



# **Review of ten years of monitoring and management actions at the Bluff Point and Studland Bay Wind Farms**

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**Symbolix**

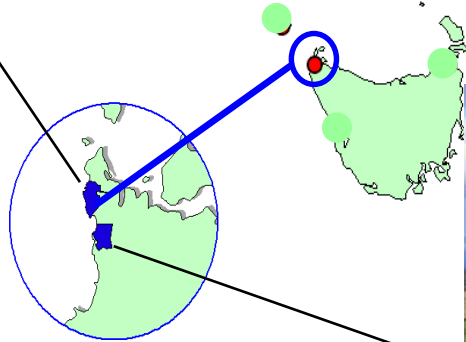
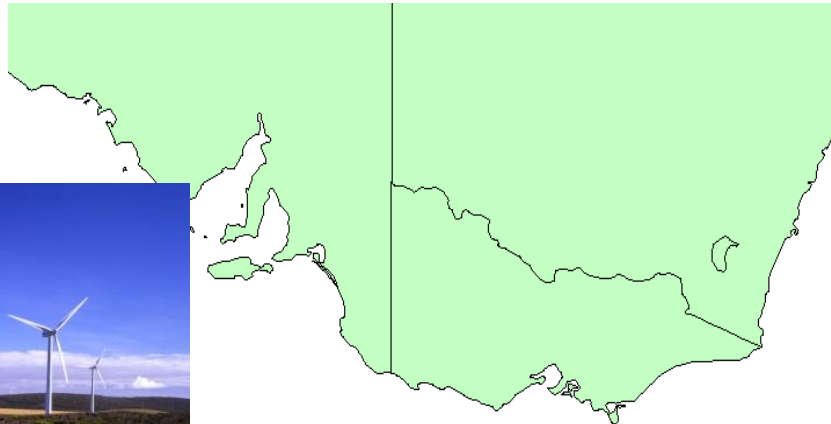
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# Topics for discussion

- How the Wind Farms are regulated
- Why the review – the first one
- Process used
- Outcomes of review one
- Review two
- Key learnings

# The Wind Farms



Woolnorth  
140 MW



Bluff Point

37 x V66 1.75MW



Studland Bay

25 x V90 3 MW

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# How these wind farms are regulated



- Determined to be a controlled action under the EPBC Act (one of the first projects assessed under the new Act)  
Approved by the EMPC Board (Tasmania) and now regulated by the Tasmanian EPA
- Approved by Local, State and Commonwealth Regulators with a suite of environmental conditions
- Hydro Tasmania (owner at the time) also committed to a range of environmental management actions
- The commitments and permit conditions are managed through a suite of Environmental Management Plans (EMPs)
- Both Regulators require evidence of compliance and reporting on these EMPs.



# Why the review – the first one 2010!

Lots of surveys/studies and actions on site, with many evolving over time

Important to evaluate to determine value and benefit

- The EPA requires that 5 of the State EMPs are reviewed on a three-yearly basis:
  - Vegetation Management Plan
  - Bird and bat Monitoring Plan
  - Turbine Shutdown Contingency Plan
  - OBP Management Plan
  - Eagle (WTE and WBSE) Management Plan
- We needed a process to collaboratively evaluate all actions – grounded on adaptive management

Key considerations needed to be:

- Did the actions target the risk appropriately
- Did they target the impacts appropriately
- Evidence for the effectiveness of monitoring and management actions
- Should some cease, be modified or continued

# Process used

Establish working group

Document and agree process

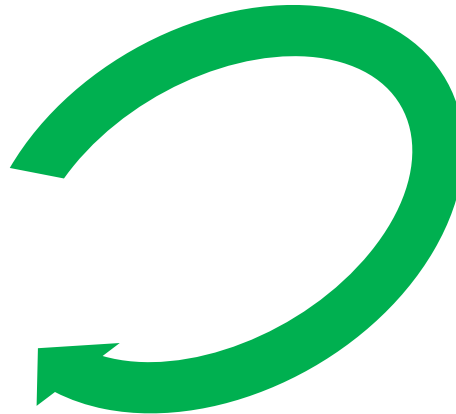


Risk and likelihood

compile & summarise



Descriptor	Description, in terms of the life of a windfarm project	Indicative frequency (not a statistical expectation)
Probable	Recurrs through out the life of the windfarm (annually or every few years)	Once a year (or more frequently)
Likely	Expected within life of the farm	Once in 20 years
Possible	Expect to occur in lifetime of one in 5 windfarms	Once in 100 years
Rare	May have occurred or could occur during lifetime of one windfarm in Australia	Once in 1000 years
Incredible	Not expected in the life of any windfarm in Australia	Once in 10,000 years



Descriptor	Consequence examples. Consequence is the consequence of a single event
Extreme	Very marginal population of a threatened species. Potential for major disruption to species.
Critical	Threatened species. Potential for disruption to regional or local population.
Major	Non-marginal species, not threatened. Impact limited to local group
Minor	Short term, localised disruptions



Collaborative decision



Evaluate



# Summary of monitoring and management actions – defining what they were

## Monitoring:

- bird utilisation surveys
- eagle breeding success surveys
- bird and bat collision monitoring
- targeted eagle studies

## Management Actions:

- On site management of weeds (potential OBP food)
- Off-site OBP food crop
- Weed control (gorse)
- Rehabilitate birds after collisions
- Trusts to offset impacts to OBPs and eagles
- Turbine shutdowns – shutdown contingency plan
- Reactive shutdowns
- Sector management



# Risk matrix and evaluation process – where should we focus our effort

Likelihood

Consequence

	Incredible	Rare	Possible	Likely	Probable
Extreme	Medium 4  alienation of OBP population	High 5  disruption to OBP population from collision	High 6  	Very High 7  	Very High 8  
Critical	Low 3  	Medium 4  	High 5  	disruption to WTE breeding – exact likelihood unclear High 6  	Very High 7  disruption to WTE population from collision
Major	Very Low 2  	Low 3  	Medium 4  disruption to remnant veg	High 5  	High 6  
Minor	Very Low 1  	Very Low 2  	Low 3  disruption to other bird population from collision*	Medium 4  	High 5  
	No evidence that this occurs at any wind farms so not expected in Australian windfarms	Could happen	Once in five windfarm lifetimes	Once or twice @ WNWF	Recurs during WNWF life

Focus area





# Outcomes – risk assessment and evaluation

- Key environmental issues at these sites – in order of priority (based on impacts or risks):
  - Eagles (WTE and WBSE)
  - Orange-bellied Parrots
  - Vegetation
  - Other birds
  - Bats
- Potential or actual effects of wind farms:
  - Direct impacts – collisions with turbines
    - relevant to eagles, other birds, bats
  - Indirect impacts – “alienation” or “barrier” effects
    - no evidence of either effect and investigated sufficiently

No impact found on OBPs, but species critically endangered so actions remain



# Evaluation process

## Example

**Treatment name:****Display Period Observations**

Specifically treat the issue?

No - indirect though increasing knowledge

Treatment strategy:

Monitoring

Specific purpose:

To study utilisation during displaying period, initially thought to be a high risk time based on initial evidence that display behaviour was statistically associated with incursions (flights within 1.5 times of swept area of WTGs). It was assumed that incursions were a proxy for collision risk. These data originally informed the sector management protocol.

previously applied? Y/N

Y - @ BPWF and SBWF

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# Evaluation process

Expected reduction in Likelihood : None  
Expected reduction in Consequence: None

Level of Resourcing required: High

Supporting evidence?

Recent analyses of the eagle specific utilisation studies, including the display period observations reveal little or no correlation between displaying and collision risk and based on a larger data set and further analysis, the initial statistical association between displaying and incursions is no longer apparent. Furthermore, the most complete data set indicates that incursions may not be a suitable proxy for collision risk.

Most importantly, both statisticians (McPherson and Muir) have advised that data returns from non designed surveys, such as employed here, are inadequate for providing further insight (which is why the data are no longer being analysed).

Given that collisions occur outside this period, any eagle surveys that are deemed important should not be constrained to one season, which is increasingly been shown to not be as high risk as assumed.

The display period surveys were suspended in 2009 and a targeted survey to test the effects of observers on eagle utilisation and quantify detectability points agreed.

**See letter sent to EPA (dated 28 July 2009).**



# Evaluation process



Recommendation to the panel:	Cease these surveys in their current form. Design and conduct surveys when there is a sound reason to do so. Determine the sampling period in light of the objectives of the survey, not on assumed high risk periods.
Recommendation of the panel:	<input checked="" type="checkbox"/> Cease (replaced with other surveys) <input type="checkbox"/> Continue as is <input type="checkbox"/> Continue with modifications
Comments:	<b>To be superseded by targeted behavioural studies. The plan to outline an approach which allows adaptive management of surveys.</b>  <b>Eagle surveys/studies will be rolled up and included in the new eagle focused section.</b>





# Outcomes of our collaborative assessment – monitoring studies

- Understand what collides (although not precise numbers)
  - Key species of concern identified as WTE
  - Change from generic monitoring of collisions to eagle focus
- Utilisation surveys completed and no value in continuing
- Eagle breeding success – can't achieve survey objectives, but survey continued at request of EPA and in conjunction with other study
- Targeted eagle studies to try and understand factors involved in eagle collision risk – 2 new studies
- We need to better understand impacts to bats
- Modify survey methodology for onsite OBP weeds



# Outcomes of our collaborative assessment – management actions

- Managing eagle food resources – no data but logical - continue
- Reducing eagle collision risk (sector management and reactive shutdowns) – evaluation demonstrates ineffective – cease
- Noise deterrents for eagles – agreed nothing effective to date - monitor
- OBP vegetation plots – cease active off-site plot management (evaluation illogical), maintain onsite actions within refined methodology
- Injured bird rehabilitation – not feasible to date, but continue commitment
- Offsets – completed



# The value of a robust review – the second review 2013



- A second review of the 5 plans was conducted in 2013 as required by EPA regulatory commitments
- A similar framework was used however the 2010 review had done so much ‘heavy lifting’ - focused us on higher priority issues and clearly articulated objectives – that the process was short
- The adaptive management framework provided
  - a new plan format – just one plan 5 sections
  - refinements of our bat studies
  - modifications to our eagle collision studies
  - modifications to our eagle camera project objectives
  - cessation of our eagle breeding success and genetics works
  - allowed confirmation and agreement that all other actions were ‘fit for purpose’



# Key learnings and common themes of the both evaluation

- Nothing achieved from monitoring for monitoring's sake
- Surveys must identify key objectives
- Objectives must be relevant and achievable
- Survey design must be robust and not modified during a study without careful consideration
- Once surveys achieve their objectives, no point in continuing
- Management actions need to be demonstrably effective or survive the evaluation process as 'logical'
- Test assumptions, potential trends rather than accept as fact
- Re-assess, re-test where possible
- Evidence-based approaches
- Adaptive management essential – Apply it

*Process conclusion – provides collaborative, open discussion with significant efficiency in EMP approval phase, builds stronger relationships and regulatory confidence*