

Swan Bay Environment Association Inc.



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NEWSLETTER NO. 62 - December 2012

From the Committee

As promised in our last newsletter, the main aim of this issue is to update SBEA members and supporters with current progress in the protection of Swan Bay water quality from the Stockland development. Greg Parry of Marine Ecological Solutions Pty. Ltd and a committee member has prepared a comprehensive account which is produced below. Finally, on behalf of the Committee, I hope you enjoy a peaceful and joyous holiday season.

Will Stockland's "The Point" development damage water quality in Swan Bay Marine Reserve?

On 13 August 2009 the Federal Minister for Environment, Heritage and the Arts approved the construction of part of Stockland's "The Point" residential waterway development near Point Lonsdale. This approval allowed stages 1-3 (approx 120 houses) to proceed, but most of the development (stages 4-14, 400+ houses) was subject to further stringent controls. Approval to proceed with the remainder of the development is dependent on further monitoring and modelling, which are intended to maintain high water quality in the Swan Bay Marine Reserve.

The discharge of nutrients, particularly nitrogen, is the main environmental concern, as this pollutant may cause problems due to excessive algal growth in Lakers Cutting and possibly Swan

Bay. Nitrogen is also a very difficult nutrient to model, as it undergoes so many biological transformations in the natural environment.

Lakers Cutting appears particularly vulnerable as all nutrients from the Stockland's development will be discharged into it directly, it is shallow, warm in summer, and it has limited tidal water exchange with Swan Bay due to the shallow sill at its eastern end. In the worst case scenario high nutrient discharges to Lakers Cutting could result in excessive algal growth, lack of oxygen, the death of most of the fauna, and very unpleasant smells.

The most important of the Minister's requirements of Stockland, before its development can proceed to stages 4-14, is that *"sampling must be undertaken to establish a baseline of water quality at Lakers Cutting and Lake Victoria, and must be undertaken in accordance with State Environment Planning Policy Waters of Victoria Schedule F6 that applies to Marine Reserves (SEPP Wov) unless otherwise agreed in writing by the Minister"*.

This condition means that Lakers Cutting must be treated as if it were part of the Swan Bay Marine Reserve for water quality purposes. Therefore to comply with the standards required for discharge into a marine reserve, discharges from the Stockland's development must ensure that "there is

no variation from background level of water quality”. Unfortunately, the meaning of “background level” in Victoria’s water quality standards is ambiguous. As these regulations are meant to protect marine reserves, our most highly valued marine sites, “variation from pristine” would seem the intended interpretation. However, Stockland appear to interpret this as variation from the water quality prior to their development.

Achieving even this lower water quality standard is likely to be difficult. Stockland’s recent monitoring has shown that nutrient concentrations in Lakers Cutting exceeded trigger values for ammonia and nitrate on **all but one** of the 13 occasions this site was monitored, even before the additional nutrient discharge from the proposed development commences (Figure 1). While these trigger values are not regarded as statutory by the EPA (EPA 2002), the Minister requires that discharges should be below these trigger values. Indeed, an explicit requirement of the Minister is that “*water above trigger levels cannot be discharged into Lakers Cutting from the Point Lonsdale Residential and Waterways Development site.*”

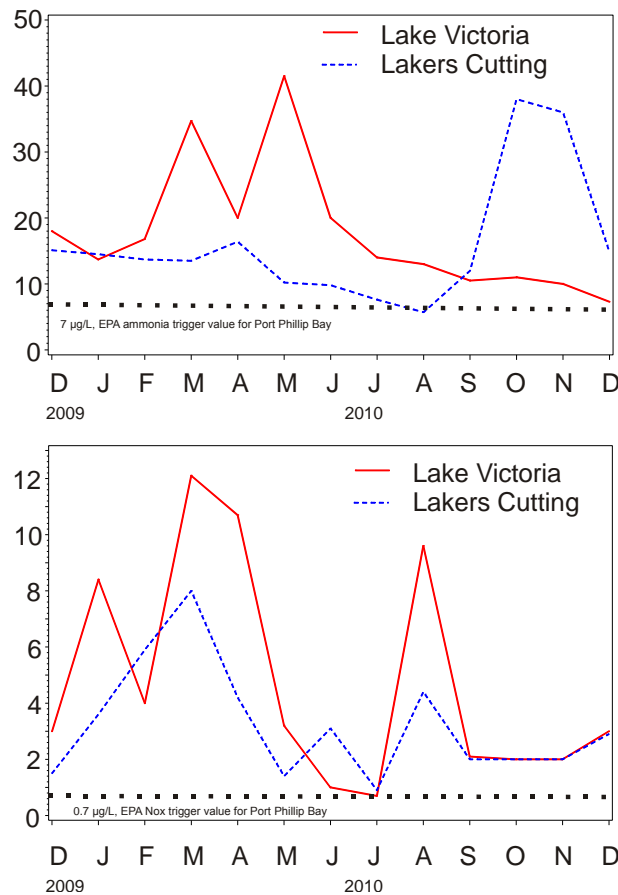


Figure 1. Monitoring of changes in ammonia and NOx (nitrate+nitrite) at Lake Victoria and Lakers Cutting between December 2009 and December 2010. EPA trigger values for ammonia and NOx are shown (Data from GHD, Stocklands website).

Water quality modelling

The Minister has established very demanding requirements for the nutrient modelling for the development. For example, the model must demonstrate that *"post-construction action will not result in a net annual increase in nutrient and sediment discharge into Lakers Cutting, and that flushing rates will pose no increased risk from toxic marine and algal species, and will meet SEPP WoV limits, taking account of the quality of water originating from Lakers Cutting and Lake Victoria"* (SEPP WoV= State Environment Protection Policy, Waters of Victoria)

The modelling attempted so far has been designed to ensure there are no algal blooms within the enclosed system of 'The Point' development. Algal blooms within the artificial lakes are proposed to be prevented by discharging ~1/20th of the lakes system per day into Lakers Cutting. There is a clear danger that blooms in 'The Point' development will be exported to Lakers Cutting.

There is yet to be any modelling of the effect of discharged nutrient-enriched water on algal blooms in Lakers Cutting and Swan Bay. This is in clear breach of the Minister's requirement that *"baseline modelling must be submitted to the Minister within 3 months of completion of the 13 month monitoring"*. As the monitoring was completed in December 2010, the modelling should have been completed in April 2011, 18 months ago!

Given the complexity of the modelling, and the inadequacy of the initial monitoring, 3 months was never likely to be enough time to develop an adequate model. The Department of Environment (and everything else) has now re-negotiated this aspect of the approval with the developer. Stocklands have indicated that the process from here on will involve a 4 stage process including: approval of a new monitoring plan, conduct of the monitoring, approval of a modelling plan and then conduct of the modelling. This process appears reasonable, but as of writing, there appears to be no new timetable. The Department of Environment has been less than helpful, and Stockland's viewpoint appears to be that the urgency of the modelling depends on when they need further house blocks for sale. Given the difficulties in undertaking this modelling, it is important that it commences as soon as possible, and that the results are available for peer review well before the next stage of the development is considered.

The Minister requires that *"if the modelling required ...cannot demonstrate that water quality can be managed ... the mitigation measures for the Point Lonsdale residential and Waterways Development ... must be revised until the person taking action can meet the requirements of ...no net increase in nutrient and sediment discharge into Lakers Cutting"*. Currently, reed bed filtration systems within 'The Point' development appear to be the primary means of mitigating nutrient discharge into Lakers Cutting. It seems unlikely that the reed bed mitigation measures planned can ever be effective enough to remove essentially all nutrients, which is the Ministers' requirement, based on Victorian standards for waters discharged into marine reserves.

Conclusion

To return to the question posed in the title – it seems inevitable that the discharge from ‘The Point’ development can only worsen the already poor water quality in Lakers Cutting. Whether this decline in water quality is great enough to cause anoxia, and a consequent major decline in the environment of Lakers Cutting, will depend critically upon the adequacy of the next phase of modelling, and continued adherence to the water quality standards in the Minister’s conditional approval.

Reference

EPA (2002). Port Phillip Bay water quality. Long-term trends in nutrient status and clarity, 1984-1999. EPA Publication 806.

Stormwater outfalls to Swan Bay (extracted from

The Bellarine Catchwork Network (BCN) is the recipient of a ‘Caring for Country’ Grant from the Federal Government. The focus of the grant is on on-ground works and community engagement projects that will lead to a decrease in nutrient and sediment loads entering Swan Bay and Port Phillip Bay. One of the actions in the BoQ ‘s Climate Change Adaptation Action Plan “Preparing for Climate Change in the Borough of Queenscliffe” is: “Monitor and treat stormwater from Council land running into wetlands and investigate the viability of constructing artificial wetlands to facilitate the treatment of stormwater in collaboration with neighbouring councils, Parks Victoria and DSE.” The BCN has had discussions with BoQ about stormwater treatment in the borough and options for improvement. A summary of the outcomes from the meeting were:

- (i) BoQ is to initiate baseline stormwater monitoring at two locations - the Hesse Street ponds and Learmonth/ Mercer Street stormwater pit.
- (ii) BoQ is to investigate the viability of constructing settling ponds and reed beds to facilitate the treatment of stormwater from Learmonth & Mercer Streets.
- (iii) BoQ and BCN to investigate potential funding streams for partnership projects to implement the construction of the artificial wetland.
- (iv) BoQ is liaising with Vic Roads re road drainage issues at Flinders Street, near the King St /Future Botanic Gardens site. Improvements could incorporate a small reed bed to replace the open channel in King Street.
- (v) Stormwater from Nankervis Parade currently discharges into an open earth channel that widens out into weed-infested foreshore adjacent to Swan Bay. This filtering area’s environmental values could be improved with weed control and appropriate planting.

Plant prices at the Nursery (79 Nelson Rd) are \$1 per plant.

Working bees are held:

Every Wednesday: 9-12; Last Friday of the month: 9-12; and 3 rd Sunday of the month: 10-12

We are always happy to see more volunteers. Just come, or contact Jill Warneke on 5258 1716 or visit our SBEA website: http://home.vicnet.net.au/~sbea/
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