ENVIRONMENT TASMANIA
The Conservation Council

THE PROPOSED TAMAR VALLEY PULP MILL: RISKS TO TASMANIA'S MARINE AND COASTAL VALUES

23 February, 2011

ISSUE

Environment Tasmania (ET) is concerned about the impact that the ocean disposal of 23 - 51 GL / year[1] (GL = gigalitre = 1,000,000,000 litres = one billion litres) of industrial process effluent from the proposed Tamar Valley Pulp Mill will have on the coastal environment, marine industries, marine ecosystems, and human health.

Fully considering and accounting for the fate of the over 160 potential "chemicals of interest"[2] in the proposed mill effluent - including polychlorinated aromatic compounds (dioxins/furans), phytotoxins, resin acids, sterols, and metals such as Mercury - is essential to avoid irreversible damage to economic, community, and environmental values.

VALUES & THREATS

Pulp mill process effluent is proposed to be discharged into Bass Strait approximately 3 km off Five Mile Bluff via a marine outfall at approximately 25 m depth.[3] The immediate pristine coastline between Beechford, Bell Buoy Beach, and the Low Head Coastal Reserve, as well as surrounding Bass Strait waters are of remarkable environmental, community, and economic value.

MARINE INDUSTRIES

The region is vital part of the Tasmanian seafood industry which, in total, is worth in excess of $300 million per year, employs over 7000 people, and is the major economic driver in some coastal communities. In terms of dollar value half of Tasmanian production is exported, generating new income to the State economy.

The acute and persistent impacts of the "chemicals of interest" in the proposed outfall effluent have significant potential to damage local fisheries. These wild fisheries include abalone, Australian salmon, and scallop, as well as farmed species such as abalone and Atlantic

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[1] The final magnitude of the proposed effluent volume is unclear given the number of related documents from Gunns, their consultants, and other documents released between 2006 - 2009 via the RPDC and EPBC assessments.

[2] Table A1.3: 'Chemicals of interest' in Bell Bay effluent - Human Health Risk Assessment - Bell Bay Pulp Mill Effluent, Toxikos Document: TR081205-RJF, July 2006

[3] The exact position of the proposed ocean outfall is unclear given the number of related documents from Gunns, their consultants, and other documents released between 2006 - 2009 via the RPDC and EPBC assessments.

salmon.[4] An independent scientific review by Associate Professor Barbara Nowack[5], commissioned by the Tasmanian Fishing Industry Council (TFIC), found that the assertion from Gunns consultants that, "the Bell Bay Pulp Mill effluent . . . will not adversely impact on the survival, breeding, or migration of fish . . ."[6] is not justified.

The seafood industry also plays a key role in the destination marketing of the State, part of Tasmania's "clean and green" branding to both national and international visitors.[7] In the case of the abalone industry, which contributes $240 million to the Gross State Product[8], Tasmanian exports are "recognized by world markets as a premium quality product harvested from pristine and unpolluted waters."[9] There is valid concern in the industry that overseas markets could be damaged by a perception, real or imagined, that Tasmania's status as "clean, green, and unpolluted" is tainted by the proposed ocean dumping of industrial effluent.[9]

"BRAND TASMANIA" AND TOURISM

Tasmania's "pristine and unpolluted" identity is a keystone in the foundation that underpins the State's brand and economic success. The independent Brand Tasmania Council, comprised of leaders of the private sector and representatives of the Department of Premier and Cabinet, Tourism Tasmania and the Department of Economic Development, places recognition of "the importance of Tasmania's natural clean environment to our international profile" as one of it's key guidelines.[10]

A State economic linchpin that relies entirely on "Brand Tasmania" is the tourism industry, delivering, "$2.2 billion annually directly to the pockets of Tasmanians" and providing 25,000 jobs year round.[11] The Tourism Industry Council Tasmania (TICT) reports that, "successive surveys show people believe [Tasmania's] future prosperity lies in tourism."[11]

In relation to the proposed pulp mill the Brand Tasmania Council has concerns that 'Brand Tasmania' may be damaged by "poor perceptions over our environmental record and lack of innovation and creativity in regards to the use of our natural resource"[12], and that the proposed pulp mill, "threatens to undo years and years of work by this government into the branding of Tasmania."[12] According to the Brand Tasmania Council, public perceptions about how we value our environment forms the, "very unique quality that makes tourists visit."[12]

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[4] "Gunn's Pulp Mill Proposal Update" - 27/10/06 – Shane Fava (TFIC Project Officer)

[5] "Review of the report on toxicity assessment of a pulp mill effluent for the proposed Tasmanian pulp mill - Prepared for Tasmanian Fishing Industry Council, Northern Tasmania Development and Dorset Council" - Associate Professor Barbara Nowak, UTAS Innovation Ltd - September 2006

[6] "Marine Impact Assessment - Bell Bay Pulp Mill Effluent" - Toxikos Pty Ltd., 2007

[7] "A Tasmanian seafood industry perspective" - Pulp Mill Symposium, 24 November 2005 University of Tasmania, Sandy Bay - Andrew Febey, Chief Executive, Tasmanian Fishing Industry Council

[8] "A Review of Abalone Diver's Charges" - Bruce Felmingham and Ingrid Van Putten, December 2005

[9] RPDC submission #353 - Tasmanian Abalone Council.

[10] Brand Tasmania Guidelines - www.brandtasmania.com

[11] "Tourism Can Cushion Tasmanian Economy" - 25 February 2009 - TICT - www.tict.com.au

[12] RPDC submission #553 - "BELL BAY PULP MILL DRAFT INTEGRATED IMPACT STATEMENT SUBMISSION OUTLINING COMMENTS AND RECOMMENDATIONS TO THE RESOURCE PLANNING AND DEVELOPMENT COMMISSION" - Brand Tasmania Council.

COASTAL AMENITY, RECREATIONAL VALUES, AND HUMAN HEALTH

The Tasmanian Environment Division (ED) identifies numerous recreational values in the vicinity of the proposed ocean outfall including surfing, scuba diving, wind-surfing, kite-surfing, and recreational fishing.[13] The Tasmanian ED lists these activities as needing protection in terms of "recreational water quality and aesthetics" for "primary contact, secondary contact, and aesthetic water quality."[13]

However, in terms of recreational values the documents submitted to the Tasmanian Government for State approval of the proposed pulp mill made the implicit assumption that there will be no direct contact with effluent, stating:

"To assess the potential for human exposure to the effluent it was not considered realistic that recreational swimming or diving would occur near the ocean outfall because it is 3 km offshore in inhospitable seas and the ocean bed at that point (approximately 25m deep) is barren. The only plausible way the general public could be exposed to substances in the effluent is through consumption of biota that may have accumulated substances from the effluent."[14]

Yet a key briefing document for the Independent Expert Group (IEG), mandated under the Federal EPBC assessment, highlights the possibility of, "high concentrations [of effluent] to be carried significant distances from the source", and that the effluent, "will certainly reach Commonwealth waters (and the coast) under conducive forcing conditions", as a "coherent pool of high concentration." [15] Australia's Chief Scientist identified this risk in his 2007 report to the Federal Environment Department saying, "however there are indications that levels of pollutants that may accumulate in Tasmanian waters may be of concern."[16]

Even more alarming is that the Chief Scientist's report also clearly states that the 2007 Federal decision (EPBC 2007/3385) ignored independent advice regarding the threat of pollution on Tasmania's beaches and in State waters:

"The Department also sought advice as to what might be the effect of extending the effluent pipeline diffuser further offshore. BMT WBM (Aug 2007, Attachment 7.5) advised that moving the outfall further offshore will increase the diffusion/ dispersal of pollutants and reduce the changes of them being driven ashore. However, the Department is of the view that moving the outfall further offshore would proportionately increase the likelihood of effects in the Commonwealth marine area."[16]

In the wake of the failed Tasmania Resource Planning and Development Commission (RPDC) assessment, this inadequacy of the Federal EPBC process to capture all the risks posed by the mill proposal was well summarized by Chief Reporter Sue Neales in the Hobart Mercury:

"In other words, don't worry about the chances of pollution on Tasmania's beaches and inshore waters, as long as it doesn't affect the parts of Bass Strait that the Federal Government is responsible for, which start 5.6km offshore."[17]

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[13] "Proposed Interim Water Quality Objectives and Interim Mixing Zone for the Gunns Limited Bell Bay Pulp Mill" - Greg Dowson, Water Specialist, Environment Division, 2 April 2007 - released by the Environment Department under FOI to the Tasmanian Greens

[14] "Human Health Risk Assessment - Bell Bay Pulp Mill Effluent"- Gunns Pulp Mill IIS, V10 A22 - Toxikos Document: TR081205-RJF, July 2006

[15] "Preliminary Hydrodynamic Modelling of the Bell Bay Outfall" - M. Herzfeld, CSIRO Marine and Atmospheric Research ,Hobart, Dec 2007

[16] CHIEF SCIENTIST'S REPORT ON THE SCIENTIFIC ASPECTS OF THE DEPARTMENT OF THE ENVIRONMENT AND WATER RESOURCES RECOMMENDATION REPORT, RELEVANT SUPPORTING DOCUMENTATION AND PUBLIC COMMENTS ON THE GUNNS LIMITED PULP MILL PROPOSAL (EPBC 2007/3385) IN TASMANIA - September 2007

[17] "A goer at last but still buts" - Mercury "Opinion", October 5th, 2007 - Chief Reporter, Sue Neales

The nearest shoreline (Five Mile Bluff) is 1.95 km away from the proposed outfall[3], with local surfing breaks and the public beaches at Beechford 4.6 km and 7.15 km away, respectively. By the Tasmanian ED definition recreational activities at all these locations risk primary or secondary contact while any coastal or offshore recreational fishing in the wider area risks secondary contact. All passive recreation would be effected by impacts to aesthetic water quality.

ECOSYSTEMS AND BIODIVERSITY

The Tasmanian ED identifies several environmental values for this area of Bass Strait including penguin habitat, the Tenth Island Seal Colony (breeding colony for Australian Fur Seals - Arctocephalus pusillus doriferus), migratory wading bird habitat, high diversity sponge gardens, a protected shark nursery (Tamar River Shark Refuge), diverse fish and macroinvertebrate communities, and the "vulnerable" listed Gunn's screw shell (Gazameda gunnii).[13]

The Federal EPBC assessment is limited in scope, covering only Commonwealth Marine Areas (starting 3 nm / 5.6 kms and ending 200 nm / 370kms offshore) and Federally listed migratory and endemic species such as the Southern Right Whale (Eubalaena australis), Great White Shark (Carcharodon carcharias), Loggerhead Turtle (Caretta caretta), and Southern Giant-Petrel (Macronectes giganteus).[18]

The 160 potential "chemicals of interest"[2] in the proposed mill effluent include polychlorinated aromatic compounds (dioxins/furans), phytotoxins, resin acids, sterols, and metals such as Mercury. The effluent, at the right concentration, has the potential to be harmful or lethal to phytoplankton, algae, fish, mammals, or other species in the ecosystem in either an acute and/or a chronic manner. In some cases pollutants may bioaccumulate at one trophic level or biomagnify up the food chain.[19] In some cases sediments may play a role in increasing the complexity of understanding the risk a specific toxic constituent may pose.

For some of the potential toxicants in the effluent well documented guidelines exist for establishing "trigger levels". However a Tasmanian ED specialist report documents the level of uncertainty in establishing guidelines for protecting environmental health saying, "unfortunately no environmental guideline values were found for some two thirds of the assumed substances in the pulp mill effluent."[13]

In the case of sterols, there is both scientific uncertainty and increasing concern about their effect on fish reproduction. A consultant report prepared for the Tasmanian ED highlights this issue saying:

"Fish exposed to high concentrations of effluent show sub-lethal effects such as altered reproductive systems. Compounds currently of concern are of the non-chlorinated type originating from pulping, rather than bleaching."[20]

and:

"The observed effect of growth of fish exposed to bleach kraft pulp mill effluent cannot be explained by [organochlorides, resin acids, or chlorinated phenols] . . . [leading] to the speculation that biologically active sterols present in the wood extractives are responsible for these effects (Tana and Lehtinen 1996). Although no conclusive evidence was presented, these researchers concluded that the effect levels of plant sterols in fish needed further clarification."[20]

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[18] http://www.environment.gov.au/epbc/protect/index.html

[19] "Response to GHD proposed modeling parameters and triggers received on 22 November 2006" - Tasmanian Environment Department Internal Working Draft - Released under FOI to the Tasmanian Greens

[20] Client Report 1631 - ENSIS PAPRO - released by the Tasmanian Environment Department under FOI to the Tasmanian Greens

Finnish based research published in 1999 concluded that, "results indicate that naturally occurring wood-derived compounds in pulp mill effluents may be responsible for reproductive impacts previously observed in fish both in the laboratory and in the receiving waters of pulp mill effluents. The results also suggest that more attention should be paid to process streams emanating from the unbleached part of the mill.[21]

CONCLUSION

The proposed Tamar Valley Pulp Mill poses potentially alarming risks to the coastal and marine values that underpin healthy economic, community, and environmental outcomes in Tasmania. Any proposal for a pulp mill in Tasmania must not only include the highest level of scientific rigor but also fully apply the precautionary principle.

In the specific case of the Federal EPBC assessment the Minister is required to take into account a number of guiding principles, referred to as 'the principles of ecologically sustainable development', listed in Section 3A of the EPBC Act. One of these principles is the precautionary principle:

"if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation" [EPBC Act, s 3A(b)][22]

With the significant risk of irreversible damage to marine and coastal values every option for reducing or eliminating the need for ocean disposal of industrial effluent must be considered. ET maintains we must be absolutely sure that any development is benign to the environment, other industries, coastal amenity, and human health.

Environment Tasmania Inc. - Per:

Dr. Thomas Moore, PhD - Environment Tasmania Coasts Coordinator

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[21] Karl-Johan Lehtinen, Kaj Mattsson, Jukka Tana, Christina Engstrom, Olof Lerche, Jarl Hemming, Effects of Wood-Related Sterols on the Reproduction, Egg Survival, and Offspring of Brown Trout (Salmo trutta lacustrisL.), Ecotoxicology and Environmental Safety, Volume 42, Issue 1, January 1999, Pages 40-49,

[22] http://www.environment.gov.au/epbc/notices/assessments/2006/3150/