

# MARINE ECOSYSTEMS and Management

News and analysis on ocean planning and ecosystem-based management

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## The future of MEAM

Hi everyone,

Last issue I said that the future of *Marine Ecosystems and Management* was uncertain in light of the fact that current financial support for the newsletter was ramping down. However, I am pleased to announce that through the generosity of donors who have stepped forward, MEAM is now slated to continue for the foreseeable future. Great news!

I'm also excited to report that, related to the new support, the newsletter will soon be redesigned to provide more frequent news and more applied advice from a greater range of practitioners worldwide. The aim of these changes is to serve you better.

**The new format will be all-electronic, meaning we will end our paper delivery option for MEAM.** I recognize this will impact our readers who receive the newsletter solely via mail. However, the proportion of our paper-only subscribers has declined significantly over time to less than 10% now. And switching exclusively to e-mail delivery will help us lower our environmental impact. I'll keep you informed of all the above changes as they take effect in coming weeks/months.

In the meantime, **if you are a paper-only subscriber and want to continue receiving MEAM**, please send a message to [meam@u.washington.edu](mailto:meam@u.washington.edu) and ask to have your subscription changed to email delivery. Thank you!

Thanks also to all of you who participated in our recent reader survey. Over two-thirds of you said MEAM has directly helped you do your jobs more effectively. This is gratifying.

MEAM's affiliated website [OpenChannels.org](http://OpenChannels.org) has several online events coming up:

- **IMBER-ADApT: A Decision Support Tool for Responding to Global Change**  
28 May 2015 at noon EDT / 9 am PDT / 4 pm GMT
- **EU Discard Reduction Manual: A Guide for Fishermen, Fishery Managers and Member States Event**  
25 June 2015 at 11 am EDT / 8 am PDT / 3 pm GMT
- **Global Fishery Recovery: Possibilities and Pathways for the Future**  
7 July 2015 at 1 pm EDT / 10 am PDT / 5 pm GMT

For more information on these and other upcoming events: [www.openchannels.org/upcoming-events-list](http://www.openchannels.org/upcoming-events-list)



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## Retrospective: Experts see progress on EBM but warn of risk of "all planning but little action"

In the first issue of MEAM in September 2007, we asked several leading practitioners in marine conservation and management for their views on the challenges facing the field of ecosystem-based management (EBM). Eight years later, as the newsletter readies its first significant change in format ("The future of MEAM", above), we thought it would be fitting to catch up with these practitioners to see what progress, if any, the EBM field has seen since 2007 in their view.

The experts agreed: progress has been made in many areas, including in the management of nearshore sys-

tems, in intersectoral planning, and in the development of planning tools. However, that progress is not universal, and actual *implementation* of EBM lags far behind its planning. Their insights are below.

### EBM: Still merely a buzzword?

**Editor's note:** Tundi Agardy is executive director of Sound Seas, a US-based NGO that advises on

continued on next page



ocean planning and management issues worldwide. Email: tundiagardy@earthlink.net

**MEAM: In 2007, you told us, “In most cases, EBM is merely a buzzword – and it hasn’t moved too far beyond the state we were in 15 years ago, when I remarked that ecosystem management was like the joke that everybody laughs at but nobody really gets....” That’s pretty depressing. Do you still feel that EBM is just a buzzword?**

**Tundi Agardy:** I think there is no doubt that we’ve made progress toward integrated EBM in many areas around the world. It is anyone’s guess whether this is attributable to EBM theory and training or whether it is the logical and inevitable progression of coastal zone management taking on more with each successful attempt to manage across various sectors. But it is interesting and instructive to look at where success is apparent – it does seem like EBM is better achieved the closer one gets to shore. There are few practical examples of EBM in pelagic systems and even fewer in wider systems that couple nearshore and pelagic. And — perhaps paradoxically — EBM seems more operationalized in developing country settings with local management than at large scales in developed countries. This is despite the enormous amount of rhetoric that developed country governments offer on the need for EBM.

**Also back in 2007, you said scaling up management to scales appropriate to vast, interconnected systems was one of the biggest challenges for implementing EBM. Have you seen any broad-scale success in scaling up management in recent years?**

**Agardy:** Here I think it’s fair to say that the watershed management folks are far and away ahead in both their thinking and execution of EBM. Sadly, scaling up EBM requires two sorts of broadening: 1) the geographical scaling up that links management of coastal ecosystems to inland land and water use, on the one hand, and offshore marine use on the other, and 2) the incorporation of more and more uses or sectors into the planning schemes and ultimately the management of marine areas. For the time being, even the geographically large EBM initiatives have shied away from tackling some of the thornier use issues (especially fisheries) and have not done a terribly good job in addressing threats from afar, such as riverine-borne pollution that threatens marine ecosystem health and functioning. And even in places where the mantra of EBM or EA (Ecosystem Approach) is accepted dogma, management ends up being more like a collection of sectoral management, all rolled into one pot called integrated management, than actual holistic, cross-sectoral, and truly integrated management.

Take the European Union, for example, which has required countries to align their management to target conditions under eleven environmental descriptors, each of which relates to impacts from one or more uses of the marine environment. The Marine Strategy Framework

Directive (MSFD) has not indicated how management that achieves targets for each descriptor could be linked. And furthermore, since fisheries management falls under the Common Fisheries Policy and not under the MSFD Directive, a major pressure on ecosystems and a driver of ecosystem condition cannot be addressed through this new integrated, supposedly EBM approach.

**Any words of warning or advice for EBM practitioners for the future?**

**Agardy:** It is probably a function of human nature and a result of the way funds flow to management, but in my mind we have embarked on a dangerous course of accepting the EBM rhetoric, paying homage to it through planning, and then doing very little that diverges from business-as-usual when it comes to management. Take marine spatial planning (MSP), for example – something most of us feel is the most practical embodiment of EBM that exists to date. If one were to add up the time or money spent on planning effective, integrated management through MSP initiatives, and then compare that to the time and money spent on putting those plans into practice, I think we would see a very front-loaded and — dare I say it — delusional investment of resources in EBM. It makes me harken back to a time when we didn’t have all this EBM jargon: managers managed to succeed — albeit on a small scale — in collaborating to establish common goals and then worked cooperatively towards those goals.

But the optimist in me also realizes MSP is a nascent enterprise. Perhaps with trial and error, MSP will come to demonstrate how EBM might be done in practice, not just in theory. It would be great to ask this question again in a decade, and see just how far we’d come from these cynical times of today!

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## **EBM: Continued progress at a slow pace?**

**Editor’s note:** Ussif Rashid Sumaila is professor of Ocean and Fisheries Economics at the University of British Columbia, Canada. Email: r.sumaila@fisheries.ubc.ca

**In 2007, you told us, “EBM is still in the conceptualization, modeling, and experimentation stage.... Progress is being made, but only slowly.” Have you seen substantial progress in implementing EBM in recent years?**

**Rashid Sumaila:** In terms of the development of tools that would help increase the application of EBM, yes, I think there has been significant progress. In the last eight years, we have seen the further development of ecosystem modeling tools such as Ecopath-Ecosim-Ecospace and Marxan. We have also seen progress in terms of integrating human dimensions into model-

ing and ecosystem economic valuation frameworks that until now have been more about the biophysical side of EBM. A particular effort that comes to mind here is the work of The Economics of Ecosystems and Biodiversity, or TEEB, initiative ([www.teebweb.org](http://www.teebweb.org)). Finally, the use of indicators to capture the spirit of EBM has increased.

**You also said, “To know EBM has been successful, I will need to see joint management institutions put in place by countries sharing a given ecosystem.”**

**Sumaila:** There has been some progress there. For example, the Benguela Current Large Marine Ecosystem and ecosystems in the Caribbean are increasingly being managed jointly (at least to some degree) by multinational management bodies. It is probably true that there is hardly any fisheries management authority today that manages fisheries without giving some consideration for ecosystem effects.

**Any words of warning or advice for EBM practitioners for the future?**

**Sumaila:** I think the biggest challenge to achieving EBM is the difficulty in moving it past a point where EBM can practically and cost-effectively be implemented by management authorities around the world.

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## EBM: A policy puzzle adrift in outer space?

**Editor’s note:** Jeff Ardron was a senior fellow at the Institute for Advanced Sustainability Studies in Germany. He has just moved to London to serve as an adviser on ocean governance for the Commonwealth Secretariat. Email: [jeff.ardron@gmail.com](mailto:jeff.ardron@gmail.com)

**In 2007 you presented three “riddles” pertaining to the future of good EBM practice. (One such riddle, for example, was “Can the implementation gap be closed or do we require a re-thinking of what is necessary?”) Then you proposed answers to them. Were you right?**

**Jeff Ardron:** Looking over that article, I am struck by how timeless it has all become. The insights from then still stand now, more or less. It is as if the doors on the time machine/space ship got jammed and we are all looking out at the world changing around us — while inside, things remain eerily the same. Kind of a “hitchhiker’s guide to the universe of marine policy”, and conservation policy more generally. [Editor’s note: “A hitchhiker’s guide” refers to *The Hitchhiker’s Guide to the Galaxy*, a science fiction radio comedy series created by Douglas Adams in the late 1970s and later adapted to books and other formats.]

Let’s look at the riddles I posed and their proposed answers together:

1) Riddle: How can we reconcile the priorities of specialists (e.g., biologists) with those of generalists (e.g., ecologists) who presumably are the advocates of EBM?

Back then, I suggested the answer could be “...that specialist funding is preferentially given to research that can aid in addressing EBM questions...” And, weirdly enough, this has more or less come to pass. We now see much more funding for cross-disciplinary projects, research networks, and policy-oriented questioning. In the US, for example, forage fish became a research topic after it was begrudgingly accepted that other critters ate them, too — even critters without fins or commercial value. (Well, OK, the ones with fins and commercial value still get more attention.)


2) Riddle: Can traditional incremental improvement apply a new paradigm such as EBM?

I answered with “...a qualified yes, given that a multi-departmental approach can be achieved as an intermediate step (i.e., fisheries and environment directorates must begin working together) — and, if this is not possible, then more dramatic institutional restructuring may be called for.” Lo and behold, last year the European Directorates for Fisheries and Environment, after years of not cooperating, were placed together under one Commissioner! They might have to get along better now.... Incremental improvement means baby steps, and these babies are appearing everywhere. Even in Canada, a country with an increasingly oiled environmental reputation, we are seeing some signs of better inter-governmental federal/provincial/First Nations cooperation in marine planning in the province of British Columbia.

3) Riddle: Can the implementation gap be closed or do we require a rethinking of what is necessary?

Back then I said, “I believe much simpler approaches are possible and just as likely, if not more so, to be successful.” On this last point, the results are not yet in. In Europe, scientists and policy wonks are getting to know one another as they struggle together to meet the requirements of the Marine Strategy Framework Directive (“the most important piece of marine legislation that you have never heard of”) — which was passed shortly after MEAM’s first issue came out. Whether simple meaningful indicators can be devised, or whether the whole thing sinks into a Euro-bureaucratic quagmire, is still not entirely clear. But at least they are trying to do what many others only talk about.

**Any words of warning or advice for EBM practitioners for the future?**

**Ardron:** No more long leisurely discussions drifting across a dark marine policy universe. I hear the sounds of pick axes, diggers, and jolly singing dwarfs (Hi ho! Hi ho! It is off to the deep sea we go...). No one said this was going to be easy. Now would be a good time to step out of the time machine and embrace the work in all its contradictions. 

**To comment on this article:**  
<http://openchannels.org/node/9680>

# Tundi's Take

## EBM: Time to stop talking and start doing

By Tundi Agardy, MEAM Contributing Editor (tundiagardy@earthlink.net)

It has been a decade or more since EBM came into the vernacular. In the interim, paeans to EBM have appeared in project proposals, annual reports, government reviews, student writings, and, with great periodicity and predictability, in MEAM as well.

We have become very good at talking about EBM. Sadly, we're less good at demonstrating how it is done. Even small steps in the direction of EBM (remember, EBM is a journey, not a destination) have been taken haltingly: sometimes with two steps forward, one step back; sometimes with two steps forward, two steps back; and sometimes with no real steps taken at all.

What is constraining us from moving towards EBM, which most everyone agrees is necessary? It is certainly not lack of ambition nor a paucity of information. In fact, we have so much information in this age – everything is at our fingertips, a Google search away. But maybe that information is not being put to its best use (and a cynic might say that perhaps the information is being used in nefarious ways). We can propose to do the right thing in infinite detail, and we are able to sell EBM well. But doing it is another matter.

### Too much information = No action?

Here's an unpopular idea: it may be that the huge amount of information available to all of us today also has the undesirable effect, paradoxically, of clouding our thinking. It seems ever more difficult to establish priorities when the realm of what needs to be addressed in management and the realm of actors to be engaged get ever bigger. More information on a variety of pressures may make it more difficult to pinpoint the most important threats that need to be addressed. And bigger and bigger target areas

for management – areas that have grown in size and scope thanks to a commitment to EBM – mean that difficult choices in terms of priority areas or optimal management actions may be harder to elaborate.

Have we created a monster by highlighting the interconnections between ecosystems and between nature and humanity? Have we been rendered impotent by our highlighting that marine management is a complex problem that requires a complex solution? I think not.

### To implement EBM, reward courage

But we have, unfortunately, rewarded those who talk and write about EBM more than those who have struggled to make it a reality. For putting EBM into practice requires not only knowledge, but also bravery. We do not talk about the implications of EBM much, beyond suggesting ways it will increase the efficacy of management. Yet inevitably there will be those who suffer from EBM actually being implemented. And sometimes those who stand most to lose are those in power or those with vested interests in maintaining the status quo.

So we go on planning. We amass information, we ask the right questions, we engage the stakeholders, and we develop scenarios that foretell alternative futures. Precious few of us are willing to leave the comfort and safety of planning, to actually draw lines on maps, impose regulations, enforce the law, and stay committed to watching to see how well nature and users respond.

A decade or two on, EBM is still a nice idea, unsullied by the realities of how difficult, painful, and sloppy it is to change human behavior. ■

To comment on  
Tundi's Take:  
[http://openchannels.org/  
node/9682](http://openchannels.org/node/9682)

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## Notes & news

### Paper: "Six myths of EBFM" are impeding implementation

Several factors that have historically impeded the successful implementation of ecosystem-based fisheries management (EBFM) have taken on mythical status, to the point that they still obstruct EBFM despite no longer being true. This is the conclusion of a paper in the journal *Fisheries* authored by scientists Wesley Patrick and Jason Link of NOAA Fisheries (the US federal fisheries management agency). The paper identifies six "common myths" (e.g., "We do not have enough resources to do EBFM"), addresses why they should no longer impede EBFM, and propose solutions for moving forward. "Myths that Continue to Impede Progress in Ecosystem-Based Fisheries Management" is at [www.st.nmfs.noaa.gov/Assets/ecosystems/ebfm/Patrick\\_and\\_Link\\_2015.pdf](http://www.st.nmfs.noaa.gov/Assets/ecosystems/ebfm/Patrick_and_Link_2015.pdf)

### Marine policy toolbox helps design ecosystem-based approaches to management in EU

A new toolbox provides guidelines and resources for designing and implementing adaptive marine policies under the EU Marine Strategy Framework Directive, particularly with regard to achieving or maintaining Good Environmental Status. It currently focuses on regulations relevant to the Mediterranean and Black Seas. The toolbox is at [www.perseus-net.eu/en/about\\_the\\_apf\\_toolbox/index.html](http://www.perseus-net.eu/en/about_the_apf_toolbox/index.html)

# Making MSP happen: Practitioners talk realizations and resources

What do you need to make MSP actually happen? MEAM asked seven MSP practitioners from around the world, and from different stages of MSP planning and implementation, what has helped them most to move their MSP processes forward. Responses ranged from realizations and partnerships to analytical tools and guidebooks, highlighting the wide variety of factors necessary for implementing MSP.

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**Belize / Chantalle Clarke-Samuels**, Director, Coastal Zone Management Authority and Institute (CZMAI; [www.coastalzonebelize.org](http://www.coastalzonebelize.org)), Belize. Email: [directorczmai@gmail.com](mailto:directorczmai@gmail.com)

“CZMAI worked closely with research scientists at the Natural Capital Project ([www.naturalcapitalproject.org](http://www.naturalcapitalproject.org)) to use the InVEST suite of models to inform decision making for Belize’s first national integrated coastal zone management plan. Decisions were communicated in an explicit coastal and marine spatial zoning scheme. The valuation of ecosystem services and examination of alternative management options for the future provided a robust science basis that addressed social and national economic development issues as well as long-term ecosystem health and functionality.”

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**Western Pacific / Sangeeta Mangubhai**, Director, Fiji Country Program, Wildlife Conservation Society. Email: [smangubhai@wcs.org](mailto:smangubhai@wcs.org)

“My partnership with The Nature Conservancy’s Global Marine Team helped me the most in implementing MSP in the Western Pacific region. They had experience in spatial planning and were able to share resources, case studies, websites, and the UNESCO guide with me. Working as a team, we developed a process for the Raja Ampat MPA Network [in Indonesia] sharing each other’s experiences and knowledge from different geographies.”

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**Israel / Michelle Portman**, Assistant Professor, Technion – Israel Institute of Technology. Email: [michellep@cc.technion.ac.il](mailto:michellep@cc.technion.ac.il)

“What helped the most was funding. Without that the Israel Marine Plan (<http://msp-israel.net.technion.ac.il/en>) may not have gotten started. Our funding comes from a philanthropic foundation that identified a gap in, or lack of, interest in marine conservation and planning in Israel and worked hard to remedy this. Conservation and planning are very well developed in this country in the terrestrial realm but not in the marine realm. A parallel process now being led by the government, which began shortly after ours, was likely nudged along due to our effort.”

**US / John Weber**, Ocean Planning Director, Northeast Regional Ocean Council (<http://northeastoceancouncil.org>), US. Email: [jweber@northeastoceancouncil.org](mailto:jweber@northeastoceancouncil.org)

“My biggest realization was that a rapidly changing ocean coupled with an increase in our demands on the sea requires us to do better than the old (cliché but true) siloed and ad hoc approaches. Meeting the demand for food, energy, transportation, recreation, and conservation means that we need to be smarter, better informed, and willing to engage in the messy conversations involved in moving away from the status quo. Fortunately, the realization of the need for new approaches was also accompanied by the fact that we have a lot of the basic tools to make this work.”

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**Norway / Erik Olsen**, Principal Scientist, Institute of Marine Research, Norway. Email: [eriko@imr.no](mailto:eriko@imr.no)

“Realizing that MSP is a strategic management process of broad societal interest requiring aggregated and synthesized information of the state of the plan area rather than detailed knowledge about each component and process is fundamental to succeed in any integrated management process. Managers and decision-makers need to synthesize knowledge, pay keen attention, and use tools such as indicators, models, and decision support tools. Without this, they can easily lose the holistic perspective necessary to develop and implement a comprehensive plan.”

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**Vietnam / Nguyen Chu Hoi**, Associate Professor, Vietnam National University. Email: [nchoi52@gmail.com](mailto:nchoi52@gmail.com)


“I started gaining awareness of MSP when I worked with the IOC-UNESCO team to develop the MSP guidelines document ‘Marine Spatial Planning: A Step-by-Step Approach toward Ecosystem-based Management’, published in 2009 (<http://unesdoc.unesco.org/images/0018/001865/186559e.pdf>). After that I prepared CMSP [coastal and marine spatial planning] national resource and training documents for coastal and marine managers and officials and CMSP technical planners and implementers in Vietnam. We have also tested applying CMSP in Vietnam using a spatial zoning tool in the coastal area of Quang Ninh - Hai Phong. The guidebook and tool have helped me the most in implementing the MSP process in Vietnam — specifically, the focus on coastal and marine spatial zoning and planning using an inter-sectoral collaborative mechanism.”

[Editor’s note: Nguyen is now working as a national consultant on a WB-MARD (Ministry of Agriculture and Rural Development) project to help Vietnam’s eight coastal provinces apply integrated spatial planning in coastal areas for sustainable fisheries development (2014-2017).]

**To comment on this article:**  
<http://openchannels.org/node/9683>

UK / **Paul Gilliland**, Head of Marine Planning, Marine Management Organisation, UK. Email: Paul.Gilliland@marinemanagement.org.uk

“The first [marine spatial] plans for England were adopted in April 2014 ([www.gov.uk/planning-development/marine-planning](http://www.gov.uk/planning-development/marine-planning)). The first factor affecting their chances of being implemented is the mandate underpinning

them. The mandating legislation requires all public authorities (not just the body preparing them) to take account of the plans in making decisions affecting the marine area. The next most important factor is people – colleagues who spend time ensuring understanding of what needs to be implemented and working with decision-making authorities.” 

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## Notes & news

### New marine plans set for much of Canada's Pacific Coast

Marine plans for most of the Pacific coast of Canada have been set as part of a collaborative project involving the province of British Columbia and 18 coastal First Nations (aboriginal Canadian peoples). The plans of the Marine Planning Partnership for the North Pacific Coast, or MaPP, provide recommendations for uses, economic development, and stewardship of the regional marine and coastal environment.

The MaPP study area covers 102,000 km<sup>2</sup> of coastal waters and watershed areas. If the recommended Protection Management Zones in the plans are eventually designated as marine protected areas, total MPA coverage in the study area will increase from less than 2% to over 20%.

The marine plans do not address management of uses and activities that the province considers to be federal government jurisdiction, as the federal government did not participate in the partnership. Issues requiring federal government involvement will be subject to consultations with the federal government.

More information on MaPP and the plans is at <http://mappocean.org>. A film on the MaPP process, called *The Great Bear Sea* and produced by Green Fire Productions, is scheduled to premiere in late May 2015 — <http://ocean-frontiers.org/great-bear-sea>

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### Blue Halo Initiative expands to Montserrat and Curaçao

The Blue Halo Initiative, which recently supported a successful ocean zoning process in the Caribbean island nation of Barbuda, is now partnering with governments and communities in Montserrat and Curaçao to design and implement sustainable ocean policies for their respective waters (<http://waittinstitute.org/bluehaloinitiative>). In each of the latter countries, the Blue Halo Initiative seeks to collaborate with existing authorities to develop and codify sustainable ocean policies by January 2017. The policies are intended to include ocean zoning, sanctuary zones, and fisheries laws and regulations.

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### Seychelles developing nationwide marine spatial plan

The Seychelles, an Indian Ocean archipelago of 115 islands, has announced that it is implementing a comprehensive spatial plan for its entire ocean territory, including the creation of what may become one of the largest marine reserves in the region. The percentage of the Seychelles' waters protected as marine national parks is expected to rise from 1% currently to 10-15% percent under the plan. The plan will also protect artisanal fisheries and create zones for activities such as commercial tuna fishing and oil exploration and exploitation. For more information go to [www.seychellesmarinespatialplanning.com](http://www.seychellesmarinespatialplanning.com)

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### Guidance for valuing ecosystems of small island developing states released

UNEP has released a manual to enable policymakers to calculate the true value of ecosystems for the world's 52 small island developing states (SIDS). SIDS' economies are particularly dependent on natural resources. The manual reveals the extent of this dependence and provides a way to capture and account for the contribution of ecosystem services to national economic growth and prosperity. For example, one application that measures the impacts of ecosystem services on SIDS' coastal tourism found that a 1% increase in the number of coastal protected areas is associated with a 2.9% increase in the arrival of international coastal tourists. The manual helps policymakers see the protection of coastal areas and other natural assets as directly benefitting the economy. The manual is at <http://bit.ly/SIDSecosystems>

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### US making progress on implementation of national ocean policy

The US White House has released a report on progress made on implementing the US National Ocean Policy, a framework for ensuring the long-term health and productivity of national marine ecosystems and communities. Federal agencies have completed or are making progress on 77% of the 214 actions of the National Ocean Policy Implementation Plan, and

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have taken a number of other actions that further the objectives and principles of the policy. Of the plan's nine priority objectives, "Marine Planning" is the furthest along in completing its actions, and "Ecosystem-Based Management" has the lowest percentage of completed or substantially completed actions. Read the full report at <http://bit.ly/USoceanpolicyreport>

### Developing blue economy in China and US

A new report offers recommendations for how the US and China — the world's two largest economies, each looking increasingly to its offshore regions for economic growth — can account for the true value of their marine natural resources and healthy ocean ecosystems. "Developing a Blue Economy in China and the United States" suggests the nations should share best practices in such valuations and promote these practices around the world. Published by the Center for American Progress, the report is at <http://bit.ly/ChinaUSblueeconomy>

### Oceans worth at least US \$24 trillion but in steep decline

A new report by WWF places an estimate of the global ocean's value at US \$24 trillion but warns that the assets that provide most of this value are in steep decline. WWF says the valuation is a conservative one.

The authors describe how the ocean's capacity to support the food and livelihoods of much of the world's population is diminishing rapidly, and how the erosion of marine and coastal ecosystems jeopardizes economic, social and political stability in many regions of the world. The report recommends eight steps the global community must take to reverse the decline of the ocean economy and start rebuilding ocean health. Read the report at [www.worldwildlife.org/publications/reviving-the-oceans-economy-the-case-for-action-2015](http://www.worldwildlife.org/publications/reviving-the-oceans-economy-the-case-for-action-2015)

### Second global assessment of ocean health finds little change

The latest annual calculation of the Ocean Health Index, published in March, suggests ocean health is holding steady. The OHI, which measures individual countries' and global performance on ten biological, physical, economic, and social ocean health goals, rated global ocean health at a score of 68 out of a possible 100 in its most recent assessment. This is an improvement of 1 point from the previous assessment.

Individual country scores, which ranged from a low of 41 (Angola) to a high of 95 (Howland Island and Baker Island), also remained relatively steady. Only

nine countries had scores that changed by 5 or more points. South Georgia and South Sandwich Islands' index score increased from 65 to 77 due primarily to designation of a large MPA whereas the Cook Islands' index score declined from 64 to 56 due to large decreases in the apparent population of certain targeted stocks. View the results in detail at <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0117863>

### New syntheses available on impacts of climate change on ocean and coastal communities

Two new reports from the Oceans 2015 Initiative synthesize key marine findings of the Fifth IPCC Assessment Report and newer literature. The findings provide a comprehensive picture of observed and projected impacts of climate change on physical and biological processes in the ocean (Part I) and ocean warming and acidification on marine and coastal socioeconomic activities/sectors (Part II). The reports are available at <http://bit.ly/OceansPart1> and <http://bit.ly/OceansPart2>

### Study of economic, social, and environmental impacts of MSP published

A study by the Redstone Strategy Group that examines the economic, environmental, and social impacts of five established ocean plans — the US state of Massachusetts, the US state of Rhode Island, the Great Barrier Reef Marine Park, Norway's Barents Sea, and Belgium — is now available at <http://bit.ly/RedstoneMSP>. Prior to its public availability, the study was mentioned in the Notes & News of the Dec '14 - Jan '15 edition of MEAM as well as in the OpenChannels-EBM Tools Network webinar series (recording available at <http://openchannels.org/node/8289>). The study shows that the plans delivered an average of US \$60 million per year in economic value and increased marine protection.

### Study: How MSP could fit with existing management frameworks in Asia and Caribbean

A recent study examines the implications and application of marine spatial planning in Asia and the Caribbean, including how MSP fits in the range of existing coastal and marine management frameworks — from integrated coastal management, to marine protected areas, to the ecosystem approach to fisheries, and more. Published in late 2014, the paper "Marine Spatial Planning in Asia and the Caribbean: Application and Implications for Fisheries and Marine Resource Management" is available at <http://bit.ly/MSPAsiaCaribbean>

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## Paper examines tradeoffs between secular and “sacred” values in resource management

In EBM, managers are expected to consider and include all relevant stakeholders and to be mindful of tradeoffs among groups. However, a new paper in the Proceedings of the National Academy of Sciences suggests that managers may tend to focus on secular, easy-to-measure values — particularly the economic impacts of a policy — to the exclusion of “sacred” values having to do with honor, justice, cultural identity or the well-being of marginalized groups. The paper addresses this topic in the context of coral reef fisheries.

“Technical people implicitly favor secular metrics for evaluating projects,” says Tim McClanahan of the Wildlife Conservation Society, who co-authored the paper with researchers from the UK, Sweden, Kenya, and Canada. “They implicitly avoid people who do not appear to share the same values, are unable to communicate those values effectively, or are not a large part of the economic value of the project.” This avoidance ends up excluding key issues from the decision-making process, he says, resulting in policies that are difficult to implement successfully over the

long term. The paper “Evaluating taboo trade-offs in ecosystems services and human well-being” is at [www.pnas.org/content/early/2015/05/14/1414900112.full.pdf](http://www.pnas.org/content/early/2015/05/14/1414900112.full.pdf)

## New MSP “concierge” seeks beta testers

The Natural Capital Project ([www.naturalcapitalproject.org](http://www.naturalcapitalproject.org)) is developing an online service to make it easier to learn about and implement MSP. The MSP Concierge will be able to provide basic information such as an introduction to marine planning and ecosystem services to beginning users as well as in-depth resources for more experienced MSP practitioners, such as helper tools for processing spatial data and synthesizing results. The Project is working with the MSP community to improve the concierge and amass a library of guidance to support a wide variety of decisions. If you are starting (or are in the midst of) an MSP project and are willing to test a beta version of the concierge, please contact Gregg Verutes ([gverutes@stanford.edu](mailto:gverutes@stanford.edu)). Your time commitment can be as little as 15 minutes or as long as you feel that interacting with the MSP Concierge is useful for your work. ■

## Letter to the editor: Turning science into policy

Dear MEAM,

I'm writing with regard to your article “Turning science into policy: What scientists should (and should not) do when talking to policy-makers” (MEAM 8: 3).

Career scientists may have a pretty high comfort level with placing some theoretical constructs between the data and their functional interpretation. It's one of the best ways to make a career, in fact. However, in the policy-making world, the comfort level with such practices is much lower. There are several reasons, although “policy-makers are just not smart enough to understand ecological theory” is not one of them. Part of the reason is just the opposite: policy-makers feel that may be just as good as scientists at filtering data through theoretical constructs.

The Venn diagrams of “relevant theoretical constructs” that each community uses overlap, but each includes constructs with which the other community may not have a lot of interest (or sympathy). The policy-makers are happier with their own set than with the set dictated by science. Now, the Science defense against that is to have a mature theory, so the full range of experts inter-

pret a body of ecological data the same way. In that case the scientist's interpretation of the data is pretty powerful in a policy dialogue - because the science community is speaking with pretty much one voice.

Even there, though, the policy community can be pretty gun-shy from past unpleasant experiences. Take the case of maximum sustainable yield (MSY). MSY was not some brainchild of policy-makers. The fisheries science community developed it, particularly in the '60s and '70s. When policy discussions started on what eventually became the fish stocks agreement, we sold to the policy world that the concept of a maximum sustainable yield was valid. Even better, we said it could be calculated. So they bought the concept and put it in high-level policy documents. Ever since then, we — the science community — have been beating on them for following our earlier advice. ■

**Jake Rice**

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