



## After the Fact | [Event Rebroadcast: The Future of Deep-Sea Mining](#)

Originally aired Jan. 5, 2017

Total runtime: 00:19:51

### TRANSCRIPT

---

*[Music]*

**Dan LeDuc, host:** Welcome to “After the Fact,” a podcast from The Pew Charitable Trusts. I’m Dan LeDuc and today we’re talking about one of the coldest, darkest places on Earth: the bottom of the ocean. These deep waters are full of marine life and the seabed is rich in mineral deposits. Soon, these resources could be extracted by a newly forming deep sea mining industry, which could put marine ecosystems at risk.

The good news is that the international community still has time to establish rules—informed by science—that could minimize the damage to these pristine areas. The International Seabed Authority oversees these regions that lie beyond national jurisdiction—an area that covers more than half of the world’s ocean floor. Last November, Pew hosted a discussion about these issues at our Washington offices, where the featured speaker was Michael Lodge, the secretary-general of the International Seabed Authority. Here’s part of what he had to say.

**Michael Lodge, secretary-general, International Seabed Authority:** Now, when it comes to deep seabed mining and the environment, I suspect that many of the people in this room come with a preconceived notion that deep seabed mining must be bad for the marine environment in some way, even if you cannot specifically say why. Of course, the word mining conjures up images of widespread destruction based on images of land based mining. When you juxtapose that with the popular image that I think we all have of the deep seabed as a pristine wilderness, then it instantly causes alarms to go off. But actually, seabed mining is something that has been around for centuries. Shallow water mining and dredging for tin, gold sand, gravel, and even diamonds, is actually nothing new, and already today it adds up to a massive industry, with billions of tons of material moved every year. It’s likely that the deep seabed mining industry will use or adapt many of the proven technologies and management techniques already used successfully in shallow water mining.

Now I’m probably not going to convince anybody here that deep seabed mining is beneficial to the marine environment, although in fact there is good evidence that compared to land based mining, seabed mining offers a sustainable source of critical raw materials far into the future. But it’s not my job to try to convince anybody. What I would say, however, is that some of the dramatic and attention-seeking headlines that I’ve seen recently— phrases such as “invisible land grabs,” “machines the size of buildings,” “literally destroying the systems that keep us alive,” “clear cutting the ocean floor,” and so on. When you join Twitter, you expose yourself to a lot of these things, and maybe it’s not such a good idea. But they’re not helpful. In fact, they’re blatantly misleading. And similarly, comparisons to disasters such as the Deepwater Horizon incident, which involved a volatile compound that is totally different in character, it’s a deep sea mineral ore, are just misguided. So all I ask is that collectively, we ground discussions in reality.



In particular, I believe we would all do well to bear in mind a few key points. First, deep seabed mining has not started yet. All activities to date are exploration, which involves no greater environmental impact than marine scientific research. That also means that we have a unique opportunity to get it right. In fact, this is probably the best regulated industry that hasn't happened yet. Second point is that even when deep seabed mining does start, it will most likely be at the scale of a very limited number of operations. Based on the size of investments required to make this thing happen, I don't think that anyone is predicting more than a handful of commercial operations during, let's say, the first 15 years. There will, therefore, be plenty of time to monitor and assess impacts, to learn from experience, and improve technology. I think the only thing you can say with certainty is that the first operator is likely to get it all wrong, and technology will improve. And the third point is that existing, well established, and proven environmental management techniques are easily applicable to deep seabed mining.

Nobody is suggesting that environmental impact assessments, for example, should not be required, and that the regulator— that's the ISA— should not specify the level of permitted impact. Standard environmental management tools that have been used in offshore industries for years, spatial management, impact assessment, prevention and mitigation of impacts, are all equally applicable. And the fourth thing I would ask you to bear in mind, is that worst case scenarios are massively exaggerated, and bear very little relation to reality. As I mentioned, Deepwater Horizon, that is not what we're talking about here. By and large, we're dealing with rocks and mud, to put it in most simple terms, not volatile compounds under pressure. There are no tailings from deep seabed mining. Operations can be halted very quickly, and direct impacts can be stopped immediately.

Well, having said all that, it would be foolish not to acknowledge that we are embarking upon a new adventure with many unknown factors to consider, and that there are real problems around lack of detailed knowledge of deep sea ecosystems, lack of data, and uncertainty as to the scale and duration of impacts. What we must not do, however, is pretend that there is some sort of existential debate about whether deep seabed mining should be permitted to go ahead or not. We are way past that point, and have been for many years. This is because the one factor that distinguishes deep seabed mining from any other extractive activity, or indeed any other ocean use, is the nature of the underlying legal regime established by the Law of the Sea Convention. I'm very glad that Conn brought the book and emphasized it in his brief introduction.

Seafloor minerals are the only example of a global resource that is under international management, by an international organization established exclusively for that purpose. And this immediately distinguishes them from other frontier resources such as outer space minerals. But if you follow the press, there has been some very, very interesting debates in recent months about outer space minerals, and the sort of freedom of access that is offered by those as frontier resources. Very interesting to distinguish them from seabed minerals.

So as such, the International Seabed Authority represents a unique experiment in international relations. For many states, it fulfills a long held vision that the mineral wealth of the deep seabed should not be appropriated by a few technologically advanced countries, but should be shared between all countries, including the landlocked, and disadvantaged countries, with its status as the common heritage of mankind. The task of the ISA is to deliver on that vision, and to make sure along the way that it is done in the most responsible and sustainable way possible. So we need to work together to ensure that this happens. That is why I'm particularly pleased to see that Pew's efforts have focused not only on providing the highest quality, independent, scientific, and legal advocacy, but also on working together with developing countries to raise awareness, and help to coordinate positions.



So where do I see things going in the future? Well, I see two major challenges for the ISA at present. The first, of course, is that we now have to put in place a workable regulatory framework that incentivizes contractors to commit significant investments in resources, to develop exploitation projects, while also addressing concerns of states parties to the convention, as well as other stakeholders, including environmental groups. Some of the major concerns are around regulatory stability and predictability, and of course, the financial and environmental management regime.

A lot of preparatory work has already been done. There's many technical studies, there have been many workshops, and as some of you may know, a first consolidated draft of the mining code is currently out for public consultation. I think you have a few days left to comment if you wish to do so. At its 2017 meetings, the Council of the ISA agreed to fast track the development of the code. And as a result, there will be two meetings of the Council in 2018, with a view to doing exactly that. The views of civil society are very important in this process, and I really do look forward to the continued support and input of Pew and your community in this exercise.

The second major challenge is environmental planning at the regional scale. To me this is a greater, and potentially far more interesting, challenge. If project based environmental management is primarily the function of the operators, the other major task of the ISA is to manage the deep seabed for the benefit of all, at a global and regional scale. Of course, in one critically important way, this is already the case, because the fundamental concept of the law of the sea is that deep seabed mining is only allowed to take place under contract to the International Seabed Authority. The consequence of this is that the default position is that the seabed is off limits to mining, except where expressly permitted, following a lengthy process of approval. In that sense, one could say that everything is protected. This is actually an important and fundamental underlying concept, and something that immediately sets deep seabed mining apart from any other high seas activity, including fishing, and including new activities like buyer prospecting.

But actually, more is needed to actively manage effectively at a regional scale. We need to drastically improve knowledge of the deep seabed, both inside and outside areas that may be under exploration. What I would suggest, like Conn, I agree very much with Conn's statement, that another critical and urgent step is to develop networks of protected areas, managed by the ISA, where no mining should occur. Now so far, the only regional environmental management plan that we have is the plan for the Clarion-Clipperton Zone shown here, which was adopted in 2012. This groundbreaking and unique plan originated, actually, in work funded initially by the Kaplan fund, and thereafter by The Pew Charitable Trusts, through the Pew Marine Fellows program, to develop a scientific case to identify the biogeographically representative network of potential protected areas.

The plan was then developed through a consultative process under the auspices of ISA, and eventually accepted by the political organs of the organization. And one of the main features of the plans is the nine areas that you see on the map as large white boxes, which we call "areas of particular environmental interest," where it is designated that no mining should occur. They are actually some of the largest protected areas on the planet. Each one is 400 by 400 kilometers, which together adds up to a very substantial area, and begins to hit the target of around 30 percent of the entire region under active protection.

But the existence of those boxes actually highlights one of the main flaws of the plan. It's actually of somewhat limited value to just set aside protected areas on the basis of models. At some point, we need actual data to get a better overall picture of the regional environment, amongst other things, to make sure



that those are the right boxes that we set aside. The only data at the moment being collected in the Clarion-Clipperton Zone, and indeed in any other areas of the deep seabed, are really those that are being collected by contractors exploring under contract to the ISA.

Now, the amount and quality of data that have been collected have improved tremendously in the past few years, and several contractors have cooperated with the ISA to gather data on those white boxes. But what we really need to see, and what I would very much myself like to see in the future, is independent scientific research, preferably with the participation of ISA, and certainly with the participation of scientists from developing countries, specifically aimed at gathering and sharing data on those protected areas, and surrounding areas of the environment. Only then can we really undertake a meaningful analysis, and make decisions for the future, as to how much should be protected, and where.

Some progress is being made, and I'm very pleased to say that at the moment, ISA, for example, is cooperating with MIT. We will be going out on a research cruise later this month with MIT. And we will also be a partner in a major European project called JPIO, Joint Project for the Investigation of the Ocean, that will take place over the next few years. Beyond the Clarion-Clipperton Zone, both the ISA Council, and even the General Assembly of the United Nations, have recognized the need to develop similar plans in other mineral rich areas where exploration activities are taking place. And member states of the authority have repeatedly acknowledged the need for a global, multiregional approach that would enable the production of better policy and operational frameworks for future site-specific management activities.

Some of the key areas that have been identified, and that seem to me to be of particular concern, include the mid-Atlantic Ocean Ridge, the Indian Ocean Triple Junction Ridge, and the Northwest Pacific. The same for the Indian Ocean, which is becoming an area of increased interest, and increased activity.

So as secretary-general of the authority, I'm very supportive of this approach. I firmly believe that regional environmental management plans, designed to collate all relevant scientific data for each subregion of the area as a whole, are really the best way to go to complement the work already being undertaken by ISA, and particularly to give more ownership to countries in each region, particularly the developing countries that border these regions. In turn, I think this would strongly contribute to the discussions held within the ISA for developing the frameworks and processes to set the specific management objectives for contractors in the planning and monitoring of exploration and mining activities, particularly where multiple activities are taking place in the same maritime region.

The problem, of course, is that scientific work on the scale that is needed costs money. It is a lot of money. Even more is required if we are to carry out long-term monitoring so that we can measure and understand changes to the environment over time. And really, I think without that long-term monitoring, all that we do is of limited value. Nevertheless, I believe that at this time, ISA has a unique opportunity, and certainly provides the best available political platform, to establish comprehensive frameworks for environmental management. I hope that others will find this vision equally compelling, and can join us in this enterprise.

**Dan LeDuc:** Secretary Lodge talked about the challenges, and opportunities, of this moment in time. The seabed floor is a critical place for biodiversity and ensuring the health of the oceans. There's more to come on this issue in the year ahead. And you can learn more by visiting [pewtrusts.org/afterthefact](https://pewtrusts.org/afterthefact). For The Pew Charitable Trusts, I'm Dan LeDuc and this is "After the Fact."