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Wind Turbines Cape Bridgewater

A Resident's Experience

Melissa Ware & Steven Cooper

Cape Bridgewater (CB) Location- SW Victoria.



Introduction

- I participated in the Cape Bridgewater (CB) Acoustic Study by Steven Cooper, in co-operation with Pacific Hydro (PH) and 5 other residents.
- I am a 55 year old housewife and mother, now being seriously affected by wind turbines, traffic and other sound sources.
- I am a trained State Enrolled Nurse, Youth Worker and have a Certificate in Small Business Studies. I operated a Wholistic Practice at CB prior to the wind farm (WF).
- I have been medically diagnosed with multiple conditions, including Hyperacusis following repeated episodes of acoustic shock from the wind farm.
- The ongoing problems of turbine sounds and vibration inside and outside our homes, and the health damages, are still being ignored by PH, the wind farm commissioner, the local council, health, planning and regulatory authorities.

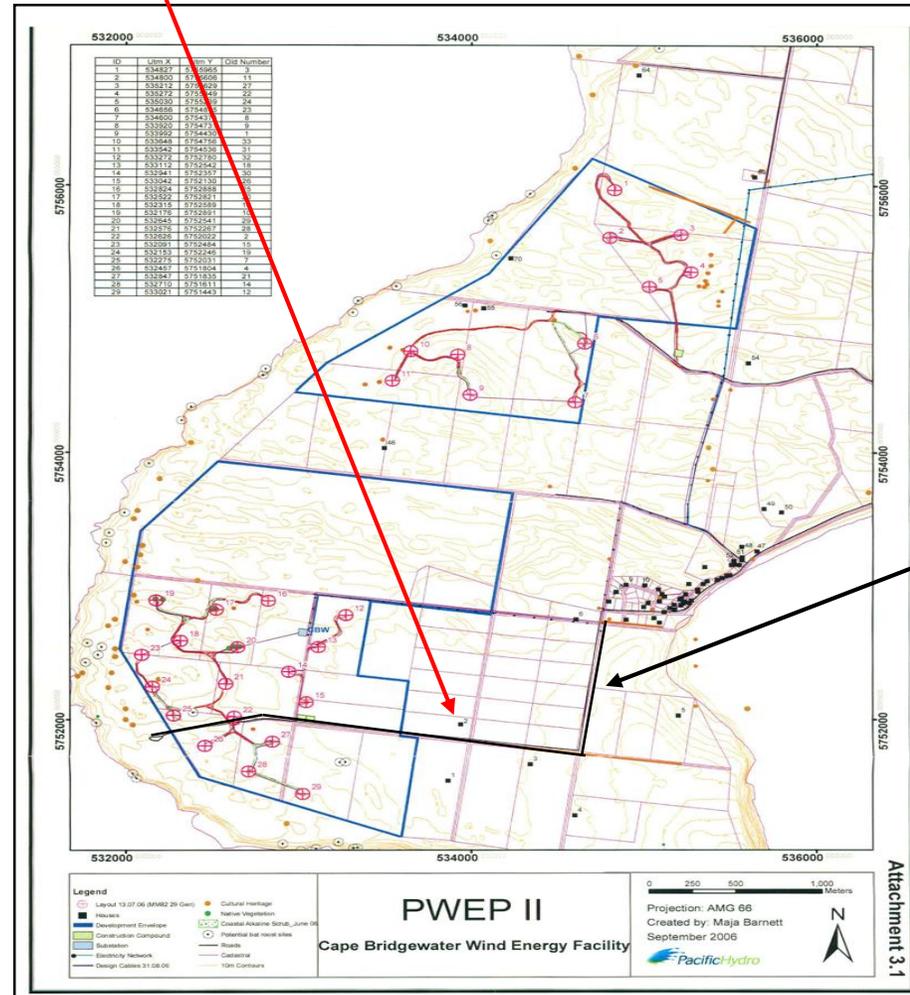
Cape Bridgewater



Background

- 2008 Pacific Hydro built & commissioned 29, 2MW turbines, the nearest group of turbines are 850m from the front door & about 500m from the back fence of our 6 hectare farm.
- The southern part of the WF borders our property on the West and to the North.
- Our house was built pre-1860 and although not heritage listed has historic value.
- We have owned the property for 21 years. The house is made of solid limestone with a tin roof and wooden floors.
- In 2008, we had no prior knowledge about the health or acoustic impacts of wind turbines.
- Our original belief was wind farms would be good but personal experience for 10 years proves otherwise.
- I felt and was disturbed by turbine noise & vibration during the construction of the turbines.
- We complained to the Company about noise and vibration from the commencement of the operation of the WF.

Location of house 88 and turbines



Blowholes Rd.

Looking South West from Blowholes Rd.

House 88



Some Facts

- Health care providers repeatedly advised me to leave the area due to the severity of the adverse impacts on my health so we have unwillingly deserted our family home.
- Impacts on me are linked to sensation & vibrations related to wind turbine operations, and at times to stationary turbines vibrating in wind.
- The turbines are not visible from two bedrooms facing West. You must walk into the paddocks beyond the buildings and trees to see the wind farm.
- Dr Bob Thorne (psycho-acoustician) independently investigated and collected health and noise data.
- Dr Thorne confirmed the existence of excessive, intrusive noise and health problems as a result of our acoustic environment.
- Mr Les Huson (acoustician) independently (in two investigations) collected acoustic data in our home.
- Mr Huson confirmed the existence of intrusive noise (including infrasound) that corresponded to the operation of the turbines and our diaries.
- Despite these independent investigations Pacific Hydro never conducted any post construction testing at or in our home, yet claimed the wind farm was acoustically “compliant”.
- After 6 years submitting complaints and Pacific Hydro denying any problems at any of their wind farms, they publicly admitted the presence of a screech, associated with the turning of the turbine hubs at Cape Bridgewater.
- In 2014 after a long community consultation process, PH agrees to a request from Senator John Madigan and 6 residents to allow Steven Cooper ‘to get to the bottom of the problems’.
- PH publicly stated they ‘wanted to restore our lives to it’s previous good quality’ pre wind farm.

Cape Bridgewater Acoustic Study



- Kitchen, back wall, faces East
- Indoor monitoring equipment
- Leads went up the passage throughout the house
- We vacated the house for a few days.
- Further equipment was set up in the bedroom, lounge room and outside the bedroom window.
- External monitoring equipment and in one bedroom operational for 7 weeks.

Cape Bridgewater Acoustic Study

- **Contrary to some claims in the public domain, there are many more than just six people being adversely affected by the CB wind farm.**
- **The budget and limitations imposed by PH on the Cooper study restricted it to just 6 people and NO medical studies and NO sleep studies.**
- I participated in the Study so that the acoustic conditions I and others experience could be recognised, investigated, understood and prevented.
- I sense the wind farm operations with accuracy inside my home; without “*seeing the turbines*”.
- There was no “*colluding with the neighbours*”.
- I feel wavelike vibrations like a slow moving ripple through the ground. I felt these vibrations even when the turbines were shut completely off (during the acoustic study) whilst there were gusty winds. I still feel such vibrations (after the study).
- We recorded sensations and observations 1-2 hourly into personal diaries throughout the study. Applying a scale of 1-5 from least to worst, helped gain an understanding about the sensations, noise and vibration we were experiencing.
- The diary entries were combined with acoustic data and also PH’s CB wind farm operational data, which was independently post-analysed by Steven Cooper.
- **The CB study showed a link between sensations and the turbines starting up, powering up and down, and when depowering in high wind strengths. (The “Schomer Principle”).**

Observations of CB Wind Farm

My Sensations are not due to;

- “*water moving in caverns*” under the Cape, -D. Halstead-PH site manager, visit, 2.1.12
- A ‘*broken down wind mill or water pump*’ (agricultural) located up the road,
- E-mail, Emily Wood- PH communications manager, 29.10.12
- ‘*Wind in the trees*’, - E-mail Georgina Downey- PH communications manager, 8.6.2012
- Simon Chapman's ‘*nocebo theory*’ or G, Leventhall's ‘*illusory truth belief*’.



I was sensing “something” others in my house were not. I and Mr Cooper felt at times a vibration wave in the kitchen floor. The visible evidence to me and my family of “something” I couldn’t prove to authorities, was the movements of a set of Newton Balls and the movements of water in a glass on my kitchen table.

Since the identification of sensation (being separate to noise and vibration) my family can now distinguish the feelings (primarily in the head) separately to noise from the turbines.

During the Study there were no joint discussions amongst the parties. We all attended the Community Consultative Committee Meetings (as did other members of Cape Bridgewater) during the Study to hear from Mr Cooper updates on his progress.

No joint discussion prior to the release of the Study, or any discussions with PH, meant we the 6 residents, had no idea:

- there would be no further steps to resolving the issues,
- no changes would be made to the wind farm or the turbines to prevent issues,
- our complaints of the past six years were to be dismissed,
- PH rejected their public claim to rectify the situation and that no efforts were made to assist us.

Hearing Impairment

- In 1982 I was diagnosed with a bi-lateral low tone sensori-neuro hearing loss, due to a virus
- This damaged my ears inner hair cells.
- I started wearing hearing aids at the age of 20 to protect my hearing.
- I now experience a high pitch squeal, a low rumble and sensations from noise only since the wind farm was built.
- Sleeping tablets, anxiety medication and CBT have not relieved the presence of head and ear pain or other symptoms.

Dr Leventhall

- **Dr Leventhall has made a number of claims about me and people who are hearing impaired.**
- **Dr Leventhall has no access to the number or nature of acoustic or health complaints I have made to my doctors or the health or planning authorities. He cannot assess my mental or physical state.**
- **Dr Leventhall has not met me yet makes public statements about me. Dr Leventhall is not my GP, Psychologist, Specialist or Acoustician whom have assessed me.**
- **Dr Leventhall should stop misrepresenting my experiences.**

Specific errors of facts re the CB study for public correction:

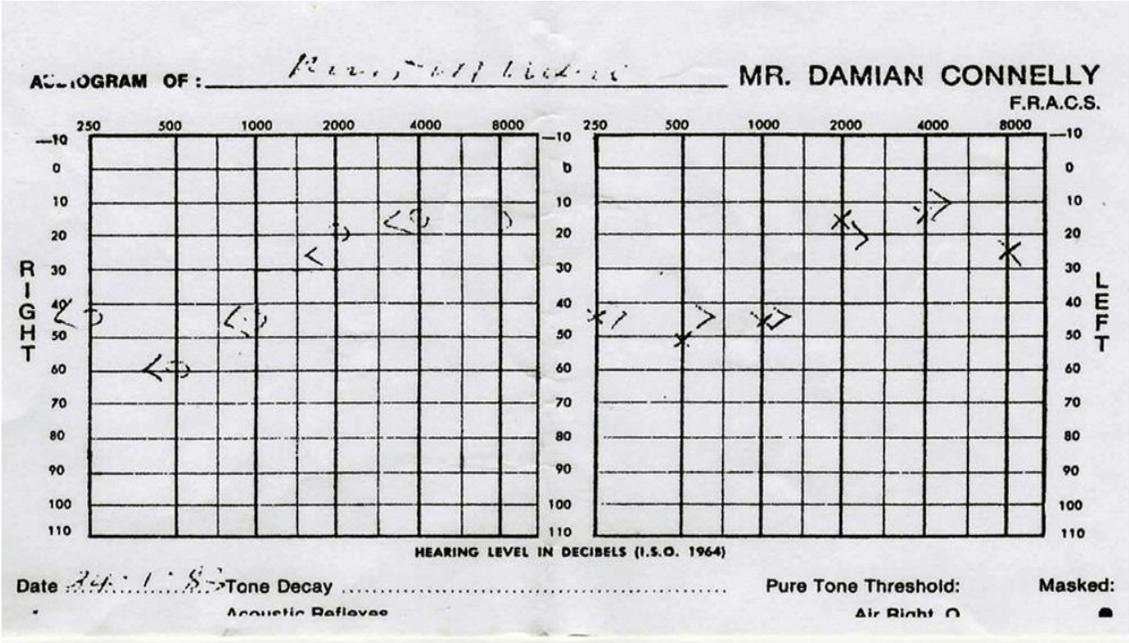
UK Acoustician Geoff Leventhall (GL) stated to the Senate Inquiry 2014 that Pacific Hydro had commissioned him to peer review the CB Study. The residents are unaware of any Leventhall peer review of the CB Study. We were advised that some questions from Leventhall were put to Mr Cooper in the public presentation of the report and were answered.

Factually incorrect statements by GL and others about myself or the CB study in the public domain include the following:

1. “Cape Bridgewater is audible” inferring that we only get sensations and symptoms when we can hear the turbines - FALSE
2. GL repeatedly refuses to accept the fact that despite being unable to see or hear the turbines I could tell with 100% accuracy whether the turbines were operating.
3. Generalised about my deafness, asserting to the Senate Inquiry Panel that I could hear low frequencies. FALSE - the following audiology tests show I can hear higher frequencies, but not lower frequencies.

Figure 2 0 Audiogram M. Ware 2016

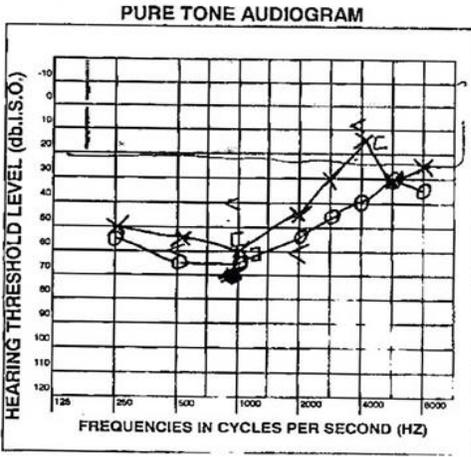
4. Figure 1 – Audiogram M.Ware 1982



AUDIOLOGY RESULTS

Name: Ware Melissa DOB: _____ Date: 2-3-16

Address: _____



COMMENTS

SYMBOLS

		RIGHT	LEFT
air conduction	unmasked	o	x
air conduction	masked	o	
bone conduction	unmasked	<	>
bone conduction	masked	[]
free field binaural		[]	

TYMPANOMETRY

	RIGHT	LEFT	NORMAL
Jorgor Type	<u>A</u>	<u>A</u>	<u>A</u>
ME Compliances (ml)	<u>0.4</u>	<u>0.6</u>	0.3 to 1.5
ME Pressure (daPa)	<u>10</u>	<u>10</u>	.100 to .50
Total Compliance at +200daPa (ml)			variable

STAPEDIAL REFLEXES

FREQUENCY (Hz)	500	1000	2000	4000
RIGHT ipsi				
PROBE Contra				
LEFT ipsi				
PROBE Contra				
-no reflex decay		+ reflex decay		

SPEECH AUDIOMETRY (dBSPL)

MATERIAL				
EAR	<u>L</u>	<u>L</u>	<u>R</u>	<u>R</u>
LEVEL	<u>80</u>	<u>70</u>	<u>80</u>	<u>80</u>
%	<u>90</u>	<u>83</u>	<u>80</u>	<u>80</u>

	Left	Right	Binaural
SRT (Speech Reception Threshold)	dB	dB	dB
MCL (Most Comfortable Level)	dB	dB	dB
UCL (Uncomfortable Level)	dB	dB	dB

5. *'Complaints had continued for about six years without resolution, leading to very stressed and unhappy complainants'. –TRUE*

PH haven't fixed the problems. PH dismissed all of our complaints of more than six years. PH rejected their advice to the community to rectify the situation to pre-wind farm conditions. So of course we are unhappy.

6. *'Cooper claimed the residents distress was due to infrasound from the turbines',*

Mr Cooper did not say our distress was from infrasound.

Read the study to see Mr Cooper started with dB(A), then 1/3 octaves, the FFT. He did not focus on infrasound, he showed the turbine signature was present when the turbines were operating and not present when they were off. He found a relationship between the complaints and the power output of the wind farm.

Mr Cooper's brief was to ascertain certain wind speeds and sound levels that related to the complaints of 6 specific residents.

To be clear, with a hearing impairment I do not hear what others do, I sense the pulses and vibrations and at level 4 or 5, I am desperate for the impacts to stop.

My sensations are NOT linked to audible noise but are linked to turbine operations including when stationary in the wind

Leventhall's claims re: WT noise effects.

“They are suffering adverse health effects because they are stressed by the presence of the wind turbines”

YES to admission re suffering adverse health effects, but NO:

- it is the **noise, (unwanted sound) and vibration** which is causing my sensations. Sensations include stress symptoms and sleep disturbance, which result in adverse health affects
- Separate scientific investigations by 3 independent acousticians objectively assessed the presence of noise in our homes.
- We felt some comfort in a study that in PH's public statement “aimed to fix the problem” and relief when somebody with an open mind took our complaints seriously, and looked at satisfying PH project brief.

‘Cognitive behavioural therapy reduces disturbance from noise through a process of desensitisation and can improve sleep and quality of life’ (Leventhall, Robertson et al., 2012),

- I have undertaken CBT on ENT advice. Meditation and other techniques helped with general stress management, but did not prevent nor resolve any of the health impacts of sound and vibration.
- Psychologists found that if they could even replicate the sounds which I cannot hear, they could not guarantee I would not be further harmed by them.

For Dr Leventhall, to say *‘Their distress is real’* , and then
to blame our distress on a ‘truth belief’ is a cruel deflection of the truth.

Deflecting from the evidence of harm.

Marginalised by those who ignore or deny the acoustic and health evidence that noise and vibrations from the wind turbines is directly causing sensations, including the physiological stress symptoms and sleep disturbance; they invoke one, or sometimes both of the following deflecting excuses:

“nocebo effect” – Simon Chapman.

Variations of **blame the victim** e.g. **“too hostile”** or **“stress from the presence of the turbines”** causing the symptoms & sensations rather than the sound itself causing them – Geoff Leventhall.

“No evidence of a direct causal link” – Andrew Dyer, Wind Farm Commissioner.

The issue of sensitisation and worsening severity of sensations with ongoing exposure is universally ignored, as is the new cross sensitisation to other noise sources.

'Sensation of Inaudible WT Noise'- by S. Cooper.

The inducing of symptoms has now been demonstrated in Steven Cooper's double blind provocation study.

- The implication of this recent provocation testing is that people including my husband and I, do indeed respond directly physiologically to pulsing wind turbine sound.
- We can sense these pulses despite being inaudible and having no idea when the pulsing was occurring.
- I experienced mildly affected vision and a sharp headache both of which ceased within moments of the inaudible noise being turned off and returned when sound was turned on.

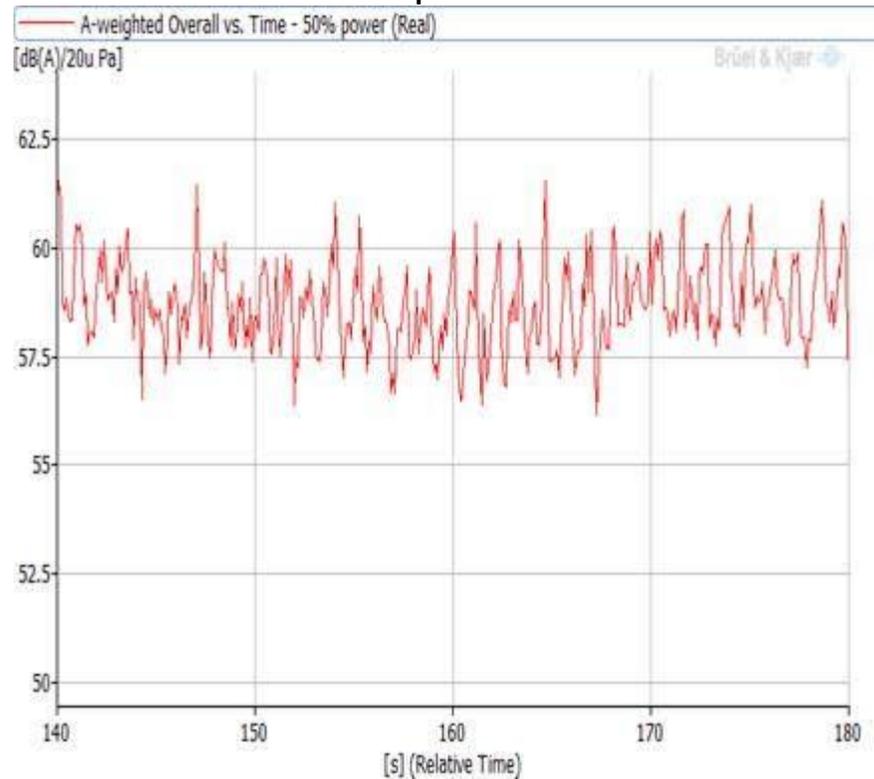
*“I think that the most important aspect of wind turbine noise ... is the amplitude modulation... and I believe that that is where the main answer should be given, in **amplitude modulation**, because **this is what upsets people**”* – GL – Senate Inquiry into wind farms 2014

Cooper slide below: **shows Strong AM at low power that corresponded to sensation 5 in my diary**

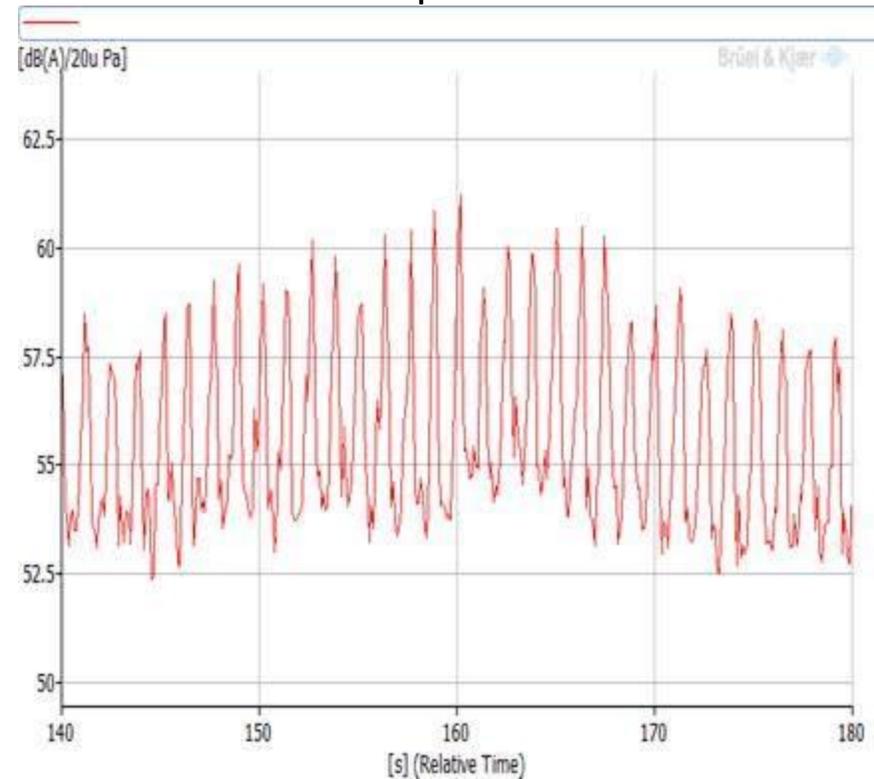
(from “Wind Farm Infrasound – Are we measuring what is actually there or something else – (Part 3)” to ASA Wind Turbine Meeting Dec 2016)

Part 2 Conclusions – Amplitude Modulation A-WEIGHTED OVERALL VS. Time

50% power



14% power



Conclusion

For professional Acousticians who abide by the ASA Code of Conduct and as residents being impacted by wind turbines, we support the Wind Turbine Working Group with a genuine desire to investigate the impacts wind turbines are having on the community.

It is unfortunate acousticians working for the wind industry and the environmental authorities do not adopt the same approach.

There are residents in proximity to wind farms in Australia who are severely impacted and like us have abandoned their home.

I am one resident of many in Australia being adversely impacted by wind farms and other low frequency noise sources.

Residents in proximity to wind farms and excessive noise suffer sleep and health impacts which require authentic treatment & preventative measures.

In light of this presentation, I request you examine the Cape Bridgewater Study and take on board the Appendices in which the six residents involved presented their perceptions of the study.

Then look at the work that has been presented to the ASA Wind Turbine Working Group.