



# THE SKIMMER

ON MARINE ECOSYSTEMS AND MANAGEMENT

Published on *Marine Ecosystems and Management (MEAM)* (<https://meam.openchannels.org>)

[Home](#) > December 2015 - January 2016 (9:3)

Issue PDF archive:

## [From the Editor: PDF of MEAM still available, new ocean planning listserv](#) <sup>[1]</sup>

Dear MEAM subscribers,

A number of you have asked for a PDF (Portable Document Format) version of MEAM for downloading and printing. Although we are no longer able to support the fully formatted eight-page version, a PDF version of each issue of MEAM is still available. The link to this PDF will be at the bottom of every monthly e-mail. This month's PDF can be downloaded at <https://meam.openchannels.org/printpdf/meam/issue/december-2015-january-2016-93> <sup>[2]</sup>.

And a new e-mail discussion group - the Ocean Planning Community listserv – has been launched for ocean planners worldwide. It will help practitioners share experience and good practices with one another: what worked, what didn't, what you have learned. The listserv is hosted by OpenChannels.org and co-produced by the University of Rhode Island, The Nature Conservancy, TNC Canada, Sound Seas, and MARE. You can subscribe at <https://www.openchannels.org/community/ocean-planning-community> <sup>[3]</sup> and post to the list at [community@list.openchannels.org](mailto:community@list.openchannels.org) once you are subscribed.

Finally, we wanted to let you know that MEAM will do a combined December-January issue every year, so the next issue will hit your inboxes in early February 2016.

Until then, a very joyous new year to everyone!

**Sarah Carr**

MEAM Editor

## [Is your work EBM? Reflections from the EBM Tools Network](#) <sup>[4]</sup>

In our first issue back in September 2007, MEAM shared the views of four EBM experts on [challenges facing the EBM field](#) <sup>[5]</sup>. Earlier this year, MEAM caught up again with some of those experts to get their views on [progress the EBM field has made since then](#) <sup>[6]</sup>.

Now as the calendar year comes to an end, we wanted to get an even broader perspective on how EBM principles, goals, and methods have been integrated, or not, into coastal/marine management and conservation. Ten members of the global [EBM Tools Network](#) <sup>[7]</sup> — a voluntary alliance of tool users, developers, and training providers — offered us their views about how their work relates to EBM, and what factors help make it, or keep it from being, EBM. (Some respondents requested anonymity, which we granted.)

[Share your own reflections for other readers in the Comments section at the bottom of this article.]

### **My work as EBM and what makes it possible**

"Yes, I consider my work EBM with some caveats. I work in international development, assisting mainly small island developing states to establish marine laws and policies. Although the focus has conventionally been around 'sustainable development', many aspects of EBM are either implicitly or explicitly included.

"Small island states have already seen marine environmental degradation at their doorstep and are keen to reverse these trends. At the same time, they need to secure new income sources.... They are increasingly looking to their oceans for financial security ("Blue Economy" etc.). While the degree of environmental emphasis varies from government to government, there is a general appreciation of: a) environmental issues, b) the inter-linked nature of marine environmental health and human maritime activities, and c) of the need to be more integrated in marine/maritime management."

--- Anonymous

"My answer is absolutely YES that my work is EBM. The most important factor for enabling EBM in my work is the strategic policy for EBM by the federal (central) government. Other important factors are cooperation between the local community and authorities and scientific findings by researchers about why EBM is so important."

--- *Hyuntaik Jason Oh is a Research Scientist at the National Fisheries Research and Development Institute in the Republic of Korea. He can be contacted at [ohhyuntaik@gmail.com](mailto:ohhyuntaik@gmail.com).*

"I work on ecosystem-based fisheries management policies within the (US) Pacific Fishery Management Council process. So, yes, I do work on EBM.

"In the US, we've seen incremental changes in how we approach fisheries management, and off the US West Coast, we are working on and towards EBM. Data-sharing technologies and massive data-modeling efforts have evolved over recent years to give scientists, managers, and the public more clear ideas about how our Large Marine Ecosystems function. Our ongoing single-species work helps us better understand those species and their places within our ecosystems; our newer ecosystem-scale work helps us see connections between species, their environment, and the multiple human uses of the environment.

"US ecosystem-based fisheries management development has been facilitated by existing policy processes, largely because US regional fishery management councils have

been organized by Large Marine Ecosystem since 1976. Our laws require us to conserve and manage living marine resources at the species- and population-scale. However, EBM policy-making has been possible because our existing institutions and participating stakeholders are accustomed to thinking about multi-species management at the ecosystem-scale.

"My impression from EBM literature is that some proponents of EBM think that if we are still doing single-species management, we are not doing EBM. Or that if we don't wholly rearrange our policy-making institutions, we cannot do EBM. I see EBM as a policy goal that we can both achieve and approach simultaneously. Ecosystem-based fisheries management may not be enough for those who want to see all sectors of human activity managed together. However, fisheries scientists, managers, and stakeholders have decades of experience thinking about their ecosystems, and that experience can serve as a vital spur for work on multi-sector EBM."

--- *Yvonne deReynier is a senior resource management specialist for NOAA Fisheries' West Coast Region. She can be contacted at [yvonne.dereynier@noaa.gov](mailto:yvonne.dereynier@noaa.gov).*

"I work in a Nigerian University as a lecturer teaching courses in fisheries. I completed a short course in Ecosystem Approaches to Fisheries in the Netherlands. As a participant, my contact with EBM was most enlightening, and I believe that I now have a mandate to become an EBM advocate. To a large extent, the course completely changed my focus in research from investigating basic fisheries biology to applying EBM in fisheries management, particularly data-limited fisheries. I am also looking at the possibility of incorporating ecological risk-based fisheries assessments methods into my work.

"EBM is not a popular concept in my country although an EBM-based fisheries management plan was recently developed for the shrimp industry. I am very interested in taking EBM to the small-scale fisheries sector, which accounts for 80 percent of domestic fish supply in the country. Planning and developing EBM approaches requires support at all levels of government, research to fill gaps in knowledge, human capacity training, and funds. I expect that as major challenges in fisheries governance are being overcome and with wider participation by the small-scale fisheries sector, political will, and improved funding to build human capacity, a lot will be achieved in implementing EBM particularly in sub-Saharan Africa."

--- *Anonymous*

"I am participating in a project about climate change adaptation in artisanal fisheries in Peru. Yes, I think this project follows an EBM approach because: 1) it involves not one, but several species (pelagic and demersal fishes, invertebrates, macroalgae); 2) it involves climatic and oceanographic information as an early warning system for fishers; and 3) it involves the human dimension represented by the artisanal fisheries who are the beneficiaries and co-designers of the project."

--- *Jorge Tam is a researcher at the Instituto del Mar del Perú. He can be contacted at [jtam@imarpe.pe](mailto:jtam@imarpe.pe).*

"I lead the [MIMES](#) <sup>[8]</sup> [MIDAS](#) <sup>[9]</sup> modeling and field team studying the dynamics of coupled human and natural systems in marine coastal and inland great waters environments. We have active projects right now in the Gulf of Maine, the Lower Mekong, and East Africa and work beginning in Belize and Brazil. This and other work in my lab is designed to elaborate and support EBM. The spatially explicit, dynamic, adaptive, integrated social-economic-ecological aspects of this work make it EBM."

--- *Les Kaufman is a professor of biology with the Boston University Marine Program and Marine Conservation Fellow with Betty and Gordon Moore Center for Science and Oceans at Conservation International. He can be reached at [lesk@bu.edu](mailto:lesk@bu.edu).*

"Yes, my work is EBM. I have been supporting an adaptive EBM approach for the Massachusetts Ocean Management Plan, groundfish management in the Gulf of Maine and Nantucket Sound, and watershed-based wastewater mitigation on land here on Cape Cod."

--- *David Dow is a retired government scientist and grassroots environmental activist. He can be contacted at [atdow420@comcast.net](mailto:atdow420@comcast.net).*

"I have been working on spatial/environmental planning and management for the past two decades. I have done management plans and consulting for different study areas - municipalities, water catchments, coastal zones, and finally maritime spatial planning. Those plans are not entirely with an EBM approach because they address several objectives with conservation and environmental quality being only one of them and sometimes socioeconomic goals are more important to decision makers and those implementing plans. However, we use an integrated approach so the environment and ecosystems are always considered.

"Over the last decade several concepts such as 'limits of acceptable change' and 'carrying capacity' have increased attention to integrating ecosystems into decision making. And undoubtedly when ecosystems fail to provide services - such as protection from natural disasters - this becomes highly important for all. Working in a region prone to natural disasters makes the need for EBM more evident."

--- *Helena Maria Gregório Pina Calado is an assistant professor in the Department of Biology at the University of the Azores, Portugal. She can be reached at [calado@uac.pt](mailto:calado@uac.pt).*

"The GEF-UNDP Humboldt Current Large Marine Ecosystem (HCLME) Project, with inputs from both Chile and Peru, is working to advance EBM in the HCLME to improve governance and the sustainable use of living marine resources and services. The Humboldt Current supports one of the world's most productive Large Marine Ecosystems. It represents approximately 11% of the global fish catch (down from around 20% less than a decade ago) and hosts globally significant biodiversity. There are currently many pressures on this unique ecosystem. Environmental variability, including climate change, is impacting ecosystem productivity and trophic structure, a minimum oxygen zone is limiting production, and high carbon dioxide levels are causing natural acidification. In addition, there are pressures from a range of anthropogenic activities, such as overfishing and habitat destruction caused by multi-source pollution."

--- *Michael Akester is the Regional Project Coordinator for Chile-Peru for the Humboldt Current Large Marine Ecosystem Project. He can be contacted at [michaela@unops.org](mailto:michaela@unops.org).*

"Our State Wildlife Action Plan, which includes the coastal environments of the Great Lakes and the Great Lakes themselves, aggregates information about species and natural communities into an ecological landscape scale. So yes, I do view my work as ecosystem-based, although it is also flexible and scales up or down depending on the problem at hand. Conservation actions to help rare or declining species and their habitats are organized at multiple levels, one of which is the ecosystem level."

--- *Shari Koslowsky is the state wildlife action plan coordinator for the US state of Wisconsin. She can be reached at [ashari.koslowsky@wisconsin.gov](mailto:ashari.koslowsky@wisconsin.gov).*

## Barriers to EBM

"There is very little that is new under the sun, and whether we call it EBM, Blue Economy, Green Economy, or whatever, the same tensions exist –between the need to maintain and create revenue streams and to act in good faith to protect the environment. The short-term gains from any proposed business development are very (VERY) attractive to poor and developing state governments. If these are to be balanced with a longer-term vision of sustainability and EBM, then some sort of countervailing incentives need to exist.... 'Blue bonds' for example, could be one way to go. Whatever financial mechanisms are established, they need to be both financial and well-established in order to get around this serious (and valid) concern from developing states that EBM is for only those who can afford it."

--- *Anonymous*

"We find that most folks are not ready for EBM, fear dealing directly with tradeoffs (or even knowing about them sometimes), and do not like the reiterative nature of adaptive management. The worst of all are agencies and co-management groups here in the US, particularly the northeast — which is ironic because this is also quite possibly the place in the US where the thinking and research are the most progressive."

--- *Les Kaufman*

"We lack monitoring/modelling efforts to evaluate the success of our endeavors and government outreach programs to engage the public if we have to move to Plan B. Also, there are interactions between fisheries management, marine and coastal spatial planning at the state/federal level, and human activities within coastal watersheds, but the local/state/federal legislation and regulatory mandates make it hard to develop a holistic EBM approach that balances human uses with the protection of wild places, wild things."

--- David Dow

"Most of the time, there is a lack of scientific knowledge about processes as well as a lack of clear guidance for integrating EBM into planning process. And when this knowledge and guidance exists, it is often too vague and hard to adapt to specific situations."

--- Helena Maria Gregório Pina Calado

"The barriers to EBM for the HCLME are mainly political. Some of the difficulties faced in promoting a multisectoral planning approach are that the government institutions responsible for managing coastal and marine systems are fragmented and the linkages between conservation and economic (including social) interests are often not appreciated. For example, implementing EBM for the northern HCLME requires legal reforms to allow aspects of fisheries co-management and the promotion of Coastal and Marine Spatial Planning. In the short term, however, attempts to implement EBM are constrained by gaps in knowledge and understanding of how to manage coastal and marine systems, difficulties in effectively incorporating scientific understanding into the decision-making process, and incipient recognition of the need to include the stakeholders whose support is essential to action in the management processes."

--- Michael Akester

"I would say access to ecosystem level information. There is a lot of up-to-date information available, but it requires investigation to find it, access it, get permission to use it, etc. We need to keep working to improve the free flow of ecological information."

--- Shari Koslowsky

## **Tundi's Take: The horror and hubris of land reclamation** <sup>[10]</sup>

By Tundi Agardy, Contributing Editor, MEAM. Email:[tundiagardy@earthlink.net](mailto:tundiagardy@earthlink.net)

As MEAM hears from practitioners around the world about how their work relates to EBM, I feel compelled to call attention to a frightening phenomenon I am witnessing – expanding, unchecked land reclamation, even in places that purport to be practicing EBM. Not only is the practice alarming, the term is annoying: people 'reclaiming' land from nature, as if it were ours to begin with.

Infilling, a decidedly more appropriate name for the practice, is trying to meet humanity's need for more space in the world's coveted and valuable coastal zones. But while we track and quantify pollution sources, dead zones, and overexploited fisheries, the amount of habitat conversion being undertaken for urban expansion, resort development, port construction, and industrial infrastructure siting does not seem to be on anyone's radar screen. All signs are that we should be worried. Irreversible losses of natural habitat – and the valuable ecosystem services that they are delivering – are occurring in every inhabited region of the world with increased pace. We can clean up some marine pollution to restore degraded ecosystems and catalyze fisheries stock rebounds by alleviating fishing pressure. But once pilings, dirt, sand, and cement subsume nearshore habitats, they can never be brought back again.

This trend is most troublesome because the infilling is happening in some of the most ecologically vital and productive parts of the marine system - tidal flats, wetlands, mangroves, corals, and rocky reefs. These places provide us with our greatest chances of adapting to and mitigating climate change and assuring future food security for large swaths of the human population. Without healthy reefs, seagrasses, mangroves, wetlands, and estuaries, coastal ecological functioning will be so impaired that coastal residents, and coastal countries themselves, are at risk.

### **Tour of destruction**

Take what is happening in the Arabian Gulf region. Throughout Saudia Arabia, Bahrain, Qatar, and the United Arab Emirates, the horizon in every direction is cluttered with construction cranes emblematic of the continuing development boom. In these arid countries, shorelines are of tremendous value, so creating new coastal land brings more and more development opportunity and more and more revenue. If the IPCC is correct that the world will experience more catastrophic storms (note the unusual cyclone that rocked Yemen last month), Gulf countries may regret destroying the mangrove, coral reef, and seagrass beds that might have buffered their valuable new shorelines from storms and wind-driven surges.

What is happening in the Maldives is even more worrying. A new amendment to the 2008 constitution allows foreign ownership of land in the atoll nation for the first time. But ownership can only accrue if developers reclaim 70% of their development parcel – that is, they are required to transform natural habitat then infill nearly two and a half times the transformed area to create new lands. And I expect the Tourism Ministry, with its new mandate to oversee environmental impact statements, will do so with a 'growth at any cost' mindset.

The Maldives depend heavily on land reclamation. To address overcrowding in the capital Malé (which was doubled in size by infilling on the coral reefs that ring the atoll on which the city was built, extending as far as possible until the drop-off was reached), the government has created, from scratch, Hulhumale Island. When completed, 227 hectares of land will have been created out of the turquoise blue sea – a lagoon of patch reefs will have given way to houses for 100,000 people. Modern technology and coastal engineering prowess make it easy to take space from nature and give it to humans for their use alone, and the Hulhumale experience has whetted the appetite of the Maldivian government for more and more land. The new development regulations incentivize infilling at the grandest possible scale, and the current government foresees the equivalent of 32 Hulhumales emerging from the very habitats that attract tourists and investors to the Maldives in the first place, and in fact make life on the remote Indian Ocean archipelago possible. Neighboring Indian Ocean countries including the Seychelles and Mauritius are accelerating such practices as well, cumulatively contributing to regional scale transformations of the seascape and landscape.

Across the world in the Spratly Islands, China is attempting to end the stalemate on this disputed territory of rocks and reefs lying between it, Vietnam, Malaysia, the Philippines, Brunei, and Taiwan. Seemingly killing the idea of a transboundary peace park – an idea that has been floating around since the 1980s - China is trying to cement its claim (pun intended) to the area by dumping fill on some of the richest and most pristine reefs of Southeast Asia. Doing so, they have destroyed some of the world's natural heritage and raising tensions in the region. But it is a calculated risk that could bring them exclusive control over potentially vast oil and gas reserves, productive fishing grounds, and strategic military locations.

And 400 kilometers north, there is Okinawa, where decades-long arguments about relocating the US military base and expanding the airport are coming to a head with reclamation that would obliterate some of that region's richest reefs. Similar scenarios are playing out in Caribbean countries.

On the surface, these are not bad actors in the marine management arena. MPAs and other management measures exist in many of these countries and in the multitude of other countries that practice large-scale land reclamation – and in fact some of these countries are lauded for their marine protections. But it reminds me of the 1980s when the world's attention was focused on deforestation. Fingers of blame were pointed at countries that had not yet established protected area systems to safeguard forest diversity. Costa Rica, however, stood out for its pioneering parks - the highest percentage of land area protected anywhere in the world, it claimed. What Costa Rica did not broadcast to the world was that it had one of the world's highest rates of deforestation outside of these protected areas. That irony was not on anyone's radar screen either.

## **The EBM Toolbox: Achieving regional objectives, country by country: A Coral Triangle example** <sup>[11]</sup>

*Editor's note: The goal of The EBM Toolbox is to promote awareness of tools and methods for facilitating EBM and MSP processes. It is brought to you by the EBM Tools Network ([www.ebmtools.org](http://www.ebmtools.org) [7]), a voluntary alliance of tool users, developers, and training providers.*

EBM often involves coordinating the actions of multiple jurisdictions to achieve shared goals. A recent study published in *Nature Communications* [12] introduces a new framework for how to do this, applying it to conservation objectives of the Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security. (The Coral Triangle Initiative

is a partnership between Malaysia, the Philippines, Indonesia, East Timor, Papua New Guinea, and the Solomon Islands.) We spoke with Maria Beger, a conservation biologist with the ARC Centre of Excellence for Environmental Decisions<sup>[13]</sup> at the University of Queensland in Australia and the lead author of this study, about how countries can work towards regional and national goals simultaneously and in a transparent and equitable manner.

**MEAM: First of all, why is regional conservation planning so different than national or local conservation planning?**

**Beger:** Effective conservation efforts often require “sub-setting”, that is, implementing common conservation goals at different scales. This could involve implementing national goals at a municipal scale or implementing regional conservation goals in different countries. And while collaborating countries may agree on multilateral conservation goals, sovereign nations still need to make conservation decisions and investments for their own jurisdiction. These decisions and investments need to reflect their national goals and contexts including local resource bases, cultures, resource usage, threats, stewardship, national incomes, country sizes, and local expertise.

**MEAM: So what does your framework help conservation planners do?**

**Beger:** Our work addresses how to incorporate regional priorities into national decisions. Specifically, we evaluate trade-offs that arise when we use a number of Coral Triangle Initiative objectives to identify places where marine protected areas (MPAs) would be most beneficial. The objectives we used are: (1) representing all habitat types, (2) protecting fish spawning aggregations, (3) improving the status of threatened sea turtles, (4 and 5) maximizing larval dispersal connectivity for coral trout and sea cucumbers, respectively, and (6) protecting places less affected by climate change.

We developed two strategies that countries can apply (often simultaneously): protecting multi-objective hotspots, and protecting complementary top priority areas. Establishing new MPAs in multi-objective hotspots would provide good conservation benefits for all six objectives at the same time. Establishing new MPAs in complementary top priority areas would provide high conservation benefit for one or two of the objectives. When employing this second strategy, countries need to coordinate regionally to ensure protection of complementary areas for all of the objectives.

**MEAM: Why not just protect the “multi-objective hotspots”?**

**Beger:** While concentrating protection efforts in places where multiple conservation benefits can be achieved simultaneously is intuitively appealing, it is not always politically equitable or ecologically appropriate. Not all countries have multi-objective hotspots, so focusing on this strategy alone concentrates the conservation burden and benefits unfairly. Also, conserving only hotspots cannot maximize conservation benefits for all of the objectives.

For example, the most important areas for connectivity and turtles in the Coral Triangle are not in multi-objective hotspots. Papua New Guinea, which does not have as many conservation resources as some of the other countries in the Initiative, has some of the most essential areas for meeting the turtle objective and can make an important contribution by working in one of the top-priority turtle areas.

**MEAM: What sort of tools did you use for this work?**

**Beger:** We used the decision support tool [Marxan](#)<sup>[14]</sup> and its extension Marxan with Connectivity – as well as a host of new techniques to represent fish migrations, turtle nesting and foraging areas, turtle connectivity patterns, and climate-related coral reef decline - to identify multi-objective hotspots and complementary priority areas for the Coral Triangle region. Coral Triangle Initiative partners can now use these analyses (see figure below) for incorporating regional priorities into their planning and determining if the partnership is on track to achieving regional objectives.

© [15]

**MEAM: Is your framework only applicable to multinational efforts or would it help in other situations as well?**

**Beger:** Our framework is also applicable to national goals which are often implemented at provincial or municipal levels. For example, in Indonesia, marine spatial planning is occurring at the province level with the national planning body providing the overarching goals and criteria. Our framework could be beneficial in this sort of situation to create a formal way for local implementing agencies to include broader goals and priorities into their decision making.

Read/download the full article for free at <http://www.nature.com/ncomms/2015/150914/ncomms9208/full/ncomms9208.html><sup>[12]</sup>.

For more information: Maria Beger, ARC Centre of Excellence for Environmental Decisions, Brisbane, Australia, [m.beger@uq.edu.au](mailto:m.beger@uq.edu.au)

## **Latest News and Resources for Ocean Planners**<sup>[16]</sup>

### **Massachusetts governor concerned that federal conservation actions could undermine regional ocean planning**

The *Gloucester Daily Times* newspaper reports that the governor of the US State of Massachusetts Charlie Baker has expressed concerns to US President Barack Obama about the potential designation of one or more national marine monuments off the coast of New England. Baker’s concerns include a lack of stakeholder involvement in the potential designation process and the potential to undermine existing regional ocean management systems, namely the New England Fishery Management Council and the Northeast Regional Planning Body. The Northeast Regional Planning Body, Baker writes, expects to submit the nation’s first regional ocean plan to the National Ocean Council next year. Read the full article at [http://www.gloucesterimes.com/news/local\\_news/baker-to-obama-monument-plan-contrary-to-regional-ocean-planning/article\\_3606cc96-3cec-536f-895f-37c332285e6d.html](http://www.gloucesterimes.com/news/local_news/baker-to-obama-monument-plan-contrary-to-regional-ocean-planning/article_3606cc96-3cec-536f-895f-37c332285e6d.html)<sup>[17]</sup>.

### **Paper illustrates steps for assessing climate change vulnerability of fisheries and aquaculture**

FAO has released a new technical paper on understanding vulnerability to climate change in fisheries and aquaculture, “Assessing climate change vulnerability in fisheries and aquaculture: Available methodologies and their relevance for the Sector”. This paper provides an overview of vulnerability assessment concepts and methodologies, and analyzes how they have been applied in the context of fisheries and aquaculture, with examples. A series of practical steps to assess vulnerability in the fisheries and aquaculture sector is proposed for climate change specialists working with dependent communities, as well as for practitioners wishing to incorporate adaptation planning into the sector’s management and development. The paper can be downloaded for free from <http://www.fao.org/3/a-i5109e.pdf><sup>[18]</sup>.

### **Coral reef society says Paris climate change conference targets not good enough**

The International Society for Reef Studies (ISRS) has prepared a consensus statement on the current scientific view of the impact of climate change on coral reefs. The group concludes that the targets being proposed for the 2015 UN Climate Change Conference being held in Paris from November 20 to December 11 will not reduce greenhouse gas emissions nor limit temperature rise enough to prevent widespread coral reef decline. ISRS calls on all nations and negotiators at the conference to commit to limiting atmospheric carbon dioxide concentrations to no more than 450 ppm in the short-term and 350ppm in the long-term. The group believes this will keep the average global temperature increase to less than 2°C in the short-term and 1.5°C in the long-term, relative to the pre-industrial period, and would prevent global collapse of coral reef ecosystems. The statement is available at <http://coralreefs.org/wp-content/uploads/2014/03/ISRS-Consensus-Statement-on-Coral-Bleaching-Climate-Change-FINAL-14Oct2015-HR.pdf><sup>[19]</sup>.

### **EBM guide now available in Spanish and French**

The UNEP publication "Taking Steps toward Marine and Coastal Ecosystem-Based Management: An Introductory Guide" is now available in Spanish and French. This guide covers why EBM is necessary, the core elements of EBM, and how to move from visioning to planning to implementation of EBM. It draws from practical experiences and lessons across the globe. The target audience is planners and decision-makers in local, national and regional governments and communities. The guide (in Spanish, French, and English) is available for free at <http://bluesolutions.info/marine-coastal-ecosystem-based-management-unepps-guide-now-available-in-french-spanish/> [20]

---

## Handbook provides global overview of ocean uses and management strategies

The *Routledge Handbook of Ocean Resources and Management* provides an overview of several facets of knowledge needed for the use and management of the world's oceans. The handbook provides information on relationships between people and the sea on a global scale, uses of the sea (e.g., food, ocean space, materials, and energy), and regional management strategies. The handbook is available for purchase (USD\$220) at <http://www.routledge.com/products/9780415531757> [21].

---

## Future seafood supply at risk from climate change, overfishing, and habitat destruction, report finds

The Nereus Program has released a new report "Predicting Future Oceans: Climate Change, Oceans & Fisheries." The report concludes that climate change and ocean acidification, overfishing, and habitat destruction will lead to declines in fisheries and alterations of marine biodiversity and food web structure in many regions in the absence of improved ocean governance. According to program co-director William Cheung, "The types of fish that we will have on our dinner table will be very different decades later compared to now." The report also finds that the long-term ecological and social sustainability of aquaculture is unclear. The report is available for free at <http://www.nereusprogram.org/nereus-report-predicting-future-oceans-climate-change-oceans-fisheries> [22].

## From the Archives: Adaptive Management: What Does It Look Like in Practice? (MEAM December 2010-January 2011, Issue 4:3) [23]

*Editor's Note:* From the Archives calls attention to past MEAM articles whose perspectives and insight remain relevant.

Article highlights:

- Getting the public to understand the "learning as we do it" philosophy
- Collecting the right level of monitoring data to support the decisions you need to make
- Practicing adaptive management amid resource limitations and multi-jurisdictional authorities
- Balancing the change implied by adaptive management with the certainty implied by spatial planning
- Building adaptive capacity may be more important than adaptive management

Read the article at <https://meam.openchannels.org/news/meam/adaptive-management-what-does-it-look-practice> [24].

[Printer-friendly version](#) [25] [PDF version](#) [2]

---

**Source URL:** <https://meam.openchannels.org/meam/issue/december-2015-january-2016-93>

### Links

- [1] <https://meam.openchannels.org/news/meam/editor-pdf-meam-still-available-new-ocean-planning-listserv>
- [2] <https://meam.openchannels.org/printpdf/meam/issue/december-2015-january-2016-93>
- [3] <https://www.openchannels.org/community/ocean-planning-community>
- [4] <https://meam.openchannels.org/news/meam/your-work-ebm-reflections-ebm-tools-network>
- [5] <https://meam.openchannels.org/node/10623>
- [6] <https://meam.openchannels.org/node/9680>
- [7] <http://www.ebmtools.org>
- [8] <http://www.afordablefutures.com/orientation-to-what-we-do/services/mimes>
- [9] <http://www.seaplan.org/blog/project/midas/>
- [10] <https://meam.openchannels.org/news/meam/tundi%E2%80%99s-take-horror-and-hubris-land-reclamation>
- [11] <https://meam.openchannels.org/news/meam/ebm-toolbox-achieving-regional-objectives-country-country-coral-triangle-example>
- [12] <http://www.nature.com/ncomms/2015/150914/ncomms9208/full/ncomms9208.html>
- [13] <http://ceed.edu.au/>
- [14] <http://www.uq.edu.au/maxan>
- [15] [https://meam.openchannels.org/sites/default/files/meam/Figure4\\_chart\\_verticalboth.jpg](https://meam.openchannels.org/sites/default/files/meam/Figure4_chart_verticalboth.jpg)
- [16] <https://meam.openchannels.org/news/meam/latest-news-and-resources-ocean-planners>
- [17] [http://www.gloucesterimes.com/news/local\\_news/baker-to-obama-monument-plan-contrary-to-regional-ocean-planning/article\\_3606cc96-3cec-536f-895f-37c332285e6d.html](http://www.gloucesterimes.com/news/local_news/baker-to-obama-monument-plan-contrary-to-regional-ocean-planning/article_3606cc96-3cec-536f-895f-37c332285e6d.html)
- [18] <http://www.fao.org/3/a-i5109e.pdf>
- [19] <http://coralreefs.org/wp-content/uploads/2014/03/ISRS-Consensus-Statement-on-Coral-Bleaching-Climate-Change-FINAL-14Oct2015-HR.pdf>
- [20] <http://bluesolutions.info/marine-coastal-ecosystem-based-management-unepps-guide-now-available-in-french-spanish/>
- [21] <http://www.routledge.com/products/9780415531757>
- [22] <http://www.nereusprogram.org/nereus-report-predicting-future-oceans-climate-change-oceans-fisheries/>
- [23] <https://meam.openchannels.org/news/meam/archives-adaptive-management-what-does-it-look-practice-meam-december-2010-january-2011>
- [24] <https://meam.openchannels.org/node/10727>
- [25] <https://meam.openchannels.org/print/meam/issue/december-2015-january-2016-93>