

Submission from Associate Professor A.J. Gabric

(from an e-mail to the Executive Director of the Review, 23 January 2006)

In the environmental sciences, the demand by industry and research institutions for graduates with quantitative and modelling skills has for some time now outstripped supply.

This is because we have enormous difficulty attracting both undergraduates and post-graduates who have mathematical/computing and environmental interests.

Part of the problem is probably a lack of appreciation by high school students of the applications of models and computing in the ecological and earth sciences, which feeds through our undergraduate intake and into postgraduate numbers. The environmental or ecological moniker is simply not recognized as an entree to a quantitative career.

Ironically, this comes at a time when there is (i) a strong quantitative underpinning to many aspects of environmental research, (ii) an extraordinary quantity of data on the biosphere from in situ telemetric and spaced based remote sensing instruments, and (iii) cheap access to high power computing platforms and modelling tools.

There are certainly opportunities for engaging students in applied maths and modelling through the many challenging environmental problems that continue to plague modern society.

We need, however, to offer new and innovative programs that bridge the disciplinary boundaries of maths, physics, chemistry and biology.

In terms of maths/environmental applications, there are clear and pressing challenges in the atmospheric/marine and climate sciences.

The recent creation of an ARC funded Earth Systems Science network is a step in the right direction, but we need to extend this theme to our undergraduate programmes.

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