

Salinity Inquiry
Submission No. 77.....

Submission to: Inquiry into the coordination of the science to combat the nation's salinity problem.

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Research fields: Salt lakes: their microbial biodiversity, genetics of hypersaline bacteria and their viruses.

What research at the extreme end of salinity?

1. Basic research at the extreme end of salinity (e.g. salt lakes) is very **poorly funded**, and has just taken a dramatic downward turn (see point 2). For example, what is the total surface area covered by salt lakes or salt pans in Australia. One would think this to be an essential and readily available statistic, but even though the value is contained in satellite image data, nobody has actually derived the figures from it. Why?

2. The **ARC** (Australian Research Council) has made a recent policy decision to allow medical applications to increase their success rate for biological research projects considered 'basic science'. The result this year (2003) has been the ousting of very many basic biological science applications (such as myself), including those researching salinity.

3. Australia has many natural **salt lakes** (our largest lakes are salt lakes), some of which are mined and others are used to produce beta-carotene from algae. Together with salt production from solar salterns, these industries contribute many millions of dollars to the Australian economy. Salt lakes are red coloured because they are teeming with microbial life; a virtually untapped **natural biodiversity** that has yet to be documented.

4. We have enormous salt lakes here (Lake Eyre) but the **number of scientists** working on them are very few. Why? My experience is that there are few possibilities to fund it. In universities, medical research labs expand and personnel are promoted at a more rapid rate than non-medical researchers. Indeed, in my annual staff appraisals, the idea of changing to medical research has been raised as being a more productive career move. If salinity is really such an important issue then show this by funding research as boldly as some of the public health campaigns.

5. I believe that if we are going to put money into salinity at all, then it should cover the full spectrum, from rising salinity in current agricultural soils to the **extreme salinities** of salt lakes. Indeed, some of the solutions for lowering salt in agricultural soils results in new salt lakes to take the extracted salt. Are they just going to be dumps or can they be used for production of useful materials (e.g. beta-carotene). Only basic research will answer this question?

6. **What is there to coordinate?** The current situation is untenable as a viable strategy. The research needs to be **properly funded** in the first place. Labs will coordinate well if they have sufficient resources to do so, and aren't desperately trying to survive another year on nothing.

Yours sincerely, Mike Dyall-Smith