

SUBMISSION BY JOHN FLENLEY

INTRODUCTION

I should like to say first of all why I think I am qualified to speak to you. I am the retired Professor of Geography from Massey University, now Professor Emeritus. My speciality is Biogeography, which means, roughly speaking, large-scale Ecology.. I have published several books and over 170 papers on this area. I hold a Doctor of Science degree from Cambridge University, and a Doctor of Philosophy degree from the Australian National University, Canberra. I am a Fellow of the Royal Society of New Zealand. I am also an ordained Deacon of the Anglican Church of New Zealand, with the special task of bringing environmental problems to the notice of the Church and the wider public. I apologise for blowing my own trumpet, but I had to say why I felt I should speak on this matter of importance – the proposed Turitea windfarm. I should like to make it clear that I am usually in favour of windfarms, except when they are in nature reserves or on important landscapes.

1.EFFECTS ON THE NATURAL ENVIRONMENT

I know Robert Coulson and am impressed by his hydroseeding and by the ‘direct transfer” of vegetation which he proposes. I think it will solve some of the problems, except perhaps the ridge line itself, which is extremely windy, making it very difficult for vegetation to establish or re-establish.

The removal of 25ha of vegetation and its ‘storage’ outside the building area , with a view to rehabilitation afterwards, will actually result in the disturbance of c.50ha of vegetation –the amount moved plus the area where it is stored. I do not think the horopito shrubs will survive, as their roots will have been badly disturbed and cut. The recovery of the disturbed vegetation to its present state will take, in my opinion, about 100 years.

There is one particular ecological point which I am especially concerned about. That is, the New Zealand Falcon. It is quite a rare species of bird, and it occurs in the Reserve. The total North Island population of this species is <1000 (www.ranz.org.nz). When I googled ‘windfarms,birdstrike’ I found many papers, rather sharply divided into two groups. Some made statements such as “bird strike is a million times less likely than bird death on roads”. Statements like that need to be thought about carefully. There are a lot more cars and roads than there are wind turbines or wind farms. It is a bit like saying that human death by murder is much less likely than death by natural causes. Does that mean we should make murder legal?

The other papers (see refs below) gave actual examples of bird strike by turbines, in some cases with photographs of the dead birds. Almost all were raptors, often eagles(<http://news.bbc.co.uk/1/hi/world/europe/5108666stm>, 2006), One paper said that Falconiformes (the falcon family) were one of the groups most at risk. In one case the entire cohort of sea eagles on a Scottish island with just one turbine was wiped out. I predict with conviction that the Turitea wind farm would lead to the local extirpation of the New Zealand falcon. This would be a loss. The bird is actually very useful in protecting some crops (e.g. grapes) from damage by small birds (Anon.2009).

References:

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2. SOCIAL AND CULTURAL EFFECTS

2A. ETHICS.

It seems to me that the acceptance of the proposal would still be morally wrong, even after all the modifications which have been made to reduce the ecological impact. The point is the the PN Council are guardians of the Turitea Reserve. They are in a position of sacred trust which they appear to have abrogated by changing the management plan in October 2006. The reserve was established by previously elected councils for the express purposes of water conservation and nature conservation. It is not as if we are over-provided with nature reserves in this city.. If the council were to follow the biblical recommendation given in Leviticus Chapter 25, they would set aside one seventh (i.e 14 %) of the land as nature reserves. The 35sq.km of the reserve is I think slightly less than this, and already fulfils two main functions: water reserve and nature reserve. It seems to me that Mighty River Power is now aiding and abetting the City Council in its abrogation of that trust, which is morally indefensible.

I realise that the construction of the windfarm would bring financial benefits which we are assured will be spent on the reserve. But it seems to me that the council position is that of a poor mother with two babies in a third world country. The offer made to her is that if she will surrender one baby, to be used for body parts, she will receive two other babies for adoption in the future. If the deal goes ahead, who is more despicable? The mother or the one who makes the offer?

I was also shocked to read that Mighty River Power is a state-owned enterprise. That implies that the government is supporting the windfarm proposal, on the grounds that we need the extra electricity. Would not this massive expenditure be better spent on ensuring that houses were double-glazed and better insulated, and that more public transport was installed. If more houses had solar panels, the massive losses of electricity in transmission would be reduced. All this would save electricity.

2B.PSYCHOLOGICAL EFFECTS.

When the psalmist wrote 'I will lift up mine eyes unto the hills, from whence cometh my help' s/he did not envisage a human altered landscape. The concept that natural landscapes are important for human psychological health is now well established. The great geographer, J.H.Appleton (1986) wrote a book entitled 'The Experience of Landscape' in which he expounds his explanation of the meaning of landscape to humans. His theory, known as Prospect-Refuge Theory, now has over 100,000 hits on its website.

The basis of the theory is that in our surroundings we are subconsciously aware of three types of symbol: prospect, refuge and hazard.. For psychological health, we need a balance between all three. Examples of prospect are large open views over land or water, and often including mountains. Refuge symbols are caves, or human-made refuges such as buildings. By extension, other human-made features such as roads, bridges (or windfarms) also indicate human presence and are thus refuge symbols. Hazard symbols are cliffs, waterfalls, rocky beaches, dense bush (where one could become lost), fast rivers etc. – anything which might spell danger.

Those of us who live in suburbia have a balanced lifestyle; we live surrounded by refuge symbols but can drive out at the weekend to experience prospects and hazards. Poorer people in urban situations are over-refuged by the buildings and lack prospect and hazard. Some of them create their own hazards by breaking the law (Flenley 2007). This may be the origin of urban crime, which can be cured by taking people on Outward Bound courses, where they experience prospect and hazard, which correct the balance. Better still, let them see hazards in the view from their homes, and they will feel psychologically satisfied. I predict that if windfarms are built all along the Tararua from the Gorge to Levin, there will be a rise in urban crime in Palmerston North.

References:

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Flenley, J (2007). For the beauty of the Earth, *Stimulus*, 15, 4, 21-25.

3. ECONOMIC EFFECTS.

In the Council Decision dated 30 October 2006, amending the management plan, it was stated that the ridgeline is mostly of rock, and that most of this area has no soil. I find this impossible to accept, as there is vegetation on both sides up to the edge of the road. In fact there is soil, but it is rather thin, and potentially very subject to erosion. Once gone, it may take 1000 years to replace itself naturally. Erosion will be likely to include landslipping, because of the steepness of the site (Fransen et al. 2001, Borga et al. 2005). The generalized figures provided by the United Nations (in Longman and Jenik 1987) suggest that erosion rates increase massively with a change in vegetation. If you give a value of one to erosion rates under forest, then the value under scrub would be 10. The value under sparse grassland would be 100, and the value for bare soil is 1000. I have not attempted calculations, but I think that if 25 hectares are to be changed, even temporarily, from scrub or forest to bare land, there will be a massive increase of erosion, the products of which are likely to end up in the reservoir, thus polluting the city water supply. Also, the increased runoff will make it more likely that pollutants from pest species, including *Escherichia coli*, a harmful bacterium, will be carried into the reservoir.

The dangers would, of course, be massively increased if an extreme rainfall event – such as that which caused the 2004 floods – were to occur during the construction phase. In a time of global warming, we may expect an increase in the frequency of such events (Fuller and Heerdegen 2005). The suggestion made that construction will be staggered through time to avoid coincidence with a major flood is self-defeating. It actually increases the chance that a major event will coincide with some part of the building process.

References:

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