

Considering scale and EBM in Aotearoa New Zealand

Ecosystem based management (EBM) has been advocated as a holistic and inclusive way to manage the competing demands on our marine environment. Successful practice for EBM requires a clear understanding of “scale” by our decision-makers and those whose role it is to manage our marine and coastal areas. Like your family, ecological systems are complex, and relationships with other species and the environment change over time. Simply put - when decisions are based purely on conceptual, human-created boundaries, scale ‘mismatch’ occurs and outcomes deteriorate. However, when decisions are ecology-centred, there is scale ‘fit’ and outcomes improve in all aspects. Scale fit requires multi-agency, flexible and co-operative management over **spatial, temporal, cultural* and jurisdictional** boundaries.

Some of our marine species live in one small area all their lives. Others have migratory or feeding patterns that cross distinct, human-created boundaries. This is the way the world works.

Pipi: We live here now but when we were younger we lived in intertidal, muddy sand areas. We can live for up to 7 years.

Horse mussels: We're juveniles and we like being here where it's safe, but when we're adults we all want our own space in deeper areas. Of course we do have to get together sometimes to breed. We can live for over 60 years.

Snapper: Once we get here we stay here, but we need lots of other adults in surrounding areas. If there aren't enough adults we don't get to successfully breed. We can live for around 20 years.

Koura/Crayfish: I love my rocky home, but from time to time I get the urge to take a VERY long walk. We can live up to 4 years.

That's not good enough! We need to build relationships and improve outcomes holistically.

I'm afraid these problems don't fall within our jurisdiction. Try the Council.

Each defined boundary area may have differing sets of management rules and funding streams focused on specific outcomes, often playing out over different time scales. These rule changes over jurisdictional boundaries result in scale 'mismatch', creating a disconnect and reduced (or poor) outcomes for the larger ecosystem, communities, and the blue economy.

International obligations
Exclusive Economic Zone - 12nm

When we create policy that centres only on discrete areas, time frames, or funding models, we create a scale mismatch, leading to poor outcomes.

We want to do what's right, but the coast isn't even in our district.

If we are all managing systems only within our own boundaries, it simply doesn't work for the ecology.

When I was growing up snapper were so much bigger and far more abundant.

Wait, what!!! These dates aren't going to work for us!

International obligations
Exclusive Economic Zone (EEZ)
New Zealand Coastal Policy Statement 2010
Territorial sea
Local Government Authorities

When we create policy that centres on ecological processes over a range of time frames, with dedicated funding, we create a scale fit and improved outcomes.

It's good to have support from agencies to invest in nature-based solutions to reduce our impacts on coastal environments.

When we manage systems across jurisdictional boundaries, outcomes are improved.

With good management the snapper will be able to migrate safely and their numbers will recover.

With management at the right scale our nursery and breeding areas will be protected.

International obligations
Exclusive Economic Zone (EEZ)
Territorial sea
Policy based on ecological interconnectivity
Place-based governance

International Obligations: The New Zealand Government has obligations with respect to marine environments and communities under international law.

National Policy: There are multiple laws and policies affecting marine environments and communities related to fisheries, environment/planning, conservation, and Māori rights and authority that are implemented at various management scales.

Aotearoa New Zealand's policies need to be informed by the ecology across all scales, so we and our environment are thriving, and the blue economy is too!

Regional Policy: There are many place-based plans and policies affecting marine environments and communities developed by councils, iwi and hapū.

Your mum and I are heading out to the deep for a while. Take care of yourselves kids.

So long Mum and Dad, good luck out there!

To develop a thriving blue economy, Aotearoa New Zealand needs:

- flexible, place-based governance that meets our obligations under Te Tiriti o Waitangi.
- policies based on ecological processes that focus on the interconnectivity of the ecology.
- funding certainty for cross-sector, cross-scalar interventions.

National Science Challenges SUSTAINABLE SEAS

* To understand ways in which cultural scale should be considered when managing our marine environments under EBM, click on the link here.