The effectiveness of threatened species and ecological communities' protection in Australia

http://www.aph.gov.au/Parliamentary_Business/Committees/Senate_Committees?url=ec_ctte/threatened_species/tor.htm

Terms of Reference

The effectiveness of threatened species and ecological communities' protection in Australia, including:

(a) management of key threats to listed species and ecological communities;
(b) development and implementation of recovery plans;
(c) management of critical habitat across all land tenures;
(d) regulatory and funding arrangements at all levels of government;
(e) timeliness and risk management within the listings processes;
(f) the historical record of state and territory governments on these matters; and
(g) any other related matter.

Introduction

Phil Collier and Robin Garnett are writing as the owners of Rubicon Sanctuary, a 20 hectare property that is covered by a conservation covenant in central northern Tasmania. We manage our land for populations of eleven threatened plant species, one threatened animal species and one threatened plant community. We have been mapping and monitoring populations of these threatened species each year since 2008, and we plan to continue for a further ten years. We have over 1000 orchids plants of 27 different species individually numbered and we track their emergence, flowering and fruiting in a longitudinal study. Five of these orchid species are listed as threatened species, which are our priorities for monitoring. Further details about our management of our two priority species are included in the Appendix, as an example of efforts that can be provided by volunteer land owners. Some of this work is now supported by a Biodiversity Fund project.

Submission against the terms of reference

a) Management of key threats to listed species and ecological communities;

1. One key threat to listed species and ecological communities arises from alienation of natural bushland. There are several processes or initiatives that ameliorate these threats. These include covenanting of high conservation value private land and regulations surrounding environmental impact of proposed developments. These appear to be implemented with sincerity by competent people in Tasmania, where we know some of the people involved. The forestry sector has separate procedures that appear to be less robust or open to public scrutiny, although this sector is clearly open to wider scrutiny through the Tasmanian forestry peace deal.
2. The key threat that arises from fragmentation of the natural environment is addressed much less well, although visionary initiatives concerning landscape-scale connectivity may help.
3. Human-induced climate disruption is a serious key threat in the medium to long term. This is not being addressed politically with sincerity or with a realistic timetable when viewed through a scientific lens. In contrast, the scientific community is intrigued by this question with many experiments underway to understand the response of the natural environment.
4. A key threat is likely to arise from the many thousands of small and larger human-induced changes to the natural environment. These will most likely lead to tipping points, both small and large, where key ecological processes breakdown. Organisms and/or their inter-relationships with other organisms could very easily disappear without prior notice. Such impacts may only be noticed much later when it is very difficult or impossible to recover. Early warnings can be sounded if adequate monitoring is in place for a variety of organisms and processes, both common and scarce. There is much work of this type in progress both in the professional and voluntary sphere, and there is clear scope for integrating this into a managed information system that enables analysis of information integrated from a variety of sources. The Atlas of Living Australia (ALA) is an example of this type of information system, but the main focus of the ALA is the management of observations of specimens and populations, not on longer-term monitoring studies.

b) development and implementation of recovery plans;

We are personally well acquainted with the National Recovery Plan for *Cassinia rugata* and the joint National and Tasmanian Orchid Recovery Plan 2006-2010. See appendix for two case studies on our property. As far as we know, the Recovery Plan for *Cassinia rugata* has not been implemented. As discussed elsewhere in this document, we discovered *Cassinia rugata* on our land in Tasmania, and we now manage the largest known population, which is a serendipitous outcome for the future of this species.

The Tasmanian Orchid Recovery Plan 2006-2010 was actioned to some extent by the appointment of a project officer, but we doubt that the plan was fully funded. Even if it had been fully funded, it very doubtful that $951 300 would be sufficient to manage 68 threatened species over a five-year period. Native orchids are especially fickle to manage as they are clearly visible above ground only for a few weeks during the flowering period, with many species favouring a particular stage of recovery from a burn or other disturbance. The Nature Conservation Plan for our property offered guidance, coordination and assistance with orchid monitoring resourced from the Recovery Plan. In reality, we have provided the management and monitoring of threatened orchids ourselves without any external assistance until a project was recently funded by the Biodiversity Fund.

We believe that the development and implementation of recovery plans, when provided, often involves well-meaning and dedicated professionals. These people often provide much more effort than is funded. The

current deficiency is in fully funding those plans that are created, and ensuring that all priority threatened species are covered by a plan.

c) management of critical habitat across all land tenures;

Generally, National Parks often cover large areas of infertile land that provides adequate protection for species that favour this type of country. In contrast, critical habitat, almost by definition, tends to be fertile or arable land that has been largely alienated in the past. This means that much critical habitat is in private hands, and the owners of any less-alienated remnants need to be engaged as conservation managers, or offered an opportunity to sell their land to conservation-minded new owners. Some of the critical habitat can't simply be managed by doing nothing and letting wilderness processes resume. Many species, including native orchids, require a level of disturbance to flower and fruit. Given the substantially reduced habitat available that maybe proximate to valuable built assets, any disturbance must be adequately planned and managed. If grazing is unsuitable as the disturbance method, burning is the most efficient and possibly the only feasible method for disturbing large areas in particular. Burning amongst built assets is a labour intensive exercise. When the burning is done, follow-up surveying or monitoring is required to measure the outcomes and then feed into adaptations of the management regime, another labour-intensive exercise. A weed management plan is often also required in combination with a planned burn.

d) regulatory and funding arrangements at all levels of government;

We have already commented on the State and Federal levels, where we respect staff as being sincere and competent in applying regulations, especially those people we know well in Tasmania. At the local government level, there needs to be a more consistent and comprehensive effort. Our local council, Latrobe, does not have a roadside program for recognising and signing important road verges. They have also destroyed a threatened species population in recent bridge works. This most likely arises from a lack of critical mass, with nobody qualified in a small organisation to lead and implement these tasks. If this is correct, then councils should be encouraged to team up with neighbours to ensure that important disciplines are effectively covered. We are not pointing a finger at Latrobe Council specifically; it is simply the Council for which we have personal experience.

As previously discussed, funding at the Government level is not sufficient to cover all recovery plans; either their creation or implementation. This appears to be especially stark when in the context of deliberate damage being done to publically owned or regulated natural resources. There seems to be considerable reluctance to take meaningful action against perpetrators, or to strive to obtain watertight evidence of wrong-doing where circumstantial evidence clearly exists.

e) timeliness and risk management within the listings processes;

A major barrier to the listing process is accurate and timely information about taxonomy. If a taxon is part of a species complex, even if it is well recognised as a problem, there is no process for having the issue examined and determined in any reasonable period of time. The same issue arises should specimens be found that don't conform to any described taxon, especially if there are few specimens known. Once a taxon is recognised, there are clear guidelines for listing at one of the defined ranks. Whilst the listing process is available to the public in principle, the information required to determine status is necessarily technical, with little obvious support to the public who wish to initiate the process.

f) the historical record of state and territory governments on these matters; and

As discussed above, we find generally that the professionals involved with regulating and managing threatened species are sincere and competent. There are very significant resource constraints that limit the

ability of these people to discharge their responsibilities across the full portfolio of threatened species. This is evidenced by patchy development and implementation of recovery plans.

g) any other related matter.

We conclude by integrating the discussion above into the following recommendations:

1. **The conservation of threatened species needs to occur in conjunction with the conservation of particular landscapes**

There are threatened species that are likely to be further threatened or even lost unless their specific management needs, such as mosaic burning and selective weeding, are carried out. Preserving and managing representative vegetation communities, while necessary, is not sufficient. Visionary projects to provide connecting corridors at a landscape scale are important to allow species to spread/move and to mitigate the effects of climate change but, unless the requirements of threatened species are managed in a targeted way, they may not persist to migrate across the landscape.

2. Empower private landholders to care for threatened species

As private landholders we are able to study and learn how to manage the threatened species on our own property. We are highly motivated to provide the best possible future for the plant populations for which we have responsibility – and we know other landholders who share our motivation.

With approximately 700 properties having conservation covenants in Tasmania alone, there is scope for private landholders to make a significant contribution to the care and protection of threatened species on their own land. We recommend that, with the endorsement of landholders and where requested, they are helped with surveys and then empowered to undertake their ongoing adaptive management, supported by relevant knowledge and management advice when requested. Voluntary land owners and managers should be fully appreciated for the efforts they provide, which is often much more intensive than can be provided by professionals in a resource constrained world.

3. Fund more research into the management of threatened species

We have found that it is important to make detailed studies of threatened species and to monitor their population numbers over successive years in order to manage their populations sustainably. Species differ in their management requirements and so the management of each species needs to be studied separately. Sometimes compromises have to be made between the requirements of different threatened species, or between threatened species and threatened communities.

There is a general lack of knowledge about the management requirements of many threatened species and the best ways to resolve conflicting requirements. We advocate that more research funding be provided especially to fill gaps where voluntary efforts are not available.

4. More staff should be funded to give advice, to monitor populations and to enforce regulations about threatened species

Currently there are only two part time positions for botanists in the Threatened Species Unit of DPIPWE to cover the whole of Tasmania. We recommend that this number be increased so that expert staff can work with private landholders in identifying and caring for threatened species as well as carrying out their important public role on a State-wide basis.

Appendix: Findings from longitudinal and cross-sectional case studies of threatened species at Rubicon Sanctuary

The following case studies illustrate some of the management requirements of threatened species that we have discovered in distinct areas on our property. They also exemplify a way that private landholders can support efforts to protect threatened species. We implement adaptive management plans for each species separately. These species might easily not survive if a broad acre approach to management were taken.

1. *Prasophyllum limnetes*, the marsh leek orchid

Prasophyllum limnetes, the marsh leek orchid is listed as Critically Endangered nationally under the Environment Protection and Biodiversity Conservation Act 1999 and Endangered in Tasmania under the Threatened Species Protection Act 1995. *Prasophyllum limnetes* is only known with certainty from a population on our property.

Our studies of *Prasophyllum limnetes* at Rubicon Sanctuary show that the plants' vigour (as measured by leaf width) is greatest in the spring following disturbance by slashing or burning the previous autumn. Vigour declines progressively in subsequent years. Instances of successful flowering declined markedly and ceased completely for the *P. limnetes* population in the third year after burning. Our current management strategy is to burn patches of their grassy sedgeland habitat on a three to five year cycle; to hand weed the area; and to cage some individual plants to prevent them from browsing animals. We are experimenting to see whether slashing is as effective as burning in promoting flowering. We are also alert to the possible influence of weather (e.g. drought) where this can be teased out from the data that we are collecting.

Prasophyllum limnetes was described in 2006 from relatively few specimens and its exact location was not known with certainty. One of our first tasks was to more clearly delineate the population we found from the similar species *Prasophyllum rostratum* that also grows at our property. This was reported by Phil Collier as "*Prasophyllum limnetes* D.L.Jones in Tasmania: Further Evidence" in *The Tasmanian Naturalist* vol. 133 (2011, pp. 15–21).

2. *Cassinia rugata*, wrinkled Cassinia

Cassinia rugata, wrinkled cassinia, is listed as Vulnerable under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 and Endangered in Tasmania under the Threatened Species Protection Act 1995. In Victoria it is restricted to about 40 plants near Portland, declining from 120 plants in 1988–90 (Carter & Walsh 2006: Wrinkled Cassinia *Cassinia rugata* - National Recovery Plan Department of Sustainability and Environment, Melbourne).

We discovered 300 plants of this species at Rubicon Sanctuary, the first report in Tasmania since a single record in the 1800s that had been discounted as being in error. The only other significant population of *Cassinia rugata* that we noticed near Port Sorell was in the process of being cleared earlier in 2012 when the owner was contacted and willingly negotiated with the Commonwealth to set aside 2 ha of his land to preserve a further 100 plants.

We have noticed that the plants of *Cassinia rugata* grow in open, ephemeral wetlands that have a history of regular burning. If the plants become overtopped by shrubs and trees they become leggy and/or die out. After a fire in 2007, woody rootstock re-sprouted from the base. In 2012 we noticed seedlings in an area that we had burnt eighteen months before. We have put protective cages around a number of these seedlings and are monitoring the progress of a sample of caged and uncaged seedling plants.

This exciting discovery of *Cassinia rugata* in Tasmania was reported by Phil Collier as "*Cassinia rugata* discovered in Tasmania: A Nationally Threatened Species new to the State" in *The Tasmanian Naturalist* 132 (2010, pp. 42–47).