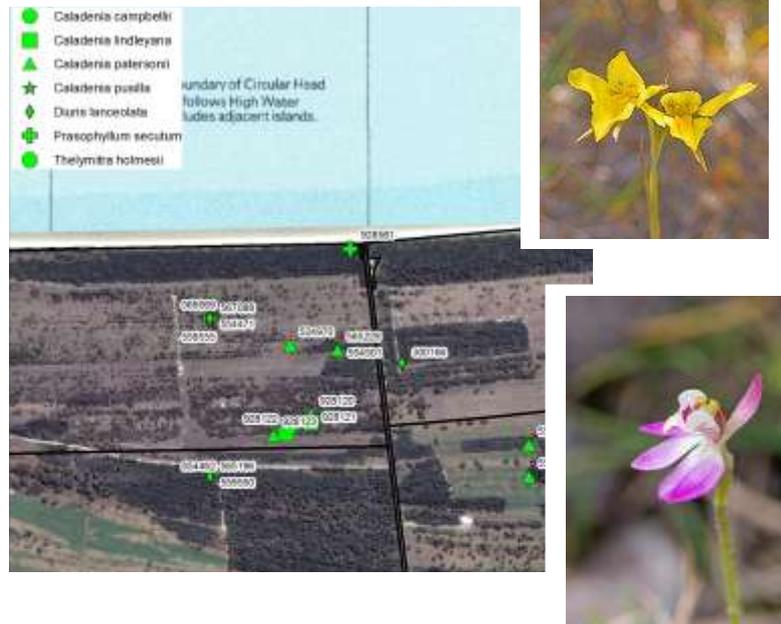


Procedures for the management of threatened species under the forest practices system: Report on implementation during 2015–16



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Report to the Board of the FPA and the Secretary of DPIPW E

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Front page photograph: Locations of threatened plants in a proposed clearance and conversion coupe in the north of the state. Following the agreed procedures the Forest Practices Officer identified both a threatened vegetation community and threatened plants at risk from this proposed operation, during the biodiversity evaluation process.

Citation

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Summary

- The *Agreed procedures* are the mechanism by which the requirements for the management of threatened species under s. 51 (3) of the *Threatened Species Protection Act 1995* are delivered through the Tasmanian forest practices system. Clause 9 of the *Agreed procedures* requires an annual report of implementation of the *Agreed procedures*. This report covers the 2015–16 period.
- DPIPWE submitted eight draft listing statements to the Threatened Species Scientific Advisory Committee (SAC) in 2015–16. Locality data and species management advice delivered via the Natural Values Atlas and the Threatened Species Link were maintained.
- FPA and DPIPWE collaborated on the completion of three Technical Notes designed to clarify habitat descriptions for threatened species and the management recommendations delivered by the 2014 Threatened Fauna Adviser.
- FPA staff and consultants continued to work on the Threatened Plant Adviser (TPA) in 2015–16. Updated habitat descriptions for all threatened flora species were released on the FPA website in June 2016.
- FPA ran field days on the identification and management of habitat for the masked owl and workshops on ‘risk assessments’ for threatened species.
- FPA and DPIPWE maintained existing planning tools, including minor updates to clarify habitat descriptions and range boundaries.
- FPA provided advice on management actions for threatened species for 135 notifications of proposed FPPs in 2015–16. The majority of advice requests were for the management of habitat for the grey goshawk, wedge-tailed eagle, spotted-tailed quoll, Tasmanian devil, masked owl, eastern quoll and eastern barred bandicoot. A third related to clearance and conversion proposals, mainly for agricultural developments.
- Four proposed FPPs for clearance and conversion operations were formally referred to the Policy and Conservation Advice Branch, DPIPWE in 2015–16.
- Of the 32 investigations that were completed by the FPA compliance program in 2015–16, three related to a threatened species.
- A report on compliance with strategic management recommendations for threatened fauna species on a PTPZL block in the north-west of Tasmania, Christmas Hills forest block was provided by Forestry Tasmania, Forest Management Services, Conservation Branch (Forestry Tasmania, 2016).
- DPIPWE and FPA have been involved in 14 research and ‘effectiveness’ monitoring projects (including student projects) in 2015–16 that relate to threatened species management (e.g. wedge-tailed eagle nest management, use of plantations by Tasmanian devils and spotted-tailed quolls, threatened butterflies, swift parrots) in areas covered by the forest practices system. These studies provide information that can be used to assess the effectiveness of the threatened species management recommendations. The reports and publications from these studies are available via the FPA website.
- Staff from the TSS and broader DPIPWE also undertook ‘trend monitoring’ of habitat and/or populations for the following RFA priority species in 2015–16: Tasmanian devil, orange-bellied parrot and a number of threatened flora species. TSS staff also volunteered spare time to carry out or assist other organisations (e.g., NRM groups) with monitoring of over 70 species (19 nationally listed, 69 state listed).

Background

The [Agreed procedures for the management of threatened species under the forest practices system](#) ('Agreed procedures') are the mechanism by which the requirements for the management of threatened species under Section 51 (3) of the *Threatened Species Protection Act 1995* and the *Forest Practices Code* are delivered through the Tasmanian forest practices system (Section D3.3 of the *Forest Practices Code*). These *Agreed procedures* were introduced in 2000 and incorporated into the *Forest Practices Code (2000)*. They were revised by DPIPWE and the FPA in 2010 and again in 2014 to be consistent with changes to legislation and policy.

Clause 9 of the *Agreed procedures* requires an annual report of implementation of the *Agreed procedures*. Previous reports cover the 2011–12, 2012–13, 2013–14 and 2014–15 financial years. This document provides a summary of the activities that relate to each clause in Part A of the *Agreed procedures* for 2015–16. It contributes to meeting recommendation 16 of the second five-yearly review of progress with implementation of the Tasmanian Regional Forest Agreement (RFA).



DPIPWE and FPA staff discuss threatened species management issues on a field visit with FPO, Terry Ware (Photo: Sarah Munks)

Report on implementation

(A) Roles and responsibilities

1 Joint roles and responsibilities of the FPA and DPIPWE

- a. *The Forest Practices Authority (FPA) and the Department of Primary Industries, Parks, Water and Environment (DPIPWE) will cooperate on the development of procedures, tools, objectives, endorsed management prescriptions and training for the management of threatened species within forests and/or threatened non-forest vegetation types at both the strategic (landscape) level and at the operational (forest practices plan) level.*
- Transition to the revised versions of the main planning tools (Threatened Fauna Adviser (TFA) and Biodiversity Values Database (BVD)) released in March 2014 ended on 30/6/14. These revised version were used consistently by planners developing Forest Practices Plans during 2015–16.
 - FPA Biodiversity Program staff and staff from the Threatened Species Section (TSS) of DPIPWE continued to collaborate on the clarification of the recommended actions delivered through the TFA in response to feedback from planners.
 - The project steering committee established in 2014–15, for the ongoing maintenance of shared planning tools used in the management of threatened species in areas covered by the forest practices system, met at bi-monthly intervals throughout 2015–16. Topics relating to the revision of range boundaries and habitat descriptions for threatened species delivered through the Natural Values Atlas and the FPA's Biodiversity Values Database (BVD) were discussed throughout the year as well as proposed minor modifications to the TFA pathways and management recommendations.
 - Species range boundaries and habitat descriptions delivered through the BVD continued to be updated by the FPA, as advised by DPIPWE, as new information became available. Any updates made were recorded in a FPA database for compliance purposes. Edits were made to habitat descriptions or range boundaries for the tussock skink, masked owl, 40 spotted pardalote, Weldborough forest weevil, Tasmanian devil, striped marsh frog, Ptunarra brown butterfly, Miena jewel beetle, glossy grass skink, dwarf galaxiid and the burrowing crayfish. Threatened flora habitat descriptions were developed by the FPA, with input from DPIPWE, and added to the BVD in 2015–16.
 - Any feedback or suggestions for improvements received by planners, in relation to the TFA, were considered by the project steering committee, to ensure that any proposed changes were justified and consistent with the procedures agreed between DPIPWE and FPA. Updates were recorded in a FPA database for compliance purposes. Minor modifications to decision pathways and recommended actions were made for eagles, giant freshwater crayfish, glossy grass skink, grey goshawk, southern sandstone cave cricket, spotted tailed quoll, Tasmanian devil and tussock skink.
 - The 'absent' nest data (216 nests) on the Natural Values Atlas (NVA) was found to be incorrect, potentially misleading planners, in 2015–16. The information available for 176 nests have now been reviewed by FPA and DPIPWE specialists and their status confirmed as either 'absent' or 'present'. The remaining 40 will be reviewed in 2016–17. NVA rules for entering absent nest data have been developed by NVA staff, with input from FPA and FT specialists.

- The FPA sought formal advice from the Conservation Assessment Section of DPIPWE throughout the year on four FPPs that were likely to lead to the certification of an FPP where the proposed management approach (duty of care threshold under the Code and any negotiated voluntary contribution) was not consistent with the DPIPWE/FPA-endorsed recommended actions for a particular species, delivered through the TFA 2014, or where endorsed recommendation actions did not exist (i.e. threatened orchids). All were proposals to clear and convert threatened vegetation communities and threatened species potential habitat or known localities, for agricultural (or other) development on private land. The species of concern included the masked owl, grey goshawk, threatened orchid species, wedge-tailed eagle and central north burrowing crayfish.
 - FPA staff continued work on the development of a Threatened Plant Adviser (TPA) in 2015–16, with the project team working on updating threatened flora habitat descriptions, survey guidelines and developing draft management recommendations for threatened flora species. Updated habitat descriptions for all threatened flora species were released on the FPA website in June 2016 (see publications), and the aim is to complete a draft TPA in 2016–17. The project is governed by an FPA and DPIPWE project steering committee and the information produced by the project team will be reviewed by a Scientific Reference Group and a Stakeholder Reference Group in 2016–17.
- b. *The FPA and the DPIPWE will liaise on any cases that may lead to applications under Part 5 (Conservation Covenants) of the Nature Conservation Act 2002 relating to the refusal or amendment of applications for FPPs for the purpose of protecting a threatened species. Where such cases proceed to a tribunal, the FPA and DPIPWE will cooperate in providing evidence to the tribunal.*
- The FPA and DPIPWE liaised on four cases in 2015–16, involving clearance and conversion of both threatened species known localities and habitat, and threatened vegetation communities. In the first two cases the Secretary of DPIPWE advised that the proposed duty of care threshold and the landowners voluntary contribution were considered to be making a reasonable contribution to the conservation of the species (and threatened vegetation community), in the context of the broader management framework of the species and consistent with the objectives of the *Threatened Species Protection Act 1995* and the *Nature Conservation Act 2002*. In the third case, the Secretary of DPIPWE advised that the proposed duty of care threshold was insufficient and recommended a suitable offset be put forward by the landowner to reduce the impact of the proposed development on the threatened species and threatened vegetation community. In the fourth case, the Secretary of DPIPWE advised that the proposed duty of care threshold was insufficient and supported the FPA's recommendation for further retention to reduce the impacts of the proposed development on the threatened species and threatened vegetation community.

There were no tribunal cases in 2015–16.

2 Primary roles and responsibilities of DPIPWE

a. *Developing strategic plans and other strategic instruments for the management of threatened species as prescribed in legislation, plans and policies for which the department is responsible.*

- The Threatened Species Section (TSS) submitted eight draft listing statements to the Threatened Species Scientific Advisory Committee (SAC) in 2015–16: two fauna and six flora species: *Platycercus caledonicus* subsp. *brownii* (King Island green rosella), *Astacopsis gouldi* (giant freshwater crayfish), *Callitris oblonga* (South Esk pine), *Doodia aspera* (prickly raspfern), *Prasophyllum apoxychilum* (tapered leek-orchid), *Prasophyllum secutum* (northern leek-orchid), *Pterostylis squamata* (ruddy greenhood), and *Ranunculus diminutus* (brackish buttercup).

- Updates were made by DPIPW to the Threatened Species Link and the Natural Values Atlas.
- Threatened species showing a decline in status in 2015–16 consisted of 10 new flora species, of which two were added to align with listings under Commonwealth legislation, three were newly described taxa, and five were components of previously listed taxa that had been taxonomically reviewed and determined to be separate taxa. The remaining four that showed a decline in status were three flora taxa (one of which was a component of a listed taxon) and one fauna species, a spider.
- Threatened species that demonstrated an improved status in 2015–16 were all flora species: one was due to new survey data; 11 were delisted; one was determined to be an introduction; two taxa were merged into non-threatened taxa; and two were parent taxa where the split components were assessed separately.
- The draft Tasmanian Threatened Orchid Recovery Plan which was drafted in 2014 underwent further revision in 2015–16 and is currently with the Commonwealth for adoption under the *Environment Protection and Biodiversity Conservation Act 1999*.
- Both TSS and the FPA had input into the drafting of a revised National Recovery Plan for the Giant Freshwater Crayfish. The new plan is expected to be finalised and adopted in 2017.

b. Coordinating and participating in research and monitoring of the impacts of land use activities and other factors on the maintenance of habitat and populations of threatened species.

- Staff from the TSS and broader DPIPW undertook habitat and/or population monitoring for the following RFA priority species in 2014–15: Tasmanian devil, orange-bellied parrot and a number of threatened flora species. TSS staff also volunteered spare time to carry out or assist with monitoring of Miena jewel beetle, swift parrot and additional threatened flora species with the assistance of the Wildcare group Threatened Plants Tasmania. This work, which also involved collaboration with the Royal Tasmanian Botanical Gardens and the three regional NRM organisations, contributed directly to monitoring and/or surveying of over 70 species (19 nationally listed, 69 state listed).(see also 3.(g))

3 Primary roles and responsibilities of the FPA

a. Organising and coordinating training in threatened species and the use of the planning tools for FPOs and others involved in the FPP planning process.

- FPA staff ran two field days on the threatened masked owl on 9 and 10 December 2015. One was held in the north of the state and another in the south. The course involved presentations and a fieldtrip by owl researcher (Dr Mick Todd) and FPA staff. The field days were primarily designed for Forest Practices Officers and other forest planners involved in coupe surveys and the implementation of management prescriptions for masked owls. Information provided covered the ecology and conservation requirements of the species and training in the use of the FPA's mature habitat availability map and the masked owl technical note during planning, field identification of potential habitat and implementation of the management approach. There were 52 participants. As well as FPOs and forest planners, there were also participants from ecological consultancy companies, Tasmanian Fire Service and DPIPW.
- A third masked owl field day was held in March 2016 in the south of the state for NGOs and consultants. The course involved presentations and a fieldtrip by owl researcher (Dr Phil Bell) and FPA staff. The aim of the field day was to provide information on the ecology and conservation requirements of the species and to raise awareness of the management

approach delivered through the procedures agreed with DPIPWE. There were 30 participants.



Masked owl spotted by FPO, Chris Bond (Photo Chris Bond)

- Many of the management recommendations delivered through the TFA refer the planner to Technical Notes for further guidance or information. See http://www.fpa.tas.gov.au/fpa_services/planning_assistance/advisory_planning_tools/fauna_technical_notes

The FPA, with review by TSS, continued on the development of technical notes for threatened species management in 2015–16. Technical notes on identifying habitat for threatened frogs and masked owls were endorsed and made available to planners via the FPA web-site. FPA completed drafting of a technical note on management of rocky outcrops for threatened flora was updated and is now ready for comment from DPIPWE and stakeholders.

- The FPA raptor specialist participated in Forestry Tasmania’s eagle nest management coordinators meeting to discuss issues with changes to the management recommendations that have arisen over the past year.
- Four workshops on biodiversity evaluations as ‘risk assessments’ were run for planners working for Forico, Timberlands and FT Northern and Southern Districts. The aim of each workshop was to run through the process recommended when assessing the risk of a forest practice on a biodiversity value (including threatened species) and to get some consistency when documenting reasons for a particular management prescription. These workshops were also a good opportunity to discuss any other issues that planners had with the *Forest Practices Code* provisions for Biodiversity.



A draft technical note on management of rocky outcrops for threatened flora was completed in 2015–16 (Photo: A Chuter)

a. *Assessing notifications lodged as part of the FPP planning process as required to ensure that the planned operations are in accordance with the requirements of the Forest Practices Code and associated planning procedures.*

- 135 requests for advice on biodiversity issues from FPOs and other forest planners as part of the FPP development process between 1 July 2015 and 30 June 2016.
- Of these, 61 were for operations on Permanent Timber Production Zone Land, with the remainder a mix of private operations. The data in the notification database indicates that field assessments were undertaken for about 45 per cent of notifications. However, this is an underestimate because some involved multiple visits and in some cases any pre-plan visits were not recorded.
- The FPA compliance program assessed 59 FPPs covering the full range of forest operations in 2015–16 as part of the annual compliance (monitoring and assessment program) audit. The results of this assessment are in Appendix 3 of the FPA annual report.
- The Section Head of TSS, DPIPWE, was notified of any threatened-species-related compliance investigations throughout 2015–16.
- A total of 32 compliance investigations into alleged breaches of the *Forest Practices Act 1985* or an FPP were completed by the FPA compliance program in 2015–16. Of the 32 investigations that were completed, three related to threatened species. Two of these investigation related to the discovery of eagle nests during the course of harvesting operations, however neither were deemed to be a breach of the *Forest Practices Act 1985* (correct operational planning procedures were followed). The third investigation relating to threatened species involved the harvesting of timber within an eagle breeding exclusion period contrary to an FPP. This investigation determined that a breach of the Act had occurred and resulted in a \$6000 fine being issued to Forestry Tasmania.

c. *Developing and providing site-specific management advice for FPPs where the planned operations are not covered by endorsed management prescriptions. This may involve consultation with relevant specialists within DPIPWE and other organisations where specific expertise is required.*

- As indicated in (b) FPA Biodiversity Program staff processed 135 requests for advice on biodiversity issues from FPOs and other forest planners as part of the FPP development process between 1 July 2015 and 30 June 2016. DPIPWE and Inland Fisheries Service specialists, specialists from universities and independent specialists were consulted when species-specific expertise was required.
- Tables 1 and 2 provide the number of requests for advice for individual threatened flora and fauna species, respectively. The total number of species requests recorded (228) is higher than the number received in 2014–15 (151). A large proportion of biodiversity evaluations, done by forest planners as part of the development of an FPP, still result in notifications to the FPA ecologists. This is in part because of the ongoing need for interpretation of habitat and the management recommendations delivered by the revised TFA (released in June 2014) and the listing of the eastern quoll. However, this was also because of the increase in FPPs for non-forestry operations (e.g., agricultural development and a few relating to subdivisions) which require specialist advice.
- The highest number of requests for advice (>10) were for management issues relating to the grey goshawk, wedge-tailed eagle, spotted-tailed quoll, Tasmanian devil, eastern barred bandicoot and masked owl. There were also a significant number of requests for advice on the eastern quoll although this is because the eastern quoll was recently listed on the EPBC Act and we do not currently have an agreed recommended action for this species delivered through the threatened Fauna Adviser.

- Formal requests for advice on the swift parrot have declined significantly over the past two years. There were only seven requests for advice recorded in the notifications database on this species in 2015–16. However, this is an underestimate as there were a number of coupes requiring informal advice or field surveys prior to formal notification. As reported in the 2014–15 agreed procedures annual report the reasons for the drop in advice request for swift parrot are not clear but may be due to the lack of forestry activity on PTPZL, within the breeding range of this species, while Forestry Tasmania continues to work with DPIPWE and ANU scientists on a strategic plan for this species. The number of requests for advice for the giant freshwater crayfish also decreased in 2015–16. This may have been a result of the training day, for FPOs and other planners, on management of habitat for this species carried out in March 2015.
- 88 out of the 135 (65%) requests for advice were for native forest operations, the majority being for clearance and conversion operations (35, 26%) and clearfell, burn and sow (24, 17%). The clearance and conversion operations were on private land and most were for agricultural developments. A large number of the requests were also for hardwood plantation operations (27%) and the remaining were for softwood operations (8%) (Table 3). This indicates that the main need for advice from the FPA specialists is for operations involving native forest but that the need for specialist advice for operations in plantations has increased.



Clearfell, burn and sow regenerating coupe in the North West (Photo: Sarah Munks)

Table 1. Number of requests for advice for threatened flora species (note that 111 of the notifications had no data (not entered by FPOs), and that multiple species can be attributed to the same notification)

Flora	Notifications
<i>Acacia pataczekii</i> – Wally’s wattle	1
<i>Acacia siculiformis</i> – dagger wattle	1
<i>Aphelia pumilio</i> – dwarf fanwort	1
<i>Arthropodium strictum</i> – chocolate lily	4
<i>Austrostipa nodosa</i> – knotty speargrass	1

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Flora	Notifications
<i>Bossiaea obcordata</i> – spiny bossia	2
<i>Brunonia australis</i> – blue pincushion	1
<i>Caladenia patersonii</i> – patersons spider-orchid	1
<i>Calocephalus lacteus</i> – milky beautyheads	1
<i>Chorizandra enodis</i> – black bristlesedge	2
<i>Colobanthus curtisiae</i> – grassland cupflower	1
<i>Diuris lanceolata</i> – large golden moths	1
<i>Epilobium pallidiflorum</i> – showy willowherb	1
<i>Epilobium willisii</i> – carpet willowherb	1
<i>Eucalyptus perriniana</i> – spinning gum	1
<i>Glycine latrobeana</i> – clover glycine	1
<i>Hovea tasmanica</i> – rockfield purplepea	1
<i>Hypoxis vaginata</i> – sheathing yellowstar	1
<i>Monotoca submutica</i> var. <i>autumnalis</i> – roundleaf broomheath	1
<i>Pilularia novae-hollandiae</i> – austral pillwort	1
<i>Pimelea flava</i> subsp. <i>flava</i> – yellow riceflower	1
<i>Prasophyllum secutum</i> – northern leek-orchid	1
<i>Rhodanthe anthemoides</i> – chamomile sunray	1
<i>Schoenus brevifolius</i> – zigzag bogsedge	1
<i>Scleranthus fasciculatus</i> – spreading knawel	1
<i>Siloxerus multiflorus</i> – small wrinklewort	1
<i>Spyridium vexilliferum</i> var. <i>vexilliferum</i> – helicopter bush	1
<i>Stylidium beaugleholei</i> – fan triggerplant	1
<i>Teucrium corymbosum</i> – forest germander	1
<i>Thismia rodwayi</i> – fairy lanterns	1
<i>Triptilodiscus pygmaeus</i> – dwarf sunray	1
<i>Xanthorrhoea bracteata</i> – shiny grasstree	3

Table 2. Number of requests for advice for threatened fauna species (note that 50 notifications had no data entered, and that multiple species can be attributed to the same notification)

Fauna	Notifications
<i>Accipiter novaehollandiae</i> – grey goshawk	17
<i>Alcedo azurea diemenensis</i> – azure kingfisher	1
<i>Aquila audax fleayi</i> – wedge-tailed eagle	22
<i>Astacopsis gouldi</i> – giant Freshwater crayfish	8
<i>Beddomeia briansmithi</i> – hydrobiid snail (Fern Creek)	1
<i>Beddomeia camensis</i> – hydrobiid snail (Cam River)	1
<i>Beddomeia fallax</i> – hydrobiid snail (Heathcote Creek)	1
<i>Beddomeia fromensis</i> – hydrobiid snail (Frome River)	1
<i>Beddomeia hermansi</i> – Hydrobiid Snail (Viking Creek)	1
<i>Beddomeia lodderae</i> – hydrobiid snail (Upper Castra Rivulet)	1
<i>Beddomeia minima</i> – hydrobiid snail (Scottsdale)	1
<i>Beddomeia topsiae</i> – hydrobiid snail (Williamson Creek)	3
<i>Beddomeia turnerae</i> – hydrobiid snail (Minnow River)	2
Cave-dwelling invertebrates (multiple species)	1
<i>Charopidae Skemps</i> – Skemps snail	1
<i>Dasyurotaenia robusta</i> - tapeworm (Tasmanian Devil)	1
<i>Dasyurus maculatus maculatus</i> – spotted-tail quoll	26
<i>Dasyurus viverrinus</i> – eastern quoll	18
<i>Engaeus granulatus</i> – central north burrowing crayfish	1
<i>Engaeus orramakunna</i> – Mt Arthur burrowing crayfish	3
<i>Engaeus yabbimunna</i> – burrowing crayfish (Burnie)	1
<i>Galaxias fontanus</i> – swan galaxias	5
<i>Galaxiella pusilla</i> - dwarf galaxiid	6
<i>Haliaeetus leucogaster</i> – white-bellied sea-eagle	7
<i>Hickmanoxyomma cavaticum</i> – cave harvestman	1
Caddisflies (various)	2
<i>Lathamus discolor</i> – swift parrot	7
<i>Limnodynastes peroni</i> – striped marsh frog	2
<i>Lissotes menalcas</i> – Mt. Mangana stag beetle	2
<i>Litoria raniformis</i> – green and golden frog	4
<i>Oreisplanus munionga larana</i> –Marrawah skipper	3
<i>Oreixenica ptunarra</i> – ptunarra brown butterfly	2
<i>Oxyethira mienica</i> – caddis fly (Ouse River)	1

<i>Perameles gunnii gunnii</i> – eastern-barred bandicoot	10
<i>Prototroctes maraena</i> – Australian grayling	6
<i>Pseudemoia pagenstecheri</i> – tussock skink	2
<i>Pseudemoia rawlinsoni</i> – glossy grass skink	1
<i>Pseudomys novaehollandiae</i> – New Holland mouse	1
<i>Sarcophilus harrisii</i> – Tasmanian devil	14
<i>Tasmaphena lamproides</i> – keeled snail	1
<i>Tyto novaehollandiae castanops</i> – masked owl	10

Table 3. Number of requests for advice by operation type

Cleared land	Salvage-fire killed, lake, dam, other	1
Native forest	Advance growth retention	2
	Aggregated retention	2
	Clearfall followed by hardwood plantation	1
	Clearfall followed by softwood plantation	1
	Clearfall followed by sowing of native seed	24
	Clearfall to remain cleared	35
	Overstorey removal	3
	Partial harvesting	1
	Potential sawlog retention	1
	Seed tree retention	8
	Selective logging	2
	Shelterwood - first cut	2
	Shelterwood - second cut	5
Plantation: hardwood	Clearfall followed by hardwood plantation	14
	Clearfall to remain cleared	13
	Site preparation & planting with eucalypts	3
	Site preparation & planting with pines	1
	Thinning	5
Plantation: softwood	Clearfall followed by softwood plantation	7
	Thinning	4

d. Ensuring that provisions within FPPs make an effective contribution to the management of threatened species in accordance with the duty of care requirements of the Forest Practices Code.

- In 2015–16 the FPA formally advised the Policy and Conservation Advice Branch, DPIPWE of four FPPs (on private land) because the duty of care thresholds, and any voluntary contribution negotiated, was not considered to fully meet the desired conservation outcomes for the species within the area covered by the FPP (see also 1. b above).

e. Monitoring and reporting on the standard of compliance with, and the effectiveness of, the endorsed or site-specific management prescriptions contained within FPPs.

- The FPA compliance program assessed 59 FPPs covering the full range of forest operations in 2015–16 as part of the annual compliance audit. This was slightly higher than last year. The results of this assessment are in Appendix 3 of the FPA annual report.
- A report on compliance with strategic management recommendations for threatened fauna species on PTPZL, Christmas Hills forest block, in the north-west of Tasmania was provided by Forestry Tasmania, Forest Management Services, Conservation Branch (Forestry Tasmania, 2016). The strategic recommendations for threatened fauna outlined in the *Forest Practices Code*, applicable to Christmas Hills Forest Block have largely been met to date. This has been achieved directly through implementing the strategic recommendations of a species strategic plan, as in the case of keeled snail, and indirectly, through implementing the multiple Code provisions (wildlife habitat strips, coupe dispersal wildlife habitat clumps, widened stream-side reserves) and voluntary contributions. Collectively, this has resulted in the maintenance of a large area of well-connected potential habitat for general biodiversity, and multiple threatened fauna species.

f. Undertaking investigations and taking any enforcement action that is necessary to achieve compliance with the prescriptions contained within FPPs, in conjunction with DPIPWE where relevant.

- The Section Head, TSS, DPIPWE was notified of any threatened-species-related compliance investigations throughout 2015–16.
- The Section Head, TSS, DPIPWE was notified of any threatened-species-related compliance investigations throughout 2015–16. A total of 32 compliance investigations into alleged breaches of the *Forest Practices Act 1985* or an FPP were completed by the FPA compliance program in 2015–16. Of the 32 investigations that were completed, three related to threatened species. Two of these investigation related to the discovery of eagle nests during the course of harvesting operations, however neither were deemed to be a breach of the *Forest Practices Act 1985* (correct operational planning procedures were followed). The third investigation relating to threatened species involved the harvesting of timber within an eagle breeding exclusion period contrary to an FPP. This investigation determined that a breach of the Act had occurred and resulted in a \$6,000 fine being issued to Forestry Tasmania.

g. Collaborating with DPIPWE on, and participating in, research and monitoring priorities relating to threatened species management under the forest practices system.

- The FPA Biodiversity Program's staff contributed to 14 research and monitoring projects relating the threatened species management in 2015–16. These research projects were funded from a variety of external funding sources and involved collaboration with external researchers, students and institutions. Five of these projects involve collaboration with the TSS of DPIPWE. These research projects are summarised in Table 4.
- Any new projects initiated by the FPA in 2015–16 were consistent with the priorities for effectiveness monitoring identified in the 2012 review (FPA, 2012). Forest Practices

Authority (2016) provides information on projects which contribute to our understanding of the effectiveness of actions recommended to mitigate impacts of forest practices on biodiversity values. \$13,200 was received from external sources to support two new projects (Timberlands support for PhD eagle project by James Pay and Tasmanian Fire Service funding for project on threatened butterflies).

- The FPA and TSS specialists continued to provide supervisory support to a number higher degree students undertaking projects which contribute to our understanding of threatened species, including James Pay (eagle breeding behaviour, PhD), Andre Pracejus (giant freshwater crayfish and forestry, Honours), and Joanna Lyall (responses of native and introduced carnivores to habitat change and fragmentation in northern Tasmania, Masters). The FPA Research Biologist also contributed to the advertising of a new PhD research topic through ANU to start in 2016–17 on the conservation and landscape ecology of the Tasmanian masked owl.
- A presentation on the research work undertaken by the FPA was given at the University of Tasmania by the Manager (Biodiversity).

Table 4 Threatened species related research and monitoring projects active in 2015–16 reporting period, with summary of activities undertaken during this period. (Further information for some projects is provided in Turner and Munks, 2016)

Project title	Activities during 2015-16
How effective are current management actions in protecting wedge-tailed eagle nest sites in production forests?	Annual eagle nest monitoring surveys were completed in November 2015. Forty eight nests were surveyed. The data gathered was used to determine the timing of the breeding season for management purposes.
Eagle nest prioritisation project	This project was initiated in 2015–16. The research component undertaken this year included conducting aerial surveys and ground surveys of 84 nests in the study site to gather data on nest characteristics. The aim is to explore the use of nest characteristics and environmental and management factors, in categorising nests into primary, secondary, tertiary and lost nests.
How effective are management actions for the skemps and keeled snail?	Funding was obtained (FPA and Forestry Tasmania) and surveys initiated in 2015–16 in collaboration with Forestry Tasmania and Kevin Bonham (consultant).
Use of devil dens in plantations before and after harvest	Monitoring of the den site in the Florentine pre and post-harvest continued in 2015–16, with data collected at monthly intervals using cameras to record observations of fauna visiting the site. Although observed species diversity declined post-harvest, species diversity was returning to pre-harvest levels within 4-5 months, including observations of a breeding Tasmanian devil. Additional monitoring sites were established in the Florentine and internal FPA funding was allocated to continue the work until 2018–19.
Impact of fire and habitat disturbance on the threatened chaostola skipper and Tasmanian hairstreak butterfly	A project was initiated in 2015–16 to monitor the impact of fire and habitat disturbance on the threatened chaostola skipper and Tasmanian hairstreak butterfly. The project aims to develop effective management prescriptions for forestry, planned burning and a range of development activities. The FPA is the principle investigator although the project is also supported by the Threatened Species Section and Parks and Wildlife Service (DPIPWE), and the Tasmanian Fire Service. The project will

Project title	Activities during 2015-16
	monitor habitat and abundance of butterflies in reserves (Lime Bay Nature Reserve – Tasmanian hairstreak butterfly; Peter Murrell Conservation Area – chaostola skipper) before planned burns and in the years following the burns. Surveys were undertaken in April - May 2016 for butterflies in areas proposed for subsequent autumn burns. Further surveys in the remainder of the Peter Murrell CA and Lime Bay NR will be conducted in spring-summer 2016–17.
Assessing the efficacy of management prescriptions for the protection of masked owl nest and roost sites	A project was initiated in 2015–16 to assess the efficacy of management prescriptions designed by FPA ecologists for the protection of masked owl nest and roost sites within areas covered by a Forest Practices Plan (FPP). The project will involve annual monitoring of nest reserves and other management actions that have been implemented in FPPs for the protection of known nest and/or roost sites. FPA ecologists surveyed some nest/roost sites in May 2016 and visited FPP areas where reserves have been designed and implemented for the conservation of known breeding habitat. Although there are only a few reserves in place so far, any new nest/roost reserves will be added to the annual monitoring schedule, as the project will run until 2018–19.
Relating forest management to stream ecosystem condition in middle catchment reaches in Tasmania	The project was completed in 2015–16 with a publication in the journal of Forest Ecology and Management. This study (initiated in 2009) built on the earlier FPA supported work by Smith et al. (2009). The aim was to investigate the relationship between the history of forestry operations and instream biota, including the giant freshwater crayfish, and habitat.

STUDENT PROJECTS SUPPORTED BY FPA

These projects contribute to the work of the FPA and are either co-supervised by the FPA Biodiversity Manager or Research Biologist and TSS scientists through their honorary positions with the University of Tasmania or receive other FPA/DPIPWE support. Some have also received expert advice and support from the FPA Scientific Officer (raptor specialist).

Effectiveness of management for the giant freshwater crayfish	Honours thesis by Andre Pracejus completed and a follow-up project designed and planned to start in 2016–17.
Behaviour of breeding eagles and the impact of disturbance	This PhD project by James Pay continued in 2015–16. It is being conducted through the University of Tasmania with funding support from Timberlands and the FPA. The aim of the study is to improve our understanding of eagle breeding biology and learn more about activities that may disturb this species. The objective is to determine whether management practices are effective in mitigating disturbance to breeding birds. The information gathered will be used to review eagle management recommendations.
Swift parrot ecology	FPA and DPIPWE are supporters of an ARC research grant that is funding a PhD (Matt Webb) and a post-doctoral position (Dejan Stojanovic). These projects are assessing habitat use, distribution, and threats to swift parrots. These projects are not supervised by DPIPWE/FPA staff, although the FPA Research Biologist provides expert advice as required.
Responses of native and introduced carnivores to habitat change and fragmentation in northern	This Masters project by Joanna Lyall is being conducted through the University of Tasmania and is co-supervised by the FPA Biodiversity Manager. The study is exploring the landscape and stand level factors that influence habitat suitability of plantations for Tasmanian devils and

STUDENT PROJECTS SUPPORTED BY FPA

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Tasmania	spotted tailed quolls, and the interaction between devils, spotted tailed quolls and cats in plantation areas. Field research has been completed and data is being analysed.
Devising commercial forest practices that support metapopulations of threatened frogs	Funding for this PhD was obtained through Deakin University in 2015–16 and a student, Tim Garvey, has been appointed to do this project. Fieldwork is planned to commence in 2016–17.
Bird Acoustic study	This PhD project by Scott Whitemore at the ARC Centre for Forest Value, University of Tasmania is supported by the FPA. This study will look at the potential of acoustic recordings to replace field-based surveys to determine site occupancy of threatened bird species as well as for documenting species composition to understand responses to forest management and restoration strategies. In particular this project will use advanced mathematics and machine learning to develop species recognition algorithms. Identifications based on this analysis will be validated by manual identification of individual species present in recordings by professional ornithologists. This project is not supervised by FPA staff, although staff will provide expert advice as required.

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FPA

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