Editorial

Conservation lessons from the Pacific Islands

THE Pacific Islands have long been at the vanguard of the battle for our planet's ecological sustainability, including biodiversity in this time of the Anthropocene. It was on these islands that the world began to understand the devastating impacts of invasive species, direct or indirect passengers on our invasion waves, on endemic animals, maladapted to avoid predation (Elton 1958). Devastating statistics on island extinctions are the frontispiece of any textbook on conservation biology. Further, the standout general rule for ecology, the relationship between biodiversity and natural habitat area, the species' area curve, was underpinned by our understanding of the bird communities of Pacific Islands (Diamond and Mayr 1976). These are the conservation lessons of the past, an ever present reminder of the legacy of the impact of our species on natural environments and the other organisms with which we share this earth. Ultimately we all depend on the ecosystem services provided by our environments. Today, conservation in the Pacific Islands continues to teach us important lessons for focussing scientific research, implementing best practice management, disseminating educational material, and developing legislative and policy mechanisms. These are tied to ongoing acute and chronic threats, burgeoning human populations and the relatively poor capacity, compared to wealthy nations, to apply available conservation tools for effective change.

Like most parts of the world, Pacific Island environments are vulnerable to local and global threats, driven by local and global economic pressures. No part of our planet is protected from the indirect effects of natural resource use and its effects on biodiversity. For example, fish and timber can relatively easily be transported from its origins of Pacific Island nations to markets anywhere in the world to supply our global population with our necessities and luxuries (Duncan and Temu 1997). Sometimes, as in some international fisheries (e.g., tuna), indigenous Pacific Islanders receive little benefit from such appropriation of their resources. Further, global humanity continues to emit unsustainable levels of greenhouse gases which are devastating the resilience of Pacific Island environments and their people. Rising sea levels, exacerbated by storm surges, are driving terrestrial and freshwater communities to extinction and forcing Pacific Islanders from their homes as environmental refugees. Inexorably, sea level rise will claim some Pacific Islands. Simultaneously, other global threats,

often working synergistically, affect land, freshwater and sea environments: habitat loss and degradation, invasive species, pollution, overexploitation, disease and climate change. These threats will be most acutely felt on small Pacific Islands, given the limited buffering of habitats with significant edge effects. Natural island habitats are inherently small, increasingly fragmented and under constant pressure from increasing human populations. Further, highly endemic species adapted to particular natural environments are poorly equipped for rapid change. While the rest of the world's natural habitats are similarly fragmented, damaged and destroyed, the Pacific Island environments probably remain among the more vulnerable on earth.

So what are today's conservation lessons from the Pacific Islands? Increasingly, the conservation community is realizing that we are as much the solution as the cause. We have to embrace and understand a world of socialecological systems (Berkes et al. 2003). Effective conservation has to be about people and their participation for successful outcomes. Conservation cannot be successful as a perceived pursuit of an ideological few intent on saving every part of this planet. The majority will needs to prevail for effective conservation action. The Pacific Islanders and their almost insurmountable problems offer considerable hope, given Pacific Island cultures are intertwined with biodiversity conservation. Engagement of people at the local scale is occurring through locally-managed marine areas, which incorporate traditional knowledge and highlight the importance of ecosystem services. These traditional belief systems are founded in ecosystem processes, such as catchment connectivity, and so lend themselves well to integration with conservation tools of adaptive management, education and compliance (Ruddle et al. 1992). Pacific Island countries and territories have no shortage of environmental policy frameworks for biodiversity conservation (Jupiter *et al.* 2014). Now it's time for pressure on governments, companies and decisionmakers to achieve sustainability.

As our planet increasingly globalizes, the world is obligated to help the Pacific conserve their unique ecosystems, as a base for important natural resources and a reservoir of earth's diversity. Many Pacific Island countries are also poorly resourced and so if such solutions can be found here, they offer lessons for other small island developing states and the least developed countries. This might put paid to the mantra, sometimes offered by politicians and economists, that conservation is a luxury for the rich. Such mainstreaming of conservation into policy and practice is highly dependent on connecting people to the importance of ecosystem services, ultimately underpinned by biodiversity. This requires many different approaches, utilising all the available tools for effective conservation action.

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