

RESOURCE PLANNING AND DEVELOPMENT COMMISSION

PROPOSED LAUDERDALE QUAY DEVELOPMENT BY WALKER CORPORATION PTY LTD

SUPPLEMENTARY WRITTEN OUTLINE OF CLOSING SUBMISSIONS ON BEHALF OF WALKER CORPORATION PTY LTD

Further to Part 7.10 of the written outline of submissions, the evidence of Dr Charles Meredith in relation to the carrying capacity model prepared by Dr Atkinson and Dr Stillman, together with the work of Mrs Harrison is important. It will be recalled that Dr Meredith peer reviewed the carrying capacity model.

As summary of his evidence is as follows:

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McElwaine supplementary questions

- The carrying capacity model is robust.
- It does not claim to predict the future.
- The model is not particularly sensitive to feeding patterns.
- If one accepts that POC feed differently in Europe that does not affect the modeling. The modeling simply assumes that there will be feeding.
- Under the model it makes no difference how the POC obtain their food such as by breaking open shells or not.
- Model did assess night time feeding.
- Claim that POC in Australia only feed by sight is the first time that has ever been publically stated in my knowledge.
- Dr Whelan observed that POC must learn to probe in the mud and I agreed with that.
- When taken in a detailed way through various pages in the PowerPoint presentation of Dr Taylor. Comments follow.
- Page 20. Misunderstanding on Taylor's part. The model was rerun with sensitivity testing.
- Model was run on the basis that the entirety of the RB area would be unavailable for foraging.
- Yet it still predicts that there is enough foraging habitat elsewhere.
- Page 21. This does not matter to the analysis.
- Page 23. The inputs are not such a fundamental issue. Some models are undertaken with no primary inputs. Its not true to claim "*garbage in, garbage out.*" Can usefully run a model full of data.
- This is a development project not a research project.
- Therefore would could have a small amount of information to make relatively precise conclusions about the impact of a known proposal.
- Page 24. Annette Harrison is not an unqualified student. She holds an honours degree and is studying towards a PHD.

- She appears to be better known than Ian Taylor with respect to POC research.
- The collection of data was neither rushed nor superficial.
- Page 26. This is the first time I have heard of this feeding claim. There is no published research data to support.
- Even if they only feed by sight all shore birds have very good night vision and that is a particular area of my expertise.
- The fact that they might not be able to open shells but by harrowing does not matter as the model is not sensitive as to how the food is obtained.
- Page 27 quantum leap of unjustified logic.
- The field observations for this project noted that they feed mostly in the water.
- Page 28. Makes no difference to this model. Interference competition was only relevant if there are huge densities of birds.
- Page 31. This is what the researches did. All aspects of the tidal cycle were covered or the zones were covered.
- Page 32. This was taken into account. The model is not run using only one number.
- Here the density of birds is low and sensitivity testing on this basis was undertaken.
- Page 34. I do not accept this. If they rest at high tide that is in their nesting situation and they have to deal with it presently.
- This will not change with this development proposal.
- Page 35. I do not agree with the premises. The model was run with various different figures and there is a fair bit of leeway in it.
- Page 36. I do not accept that the birds cannot use their eyes.
- Most waders observed were active at night.
- Model assumes 50% feeding reduction at night time which is a very conservative assumption.
- Page 37. I do not agree for the same reasons.
- Page 38. The model does not say that there is no other loss. Its an assumption.
- The model was rerun assuming 50% of the food source was eaten by other competitors and the model still demonstrated that it does not make much difference.
- The point is that there is a lot of resource and not many birds.
- Page 39. This does not matter and is not important. There are lots of scientific studies that have proceeded on this basis.
- It is an accepted technique.
- Page 40. The graph. The graph does not compare like for like.
- The important value to look at is the calorie content of the food source.
- Page 41. The model is based on optimal foraging theory. It assumes it. There is no need to expressly say so.
- Page 42. This is a nonsense conclusion and is just simply wrong.
- Page 43. The model is not about predicting their future. It is a snapshot of the carrying capacity based on assumptions.
- It is not a demographic model for the future. It is a carrying capacity model.
- Page 44. The high tide scenario is modeled.
- It is an existing situation.
- If birds shut down and they cannot feed then it makes no difference to the model.

- Page 46. I am not an expert in sampling prey but Aquanel do this for a business and they were the ones used.
- Annette Harrison who did the modeling is an expert and is perfectly happy with the basis on which it was prepared.
- Page 48. This is an outcome of the way the report is put together.
- The Aquanel reports have lots of detailed data behind them but this was omitted from the DIIS otherwise it would have been huge.
- The background reports exist.
- The statistics exist.
- Each of publically available and could have been made available to Dr Taylor.
- Page 49. The statistics exist.
- If Dr Taylor had the statistics he would not make this claim.
- He has overlooked that a statistician was engaged to analyse the data.
- Page 50. This is irrelevant given that all of this was undertaken in the background report.
- I have the same comments for pages 51-53.
- Page 54. It is in the background reports.
- Dr Taylor has simply not had the benefit of them.
- The model uses this information.
- Same comment for page 55.
- Page 57. Intensive observations of particular birds were undertaken by reference to isolating footprints and then examining shells dropped.
- Page 58. We say in the documentation that this is only a small component of the diet.
- We do not say that there is sufficient information for this to be accurately predicted.
- It is not true that this approach was discredited many years ago. It is still used.
- Page 59. I utterly reject.

Dr Woerhler questions

- Biological modeling can take various forms.
- Models have been developed for impacts on birds.
- This is a behavioral model.
- Page 40 of Taylor is a frequency graph. It is self evident that smaller prey is more frequently eaten but larger animals have a greater calorie value.
- Dr Whelan's evidence supports my view that POC are not sight only based feeders.
- If POC only use sight it makes no real difference to the model because it assumes that night time feeding was 50% less efficient.
- They do feed at night and were observed to feed at night.
- More sensitivity testing on the night time feeding pattern could be done but it would not make a lot of difference.
- I believe night time reduction is in the order of 20-30%.
- Model is undertaken on a worst case scenario.

Browne questions

- I have experience in population viability analysis which is predictive.
- Stillman and Atkinson do not predict mortality.

- There is no increase in mortality rates so therefore no point in running a PVA model.
- A PVA model was not pursued because the foraging analysis indicated that further mortality was unlikely as a result of the development.
- A PVA will not add to the EAA because there is no predicted increased in mortality.
- Model assumed on a worst case for the entirety of RB would become unavailable not just the footprint of this development. That was an extreme assumption used for sensitivity testing.
- Sensitivity testing in model is appropriate and well done.
- The model gives a prediction consistent with what is seen in the field.
- It is unusual to find such a close correlation between different bird species for the application of the POC model.
- Use of the European model is most certainly better than no model at all.
- POC model does work on the Australian species.
- Whether they feed by looking, by listening or by feeling is not important for the model.
- If Dr Taylor is correct that the POC only feeds by sight, then I still do not accept that there is no capacity to feed at night. This was observed.
- Whether the POC can open shellfish in the intertidal zone makes no difference.
- Model assumes mortality of biomass of 50% which is a very significant assumption.
- I have seen no literature which suggests that the POC only feeds by sight except the claim from Dr Taylor.
- On the searches that I have undertaken Annette Harrison is better qualified than Dr Taylor on the POC.

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Allom questions

- I have particular expertise in modeling rather than inputs to models.
- I am not an expert on the ecology of the POC, I am an avian expert.
- Science must be capable of being generalized and hence I can comment on the quality of the inputs to the model.
- I have analysed the inputs to a high degree.

Shaw questions

- As a general proposition replication of data many times over for a model is desirable.
- Migratory species may need to feed intensely. This is to be contrasted with the POC which is more sedentary.
- POC were observed to spend time feeding at night but less frequently.
- Ian Smales can give more assistance on night time feeding and disturbance at night.
- It is just speculation that the POC do not feed at night.
- The migratory stint is difficult to observe but the field teams had very good spotting scopes and were experienced observers.

- Observations were made in low numbers of the stint and hence that's why they could be observed.
- Our surveys were not meant to be comprehensive.
- Even in the best surveys some birds will always be missed.
- Variations between our surveys and Birds Tas can be explained by sampling errors, the fact that some birds did not migrate in particular years, the fact that some birds were in different areas or actual variations in real numbers.
- I accept the point about observer bias but I am confident in the personnel who did the surveys.

Ball questions

- If there is no mortality prediction then its pointless to run a PVA.

Pitt questions

- Difference between carry capacity model and a PVA is that the model is a snapshot and a PVA is a prediction of the future.

Browne further questions

- I spoke with Annette Harrison.
- She is very concerned that she is listed as an author of the unpublished Taylor paper.
- Taylor has a reputation for taking the work of others and downgrading it.
- As a consequence I am very concerned about his methodology.