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Lessons learned from 40 years of Great Barrier Reef zoning

By Tundi Agardy, Contributing Editor, The Skimmer. Email: tundiagardy@earthlink.net

A recent publication "[Marine zoning revisiting: How decades of zoning the Great Barrier Reef has evolved an effective spatial planning approach for marine ecosystem-based management](#)" published in *Aquatic Conservation: Marine and Freshwater Ecosystems* distills important lessons from Australia's evolving commitment to manage the world's most iconic multiple use marine protected area. It casts a critical eye on what has worked and what has not, and it pushes us beyond our marine comfort zone to face the challenge of true ecosystem-based management (EBM), which neither ocean zoning nor marine spatial planning (MSP) in their current applications can adequately provide. With this publication, Jon Day and his coauthors have given the world a valuable gift that will keep on giving – if we can acknowledge this gift and heed it.

Day and his colleagues (including Richard Kenchington, who like Day has been intimately involved in the design and management of the Great Barrier Reef Marine Park [GBRMP] through its various iterations over the years) recount how zoning both set the stage for multiple use management and evolved to provide the legal framework for regulations to protect the world's largest barrier reef. The use of zoning had to be adapted over decades because the GBRMP Authority was a pioneer in spatial management and the allocation of space to uses of the marine environment. Zoning on land may have provided a glimpse of the possible, but adapting zoning approaches to the fluid and obscured ocean realm required experimentation and a fair amount of risk taking.

Zoning lessons learned from the GBRMP

Some critical lessons from [Day et al. \(2019\)](#) include:

- Lesson 6: Although the International Union for Conservation of Nature advocates protecting at least 30% of marine waters in highly protected area, this does not mean every MPA needs to aim to protect this percentage from the time of initial designation.
- Lesson 8: Role of political engagement. Zoning cannot occur in a 'political vacuum'; zoning is primarily a political process that needs to consider the interests of all stakeholders and be in keeping with the political aspirations of the government(s).
- Lesson 9: Prerequisites for effective zoning include high levels of political buy in enhanced by ongoing public participation.
- Lesson 10: Public engagement. All zoning processes should include genuine and effective public engagement; this requirement will generally preclude a relatively quick or inexpensive zoning process.
- Lesson 11: Adjacent areas. Zoning needs to consider, and wherever possible complement, adjacent coastal and marine areas. This includes the need to consider other key marine-related policies.
- Lesson 12: Ecological connectivity is an important concept when determining zoning.
- Lesson 13: Wherever possible, zoning decisions should consider all the values (ecological, social, cultural and economic) within, and surrounding, an MPA.
- Lesson 14: Complementary zoning across adjoining jurisdictions. Such zoning can provide many advantages, by enhancing public understanding as to what is allowed, or not allowed, across broad areas of the marine environment.
- Lesson 15: Zone by objective, not activity. Zones should not be based around individual activities; rather, the key determinant should be activities that are compatible with the zone objectives.

[Read more about these and other lessons learned](#)

Some of the lessons learned

In total, Day and his colleagues offer [38 lessons from the four decades that the GBRMP Authority applied zoning as the foundation for multiple use management on the reef and its associated ecosystems](#). Some of the most interesting include Lessons 6, 8-10, 13, and 15:

- Lesson 6 reminds me of the line from *Pirates of the Caribbean* that describes the pirate's code as "more of a guideline than a rule."
- Lessons 8-10 stress the importance of social and political engagement – systematic conservation planners and ivory tower academics beware!
- Lesson 13 on considering all the values a place provides is critically important and could be a paper in its own right.
- However, for me, the most valuable lesson is captured in Lesson 15: zone by objective, not by activity. This gets to the fundamental importance of setting objectives for zoning for MPAs and marine management more generally. Performance-based zoning can yield positive results, but only if it is tailored to the problem that management is meant to address.

Zoning can be so much more, though

I do have a slight bone to pick with Day and his co-authors, however, regarding their reluctance to give zoning its due. That seems a strange thing to say since the entire paper illustrates the ability of the zoning approach, especially as it evolved in the GBRMP, to be efficient and effective. But Day and others are quick to point out that zoning

provides only one layer of MSP and is not the be all and end all of integrated management. I take a broader view. In my mind zoning is more than a tool or an information layer that leads to a legal framework for allocating use – it is a mindset. Zoning forces us to take stock of what we know, acknowledge what is most ecologically important to protect for sustainable use, and recognize connections between ecosystem components (including those on land and in freshwater) and between human use and ecosystem function. Good zoning is likely the only way to preserve these connections and maintain ecosystem function, and it can guide the use of all the other management tools that must also be used – such security and surveillance regimes, use of permits, innovative financing for marine management, and on and on. I'm not saying zoning is a panacea – but it is a solid footing to allow us to grab complex marine management issues by the horns.

In fact, zoning as an approach (as opposed to zoning as a legal tool) can go beyond MSP. Day and coauthors pay homage to this in Lesson 11 on considering adjacent areas, Lesson 12 on connections, and Lesson 14 on complimentary areas – but they could have gone further to chart a course correction that is needed in MSP right now. MSP seems, by unfortunate accident of its own evolution, constrained to the purely marine environment. But taking stock of what we know about ecosystems to plan EBM allows us to identify places not only in the sea (water column and benthos) but also places on the coast that need special management to keep systems healthy and productive. Marine management authorities may not have jurisdiction over land area, but they can identify important 'zones' on land and along water bodies that need special attention and engage the appropriate authorities in land and water management to lessen negative impacts on marine ecosystems. Although a bit too late, this is what GBRMP Authority did when it engaged with the State of Queensland to work on the run-off affecting water quality on the Great Barrier Reef. I recognize this is a very loose interpretation of what is meant by zoning – but it is the logical extension of an approach that takes what we know, puts it on a map, and uses it to steer management in an EBM direction.

I would say this paper offers one more lesson – perhaps the most important of all: unless we cast a critical eye on how management is implemented and what it achieves, no amount of theoretical modelling, MPA design, or MSP processes will result in the positive outcomes we need. The lessons that Day and his colleagues offer are grounded in pragmatism – and should be paid heed. Campaigns to stop eating fish, ban bottom trawling globally, use nature-based solutions to tackling climate change, and the like are all well and good to engage the public, but when it comes to the paramount but difficult issue of what use to allow where, only real experience can guide us. And given the prospects that Australia and the Great Barrier Reef are facing today, maybe there is a 40th lesson in there, too – it's now or never to pay attention and apply the lessons learned in marine ecosystems everywhere.

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