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[From the Editor: Making MEAM more global](#) ^[1]

Welcome to the May 2017 issue of MEAM (Marine Ecosystems and Management).

It is spring here in Washington, DC, and it seems like an appropriate time to take stock of where MEAM is right now and how we would like to improve and grow the newsletter to serve our multiple constituencies. An area that is of particular interest to us is increasing our geographic range – of topics, interviewees, perspectives, and readers. The map below shows the distribution of MEAM readers at present (according to Google Analytics).

In short, since MEAM became a fully online publication in September 2015, we have welcomed 11,346 unique users for 22,823 sessions. Roughly 45% of sessions were initiated from the US, 19% from Europe, 13% from North and Central America (other than the US), 7% each from Oceania and Asia, 5% from South America, and 4% from Africa.

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As we all know, innovations and insights for improving ocean management are being developed across the globe. We would appreciate your help reaching out to new contributors and readers by:

- Sending this issue of MEAM or a link to the MEAM archives <https://meam.openchannels.org/meam/archives> ^[2] to colleagues who might be interested
- [Taking our short survey to provide input on how we can reach more ocean planners and managers](#) ^[3], particularly in underrepresented areas.

[Take the survey](#) ^[3]

On another note, we just completed another update to our compilation of EBM and MSP-related training opportunities, adding several new EBM, MSP, and “blue planning” trainings ^[4]. Check it out!

Thank you for your time and support, and best wishes for your work,
Sarah Carr, Editor

[Marine Spatial Planning ten years later: A conversation with Charles “Bud” Ehler](#) ^[5]

Editor’s note: Charles “Bud” Ehler is president of [Ocean Visions Consulting](#) ^[6] and a consultant on MSP to [UNESCO’s Intergovernmental Oceanographic Commission](#) ^[7] (IOC). IOC and the European Commission Directorate-General for Maritime Affairs and Fisheries (DG MARE) just hosted the [2nd International Conference on Marine/Maritime Spatial Planning](#) ^[8] in Paris, France, in March 2017. This conference was held ten years after the first IOC international workshop on MSP in November 2006 in Paris – a meeting that has been characterized as the starting point for the spread of MSP internationally. Ehler was integrally involved in planning both conferences. He co-chaired the 2006 workshop and was the keynote speaker at the 2017 conference. The views and opinions expressed here are his and do not necessarily reflect those of IOC or official conference documents. He can be reached at charles.ehler@mac.com.

MEAM: What were some of the most striking aspects of the conversations and talks you heard at the 2^d International Conference on MSP that just wrapped up in Paris?

Ehler: Certainly one of the striking aspects of almost all of the talks at the conference was the very consistent affirmation of MSP as an effective process or framework to achieve EBM, sustainable economic development (the “Blue Economy”), and conservation in marine places around the world. The role of MSP in implementing [Agenda 2030 for Sustainable Development](#) ^[9] was a topic of a conference panel and the focus of the [Joint Roadmap](#) ^[10], a product of the conference.

Two things struck me about the 300+ participants – their youth and diversity. I’m sure that at least half were under 30 years old – a good situation for a field that needs new planners. I was impressed that a large number of participants came from African countries – all eager to learn about MSP. Enthusiasm and hope for MSP were high throughout the conference, and the need for MSP capacity building is recognized in the [Joint Roadmap](#).

MEAM: You mentioned that it’s amazing to see how much progress has been made in the field over the past 10 years. Can you describe some of the major changes you have seen in the MSP field over that time?

Ehler: The biggest change in MSP over the past 10 years is its geographic scope. It has grown from initiatives in a handful of places, mostly in Western Europe and North America, to [over 60 initiatives around the world](#) ^[11] in various stages of development. Much of the growth in the next five years will be due to Maritime Spatial Planning Directive (law) of the EU that requires the its 23 member countries with marine waters to have approved marine plans by 2021. New initiatives continue to pop up in other regions as well, e.g., Myanmar, Mauritius, Namibia, and Saint Lucia. Current trends suggest that well over 30% of the surface area of the world’s EEZs could be covered by government-approved marine spatial plans by 2030.

Another change is the increasing recognition of the need for trans-boundary MSP at the regional level. Trans-boundary MSP is necessary if we want to move MSP closer to EBM. The European Union is encouraging a regional, trans-boundary approach among its member countries and all of its sea basins, e.g., the North and Baltic Seas. In the US, good progress has been made in working across boundaries for the Northeast and Mid-Atlantic regional ocean plans. Specific actions that need to be taken to promote trans-boundary MSP are laid out in the [Joint Roadmap document from the conference](#)^[10].

MEAM: Here at MEAM, we have heard concerns that MSP is sometimes co-opted by proponents of "blue growth" ^[11] who in some cases may be more concerned with fitting as much short-term extractive activity as possible into the ocean than with maintaining long-term ocean health. Do you share these concerns?

Ehler: No, I do not. "Growing the Blue Economy" has become a characterization of many MSP initiatives (e.g., South Africa, Seychelles, Caribbean countries, Abu Dhabi) around the world because of the appeal of "unlocking" the ocean economy – creating jobs and providing incentives for technological innovation. It is particularly appealing in low-income countries where increases in employment and income from a "Blue Economy" could reduce poverty and deliver shared prosperity. The relative contribution of the ocean to the national economy is much higher in a number of coastal and island states with large ocean areas – for example providing an estimated 20% of the national economy of Indonesia.

However, many of the economic sectors identified for growth in a Blue Economy (tourism and recreation, mariculture, marine biotechnology) require a healthy and resilient marine ecosystem. Overfishing, pollution, unsustainable coastal development – and now the effects of climate change and ocean acidification – must also be dealt with if truly "Blue" economies are to be developed.

The Republic of the Seychelles marine planning initiative (2014-2017), covering over 1.4 million km² of ocean and 115 islands, is an excellent example of how MSP can support protection of a global biodiversity hotspot (the plan commits protection of 30% of its exclusive economic zone), improve the resilience of coastal ecosystems to the effects of climate change, and ensure economic opportunities through development of a Blue Economy. Compatible uses are being aligned with biodiversity objectives through MSP. The first phase of the Seychelles plan will be completed in 2017; the final plan in 2020.

I remember the early days of MSP (2000-2005) when it was minimized by its detractors as just another marine conservation initiative that they hoped would go away. Today some are concerned that MSP has become too focused on economic development. In fact, MSP is about finding a balance among social, economic, and environmental objectives that is desirable in any marine planning area. That balance should be sought through the engagement of stakeholders and influenced by the best natural and social science available to the MSP process. Ultimately the marine plan and its implementation will be a political decision that should be revisited periodically to see if the balance of objectives and management actions are still appropriate and desired. MSP is a continuing process and long-term commitment – and it works when used adaptively. Slogans such as "Growing a Blue Economy" are often helpful in launching initiatives. Real intentions are best revealed in the outcomes of specific management objectives and actions specified in marine plans, including those related to ocean health.

MEAM: Do you have any suggestions for current and aspiring natural and social science researchers as to where they should focus their work to help MSP initiatives and move the field forward?

Ehler: We have accomplished and learned much in practical applications of MSP, at least in terms of getting a first generation of plans in place, but a lot remains to be done to move ahead. Applied research needs – such as methods to assess cumulative effects, more effective decision support tools, better valuation of non-market marine goods and services (e.g., natural capital and ecosystem services) – have been identified in many fora and articles over the last decade. Some progress has been made in these areas, but they continue to be high priorities for applied research.

However, while MSP practitioners and researchers acknowledge the importance of social data in the development of marine plans, only a few efforts have been made to collect and apply social data, especially spatial social data for MSP. These data are important if planners expect to balance ecological, economic, and social objectives in MSP. Delivering beneficial human welfare outcomes in marine plans will not be possible without the availability and use of better spatially explicit social data.

One of the biggest challenges in moving the field forward would include a focus on measuring and communicating the distribution of the outcomes of MSP processes, e.g., equity considerations. This is not a radical idea as some have characterized it, but simply a fundamental evaluation question – who bears the costs and who receives the benefits of the outcomes of MSP plans and are these acceptable/desired outcomes ^[12]? Only a few plans have attempted to estimate the costs and benefits of delivering desired outcomes of MSP ^[13], let alone their distribution. Applied social science research is needed to help marine planners determine these distributional effects of MSP.

A related challenge—especially to young, tech-savvy researchers, is to better communicate the purpose and outcomes of MSP to decision makers, stakeholders, and the general public. Social media, simulation games (such as "[MSP Challenge 2050](#)" ^[14] that was played throughout the conference), virtual and augmented reality, films, and cartoons (such as WWF-Germany's "[How to Safeguard the Seas through Ecosystem-based Management](#)" ^[15]) can all be used to move forward. Effective communications of MSP outcomes is also identified as a priority area in the [Joint Roadmap](#).

Food for thought: Conservation "leakage" and potential impacts of Trump's trade policies on marine conservation ^[16]

*Editor's note: As editor of MEAM, I have the privilege of looking through a lot of literature about marine conservation and management. Every once in a while, an article really stands out because it brings up an entirely new perspective (for me) on a topic. The recent article "[Can the United States have its fish and eat it too?](#)" ^[17] published in *Marine Policy* was one such article. It describes some of the consequences of the US combining relatively well-managed domestic fisheries with significant imports of seafood from foreign fisheries, some of which have greater rates of overfishing, bycatch, and interactions with threatened species.*

*Moreover, this article appears at the same time that we are seeing the US proposing dramatic shifts in trade relationships with the rest of the world ^[18]. We do not know how future trade negotiations will turn out, but several of the authors of the recent *Marine Policy* article spoke with us about their recent article and possible implications for global marine conservation if trade relationships do change. Lead author Mark Helvey is a retired assistant regional administrator for sustainable fisheries with NOAA's National Marine Fisheries Service. Co-author Carrie Pomeroy is an extension specialist with California Sea Grant and a social scientist specializing in the human dimensions of fisheries and fishing communities. Co-author Naresh Pradhan is a fishery analyst and economist with the New England Fisheries Management Council. The authors can be reached through Mr. Helvey at markhelvey2@gmail.com.*

MEAM: Tell us about "leakage" as it pertains to US seafood consumption and fisheries.

Helvey et al. The term leakage (also referred to as "unequal ecological exchange," "transfer effect", and "spillover") is used to describe the displacement of environmental impacts. This can occur when conservation policies aimed at reducing environmental pressure from production activities in one place lead to a countervailing effect in another place, offsetting the intended benefits of the initial policy.

Swordfish provides perhaps the best example of leakage resulting from conservation policies directed at US fisheries. In 2014, the US consumed little over 19,000 metric tons (mt) of swordfish, 87% of which was imported ^[17]. Documented swordfish leakage comes from the US Pacific fisheries operating out of Hawaii and California that harvest a healthy stock. The primary gear types used to harvest swordfish commercially are shallow-set longlines and, off California, nets because the state prohibits the use of shallow-set longlines. Both gear types inadvertently catch other marine species, but research conducted in the US has led to the development and adoption of methods that reduce those impacts to marine mammals, sea turtles, and sea birds, consistent with US marine conservation requirements.

However, because of restrictions on domestic fishing effort and therefore catches, US markets largely rely on imported swordfish that primarily comes from foreign nations, many of which don't impose similar conservation requirements on their fishermen. Consequently, the conservation gains occurring in the US Pacific swordfish fisheries because of fishery restrictions are being leaked or lost to those foreign fisheries that supply the other 87% percent of the swordfish consumed in the US.

[Editor's note: [Two new regulatory programs](#) ^[19] - to [reduce the import of seafood obtained through illegal and unregulated fishing](#) ^[20] and to [reduce marine mammal bycatch related to seafood imports](#) ^[21] - were finalized in the second half of 2016 and are currently being implemented.]

MEAM: What are some actions the US could take to reduce negative marine ecosystem impacts of its seafood consumption?

Helvey et al.: One seemingly simple action would be to reduce US seafood consumption. This approach is naïve and impractical, however, because the nutrition and health benefits of seafood consumption would be lost and there would still be leakage due to increased agricultural food production to replace the foregone seafood production and consumption.

Another action advocated by many for reducing negative marine ecosystem impacts is curtailing US fisheries production. This tactic is short-sighted because while it may reduce domestic marine ecosystem impacts, it also reduces consumer access to domestically-produced seafood from well-managed fisheries.

One practical action is for the US to take greater ownership of its seafood demands by further utilizing its own capture and aquaculture fisheries as long as they are managed on sound scientific information. Consuming seafood means harvesting it from somewhere, but doing that under US (or likewise conservative) governance is probably the best action for reducing negative marine ecosystem impacts to practicable levels from a global perspective.

MEAM: The new US president, Donald Trump, has signaled that there may be an increase in trade protectionism for the US in coming years. Can you speculate on what impact a decrease in seafood imports into the US might have on marine conservation globally?

Helvey et al.: Seafood is among the most traded of all food commodities^[22]. The three largest seafood importers – the EU, the US, and Japan – are highly dependent on seafood imports from other – often developing – countries^[23]. Many developing countries lack sufficient governance to ensure that the marine ecosystem impacts of their fisheries are minimized, so fishery products exported from these countries to developed countries often do come at higher environmental costs.

Global seafood trade also represents a significant source of income for many individuals, households, and firms across many countries^[23]. Given the economic importance of these trade flows, a decrease in seafood exports to the US may lead those nations to redirect their products to other global markets rather than reducing seafood production and associated impacts.

MEAM: Are there any other potential marine conservation impacts of shifting trade relations that marine managers and conservation practitioners should be aware of?

Helvey et al.: The US imposes standards under the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 and the Marine Mammal Protection Act (MMPA)^[24], among others, for how foreign fleets seeking to export to the US conduct their fisheries. Shifting trade elsewhere creates the risk that these foreign fisheries would no longer be incentivized to fish in more responsible and sustainable ways to gain access to US markets.

Tundi's Take: Could complex institutional frameworks and regulations actually inhibit EBM?^[25]

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

The recent juxtaposition of two EBM-related teaching/training sessions, one in the Baltic and the other in the Adriatic, led me to ponder why approaches to EBM are so fundamentally different in these two parts of Europe. While there have been many scholarly papers written on how European policies under the Marine Strategy Framework Directive, Common Fisheries Policy, and Maritime Spatial Planning Directive catalyze an ecosystem approach^[26] and make room for the precautionary principle, there has been little attention paid to whether these complex regimes may actually be inhibiting effective EBM.

The view from northern Europe

In March I participated as a trainer in a weeklong Blue Planning in Practice^[27] course on the island of Vilm, Germany. By all accounts the training was successful and participants learned new ways of looking at marine management problems and solving them through MSP. The Blue Planning in Practice training method involves investigating a fictional country's marine issues, but trainees were also exposed to the real-life challenges of management in the Baltic Sea. A day-long workshop in the nearby mainland town of Stralsund focused on MSP in Germany with presentations and a panel discussion by national and regional authorities.

The Stralsund planning and management workshop was a good reality check. We were surprised to realize that MSP in the Baltic cannot really be considered EBM, despite the advances made through the pioneering HELCOM Convention^[28] and the advanced management capacity of Baltic States. Why? There are a number of possible factors – the situation in the EU in which EEZ fisheries do not get considered alongside other maritime uses (the Common Fisheries Policy takes precedence over other marine management policies), the fact that there is surprisingly little coordination between national level marine and coastal planning, and the disconnect between management of wetland or transition areas and the rest of the coast. In fact, it appeared as if most of the MSP in this area of the Baltic focused on accommodating two main stakeholders – offshore wind and seaside visitors with concern for the viewsheds. These shortcomings were acknowledged in the panel discussion, but not explained. This made me wonder – could it be that the extensive regulations and the highly complex legislative and institutional frameworks for marine and coastal management in Europe actually impede integration and consideration of the full suite of affected stakeholders?

The view from southern Europe

A month later I joined colleagues in Venice to teach a workshop on the use of ecosystem services for the Erasmus Mundus course on maritime spatial planning^[29]. Observing planning and management in the Adriatic brought the differences between northern and southern Europe into stark relief. Of course, the Adriatic is a European sea too – but to achieve cooperation in the whole of the Adriatic requires that EU nations work alongside countries like Albania, which is geographically part of Europe but not yet a member of the Union and therefore not bound by EU policies.

The approach to integrated marine and coastal management in the Adriatic is much more undefined and fluid. This could lead to lapses in management or lower standards of performance, but it also opens the door to creativity and innovation, and bona fide EBM.

Through AdriPlan^[30], Elena Gissi and colleagues from the University Iuav of Venice have been focusing on a number of information platforms that will steer marine management in the direction of true integration and EBM. One platform looks at cumulative impacts to identify marine and coastal activities that need urgent attention. Their cost-benefit analysis of management measures under uncertain conditions has the ability to drive new approaches to management not stipulated in any of the hundreds of municipal, regional, national, or EU-wide regulations and policies regarding marine management. Another approach focuses on assessing ecosystem services, and using this information not only to determine management priorities, but also to define planning areas that span political and biographic borders. The ecosystem services perspective allows planners to engage stakeholders that might have been left out of planning processes in the past. One example concerns water management in Venice Lagoon – a challenging task initially focused only on controlling river inputs, but now encompasses the concerns of local artisanal fishermen, Adriatic commercial fishermen whose catches are linked to nursery areas within the lagoon, ecotourism operators, and other stakeholders.

Creating new management frameworks presents opportunities to do it right

What is happening in the Adriatic is mirrored in other parts of the Mediterranean as well, where European countries find themselves adapting their planning and management to a setting where neighboring countries have uneven capacities for these tasks. Here one finds the Mediterranean Action Plan^[31] working with its 22 Member States to adapt EU policies under the Marine Strategy Framework Directive to the needs of the non-European nations in North Africa and the Middle East. One result has been the Ecosystem Approach initiative, which has defined 11 common ecological objectives^[32] for integrated coastal and marine management in true EBM style. Unencumbered by the extensive regulations on marine pollution, biodiversity conservation, wetlands protection, and fisheries policies that each EU member state is required to uphold – each set of which is dictated by siloed management agencies in each country – the regional sea can work collectively and cooperatively to find common ground and craft a set of streamlined management practices to achieve those common goals.

The students in the Erasmus Mundus MSP Masters course are largely from the developing world, as were the trainees at the Blue Planning in Practice in Vilm. It struck me that holding up examples from the developed world, with its burdensome regulations and complex institutional frameworks, could serve less as an example of how to achieve EBM, and more of a lesson on the enormous opportunities that exist for cooperation, collaboration, and new insights in places where marine management is still in its infancy. With the engine of [Blue Growth](#)^[33] being revved by coastal nations across the whole of the world, the chance to get it right and prevent the silos of sectoral management from being built is more important than ever.

EBM Toolbox: A new, short, and free primer on modern ocean management^[34]

Has having to figure out if you want to do management (EBM), integrated coastal zone management (ICZM), area based management (ABM), whole domain management (WDM), or marine spatial planning (MSP) got you down?

You are in luck. [A new paper published on OpenChannels.org](#)^[35] for policy makers, managers, and students provides a short history of ocean management, its conceptual foundations, modern frameworks for it, and numerous real world examples of how these concepts and frameworks are being applied.

Lead author Steven Katona, a former professor of biology and president at the College of the Atlantic and now managing director for the Ocean Health Index with Conservation International, initiated the project because he was confused by all the terms used in ocean management. He wanted to understand how they fit together. "I've always found that when I have a question, others do too, so I hoped that any insights I gained would be useful to others," says Katona.

The paper discusses concepts like sustainability, natural capital, and ecosystem services as well as initiatives such as Blue Economy, Large Marine Ecosystems, and Seascapes. It covers similarities, differences, relationships, and synergies among these activities as well as the types of analytical tools useful for ocean governance and their availability (or lack thereof).

Vocabulary of ocean governance evolving

When asked why there has been such a proliferation of similar terms for ocean governance, Katona says the various terms reflect contributions from a variety of practitioners worldwide over the course of two decades or more. "Some are refinements of previous terms (e.g., DPSIR to DAPSI(W)R)," he says. "People from different places may use different terms for the same thing – e.g., 'measures' in EU countries are 'responses' or 'actions' elsewhere. Other new terms highlight particular circumstances, approaches or nuances. The situation is a microcosm of what we see in English, where new words steadily emerge, others go out of style, and the language constantly develops to suit new needs and environments. In similar fashion, the vocabulary of ocean governance is likely to keep evolving even as the EBM foundation remains relatively constant."

And if EBM really is the foundation for progressive ocean management these days, why are we hearing relatively little about it in the news and literature, particularly compared to a decade ago? Katona believes that EBM has indeed become established as the central organizing principle for managing socioecological systems and the discussion has now shifted to *how* to implement it – hence the discussion of topics such as marine spatial planning, adaptive management, dynamic management, and other tools for curating ecosystem services. "It's a little like baseball," he says. "The general concepts and fundamentals of the game are well established and not discussed often. But there is constant attention to new strategies and techniques for playing it better in different situations."

"Navigating the seascape of ocean management: waypoints on the voyage toward sustainable use" is available [here for free download or online reading](#)^[35].

Citation: Katona, S.K., J. Polsenberg, J.S.S. Lowndes et al. 2017. Navigating the seascape of ocean management: waypoints on the voyage toward sustainable use. OpenChannels: Forum for Ocean Planning and Management. 44 pp. Available at: www.openchannels.org/literature/16817^[36].

Latest News and Resources for Ocean Planners^[37]

- [UN website provides map and summaries of MSP processes worldwide](#)^[7]
- [Compilation of global MSP documents available](#)^[38]
- [New database maps marine litter and its impact on aquatic life globally](#)^[39]
- [UN Ocean Action Hub public discussion on ensuring sustainable marine and coastal ecosystems available](#)^[40]
- [FAO provides guidance for ecosystem approach to aquaculture site selection, zoning, and management](#)^[41]
- [Great Barrier Reef hit by severe bleaching for second year in a row, with extensive coral die-off](#)^[42]
- [Analysis of European MSP data and knowledge needs available](#)^[43]
- [European Commission releases report on blue growth strategy](#)^[44]
- [Baltic Sea project produces recommendations for MSP across borders](#)^[45]
- [European Commission launches blue growth initiative in Western Mediterranean](#)^[46]
- [Report explains legal mechanisms and processes US administration may use to change existing environmental protections](#)^[47]
- [US takes steps to expand ocean drilling in Arctic and Atlantic](#)^[48]
- [US ocean economy accounted for \\$352 billion in gross domestic product in 2014](#)^[49]
- [Year to date is second warmest on record](#)^[50]

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