

MARINE ENVIRONMENTAL EDUCATION - ARE WE LEARNING OUR LESSONS?

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Abstract

In a busy world where 'out of sight, out of mind' is commonplace, conservation of coastal and marine environments is often the last thing on people's minds as they go about their everyday lives. Though not being a regular beachgoer doesn't mean you have no impact on marine environments, and it certainly doesn't mean unhealthy marine environments don't impact you. Our challenge then, is to develop ways to encourage people to think and act holistically, considering the impacts of their actions on a world which is often incredibly disparate from the one they reside in. What does the scientific research mean to the general public?

Environmental education is a changing field. Marine education is even more complex given, among other things, the physical barrier between most people and marine and coastal environments. We must learn from our mistakes as well as our social research in order for better outcomes to transpire. This paper will give an overview of the developments in environmental and sustainability education over the last two decades. Relating these developments to marine and coastal environments and drawing on the knowledge and experience of marine educators from across Australia, it will make suggestions for a positive way forward for people and marine environments together.

Introduction

As we learn more and more about coastal and marine environments, what do we do with the information we gain? Coastal management programs stem from the findings of scientific research and often involve legislation about the way people use coastal environments. How effective has this been over the last few decades? In the famous words of Albert Einstein, "significant problems cannot be solved at the same level of thinking we were at when we created them".

There is increasing pressure from all angles on coastal environments. As we search for ways to manage this pressure, we must also think about managing its source. Why is it that many people see no problem with walking through fragile foredunes, or even building their homes on those fragile foredunes? Is it possible to manage these and other problems without understanding (and potentially changing) the thought process that results in the environmentally degrading behaviour? Research and history indicate that doing so would be fighting a losing battle.

Speaking Gibberish: Legislation Alone Is Not Enough

Sometimes, certain laws mean no more to the average person than speaking Gibberish. Consider the situation below.

A new law has been passed stating people living in NSW can only speak gibberish. Gibberish Officers patrol the streets every month or so - there are only 150 in the entire state, so they're pretty busy. If they catch you speaking clear English, you'll be fined a few hundred dollars depending on the nature of the offense (how many people heard you & what you said). Your neighbours and just about everyone you know still speak English and haven't been caught yet. It obviously makes so much more sense to speak English! Why should you have to learn some new crazy language? Noone in other States have to speak Gibberish!

What do you do?

What if you knew the reason for the law? Astronomers in Canberra were contacted by extraterrestrials who've deciphered the English language. They're carefully listening to all our conversations and have a particular interest in Australia. They've decided that because Australia is an island, they can come and take over with no other Earthlings realising. All State Governments are aware of the situation. We've got NASA onto it and they're currently trying to figure out where to send the nuclear bombs...a process not unlike searching for a specific grain of sand on a beach...and that grain is smarter than you and doesn't want to be found.

The NSW Government hit the ground running. They travelled the state talking to people - the more creative the better - to find some possible solutions or ways to stall the extraterrestrials. You and everyone you know were involved in the process. There were a number of options put to you and you couldn't come up with anything better. Speaking Gibberish was the most obvious way of making it more difficult for the aliens to gather information which would help them take over Australia. The suggestions were taken into account and carefully evaluated. Among other things, it was agreed that speaking Gibberish would certainly hinder the aliens, and it was a step worth taking. As a result, it was quickly passed as law and Gibberish Officers were trained up. Everyone was aware of the threat though and were more than willing to comply. As part of this change, underground Gibberish lessons were conducted to help people learn the language as easily and quickly as possible. These Gibberish lessons were made accessible to every NSW citizen through various methods. Gibberish teachers were available for support at any time of the day at the press of a button. You and all your family, friends and neighbours became fluent in Gibberish.

Would you then speak Gibberish?

Believe it or not, this wacky situation can be likened to introducing new restrictions on people's actions without quality collaboration and education. Consider how you would react if someone simply told you to change your personal behavior or you'll be slapped with a fine. Your immediate reaction would likely be defense, followed by defiance. If however, the issue was put to you in the following way, would you feel differently?

- a. The problem resulting from the behaviour was explained clearly to you in depth in a friendly and blameless way.
- b. You were asked for suggestions on how to reduce the problem.
- c. Your suggestions were not only heard, but listened to and acted upon.
- d. People or organisations provided you with knowledge, skills, funding and/or equipment for alternatives to the troublesome behaviour.
- e. You could see others around you changing their behaviour and were able to share and discuss challenges with them.
- f. You received encouragement and acknowledgement for your effort.
- g. You saw that what you were doing made a difference.

Sustainability Education

Educating people about environmental problems has come a long way since the hippy days of the 60s. Trial and error have shown us that for environmental conservation in a world of increasing population to occur, we must change the way we approach managing people and their behaviour. We've come to realise that a number of things need to occur in order for people to value natural environments. Only once people value natural environments will they even consider changing their behaviour in order to conserve and protect them.

Sustainability Education, or Education for Sustainable Development, goes beyond the old school Environmental Education approach to managing environmental impacts. First, it takes a triple (or even quadruple) bottom line approach to managing behaviour:

- Environment
- Society/Culture
- Economy

Education for Sustainability makes the logical assumption that without a balance of all three points of the triangle, change will not occur. Without the financial freedom and societal acceptance for example, pro-environmental behaviour will not result.

However even with this multi-tiered approach, people need to have the knowledge, capacity and motivation to change their behaviour. Education for Sustainability is founded on the following principles:

- *Envisioning* - 'We cannot build a future we cannot imagine. A first requirement, then, is to create for ourselves a realistic, compelling and engaging vision of the future that can simply be told.' (Elgin, 1991 p.77)
- *Critical Thinking* - 'Along with a process called values clarification, critical thinking helps us to uncover how our culture shapes our deepest held personal values and beliefs so that we can grasp both the personal and cultural dimensions of the many complex problems of sustainability.' (Ziegler, 1987)
- *Participation in Decision-Making* - The word 'participation' is often linked to consultation. Unfortunately, this is the most common form of community engagement for many organisations, since it gives away no power. Ideally, community engagement should involve individuals (as opposed to stakeholder or representative groups) in a process of sharing ownership of decisions and outcomes.
- *Partnerships* - 'The challenges of sustainability are daunting ones, but partnerships are proving that we don't have to face them alone.' (Tilbury et al, 2004 p.64)
- *Systemic Thinking* - 'You think because you understand 'one', you must understand 'two', because one and one make two. But you must also understand 'and'.' (Ancient Sufi Saying)

"Sustainable development calls for additional and different processes than those traditionally thought of in education. The quest for sustainability demands new approaches to involve people, rather than convey just a body of knowledge." (Tilbury et al, 2002 p.12).

Coastal and Marine Education

In my view, coastal and marine environments present even more challenges for scientists, managers, educators and policy-makers. The New South Wales coastline not only acquires problems flowing down from terrestrial environments, but also from the other side, such as decreasing biodiversity in Australian and international waters, as well as from above as climate change alters the temperature and chemistry of our oceans. Yet with all this pressure, coastal and marine environments are very much out of sight and out of mind for most New South Wales residents. It is for this reason that quality marine education be facilitated throughout New South Wales.

The unique challenges of coastal and marine environments has led to research from the Australian Research Institute in Education for Sustainability, funded by the Commonwealth Government: *Assessing Provision and Effectiveness of Coastal Management Education* (2006). The research essentially analysed a number of marine education programs of various scales, asking how effective they are in increasing the knowledge, skills and motivation of participants to create sustainable, long-term change in how our coasts are managed.

Key findings of the research were interesting, but not surprising:

"While there are good examples of programs underpinned by Education for Sustainability principles, many other programs remain focused on raising awareness or engaging participants

in on-the-ground activities without providing learners with opportunities to participate in defining problems, developing positive visions for the future or critically questioning the core issues underpinning coastal management problems.”

Based on findings, the report summarised programs into the following categories and made appropriate recommendations, which provide us all with a good take-home message:

- *Awareness raising programs* - Seek to integrate more action-oriented and learner-centred approaches into awareness raising programs.
- *Participant engagement programs* - Seek to increase effectiveness of participant engagement programs through the application of Education for Sustainability approaches, for example by providing learners with greater involvement in defining coastal management issues, in envisioning positive futures for the coast and in critical thinking and reflection on the root causes of coastal management problems.
- *Professional development programs* - Seek to incorporate Education for Sustainability approaches into professional development programs with the aim of increasing the impact of such programs and transforming professional practice.
- *Coastal Management Networks* - Incorporate learning as a primary objective into existing networks such as the Marine and Coastal Communities Network with the aim of increasing the effectiveness of these groups in facilitating change for improved coastal management.
- *Action learning and action research programs* - Seek to expand the application of learning and action research programs within coastal management education programs.

Conclusion

Coastal and marine education is not always ‘someone else’s job’. Anyone working in marine and coastal management or conservation is responsible for effectively ‘educating’ people. By ‘educating’, I do not mean teaching or telling; I mean building people’s capacity to make personal, long term behavioural changes to conserve our coasts and oceans. We must take our science and use it appropriately. Through being aware of the developments in sustainability education, we are all one big step closer to achieving sustainability. It is now up to all of us to apply what we know on the ground...or in the sea.

References

Elgin, D. (1991). *Creating a Sustainable Future*. ReVision. p.77.

Tilbury, D., Hamu, D. & Goldstein, W. (2002). *‘Education’ EarthYear Report on the World Summit*, IUCN, Gland.

Tilbury, D. & Wortman, D. (2004). *Engaging People in Sustainability*, Commission on Education and Communication, IUCN, Gland, Switzerland and Cambridge, UK.

Wortman, D., Cooke, K., Herbert and Tilbury, D. (2006). *Assessing Provision and Effectiveness of Coastal Management Education*. Canberra: Australian Government Department of the Environment and Water Resources and the Australian Research Institute in Education for Sustainability (ARIES).

Ziegler, W. (1987). *Designing and Facilitating Projects and Workshops in Futures-Invention*. Futures-Invention Associates, Boulder, Colorado.