

Tamar River Pollution

The Tamar river system drains more of Tasmania than any other river system. Its drainage boundaries extend from Myrtle Park, Upper Esk, beyond Mathinna, St Marys, Lake Leake, Tooms Lake, Tunbridge and Meander, and all localities within these broad parameters. It also drains the Ben Lomond massif, the Western Tiers and much of the Central Plateau as a result of HEC works and Poatina power station. Its tributary rivers pass through extensive areas of forestry activity and farmland. Many towns, with their attendant sewerage plants, have grown up on the banks of this river system. Waters from this extensive system eventually reach the Tamar River; the only lessening of this water volume would be due to waters utilised for irrigation and the storages which have been established for this purpose.

In the previous two centuries the activities of European settlers have greatly impacted on the river system. Forests were harvested to provide timber for a range of uses. Much land was cleared for farming activities. Both these activities led to increased erosion with silt build-up in the rivers. In times of heavy rain this silt and suspended particles were carried down the rivers to eventually reach the Tamar, an estuary virtually at sea level, which greatly slowed the movement of water and, with the intrusion of salt on incoming tides, caused flotation to occur. Flotation leads to an aggregation of fine particles of suspended matter into larger particles which then have sufficient mass to fall to the river's bottom. Thus the development of mud flats, which is a phenomenon repeated around the world in river estuaries, with the mighty rivers, such as the Nile, Ganges and Mississippi, leading to the creation of deltas. Some level of erosion is a natural process – it is how mountains wear down and plains are formed and basically it has resulted in some of the world's best farmland being formed.

In recent years there has been serious decline in forestry activity and farming practices are now cognisant of the evils of erosion and mitigate against this as far as is possible. However we don't control nature and storms and heavy rain events can cause flooding and increased erosion with landslips, although such events are quite rare. Thus probably the system's biggest problem today is the issue of human waste. Seventy years ago few towns, apart from Launceston, had sewerage systems. Each home dealt with its own waste, either with a

toilet can or septic tank. The writer well remembers his early years when the toilet tin was emptied and buried in the vegetable garden – with some excellent vegetables resulting. Human waste being returned to the soil is the same as animal waste being used in this way – it is part of a natural process or cycle. However with closer concentrations of people it is not practical to deal with human waste in this way and so we have sewerage systems. To my count there are at least fourteen of these beside the rivers feeding into the Tamar (St Marys, Fingal, Avoca, Campbell Town, Ross, Cressy, Longford, Perth, Evandale, Hadspen, Deloraine, Westbury, Blackstone Heights and then the various schemes serving Launceston and its suburbs).

When our numerous, small local governments were forced to address the problem of human waste, they generally opted for cheap expedients, little more than primary treatment only in some cases. And invariably these plants were located adjacent to the river passing through that town so that there was always the fail-safe expedient of overflows ending up in the river. No worries as several kilometres downstream it all entered the neighbouring municipality! The over-riding concern with our small rural councils, dominated by large landowners, was to keep rates as low as possible. This earned them kudos from ratepayers, but did not effectively deal with the problem. Thus Tasmania at this time has thirty or so non-complying sewerage plants! We reap what we have sown! This is the formidable task that faces Taswater and is the reason the state government is planning to take over this operation. Taswater has 29 owners each keen to see their annual dividends. In this climate it will be most difficult for Taswater to address the problems created for the Tamar River with municipalities across the state each identifying urgent works in their own areas.

How does all this finally impact on the Tamar? The Tamar has always seen silt build-ups as clearly demonstrated with the suburb of Inveresk sitting on silt deposited over the centuries. However the nature of this silt has changed. Much of the build-up over the centuries was due to the natural process of erosion whereby mountains were gradually weathered away and silt build-up occurred along the lower reaches of rivers draining from these highland areas. This was the situation at the time of white settlement in Tasmania. There were mudflats in the Tamar at that time and at some later time dredging was

introduced to allow ships to freely enter the port of Launceston. Thus the 'Ponrabbell' for years operated to remove silt build-ups. This silt was then deposited on adjacent land now occupied by Grammar School sportsgrounds and on the West Tamar. That these sites reached capacity probably coincided with the Port of Launceston moving downriver to Bell Bay, the lower reaches of the Tamar with strong tidal flows not being impacted by silt build-up.

In recent years the expedient of silt raking has been utilised. This is quite effective at times of high rainfall and subsequent heavy river flows and carries the silt downriver, hopefully not to return on strong incoming tides. Early raking produced an interesting and alarming result. The rake became somewhat clogged with sanitary pads – clear evidence of the quantity of sewerage sludge in the more recent silt build-up and of the unfortunate habit of many in seeing the family toilet as a convenient waste disposal unit! It is to be hoped that this expedient no longer occurs, but that might be wishful thinking. The population is what the population is and it will take mammoth efforts to change long held habits of little concern for one's impact on the environment. However if our river is ever going to be healthy the general population must be fully co-operative and strategies must be put in place to make our population more aware and prepared to work towards a healthy river. The rewards will be great as the river again becomes the population's playground!

Trevallyn power station severely reduced the amount of water entering the Tamar through Cataract Gorge, although it did not impact the total of water entering the Tamar, but it now entered the river by way of the Tailrace. In many ways this has become a more consistent flow as the additional waters from the Central Plateau now reach the Tamar to add to volumes and water storages help even out flows over the year. More water down the Gorge would have decided aesthetic gains for our city, but would not overcome silting problems. However it would greatly impact on water quality in the river's upper reaches of Home Reach. The proposed canal from the Tailrace to the mouth of the Gorge would merely have one benefit – cleaner water. It would be sluggishly flowing water, little able to pick up and carry downstream silt deposits although it would reduce the potential for sewerage waters from Ti Tree Bend to intrude into Home Reach.

The answer, undoubtedly to Launceston's river woes is to be totally stringent in what we allow to go into the river. NRM is working to greatly reduce farm run-off, especially that caused by sheep and cattle, with the river being fenced off in a number of situations. That body is also looking at riverside erosion and funding efforts to reduce this. However recent water testing has shown that both humans and animals are contributing to our river's unhealthy state and this must be further pursued. I suspect the Killafaddy abattoirs at St Leonards are still a negative for the river unless its wash-downs are collected and taken elsewhere. Every pipe carrying waste or storm water into the river needs inspection, desirably with settling basins established so that muck and other nasties don't enter the river.

We must address the safe, effective disposal of human waste at a single large 'farm'. Ti Tree Bend has scope to be this sole sewerage plant, but must upgrade its treatment to tertiary stage with no overfills spilling into the Tamar. This probably demands a large settling basin and the Riverside flats provide a suitable site for this, with the creation of a large shallow lake. Here bacteria and micro-organisms and marine animals will work to purify the water, with evaporation seeing to much of its dispersal. Sewerage solids make excellent soil conditioners and can be widely dispersed across neighbouring farmland rather than be let into the river to create further silt build-ups.

The problem of Launceston's combined sewerage and stormwater system, an unfortunate cheap expedient of its city governance over the years, can be lessened by creating holding ponds such as that at the head of Margaret St. or behind PCYC in East Launceston. Separation would be a horrendously expensive exercise although any future development ought to insist of separation. Mind you, stormwater is far from pure water – it is the water of gutters, drains and roadways and its impact on the river is still a negative. However it occurs during high rainfall events which tend to increase the river's outward flow to disperse this extra water downstream.

Robin Frith has proposed a barrage across the lower Tamar near the wood chip mill. This would create a fresh water lake stretching back to Launceston. It would overcome flotation as salt would no longer reach the upper Tamar. It would provide virtually limitless water for irrigation and other purposes. The river would become the wonderful playground it could be. If maintained at

about two thirds high tide level, it would overcome some of the problems the present three metre rise and fall creates for river users. It could be used to obviate against sea level rise, something we cannot ignore as our world is on a pathway that will take many decades to successfully address. While it has a range of benefits I believe we must tread warily and fully research with modelling any moves in this direction.

Every second person seems to have a solution to our river's woes, the canal proposal just being one of many. Personally I'm inclined to trust the experience and wisdom of Alan Birchmore, the architect of our improved levee system. However I believe we all strongly agree that an increased flow of water down the Gorge would have benefits, maybe even through a re-activation of the original Duck Reach power station as a corollary to the Trevallyn power station. And now that our thinking is encompassing pumping water back to again pass through the turbines (think of the Snowy River proposal), it would appear feasible to undertake this with the Trevallyn power station. This pumped hydro is an eminently feasible provision for this particular scheme which has the great advantage of being close to its water storage in Lake Trevallyn. However it is strongly urged that this is not to merely again flow through the existing station, but to come down the Gorge through a reactivated Duck Reach power station or base-of-the-dam turbines which, commendably I understand, is being worked towards by others. And the power for this pumping? How about a wind farm on the site of the never-to-be-built pulp mill?

I believe this is about the fifteenth report prepared on the problems of the upper Tamar, which appears to have been a diversion employed many times to deflect those urging that these problems should be addressed. I am encouraged that our present state government now has the necessary drive to see a solution effected. It is urged that this happen no matter what the Legislative Council does with the present Taswater take-over bill. I personally believe that all ratepayers across the state should contribute to righting our sewerage problems. A one cent additional rate would provide considerable funding for the next several years until problems have been rectified.

Dick James
16/9/2017