Narratives enabling ecosystem-based management: reworking public conversations.

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with support from

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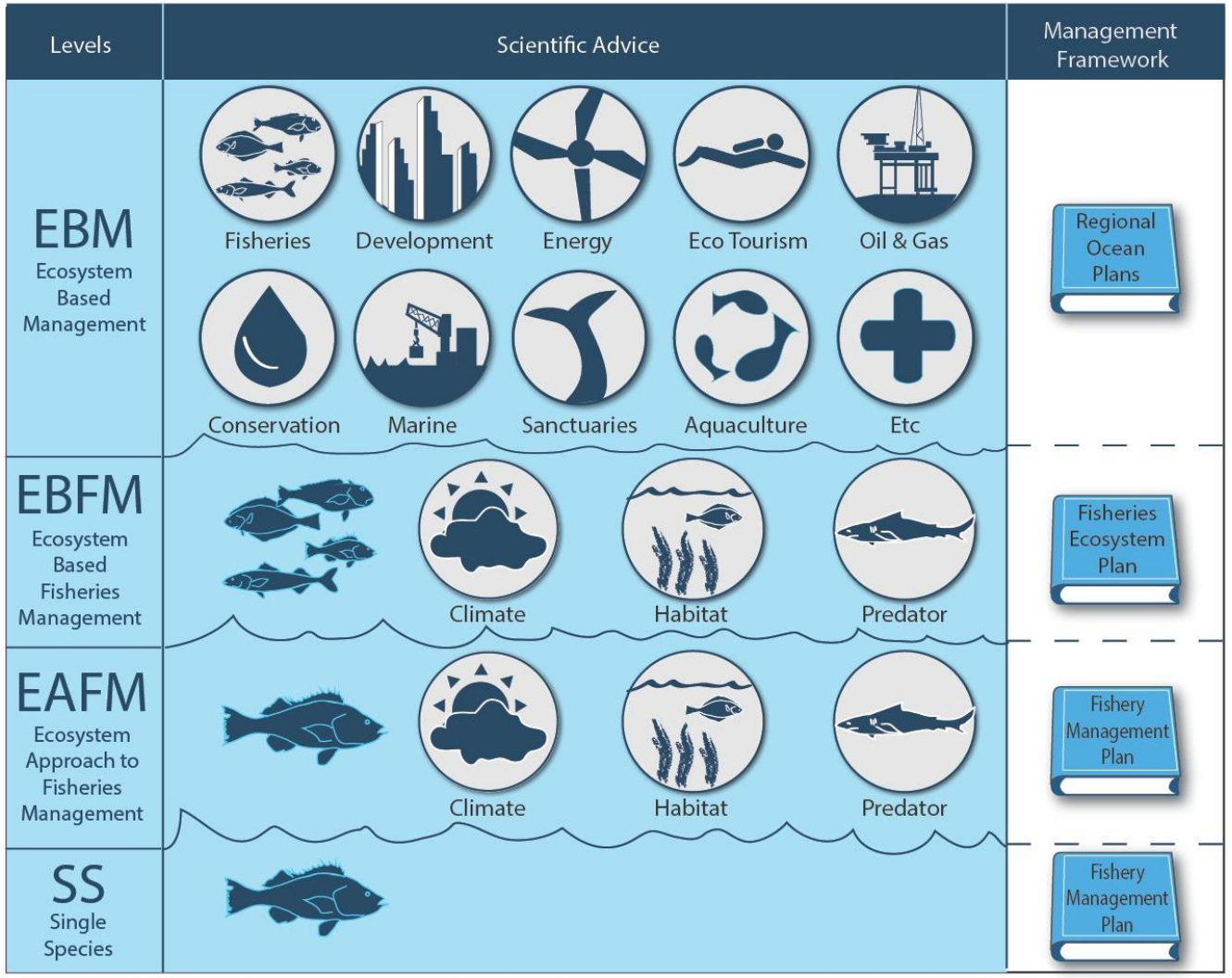
The alphabet soup of EBM



Jason Link, NOAA

Proposed ecosystem-based management principles for New Zealand

SUSTAINABLE SEAS (SS)

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Ecosystem-based management (EBM) is not a new concept. It surfaced decades ago in international literature. It has been applied internationally and websites on the subject are numerous. Despite all of this attention, there is a general belief that the term is not well defined and that this prevents its use.

In New Zealand, the term has been increasingly used in the last decade, although mainly as a concept for marine management. In December 2015, the marine science community and the government of the day recognised its crucial role in sustainable management by agreeing that the focus of the Sustainable Seas National Science Challenge should be EBM.

The Sustainable Seas Science Leadership Team believe

one exception, have been stated in various international documents; the one exception being to specifically incorporate the role of the Treaty of Waitangi. While the principles make specific reference to the marine

EBM PRINCIPLES OVER TIME

One of the first most widely promulgated set of EBM principles were developed during North American workshops on wildlife management (Sidney J Holt and Lee M Talbot "New Principles for the Conservation of Wild Living Resources" (1978) 59 WM 3) and utilised during the development of UNCLOS (United Nations Convention on the Law of the Sea) (Mark F Forst "The convergence of Integrated Coastal Zone Management and the ecosystems approach" (2009) 52 OCM 294). Holt and Talbot put forward four major principles:

> *"1. The ecosystem should be maintained in a desirable state such that*
>
> > *"a. consumptive and non-consumptive values could be maximized on a continuing basis,*
> >
> > *"b. present and future options are ensured, and*
> >
> > *"c. risk of irreversible change or long-term adverse effects as a result of use is minimized.*
>
> *"2. Management decisions should include a safety factor to allow for the facts that knowledge is limited and institutions are imperfect.*
>
> *"3. Measures to conserve a wild living resource should be formulated and applied so as to avoid wasteful use of other resources.*
>
> *"4. Survey or monitoring, analysis, and assessment should precede planned use and accompany actual use of wild living resources. The results should be made available promptly for critical public review".*

These four principles contain many of the EBM principles in use today. In 1996, Christensen (Norman L Christensen and others "The Report of the Ecological Society of America Committee on the Scientific Basis for Ecosystem Management" (1996) 6 Ecological Applications 665) published eight principles:

> *"a. Long-term sustainability as a fundamental value*
>
> *"b. Clear, operational goals*
>
> *"f. Attention to context and scale*
>
> *"g. Acknowledgement of humans as ecosystem components*
>
> *"h. Commitment to adaptability and accountability".*

Principles and sources quickly proliferated. In 2004, NOAA (National Oceanic and Atmospheric Administration *New Priorities for the 21st Century: National Marine Fisheries Service Strategic Plan, Updated for FY 2005-FY 2010* (September 2004)), noted that consideration of cumulative effects was required and acknowledges five main principles, summarised at "What is Ecosystem Based Management?" NOAA https://ecosystems.noaa.gov as major headings:

> *Adaptive and flexible, responsive to monitoring and research results*
>
> *Place-based with geographic areas defined by ecological criteria*
>
> *Cross-sectoral, considering interactions between sectors of human activity*
>
> *Proactive, incorporating tradeoffs to manage the marine and coastal environments.*
>
> *Inclusive and collaborative, encourages participation from all levels of government, indigenous peoples, stakeholders.*

In 2015, Long (Rachel D Long, Anthony Charles and Robert L Stephenson "*Key principles of marine ecosystem-based management*" (2015) 57 MP 53) conducted a study of EBM principles and selected 15 as key principles based on the number of times they were stated:

> *Ecosystem Connections,*
>
> *Appropriate Spatial & Temporal Scales,*
>
> *Adaptive Management,*
>
> *Use of Scientific Knowledge,*
>
> *Integrated Management,*
>
> *Stakeholder Involvement,*
>
> *Account for Dynamic Nature of Ecosystems,*

Collaborative decision-making
Collaborative, co-designed and participatory decision-making processes involving all interested parties.

Tailored
Place and time specific, recognising all ecological complexities and connectedness, and addressing cumulative and multiple stressors.

Co-governance
Governance structures that provide for Treaty of Waitangi partnership, tikanga and mātauranga Māori.

EBM Ecosystem-based management for Aotearoa

A holistic and inclusive way to manage marine environments and the competing uses for, demands on, and ways New Zealanders value them.

Human activities
Humans, along with their multiple uses and values for the marine environment, are part of the ecosystem.

Sustainability
Marine environments, and their values and uses, are safeguarded for future generations.

Knowledge-based
Based on science and mātauranga Māori, and informed by community values and priorities.

Adapts
Flexible, adaptive management, promoting appropriate monitoring, and acknowledging uncertainty.

New possibilities for public conversations

From	To	Experiments
Definition	A concept that keeps escaping codification	Enabling multiplicity
Target audiences	Conversations	Prioritising relationality
Individuals and organisations	Human and non-human actors	Reworking identity and agency

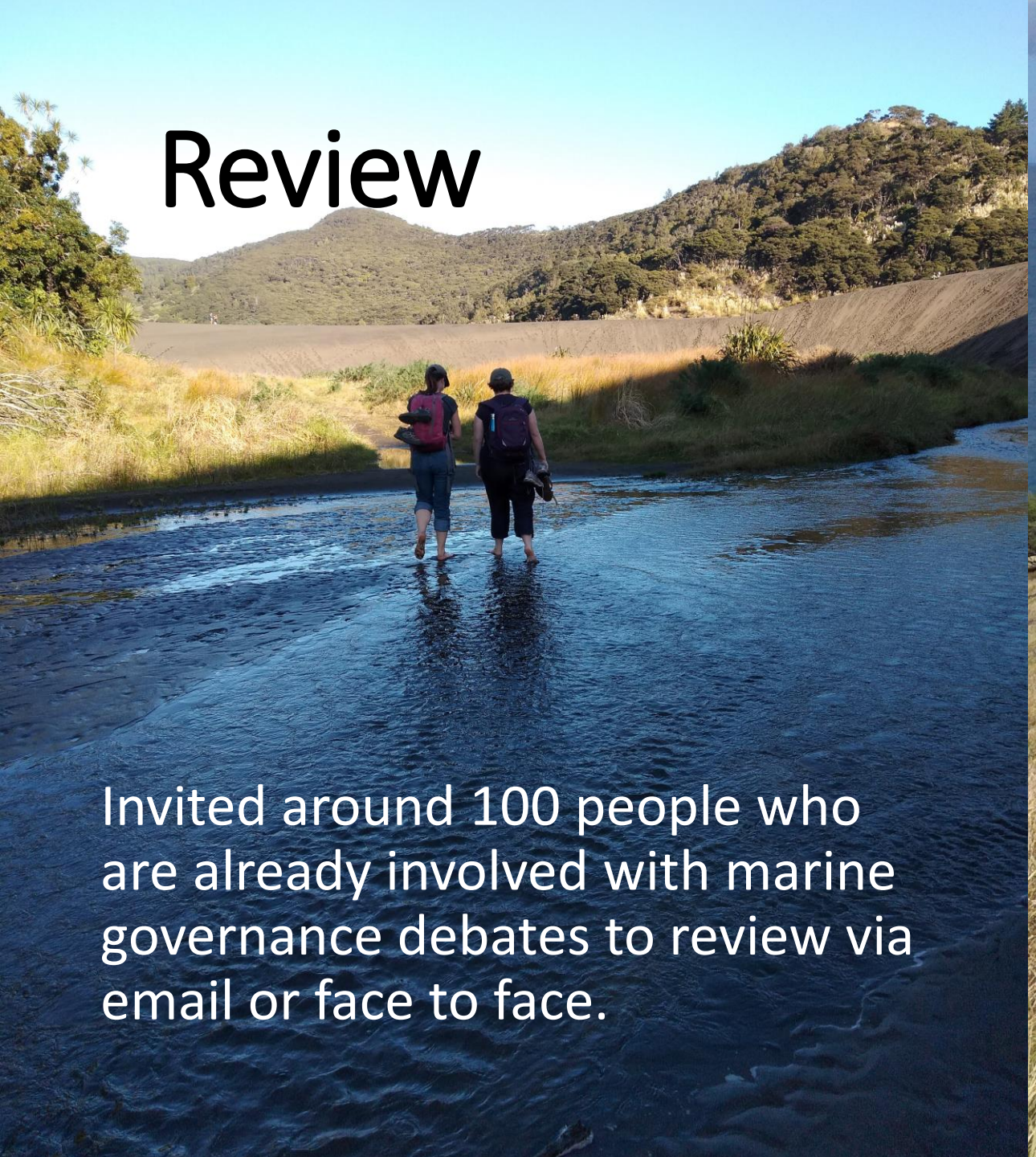
Five multimedia resources enabling EBM

STORIES SUPPORTING HOLISTIC MARINE MANAGEMENT

Storytelling, as spoken, written and illustrated narratives, is an effective way to convey complex or abstract ideas. This package of multi-media resources shares stories about different ways of achieving ecosystem-based management (EBM) in New Zealand. These stories are founded on real examples where New Zealanders have come together to manage their marine environment collaboratively. We show how EBM might come about and specifically what governance of marine spaces might look like in the future. We are learning how best to share these stories.

This study is funded by the Sustainable Seas National Science Challenge and is conducted by Manaaki Whenua – Landcare Research (MBIE contract number C01X1515). If you have any queries or wish to know more please contact either Alison Greenaway (project leader) greenawaya@landcareresearch.co.nz or Lara Taylor (Kairangahau Maori) taylorl@landcareresearch.co.nz.

Review



Invited around 100 people who are already involved with marine governance debates to review via email or face to face.

Kaitiakitanga and EBM are complimentary but not the same or a subset of each other.

Its more than a problem of fisheries, changing actions on land is part of EBM..