John Davis: I'm John Davis. I am the editor of Marine Ecosystems And Management, or MEAM, the newsletter on marine and costal ecosystem-based management. For more information on MEAM, including past issues of the newsletter and instructions on how to subscribe, please visit our Web site at www.meam.net. MEAM is co-presenting this webinar with the EBM Tools Network, a voluntary alliance of leading tool users, developers, and training providers. Their Web site is www.ebmtools.org.

Our panelists today are Fanny Douvere and Charles (or "Bud") Ehler of UNESCO. They are the co-authors of the guidebook, *Marine Spatial Planning: A Step-by-Step Approach Toward Ecosystem-Based Management*. Fanny is one of the leading experts on marine spatial planning. She is co-author with Bud of the Step-by-Step guide, as I mentioned, and has published several articles for international journals, including *Science* and a special issue of the *Journal of Marine Policy*. As of last month (October), she is the new coordinator of the Marine Programme of the World Heritage Centre at UNESCO.

Bud Ehler is the president of Ocean Visions. He works in Paris as a consultant to UNESCO's Intergovernmental Oceanographic Commission, as well the Man & the Biosphere Programme. Before moving to Paris in 2005, he worked for 27 years as a senior executive of the U.S. National Oceanic and Atmospheric Administration. He was also the marine vice chair of IUCN's World Commission on Protected Areas from 2000 to 2005.

Here are Fanny Douvere and Bud Ehler.

Fanny Douvere: Hello, everybody. As John just said, I recently switched jobs. I'm now the coordinator of the Marine Programme at the World Heritage Centre, but tonight we will be talking to you about marine spatial planning. So we will have about 20-25 minutes of presentation, and we will talk about four key components. First we will talk about why we need marine spatial planning. We will talk about what is different in marine spatial planning from what we are doing today in the marine environment. We will talk to about why time and space are so important, and we will finish with what marine spatial planning really is, what its characteristics are, and how it really works.

So why do we need marine spatial planning? If you look at the map that you see on your screen right now, you will see that virtually no ocean area is untouched by human activity anymore. You can see it on the orange, yellow, and particularly the red spots

that show that many marine places are under increasing development pressures. Only around the two poles are there still some signs of less economic development.

So why is that? It's basically because of a number of activities: from traditional human uses, such as fisheries and maritime transportation, but also from technological change that really changes the way we are using the marine environment, and how we have to deal with it.

It is also from new demands for ocean space. That comes primarily (as many of us know) from renewable offshore wind energy, and also aquaculture, that are putting a bigger pressure on the demand for new ocean spaces.

Last, but not least, from new development in new ocean places—places that, until now, were not really developed economically. For example, the high seas, and now the Arctic, which is increasingly opening to economic development due to climate change.

One of the first countries that started to visualize and map some of these human activities that were taking place in the marine environment is Belgium. As you can see on this map, Belgium is located in the North Sea and Northwest Europe, and is a relatively small place in terms of its Exclusive Economic Zone. But when it started mapping the various activities in time and space of what is happening in their marine environment, this was the result: a very densely used area with a lot of potential for conflicting uses—conflicting among each other, but also conflicting between human use and the marine environment.

There are basically two ways to manage marine spaces: one is an incremental way and the other one is a more integrated way. The incremental way is still very much what we are doing today. We are still, to a large extent, managing the space of our oceans on a sector-by-sector basis. We're doing that on a sector-by-sector basis without much consideration of what the impacts are, or the implications are, of the type of decisions we make within each of the sectors.

What are the implications for measures that we take within fisheries, for example, for oil and gas, or vice versa? Or what are the marine environmental implications of taking measures within a particular sector?

There are various examples of what we are calling "zoning without marine spatial planning". We basically zone for particular uses without much planning from a place-based or area-based perspective. Examples are: vessel traffic separation systems (or zones); we zone for the development of renewable energy like wind farms; we are providing oil and gas leases (or concession areas); dredging, but also the disposal of dredged materials in particular zones; sand and gravel; even fishery closure areas, but also marine protected areas. These are all examples, basically, of zoning, or of allocating particular uses to particular spaces, but without doing so in a more planned and a more integrated approach towards management of the marine environment.

Now as I said on one of the earlier slides, another way to deal with this is in a more integrated way. That is something that we see emerging over the last 10, maybe 15, years, in countries that are really trying to have a more integrated approach. These are countries like, for example, the United Kingdom, Belgium, the Netherlands, Norway, and a few others, that are really using a marine spatial planning approach to try to get to a more integrated way of achieving certain objectives. These can be social objectives. Or economic objectives. Or ecological objectives. Those objectives are most of the time specified through a political process. But what these countries have in common is that they are applying a public process, because that's what marine spatial planning is about: a public process of trying to analyze and allocate the spatial and temporal distribution of human activities in the marine environment.

When we refer back to the slides that you saw earlier when we were talking about a sector-by-sector approach, as we still do to a large extent today, these countries have basically used marine spatial planning as a basis to try to guide and integrate all of the individual decisions that we are taking within single-sector management, and trying to make sure that the sum of all of these decisions is leading toward a more integrated approach.

Charles (Bud) Ehler: So the next question that we want to turn to is: Why is time and space important? Why do we even want to think about marine planning and management, in terms of time and space considerations?

There is a very simple reason for that. The oceans—despite what we've learned through our geography texts over the last 50 years—the oceans are not homogeneous. These are not just big blank spaces. They're not all white or black spaces. They're very

different areas, and some areas are very much more important than others. This is true in terms of the ecological importance: some areas have different values in terms of ecosystems—areas of high biodiversity, spawning areas, nursery areas. These areas are certainly more important than most of the other areas of the ocean.

It's also true that some areas are more economically important than others: we can only find oil and gas where there are oil and gas deposits; only extract sand and gravel where there are sand and gravel deposits; fishermen only fish where there are fish. We have certain spaces that are allocated already to uses like marine transportation routes. We can't really develop offshore wind energy if we don't have sustained winds over a certain amount.

So any kind of effective marine spatial planning and management has to address this spatial and temporal heterogeneity. It's true not only for ecological or economic areas, but also for the social use of marine spaces.

The diagram that you see in the upper right-hand corner of this of this slide is some very interesting work by Professor Kevin St. Martin from Rutgers University, who is trying to associate the human use of offshore areas with communities that are onshore. This is extremely important information for assessing the impacts on onshore communities of decisions that are taken offshore. If you decide to designate a marine protected area or to close a fishery in a particular area, you're able to translate that back into the distribution of impact on particular communities along the coast.

There are certain kinds of benefits that are pretty obvious from the standpoint of marine spatial planning. There are economic benefits. For example, in many of our discussions around the world we've talked to industrial users, and the big concern that the private sector or industry has is they want certainty in terms of planning and decision-making. They make investments over a 20- or 30-year time period, and they need to know if they're going to be able to have access to particular areas with some certainty for those kinds of investments.

Marine spatial planning also identifies both compatible and incompatible uses, in terms of trying to sort out the conflicts or the compatibilities that might exist among these.

Then there are environmental benefits, of course. There are areas that we can identify at the beginning of a spatial planning process

that are important from a biological or ecological standpoint. This allows ecological goals and objectives to really be at the heart of marine spatial planning and management. In many cases, one of the purposes of marine spatial planning is to set the context for the development of a network of marine protected areas.

Fanny Douvere: When we started about a little over four years ago, somewhere towards the end of 2005, with our idea of marine spatial planning at UNESCO, one of the key questions that kept coming up was: This is a great idea (marine spatial planning), but how do you really do it? How do you start? What's the first step? It's something that is very well represented by a quote of an American bishop when he said, "I'm like a mosquito in a nudist camp. I know what I ought to do, but I do not know where to begin."

That's really why we went back a step and thought, "You know, maybe we should lay out a step-by-step approach on how to do marine spatial planning."

If you remember as I said earlier, various countries have already started with marine spatial planning: countries like Germany, the Netherlands, Belgium, Norway, the United Kingdom, also to some extent in the United States and Australia, and to some extent in Canada, and even in places in China. We took the best parts of each of these individual examples of marine spatial planning and put them together in a step-by-step approach. That's our latest publication that you can download from the website that we will show in a minute.

What it basically tells you is that marine spatial planning is not a one-time plan. It is a process that has various steps, and each of these steps is equally important. It is important to see it as a step-by-step approach because you should also think, when you start with marine spatial planning, to provide financial support for each of these individual steps.

It's primarily starting with defining the context and the authority to make sure that there is some form of stakeholder participation, because you're trying to achieve multiple objectives, and your participation should reflect the type of issues that you should be dealing with through marine spatial planning. You need some form of analyzing current conditions—what is my baseline today—but that's not enough. You should also look at what are my future conditions? Where am I going?

Now once you have completed these tasks, which you traditionally will do through information synthesis and analysis, you develop a plan. But even there it doesn't stop, because planning without implementation is sterile. You need to go through some form of implementation, and after that it's important to look at whether or not your actions are leading you towards the objectives that you originally set. You have to carry out some kind of monitoring and evaluation of the performance of your marine spatial plan. This entire process is what we call an "adaptive approach" to marine spatial planning. So it's very important to think along a number of continuous steps, and not think about marine spatial planning as a one-time plan.

When you boil it down, you essentially come to three questions, and these are really what marine spatial planning is about. The first question is: Where are we today? The second question is: Where do we want to be in the future? The third question is: How do we get there?

Charles (Bud) Ehler: We want to conclude the presentation with just a few of the key characteristics of marine spatial planning. We're just going to go through a number of these characteristics.

The first, obviously, is that marine spatial planning is an integrated activity. It cuts across economic sectors, it goes across agencies, and it also goes vertically among different levels of government.

The second, and very important characteristic, and one that we often find lacking in marine spatial planning practice, is that marine spatial planning is a strategic and future-oriented process. It's focused on the long term. It's not just simply documenting where we are today.

Participation is extremely important, and this, again, is going to vary from place to place. Participation is difficult to prescribe because it's culturally determined. In many places everyone has to be involved, and in some other places this is a centrally planned activity by the government. So it's difficult to say how it should be done, but we should consider at least somewhere in the marine spatial planning process how stakeholders and the general public are involved in participation.

It has to be adaptive. We are uncertain about how to proceed in a lot of these kinds of spatial planning applications, and the critical descriptor here is "adaptive." We have to be able to learn from experiences and adapt our spatial planning activities over time.

Ecosystem-based is certainly an important characteristic, because we want to be able to sustain the kinds of natural services that are provided by marine areas. The only way we can do this is if we are aware from the very beginning that, really, the underpinning of marine spatial planning activity should be the marine ecosystem.

Finally, and perhaps most importantly, the obvious characteristic of spatial planning is that it is a place-based or area-based management activity.

MSP is not a one-time plan. It's something that starts and, because we're taking an adaptive management approach, it is going to change over time. So the cycles that we show in this diagram are just simply indicative of a process that begins, completes a plan, and the next step is really to move into the monitoring, evaluation, and adaptation of a planning process.

I want to conclude with just a couple of ideas in terms of what marine spatial planning is not. We talked a lot about what it is. What we want to say here on this final set of slides is, what is not marine spatial planning.

MSP is not a substitute for single-sector planning. Fisheries management, marine transportation management, oil and gas management or development is going to continue pretty much on a single-sector basis. The point is that marine spatial planning can provide the umbrella—the context—for making these individual decisions on a single-sector basis.

It is not a one-time master plan or "blue-print", even though master planning has been used and has characterized some of the current spatial plans. We don't think that it's a good label for this activity, and this is going to be a continuing process that changes over time.

It is not only conservation or marine protected area planning. Although certain applications (particularly from a historic perspective) have focused on conservation planning, we're really talking about multiple-objective planning today.

And it's not marine mapping only. We've seen projects such as marine cadastres, and the various GIS and coastal atlases and marine atlases developed. They are very useful in terms of trying to characterize existing conditions, but they do not really focus on the future and what marine planning tries to accomplish.

Finally, ocean zoning. Ocean zoning is where we were 10 years ago, or maybe even 40 years ago, with the Great Barrier Reef and a number of other places. Zoning is only a tool to implement planning, and as Fanny showed in the earlier slide, we do a lot of zoning already in the ocean, but we don't do it across sectors. So ocean zoning is a key aspect of marine planning, but marine planning should precede ocean zoning.

Now, one of the activities that we've implemented in UNESCO is not only producing the guide but also developing a very informative website that, if you haven't seen it already, you should visit if you're interested in marine spatial planning. It has a lot of information in terms of the background to what we've talked about, and more than we've been able to produce in the guide. We have a number of case studies there that not only describe applications of marine spatial planning, but point to sources where you can find additional information. We have a reference section in our website that contains over a hundred references, mostly in the gray literature, that are actual examples of plans and other documents—background documents—that should be useful to you if you are undertaking marine spatial planning.

This is the website address (www.ioc3.unesco.org/marinesp). We'll come back to that if you don't have time to write it down.

With that, we want to thank everyone. We particularly want to thank John and Sarah for organizing this webinar. We also have to thank our sponsors for most of the work on the guide: The Gordon and Betty Moore Foundation, the David and Lucile Packard Foundation, WWF International, and finally the government of Belgium, all of whom have contributed to making the work that undertaken a reality.

QUESTION & ANSWER SESSION:

John Davis: Thank you very much, Fanny and Bud. This is John Davis again. That was great.

We now open up the webinar to the audience for the next hour. If you have a question for our panelists, you can submit it in the question box that is on the control panel on screen; a number of you have already started doing that. We'll be drawing from those questions throughout this question and answer session. Alternatively, if you want to try speaking out loud to the panelists, you may raise your virtual hand on the webinar control panel, click on the little hand beside your name, and we'll call on you. As

Sarah mentioned, just make sure that you have a microphone so that we will be able to hear you if you choose to do that. When we call on you please identify yourselves so we know who you are and where you're from. Thanks.

All right. So we'll open it up to questions. Our first one is a definitional one. It's very simple: "Is marine spatial planning synonymous with ecosystem-based management?" This is a question that I certainly hear a lot.

Fanny Douvere: That's a very good question. Is marine spatial planning synonymous with ecosystem-based management?

There is a very straightforward connection between the two. Basically, they're trying both to achieve multiple-use objectives and trying, in the broader context, to achieve the sustained functioning and the maintenance of ecosystems. The way we see the connection between marine spatial planning and ecosystem-based management is that marine spatial planning really makes ecosystem-based management much more tangible. Ecosystem-based management is still, in many places, a very abstract concept with little actual implementation. By looking at true marine spatial planning of various activities, and the diversity of the marine environment and its functioning in time and space, you are making all of the things much more tangible and much more operational. So, in short, marine spatial planning is a way to actually implement ecosystem-based management.

John Davis: Great. Bud, do you have anything to add?

Charles (Bud) Ehler: No, I think that was a good response. What we find is that marine spatial planning basically is where you can get down to really identifying where conflicts exist among different human uses. Perhaps more importantly for this question, where you can identify spatial and temporal dimensions—we say, “spatial planning”, but we really want to emphasize that it's got a temporal dimension as well…. Through a marine spatial planning process, you can really identify and actually discard many of the concerns that we have about conflicts in terms of use of the oceans in time and space, through this kind of process.

John Davis: Great, thanks.

Sarah Carr: John? Let's go with this question, and afterwards there were two hands raised and we'll see if we can get either of those people on the line. So, let's go with the one we'd planned, though. Okay.

John Davis: Okay, thanks, Sarah. Our next question gets at the relationship between marine spatial planning and MPAs. As you mentioned, there are a number of large MPAs that have engaged in spatial planning, and they're considered good examples of marine spatial planning and practice. "Is there a danger that MSP will become synonymous with MPAs and with conservation, and that it will become more difficult to convince ocean users of the benefits of integrated ecosystem-based management?"

Fanny Douvere: I would hope not. We have always been promoting the real benefits of marine spatial planning—being that it has advantages to both the industry and to people who are in charge of conservation efforts.

Is there a danger? I think as long as we see what marine spatial planning is really about, and we all try to promote it for what it really is, I don't think it will be synonymous with only conservation planning. On the other hand, there are real benefits of marine spatial planning to both the identification of valuable places in our marine environment that could potentially become marine protected areas, and at the same time, it's very valuable and can have real advantages for MPA management as such. As we said earlier, some of the early forms of marine spatial planning were actually done within the context of large marine protected areas, such as the Great Barrier Reef Marine Park in Australia and the Florida Keys National Marine Sanctuary in the United States.

Now I think the key difference here, with marine spatial planning as we talk about it today, is that it tries to connect and integrate various objectives. In the end, we are living in a world that has both economic and social objectives, and at the same time ecological objectives.

So what we're trying to do through marine spatial planning is really integrate all three of those, but at the same time there are some real advantages towards marine protected area management and identification.

Charles (Bud) Ehler: If I could add to that, I think the real benefit of marine spatial planning to marine protected areas is that it provides contextual information that is very useful in terms of identifying what areas should be eventually designated as marine protected areas.

If we go through a process of identifying important biological and ecological areas as part of the marine spatial planning process, then

eventually when we finally get to the table and begin to develop the management plan that identifies what areas should be protected, then marine protected areas would come out of that kind of process. Again, I think that probably the best example is the bioregional planning process that Australia is implementing now. One of the major products that come out of the bioregional planning process is a representative network of marine protected areas.

John Davis: Great, thanks, Fanny and Bud. Sarah.

Sarah Carr: Okay.

John Davis: Do you want to handle the hand-raisers?

Sarah Carr: Yeah, let me see. David, are you there? David? Okay, well we'll try Vera.

Vera Agostini: Yes. Hi. This is Vera Agostini from the Nature Conservancy - Global Marine Team. I was intrigued, Bud, by your statement that zoning is only a tool to implement planning. I have often been thinking about this as zoning/MSP is a process, and one of the places it can lead to is zoning for multiple uses. I'm not sure if we're saying the same thing, or if you see a difference there, so I'm wondering if you could elaborate on that?

Charles (Bud) Ehler: Well, if I understand your statement, I think we're talking about the same thing. Marine spatial planning, again, provides the context for marine area management. "Zoning" has been used as a term to describe what we're doing in terms of trying to allocate human uses to particular places, and, again, as Fanny has said, that's most obvious in places like the Great Barrier Reef. I don't think that zoning is the answer when we look at this from the standpoint of multiple uses in large areas like the EEZs of many countries. Again we can point to places like the North Sea, or the Baltic Sea, or other places where marine spatial planning has been used as a process, and at some point you eventually have to decide how you are going to allocate uses within those large spaces—whether they're exclusive economic zones or particular marine protected areas, for that matter.

The process of allocation is really what marine spatial planning is doing. Ocean zoning, again, if you think of the analogy between marine and terrestrial—if you just sort of go back to where we are in terms of developing land use plans and implementing those land use plans through ocean zoning—we like that analogy and we use

it often, although we're very aware that a lot of marine scientists don't particularly like the idea of using the land use planning analogy in terms of applications to marine environments. We think it's quite useful and continue to try to use that as an example of what we're talking about in marine spatial planning.

John Davis: That's great. Thanks, Bud. Sarah, do we have any more hand-raisers?

Sarah Carr: No, that's all.

John Davis: Okay.

Sarah Carr: Thanks, Vera.

John Davis: Thanks, Vera.

All right, our next question's right along that line: The comparison of land use planning and marine spatial planning—pointing out that land use planning is a very highly developed field. This person asked: "How much of that has been used to develop approaches for MSP?" Another question-asker pointed out as you were, I think, maybe referring to just now, Bud, one of the differences is that land, in general, is in private ownership whereas oceans are held in common. How does that affect the planning process in the ocean?

Fanny Douvere: Well, there are indeed, a lot of differences between terrestrial environments and marine environments, but we have looked very extensively over the past four years at what those differences really would mean when we develop a process for marine spatial planning. We basically came to the conclusion that despite the differences in the context between terrestrial and marine environments, we still can apply a similar process. "Process" meaning the steps that you are taking to develop marine spatial planning are not that much different from what you develop on land.

What you see in marine spatial planning is that a lot of the input that has been given to develop marine spatial planning is really coming from within the ocean community, the conservation community, and whoever is dealing with the ocean. That is really where the drive and a lot of the input toward marine spatial planning are coming from.

We have borrowed and connected a lot of the process and steps that are also seen in land use planning, and that's primarily the future-oriented focus of marine spatial planning. What we have not done is really very extensively taken all of the components of land use planning—there are certain things that are perhaps not working on land as well that might be different than the ocean. Still, from a process standpoint and the steps that you are taking, it's very similar when you plan on land to when you plan in a marine environment.

Charles (Bud) Ehler: Yes, that's exactly right. There are a lot of complementary steps in land use planning that we are advocating that the marine planners pick up. I guess I would just point out that when the Great Barrier Reef was thinking about how to manage this very large space, back in the early 1980s, the marine biologists that were primarily dealing with the problem brought in a team of land use planners. The outcome of that process was really the initial zoning maps that were developed sequentially in the Great Barrier Reef that had many of the same ideas that were already routinely applied in terms of land.

So we think there are a lot of similarities; there are a lot of differences as well. But, as Fanny said, the general process that we use in terms of trying to look at conflicts and compatible uses on land are very useful and applicable to thinking about the uses of the sea.

John Davis: Excellent, thanks. Our next question gets at the importance of legal authority to underpin marine spatial planning. It says: "Your step-by-step guide talks about the importance of having authority. Is it vital to have enabling legislation to start the process?"

Fanny Douvere: That's a very good question. We do, indeed, take the establishment of authority as one of the very first steps. What we have seen in some places is that when there is no authority, people do start with marine spatial planning. Now, you can come up with the best marine spatial plan, but eventually if you have no authority to implement it, or inspectors to ensure compliance with it, then it basically leads to nothing. I mean there would have to be a tremendous amount of good will in the end from all partners who are involved in the development of the marine spatial plan to implement it without any authority.

So what we have seen concretely is that when there is no authority, it is a very weak basis to start. However, having said that, even if you have no authority, there is no reason why you cannot start with

a number of steps, looking at least at perhaps how marine spatial planning could develop in your area. Take that as a lead and perhaps derive some argumentation for actually developing some form of authority.

There are various countries that have dealt with authority in different ways. It is not the case that most countries are developing new authority to start with marine spatial planning. That approach is being taken in the United Kingdom. There has just been a marine act (the Marine and Coastal Access Act) passed last week that provides the basis for the United Kingdom to develop marine spatial planning.

But that's not how it has gone in many other countries. Countries like the Netherlands, for example, and Germany as well—those countries have modified their existing land use planning legislation into the marine environment. So they have basically used existing legislation, extended it to the marine environment, and taken that as the basis for developing marine spatial planning.

There are also countries that are using existing legislation to deal with the protection of the marine environment. That's the case both in Belgium and in Australia (in areas outside the Great Barrier Reef Marine Park).

So there are different ways of establishing authority. But one of the most important components of authority is to make sure that your final outcome—the product that you finally derive through your marine spatial planning process, which is most likely going to be a marine spatial plan—that that plan is implementable and enforceable, and has to be complied with by all the partners and all the sectors who are involved in the marine spatial planning process.

John Davis: Thanks, Fanny.

Sarah Carr: Actually, David, that was your question. Did you have any follow-up? Okay, we're still not able to hear David. All right.

John Davis: Okay. The next question gets back to the ecosystem-based aspect of marine spatial planning. "Does marine spatial planning have to be applied in an ecosystem-based way to effective? Theoretically if the main uses in a particular ocean area were purely industrial (such as shipping, offshore oil drilling—maybe offshore wind farms), couldn't marine spatial planning be done there with no ecosystem considerations?"

Charles (Bud) Ehler: The answer to that question is emphatically "no". We strongly advocate that marine spatial planning is an ecosystem-based approach, and that no matter what kind of activities are carried out in a particular area, they're going to have an effect on the services that are provided by Nature in that area. No matter how small or large the area, there are ecosystem services provided by marine areas, and we think it's particularly important that at minimum those natural services are considered—that an attempt is made to maintain and to sustain those services that are absolutely critical in terms of not only the ecosystem but also the economy of marine areas.

Fanny Douvere: A good illustration can be found, again, in northwest Europe. The countries there are already a little bit further with the development of their marine spatial planning; you actually can see some conclusions now. Various of the spatial plans that have been developed in Belgium, the Netherlands, Germany, and some of the other countries, these plans are made for areas of which the boundaries are the administrative boundaries—the boundaries of the EEZs primarily. So these boundaries are, most of the time, not very valuable, not very meaningful, from an ecosystem perspective.

You see right now that a lot of the areas that are designated for particular human uses or for the conservation of the marine environment are not really consistent across boundaries. That is what the European Commission right now is stimulating: to have marine spatial planning that is much more underpinned by an ecosystem approach to make sure that the sum of all of these individual national plans now being developed have a better consistency towards a spatial planning initiative that is done on a broader scale and within boundaries that are meaningful from an ecosystem perspective.

Charles (Bud) Ehler: Just to add one point to that. We think that a very important first step in any marine spatial planning process is the identification of biologically and ecologically significant areas. That, again, is the basis for spatial planning. When you decide to create a wind farm, or an oil and gas development area, or an industrial park in terms of a particular area, the cumulative impacts on these ecologically and biologically important areas are considered and very well documented in this process.

John Davis: Great, thanks. Next question has to do with public and sectoral participation in planning processes. "How do (or can)

governments or enforcing bodies ensure that all the different user groups, whether it's industry or conservation (if you consider that a use), recreation, et cetera, have adequate representation in planning processes?" We had another question along this same line asking about this in the particular case of developing nations and other nations where public participation in some cases might not be a common occurrence in governance.

Charles (Bud) Ehler: That's an excellent question, and a very difficult one to answer. Because, as I think we said in our presentation, public participation, stakeholder involvement, all of these terms that are easy to talk about are very difficult to put into practice, and are very much dependent on culture and other contextual considerations.

What that really means in practice is that in places such as the United States and North America in general (including Canada), certainly the UK and Australia, there are very extensive requirements for public participation and stakeholder involvement that's pretty much prescribed in terms of the regulations that govern planning processes in any sector, but certainly including the marine environment. So, that's one point. It's going to depend on the context.

In many other places—continental Europe, certainly Asia, and other places—public participation is usually defined as comments on a plan after the plan has been developed or a much more limited involvement of the public in the planning process.

Our conclusion after looking at a number of places is that stakeholder involvement is critically important, particularly from the standpoint of sustaining these kinds of efforts over time. And the more involvement, and the early and real involvement—the effective involvement—of stakeholders in the process usually leads to better outcomes than when planning is done only from the top down.

Fanny Douvere: This is a question that is, again, very much connected with the way you establish your authority. One way to make sure that there is adequate representation is to embed it in the authority that you establish that will give the lead to certain agencies, or roles to certain agencies, for the plan development. Make sure that there is adequate representation, and that the major partners who have to be part of the development of a plan, that those roles are very well specified in the authority that you establish for the development of a marine spatial plan.

Charles (Bud) Ehler: I would just add one more point, and that is the value of public participation from the standpoint of collecting information for planning purposes. This is probably well illustrated in a number of places, but one that we're very familiar with is what the State of Massachusetts in the United States has done. Again, in the United States there is a very extensive and explicit role for public participation, and there are a lot of venues for getting that kind of public input. Usually it is in response to decisions that are made by government, but what we have found, particularly in Massachusetts and in a few other places as well, is the value of public participation for collecting information. I think those of us who've been involved in spatial planning for a long time recognize that governments probably know less about the marine environment, and particularly in terms of individual uses of the marine environment, than users do—than the real stakeholders do. The oil and gas industry knows a lot more about oil and gas development, for example, than the government does. Even in new technologies such as wind energy, those industries know more about where they want to go and how they want to proceed than the government does.

So the importance of stakeholder involvement can be turned around and can be used as a way to collect information about how the private sector, and industries, and other stakeholders expect to use these kinds of environments over time—over the next 20 years. If you approach public participation from the standpoint that it's a valuable tool for collecting information, we think that that would be a stimulus to government to really take this even more seriously in terms of finding the kind of information that they need for better decisions about marine spatial planning.

Fanny Douvere: That is very well illustrated in some examples right now in marine spatial planning. One good example that we have been looking at is in the Netherlands, where they have actually collected that kind of information about where industry and a number of other sectors want to go in the next 20-25 years.

John Davis: Thanks, Bud and Fanny. One of the really nice things about your Step-by-Step Guide to MSP is that you do provide a number of examples of MSP in practice.

Our next question asks: "Could you provide an example, or perhaps a couple of examples, of how countries have resolved conflicts between industrial uses and important ecological areas using marine spatial planning?"

Charles (Bud) Ehler: We're both pointing at each other to come up with an example. That's a good question. No, I think there are examples certainly in the Netherlands. Fanny just mentioned the Netherlands. It is a relatively small Exclusive Economic Zone. It is not a large scale if you're talking about places like the United States, or Australia, or Canada. But in the North Sea we see a number of examples where conflicts have been resolved through a marine spatial planning process. Again, the idea of identifying important biological and ecological areas as an early step in the process is very important, because that is the basis for sorting out these kinds of potential conflicts between uses and important ecological areas.

In the case of the Netherlands, they went through a process of identifying these areas early on. As Fanny just pointed out, they asked industry about their expectations and plans for using the marine spaces of the Netherlands over time. In many cases, although not in all cases, they were able to resolve the kinds of conflicts in terms of specific uses—whether it was wind farms, or sand and gravel extraction, or marine protected areas—these areas were sorted out early on in the process and resolved, I think, probably to the satisfaction of not only the private sector, but also the environmental interests, again, with a few exceptions. There are always going to be compromises. That's the whole point of marine spatial planning: it makes these kinds of tradeoffs and compromises very explicit, and people can agree to either disagree or to accept the marine spatial planning outcomes that are developed.

Fanny Douvere: There are also some very concrete examples in Belgium. This is a slightly longer existing example of marine spatial planning so that's why you can actually see already some concrete initiatives that actually have resolved conflicts. One great example is that at one particular point there were three different users that were interested in the same place. They were the sand and gravel extraction industry, fisheries, and the wind farm industry. All three of them wanted to have exactly the same location for their activities.

What happens was, after a number of consultation rounds (primarily with the different sectors), they came to a conclusion, which was not just looking at space but also at time, and tried to separate conflicts by separating them in space and time. For example, in this case there was an agreement that the wind farm would move further offshore because it had other potential areas where it could go, but then primarily also looking at what the

economic consequences were and how to deal with that. So this was one use that was brought out of this particular place. To resolve the conflict between fisheries and sand and gravel, there was basically a time component that was added. So that particular place is now open for certain times of the year only for fisheries, and for other times it is closed to it. It is the same for sand and gravel extraction.

So it's important when we think about resolving conflicts not just to think in terms of space, but also to think in terms of time. It's both time and space.

Charles (Bud) Ehler: I think there's another good example of how marine spatial planning and thinking, at least, has resolved conflicts between industrial uses and nature, and that is in the area around Boston, and the marine transportation routes into Boston Harbor that had to pass through the Stellwagen Bank National Marine Sanctuary. We often think that marine routes, traffic separation schemes, and other regulations about how ships operate in particular areas are relatively inflexible. But in this case it was an example where good planning and analysis, in terms of the presence or absence of a particular species of whale in that area during, again, special times or particular times of the year, were used in conjunction with the routing into Boston Harbor to shift the traffic separation scheme just slightly to avoid the whales, again, at particular times when they were present in the area, and to avoid ship strikes to marine mammals from ships.

John Davis: Great, thanks. Our next question says, "We know very little about large areas of the ocean. How can marine spatial planning be effective in the absence of this knowledge?"

Certainly this, to some extent, brings up the concept of the high seas (areas outside of national jurisdiction), and particularly the deep ocean about which we know quite little. Are you familiar with any proposals for marine spatial planning on the high seas?

More, in general, getting back to the question: How can MSP be effective in the absence of knowledge in some ocean areas that we just don't know very much about?

Fanny Douvere: Well, we don't know of any real concrete initiatives that are leading toward establishing marine spatial planning on the high seas. However, having said that, there are a number of activities that are really moving towards that direction.

There are a number of initiatives, even within UNESCO, that are trying to map the current conditions of the high seas, and really trying to look at where are the most important and valuable places from an ecological and biological perspective. Marine spatial planning, of course, needs this particular basis of information in space in time to be effective.

Now, it's not the case that, without knowing anything, you cannot start marine spatial planning. That is not so. There are a lot of places that are starting with a minimal amount of information, sometimes gathered by having a number of experts within a room, and drawing certain things simply on a map without having a lot of very sophisticated tools at hand, like GIS and a number of other tools.

Marine spatial planning really needs an information base in terms of the spatial and temporal distribution of where things are happening, both ecologically and economically.

Now, in addition to that, the way marine spatial planning can help is that it provides the structure to deal with the type of information that comes up. What we often see is that a lot of data and information is gathered but it's not really used through a very systematic process. So we believe that for the information that is continuously getting more sophisticated and is giving us a much better impression of what is actually happening in various places, like the deep ocean, marine spatial planning can provide some kind of framework to actually bring that information into decision making.

In the high seas, we're also dealing with a whole other issue that no particular state is responsible for developing a marine spatial plan. So we are having an entirely different set-up of authority and issues that we have to deal with when it comes to marine spatial planning in the high seas. So, there is, right now, not really any marine spatial planning on the high seas in any similar way as it's done within the Exclusive Economic Zones of particular countries.

Charles (Bud) Ehler: I think the key idea here is “learning by doing”, and that's adaptive management. That’s something that we often say that we would like to undertake when we talk about spatial planning or integrated ocean management. The idea of getting started and figuring out what you actually need is a key aspect to knowledge and reducing uncertainty, because it's certainly true that we don’t know a lot about many parts of the ocean. It is not limited only to the high

seas. In many cases, particularly in developing countries, we have very little marine science or general information about the ocean.

The idea of thinking about marine spatial planning and going through our steps about characterizing marine areas, and thinking about the future: that can provide a framework for identifying what we don't know and where we need additional research—very applied research, really, to reduce the uncertainty for planning and decision-making. It should not be an excuse for not getting started on these kinds of efforts, because we've often heard the argument that, "Well, we don't know anything, we just can't begin."

As we said in our presentation, the process of beginning and laying out and trying to identify, for example, important ecological areas, or trying to identify where economic activities take place and, perhaps more importantly, trying to figure out where these areas (both ecological areas and economic areas) are going to be sometime in the future (20 or 30 years)—considering things like climate change and other factors that are going to change the distribution of not only human activities, but also natural processes and important biological areas—that's part of the process that can allow us to identify where we need additional research, and additional information and data collection activities, to improve our ability to plan for the future.

John Davis: All right. Thanks, Fanny and Bud. Our next question, and we've received a couple along this line, gets at the examples that you described a couple answers ago: "Existing marine spatial programs are mostly taking place in developed countries—at least the ones that you described. What additional steps, if any, would be required, or would you emphasize, to ensure or encourage effective marine spatial planning in developing countries that are beginning to consider an ecosystem-based approach to management?"

Fanny Douvere: I think that's correct that lot of these initiatives have been taking place in developed countries. I believe it's now our task to promote this idea in other countries around the world. Again, this is a very new idea. It's only during the last ten years, and perhaps even the last seven years, that we really see a multiple objective approach to the development of marine spatial planning. I think a very important point that is related to this question is that from what we see, it's not always necessary to have a large amount of very sophisticated tools to do marine spatial planning. It might be helpful to have a GIS system, or to have very sophisticated and data-intensive tools like Marxam. But at the same time it's really possible to do it in a very different way. We have seen examples

and places where people primarily sat together, perhaps in a first stage sector-by-sector, and tried to consider what are the most important areas for their particular interests, and what are the valuable areas—which are the most important ones—and bring these kind of things together. Then in a later stage, start to connect these various perspectives of the various different sectors, and try to see where the conflicts lie and also where the opportunities lie.

So we have always been promoting—simply because it was a conclusion from our work—that you don't really need a tremendous amount of money, you don't really need a tremendous amount of sophisticated tools, to produce a fairly effective marine spatial plan.

Charles (Bud) Ehler: That's the approach that we took in our guide. The steps that we have laid out can be implemented in a variety of different ways. If you have multiple millions of dollars in resources, and many years to undertake the planning activity, or if you have one year and you have very limited resources, you're going to go through the same steps. That's important to recognize: that the steps we laid out in our guide are the essential fundamental pieces of marine spatial planning, but they can be implemented in a variety of ways.

If you are a developed country with resources and a very rich database, you can undertake ecosystem modeling or at least analyses of fairly highly sophisticated approaches. If you are a developing country and you have limited resources, you're still going to have to go through this process—if you want a successful outcome we would argue that you have to go through and consider these various steps. Some of them, if you can't do them on the back of the envelope, you can do them in a fairly simple and straightforward way, including things like thinking about the future and identifying in a very qualitative way what future outcomes might be in a particular area.

So we think that this is a process that can be applied, not only in the developed world, but also in the developing world. In fact, when we were testing our guidelines, we actually took that approach of trying to look at places like Massachusetts that had a significant amount of information about their marine area, but had a very limited amount of time to actually produce a plan.

We also went to Vietnam, which had much more limited resources in terms of planning and analysis, but could understand the steps in the process and apply it in their own particular way, in their context with the resources they had available.

We thought that the result of our interviews with people in both of these places was that the general approach that we had laid out was useful in either a developed or developing world context.

John Davis: Thanks. The next question gets at the issue of the cooperative aspect of marine spatial planning. "MSP appears to require a lot of cooperation from various sectors. What if some are uncooperative? What strategies would you suggest to move forward in such a situation, either with or without these uncooperative sectors?"

Fanny Douvere: Well, that is, of course, a problem when a sector does not cooperate. Again, I think it's important to think upfront about this problem. It's something that could be embedded in the authority that you lay out, to make sure that when a particular sector does not cooperate that there is some form of non-compliance measures that you can take. We haven't really seen that in various countries. That is not really one of the conclusions we have been extracting from our work.

Now having said that, we do see that some places are not including certain sectors. There are places that find it, at this stage, too difficult to include all of the sectors, but we still think it's a very good way forward. Fisheries is, for example, in various countries, a sector that is not always considered fully when it comes to marine spatial planning. Or other sectors, or other government agencies, really see it as a huge step forward if they already can deal with a number of other issues, and perhaps having one of the sectors coming out or joining the entire process later on.

Charles (Bud) Ehler: That's a very good question, and it's one that we've thought about a lot in terms of advocating integrated marine spatial planning, but recognizing that political realities and cultural realities are going to vary from place to place.

Very often in marine spatial planning, as Fanny said, there is one sector that is typically excluded from participating in the process. Fisheries is by far the one sector that we find in many places (from Massachusetts to many of the European examples) that has been excluded. They get a free pass, basically, that says that we're not going to consider fisheries. In other places, sometimes it's oil and gas that doesn't participate in the process.

So what is the implication or the outcome of being out of the process? We've heard a number of people remark over the last

year that unless you're around the table, you're going to be on the table, and that certainly is the case in terms of fisheries in a few places that we've looked at. The Netherlands is probably the best example, where the first plan that was developed for the Netherlands (part of the North Sea), the fisheries sector basically said, "We're not going to participate in this process. We need to have access to all parts of the Dutch part of the North Sea, and we're not going to participate." Well, the process moved ahead without the fisheries sector, and the result was that fisheries was basically reduced in terms of the access that it had to the Dutch part of the North Sea, at least, to very small areas. The response on the part of the industry was a very interesting report, which you can find on our website, that was entitled, "Fishing on a Square Inch," which was the outcome of this planning process where the industry was restricted to very small areas within the Dutch part of the North Sea.

When the Netherlands was required to review these plans (every four or five years), and the next time the plan was developed, the sector that was very definitely sitting at the table was the fishery sector, because they didn't want to be excluded and they realized that there was more value in participating and contributing to the process, and ensuring that their interests were represented in the final plan to affect that outcome. We think it's a good example of where industry decided not to participate, suffered the consequences, realized the benefits of participating in the process, and came back to the table in the second round of planning.

John Davis: All right, thanks. The next question pertains to cumulative impacts which you mentioned earlier. "How does marine spatial planning operationally deal with cumulative impacts, beyond sorting out between compatible and incompatible activities? How do incremental or 'new activities' (future activities, I assume this means) get accounted for in an adaptive spatial plan?"

Fanny Douvere: Evaluating cumulative impacts is one of the questions that is not very well researched just right now in marine spatial planning. Again, it's a pretty new field of research. I'm sure in the next years to come there will be much more work done on that. It's a very difficult aspect to deal with cumulative impacts. Work that has been done by one of our colleagues, Ben Halpern, who has been working and trying to find ways to incorporate cumulative impacts of various activities on the marine environment. Obviously, this is one key component of marine spatial planning, because we're talking about trying to achieve multiple objectives at the same time within a particular place, so cumulative impacts

are really at the heart of any marine spatial planning process. Again, that is something that is not really very well researched right now.

Now, when it comes to the new activities, at least in Europe, there is the obligation to develop an environmental impact assessment of each particular new infrastructure that is getting developed within the marine environment, which gives some kind of idea, at least, of what the impact might be upon the environment. At the same time, it's not just done for individual infrastructure. It's also done at a more place-based, more strategic level, a strategic environmental assessment (SEA). So whenever a plan is being developed within Europe, it has to go through a strategic environmental assessment process. When you go, for example, to the German marine spatial plan at the German Web site, you will find not just the marine spatial plan, but you would also find the strategic environmental assessment.

So that's one way, at least, that is moving us in the direction of trying to deal with cumulative impacts, but it's really one of the components that is not very well researched right now: how to identify that in the first place, and how to incorporate it in an adaptive marine spatial planning process.

Charles (Bud) Ehler: Well, I certainly agree with all of that, and I think that there are two tough questions in marine spatial planning that need to be resolved. The first is: how do you make trade-offs among different uses that both desire the same space or both have interest in making investments in a particular place? So that's the trade-off analysis question.

The second most important uncertainty in this business is really how do you evaluate cumulative effects? We've been trying to deal with cumulative effects in planning, in general, whether it's coastal zone management or any other kind of planning process, for 30 years and we're still struggling with that question.

We like what Norway has been doing. Norway has taken a different kind of approach to spatial planning in terms of trying to look at cumulative effects, and they really have focused on trying to sort out the scenarios of development on a sector-by-sector basis. So the government in Norway in the Barents Sea—and there is a Barents Sea plan that documents a lot of this discussion that you, again, can find on our web site—the government of Norway decided to tackle this problem by looking not at cumulative effects, but looking at forecasts of individual sectors. So they asked the oil

and gas industry, they asked the marine transportation in industry, and they asked the fishing industry, how they saw their use of the Norwegian Barents Sea over a 20-year period. Completely unconstrained by other uses, just as if there were no constraints, how would that sector develop over a 20-year period? For each of these three sectors, that was the process that was used. Once they got those results, the Norwegian government—the Ministry of Environment in Norway—looked across the sectors at what the cumulative effects of these various development plans might be.

We think that's a very intelligent approach to dealing with this problem. Again, starting with a sector-by-sector basis but eventually trying to look at the impacts across sectors in terms of cumulative impacts on the environment. That's something that industry is hard-pressed to do. But the institution that is ultimately responsible, in this case the national government, could sit back and look at these impacts across sectors and on a cumulative basis. You'll find that pretty well documented in the Norwegian plan for the Barents Sea.

John Davis: Great. Our next question deals with climate change. "Climate change threatens to alter our coastal and marine ecosystems through sea level rise, warming seas, acidification, and other impacts. How can climate change be taken into account during the marine spatial planning process, considering the area being planned might look different in a few decades?"

Another question-asker wondered whether you had any concrete examples of MSP processes that had incorporated climate factors, like sea level rise or storm surge?

Fanny Douvere: Yes, there are examples that have actually very concretely looked at how to deal with sea level rise and climate change in general, and incorporated that into their marine spatial plan.

Now, I hope I don't get repetitive, but today the Netherlands is probably the furthest developed and most sophisticated example that we have on marine spatial planning. They are a very low-lying country; a large part of their population is living in areas that are below current sea level. So they're really very much living with sea level rise and the effects of climate change. There was an article this week in *Time* magazine that really looks into this problem in much detail. So it's not just through marine spatial planning that they are dealing with this problem, but marine spatial planning is one of the ways that they are dealing with climate change and sea level rise.

What they basically did was to evaluate three different scenarios where they looked at three different estimates of sea level rise, and they identified certain measures that should be taken to deal with the effects of climate change. One of their measures was to take sand and to develop a bigger border—a longer coast that could deal with the rise of sea levels.

To do that—to get the amount of sand needed to achieve this level of protection, they identified an entire zone within their North Sea area, within their territorial sea basically, that was preserved and had a priority over other uses. These areas were a priority to extract the sand to deal with this particular issue in the future.

Basically, from a viewpoint of incorporating it in their marine spatial plan, the government had set a particular priority and all the other activities had to, in some ways, be incorporated in a way that did not conflict with this particular priority of the government.

I think it's a very good example, both on how to deal with climate change, but also the fact that we are doing marine spatial planning not for the sake of planning and maintaining the status quo of what we have today. I think it's a very good example of how to look into the future, and how to make sure that the priorities that you have as a country—how these can be specified, and how the marine environment basically can help you in achieving some of these particular priorities. This is both, again, from a climate change perspective, but it's also from a general environmental perspective; it's protection of the marine environment. It's also from an economic perspective—trying to deal with all these various things. It's not just looking at what is there today. It's looking at what is coming up in the future.

Again, I think the Netherlands is an excellent example of how it has dealt with both looking into the future from a general perspective (trying to incorporate that information), but also very concretely looking at very specific effects of climate change.

Charles (Bud) Ehler: I agree with all of that. I think the other important issue with respect to climate change is a boundary issue, and the importance of thinking about how boundaries might change over a long period of time—over a 20 year period, over a 30 year period, where we're probably going to get shifts, not only in animal populations, but other factors that are going to be important with respect to protected areas.

We have to think about these kinds of things, and we've emphasized in our presentation that marine spatial planning is a future-oriented activity; it's not just documenting where we are today, but it's thinking about where we might be in 20 or 30 years. So the identification of marine protected areas today may look very different in terms of protecting species, whether they're commercially valuable fish species, or marine mammals, or whatever. These areas might be moving in different directions over a longer period of time. That's part of the spatial planning process: not only to think about we are, but anticipate where we might be in 20 or 30 years.

John Davis: Thanks. We have time for one more question. I know that there are still a number of you in the audience who have questions we have not yet gotten to. We have a backlog of over 60 questions. We do still want to hear from you. Anyone of you who still has questions, please submit them in the question box on your webinar screen. We are recording them, and your questions will be invaluable for informing future issues of MEAM, and EBM Tools Network. So we look forward to tracking down answers for you to those.

The final question is: "Are there any examples of international cooperation with marine spatial planning? Do you see MSP as a potential method of resolving international conflicts over ocean use?"

Fanny Douvere: Well, in response to the first part of the question, I think there are some very interesting things going on, again, in northwest Europe, since those plans are primarily developed for areas within national boundaries, so on a national basis within the Exclusive Economic Zones.

What you see now is really a trend toward trying to cooperate on an international basis and a trans-boundary basis, and trying to have at least a number of activities being consistent with one another and across boundaries.

Right now there are a number of initiatives going on. Germany, for example, has just proposed or just made its own plan public, and went through a consultation, not just nationally, but also translated its plan into the languages of its neighboring countries, including Poland. So they translated their plan into Polish, and as well in the Netherlands, and opened their consultation round not just for the people within their own country, but also for the people within Poland and within the Netherlands. That's one formal way, or one example, where they used a formal process of international cooperation with marine spatial planning.

There are also a number of informal ways that I think are, to some extent, stimulated by the fact that Europe is really trying to get a more ecosystem-based approach to their marine spatial planning. Again, the Netherlands, Germany, and to some extent Belgium, are trying to identify key activities. In that case, it's very often nature conservation, but also maritime transportation, that are dealt with, and that actually need to be dealt with at a trans-boundary level.

Maritime transportation, when you look at the North Sea for example, that might be a similar story in a number of other places. But when you look at the North Sea, there are four shipping ports that are some of the largest in the world. All of the maritime transportation has to go through a number of the countries to reach some of these ports.

So having some kind of consistency in relation to other activities, or to other objectives, that are developed through your marine spatial plan, such as security zones in relation to wind farms, or protection measures in relation to MPAs—those kinds of things need to be somewhat consistent to make it still relevant for sectors, as, for example, maritime transportation.

There are also a number of things that they deal with in relation to marine protected areas, because right now what you see when you put one plan next to the other plan is that some protected areas are stopping right at a border. Now we all know that from an ecosystem perspective, this is not the case; it's our political boundaries that are not matching with what is important, and what we should consider from an ecosystem perspective.

So, there is a very informal process going on right now between those three countries, who are really trying to identify the main issues, and at the same time trying to relate this back to their own priorities within their own countries, in relation to marine spatial planning.

John Davis: Bud, anything to add?

Charles (Bud) Ehler: No, I think I'll pass on that one. I think Fanny covered that one.

John Davis: That's great. Well, with that, we conclude this webinar.

We want to thank Fanny and Bud for contributing their insights, and thank you to the audience for participating as well. Anyone who still has a question, as I mentioned, please submit it in the question box on your webinar screen. We do want to hear from you. You are helpful to our work.

Also, upon departing the webinar, please participate in the poll question on the usefulness of this session. As I mentioned at the beginning of the webinar, we are looking to learn from this event. If you'd like to add any comments in response to your poll answer, you can use the question box for that as well.

We will leave the webinar open for the next five minutes or so to allow you time to contribute your questions and comments. Again, thank you for participating, and we look forward to hearing from you.

Sarah Carr: I just wanted to add, I've pulled up the UNESCO Marine Spatial Planning Web site in case anybody wants…

[End of Recording]