
4. In the event an animal is injured the following fauna rescue services and local veterinary surgeries contact details are as follows:

Agency/business	Contact Number
<i>Project Ecologist</i>	<i>David Havilah 0407237985</i>
<i>FAWNA / WIRES</i>	<i>WIRES Nambucca and Mid North Coast 6564 8661</i>
<i>RSPCA/Council Depot</i>	<i>Nambucca Shire Council Ranger 6568 2555 or 0417 513 839 (Emergency Only)</i>
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<i>Port Macquarie Koala Hospital</i>	<i>02 6584 1522</i>

In the event the rescue service and/or local veterinary service cannot be contacted, the most appropriate euthanasia will be administered by the Project Ecologist (i.e. cervical dislocation for small vertebrates, ice slurry for introduced fish). This is to occur in accordance with applicable guidelines and legislative requirements.



5. If the fauna species is identified as a threatened species that is not a species identified in the FFMP, notify the Environmental Officer or Environmental Manager who then must:
  - a) Immediately cease all work likely to affect the threatened species;
  - b) The Environmental Manager shall contact the RMS Representative to inform of the situation.
  - c) The Environmental Manger shall then contact the following stakeholders, to determine the appropriate corrective actions and additional safeguards to be undertaken:
    - i. EPA (131 555)
    - ii. Environmental Representative
    - iii. Others as instructed by RMS Representative or EPA
  - d) Environmental Manager to record find in RMS Environmental Incident Report
  - e) Following consultation with all relevant stakeholders, the Environmental Manager shall implement any corrective actions and additional safeguards.
  - f) Following confirmation by the Environmental Manager that all appropriate safeguards have been implemented, construction works shall recommence.
  
6. Relocation of fauna captured during the clearing and associated works will generally take place in areas of suitable habitat immediately adjacent to the Project site taking into account:
  - a) The release site contains similar habitat and occurs as close to the original area as possible;
  - b) If the species is nocturnal, release will normally be carried out at dusk;
  - c) Release would generally not be undertaken during periods of heavy rainfall expect for aquatic fauna; and
  - d) Non-native fauna will not be translocated and will be euthanised.

If the animal has been placed into care due to injury, age (i.e. young) or stress, upon its rehabilitation it will be released in an area that is not to be disturbed by the project construction works, at the discretion of the project ecologist taking the above into account. The Project Ecologist will record and provide the capture and relocation data in the post clearing report.

#### 4.2 Aquatic Fauna

During the project it may be necessary to relocate aquatic fauna, in particular as a result of the dewatering of dams and sections of waterways with aquatic fauna present. In general to avoid the spread of diseases as well as plant and fish pest species should take place downstream and within the same catchment relative to the rescue point. A risk assessment should be conducted before the relocation of fish from an “offline” waterbody (not located in natural drainage system e.g. turkey nest dams) into a natural system as there is a heightened risk of disease and pest spread.

A permit is required to take prohibited size or protected fish, capture fish using non recreational fishing equipment or exceed bag limits under *Fisheries Management Act 1994* Section 37. Obtaining this permit from NSW DPI should be prioritised as the permit processing may take some time. If possibility exists as a result of activity to require relocation of Threatened fish species an assessment, as well as Species Impact Statement should be prepared if assessment indicates that there is likely to be an impact on the species (*Fisheries Management Act 1994*). Inclusion of these potential Threatened species should occur as part of the permit, which include a defence to take Threatened fish.

Commonwealth Department of Sustainability, Environment, Water, Population and Communities (DSEWPAC) should be consulted if any nationally listed Threatened species are present at the relocation or receiving site. Water removal to a lower pool or river bank works may require a permit from the Office of Water (NOW).

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### Logistical factors

- Access to site for machinery
- Ensure access for staff to safely capture fish and relocate
- Size of waterbody – how much water/ approximate volume required for treatment in sediment basins. Water quality testing will be used to inform the water that is able to be released downstream if any, at some point of pumping suspended sediment levels will indicate when water will need to be treated prior to release
- Ecologist to establish the presence or absence as well as the abundance of native and pest fish as well as assessing the aquatic weeds present if any. Ecologist also will ascertain if there is suitable habitat for native fish to be relocated to and how many fish the relocation site would be able to support if any.
- Landholder should be consulted to ascertain if fish are present in the waterbody through stocking or otherwise
- Suitable disposal site should be identified for euthanized fish (usually landfill)
- Record kept of number and species of fish released as well as the number and species euthanised. NSW DPI permit requires this

### Methodology for relocation

1. Siphon or pump the waterbody to a level to allow fish to be removed using environets or a combination of electro fishing and netting. Adequate meshing utilized on pump sumps to prevent ingress of aquatic species.
2. Divide fish into pest/non endemic fish for euthanasia in an ice slurry. Fish to be released are put into tubs of water and moved into aerated transport tank as soon as possible and taken to the release location(s) and released into areas selected by the ecologist from the assessment. Monitor
3. Following relocation visual check should be conducted downstream for any injured or dead/dying fish which will then be removed. Habitat pools selected should also be visually inspected.

### Equipment required

- Permit from NSW DPI. This should be given primary importance as the permit may take some time to obtain
- Pumps, pump sump screen/ syphons as required for the waterbody size
- Light Vehicle with: transport tank, aerators, O2 bottle, regulator, airline and airstones
- Sediment basin for treatment of unsuitable water
- Tubs and ice for euthanising pest/non-endemic species
- Environets for capturing fish
- Tubs to move fish from waterbody to transport vehicle

### Checklist

Ensure the following aspects are considered prior to translocating aquatic fauna:

- What are the consequences of doing nothing?
- Does the expenditure justify the effort?
- Are the fish Threatened species?
- What are the community expectations?
- Can you physically and safely access the site with the appropriate equipment to capture the fish?
- Is a suitable relocation site available? Is it close by? Does it have same genetics, diseases, pests etc as the waterbody the fish are sourced from?
- What impact will the relocated fish have on populations at the relocation site? Will there be increased predation, competition for habitat, genetic impacts, or limited food availability?
- It is important to avoid translocating non-endemic species.
- Are any diseases known to be present or are the fish in an area known to be affected by a particular disease?

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- Are there any pest or translocation implications?
- Are pest fish likely to be encountered and in what quantities? Euthanasia will be required for pest fish and a suitable disposal site will be required. Dewatering may involve euthanasing large quantities of pest or non endemic fish and transport and disposal of them at an approved location.
- What time constraints are there and can you work within them?
- Can you manage water appropriately while conducting the works?(ersed, where does it go, is the water owned by irrigators, landholders etc, is the water discharge covered by an EPA EPL.
- What resources are required?
- Have you prepared a safe work method statement?
- Do you have land owners permission to conduct works?
- Have you obtained all legislative requirements?
- Are any diseases known to be present or are the fish in an area known to be affected by a particular disease?
- Will you need to treat water prior to release via sediment basins to prevent pollution of waters? Consult EPA to establish what if any water treatment will be required and if any licence is required.

The above information is to be included in a Site Specific EWMS for the translocation.

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