

In the matter of the Stockyard Hill Wind Farm

Planning Panels Victoria

Proponent: Stockyard Hill Wind Farm Pty Ltd

Expert Witness Statement of Ian John Smales

Expert of Stockyard Hill Wind Farm Pty Ltd

1 Name and address

Ian John Smales
Biosis Pty. Ltd.
38 Bertie Street
Port Melbourne
Vic. 3207

2 Qualifications and experience

Appendix A contains a statement detailing my qualifications and expertise and addressing the matters set out within Planning Panels Victoria's Guide to Expert Evidence.

3 Scope

3.1 Role in Preparation of the Amendment Application

My firm Biosis Pty. Ltd. was responsible for the preparation of technical report titled:

- *Stockyard Hill Wind Farm Bird & Bat Impact Assessment. Assessment to Accompany Application to Amend Planning Permit No. PL-SP/05/0548.*

My firm Biosis Pty. Ltd. was also responsible for a letter dated 2 August 2016 to Peter Marriott, Generation Project Development Manager, Stockyard Hill Wind Farm Pty. Ltd. The letter was titled:

- *Bird & bat impact assessment for minor change to turbine dimensions.*

I am the sole author of the report and the letter. I undertook all aspects of the impact assessments described in the report and the letter.

3.2 Instructions

My instructions to prepare this witness statement are set out in Appendix A.

3.3 Process and Methodology

Full details of the processes and methods used in my assessment are provided in *Stockyard Hill Wind Farm Bird & Bat Impact Assessment. Assessment to Accompany Application to Amend Planning Permit No. PL-SP/05/0548*. The following provides a summary of the processes and methods used. My assessment was prepared to evaluate potential for:

- 1 Significant impacts on species of birds and bats that are listed as threatened or as migratory under Australian and Victorian legislation and policy and that have some potential to be affected by changes to Stockyard Hill Wind Farm associated with the amendment to planning permit application.

- 2 Potential risks of Brologas colliding with turbines and overhead powerlines internal to the wind farm associated with the amendment to planning permit application for Stockyard Hill Wind Farm.

The primary consideration of the assessment is to evaluate whether potential impacts on listed species of birds and bats of the permitted and proposed amended Stockyard Hill Wind Farm are likely to substantially differ.

A permit was issued by the Minister for Planning in October 2010 to enable the use and development of Stockyard Hill Wind Farm, subject to conditions. The permit allows for 157 turbines which was a substantial reduction from the 242-turbine wind farm that was the subject of original assessments. As a consequence of this process, no previous documented assessment exists for potential impacts of the Stockyard Hill Wind Farm, as permitted.

In order to appropriately consider potential impacts on listed species of birds and bats of Stockyard Hill Wind Farm for the purposes of the current planning amendment application, it was first necessary to consider those for the permitted wind farm in light of current information.

On 17 September 2015 I inspected Lake Goldsmith and wetlands visible from roads within a five kilometre radius of Lake Goldsmith. The inspection was carried out to determine whether shallow wetlands contained water and thus were likely to offer habitat to listed threatened or migratory shorebirds during the spring – autumn period of 2015/16. All natural, shallow wetlands were entirely dry with no visible surface water.

Assessment for listed birds and bats

This component of the assessment included species of birds and bats that have a medium or higher likelihood of occurrence at the site of the wind farm and are listed as migratory under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and/or listed as threatened under the EPBC Act; the *Flora and Fauna Guarantee Act 1988* (FFG EPBC Act) and/or are included on the *Advisory list of threatened vertebrate fauna in Victoria* (DEPI 2013 all references here are detailed in my report). In combination, I refer to these as 'listed' species.

To make my assessment I considered the following:

- The likelihood of listed species occurring at the wind farm site on the basis of a review of current records in publicly available fauna databases and the data contained in the assessment of fauna for the original Stockyard Hill Wind Farm planning application (Brett Lane & Associates 2010). This evaluation of publicly available fauna records included all data from all years up to the time of the database interrogation in late 2015. It thus included data from a range of environmental conditions including wet and dry climatic conditions.
- Potential for the wind farm to result in impacts on listed birds and bats due to habitat loss, disturbance and turbine collisions.
- Policy statements, significant impacts guidelines, listing advice and key threatening processes published by the Australian Government for the purposes of the EPBC Act.
- Differences in number and specifications of turbines between the permitted and proposed amended Stockyard Hill Wind Farm.

My assessment also took into account the results of a meeting on 7th October 2015 held in Ballarat to discuss aspects of the amended assessment with officers of DELWP. At that meeting it was agreed that the dry condition of potential shorebird habitats in proximity to Stockyard Hill Wind Farm meant that they were not suitable for use by shorebirds and were unlikely to receive water during the 2015/16 period in which international migratory shorebirds are routinely present in south-eastern Australia and thus that field surveys for shorebirds during that period were not warranted. It is my

understanding that the relevant wetlands remained dry and unsuitable until after migratory shorebirds undertook their routine migration from Australia in autumn 2016.

My assessment for significance of impacts on species listed under the EPBC Act used definitions of significant impact as set out in relevant EPBC Act policy statements and guidelines. There are no published guidelines for significance of impact on species listed as threatened under the FFG Act or species included in the *Advisory list of threatened vertebrate fauna in Victoria*.

In relevant EPBC Act policy statements and guidelines significance of impacts are evaluated for their effects on populations of subject species. This is appropriate because, while individual animals have a finite life-span, conservation is aimed at long-term persistence of their populations.

Assessment for Brolga

The Brolga is listed as threatened under the FFG Act and as vulnerable on the *Advisory list of threatened vertebrate fauna in Victoria* (DEPI 2013).

In making my assessment for this species I gave particular consideration to the *Interim Guidelines for assessment, avoidance mitigation and offsetting of potential wind farm impacts on the Victorian Brolga Population 2011* (DSE 2012) ('Brolga Guidelines').

My assessment also took into account the results of a meeting on 7th October 2015 held in Ballarat to discuss aspects of the amended assessment with officers of DELWP. At that meeting it was agreed that the dry condition of potential Brolga breeding sites in proximity to Stockyard Hill Wind Farm meant that they were not suitable for breeding by the species and were unlikely to receive water during the 2015/16 breeding season. It was therefore agreed that an aerial survey for breeding Brolgas in that season would not usefully inform the assessment.

The current assessment is concentrated on potential risk for Brolgas to collide with turbines and an overhead powerline because I consider these risks are those in which the amended Stockyard Hill Wind Farm is most likely to represent different potential for impacts from those of the permitted project. The assessment used quantified collision risk modelling (Smales *et al.* 2013) to compare potential risks associated with the permitted and the proposed amended Stockyard Hill Wind Farms. The process used the number and multiple specifications of each type of turbine proposed to be used for the permitted and amended wind farms and details of different routes of overhead powerlines internal to the wind farms.

In light of the comparative primary objective of the assessment, I note that while the mathematical modelling I used provides quite precise outputs, the fundamental value of the process is that it provides a mechanism for a valid quantified comparison. This is because assumptions about Brolgas were held constant for both the permitted and proposed amended wind farms. I consider the assumptions and values used are reasonable and they are informed by available information about the ecology of Brolgas in south-western Victoria. This evaluation of publicly available records included all data from all years up to the time of the database interrogation in late 2015. It thus included data from a range of environmental conditions including wet and dry climatic conditions. Nonetheless, I note there is no empirical data currently available as a basis for some inputs to the risk modelling, such as capacity for Brolgas to avoid collisions with turbines or powerlines. All assumptions used are detailed explicitly in the report *Stockyard Hill Wind Farm Bird & Bat Impact Assessment. Assessment to Accompany Application to Amend Planning Permit No. PL-SP/05/0548*.

Given that there is no current empirical knowledge of the actual capacity for Brolgas to avoid collisions, I provided results of the collision risk for three possible avoidance rates. 'Avoidance rate' is the measure of Brolgas flights that are otherwise on a potential collision course but that avoid collision. The rates I used are within the range of rates applied to such situations internationally (e.g. Cook *et al.* 2012).

Results of turbine and powerline collision risk assessment were used in a population viability analysis designed to evaluate the likely effects on the functioning of the Victorian Brolga population. As noted above, this population-level assessment is appropriate in consideration of possible effects on the long-term persistence of the population of the species.

I used results of the population viability analysis to provide recommendations intended to ensure that any impacts of the wind farm on Brolgas are offset or mitigated and that there is thus no net impact on the Victorian Brolga population, as required by the Brolga Guidelines.

4 Findings

4.1 Summary of Opinions

Assessment for listed birds and bats

The proposed amended Stockyard Hill Wind Farm covers a smaller land area and includes eight fewer turbines within the same local area as the permitted wind farm. All zones designated as turbine-free buffers around wetlands in the permitted wind farm remain free of turbines in the layout of the amended wind farm. The turbines for the amended wind farm are taller and have larger rotors.

In my opinion the physical changes entailed in the amended Stockyard Hill Wind Farm are not sufficient to measurably alter the assessment made for the permitted wind farm. I do not consider that the amended Stockyard Hill Wind Farm will result in a significant impact on populations of any species listed as migratory under the EPBC Act or on populations of any species listed as threatened under the EPBC Act, the FFG Act or included in the *Advisory list of threatened vertebrate fauna in Victoria*. In the case of species listed under provisions of the EPBC Act, my opinion is based on the criteria for 'significant impacts' as set out in published significant impact guidelines for the EPBC Act.

I note that the amended Stockyard Hill Wind Farm project has been determined to be a controlled action under the EPBC Act and that the controlling provisions are for listed threatened species and communities (EPBC Act sections 18 and 18A). The Australian Government Department of the Environment has provided Stockyard Hill Wind Farm Pty Ltd with the specific controlling provisions in a letter dated 13 January 2017. The controlling provisions do not include any species of birds or bats.

Assessment for Brolga

My assessment is that the differences between the permitted and proposed amended Stockyard Hill Wind Farms are negligible when evaluated for their potential effects on the Victorian population of Brolgas.

Results of scenario modelling of potential Brolga collisions with the Stockyard Hill Wind Farm are provided at 95%, 98% and 99% avoidance rates.

Results for turbine collision risk were added to results for potential collisions with an overhead powerline within the wind farm for each of the permitted and proposed amended wind farms.

Under assumptions used for the permitted Stockyard Hill Wind Farm the projected total annual average number of Brolga collisions ranged from 0.086 (95% avoidance rate) to 0.050 (99% avoidance rate).

Under assumptions used for the proposed amended Stockyard Hill Wind Farm the projected total annual average number of Brolga collisions ranged from 0.093 (95% avoidance rate) to 0.043 (99% avoidance rate).

The differences between these results for the permitted and proposed amended Stockyard Hill Wind Farms are so small that they require rounding up to the same value (0.1) for use in population viability analyses. As a consequence, the population viability analysis cannot discern any difference in potential effects of the two wind farm designs on the Victorian population of Brolgas. Based on demographics of the Victorian Brolga population, assuming 600 birds, and a combined estimated annual loss of 0.1 birds due to turbine collisions at the amended WEF the population's annual mortality rate would

increase by 0.16% per annum. Within the Victorian Brolga population this would be compensated by production and survival of one additional Brolga fledgling every 10 years. In my opinion measures to achieve this could be readily implemented. This would meet the requirements of the Brolga Guidelines for a zero net impact of any given wind farm on the Victorian Brolga population.

In preparing this expert witness statement I have reviewed the report *Stockyard Hill Wind Farm Bird & Bat Impact Assessment. Assessment to Accompany Application to Amend Planning Permit No. PL-SP/05/0548* and the letter titled *Bird & bat impact assessment for minor change to turbine dimensions* dated 2 August 2016 to Peter Marriott, Generation Project Development Manager, Stockyard Hill Wind Farm Pty. Ltd.

Save where otherwise indicated I adopt that report and letter as the basis of my evidence before Planning Panels Victoria

4.2 Any Additional Work Undertaken Since Submission of Amendment Application

On 24th January 2017 I made a visit to Lake Goldsmith and wetlands visible from roads within a five kilometre radius of Lake Goldsmith. The purpose of the visit was to obtain an understanding of the current habitat values of these wetlands to listed species of birds. Lake Goldsmith held water which was clearly receding after high rainfall in winter and spring of 2016. Slater Lake also retained water. Other accessible wetlands were dry. Lake Goldsmith was being used by a variety of common wetland bird species but I detected no threatened or migratory species. Slater Lake was being used by a combined total of several dozen common species of ducks and Caspian Terns. The inspection did not alter any of my opinions as detailed in my report or letter.

4.3 Response to Submissions

I have reviewed the following submissions which raise issues concerning potential impacts of Stockyard Hill Wind Farm on birds and/or bats:

Submission 1.

Submission 3.

Submission 4.

Submission 10.

Submission 11.

Submission 18.

My detailed response to the matters raised in these submissions is set out in Appendix C.

4.4 Amended Planning Permit Conditions

I have reviewed draft amended planning permit conditions for the wind farm and for Pyrenees and Corangamite Shires, as provided on a without prejudice basis by DELWP to Stockyard Hill Wind Farm Pty Ltd on 18th January 2017. I do not consider that any changes are necessary to those draft amended planning permit conditions.

5 Declaration

I have made all the inquiries that I believe are desirable and appropriate and no matters of significance which I regard as relevant have to my knowledge been withheld from the Panel.



Signed

Dated

25th January 2017

Annexure A – Response to PPV Guide to Expert Evidence

Expert's Qualifications

MSc. University of Melbourne

Professional Associations

Member: IUCN Species Survival Commission, Re-Introduction Specialist Group

Member: Australian Society of Herpetologists

Honorary Life Member: Friends of the Helmeted Honeyeater (bestowed 2015)

Past Member: Helmeted Honeyeater National Recovery Team (1989 - 2015)

Past Member: Orange-bellied Parrot National Recovery Team (1994 – 2003)

Past member: Scientific Advisory Panel to the South-West Victoria Brolga Research Project

Employment History and Achievements

2013–present Principal Zoologist, Biosis Pty Ltd

2003–2013 Senior Consultant Zoologist, Biosis Research Pty Ltd

1990–2003 Conservation Biologist, Conservation and Research Department, Zoological Parks and Gardens Board of Victoria

1989 Contractor to Department of Conservation and Environment, Victoria for establishment of Recovery Team for the Helmeted Honeyeater.

1978–1987 Fisheries and Wildlife Division, Victoria (subsequently Department of Conservation, Forests and Lands).

I am Principal Zoologist with Biosis Pty Ltd. I have thirty five years of professional experience in wildlife research and natural resource management with the public and non-government sectors. I have broad field expertise investigating the ecology, distribution and habitat requirements of Australian vertebrate fauna and have undertaken comprehensive research projects for birds and reptiles. I have authored or co-authored more than sixty scientific papers and consultant reports in those fields.

My career has included periods with the Wildlife Management Section of Victoria's former Fisheries and Wildlife Division (1978 - 87) and as Conservation Biologist with the Zoological Parks and Gardens Board of Victoria (1990 – 2003). I have been involved with research and management for threatened fauna throughout my career and have been a long-standing member of the national recovery teams for the Helmeted Honeyeater and the Orange-bellied Parrot.

I have designed and managed numerous flora and fauna assessments for multiple development projects including a number of major Government infrastructure projects.

Expertise to Make Report

My research on birds has encompassed population biology and my MSc dissertation was entitled "*Population ecology of the Helmeted Honeyeater Lichenostomus melanops cassidix: long-term investigations of a threatened bird*". It was based on a 20-year study of that critically endangered bird. I have investigated bird abundance, habitat use and behaviours at numerous sites for many Australasian taxonomic groups of birds. I have designed and led long-term investigations of bird and bat utilisation of many wind energy facilities in Tasmania, South Australia, Victoria, Queensland and Fiji.

Under my guidance Biosis has led the development in Australia of numerical modelling of potential risks of bird and bat collisions with wind turbines. Biosis owns the only proprietary avian collision risk model developed and used in Australia for this purpose. I have applied the model to assessment of potential risk for numerous bird species for wind farms proposed and in operation in Victoria, South Australia, Tasmania, Queensland and Fiji. I am the senior author of the 2013 description of this mathematical collision risk model published in the U.S. journal *Wildlife Society Bulletin*.

I presented a paper on cumulative risk assessment at the first world conference on wind energy and wildlife in Trondheim, Norway in 2011 and was a member of the organising committee for the first Australian conference on the subject held in Melbourne in 2012.

For the term of its work I was a member of the Scientific Advisory Panel to the South-West Victoria Brolga Research Project.

In 2016 I prepared a chapter entitled "Modelling of collision risk and populations" for a four-volume work "Wildlife and Wind Farms: conflicts and solutions" due for publication in the United Kingdom in 2017.

I am senior author of "Appendix D Birds and Bats" of the "National Wind Farm Development Guidelines Public Consultation Draft" (Environment Protection & Heritage Council, Commonwealth of Australia October 2009).

Other Significant Contributors to the Report (if any)

I am the sole author and contributor to the report *Stockyard Hill Wind Farm Bird & Bat Impact Assessment. Assessment to Accompany Application to Amend Planning Permit No. PL-SP/05/0548* and the letter titled *Bird & bat impact assessment for minor change to turbine dimensions* dated 2 August 2016 to Peter Marriott, Generation Project Development Manager, Stockyard Hill Wind Farm Pty. Ltd.

Instructions to Prepare Report

Mr Ian Smales
Senior Consultant Zoologist
Biosis Research Pty Ltd
38 Bertie Street
PORT MELBOURNE VIC 3207
ismales@biosisresearch.com.au

31 August 2016
Matter 82489236
By Email

Dear Mr Smales

Confidential and Privileged

Stockyard Hill Wind Farm Engagement of Expert Witness - Brolga collision risk

We are acting as legal advisors to Stockyard Hill Wind Farm Pty Ltd (**Stockyard Hill**) in connection with the Stockyard Hill Wind Farm (**Project**), and specifically the following applications:

- application to amend the existing planning permit PL-SP/05/0548-1 for the Project (**Amendment Application**),
- together with three associated planning permit applications:
 - two applications for the removal of native vegetation and to create an alter access to a Road Zone, Category 1 (External Overhead Powerlines) (Permit Application No. PA1600101 under the Pyrenees Planning

Scheme and Permit Application No. PA 1600126 under the Corangamite Planning Scheme) (**Overhead Powerlines Applications**); and

- application for an Extractive Industry (On-site Quarry) (Planning Permit Application No. PA2499/16 under the Pyrenees Planning Scheme) (**Quarry Application**).

1 Background

The Amendment Application includes a number of changes to the existing planning permit PL-SP/05/0548-1, including:

- A rotor diameter of up to 142 metres (an increase from the permitted blade length of 52 metres / rotor diameter of up to 104 metres);
- A hub-height of up to 120 metres (an increase from the permitted hub-height of up to 80 metres);
- A ground clearance from the bottom of the blades to the ground level of no less than 32 metres (not previously specified); and
- A total blade tip height up to 180 metres (an increase from the permitted height of up to 132 metres).

On 8 August 2016, the Minister for Planning determined to call-in the Overhead Powerlines Applications and the Quarry Application under section 97B of the *Planning and Environment Act 1987* (Vic) (**PE Act**). The Minister indicated he will consider these applications concurrently with the Amendment Application, and, following completion of the public notification period, appoint a panel of inquiry (**Panel**) under the PE Act if submissions are received as a result of the public notice. The Minister confirmed this would be a combined panel hearing considering all of the applications referred to above which have been made by Stockyard Hill.

2 Scope

2.1 Expert witness statement

We would like you to prepare a witness statement in accordance with Planning Panel Victoria's *Guide to Expert Evidence* (**Guide**) which prescribes the content and form of expert witness statements. We enclose a copy of the Guide for your reference. You are required to review and understand the Guide and to ensure your witness statement addresses all matters set out in the Guide, in particular those matters listed under the heading 'Content and Form of Experts Report'. Please contact us if there is anything in this Guide which you do not understand, or if you have questions in relation to it. Your witness statement should include matters required as set out in the Guide such as:

- (a) A reference to any technical report or reports that you rely upon;
- (b) A statement to the effect that you adopt the findings in reports you helped to prepare and were submitted as part of the amendment application and identifying any departure from the findings and opinions you express in those reports;
- (c) Any key assumptions made in preparing your witness statement.

Once submissions have been received that are relevant to your area of expertise we will also request you consider those submissions and respond to any relevant matters in your witness statement.

We have prepared a template to assist you to prepare and order your expert witness statement. You should treat the template as an aid and should not consider yourself constrained by it if you would prefer to structure your statement differently.

3 Timing

As the dates for a potential Panel hearing have not been confirmed, the timing of your expert witness statement is to be advised. We will let you know as soon as we can.

Any documents you prepare under this engagement should be marked 'Confidential and subject to legal professional privilege.'

4 Fee estimate and invoicing

It is important to note that you will continue to be contractually engaged on behalf of/by Stockyard Hill. Stockyard Hill will continue to be responsible for the payment of your fees and your accounts should be sent directly to the appropriate person nominated by Stockyard Hill.

5 Confidentiality

Your expert report prepared in accordance with this retainer is confidential and is not to be copied or used for any purpose unrelated to the Panel hearing without our permission.

Material supplied by Herbert Smith Freehills is, unless it is already in the public domain, confidential and is not to be copied or used for any purpose unrelated to your retainer without our permission.

6 Conflict of interest

It is important that you are free from any possible conflict of interest in providing your advice. You should again ensure that you have no connection with any potential party to the panel hearing which could preclude you from providing your opinion in an objective and independent manner.

7 Your duties and responsibilities as an expert witness

As set out in the Guide, an expert witness has a duty to the Panel and not to the person engaging the expert. You are not an advocate for any party. Consequently, though you are retained by Stockyard Hill, you are retained as an expert to assist the Panel, and have an overriding duty to it. The Panel will expect you to be objective, professional and form an independent view as to the matters in respect to which your opinion is sought.

Until your expert witness statement is in final form it should not be signed. You should, however, be aware that unsigned documents may need to be disclosed to other parties.

8 Communications

Unless advised otherwise, all communications, whether verbal or written, should be directed to our office so that we can coordinate, manage and integrate work activities with legal requirements and ensure legal professional privilege is maintained as appropriate. It is however quite appropriate for your communication to be copied into Stockyard Hill.

If you have any questions about this letter, your role in the hearing, or the approval process, and would like to discuss your availability or the content of your report, please contact us.

Yours sincerely

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Herbert Smith Freehills LLP and its subsidiaries and Herbert Smith Freehills, an Australian Partnership ABN 98 773 882 646, are separate member firms of the international legal practice known as Herbert Smith Freehills.

Identity of Persons who have Carried out Tests or Experiments upon which Reliance has been Placed (if any)

In order to provide validly comparable collision risk modelling for Brolgas for the permitted and proposed amended Stockyard Hill Wind Farms, it was necessary to use a number of input values as used in modelling for the risk assessment of the wind farm prepared in 2009 (Biosis 2009a and 2009b). For that work algorithms and mathematical computations for lengths and heights of Brolga flights were determined by Dr Stuart Muir of Symbolix (2008a and 2008b) on the basis of data provided in Brett Lane & Associates (2009). The modelling I have undertaken for the present risk assessment uses values from the work of Dr Stuart Muir (Symbolix 2008a and 2008b).

Reports Relied Upon to Prepare Expert Witness Statement

The reports prepared in 2008 and 2009 referred to above are as follows:

Biosis Research 2009a. *Modelled risk of Brolga collisions with turbines at the proposed Stockyard Hill Wind Farm*. Report for Stockyard Hill Wind Farm Pty. Ltd. Author: I. Smales. Biosis Research Pty Ltd, Melbourne. Project no. 7349.

Biosis Research 2009b. *Evaluating risk of Brolga collisions with powerlines for the proposed Stockyard Hill Wind Farm*. Report for Stockyard Hill Wind Farm Pty. Ltd. Author: I. Smales. Biosis Research Pty Ltd, Melbourne. Project no. 7783

Brett Lane & Associates 2009. *Proposed Stockyard Hill Wind Farm flora and fauna assessment*. Report for Stockyard Hill Wind Farm Pty. Ltd. Brett Lane & Associates Pty. Ltd.

Symbolix. 2008a. *Stockyard Hill Brolga/Windfarm interactions: Adjusting the Observed to the Potential*. Symbolix Pty Ltd report to Biosis Research Pty. Ltd.

Symbolix. 2008b. *Stockyard Hill Brolga Investigation: "one-off" flocking on-site*. Symbolix Pty Ltd report to Biosis Research Pty. Ltd

Annexure B – Curriculum Vitae

Curriculum Vitae of Ian John Smales

Position

Principal Zoologist, Biosis Pty. Ltd.

Qualifications

MSc. University of Melbourne

Professional associations

Member: IUCN Species Survival Commission, Re-Introduction Specialist Group

Member: Australian Society of Herpetologists

Honorary Life Member: Friends of the Helmeted Honeyeater (bestowed 2015)

Past Member: Helmeted Honeyeater National Recovery Team (1989 - 2015)

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Past member: Scientific Advisory Panel to the South-West Victoria Brolga Research Project

Employment history

2013–present	Principal Zoologist, Biosis Pty Ltd
2003–2013	Senior Consultant Zoologist, Biosis Research Pty Ltd
1990–2003	Conservation Biologist, Conservation and Research Department, Zoological Parks and Gardens Board of Victoria
1989	Contractor to Department of Conservation and Environment, Victoria for establishment of Recovery Team for the Helmeted Honeyeater.
1978–1987	Fisheries and Wildlife Division, Victoria (subsequently Department of Conservation, Forests and Lands).

Professional experience:

Ian Smales, Principal Zoologist with Biosis Pty Ltd has over thirty years of professional experience in wildlife research and natural resource management with the public and non-government sectors. He has been with Biosis since 2003. Ian has broad field expertise investigating the ecology, distribution and habitat requirements of Australian vertebrate fauna and has undertaken comprehensive research projects for birds and reptiles. Ian has authored or co-authored more than sixty scientific papers and consultant reports in those fields.

Ian's career has included periods with the Wildlife Management Section of Victoria's former Fisheries and Wildlife Division (1978 - 87) and as Conservation Biologist with the Zoological Parks and Gardens Board of Victoria (1990 – 2003). He has been involved with research and management for threatened fauna throughout his career and has been a long-standing member of the national recovery teams for the Helmeted Honeyeater and the Orange-bellied Parrot.

Ian has designed and managed numerous flora and fauna assessments for multiple development projects including a number of major Government infrastructure projects.

Ornithology

Ian's research on birds has encompassed population biology and his MSc dissertation is entitled "*Population ecology of the Helmeted Honeyeater Lichenostomus melanops cassidix: long-term investigations of a threatened bird*". It was based on his 20-year study of this critically endangered bird. He has investigated bird abundance, habitat use and behaviours at numerous sites for

woodland birds, shorebirds, raptors, owls and almost all other Australasian taxonomic groups. Ian has designed and led long-term investigations of bird and bat utilisation of many wind energy facilities in Tasmania, South Australia, Victoria, Queensland and Fiji.

Wind turbine collision risk

Under Ian's management Biosis has led the development in Australia of numerical modelling of potential risks of bird and bat collisions with wind turbines. Biosis owns the only proprietary avian collision risk model developed in Australia for this purpose and it has been used for approximately 30 proposed wind energy projects in Australia and by authorities including the Commonwealth of Australia. Ian is the senior author of the 2013 description of this mathematical collision risk model published in the U.S. journal *Wildlife Society Bulletin*. He presented a paper on cumulative risk assessment at the first world conference on wind energy and wildlife in Trondheim, Norway in 2011 and was a member of the organising committee for the first Australian conference on the subject held in Melbourne in 2012. In 2014 Ian was invited to prepare a chapter entitled *Modelling of collision risk and populations* for a four-volume international book on all aspects of wind energy and wildlife to be published in the UK.

Expert witness experience

Ian has provided expert witness evidence to a range of statutory planning hearings. These have included State-significant projects evaluated under Environment Effects Statements (Victoria) for the Victorian Long-term Storage Facility proposal, the Victorian Desalination Project, Sole Gas Extension and Wyndham Harbour Development.

He has provided expert evidence related to wind farm collision risk for various bird species for statutory hearings into Mortlake Wind Farm, Stockyard Hill Wind Farm, Yaloak South Wind Farm and Dundonnell Wind Farm.

Publications

Smales, I. in press. *Modelling of collision risk and populations*. in M. Perrow (ed) *Wildlife and Wind Farms: conflicts and solutions*. Pelagic Publishing. UK.

Smales, I. 2014. Fauna Collisions with Wind Turbines: Effects and Impacts, Individuals and Populations. What Are We Trying to Assess? Pp 23 – 40 in Hull, C., Bennett, E., Stark, E., Smales, I., Lau, J. & Venosta, M. (eds) *Wind and Wildlife: Proceedings from the Conference on Wind Energy and Wildlife Impacts, October 2012, Melbourne, Australia*. Springer Dordrecht.

Pavlova, A., Selwood, P. Harrisson, K.A., Murray, N., Quin, B., Menkhorst, P., **Smales, I.** and Sunnucks, P. 2014. Integrating phylogeography and morphometrics to assess conservation merits and inform conservation strategies for an endangered subspecies of a common bird species. *Biological Conservation* 174: 136–146.

Smales, I., Muir, S., Meredith, C. & Baird, R. 2013. A description of the Biosis model to assess risk of bird collisions with wind turbines. *Wildlife Society Bulletin* 37(1): 59–65

Smales, I., Quin, B., Menkhorst, P. & Franklin, D. 2009. Demography of the Helmeted Honeyeater (*Lichenostomus melanops cassidix*) *Emu* 109: 352–359.

Chambers, L., Quin, B., Menkhorst, P., Franklin, D., & **Smales, I.** 2008. The effects of climate on breeding in the Helmeted Honeyeater. *Emu* 108: 15–22.

McCarthy, M. A., Menkhorst, P. W., Quin, B. R., **Smales, I. J.** & Burgman, M. A. 2004. Helmeted Honeyeater (*Lichenostomus melanops cassidix*) in southern Australia – Assessing options for establishing a new wild population. Pp 410 – 420 In H. R. Akçakaya, M. A. Burgman, O. Kindvall, C.C. Wood, P. Sjögren-Gulve, J. S. Hatfield & M. A. McCarthy (eds) *Species Conservation and Management*. Oxford University Press, Oxford.

Smales, I., Brown, P., Menkhorst, P., Holdsworth, M. and Holz, P. 2000. Contribution of captive management of Orange-bellied Parrots *Neophema chrysogaster* to the recovery programme for the species in Australia. *International Zoo Yearbook* 37: 171-178

Smales, I., Holdsworth, M., Menkhorst, P., Starks, J. & Brown, P. 2000: Re-introduction of orange-bellied parrots, Australia. *Re-introduction News: Newsletter of the Re-introduction Specialist Group of the IUCN's Species Survival Commission*. 19: 32-34.

Smales, I., Quin, B., Krake, D., Dobrozczyk, D. & Menkhorst, P. 2000. Re-introduction of helmeted honeyeaters, Australia. *Re-introduction News: Newsletter of the Re-introduction Specialist Group of the IUCN's Species Survival Commission*. 19: 34 – 36.

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Annexure C – Detailed Response to Submissions

Issue	Submission No.	Response	Any Recommended New or Modified Conditions
<p>Potential impacts on EPBC Act listed migratory species that may use Lake Goldsmith have not been adequately considered by previous Brett Lane assessment reports for Stockyard Hill Wind Farm.</p> <p>Specific concern about mortality of raptors due to turbine collisions.</p>	<p>1</p>	<p>My 2016 report provides consideration of all EPBC Act listed migratory bird species that have potential to occur in the relevant area. I used criteria and definitions set out in the EPBC Act <i>Policy statement 3.21 Industry guidelines for avoiding, assessing and mitigating impacts on EPBC Act listed migratory shorebird species</i> to ascertain whether the area provides 'important habitat' for such migratory birds and whether effects of the amended Stockyard Hill Wind Farm are likely to result in a 'significant' impact on any such species.</p> <p>The permitted wind farm has been assessed under the EPBC Act as a controlled action with listed threatened species and communities and listed migratory species as controlling provisions.</p> <p>The amended wind farm has been assessed under the EPBC Act as a controlled action with listed threatened species and communities as controlling provisions. The specific controlling provisions nominated by the Australian Government Department of the Environment do not include any species of birds or bats.</p> <p>No species of raptors inhabiting Victoria are listed under provisions of the EPBC Act. Four raptor species are listed as threatened under the FFG Act (Grey Falcon, Grey Goshawk, Square-tailed Kite, White-bellied Sea-eagle). The distribution and/or habitat preferences of these four species are such that none of them are likely to be at risk of significant impact from the amended Stockyard Hill Wind Farm. Publicly available database records of listed threatened species from within 10 kilometres of the wind farm include no species of raptors. There is potential for mortalities of non-threatened raptor species, as there is with a range of</p>	<p>I do not consider there is any requirement to modify draft permit conditions, as provided on a without prejudice basis by DELWP to Stockyard Hill Wind Farm Pty Ltd on 18th January 2017.</p>



		<p>other widespread birds.</p> <p>I do not consider the physical changes entailed in the proposed amended Stockyard Hill Wind Farm are sufficient to measurably alter the assessment made for the wind farm as permitted. I do not consider that the amended wind farm will result in a significant impact on any species listed as threatened under the EPBC Act or FFG Act or listed as migratory under the EPBC Act.</p>	
<p>Submission states significant new evidence has emerged for the deadly impact turbines have on Brolgas.</p> <p>Larger turbines will pose a greater impact on Brolgas.</p>	3	<p>The submission does not specify the evidence about Brolgas it mentions. I am not aware of any documentary information for Brolga mortality due to turbines.</p> <p>My report provides quantified modelling of the difference in collision risk for Brolgas for the permitted and proposed amended wind farm. It holds all assumptions related to Brolga activities constant for the specific purpose of evaluating the risks associated with the designs of the two wind farms. My conclusion is that the difference in risk to Brolgas between the permitted and the amended wind farm designs will be negligible and that any effects on the Victorian Brolga population will be very low. I consider that measures can be implemented to offset such an impact to achieve a zero net effect on the Victorian Brolga population as specified by the <i>Brolga Guidelines</i>.</p>	<p>I do not consider there is any requirement to modify draft permit conditions, as provided on a without prejudice basis by DELWP to Stockyard Hill Wind Farm Pty Ltd on 18th January 2017.</p>
<p>Concern about general effects on birds and bats. Concern about Brolga collisions with powerlines.</p>	4	<p>As detailed in my report, I consider that measures can be implemented to offset impacts including those due to powerlines, in order to achieve a zero net effect on the Victorian Brolga population as specified by the <i>Brolga Guidelines</i>.</p>	<p>I do not consider there is any requirement to modify draft permit conditions, as provided on a without prejudice basis by DELWP to Stockyard Hill Wind Farm Pty Ltd on 18th January 2017.</p>
<p>Mention of general effects on fauna.</p>	10	<p>As detailed in my report, I consider that impacts on listed species of birds and bats will be unlikely to result in significant impacts on the populations of any such species.</p>	<p>I do not consider there is any requirement to modify draft permit conditions, as provided on a without prejudice basis by DELWP to Stockyard Hill Wind Farm Pty Ltd on 18th January 2017.</p>



<p>Concern specifically about siting of five turbines close to Mt Emu Creek due to its habitat values to fauna.</p>	<p>11</p>	<p>As detailed in my report, I consider that impacts on listed species of birds and bats resulting from the entire amended wind farm will be unlikely to result in significant impacts on the populations of any such species. No information available to me indicates that possible effects on Mt Emu Creek specifically would alter that assessment.</p>	<p>I do not consider there is any requirement to modify draft permit conditions, as provided on a without prejudice basis by DELWP to Stockyard Hill Wind Farm Pty Ltd on 18th January 2017.</p>
<p>Larger turbines will pose a greater impact on Brolgas.</p>	<p>18</p>	<p>My report provides quantified modelling of the difference in collision risk for Brolgas for the permitted and proposed amended wind farm. It holds all assumptions related to Brolga activities constant for the purpose of evaluating the risks associated with the designs of the two wind farms. My conclusion is that the amended wind farm design will pose a slightly greater risk to Brolgas, but that the effects on the Victorian Brolga population will be very low. I consider that measures can be implemented to offset such an impact to achieve a zero net effect on the Victorian Brolga population as specified by the <i>Brolga Guidelines</i>.</p>	<p>I do not consider there is any requirement to modify draft permit conditions, as provided on a without prejudice basis by DELWP to Stockyard Hill Wind Farm Pty Ltd on 18th January 2017.</p>