The wind farm threat, is the Environment Minister, Senator Campbell following his own statutory requirements or playing politics.

The original ship was mainly wind powered and now the Aurora joint venture company, Roaring 40's, wants to place a large wind farm near that first land sighting by Van Diemen, Mount Heemskirk.

In that time the Orange Bellied Parrot [***Neophema chrysogaster*** **Latham 1790]** [OBP] has gone from completely unknown animal to the endangered status of a threatened species under the Environmental Protection and Biodiversity Conservation [EPBC] Act 1999. Only 200 remain in the wild.

Wind farms have not made that species endangered, they were already so when large scale construction of wind farms started. The matter of death by rotor was considered when the Cape Grim wind farm was planned and a permit to take [kill] them was issued.

Perhaps OBP's had a relatively small population at the time of settlement of Victoria, due to environmental changes prior to 1642. More likely is that the fate of the swift parrot [***Lathamus discolor Shaw***], habitat destruction has reduced the numbers of this species until it is endangered.

Factors threatening the survival of the OBP include: the clearing of native vegetation, grazing and urban development of coastal areas reducing the availability of winter feeding habitat; alteration to fire regimes adversely affecting breeding habitat in Tasmania; competition for resources from introduced bird species; and, predation pressure from introduced carnivores such as cats and foxes.

OBP's nests in hollows in eucalypt trees which grow adjacent to its feeding plains in Tasmania. In early October the birds arrive in the south west and depart after the breeding season usually in March and April.

After breeding, migrating birds move gradually northwards up the west coast, through the Hunter Group and King Island in Bass Strait and on to the mainland. On the journey the birds usually feed on beach-front vegetation including salt tolerant species such as sea rocket Cakile maritima. They also eat various coastal native and introduced grasses.

Windfarms in the path of species with long migratory flights may impact on species numbers, however the long flight for OBP is across the water, currently free of wind farms.

So lets compare OBP with another trans Bass Strait migratory species, the swift parrot to assess the consistency of conservation management. Reduction of habitat threatens this species, both in its overwintering grounds and in its Tasmanian breeding grounds. Because it is dependent on forest, the conservation of this threatened species is now covered by the Regional Forest Agreement.

Why have breeding pairs have fallen from 10,000 to 1,000 pairs [Forshaw 1993, Garnett 1993, Brereton 1998].

Here is the official explanation taken from the Tasmanian government website. [address below] "Unfortunately blue gums have been cleared for agriculture and are continuing to be cleared. Also timber harvesting removes old trees so that the age of our blue gum forests is lowered. Old trees produce more flowers and nectar for the swift parrots and other nectar-feeding animals. Loss of old trees means there is less food for the swift parrots to eat during the breeding season and is the major reason for the swift parrot's decline. Old trees also provide nesting hollows essential for the breeding success of the swift parrot."

Habitat destruction can reduce a species with a large population to a level where it is threatened with extinction. Most readers will know why Minister Campbell has not intervened to stop activities threatening swift parrots. The outcomes of threatened species management under the RFA are unproved.

Certainly we know the Minister has stopped the construction of a wind farm that is not in the OBP's core habitat, a site where the bird has never been recorded and where estimates were that 1 OBP would die from running into the windmill blades every 143 years. That is the Bald Hills site in South Gippsland.

The only record for a death of an OBP from striking a stationery object was 1 running into a lighthouse on King Island at night. This agile night flying bird was probably blinded during its longest flight.

The Minister wrote to all state and territory Environment Ministers in November objecting to the state governments forcing wind farms on country towns opposed to them and threatened to take away state control of wind farm approvals and federal funding for wind farm projects.

However, the Senator has not closed any of the existing wind farms currently operating in or near core habitat for this endangered species whilst it is present.

If the outcome wasn't serious for these 2 parrot species the Minister's contradictory behavior would be farcical.

So now we have a dilemma for the Minister, wind farms that potentially could kill parrots, but have not been recorded as doing so to date, also contribute to saving the species threatened by climate change destroying their habitat.

How so.

Climate change impact modeling by scientists in 1995 showed that with a 3dC. rise in temperature the core habitat for OBP's in Victoria disappeared completely and the range habitat was reduced by 98.6%. Compare this with the outcome for the habitat in Victoria of the RFA threatened species, the swift parrot.

Reference 1 – Appendix 1 shows how both core and range habitats decline for 2 threatened species of parrot in Victoria and Tasmania.

Below the decline of the Total number of habitats, core plus range, is given after the impact of the temperature increase on the core habitats

The Core Habitat for OBP declines from 24 in 1995 to 0 with a 3dC rise, having risen to 77 as the temperature increases by 1dC. Total goes from 247 to 279 then 109 at 2dC then 3 at 3dC

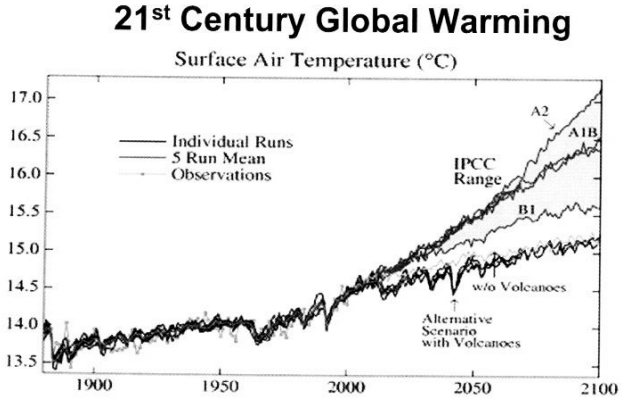
The Core Habitat for swift parrot declines from 696 in 1995 to 344 with a 3dC rise, having risen to 775 as the temperature increases by 1dC. Total goes from 3285 to 3133 then 2417 at 2dC then 1517 at 3dC. Just under a 50% decline in habitats available.

Note the result for 3dC is from the most likely rainfall outcome, other rainfall possibilities at that temperature were also modeled but the result was the same.

Thus a temperature increase could give a false result in studies of population if the modeled result was repeated in nature.

Certainly climate change has a serious outcome for the OBP, it becomes critically endangered or moves onto the list of extinct species, another record of human ineptitude.

The current path for GHG management that the Australian Government is supporting will, without major changes in global energy demand or the sources of that energy moving rapidly away from fossil fuels, see over 730ppm achieved late this century, resulting in a rise of at least 3dC. [Model A2 below]



That increase in temperature, if this species is dependant on its migration across Bass Strait for the juveniles to mature and return to Tasmania to breed, something that has occurred for eons, threatens to have a very significant impact on the species, regardless of whether the rotary blades on any wind farm turn or not.

Avoiding the extinction outcome, the next step from the current endangered status if the temperature rises by 3dC, remains the responsibility of the Australian Government

under the EPBC Act, and without a clear plan to do so the Commonwealth must be failing under the EPBC Act.

Yes Minister, you have the wrong target.
Further, if the Bald Hills wind farm was rejected because it may result in the death of one OBP every 143 years then how can the Heemskirk wind farm be passed when its strike rate is estimated at 7 times [1 death every 20 years].

And why, with the Bald Hills risk level at this rate, aren't the other wind farms extant in the OBP habitat closed immediately, until there is a complete review of the impacts of their operation on this species, and if the impact is negative, they are closed down whilst the OBP is in the vicinity.

The Ministers concern appears to be a political nonsense, given that Roaring Forties are being reassured about their Heemskirk proposal although it lies in the OBP's migratory route, unlike the Bald Hills proposal.

The nearby country town of Zeehan is not objecting to this change to its economy.

The Bald Hills wind farm was to be in a Victorian marginal Liberal seat of South Gippsland and apparently MP Russell Broadbent needs all the support he can get so the opposition to new wind farms in certain Victorian country towns is to be mustered for the Liberal vote.

Can wind farms contribute to the alternative energy sources that reduce GHG production and also avoid impacts on endangered birds in their flight paths, if they are of a 'significant impact'.

Placement is not easy as large scale wind farms need to be in windy places to compete with dirty coal. Therefore the blades also need to be as efficient as possible.

They also need to not disturb people through the noises they make in operation, also putting them into less inhabited locations.

A change in funding and taxation, such as a carbon tax diverted to supporting the development of alternative energy could alleviate this competition factor, the community paying to conserve nature from the impact of the global warming.

Included could be, if wind farms are indeed a real threat to this species, design of a different rotor system, such as the Savonius, to reduce any potential for collision. The current towers can be relocated to places where species are not endangered by their operation.

Now that would be real action to address the major threat to this species survival.

However, other endangered species are also threatened by climate change and for one of them the bell tolls more loudly.

Extinction of the mountain pygmy possum.

This is one reality of the Australian Government's strategy of delaying, diverting and obfusticating over measures to reduce the human causes of global warming.

Here is the Ministers dilemma, arising from his wind farm contradiction.
In saving one notional orange bellied parrot [OBP] every 143 years he acts to condemn at least one other endangered species to extinction in the wild as global warming raises temperatures by in the Australian Alps by 1.0dC.

Burramys parvus CONSERVATION STATUS: COMMONWEALTH: Endangered
(Environment Protection and Biodiversity Conservation Act 1999)

The mountain pygmy possum lives within a small area of some 10km. Its food consists of Bogong moths (*Agrotis infusa*) and during winter a store of seeds. It is only found in a particular temperature cline, the one currently prevailing above 1400m in the Australian Alps.

The threats given by the The Threatened Species Network, a community-based program of the Australian Government &WWF-Australia.and shown on the Department of Environment and Heritage websyte are;

"Although occasionally known to out- compete the native Mountain Plum Pine (on which the possum relies for shelter and food) at the snowline, blackberry alone is not a major threat to the Mountain Pygmy-possum. But coupled with climate factors its impact can be far greater. As our world warms, blackberry is expected to have an advantage at higher altitudes, where it is feared the weed will invade further on native plants and possibly cause the possum to lose its competitive advantage over other small mammals like the Bush Rat. Other weeds, including English broom, and hunting by foxes and cats may also pose a threat. Of more immediate concern is the destruction and fragmentation of the Pygmy-possum 's habitat from human activities associated with skiing and alpine resort development, fox and cat predation and the broader impacts of climate change. Because the Pygmy-possum needs a snow depth of at least 1 metre to provide adequate insulation during its winter hibernation, it is threatened by any climate change that fragments or thins the snow cover and exposes it to cold temperatures."

Perhaps the Minister has not read the Australian Governments advice and so is not aware of it, he is after all busy with elections. This Schultzian phenomenon seems to be more and more common among those in responsible positions.

Brereton, in his study of the impacts of temperature increases [1.] also found that from the climate modeling used, that a 1dC temperature increase reduced the amount of available habitat for Burramys parvus to nil, the little pygmy possum rushing to extinction behind another degree behind it.

Reference 1 – Appendix 1 shows how both core and range habitats decline for 3 threatened species of possum found in Victoria.

Below the decline of the Total number of habitats, core plus range, is given after the impact of the temperature increase on the core habitats

The Core Habitat for Leadbeaters possum declines from 19 in 1995 to 4 with a 3dC rise with the Total going from 224 to 50.

The Core Habitat for Little pygmy possum declines from 285 in 1995 to 0 with a 2dC rise with the Total going from 434 to 10 and 0 at 3dC.

The Core Habitat for Mountain pygmy possum declines from 4 in 1995 to 0 with a 1dC rise with the Total going from 9 to 0.

Note the result for 3dC, where it is given, is from the most likely rainfall outcome, other rainfall possibilities at that temperature were also modeled but the result was the same.

That 1dC temperature increase is already set in place. GHG's are at 425ppm in CO2 equivalents [a Radiative Forcing value of 2.26 W/m2], it is only a matter of decades before the average temperature in the southern hemisphere reaches up from its current average rise of 0.3dC, resulting in the insulating blanket of snow no longer sheltering the mountain pygmy possum..

Hansen concludes that warming will be greater than 1d C. if additional forcing is above 1.5W/m2. [3.] The current level of CO2 alone is at 380ppm, not counting the other warming GHG's, methane and nitrous oxide, an additional forcing of 1.66 W/m2

Regardless of the Australian governments political reaction to the climate being changed by human activity and the concomitant moral responsibilities to future human generations and to nature, the Minister for the Environment has a statutory responsibility, in the terms of the Environmental Protection and Biodiversity Conservation Act 1999, to treat the threats to this endangered species in a particular way.

18 Actions with significant impact on listed threatened species or endangered community prohibited without approval

Endangered species

(3) A person must not take an action that

(a) has or will have a significant impact on a listed threatened species included in the endangered category; or

(b) is likely to have a significant impact on a listed threatened species included in the endangered category.

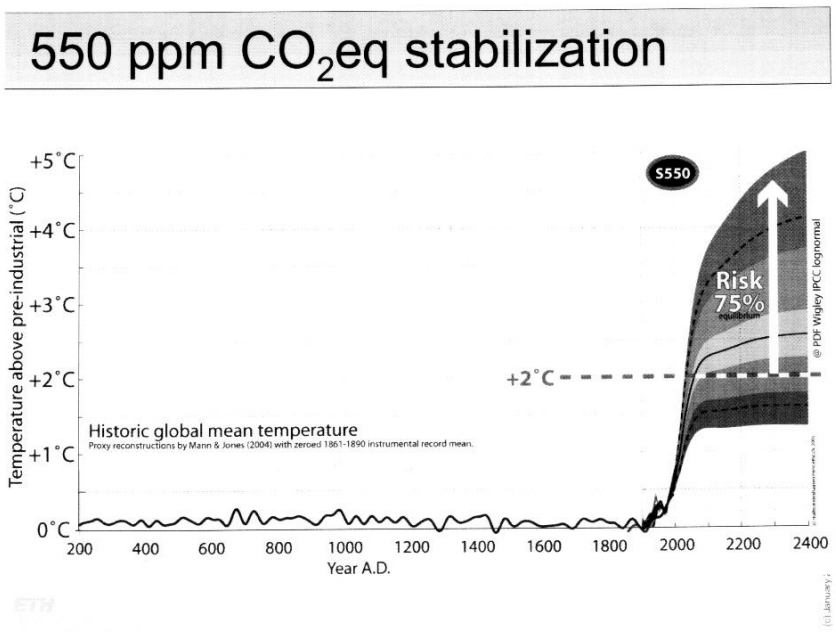
Note; A person includes the Commonwealth and corporations.

There is a penalty, but that is hardly the point.

This section is what gave the Minister the power to stop the Bald Hills wind farm, Even though the direct impact threat was estimated to be a low potential death every 143 years.

From the Prime Minister down, the Australian Government agrees that the climate is warming. Further, the science from Australian Government instrumentalities predicts by how much and over what time frame. 1dC is absolutely certain to occur in the decades following 2030 and modelling tells them that the most significant impact on the mountain pygmy possum will occur, extinction in the wild. [1.]

From [2.] The chart below shows the probability of temperature increases if GHG growth is stabilized at 550ppm. Current GHG growth achieves this level in 2050 with no guarantee of stability. Note; that 1dC is so far below the level of 'very likely' outcome, passed by mid century and under an active program of GHG reduction.



Of course extinction in the wild may occur prior to warming by 1dC, as the conditions governing their survival in a specialized ecology disappear, the snow blanket that covers their hibernation being insufficient and the animals not having the ability to store sufficient food to support their changed metabolism in the new conditions or their changed activity patterns making them more vulnerable to predation.

There are alternatives the Government can take to conserve this species. Given the likelihood of temperatures going over the 1dC rise before global action can curb climate change, if it can be curbed, the more likely will be ex-situ populations managed in controlled environments.

However, this does not absolve the Commonwealth from action to control the causes of the significant impact, given that we know what their causes are.

It is not just this animal, many animals will have reductions in the area of suitable habitat [2.], extinctions being the result for many species if warming is not reversed..

Hansen [3.] charts a series of measures he believes can put off the increase in temperature. There are a number of other programs that also chart similar paths without entailing unaffordable economic cost if they are adopted now.

The Government, if it is serious about conserving nature, needs to wholeheartedly adopt the range of effective measures immediately. The Minister is bound by the EPBC Act to ensure that this happens and to prosecute those who fail to join in reducing the release of GHG wherever possible.

Arguing that they are doing so when the current AP6 policy, a light version of business as usual, ensures that the mountain pygmy possum will suffer the most significant impact, extinction in the wild.

phill Parsons has outlined some of the low economic cost alternatives in his articles. If you drive on the open road, you can reduce your contribution, drive at no more than 90kph, save fuel and reduce emissions.

Included are some References for those who think that global warming will have no impact other than to make it warmer.

http://www.parks.tas.gov.au/wildlife/birds/obp.html

http://www.parks.tas.gov.au/threatened/swift/html

1. Enhanced Greenhouse Climate Change And Its Potential Effect On Selected Fauna Of South-Eastern Australia: A Trend Analysis. Raymond Brereton, * Simon Bennett & Ian Mansergh
Biological Conservation Vol72 Issue 3 (1995) pp339-354

2. Dr Malte Meinshausen, Environmental Physics Department of Environmental Sciences, Swiss Federal Institute of Technology, ETH Zurich – On the Risk of Overshooting 2dC.From the Scientific Symposium Avoiding Dangerous Climate Change Conference Papers Exeter, MetOffice, UK, 2 February 2005

3. Is There Still Time to Avoid 'Dangerous Anthropogenic Interference' with Global Climate?
A Tribute to Charles David Keeling. James E. Hansen NASA Goddard Institute for Space Studies, and Columbia University Earth Institute. New York, NY 10025