Wildlife CSI

Wildlife Conservation Services International Pty Ltd

FAUNA MANAGEMENT PROTOCOL

PYRENEES HIGHWAY (SEC 2) SSRIP PROJECT, ROAD CHAINAGE 10-15KM

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Introduction

This Fauna Management Protocol has been prepared to manage and salvage any native fauna that may be impacted on by road safety improvement works on the Pyrenees Highway (Sec 2), chainage 10-15 km, Green Gully, Victoria, as recommended by Ecolinks Consulting (Biodiversity Assessment Pyrenees Highway, Green Gully report, August 2016).

In addition to the general fauna management protocol, management protocols have been prepared for two threatened species; Swift Parrot (EPBC Act & FFG Act) and the Brush-tailed Phascogale (FFG Act) (Appendix 3). As detailed in the Ecolinks (August 2016) *Biodiversity Assessment, Pyrenees Highway, Green Gully* report for VicRoads.

Fauna species identification data sheets are provided for the following threatened species, the Swift Parrot, Brush-tailed Phascogale and the Brown Treecreeper (FFG Act - Victorian Temperate Woodland Bird Community) in Appendix 4.

General

1. All native fauna in Victoria is protected by law (the Wildlife Act 1975). Permits and authorisations are required to handle and manage native fauna. Only qualified, experienced and authorised personnel are to handle and relocate native fauna.

2. A Wildlife Management Authorisation (see Appendix 1) is required from the Department of Environment, Land, Water and Planning (DELWP) to capture and relocate fauna affected by habitat removal works.

3. A qualified, experienced and authorised Zoologist/Wildlife Specialist should be engaged under this protocol.

Pre Construction

4. Contractor induction must be provided (see Appendix 2) and is to include this protocol and those outlined in Appendix 3 and other fauna management issues and obligations under the Wildlife Act and/or as required by DELWP, to not interfere with or harm fauna.

5. Artificial Hollows or nest boxes are to be considered and installed as an offset to the loss of natural hollows due to any hollow-bearing tree removal. Nest boxes should be installed at least 3 metres from ground level and entrance holes generally facing east (avoiding cold and hot weather from the south, west and north).

6. The following types of nest boxes are available Sugar Glider/Tuan, Common Brushtail Possum, Common Ringtail Possum, Feathertail Glider, Antechinus, insectivorous bat, Kookaburra, Duck, Owl, Parrot and pardalote.

During Construction (eg vegetation removal, earthworks)

7. The Zoologist/Wildlife Specialist is to be on site during the construction and the removal of vegetation and to inspect trees and ground litter/vegetation for fauna that may need to be relocated.

8. All possible options should be explored to successfully relocate fauna affected by the works.

9. All fauna requiring to be relocated will be relocated into adjacent suitable habitat as close as practical to the point of capture. Usually this is within 50 meters of the capture location, but no more than 100 meters unless authorised by the DELWP.

10. Depending on the fauna encountered and/or during construction or vegetation removal when fauna may become evident, the Zoologist/Wildlife Specialist will determine if capture and relocation is warranted, based on the best interests (animal welfare interests) of the animal concerned.

11. For any threatened species that are encountered, advice from the DELWP should be sought prior to relocation. Works may need to cease, pending advice from DELWP.

12. If the Zoologist/Wildlife Specialist determines that construction or tree removal is to cease so that fauna may be safely captured and relocated, the Zoologist/Wildlife Specialist is to liaise with the site manager and/or the appropriate contractor(s).

13. If elevated platforms are to be used to cut down trees, it is advised that the Zoologist/Wildlife Specialist inspect the hollows for fauna from the platform prior to removal. If fauna is resident in the hollow, follow step 16.

14. Once a tree or section of tree of interest is on the ground, Zoologist/Wildlife Specialist should inspect hollows, loose bark, fissures and nests for fauna.

15. Fauna is to be captured by the Zoologist/Wildlife Specialist either by hand, nets, capture poles, capture bags, blankets or towels. Captured fauna must immediately be covered and/or placed into a suitable container, to reduce stress and the risk of escape.

16. Fauna in hollows should be extracted by hand from the hollow. This may require cutting the entrance of the hollow with a chainsaw. Extreme care is advised. A portable inspection camera may be useful to see where the animal is in the hollow. If a chainsaw must be used to increase the entrance size, it is strongly recommended that a suitable plug (for example, several scrunched-up cloth capture bags or towels), be placed between the animal and the chainsaw. Care must be taken not to injure the animal during the extraction process. Firm but gentle pressure should be applied, to encourage the animal from the

hollow. The use of an inverted cloth capture bag is recommended if appropriate to the circumstance, so that when the animal is extracted, the bag can be pulled over the animal immediately.

17. Captured arboreal mammals should be placed into cloth capture bags.

18. If frogs are encountered and need to be translocated, they require specific attention to avoid disease transmission. The following hygiene protocol applies:

    a. Gloves (nitrile) should be worn at all times when handling frogs.
    b. Gloves need to be changed for each frog handled.
    c. Each frog must be housed individually in plastic zip lock bags.
    d. No plastic bag is to be re-used and must be disposed of after a single use.

    Bagged frogs must be kept in a cool quiet location and released into suitable habitat at the earliest opportunity.

19. Arboreal mammals captured are to be released into a suitable hollow or nest box within the identified release location as soon as is practical after capture.

20. If nocturnal fauna is required to be kept during the day, they will be kept in either standard pet carrying cages or ventilated cardboard/plastic animal boxes, or cloth capture bags. Captive fauna will be kept in cool and shaded conditions. Water will be provided if necessary. Zoologist/Wildlife Specialist is to regularly monitor captive fauna.

21. Reptiles and Frogs captured can be relocated as soon as is practical to the nearest suitable habitat for the species within the identified release site.

22. Snakes can only be captured by an experienced Zoologist/Wildlife Specialist or licensed snake handlers. All snakes are protected and are not to be harmed or interfered with. Any snakes disturbed by the development should only be captured and relocated if they present a potential threat to construction personnel or are likely to be harmed by the works. In most cases, snakes will attempt to move away from a disturbed area.

23. In the event that juvenile fauna is displaced and cannot be re-united with its parent(s), orphaned fauna must be deposited with an authorised wildlife shelter within the region for hand rearing.

24. In the event that fauna is injured during construction, the removal of trees, or during hand capture, the animal should initially be assessed and first aid rendered by experienced Zoologist/Wildlife Specialist and subsequently taken to a Veterinarian for further assessment and treatment and if necessary euthanasia. The DELWP must be advised of any euthanized wildlife should they wish to obtain the body.

25. After consultation with the veterinarian, injured fauna that requires recuperation and thus is unable to be immediately released must be deposited with an authorised wildlife shelter. Upon successful recuperation and rehabilitation, the animal is to be released into suitable habitat as close as is practical to the point of original capture.

26. Fauna killed by the works must be collected and offered to the Museum of Victoria and the DELWP notified.

27. At all times, the welfare of individual animals must be of utmost concern to all involved in this protocol.

28. All fauna observed, captured, relocated, injured or killed during the development must be recorded by the Zoologist/Wildlife Specialist. This data is to be supplied to the DELWP Wildlife Atlas Database by the consultant Zoologist/Wildlife Specialist.

Earthworks

29. The Zoologist/Wildlife Specialist is to inspect the site for vertebrates (and in some cases threatened invertebrates) on the day of earthworks. Vertebrates (and threatened invertebrates) that are encountered and in danger from the earthworks should be captured and translocated.

30. The Zoologist/Wildlife Specialist should observe the initial excavation/clearing of soil for vertebrates (and in some cases threatened invertebrates). If vertebrates (or threatened invertebrates) are encountered, the Zoologist/Wildlife Specialist should signal the plant operator to stop so that the animal can be captured and translocated.

Fauna Translocation

31. Fauna encountered during development works may require to be captured and translocated to a safe area. Translocated fauna does best if it is translocated within the individuals' home range and habitat. Thus if possible, translocation of fauna affected by the works should be adjacent to the capture point where practical, or say within 50 meters of the capture point, but no more than 100 meters from the capture point, unless authorised by the DELWP.

32. Fauna translocation can pose an issue with regards to the transmission of disease from one population to another. Disease transmission may not be an issue as long as the translocation distances are not significant and are likely to be within the same general population of a species. For frogs, hygiene protocols as outlined in 18 above are to be followed.

33. The method for translocation will depend on the species captured. *Table 1* lists the general recommended translocation methods for the potential animal groups that may be encountered. Depending on the species that may be encountered, particularly threatened species, more specific protocols may need

to be developed. The capture and translocation of larger vertebrate species such as koalas, macropods, and wombats and threatened invertebrates may require specific protocols and are not covered here.

Table 1: Translocation methods for fauna captured during development projects.

Animal Group	Time for release	Method
Frogs	As soon as practical after capture, during day light.	Translocate frogs into the same habitat type/structure as close as is practical to the point of capture. Release frogs into or near some form of cover to reduce the risk of predation. Ensure the frog moves off, is able to hide and appears to be safe from potential predators.
Reptiles	As soon as practical after capture, during day light.	Translocate reptiles into the same habitat type/structure as close as is practical to the point of capture. Release reptiles into or near some form of cover to reduce the risk of predation. Ensure the reptile moves off, is able to hide and appears to be safe from potential predators.
Birds	As soon as practical after capture, during day light.	Adult birds are unlikely to be directly impacted by the works. However, nestlings may be impacted directly by nest destruction/disturbance. As nestlings are still dependant, they will need to be reunited or of this is not possible, retained for hand rearing.
Mammals		
Echidna	As soon as practical after capture, during day light.	Hand capture and move to the translocation site and release. The Echidna is likely to "dig in". Observe the animal from a distance to ensure it moves off freely and away from any roads.
Tuan, gliders & Possums	As soon as practical after capture, during day light.	Translocate and release into installed artificial hollows (nest boxes). Two release methods can be used. 1. Place a temporary cover over the nest box entrance hole; undo capture bag; place capture bag and animal into nest box; slowly remove the capture bag from nest box; install nest box with animal in suitable tree; remove temporary cover over entrance hole. 2. With the animal in the capture bag, expose the nose and direct the animal into the entrance hole. This simulates the animal entering a hollow as it would normally. Once the nose is within the entrance, the rest of the capture bag can slowly be exposed. Animals will usually enter the box freely.

Post Construction

34. If practical, suitable woody debris (identified by experienced zoologist/Wildlife Specialist) should be retained to increase habitat diversity within the area. The woody debris should be placed to avoid disturbance or damage to other habitat features.

35. A fauna monitoring program for fauna translocated may be required.

Other Considerations

36. The use and parking of heavy plant and equipment should be restricted to within the Project boundary or cleared areas where possible, so as not to disturb ground vegetation and fauna. All plant and equipment should be clean to avoid the spread of weeds.

APPENDIX 1: Wildlife Management Authorisation

All wildlife in Victoria is protected under the Wildlife Act 1975. The capture and translocation of fauna associated with major road or land development projects requires a permit from the Department Environment, Land, Water and Planning (DELWP). This permit is known as a Wildlife Management Authorisation.

Wildlife Management Authorisations are issued to individuals pursuant to the provisions of the Wildlife Act 1975. They generally give permission to "…*live capture and relocate native fauna … to the nearest remnant habitat suitable for that species* …". There are usually several standard and perhaps specific conditions that will also need to be adhered to. These generally include the following:

- To notify the relevant regional Flora and Fauna Officer of DELWP prior to any relocation activities.
- Any traps used must be labelled with the permit number.
- Any threatened species encountered must be notified to DELWP.
- Within 30 days of the expiration of the permit, fauna data must be submitted to DELWP for incorporation into the Atlas of Victorian Wildlife.

APPENDIX 2: Induction for personnel involved in land development activities

To reduce the impact on fauna as a result of the proposed works a fauna monitoring, salvage and relocation plan (the **Fauna Management Plan**) has been prepared.

The following points are relevant to personnel involved in the construction works:

1. All native fauna in Victoria is protected by law (the Wildlife Act1975). Permits and authorisations are required to handle and manage native fauna. Only qualified, experienced and authorised personnel are to handle and relocate native fauna.

2. A qualified, experienced and authorised Zoologist/Wildlife Specialist will be engaged for this project to deal with affected fauna.

3. Depending on the fauna encountered and/or during vegetation removal when fauna may become evident, the Zoologist/ Wildlife Specialist will determine if capture and relocation is warranted, based on the best interests (animal welfare interests) of the animal concerned.

4. If the Zoologist/Wildlife Specialists determine that work is to cease so that fauna may be captured and relocated, the Zoologist/Wildlife Specialists will liaise with the site manager and/or the appropriate contractor(s).

5. If elevated platforms are to be used to cut down trees, it is advised that the Zoologist/Wildlife Specialist inspect the hollows for fauna from the platform prior to removal.

6. Once a tree or vegetation of interest is on the ground, the Zoologist/Wildlife Specialists will inspect hollows, loose bark, fissures and nests for fauna.

7. Snakes can only be captured by the Zoologist/Wildlife Specialist or licensed handlers. All snakes are protected and are not to be harmed or interfered with. Any snake disturbed by the clearing should only be captured and relocated if they present a potential threat to construction personnel or are likely to be harmed by the works. In most cases, snakes will attempt to move away from a disturbed area.

8. At all times, the welfare of individual animals must be of utmost concern to all involved in this project.

9. All fauna observed, injured or killed during the vegetation removal and other works must be reported to the Zoologist/Wildlife Specialist and recorded.

10. If practical, suitable woody debris (identified by experienced zoologist/Wildlife Specialist) should be retained to increase habitat diversity within the area is possible and practical. The woody debris should be placed to avoid disturbance or damage to other habitat features.

11. The use and parking of heavy plant and equipment should be restricted to within the Project boundary or cleared areas where possible, so as not to disturb ground vegetation and fauna. All plant and equipment should be clean to avoid the spread of weeds.

12. Specific protocols for two threatened species, the Swift Parrot and the Brush-tailed Phascogale have been prepared. Fauna Data Sheets for these species are provided to contractors for information, including for the Brown Treecreeper. If these species in particular are encountered by contractors they must be reported to the site supervisor, Vic Roads or the on-site zoologist.

APPENDIX 3:

SWIFT PARROT AND BRUSH-TAILED PHASCOGALE FAUNA MANAGEMENT PROTOCOL

PRE-WORKS, TREE REMOVAL AND CONSTRUCTION PHASE

SWIFT PARROT

If tree works are proposed to occur during the period when Swift Parrots are in Victoria (March - September), then the following measures must be implemented with regard to the Project area:

1. Undertake a pre-start inspection of the study area with a qualified zoologist to determine if:
    a. Eucalypts within and directly adjoining the project area are flowering (nectar/food source present);
    b. Swift Parrots are utilising the project area and/or areas directly adjoining the Project area in liaison with the DELWP;
    c. Eucalypts are not flowering and Swift parrots are not present proceed to 2 or proceed to 3 if Eucalypts are flowering and Swift parrots are present.
2. If Eucalypts are not flowering and Swift parrots are not present, works can proceed subject to the following:
    d. Daily pre-start checks are undertaken by a qualified zoologist to monitor the Project area and works to confirm presence / absence of the Swift Parrot;
    e. If daily pre-start checks confirm that Swift Parrots are present and utilising parts of the project area then follow mitigation options 3 f, g and h must be followed
3. If Eucalypts are flowering and Swift parrots are present, works can proceed with caution subject to the following:
    f. Undertake daily pre-start checks with a qualified zoologist, if Swift Parrots are present and foraging on trees proposed for removal / or are sighted in a section of Project area, then follow g and h;
    g. Commence works within another part of the project area where Swift Parrots are not foraging / present, provide a minimum buffer of 200m - 300m from sighted Swift Parrot location;
    h. Zoologist to monitor Swift parrot activity with regard to the operation of works over the course of the works period and tree removal works in the project area. If it is determined that works are impacting on Swift Parrot foraging then consider either increasing the works area buffer and / or shifting works to another section of

the project area. This would include liaison with the DELWP as required.

If tree works are proposed to occur during outside of the period when Swift Parrots are in Victoria, then works can proceed in accordance with the normal operational requirements of this Fauna Management Plan/Protocol.

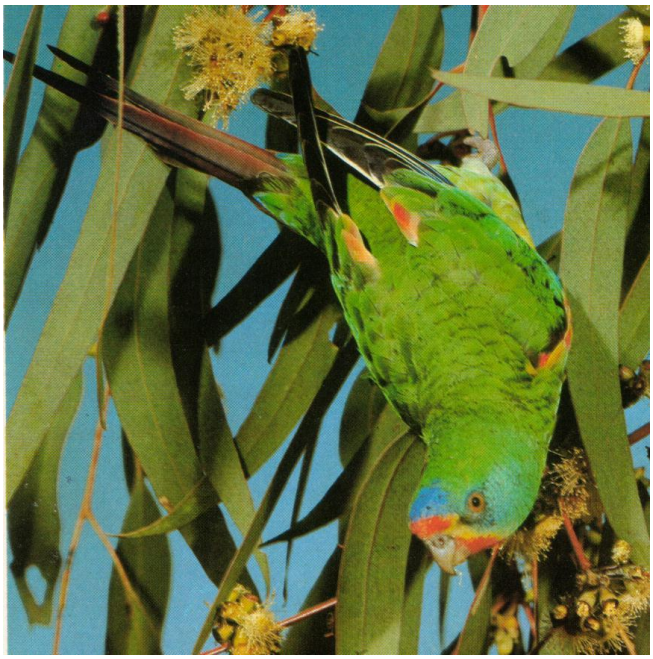
BRUSH-TAILDED PHASCOGALE

Undertake the following with regard to minimising impacts to Brush-tailed Phascogale in relation to the nine identified hollow bearing trees within the project area with a qualified zoologist as follows:

1. During the breeding season, a qualified zoologist to undertake a pre-start inspection of the tree(s) proposed to be removed. If being used for breeding purposes - tree is to be retained until finish of breeding season and/or tree has been vacated and re-checked as part of this Fauna Management Plan/protocol prior to removal works occurring. Liaise with DELWP as required; and
2. If during breeding season, tree is not being utilised for breeding purposes - remove the tree in accordance with a Fauna Management Plan/Protocol.
3. Non-breeding season, check trees and manage tree removal works in accordance with this Fauna Management Plan/protocol.

APPENDIX 4:

Species data sheet: SWIFT PARROT



Description

A medium sized bird, up to 245 mm. Generally green. The face is red with yellow margins and the crown is blue. Shoulders and underwing coverts are red. Central tail feathers dull brown-red tipped with blue.

Habitat

Swift Parrots migrate to Victoria in Autumn from their breeding sites in Tasmania. In Victoria they mainly occur in box-ironbark forests, particularly where Red Ironbark is well represented. They feed on winter flowering plants, particularly Grey Box, Red Ironbark, Yellow Gum, White Box and Mugga Ironbark (far north-east Victoria). As the parrots arrive, the Grey Box is in flower.

Diet

Nectar of eucalypts; sugary exudates from insects.

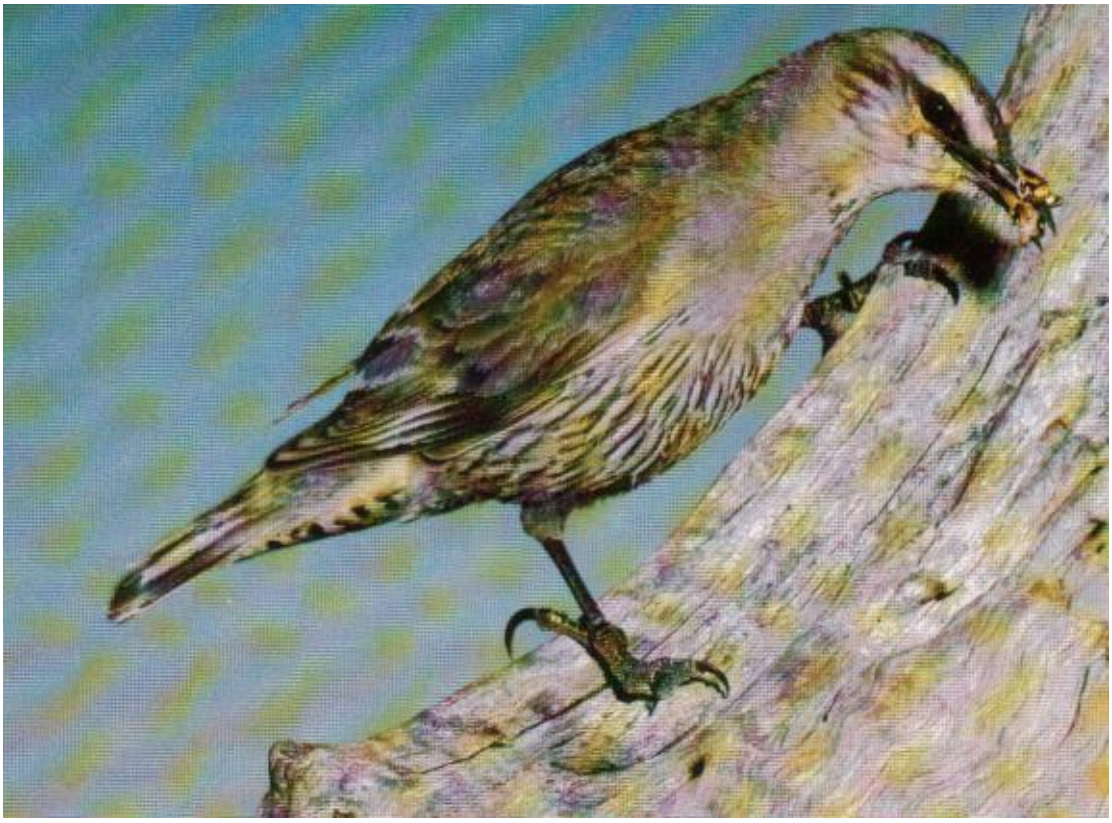
Breeding

Breeds late September to early January in Tasmania.

Conservation

Federally listed under the EPBC Act as Endangered; threatened species listed under the Victorian FFG Act; in Vic it is Endangered.

Species data sheet: BROWN TREECREEPER



Identification

Males and females similar. Grey-brown above, tending to grey on crown; pale buff eyebrow line; breast and belly streaked dull white and dark brown; eye dark brown; bill black; legs dark. Size: 150-185mm.

Habitat

Lowland dry woodlands and wooded farmlands, particularly those dominated by River Red Gum or Yellow Gum in northern Victoria. They probe for insects on tree trunks as well as the ground litter layer.

Nesting

They use hollows for nests. They breed between August and January.

Conservation

The Brown Treecreeper belongs to a community of bird species, the Victorian Temperate-woodland Bird Community. This community has been classified as threatened under the *Flora and Fauna Guarantee Act 1988*.

Species data sheet: Brush-tailed Phascogale or Tuan

Description

A carnivorous marsupial, with grey fur with a black bushy tail. It has a pointed snout. Head body length: 180-230mm Males, 160-190mm Females; Tail length: 175-220mm Males, 170-210mm females; Weight: 175-235g Males, 110-190g Females.

Habitat

Dry forest and woodland, especially box ironbark and stringybark forests. Tree hollows are required for den sites. Preferred hollows are small, approximately 30-40mm in diameter.

Diet

Insects primarily, but can also take baby birds.

Breeding

Births occur in June, July, August

Conservation

The Tuan is a Threatened Species in Victoria and considered Vulnerable. It is also a listed threatened species on the Flora and Fauna Guarantee Act.