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SATURDAY BREAKFAST
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GERALDINE DOOGUE: From the havoc of Hurricane Katrina in the Deep South of America we're now going to the island in the south of Australia, where the Tasmanian wedge-tailed eagle, the swift parrot and a stag beetle are the subject of an important test case that's currently before the Federal Court.

All three endangered species are nationally listed under the Environment Protection and Biodiversity Conservation Act, but when these rare and threatened species occur in a logging coupe the national legislation doesn't apply—it's overridden by the state-based Regional Forest Agreements. And this is the point to be challenged. The Greens Senator, Bob Brown, is testing the laws governing endangered species in the Wielangta Forest on the east coast of Tasmania.

To discuss the science behind the case, Alexandra de Blas is joined by Dr Peter McQuillan. He's an entomologist and he lectures in ecology at the University of Tasmania.

PETER McQUILLAN: All three species, Alexandra, are listed as endangered under the federal EPBC Act of 1999. They're all iconic species that are ... and they've been the subject of quite close documentation as to their trends and their populations for some years now.

ALEXANDRA de BLAS: The Tasmanian wedge-tailed eagle, that's separated off about 10,000 years ago from the wedge-tailed eagles on the mainland, and there are only 500 to 700 mature birds left in the state. How threatened, actually, are they?

PETER McQUILLAN: The numbers themselves have been trending downwards over a long period of time, but one of the main problems with the species is the fact that there is a lot of small-scale mortality due to collisions with motor vehicles or collisions with power lines, and it's this sort of incremental losses that are creating quite an issue with that species.

ALEXANDRA de BLAS: The Royal Melbourne Institute of Technology last year found that they have a 67 per cent risk of becoming extinct in the next 200 years, and that's without logging, apparently; and if you factor the logging in that risk goes up to 91 to 97 per cent. How reliable are models like these? Is it likely to become extinct in the next 200 years? Can we know that?

PETER McQUILLAN: We can't know that for certain, but these models attempt to gather up all the different fragments of information that might predict things such as breeding success, the number of territories that are maintained in Tasmania, and they also factor in these disparate mortality factors. So these models only give us a fairly broad-based, I guess insight into the future prospects of the species. But, nevertheless, they do sometimes raise alarms that require us to take things quite seriously.

ALEXANDRA de BLAS: And why would the Wielangta Forest be important to the Tasmanian wedge-tailed eagle?

PETER McQUILLAN: It's one of many forest patches in Tasmania that preserve nests of this species, and the situation is that we really probably can't afford to forgo any nesting sites of the species at all. It's a very shy nester. The success rate is fairly low in terms of generating fully-fledged juveniles, and it's simply a case where we have to take a judgment as to how many nesting sites can we forgo into the future, given the fact that we've already lost many, many nesting sites in the previous 150 years of European settlement in Tasmania.

ALEXANDRA de BLAS: And what is the Wielangta Forest like?

PETER McQUILLAN: It's an extraordinary combination of particular forest communities. It's particularly rich in Tasmanian blue gum and has patches of blue gum grassy forests, which is a threatened community of plant species. And these grassy forests have been in rapid decline in the last century or more due to their conversion into farming land. The Wielangta is a particularly precious remnant of this sort of vegetation. As well as that it has quite a lot of relief. It's quite well-watered, relative to other parts of south-eastern Tasmania. It's also rich in endemic species and it's a reservoir of genetic diversity for quite a few plants, including the Tasmanian blue gum which is one of the world's most valuable plantation species.

ALEXANDRA de BLAS: If we go to the swift parrot now, there are fewer than 1,300 breeding pairs of the swift parrot and more than a million dollars has been spent on its recovery in the last five years. How does the parrot use the forest at Wielangta?

PETER McQUILLAN: The Wielangta Forest and other nearby forests in the south-east are really one of the strongholds for the species for breeding. When they return from the mainland at about this time each year, in August, they aggregate in the south-eastern part of Tasmania and they select out old trees with hollows which they use to breed within. Also the blue gum and the swamp gum which flower in the late winter, early spring, then become a key food resource. The male birds feed the females as they're incubating the eggs and raising the young, and so the Wielangta is a crucial reservoir of resources that are essential to the ongoing survival of that species.

ALEXANDRA de BLAS: And I believe they're not particularly good breeders, either, that they don't successfully breed every year, depending on the quality of the nectar and the level of flowering?

PETER McQUILLAN: That's correct. They're fairly long-lived birds, so they don't necessarily successfully breed a full breed every year, or each pair. There also is an increasing shortage of large, mature trees with hollows that are suitable for nesting sites. And, as you say, if there's a failure in the nectar supply or the pollen supply, then this also impacts the success rate of the breeding in that particular year.

As well as that, because the bird moves several thousand kilometres each year as it moves back across Bass Strait into northern Victoria and southern New South Wales,

it's reliant on winter-flowering eucalypt trees in the box woodland forests, and the flowering there is not always successful every year.

ALEXANDRA de BLAS: This is in Victoria?

PETER McQUILLAN: This is in Victoria. So the bird is subject to all sorts of vagaries of nature in all parts of its range.

ALEXANDRA de BLAS: It's endangered, but why should we be protecting the swift parrot? I mean, why is it so special?

PETER McQUILLAN: It's a very special bird because first of all it's an iconic species. It's one of the harbingers of spring into Tasmania, whereas people in, say, the Northern Hemisphere might observe the date of the first cuckoo clutch being heard in England, which is often advertised in the local press up there.

Down here the swift parrot more or less fulfils that role, so people observe the date of arrival of the first swift parrots in Tasmania. Within the parrot family it's the only member of its genus, the genus *Lathamus*. And to look at both its appearance and its behaviour you would think that it's related to lorikeets, which people would be familiar with as feeding in flowering eucalypts and other trees, but in fact it's closely related to rosellas, so it represents an independent evolution of nectar feeding.

Secondly, it's been shown in recent work done at the University of Tasmania that Tasmanian blue gum is highly reliant on this bird for pollination. Blue gum has a very large flower that's solitary and it's not successfully pollinated to any extent by bees or insects like most other eucalypts are, and in fact it's very highly reliant on birds for successful pollination.

The fact that we have so much concentration of the genetic diversity of this hugely commercial important species, blue gum, in Tasmania, it's essential that we maintain that genetic diversity and the secret to it is keeping viable populations of swift parrots in perpetuity.

ALEXANDRA de BLAS: Do other birds serve that role, too?

PETER McQUILLAN: Blue gums are also visited to some extent by some of the larger honeyeaters, such as the New Holland honeyeater and one or two other species as well, but it's swift parrots that consistently visit them every year and also move the pollen quite large distances, whereas the honeyeaters tend to move the pollen often within the tree or perhaps to the neighbouring tree a few tens to hundreds of metres away. But swift parrots can move kilometres per day and so there's much more mixing up of the pollen as a result of their activity.

ALEXANDRA de BLAS: Peter, I think you might get public sympathy for the eagle and the parrot, but I think you're facing an uphill battle when it comes to the broad-toothed stag beetle. What's the story behind the stag beetle?

PETER McQUILLAN: The stag beetle is very interesting in Tasmania because ... they're only quite a small family of beetles, about 700 or 800 species worldwide, and they're usually more diverse in the tropics. They're an extremely ancient group of beetles. They're associated with old, decaying logs on the forest floor, so they're often a good market for ancient old-growth forests in general.

Tasmania's unusual because being a temperate latitude it has an extraordinarily large diversity of these species, an unexpectedly large diversity which exceeds 30 species, and the Wielangta stag beetle was one of about 25 in this single genus called Lissotes, which are all flightless, ancient beetles which have connections back to Gondwana. So if we look in similar forests in New Zealand or in South America at a similar latitude you'll find relatives to these sorts of stag beetles.

And the Wielangta species is one of the most restricted at all. It's really only found in the Wielangta Forest and also a small population just offshore on the nearby Maria Island.

ALEXANDRA de BLAS: These creatures all sound wonderful, but haven't they been protected under the \$250 million Tasmanian Community Forest Agreement which the Prime Minister launched in May?

PETER McQUILLAN: That certainly made a contribution to their survival in the future. The problem is we are lacking a great deal of information. We need to know as to the detail of their breeding locations, as to their breeding success, even their fine-scale distribution. And while that has certainly made a contribution it's by no means certain that this is adequate in itself.

And one of the problems is that the long-term projected trends for the climate in south-eastern Tasmania are for long-term drying, we've already seen this since the 1950s where there's been a catastrophic decline in the autumn rainfall. And this is reflected in the drying out of many of the forest types, and so the likelihood that good moist breeding sites in forests will be maintained is problematic.

ALEXANDRA de BLAS: How threatened will the three species that we've been talking about be if logging continues in the Wielangta State Forest?

PETER McQUILLAN: I think depending on what forward scenarios are put forward by forestry, but generally speaking any further pressure on their habitat has to be detrimental, I would argue, simply because these species have already been under quite severe pressure over many, many decades, which has taken to this position of being formally listed by the federal government as endangered. So that, in itself, should ring alarm bells.

So, basically the argument that you can further pressure these species by modifying their habitat through forestry activities, basically is very unwise. And really the onus of proof that this sort of activity is not threatening lies quite squarely, I think, at the feet of the industry itself. And I don't believe, at least not to my way of thinking, they've not demonstrated this beyond any sort of reasonable doubt.

ALEXANDRA de BLAS: Around the country lands governed by a regional forest agreement are exempt from the federal EPBC Act, the federal environment law. But the RFAs are required to protect endangered species, so why is there a problem? Aren't they all protected under the RFA?

PETER McQUILLAN: One thing that it would test is whether or not the Regional Forestry Agreement for Tasmania, whether the provisions of that RFA are sufficient in their own right to really deliver good conservation outcomes for these particular species in this location. The most interesting case is, of course, that the three species themselves are not just listed within the Tasmanian Threatened Species Act but also are listed federally under the EPBC Act and therefore, to some extent, it's a test of whether the Commonwealth legislation will prevail over the state legislation. But, more importantly and more to the point I think, it will be a test at whether the provisions of the RFA are sufficient to deliver good conservation outcomes for these three species.

Were we to mismanage any of these species it would be quite catastrophic and really unforgivable if they were to be lost through neglect or through mismanagement.

GERALDINE DOOGUE: Watch this space, or listen to this space. Peter McQuillan from the University of Tasmania, and he was with Alexandra de Blas.

We did invite the Forestry Tasmania and the CEO of the Forestry Practices Authority to discuss the management of endangered species in the Wielangta Forest, but with the case before the Federal Court they declined to comment.