

Center for Strategic and International Studies

The Launch of the Stephenson Ocean Security Project

Opening Remarks

Speakers:
John J. Hamre,
President and CEO,
CSIS

Phil Stephenson,
Founder,
The Philip Stephenson Foundation

Whitley Saumweber,
Director, Stephenson Ocean Security Project,
CSIS

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Transcript By
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JOHN J. HAMRE: I apologize. I have to wear this because I have some hearing problems, and so I can't hear you if I don't put this on.

Good morning everybody. Welcome. Thank you for coming. We're delighted to have you here.

There are seats up front so don't hesitate to come back. We've got people in the back standing; just move your way up. This isn't the Methodist Church, you know. (Laughter.) You can sit up front.

My name is John Hamre and the president here at CSIS, and first we always start with a little safety announcement. If there's anything that happens, we're going to hear an announcement over the intercom system. Whit? Where's Whit? Whit is responsible for everybody's safety, so follow him. The exits are right behind us. We'll go down to the ground level, the stairs is right here, and we'll take two left-hand turns, a right-hand turn, go over to National Geographic, and they've got a great show on right now, and I'll pay for everybody – (laughter) – to go.

Normally my role is entirely ornamental. My wife usually laughs when I say that, but – for when we have conferences, but here I have a little something more substantive I'd like to offer.

You know, we're a – historically a defense think tank. That was our provenance. It's only about third of our work now, but we're still known that way. And I must confess to have had a bias about the oceans as being a Department of Defense issue, and I'm really coming to realize how wrong that's now been. And there is a much larger, more important definition of security that we should start thinking about when we're dealing with the maritime sphere.

(Inaudible, background noise.) It's a great source of criminality – illegal fishing, piracy. Its criminal networks become the logistics backbone for terrorist organizations. You know, so this is a much larger problem than people realize, and it is largely lawless when you think about it. Who is responsible for security on the high seas? You know, I mean, if it isn't a military issue, it's wide open.

This is an important issue for all of us, and all of us are affected – both our financial well-being, health – I think the people say something like 40 percent of the fish you buy in the market is mislabeled, you know, but it's also one of genuine security. And we're going to explore that.

This is a – came out of a conversation I had with Phil Stephenson. We call it the SOS Project, and I put Phil's name in intentionally because of his personal interest and energy in making this possible, but it's not a project for CSIS. It's a project for all of us. What we hope to do is provide a platform where all of us can participate in raising consciousness about this extremely important question, important issue. I think we have a unique opportunity because of our historic role as a defense think tank, but a defense think tank that believes that the soft power dimensions of national power are far more important than the hard power dimensions. And that's part of what we're going to explore with this project with you together.

So let me ask Phil Stephenson to join us. Phil is a passionate devotee of the oceans. He is on the ocean a lot, but he thinks about it all the time. He brought us together with National Geographic when we first started to explore this and has been really the intellectual guide for this effort. Please welcome Phil Stephenson with your warm applause. (Applause.)

PHIL STEPHENSON: Thank you. Thank you, Dr. Hamre for that kind introduction. Thank you all for coming here today and joining this inaugural effort.

I have been privileged to be associated, as an informal advisor, to CSIS for about 12 years. Two years later – about a decade ago – we started the Stephenson Foundation. We're a small, private foundation and necessarily had to focus on something that we cared most about and that was the ocean.

We really have three pillars of what we do.

The first is marine exploration where we've gone in and funded all or part of expeditions by explorers who go out and gather data, come back and present what they've done. That's very satisfying and hands-on work.

The second area is marine protection, conservation. We have worked with coral reef rehabilitation, mangrove replanting, plastics cleanup. But our signature investment, our largest investment to date, has been in the Pristine Seas program of National Geographic, which is managed by my friend Dr. Enric Sala, who is here today. Pristine Seas, we're a small part of that, but it has succeeded in protecting over the last decade almost 2 percent of the world's oceans in a lot of different – working with a lot of different, willing sovereign nations.

Now we come to really the third pillar of what we're going to do, which is ocean security. And by that, I mean exactly what Dr. Hamre said, which is, where are places where U.S. national security interests intersect with environmental interests around the world? We had a meeting, Dr. Hamre, Dr. Sala, myself, and some other staff members, almost two years ago in the ninth floor here and we thought that these two communities who didn't normally overlap were filled with people who were intelligent, science-oriented people who wanted to change the world and they might be able to look at certain problems in the same way. And the first problem we took on was IUU fishing, illegal, unregulated and unreported fishing, and that's a pretty intuitive one where these two areas intersect, because you have a fishing boat, it's killing too many fish and suppressing biodiversity, and then it's running guns and drugs and people in its spare time. It's also something that is viscerally understandable and I think amenable to solutions if there's the willpower to do it.

So we centered on that issue and we produced in about a six-month period, in the second half of 2017, this report on IUU, which is still available on the CSIS website. It is the first substantive collaboration between these two great neighbors, CSIS and National Geographic. And I'm proud to have been sort of present at the creation of that. The report was well-received. It identified the problems globally, but it stopped sort of – stopped short of recommending specific solutions.

And that's where SOS came into being. Because afterwards, and it was, again, another conversation, Dr. Hamre and myself, saying, OK, now, what can we do about this? And instead of a single report, we wanted to establish a platform, fund it for a number of years. And thus, SOS was born and very recently last fall, after some working groups and organization, which some of you participated in, thank you for that, we recruited Whit here, Dr. Whit Saumweber, to be the full-time executive director dedicated to this project only here in an office at CSIS.

And so just to mention Whit's background briefly, he has a background in both science and policy. He's an actual marine biology Ph.D. And he's worked for over a decade in positions on both the Hill and in the White House. I think he's the perfect guy to lead SOS and I'm very glad that he joined us. And I'd ask you to welcome Whit warmly. (Applause.)

WHITLEY SAUMWEBER: Good morning. Thank you all for coming today. This is really heartwarming to see such a great turnout. It's wonderful to see everybody here, so many friends, so many colleagues.

I just want to start off by saying a very great thank you to Phil Stephenson, of course, and Dr. Hamre for their leadership, for their vision, for the idea that you could create a program that's designed to break down barriers and bring together communities to find solutions for challenges that we're only really beginning to grapple with.

You know, the concept of sustainability is one that we most often hear about when we're thinking about conservation or development. It's a resource issue. It's the idea that we need to better manage what we have today to make sure that it's here for tomorrow. In the world of marine policy, where my background is primarily, we often think about these terms in, say, improving fisheries management, preserving coral reefs or perhaps developing marine parks. But the truth is that the concept is really much more vital than that. In a world of change, in a world that's ever more crowded and a world that is ever more competitive, sustainability needs to be at the core of our national, foreign and security policies in a way that I don't think it has been to date.

I'm going to borrow a phrase from my friend Admiral Jon White, who I think is here in the audience, the concept of ocean security. This is the melding of what we might call traditional concepts of maritime security with the principles of conservation and sustainable use of marine resources. And crucially, from a strategic perspective you can't have one without the other. Over the long term, unless you're thinking about sustainability you are not secure in the maritime sphere. So it's not just a conservation solution, but a vital element of soft power and a critical alternative to the more exploitive path.

So we're going to show just a brief video sort of highlighting our program and kind of where we're thinking about things, I'm going to say a few more words, and then we'll get to the program.

(A video presentation is shown.)

MR. SAUMWEBER: Great. So that's a nice little intro, I think, to what we're all about, what we're trying to do here. I'm just going to reflect very briefly on what was – some of the highlights of that video: the idea that the world is changing, that we're rapidly approaching a threshold for dramatic ecosystem change as a result of climate change, that we have a continually growing population that is increasingly reliant on ocean resources, and that marine resource exploitation is a critical element today of the great-power competition between nations.

How do we deal with those issues? How do we deal with those challenges? How do we manage the changing world of today for the changed world of tomorrow? That is what the Stephenson Ocean Security Project is here to try and help us do. That's what I want to do in the coming years in helping guiding this project. And I'm so grateful to Phil Stephenson and Dr. Hamre for hosting this program here at CSIS to help think about these challenges.

So I think just briefly we're going to go through today. We have two panels. We have a South China Sea panel that's going to talk about a project that was led by our own Greg Poling from the Asia Maritime Transparency Initiative looking at new technological approaches for identifying fishing vessels in the South China Sea and thinking about the implications from both a national security and

fishing perspective. Then we're going to have a short break. We're going to have a second panel talking about a changing Arctic and how our international institutions can grapple with what that might mean from a resource use and competition perspective. That's going to be led by our VP for Europe, Eurasia, and the Arctic, Heather Conley. And then we're going to have a closing keynote from Senator Sheldon Whitehouse, who's going to talk a little bit about the broader implications of climate impacts on the ocean and how that rebounds on our national security perspective.

So I just, again, would like to thank you all for coming today. I really appreciate it. Thank, again, Dr. Hamre, Phil Stephenson. And welcome.

Greg?

(END)

Panel Discussion: Illuminating the South China Sea's Dark Fishing Fleets

Introduction and Moderator:

**Gregory B. Poling,
Director, Asia Maritime Transparency Initiative,
CSIS**

Speakers:

**Nong Hong,
Executive Director and Senior Fellow,
Institute for China-America Studies**

**Tabitha Mallory,
Affiliate Professor, University of Washington, Jackson School of International
Studies, and Founder & CEO, China Ocean Institute**

**Mark Powell,
Senior Researcher,
Vulcan Inc.**

Location: CSIS Headquarters, Washington, D.C.

**Time: 9:15 a.m. EST
Date: Wednesday, January 9, 2019**

(Applause.)

GREGORY B. POLING: Well, thanks very much to Whit, to Phil, to Dr. Hamre. Thank you all for coming out this morning.

I am legitimately excited to be part of this project. After a while doing the Asia Maritime Transparency Initiative you start to think that you're just writing the obituary of the South China Sea over and over for about three years, and there's only so many times you can ring the same alarm bell about militarization and the, you know, possibility of accidental escalation between militaries before you want to look at something from a different perspective.

This project has really given my team and AMTI the opportunity to do that. And I think it's important that we recognize while most of the headlines about the South China Sea focus on navies and coast guards, those are not the major players in these waters. And they're not even the players on the frontlines of conflict most of the time. Most violent escalation in the South China Sea over the last decade or so has been started by fishing vessels. And then you get responses by other fishing vessels, militia, coast guard, navy, and it spirals. So without getting at the core problem, which is these vast fishing fleets that are operating in a very small, contested space, we're not going to get to a resolution of these disputes.

Now, to set the scene, you know, the South China Sea accounts for about 12 percent of global fish catch. It employs about 3.7 million people officially, and a lot more than that unofficially. More than half of all the world's fishing vessels are projected to operate in the South China Sea. And in this space unsurprisingly, unfortunately, stocks are down about 70 to 95 percent, depending on species, since the 1950s. The problem is compounded over the last five years by clam digging, harmful fishing practices, and island reclamation. That's destroyed about 40,000 acres of reef surfaces.

All of that leaves us to want to get a handle on just how many vessels we're talking about, what kind of activities they're doing, and who they really represent. Now this is particularly difficult in the South China Sea for a few reasons that I'll talk about. But to try to get at the issue, as Whit mentioned, we decided to leverage a handful of technologies that haven't really been part of the normal toolbox for policy wonks here in Washington, or even most South China Sea watchers in the region. And we teamed up with Vulcan's SkyLight maritime initiatives to do that. If we can get the first slide up.

While that loads, the reason that trying to remotely monitor fishing activity in the South China Sea is so uniquely difficult is because nobody is transmitting AIS signals – automatic identification system signals – as they should be under international law. All vessels over 300 tons – didn't realize I was in control – all vessels over 300 tons that travel in international waters are legally required to transmit AIS at all times. And what AIS does, for those who don't know, is provide basic information like location, heading, speed, what kind of activity you're doing.

This is a picture of the southern half of the South China Sea. And in the middle there is Spratly Islands. Now, I'm sure anybody who has read a newspaper over the last few years and seen a story about the South China Sea knows, you know, anecdotally, that there is a lot more activity going on in the South China Sea than that handful of orange lines would indicate. This is just a single month. And

you can see that right in the middle of the world's busiest shipping lanes there's a giant black hole where virtually no vessels seem to be present.

Part of the problem in the Spratly Islands, admittedly, is that some of the fleets are old, some are small, some don't – mainly are not composed of 300-ton vessels. But most of the problem here is that vessels who are legally required to be transmitting that data are not, to hide their activities for one reason or another. So to get at this problem, we decided to combine a handful of other options. The first is a tool that many in this room might be familiar with, developed by NASA and NOAA, called VIIRS, or the Visible Infrared Imaging Radiometer Suite.

And what VIIRS does is let you identify bright lights at sea. It's particularly good for identifying fishing vessels at sea because night fishing tends to produce a lot more light than any other activity you're going to see in the oceans. We then used what's called synthetic aperture radar, essentially space-based radar. Helps you identify in a small swath of sea anything metal. And of course, this helps light up any fishing vessels. What we found when we combined these two – this is just four passes of SAR, so four random moments on four different days – and we find hundreds of vessels, almost none of whom are transmitting AIS. Every one of the yellow dots here is a vessel that appears to be night fishing. Every one of the blue are metal vessels that appeared in SAR.

The overall takeaway here, the big point of our report, is simply this: That there is exponentially more fishing activity happening in the South China Sea than is available – that is widely recognized in any public source. And without getting at that problem, we're just spinning our wheels talking about navies and coast guards who are not the primary actors here. Now, this also, when we dig in, lead to two other related conclusions. First, while there is a lot of fishing activity by almost all the nations – especially the Philippines, Vietnam and China – by far the largest fleet out there is what we now call the Chinese maritime militia. These are large, relatively modern, fishing vessels that do not spend most if any of their time fishing. They are down there operating as an arm of the state.

And the reason I picked this shot to show you, is that what this is showing is activity around Chinese-occupied features, especially Subi Reef. Subi Reef is one of the three largest of China's artificial islands. It has a large lagoon. Along with Mischief Reef, it has become the prime harbor for these maritime militia fleets in the South China Sea. And on any given day, we see hundreds – hundreds of vessels, all of whom are over 300 tons, none of whom are transmitting AIS. In a random week, from September 30th to October 5th, we did four passes of SAR to collect radar data. Came up with 264 vessel detections. Only eight of those could be correlated with AIS. Eight out of 264. Less than 5 percent of the vessels in the Spratlys appear to be actually transmitting any data.

On any given day, this is what the harbor at Subi Reef looks like. We had in August, which appeared to be the busiest month of the four that we monitored for this project, about 300 fishing boats tied up at Subi and Mischief Reef combined – on any given day. Over 90 percent of the vessels there in the harbors are fishing boats. Most of them are not government vessels. They're not coast guard. They're not navy. The average, about 51 meters, 550 tons. They're far larger, far better-equipped, far more modern than anything that the Vietnamese, or the Filipinos, or the Malaysians are putting out in the Spratly Islands.

And this led us to our third conclusion. The fact that these vessels don't ever appear to be fishing – and you can read the report online and kind of see how we came to that conclusion. But here's a good – they're all tied up at the lagoon. They're clearly not fishing. But they represent an enormous overcapacity, and one that should be deeply worrying. If you take just the vessels at Subi

Reef and Mischief Reef on any given day in August, we estimate that their catch – their total hypothetical catch – could be about 3,240 metric tons of fish every day. That would account for 1.2 million tons a year. That is equal to the entire estimated reported catch for the Spratly Islands by all countries.

If these vessels at any point in the future decided to actually start fishing full time, there wouldn't be any fish left in the Spratlys for anybody to argue about. So even if Beijing does decide in the future that they need to start decommissioning or moving away from the reliance in maritime militia force in the Spratly Islands, it could open up a whole 'nother can of worms. What does this many fishing vessels, this many unemployed fishers do in a region that is already grotesquely overfished?

Now, to give you a little more context, we decided to travel – to follow a handful of these vessels from kind of birth to current day. We found nine vessels built in 2017, all called Yua-taiyu (ph) and then a number one through nine. All part of the same fleet. They were constructed at Guangshin (ph) Shipyard in southern China and rolled off the line in December 2017. And since then, they've done absolutely nothing but travel to a home port on the south coast of China, and then transit to and from the Spratly Island, spending all of their time hanging out around Chinese-occupied features, as well as the reefs and islands occupied by China's neighbors, mainly the Philippines and Taiwan, in these cases.

We see no evidence they did any fishing. They are slightly larger than most of the Chinese vessels that we see there, about 64 meters. But they're not – they are largely within line of the rest of the maritime militia. And we estimate they cost about \$100 million to build. So \$100 million for nine vessels. We spot 300 on any given day. This is an enormous amount of treasure that has been invested by Beijing into a largely unproductive fishing fleet, whose only purpose is to kind of represent China's claim – to put boats in the water as a visible reminder that Beijing claims these waters. Eventually they will have to do something else. What that is, I think, should be very concerning.

Now, we pulled together an expert panel who I'm going to call up in a second. And what I'd like to talk about more broadly is the role of fishing and fishing vessels in the South China Sea, how they lead to the dispute, what China's policies currently are towards its fishing fleets, and how we see this moving in the future. So let me go ahead and call up our panel. First, we have Dr. Nong Hong, who is the executive director and a senior fellow with the Institute for China-America Studies here in Washington. We have Dr. Tabitha Mallory, founder and CEO of the China Ocean Institute and affiliate professor with the Henry Jackson School of International Studies at University of Washington. And Mark Powell, who's a senior researcher for Vulcan, Inc. out in Seattle, and was critical in pulling this entire project together. So, please, join me up here on the stage. (Applause.)

You want to go first and lead us off? OK.

Can everybody hear me OK? (Inaudible.)

So first I'm going to call up Dr. Mallory, who's prepared a PowerPoint. She's going to use the podium. And then we'll just move down the line of our speakers. So, please, here, Tabitha.

TABITHA MALLORY: There we go. Good morning. Is this on? There we go. Good morning.

So I want to thank CSIS for having me, and also to congratulate them on the Stephenson Ocean Security Project, as well as this project on the South China Sea's dark fishing fleets, which is a very fascinating project. And I was asked to speak a little bit about the fisheries policy context from China, talk a little bit about the difference between the domestic fishing industry, the distant water fishing industry, what's going on in the South China Sea, and a little bit about some of the subsidies policy. So that's what I'm planning on doing.

I also want to say I'm delighted that there's a lot of Seattle representation on the panel today. (Laughs.)

OK, so let me start. So first I want to talk a little bit about just kind of some context for the industry. So there's really a difference in the policies towards the domestic industry, and then within that the South China Sea, and then also towards the distant water fishing industry.

So the domestic industry – for China's statistical and management purposes, the domestic industry, they count that as fishing activity in the Bohai, the Yellow Sea, the East China Sea, and all of the South China Sea. So even the disputed areas, the fish that's caught there, any of the activity there is counted as China's domestic fishing activity. So that includes the Spratly Island fishing activities. So distant water fishing, on the other hand, is any of the fishing activity beyond the domestic seas, so on the high seas and in the exclusive economic zones of other countries.

So there are much stricter policies over the domestic fishing industry as opposed to the distant water fishing industry, mostly because of the direct impact of unsustainable fishing practices, you know, on China's food security and the employment of their fishermen. Distant water fishing is very much seen as a strategy to make up for some of the losses in the fishing industry domestically because of overfishing. The South China Sea, though, on the other hand, is very complicated because of the maritime disputes. And in the South China Sea the priority really is asserting China's sovereignty; it's less on sustainability.

So I'm going to talk a little bit about some of these policies, the Maritime Militia, but through the lens of the fishing industry policies; you know, the policies that come through the Ministry of – well, what is now the Ministry of Agriculture and Rural Affairs, but used to be the Ministry of Agriculture, which houses the Bureau of Fisheries.

So, according to the fisheries policy, there is a policy that was established in 2012 called the Spratly Backbone Fishing Fleet. And so that – there's two policy guidelines that were issued that year. There were policies before that that addressed – encouraged fishermen to go fish in the South China Sea and the Spratlys, also created certification programs, but this – these two policies were the first time that we see the use of this term, Spratly Backbone Fishing Fleet. So those came out in 2012, issued by the NDRC and the Ministry of – the then-Ministry of Agriculture. I have not seen the entire text of these. I've looked for it, but I've not – I've not seen actually what it says specifically about establishing this program.

So what it does, first of all, is create subsidies for the renovation and construction of fishing vessels to go specifically down to the Spratly Islands to fish. In addition, there are operational subsidies to provide fuel support. There's also a subsidy program for insurance for the fishermen who are engaged in these practices.

In order to build vessels that can, you know, obtain a certification to engage in the Spratly Backbone fishing, you have to really wait for months and meet some pretty rigorous hardware and technical standards in order to be able to get a certificate and a license. The vessels come from Guangdong, Hainan and Guangxi. And I've been looking for a list – and we have some indication from the report what the total number is – but I've been looking for a count from, you know, Chinese sources. And one count that I found was from the 2017 fisheries yearbook which said there were 170 renovated and built in 2016.

So, now, what I did was – so I got some of the notes a few days – a few days ago and I essentially started to go down this rabbit hole looking at some of the vessels that Greg just mentioned, the Yua-taiyu (ph) vessels. And so I just kind of dug up some information. I was particularly interested in some of the subsidy information and so I want to show some of that material now. And I want to say, too, that a lot of – a lot of, I think, this report, it brings up a lot of questions in my mind, so I feel like I have more questions than answers at this point. So I think that'll make for an interesting discussion later.

OK. So this is kind of overwhelming, but I'll explain it. So unfortunately, the title is cut off a little bit. So this is a list of the fishing vessels from Taishan in Guangdong province from 2015 and 2016. And it's the subsidies that were given for renovation and construction of the backbone industry going down to the Spratlys. And so what you can see is there's the name of the little village within Taishan. This is only one city in China. So there's the little village in Taishan, the name of the fishing vessel, so they're all called Yua-taiyu (ph). “Yua” (ph) is the old – the ancient character for Guangdong province, then “tai” is for Taishan, the city.

The main contact, the length, the size of the engine in kilowatts, what the material for the vessel is – so this is all steel-hull vessels – the type of fishing gear, which is predominantly purse seining and trawling, and then how much the subsidy from the provincial level was given. So this is 2 million renminbi per vessel. And then that's the date of the certification for use.

So there are 45 in total. So if you look – I don't know if this has a pointer on it, it doesn't seem to be working – so if you look at numbers 20 through 29 – sorry, 20 through 28, those are the Yua-taiyu (ph) vessels that Greg just mentioned. And they are owned by Fung Chung (ph) Fisheries Development Company. The length is a little bit shorter than what you guys found, but that's where they are. And there's 45 total. So the total amount that was given to these vessels for two years was 85.5 million renminbi, which is about \$13 million. And there was no mention of these subsidies in the – the yearbooks is where they provide a lot of the subsidy information, but there was no mention of these in the yearbook that covered 2016, although Guangdong did report 123 million renminbi for 2015 for the entire province.

So then I found another chart which I thought was very interesting, too. So this is a list of – this is also just Taishan, the city of Taishan. This is a list of all the vessels, including the backbone industry that were given construction and renovation subsidies. So you can see, if you look at the column all the way to the right, essentially, the ones that have any text in them are the ones that are part of the backbone industry. And what's interesting, too, is that there is a point of contact with the cell phone number, so we could probably just call and ask them for some information maybe. (Chuckles.) But yeah, so the length, you know, engine size, and then you can see also the difference, the ones that are part of the backbone industry are pretty much all steel-hulled, whereas the other ones, kind of the regular fishing vessels that fish closer inshore, those are made out of fiber glass.

And then so here, what's interesting about this chart is those two columns that are one in from the right, that actually provides some information about the central-level subsidies, which is 4 million generally for the backbone fleet going down to the Spratlys and then 2 million from the provinces.

So there's a – and I was looking in some documents and there is a subsidy ratio, central-government-to-provincial subsidies, of two to one. So essentially, it's 4 million provided from the central government, 2 million from the provincial government. And if you use that ratio for the chart that I showed previously, that would have been about 40 million total for 2015 and 2016 perhaps.

There's also a cap of 30 percent of the total cost of the vessel that comes from the central government, so it's not to exceed 4 million renminbi. And so what I thought was interesting about this, too, is there – you know, Greg mentioned some estimates about the cost of constructing one of these vessels, and if you are going by these numbers, that's less than what you guys came up with, and so I'm wondering – yeah, so one of my questions is, you know, what's the cost of the vessels? Where is the funding coming from? Is it just coming from the bureau of fisheries, or is it coming from elsewhere as well?

And then none of these central-level subsidies were mentioned for 2016. And I haven't gotten to fuel subsidies. I'm not going to talk that much about that here, but there were no details about the fuel subsidies. That has not been broken out in any kind of detail in the last few years.

And so one of the important things about the subsidy issues is there is a very big meeting at the end of this year to deal with fishing subsidies through the WTO to try to remove some of the fishing subsidies to decrease the capacity in the industry and therefore decrease overcapacity, and so this kind of lack of transparency is – it's very challenging to move forward on removing subsidies if we don't have more understanding of the actual subsidies that are provided.

So a couple more slides – another question I had was – this is still kind of digging through the Yua-taiyu (ph) fishing vessels, you know, sold to that one company – the nine vessels. So I found a couple of articles that talked about the vessel construction and the – you know, and then the sale to this company. And the first one is from March of 2017, and it talks about these fishing vessels being part of the Spratly backbone fleet.

But then this article, which comes out later that year in December, talks about these vessels being part of the distant water fishing industry, so another question I have is what are they actually for. Are they, you know, for the Spratlys or are they going to be used for distant water fishing, as well, later? So that's, I think, an interesting uncertainty. Perhaps – I've seen before that the Spratlys have been suggested as a possible base for distant water fishing activities further into Southeast Asia, so –

And I want to end by on talking a little bit about the distant water fishing industry. It's a little bit easier to understand some of the statistics for this, although the case also might be true for the domestic industry. So just a quick point I wanted to make: the official number of distant water fishing vessels for 2017 was 2,491, which is down a little bit from 2016, and some of you might be familiar with the 13th Five-Year Plan for distant water fishing that came out which caps the number of vessels at 3,000, so if about 2500 is the starting point, that means China is planning on expanding to 3,000, so they will be building more vessels, or maybe, you know, using the vessels for the Spratlys later as part of this fleet.

You know, there was an announcement recently to send 330 distant water fishing vessels to Madagascar, which is a huge number, and it was very surprising – you know, a surprising number. So if you – if you look, the distant water fishing five-year plan does not cap the total capacity. It caps the number of vessels, but it doesn't say anything about how big they can be. And so if you compare the size of the engines – oh, you know what? I got the numbers wrong here actually.

So the 2016 – so, OK – so the 2016 should be actually 2017 – that should be reversed – so essentially what's happened is even though the number of vessels has decreased, the engine size is increasing, so the average size of the engine, the kilowatt – in kilowatts has increased while the – you know, the number of vessels has gone down. So you can see from their statistics that already this is happening. And it's possible that – it's hard to tell if this is the case with some of these vessels that are going down to the Spratlys because the statistics do not separate out the ones that – the vessel sizes for the backbone industry going to the Spratlys. But that – it's possible that this is also true of that backbone fleet.

And then, you know, just to also illustrate that there will probably be a lot more activity, you know, for distant water fishing, the 2018 subsidies for disposal, renovation and construction of distant water – oh, actually, this is all of the vessels – domestic and distant water – is 6.123 billion, which is about – it's about a billion dollars, and over half of that is going towards distant water fishing.

So, yeah – so and the other – one of the other challenges with some of the subsidies and China's reporting of its subsidies is that what we see now – whereas they used to break out the different subsidy programs. You could tell which subsidies were for, you know, environmental enhancement, you know, the so-called good subsidies from the ones that were the harmful ones; you know, capacity-enhancing subsidies, for example.

But now they've put a lot of those subsidies together and not broken them out, so you can see from – you know, this policy it's also for decommissioning vessels, but we don't know how much of that subsidy is actually for decommissioning the vessels and how much of it is for reconstructing or constructing new vessels. And so it makes it more difficult to tell, you know, what types of issues should be addressed with their subsidy policy.

So anyway, I'll end there – just some kind of food for thought for the discussion later, and thank you. (Applause.)

MR. POLING: Thanks, Tabitha.

Next I'll turn to Dr. Nong Hong. Nong?

NONG HONG: First of all, I'd like to thank CSIS for having me back and Greg for inviting me to this panel.

Allow me this opportunity to share with you –

MR. POLING: Your microphone. One sec.

MS. HONG: So thank you again. And I would like to thank Greg. And I'm grateful having this panel and sharing my views on these very complicated issues.

And I think to start with among all the different factors in the South China Sea disputes, I think fishery is less sensitive compared with other factors like maritime boundary or competition for oil and gas, but it's also complicated in many ways. And first of all, I think because we have this pending maritime – (inaudible) – and we have unclear boundary, and then given this hard to define where are the national jurisdiction, where are the area beyond national jurisdiction, there were costs to the fishing – the fishing conflicts among all the claimant states. That is one issue.

And the other is overfishing and also degradation of marine fishery resources as we hear from the program that was shown earlier.

And the third issue is fishing illegal and report and regulate it, as suggest by Mr. – in your opening remark.

And another very important issue, I think, is the competing maritime law enforcement from all these claimant states in the South China Sea, including China, Malaysia, Vietnam, Philippine(s), for all these – from all these countries.

So let me start by talking something about the more positive. If we look at all these claimant states and – from a legal perspective, all these countries they seem to have a very comprehensive national legislation in terms of fishing industry. And you will look at the different countries' national legislations, they have very – (inaudible) – and comprehensive law and legislation.

And if you look at the practices in the fishing industry, you might also find that they either ratify or cite many international regulations or conventions – just to name a few – including Convention on Fishing and Conservation of Living Resources on the High Seas in 1958, and for instance the agreement for development of Southeast Asia Fisheries Development Center in 1967. So, from a legal perspective, all these countries are ready to regulate their fishing activities.

But another thing, we have to keep in mind that even though we have a quite comprehensive legal system, but there is a lack of regional fishing organization in the South China Sea. And you might find some existing national organizations, but in the area of the South China Sea we are lacking regional maritime – regional fishing organizations. And one of the reasons is lack of trust from all the states. Supposing that some countries like China earlier proposed that we should establish a regional fishing organization to regulate fishing or regulate overfishing in this area, but it's a lack of trust from all the states, and who is going to lead, and who is playing major role, or how to divide the power in this so-called regional fishing organization. So so far we don't have this organization in existence.

And the second issue is because there are clear boundary which lead to fishing conflicts in this region, so you will often hear about a fishing conference. For instance, one day you might hear the Vietnamese fishing vessel detained by Indonesia's law enforcement in Indonesia's claimed EEZ. On the other – on the other day, you might hear Chinese vessels being detained, of Indonesian vessel being detained by Chinese law enforcement. So those fishing conflicts happen very often, especially in the contested maritime areas.

So then, from these countries, their maritime law enforcement agency come into play. Some countries, they use the coast guard to assist law enforcement. Some countries, they do – for instance, in the case of the Philippines, they do have – there's no coast guard, but because of the so-called lack of resources and coast guard, sometimes they use navy to exercise maritime law enforcement in terms of fishing activities. So if we compare, like, Indonesia, Malaysia, Vietnamese, Chinese, and also

Philippines law enforcement, sometime, especially in a coastal area, you might see the conflict not only between the fishing vessels, but also from the law enforcement vessels with other countries fishing conflicts. Or in other cases, we have competing law enforcement agencies from government, from different – from different countries, in many cases even more complexity.

And then I think I want to emphasize – because you asked me to talk about Chinese law enforcement. I think mostly we're talking about Chinese coast guard. There are two reforms from Chinese coast guard; one in 2013, the other in 2018. So the motivation of the Chinese reform of coast guard is to reduce overlapping jurisdiction and also reduce the waste of overcapacity or overfunction. But the major function of the coast guard is to maritime law enforcement, including fighting maritime crimes, maintaining maritime security, and also fishery management. That's the issue that we're talking about today.

And second, I think the prime mission of Chinese coast guard does not change. It's still, I guess, civilian mission functions agencies.

And then I'm not even sure I want to talk about, because Greg mentioned about in his remarks about Maritime Militia, so I wanted to make this case. Oftentimes we hear a lot of American scholars writing about Maritime Militia in the South China Sea. So when I talk to many of the American scholars, especially there is a group – a scholar from the U.S. Naval War College that have produced a lot of reports on Maritime Militias. But I have to say that there is a lack of – or there is a lack of understanding from – if we talk to the Chinese scholars – maritime scholars and American scholars. So we don't often have a – how do I put this way? – we don't actually talk on the same page. The Maritime Militia is often referred – talk about by American scholars, but the Chinese, it's not assumed to be, like, a major issue in – for Chinese scholars. If you also talk to other countries in the South China Sea, like Vietnamese and Indonesia, you will very – in few occasions they'll use the term Maritime Militia. So we're talking about coast guards. Because I think fishing issues in these areas, we see this too often. That is why we don't actually come to attention about this term Maritime Militia. That's something I think we need to differentiate.

And certainly, as Greg mentioned, sometime you might see a lot of fishing vessels in (contested ?) areas from China, from Philippine(s), from Taiwan, from Vietnam. And I'm not quite sure, as a matter of fact, although I conducted research on the South China Sea for more than 10 years, but never been to any of these islands either in Paracel or Spratly. I don't know, really, about issue.

And then the role of fishing vessel, coming back to the real issue that we're talking about today. I think there are many fishing vessels in the coastal areas. I have to mention I think their major function is to fish. And also, when we talk about there is, like, group of fishing vessel in these regions, I talked to – I had the chance to talk to many of the local fishing vessels from Hainan, where I'm coming from, and sometime they train, these fishing vessels, in order to protect themselves from – one, from the natural hazard, and the other reason is because to protect themselves from other countries' law enforcement agencies. Sometimes we actually witness or hear too much cases about over-excessive maritime law enforcement power.

My last point: I want to propose a couple of recommendation(s) in terms of reducing – (inaudible) – fishing or enhancing fishing coordination in the South China Sea. First of all, multilateral perspective; I think all the claimant state, they need to have a multilateral code for conduct on fishing activity in the South China Sea. So what's happening now is that China and the 10 ASEAN member

states, they're working on drafting and also speeding up the consultation of code of conduct. And I think fishing activity should be included in this discussion. That's very important.

And from a bilateral level, I think all the claimant state, they should have bilateral mechanisms – between China-Philippine(s), China-Vietnam, or Philippine(s)-Vietnam. They should have the bilateral fishing agreement to regulate and also to help to reduce illegal fishing. For instance, some very practical example is the MSC measures from Malaysia and Brunei that have very practical examples that monitor, control, and surveil their system. That's something that more discussion need to – (inaudible) – and then to put more resources from government or from a local governments perspective.

And the last point I want to make a recommendation. I think, as I mentioned earlier, there are many issues in the South China Sea dispute – (inaudible) – competition, boundary issue. I think fishing is something that we can – actually easy to start over in terms of enhancing the regional cooperation and coordination, which might also have a spillover effect in regulating other areas – (inaudible) – different diversity of the South China Sea disputes. I finish with that. Thank you.

MR. POLING: Thank you.

And last, I'll turn to Mark Powell. Mark?

MARK POWELL: Can you hear me? Microphone? OK.

First of all, I'd like to thank Greg and CSIS for bringing Vulcan and me into this project. It's been really exciting and we've learned a lot. I think we've raised a lot of questions and there's more work to be done. And on that note I'd like to thank Whit and the team at CSIS for convening this conference and really beginning the dialogue.

I'm a big supporter of the notion that we need to bring together these two worlds. And my particular background is I entered this field as a – as a child, actually, growing up with my father on fishing boats. My father owned a commercial salmon trawler off the coast of Oregon and I drove that boat for a while. And one of the things that always bothered us was looking out to sea from our little 30-, 35-foot salmon trawler and seeing the massive Russian hake trawlers that were operating in the same water. We believe they were catching salmon. They said they weren't, and of course now we know they were. They were taking our fish. That's the way we looked at it. It was legal, but it was a problem.

And after that time I went through the similar transition as Whit. I became a marine biologist, worked on conversation policy. And I found myself facing the same challenge as the small salmon trawler seeing the Russian hake trawlers nearby, was that we could – we could work on conversation policy; we could implement procedures, laws, processes to control fishing; but we couldn't stop the cheaters. There was a group of vessels that we couldn't deal with.

And so now I'm working for an organization with a focus on stopping the cheaters. Thanks to our founder, Paul Allen, we're using emerging technology to try to bring that last group of participants in fisheries into the collaborative world of management.

So really the thing I'd like to address is how can we use emerging technology to understand illicit activity that happens at sea far from land? And just to start with an example, the hotly-contested

South China Sea, how can we detect vessel activity, identify the vessels involved, link to the history the context of those vessels – so the data that we can find about those vessels in published literature – combine these types of vessel monitoring with political and fisheries context to really gain an overall package of insight into what's happening?

And I think it's worth mentioning a little bit Vulcan's approach on this because some of the questions that have come up already I can see we're going to have to dig in on, well, how do you think – why do you think that's true? How did you find that information? Because I think there are some things we're finding that are a bit of a surprise.

So we at Vulcan – Vulcan is a technology company. I'm a little bit unusual at Vulcan for being a biologist, and so I get called something that I didn't even know existed. I'm a SME, which is a subject matter expert. Most of my colleagues are software engineers, machine-learning experts. And we bring together what we hope is the best-in-class vessel database. We've collected from public and private sources everything we can about vessels. I think, from our information, there's probably a lot more distant water fishing vessels from China that are shown in the official numbers and we're engaging in a project right now to try to understand what is that number based on what we see on the water. So vessel data – machine learning that synthesizes global data and cuts through the noise to detect events in real time, events like transshipment, vessels rendezvousing and analytics that we can apply to the data – the satellite-based data – that enable us to provide real-time answers.

So the observational technology, that's what we rely on, seeing what's happening on the water, and Greg mentioned some of this – light-detecting satellites known as VIIRS that enable us to see brightly-lit fishing vessels, synthetic aperture radar, electro-optical imaging and, of course, AIS. What we found in the South China Sea and the Spratly Islands was that each of these tools gives us pieces of information. No one tool is really highly informative about the activity of the vessels.

But when we put together the four different types of data and talked together with the team at CSIS about what does this all mean, we really can begin to provide a fairly complete picture and the nine vessels that several of us have talked about already become a very – a very fascinating case in point. Those vessels in general don't transmit AIS – automatic identification system – signals that they're required to transmit but they do transmit occasionally.

So that gives us some pinpoints, some locations and times where we can know those vessels are present. Using our satellite analytics, we've correlated AIS with electro-optical satellite imagery so we can find photographs of those vessels from space the same time, the same place, as they're transmitting AIS. That gives us a calibration that we know we're seeing those exact vessels.

We followed those vessels from the point of construction in a shipyard. We could show you satellite photographs – I'm sorry I didn't bring more photographs – of those vessels under construction in a shipyard, nine of them – their size, 62.8 meters. We've measured it and the construction documents give that same figure. So they're on the larger end of the Spratly backbone fishing fleet.

We saw those vessels, by a number of different observational technologies, leave port in China near the end of 2017 and I think they're part of the Spratly backbone fishing fleet because we've never seen them anywhere else. They traveled to the Spratly Islands and the first thing they did is they went to Subi Reef and they parked, and we have satellite photographs. Not every day but over a period of time we can see the same vessels rafted together in large groups, so five, six, seven, eight of them at a time in one place, and they're not – they're not moored in such a way that you'd expect for a fishing

vessel that was coming and going. They're rafted together, and we see them in the same place in the same configuration for two to six weeks in a harbor. We worked with some of our sources to try to estimate what those vessels are worth. If they were constructed in the U.S. today, they would be worth about \$300 million, maybe \$250 million. It's an incredible investment in steel to sit idle in a harbor. It makes no sense.

Probably the cost in China was about 35 (percent) to 40 percent of that cost. We don't have exact figures. But I would be quite surprised if the number was not close to \$100 million for the amount of money invested by someone in these vessels. We can't rule out the possibility that those vessels had fished but we've seen them in a number of locations in satellite photographs and also in AIS. Never have we seen evidence of them fishing.

Now, there are gaps in our record. They may well have fished. But they don't fish like an American vessel run by friends of mine would fish if they just put \$100 million into those vessels. Those vessels would be fishing night and day if they were operated by anybody that I know who fishes.

So fascinating. A lot of questions remain. But the piece that Vulcan brings, this is what we see on the water. This is what we can observe. And so we'd like to try to reconcile that with other sources. It seems highly likely that these are maritime militia vessels carrying out power projection, operating near, perhaps, a Vietnamese or Philippine base. The vessels seem to anchor within maybe five kilometers of a Vietnamese or a Filipino base and sit, and just sit there at days at a time. They move around a little bit, but we can see them in the same place several days in the row, often rafted together in groups.

So that's an example. And we want to extend these capabilities and try to bring this kind of observational capability into a more and more current tool, something that operates in real time. So working together with partners we've worked in some other areas, the Western Pacific, West Africa. I know that CSIS is expanding their operations as well. We want to bring these capabilities into identifying illicit activity in real time based on such things as rendezvous, based on specifically the AIS gaps. One project we're working on that's very interesting is it's true that many of these vessels carrying out illicit activity don't broadcast AIS routinely. Many, if not most of them, broadcast AIS signals part of the time. So we can use that information.

Here's a vessel present, broadcasting AIS. And then when it goes dark – that's what we refer to as going dark, when a vessel turns off its AIS – we can use that as a signal and we can track globally in real time all the vessels that recently turned off their AIS signal and compare that to nearby vessels where expect – or, where we see other nearby vessels transmitting AIS. That signal is received. But their neighbor just went dark. So we don't think there's a technical issue. We think there's receivers present. And so we can use those AIS gaps actually as a tool to provide insight into possible suspicious, possible illicit activity.

So the types of crimes that were formerly viewed as minor – administrative crimes such as overfishing and underreporting catch, basically stealing fish – we think we can provide insight into some of those activities, illicit activities. And as other people have mentioned, we do see a correlation. Vessels that are engaged in illegal fishing, underreporting catch, frequently are platforms used for other types of crimes. So one final piece we'd like to – we'd like to mention. The satellite – commercial satellite industry is rapidly evolving. Some of the things that we've been doing require a long lead time. Getting satellite photographs these days can be a slow process.

Working together with DigitalGlobe and their parent company Maxar and MDA, another subsidiary, we're working on accelerating the period of time between when we ask for an image and when that image is collected, so that hopefully we're soon going to be at the point where we can use real-time satellite industry, triggered by other sources of information. Looking at suspicious vessels using the full range of observational tools, and then tasking and getting real-time collection of satellite photographs. So I think we're just scratching the surface. There's a lot more to be done. And we at Vulcan hope to be involved in the ongoing work, together with CSIS and others. Thank you.

MR. POLING: Thank you. We – please. (Applause.)

We have a few minutes left for Q&A. And I want to get to as many questions as I can. A few ground rules. Please wait for the microphones we're going to have coming around, so you can be heard on the webcast. Please announce yourself and your affiliation. And please make sure your question is actually a question and not a speech.

We'll start over – the gentleman on the right here.

Q: Good morning. Thanks very much. My name is David Balton. I'm now with the Woodrow Wilson Center.

I have a question for Mark Powell. The technology that you're describing seems to be really useful in detecting one kind of illegal fishing – namely, vessels that are fishing where they're not supposed to be fishing or when they're not supposed to be fishing. But that's only one part of the IUU picture, right? There are vessels that are otherwise fishing legally but catch too much, or they misreport their catch, or don't report their catch, or they don't have an observer aboard, or they don't have – or they're using illegal gear, right? Does the technology you're talking about help get at those other kinds of problems, the problems about what actually goes on onboard a vessel, not where or when it is?

MR. POWELL: Yes. One of the things that we've done is to produce estimated catch for vessels fishing in a country where we had a defined fleet of vessels. We had – we knew who was licensed. We knew who wasn't. So we could look for the vessels that weren't supposed to be there. For the vessels that were licensed and were legally present in the area, we monitored their fishing activity and estimated how much they were catching. And then we provided that information to the government managers. And they contacted the vessel captains and challenged them about the amount of catch they were reporting. And the vessel captains admitted that they had been underreporting catch.

Now, we can't do a precise catch estimate. But we can certainly produce an order of magnitude catch estimate based on how the vessels move. And based on how they moved, we can often detect what gear type they're using. It's not perfect, but it's – certain characteristic signatures for long-line fishing, for trawling, for purse seining, et cetera. So I would say we can begin to address some of those issues. We don't have final answers. But, yes, we can address other types.

MR. POLING: Third row.

Q: I'm Peter Humphrey. Intel analyst and a former diplomat.

I note that it is also possible to track these vessels with their unique cruise signatures acoustically. And when you see a collection of boats sitting in one place, that may well be a phased

array intelligence collection effort, where the collective antenna is huge – made of small components. My question is, what good is all this data collection without some internationally coordinated guarantee to prosecute enforcement mechanism? There's nothing.

MR. POLING: Anybody want to jump on that first? (Laughter.)

MR. POWELL: I agree. I mean, without enforcement the information is relatively less powerful. I think ongoing efforts to improve enforcement worldwide are promising. The Port State Measures Agreement provides some opportunities to drive enforcement. The recent work by the EU in working with countries that were promoting IUU – or, rather, failing to rein in IUU. Recent progress with Thailand I think is promising. So you make an excellent point, though. We need better collaboration on enforcement.

MR. POLING: Over on the right here.

Q: Commander Josh Taylor. Military fellow, CSIS.

When you run through all of the massive overcapacity that they've constructed, and the fact that these ships are doing nothing, I'm wondering how much of this is actually – yes, no doubt, there's probably some nefarious purposes such as, you know, intel gathering or using these things as, you know, basically the maritime version of human wave attacks in, you know, high-end conflict. But how much of this is just a straight-up jobs program, not unlike BRI? I can't help but think that this is internally focused as much as externally focused. Any comments on that for the group?

MR. HONG: I can mention one thing. It's a pretty expensive way to create jobs. The capital cost is huge. And one of the predominant types of fishing vessels in the Spratly Islands is what's called a falling net vessel, which I wonder if that's your purse seine vessels because it's similar to a purse seiner and we don't see purse seiners in the Spratly Islands at all – never seen one. But it's a very similar fishing method where vessels use lights to attract squid or, in some cases, tuna, and then they drop the net around it and purse that net together. Those vessels are reported in the Chinese scientific literature to be favored because of the low labor cost. You can operate a 50-meter falling net vessel with a crew of eight. So it reduces labor costs. So I don't see the desire to put more people to work. But I mean, you make a good point. The vessel's sitting there doing nothing. Why?

MS. MALLORY: I have something I could add, too. So I came across recently of a report by a publicly listed fishing company in China, Pingtan Marine Enterprises. And it was, you know, one of their reports to shareholders, I think. And they were talking about how the subsidy programs work. And what they said was, you know, they get an initial subsidy to build the vessel and then the way they – you know, they also get favorable bank terms – financing terms. And so the way it was describing it, and I don't entirely understand this but essentially the way they were describing it is that they could essentially do nothing and still make money.

And then when you add the fuel subsidies on top of that, then you get – you know, if you actually – I mean, that was what they were saying. OK, if you actually operate then you can make a lot of money. But it was a system of being subsidized to the degree that you didn't really actually have to operate the vessel. So that's the only instance I've seen something like that. So, you know, it's an interesting point, I think, to look into further.

MR. POLING: Let me get a time check. We have five minutes. Go to Phil first.

Q: On the subsidies question, have you looked at the rate at which other countries subsidize – the U.S., Sweden, Spain, Korea? And is this a uniquely Chinese problem or greatly a Chinese problem, or are we all doing it?

MS. MALLORY: Yeah, it's – we are all doing it. The Chinese – well, there are some issues – there are some challenges understanding the Chinese statistics, too. The subsidy levels were very high just a few years ago and they've – they have implemented some policies to reduce them. But the reduction has been pretty fast and then there's been this lack of transparency that has accompanied it, like a(n) increase in opacity so, you know, less information being reported. So there are those issues.

But China has been one of the biggest countries, you know, subsidizing its industry. Japan is another one. Yeah, you know, Spain. So there are – you know, the USSR – former USSR, Russia, they for a while weren't doing much, but they're kind of getting back up there again. So it is a problem that – it's a collective action problem, essentially. It's going to take a lot of multilateral coordination to actually get to an agreement to reduce them.

MR. POLING: Great. I'm going to apologize in advance. We have time for one more question and so let's go to the third row here in the middle.

Q: Thank you very much. I'm Veronica Cartier with – (inaudible) – global think tank.

My question is in a maritime. The United Nation(s) International Maritime Organization – IMO – which is regular for the development of maritime law, beside for shipping regulation, are there regulation on military activities? And would you please elaborate what is the IMO latest development on that issue, especially for the artificial island chain? Thank you.

MS. HONG: I'll try. I'm not quite sure I get your question. Talk of military activities enforcement? There are many –

Q: It is for the environment. Environment.

MS. HONG: Sure. OK. If you're talking about the maritime environment –

Q: Yes. So the activities in that. You know, what is the IMO have done to develop in maritime law?

MS. HONG: Well, in the international convention there are many convention, including MARPOL, and – (inaudible) – to talk – to talk about marine environmental issues, and I think in the South China Sea there is a lot of existing international practices in terms of marine environmental protection. And from the multilateral perspective we have the OPER (ph) and also UNEP program, and there's other regional maritime protection – environmental protection mechanisms and practices. And from the – from the perspective of countries' national legislations, there is – like, all these claimants, they either ratify or sign all these multilateral conventions or regulation, including the IMO parties like MARPOL as well. So there is a lot of existing regional and state practices on that.

MR. POLING: So we could have another whole conference on the legality or illegality of military activities in the South China Sea and in fact we do have one of those every year and we'll have

the next one in the summer. But for now, I have to wrap up the panel so we can move on with our discussion. Please join me in thanking our panel. (Applause.)

Panel Discussion: Charting a New Arctic Ocean

Moderator:

**Heather A. Conley,
Senior Vice President for Europe, Eurasia, and the Arctic; and Director, Europe
Program, CSIS**

Speakers:

**Ambassador David Balton,
Former Deputy Assistant Secretary for Oceans and Fisheries;
Senior Fellow, Polar Initiative, Wilson Center**

**Rear Admiral (ret.) David W. Titley,
Director, Center for Solutions to Weather and Climate Risk,
Pennsylvania State University**

Introduction:

**Whitley Saumweber,
Director, Stephenson Ocean Security Project,
CSIS**

Location: CSIS Headquarters, Washington, D.C.

Time: 10:30 a.m. EST

Date: Wednesday, January 9, 2019

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WHITLEY SAUMWEBER: Thanks. If folks could gather and take a seat, we're about ready to start our second panel.

OK, all right. So thank you very much for coming back promptly after the break. I would like to go ahead and introduce Heather Conley, who's our senior vice president for Europe, Eurasia and the

Arctic. And she's going to have a conversation with a couple of very distinguished experts about the new Arctic.

HEATHER A. CONLEY: Thank you, Whit.

Good morning everyone. My name is Heather Conley. I direct our Europe and Arctic research here, so I'm going to take you geographically north. We're going to head to the polar ice cap. And the title of our discussion is "Charting a New Arctic Ocean." In some ways, that's a pun because about just under 2 percent of the Arctic Ocean is chartered to international standards. So the part that we're going to charter this morning is taking a look at governance.

Now, when Dr. Hamre mentioned this morning that we really look at security in a very broad way, I think this is an excellent opportunity to think about governance as a force of security and stability. Now, one could argue that the Arctic is very well-governed because of the Law of the Sea Treaty, that it establishes for the five Arctic coastal states their territorial waters, their exclusive economic zone. But there is perhaps a new challenge in charting the governance of the high seas of the Arctic, those international waters that extend beyond the exclusive economic zones. This has been affectionately called the "donut hole." I know Greg was mentioning the black hole, but we're going to call it the "donut hole" in the Arctic. And so what we've been seeing over the last seven years, I would argue, is a lot of creativity and dynamism that looks at new governing strategies for the Arctic Ocean and particularly the central Arctic Ocean.

Now, two individuals that have been present at the creation of much of this governing dynamism and some of the new agreements we've seen in the Arctic are with us today. And we are so delighted, to my right, to have Ambassador Dave Balton, who is a senior fellow with the Polar Institute at the Wilson Center. But Dave has been a frequent visitor thankfully here at CSIS when he served as deputy assistant secretary for oceans and fisheries at the Department of State. He served also during the U.S. chairmanship of the Arctic Council. He was the chair of the Senior Arctic Officials. And he was present at the creation and helped push forward a variety of international agreements, search and rescue agreement, oil, preparedness and response agreement for the Arctic.

And we're really grateful, Dave, to have you here with us to help charter this new Arctic Ocean.

And then to my left we have Ambassador Dave Titley, who is the professor of practice in the Department of Meteorology at Pennsylvania State University. He's actually founded a new center, a Penn State Center for Solutions to Weather and Climate Risk. A Naval officer for 32 years, he was a commander of the Naval Meteorology and Oceanography Command. But we perhaps know him the best, in 2009 he initiated and led the U.S. Navy's Task Force on Climate Change. When he left the Navy, he went over to the Department of Commerce to be the deputy undersecretary of commerce for operations and the chief operating officer of NOAA.

So we have two phenomenal colleagues that will help us think how to chart this new Arctic Ocean.

So, Dave, I'm going to start with you. And there was a really groundbreaking agreement that you were the instigator of, the 2017 Agreement to Prevent Unregulated High Seas Fisheries in the central Arctic. It brought together the five Arctic coastal states and then five other major fishing nations and organizations: China, Japan, South Korea, Iceland and the European Union.

Now, this is a high sea fisheries agreement, but there are no fish in the central Arctic now, so this was a preemptive move. Science is the key to unlocking that moratorium if it should ever be. And so this is a – it's just gone into – I believe all the – all the –

DAVID BALTON: It was just signed.

MS. CONLEY: All signed with instruments being deposited. Tell us why this governing agreement was so critical to stability in the central Arctic.

MR. BALTON: OK. Thank you, Heather. Thanks also for inviting me here.

Good morning everyone.

So Heather's right, this new Arctic fisheries agreement is a kind of preemptive strike against what might be unregulated fishing someday. If you can imagine a map of the world with the North Pole in the middle of it, you have the Arctic Ocean surrounded by the five coastal states, but there's this area in the middle, about 2.8 million square kilometers, roughly the size of the Mediterranean Sea, that is beyond the fisheries jurisdiction of any country, it's high seas. And in recorded history, there has never been any commercial fishing taking place there and that is because it has been covered by ice year round until now. Now a portion of that area is ice-free for part of the year. That portion is growing both in the amount of open water and the time of year that it is open water.

And we don't actually know very much about what lives up there. I'm not sure it's accurate, Heather, to say there are no fish. There are probably some fish up there, but the truth is we just don't know very much.

Anyway, the United States had an experience in another high seas area off our shores in the Bering Sea in the early '90s where a brand-new fishery led to the collapse of an important pollock stock. And we were worried that a similar phenomenon in the central Arctic Ocean might occur, so we actually proposed an agreement, both among the coastal states, but also those states with large fishing fleets that might wish to fish there someday, not to fish in this area until at least two conditions were satisfied: one, that there was enough scientific information with which to manage any fishery properly, something we don't have now; and two, some kind of international mechanism, a regional fishery management organization or similar arrangement, to actually set catch rules for this area.

And it took, you know, some eight years or so, but eventually we got these five coastal states and five others to agree they will not fish for at least 16 years from when the treaty enters into force. And it will be extended in five-year increments beyond that unless anybody objects. And the other major commitment of this agreement is to undertake a joint program of scientific research and monitoring to try to get a handle on what actually lives up there.

I think you're right that this agreement takes its place in the growing architecture of Arctic governance. And there's some really interesting questions about where we're headed in that way.

MS. CONLEY: Absolutely. And we're going to go to a what's next at the end of our conversation.

Dave, let me bring you in and I want to pick up on the science bit, the monitoring. From your perch at NOAA, from your extensive experience in oceanography, how do we best manage

collaboratively that science question, that monitoring the internationalization? We just had the signing of an Arctic international science cooperative mechanism. Again, another product that came out of the U.S. chairmanship of the Arctic Council. But just from your experience, can you help us put this science into some context and then your own thoughts about how you see the 5+5 and its historic nature?

REAR ADMIRAL (RET.) DAVID W. TITLEY: So a couple of questions here.

MS. CONLEY: Yeah.

ADM. TITLEY: So first, thanks. Thanks very much, Heather, for having me. I really, really appreciate the opportunity here.

Let me do the first one – or the last one first, I guess that's it. As I was thinking about the 5+5 and the Arctic Council, I think we might have an analogue for the Arctic Council in our own U.S. government and that would be NOAA. If you think about it, NOAA has no organic act, they're not quite always sure of their authorities. The lines have more authority oftentimes than the headquarters. They do research. They do some policy, they don't do security. They sometimes get reorganized; like, when the previous president thought out loud about reorganizing, NOAA was left off. And sometimes, I think the Arctic Council feels like they're kind of left off. So if you just sort of think of the Arctic Council as an international version of NOAA, you know, it kind of works in a lot of ways. So, yeah, that'll – I'm sure that'll make all the NOAA people happy once they come back to work. (Laughter.)

But there are some analogues. And having said that, both NOAA and the Arctic Council do some amazing work. And they have really been a force for good both nationally and internationally, respectively. So it's – you know, people, I think there are some people that are a little nervous about a 5+5 because some of the Arctic Council, it wasn't an Arctic Council, it, you know, raises the – you know, and I can understand that. That's sort of a natural bureaucratic reaction. But if you look at it, there are a lot of things at 5+5 or other ad hoc groups can do that get work done, that can then in fact rely on a lot of the basic research and basic cooperative agreements that have gone through sort of a somewhat more formal process of the Arctic Council with the observers and with the indigenous peoples and all the components that I'm sure many here are familiar with.

So I look at the 5+5 as actually a very good thing. I don't think it is a threat, per se, to the Arctic Council, although I can see how some might see it that way. And it's sort of how NOAA gets to live, too. There are pieces of the weather enterprise that are not part of NOAA, but they're a key part of it and they – and they provide a lot of the basis. So that's that piece.

As far as the scientific observations, I mean, there's – you know, I'm a – I tell people I'm a recovering weather forecaster primarily. (Laughter.) But if you look at how what forecasting is done and has been done for many decades, it is truly an international affair. We share almost all of our data with almost everybody else. And the reason for that is, if you don't do that, everybody loses. And, you know, whether you call it game theory or whatever, nobody, no one single country can have access to all the weather data in the world. It just doesn't work that way.

So I think there are analogues there. There are certainly some analogues in the ocean community. Admiral Jon White here can talk about that from the Center of Ocean Leadership perspective. And that's really, I think, what these agreements do is that they show that really everybody can win.

I mean, when we started the Task Force on Climate Change a decade ago, we talked about in the Navy and in the DOD that there was a chance to actually get this right. And you look at these agreements that Ambassador Balton and others have really led and we have, by and large – you know, not everything is perfect – but we have actually done a lot of good in the last decade.

MS. CONLEY: Absolutely. I mean, as I look at the 5+5, my own reflection – I think, in some ways, this is – this is showing us the way to what the future of the international system will be – it's bringing the parties together to solve problems. It may not fit nicely into an organizational structure, but it is designed to be flexible and nimble.

ADM. TITLEY: It works.

MS. CONLEY: It works. And I think that's the most important part.

Admiral Titley, let me – let me move to the second area of governance, which I think has been long in coming, but also very impressive, and that is the International Maritime Organizations Polar Code.

Now, just to step back a little bit, IMO had been thinking about this, contemplating this. And Arctic countries within the IMO were leading and pushing for this, a requirement, a regulation to make sure that ships are ice-strengthened so that they can safely navigate the polar regions; that they are very cautious about how they dump pollution or use of fuels; and specifically making sure that life at sea, and protected and really strengthening those structures.

This came into being in 2017. We now have this in ports – certification and it's ice strengthened. And we have that AIS mechanism following those vessels to make sure we know who's in the Arctic – or, we're trying to follow what's in the Arctic, if they are in distress. What has that meant for – and putting sort of Navy hat on and maybe substituting because our Coast Guard colleagues couldn't be with us today – thinking about what that means for safety and security in the Arctic.

ADM. TITLEY: So, first of all, I certainly do not speak for the Coast Guard. I don't speak for the Navy. Nor do I speak for Penn State. I don't speak for anybody but myself. (Laughter.) So what I say is –

MS. CONLEY: You speak for Dave Titley. I got it.

ADM. TITLEY: That's about it. I think some – you know, analogous to what we were just talking about with the fisheries treaty in the high seas of the Arctic, again, this Polar Code has taken a long time to get. It wasn't a unanimous agreement. There was a lot of negotiation and persuading. But at the end of the day, this really buys down risk for all of us, because if we have – if there are oil spills, if we have ships grounding up there, I guess the technical term is it's a hell of a problem. It's really, really hard to deal with these issues. If, you know, people who have – I'm sure some people in the audience have worked on Arctic. In the Arctic there's no infrastructure. Yes, we have a Search and Rescue Agreement, but we have a very few assets to actually go and execute that.

So the best way to avoid these – or, the best way to deal with these is to not have these issues in the first place. You'll never have 100 percent safety, but things like the code really buy down the risk

as opposed to kind of a, you know, every person for themselves wild west kind of thing, in which you can just go up there and see what happens. It's a – it's a dangerous place. It's still a dangerous place. It's an austere place to work. And if we can put a few dollars – it's kind of like, you know, if we were talking about sea level rise and extreme weather. The few dollars relative you put into either preventing – increasing resilience in storm surge, or wildfires, or whatever pays off big time when you have an issue. And the Polar Code is going to do just that. So I would think from a – from a Coast Guard perspective, this is – this is wonderful.

MS. CONLEY: The theme of prevention runs through this entire conversation. Dave, Polar Code, placing that into context. Because from that then has come the United States and Russia putting forward to the IMO a vessel traffic management scheme for that narrow Bering Straits, which is about to see a whole lot of LNG carriers going to the Russian Arctic, to the Yamal Peninsula, to bring LNG to Asian markets. Place the Polar Code – how did you see that? As an important piece? Or perhaps it was just another additional layer of stability and security for the Arctic?

MR. BALTON: It was important, but from where I sit it was one of five binding agreements about the Arctic – mostly about the Arctic Ocean – just since 2011. And that, in its own right, is kind of remarkable. This is one area of the world – I don't know if there's another area in the world where that could be said. Through the Arctic Council we had the 2011 Search and Rescue Agreement you mentioned. 2013, the Arctic Marine Oil Pollution Preparedness response agreement. Then most recently – Evan Bloom's in the room. He co-chaired the negotiations on the Arctic Science Cooperation Agreement. Those are the three Arctic Council-led agreements. Then there's the Fisheries Agreement and the Polar Code. All in this tight space.

And I think what it shows is an ability of mostly the Arctic states, but others as well – certainly the Polar Code is binding on all the IMO members – to be – to take a practical approach in the Arctic. And particularly for Russia and the United States, and you have the Western countries to set aside the differences – very real differences they have about other parts of the world and other issues to take some steps, as David said, to buy down the risk in the Arctic.

MS. CONLEY: So the speed of these agreements have been amazing. I want to dig a little deeper, particularly on the Search and Rescue Agreement, which is one of the oldest. So what has actually happened? We've had the formation of the Arctic Coast Guard form, which brings the states together. We've had tabletop exercises. We've had live exercises. We are practicing. But what's missing?

MR. BALTON: Well, the agreement came about in part because the Arctic states realized that none of them had adequate capacity to deal with search and rescue. So at a minimum, this agreement helps – creates a promise to share or pool assets wherever possible. And, yes, joint training. Joint exercises. Sharing of data. And so it helps move us forward, but I think – as David was alluding to – none of us, including the United States, have anything near like adequate capacity to deal with a major search and rescue problem in the Arctic.

MS. CONLEY: Dave, what is your perspective on these agreements? What are we missing here? What – I mean, as I said, this is a good news story. But what are – what are you concerned about in this space – in the search and rescue space?

ADM. TITLEY: So in this space – I mean, it's what we've talked about. It's assets, right? I think Admiral Allen famously said about seven or eight years ago that if there was a major disaster,

loss of life, in the Arctic, he would fly a C-130 overhead and count the bodies. I mentioned the Arctic frontiers up in Norway about eight years ago, that if we do not have assets are on track to have a Titanic-scale disaster. And that is before. We're now sailing cruise ships through there, you know, with everybody who is probably of age to collect Social Security.

And they're paying a lot of money. And when you pay a lot of money, you're not there to go and just see open waters. You want to see critters. And you want to see really cool landscape. And you want to see icebergs, and things like that. Those are great from a tourist perspective, but as somebody who's driven really big ships I try to stay away, as far as I can, from that stuff, because they can be, what John and I – John White and I would call CLMS, career-limiting moves if you hit these sort of things. (Laughter.) You don't want to do this.

And we've seen this. You know, we say, well, how could that possibly happen? Well, don't think – you know, we just have to think back a few years ago. Remember the Italian cruise ship that hit an island that we've known about for 3,000 years? (Laughter.) So people make mistakes. And it's one thing if you make it five miles or 10 miles off the coast of Italy. And people tragically still died in that. Imagine when this happens 2,000 miles away from anybody. And it's cold. And the water's cold. And the ice is – and the weather is cold.

We have already – much small cruise ships, actually, in the Antarctic had some disasters. And we have just been lucky. We've had good weather. We've been able to rescue them. Our luck is not going to hold. So it's really – it's really assets. We have the governance structure. It seems to be a pretty good governance structure. Coast guards around the world by and large are very good at working with each other, despite political differences of maybe their respective capitals. But we and the other Arctic nations need to now put kind of our money where our mouth is and put assets into that.

MS. CONLEY: So I'm going to put two things that I'm worried about, get your reaction, and then turn to you and say let's put our crystal ball and say what's next for governance in the Arctic. The two things I worry about is the fact that Russia and Canada have two very different views about the Northern Sea Route and the Northwest Passage being internal waters. And the majority of the international community, including the U.S., believes these are international passages. Now, this issue has not really made a difference. In part, we haven't challenged this. Are we equipped to govern that dispute should it come forward? And what is the mechanism?

And then my second one, it's a good-news story because it's a well-governed space, but I still worry about it. And that is, the Article 76 Committee, which is the committee that adjudicates scientific claims submitted by states to extend their outer continental shelf. The Russian government has submitted now its second round of scientific data that should be coming forward. Now, this committee adjudicates that the science meets the legal definition. But, of course, the states themselves have to negotiate the boundary of that. Does that concern you in any way as we move forward? So do any of those two issues concern you in any way?

MR. BALTON: So it is certainly the case that Russia and Canada on the one hand, the United States and the other countries in on the other, have different views about transit rights through the Northwest Passage and across parts of the Northern Sea Route. It's not that we haven't challenged it. The U.S. government has protested repeatedly. But for the most part the amount of shipping that has been going through these areas is still at a low enough level that we've been able to agree to disagree. If either Arctic route actually becomes a major shipping route, there might be – it might be harder to manage those differences of view and the other potential sources of friction.

I'm less worried about the continental shelf process. It's not only happening in the Arctic, Heather, right? There are some 60, 70 countries in all different parts of the world going through the process of figuring out the outer limits of their continental shelves and submitting the information to this commission that you mentioned and getting recommendations back. And yes, there are many places in the world where maritime boundaries still have to be negotiated.

Interestingly, in the Arctic the U.S. and Russia already have one.

MS. CONLEY: It's Canada.

MR. BALTON: Yeah, we don't have one with Canada, interestingly. Russia and Norway also more recently have reached agreement on a boundary. So there are still other boundaries to negotiate, but those will be fought over by lawyers and cartographers, and not by warships, and it will all sort itself out. It will probably take quite a while, but I don't think it's going to cause any serious friction in the Arctic or elsewhere.

MS. CONLEY: Dave, your thoughts?

ADM. TITLEY: So on those two issues – I'll take the sea route passages first. The Northwest Passage doesn't really bother me too much. It's kind of the – the analog is, like Route 66. It's historical. We all love it. We make movies about it. But if you look at the actual charts, there are several places where the draft, how deep the water is, is pretty constrained. It's a challenging sea detail. It's not really the place where if you're Maersk Shipping Lines you want to drive a lot of your ships through. The Northern Sea Route's certainly going to see more traffic.

I think the solution is going to be when the ice seasonally melts out of a lot of the top and you're going to end up with a transpolar route, and that's through the high seas. And that just kind of obviates a lot of these issues. So I think, especially in the longer term, the ice, or lack of ice, is going to solve that.

The Article 76 I would certainly agree with Dave. I think there's a pretty good process. The part that worries me more than these straight definitions is Svalbard. I think Svalbard is still – if the Russians want to make mischief, Svalbard is a great place where you can make mischief for a whole variety of reasons. The governance is a little fuzzy and soft. The Norwegians have one view; the Russians have another. I'm not sure we really pay attention. You know, it brings in – potentially it brings in NATO. It brings in a lot of things. And it's something that we should at least really pay attention to in our security establishment writ large.

MS. CONLEY: It's governed by the 1920 Spitsbergen Treaty, or Svalbard Treaty, and has fisheries protection zones, economic issues. You're absolutely right. I'll add Svalbard to my list. Thank you.

OK. Before I turn questions over to this fantastic audience, last question: Where to next? Here's my list. Please add to it. Please subtract from it.

Heavy fuel oils. Really, there's a movement now I think in the environmental community to ban heavy fuel oils from the Arctic.

Thinking about biodiversity beyond national jurisdiction, there has been finally some progress moving forward in the U.N. And, Dave, you were instrumental through the U.S. chairmanship of thinking of linking marine protected areas within national waters and boundaries, to connect them as a pan-Arctic marine protected area. About 11 percent right now of the Arctic Ocean is in a protected status. Could you see where some of that flows into sort of ensuring biodiversity? And are you ready to lead the next regional management organization –

ADM. TITLEY: (Laughs.)

MS. CONLEY: – for the central Arctic?

That's my list. What's your list, Dave?

ADM. TITLEY: The answer to the last question is no. (Laughter.)

MS. CONLEY: Aw, come on.

ADM. TITLEY: So, yes, there is, I would say, growing support for a ban on both the use and the carriage of heavy fuel oil in the Arctic, as has already been agreed around Antarctica. It will take some time. There's still a lot of communities in the Arctic that depend on heavy fuel oil, and I don't think they can just overnight change the fuel that they use. So it will probably be a phase-out of some kind. But there are alternatives available, and I think we will be heading in that direction through the – through the IMO.

Yes, the BBNJ negotiations are now actually underway after almost a decade of sort of preliminary talks, but we still don't really know what they will yield and what that will mean for the Arctic. There is a number of areas beyond national jurisdiction including one in the central Arctic subject to the fisheries agreement and how the – how the interplay between this potential global agreement and the existing Arctic arrangements will unfold nobody really knows. It's actually kind of interesting.

One thing we don't have for the central Arctic Ocean is a marine science organization where we have in the North Atlantic and the North Pacific. I believe we could use one dedicated to the central Arctic Ocean – a marine science organization like ICES and PICES. And yes, there have been established marine protected areas in different parts of the Arctic through the Arctic Councilors initiative to create some kind of network – pan-Arctic network. We haven't – I don't know how well it's moving forward at the moment. There's more work to be done there.

MS. CONLEY: Absolutely.

Dave, your list?

ADM. TITLEY: So I guess to paraphrase Niels Bohr, predictions are tough, especially when they're about the future.

MS. CONLEY: Yeah.

ADM. TITLEY: So with that, I would agree on the fuel. This is – this is going to probably evolve here. It's really dealing with change. I mean, the Arctic is changing faster both on land and at

sea, faster than any other place on the Earth – physically changing. So how do we – you know, manage is probably the wrong term. How do we deal with this; how do we buy down risk. Permafrost, the ecosystems. There are wild cards.

A wild card is basically if there is a conflict in the middle latitudes and somebody wants to have what we would call in the Pentagon an asymmetric response – does the Arctic get dragged in. And while we would all like to say that's not going to happen, it could happen. And why? One of the reasons is the U.S. has limited capabilities up there.

You could do some damage, especially in the – as we go along. Does the – what is the – sort of the conceptual model? Is it – it's not Antarctica. We're pretty sure it's not Antarctica. There's not going to be a treaty. There's people up there, not – you know, penguins and stuff like that. Is it the Mediterranean where you have almost an estuary with a lot of different countries, with a lot of different organizations? Is it something else? And how does the Arctic really become mainstreamed?

It's going to, whether we think this is right or not, but my prediction is it's going to become more and more an integral part of the world's economy, of the world's – it is part of the world's ecosystem. But as that ice melts out people are going to be there. So how do we deal with this and is it going to be special or are we going to deal with it kind of like we deal with a lot of other things? And I think the initial signs have actually been really quite encouraging this past decade. But there's still a lot of work to do.

MS. CONLEY: Just a – are you concerned about fisheries in general, meaning as we see waters warming we are seeing productivity in the Barents Sea going through the roof. These are shifts and patterns. You know, I always little worry that that just encourages more activity. Are we prepared and have stability as these fishing stocks really move and fishing vessels and nations perhaps want to test that proposition?

Dave, are you concerned about that in any way?

MR. BALTON: Sure. There is – somebody mentioned in the first panel a kind of poleward shift of fish stocks in general. That's not true of all, and yeah, I don't know that we have wrapped our heads around how to deal with that. Some of the fisheries management mechanisms in the northern part of the Northern Hemisphere are among the best in the world, though, and there is, for example, the Northeast Atlantic Fisheries Commission to manage the growth in fisheries in that part of the world.

Still, it is – these dynamics are only part of the pressures that fish stocks are under all over the world and it's not a pretty picture. Not a pretty picture.

MS. CONLEY: All right. Well, let's bring our wonderful audience into the conversation. We have microphones. You have to speak very clearly into those microphones. Sometimes it's a little hard to hear up here. If you could introduce yourself and briefly ask a question. I'm going to bundle some questions and then I'm going to come back to our panel. So I'll start over here up front here with Sherri. Thank you.

Q: Hi. Sherri Goodman, now at the Woodrow Wilson Center with Dave.

And Heather, thank you. You have a great panel and thank you all, Dave and Dave, for your many years of service, much of it we've done together. So my question is, given the U.S. Navy's

increasing ambition to deploy surface ships in the Arctic, should we be conducting a freedom of navigation exercise through the Northern Sea route?

MS. CONLEY: So that's a loaded question. Can't wait to hear the answer to that one. We have one in the –

MR. BALTON: It's a question for him. (Laughter.)

MS. CONLEY: All right. Yes, ma'am, in the back, please.

Q: Hi. I'm Monica Medina and I'm a senior associate here at CSIS, and in my spare time I have a daily environmental newsletter called "Our Daily Planet."

So I have two – it's a two-part question about extending U.S. power or showing U.S. power in the Arctic. For Dave, the question is how important are the icebreakers for that and how many do we really, really need, in your view. And for Admiral Titley, the question is sea ice forecasting. Obviously, we worked in succession at NOAA. I know how much or little capacity there is for sea ice forecasting. I think that's – I think it's important but I'd be interested as a meteorologist in your view on that.

MS. CONLEY: Thank you. I'm going to just keep on swinging by here. Do we – this side of the room is very quiet. Oh, thank you. Yes, sir. Right back there, and then we'll come back to you. Please.

Q: Yeah. I'm Frank Schwing (ph). I'm a currently furloughed federal employee. (Laughter.)

MS. CONLEY: Our sympathies.

Q: But what's your report card – what's your assessment of the current administration Arctic policy, both domestic and international?

MS. CONLEY: Sorry. Could you repeat that one more time? Sorry, sir.

Q: Yeah. What's your current report card for the current administration –

MS. CONLEY: Oh, report card.

Q: – on ocean policy, both domestic and international?

MS. CONLEY: OK. We're going to grade the administration. OK. (Laughter.) Sir, I'll come back to you in just a minute. So the provocative question, should the U.S. conduct a freedom of navigation operation through the Northern Sea route, how many icebreakers does the U.S. need, sea ice forecasting, and then you get to grade the administration. Who would like to begin?

ADM. TITLEY: Sure. I'll start and then –

MS. CONLEY: Admiral Titley would like to begin.

ADM. TITLEY: – and then Ambassador Balton can say, as I’m sure he’s done many times, what the admiral meant to say. (Laughter.)

MS. CONLEY: I think the Daves are a pretty good duo – good team here. Yes, sir.

ADM. TITLEY: So the freedom of navigation – it’s a great question and Sherri kind of knows the answer – is you need two things. You need a capacity to do this and then, given that you have a capacity, it doesn’t mean that you go off and do every one every time. There’s a whole – at least there used to be. I don’t know how it works in this administration. I probably shouldn’t comment on that.

But at least in normal government times there’s a pretty sophisticated and well-developed policy procedure that incorporates the National Security Council, the Department of State, the Department of Defense and others to decide when and where we exercise freedom of navigation.

So, I mean, not to kind of punt on this but this would be as a much – just one component of a much larger assessment of how we want to interact with Russia both writ large and in the Arctic. But it also assumes that you have a capacity. And I’ll use this to –

Q: (Off mic) – capacity.

ADM. TITLEY: OK. So I’m –

Q: (Off mic) – didn’t have it.

ADM. TITLEY: Yeah. I’m going to use this. It’s very interesting that just this morning, in fact, in the U.S. Naval Institute blog the secretary of the Navy very recently was thinking out loud about taking some surface ships up to the Arctic. That’s actually not exactly what the uniformed Navy is saying right now at very high levels.

So that’s going to be an interesting luncheon between the CNO and the secretary of the Navy, I think. But the part is I think we need to do this because the Navy has sometimes said, well, we’re going to have the Coast Guard up there. The Coast Guard is really good at constabulary functions. They’re not the U.S. Navy, and the U.S. Navy is not the U.S. Coast Guard. They have separate missions –

MR. BALTON: Yes.

ADM. TITLEY: – that complement each other, and just like in most oceans we have both Navy and Coast Guard present. It’s not one or the other. The Navy needs to break that code. I think the secretary has and I hope he can persuade the military that – the uniformed commanders – that they need to get onboard with that because it’s changing and this is going to happen.

MS. CONLEY: I’m going to come back to the report card question.

ADM. TITLEY: OK. Just lots of –

MS. CONLEY: Do you want to talk about icebreakers and then sea –

ADM. TITLEY: Oh. (Inaudible.) Oh, there’s all –

MS. CONLEY: New icebreakers and then sea ice forecasting.

ADM. TITLEY: OK. Oh, sorry.

MS. CONLEY: I know. Keep up.

MR. BALTON: So we don't have enough icebreaking capacity currently. We have one heavy icebreaker nearing the end of its useful life and one medium-strength icebreaker, the Healy, that is fine, but that's not enough. We have icebreaking needs both in the Arctic, also in the Antarctic. We need to break into McMurdo Station, perhaps do some other things there. So I actually do hope that Congress appropriates money for building at least one more heavy icebreaker. Whether that would be sufficient for practical purposes, I don't know. But as a lot of other people have pointed out, it is also one way to demonstrate some kind of commitment to the region to have that kind of presence. They are expensive. I appreciate that. And there are many challenges on the federal budget. That's what I have to say about icebreaking.

MS. CONLEY: Sea ice forecasting.

ADM. TITLEY: Yeah. OK. So sea ice – sea ice forecasting, yeah, we need to get better. The bottom line is, you know, it's not rocket science, it's harder. It's pretty complex to actually get this right, not only how much ice you have, but how thick it is, how it interacts. You've got to understand the ocean right underneath it. The ocean, if you have warm water, warm in an Arctic sense, like, 35 degrees – my idea of warm is 80 (degrees) – but that really messes up the ice even more so than the – than the air temperature, so you have to be able to observe all of this, so you need much better observing systems that can run and are sustainable and not just an exercise. So we have a lot to work on that.

The other part I would say about ice is we care about the land ice on Greenland because that's going to impact sea level rise this century. And if we're going to get 1 foot or 2 foot or 3 foot, a lot of that depends on Greenland and we need to do a lot better on understanding that as well.

MS. CONLEY: I'm going to have you guys finish up with the report card. So grading the administration, then I'll have you broaden that. Sort of really grade the last 10 years because, as you mentioned, the 5+5 agreement began with President George W. Bush starting that into motion.

MR. BALTON: Yes, right.

MS. CONLEY: So we have two years of the current administration, but maybe dial back. What's been the report card? And that's hard. You're grading yourself, Mr. Balton, on a lot of that, so you can give yourself some grade inflation if you'd like.

MR. BALTON: Well, under both the presidency of George W. Bush and President Obama, there was a lot of attention given to the Arctic. The Bush administration put out an Arctic plan – not strategy, but the Obama administration called it. But both the George W. Bush administration and Obama strategies for the Arctic were actually most notable for what they had in common. But one thing that was true during the Obama administration is the Arctic became kind of the posterchild for the Paris Agreement and climate change more generally, I think for good reason. We had a president and a secretary of state and others who really cared about climate change and went to the Arctic and used our

chairmanship of the Arctic Council in part to draw attention to the problems of climate change in the Arctic and what it meant for the rest of the planet and to build support for the Paris Agreement. There was created in the White House under President Obama both a National Ocean Council and an Arctic Executive Steering Committee.

I think this administration, whatever else might be said of it, the attention to the issues has definitely gone way down. Now, some of it has to do with the attitudes about climate change and the announcement of withdrawal from or intent to withdraw from the Paris Agreement. Also, with the end of the U.S. chairmanship of the Arctic Council, there was going to be some subsiding of interest in the federal government about the Arctic, I'm sorry to say, and it seems to have – to be true. So I'm disappointed that the current administration isn't paying more attention to these issues at high levels.

MS. CONLEY: Grade?

MR. BALTON: C.

MS. CONLEY: C.

Mr. Titley, grade?

ADM. TITLEY: So maybe I'm an easy grader. I was going to give them a B- overall.

MS. CONLEY: OK.

ADM. TITLEY: Not this administration, per se, but just sort of the last 10 years or so.

MS. CONLEY: The last decade.

ADM. TITLEY: Our interest seems to be very episodic. And while some administrations have talked more and created what I call exquisite bureaucracy, nobody has funded this. I mean, you look at the Obama administration, for eight years knew we needed to fund icebreakers, but we never quite got around to it in eight years. Now, icebreakers are sort of a manhood issue and it's a shorthand, but there is a, as Dave mentioned, there is a real need to recapitalize our icebreakers. We have about .5 of a heavy icebreaker on a good day that works. And we didn't do things.

We have done some things. I would say, frankly, the Department of Defense gets about a B-, too. It's very episodic. And we need to be able to – and it's tough in this country with the politics – sustain this. I think hooking this into sort of the very partisan and polarized – no pun intended – climate debate is probably not helpful.

MR. BALTON: Right.

ADM. TITLEY: The Arctic is going to change. And while I would say 97 percent of us in this room know why it's changing, that doesn't really – you don't have to lead with that to buy support. And I think if you can show in a very pragmatic, nonpartisan way the changes that are happening and how are we going to manage this, you might be able to do things, including getting money, sustained money for this. I was hoping we would see money associated with our chairmanship of the Arctic Council; that did not happen. And it remains to be seen whether we will take this seriously or not.

MS. CONLEY: Well, I will say thanks to Phil Stephenson and the Stephenson Ocean Project. We're going to get ourselves to an A, we're going to work towards that A on the report card.

Mr. Titley, you are a soundbite machine. Thank you very much. (Laughter.) I've learned a lot.

One good housekeeping, I want everyone to remain in your seat – Arctic freeze. Senator Whitehouse will be joining us in just a minute, so don't move.

But the one thing you can move is please put your hands together and thank Ambassador Dave Balton and Admiral Dave Titley for joining us. (Applause.)

(END)

Keynote Address

Speaker:
Senator Sheldon Whitehouse (D-RI)

Introduction and Moderator:
Whitley Saumweber,
Director, Stephenson Ocean Security Project,
CSIS

Location: CSIS Headquarters, Washington, D.C.

Time: 11:15 a.m. EST
Date: Wednesday, January 9, 2019

Transcript By
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WHITLEY SAUMWEBER: (In progress) – around the new Arctic Ocean and what might be the future of that space.

But now I'd like you all to welcome Senator Sheldon Whitehouse, a Democrat from Rhode Island. Senator Whitehouse is a huge ocean champion. He is known as one of the biggest champions of oceans in general in the Senate and as somebody who is always on the forefront of discussing the impacts of climate on the ocean and on the world at large. He is currently a member of the Senate EPW Committee, Environment and Public Works. He plays a key role in crafting policies addressing environmental protection and climate change. In 2011, he joined with Democrats and Republicans to form the Senate Oceans Caucus to increase awareness of and find common ground on issues facing the oceans and coasts. Through the caucus, they help to gain approval of a number of fisheries treaties, including passage of the IUU Fishing and Enforcement Act that will prevent illegal, unreported and unregulated fishing. The senator has worked to boost federal support for fishery science and cooperative fisheries research as well as efforts to improve transparency and efficiency in commercial and recreational fisheries management process.

So without further ado, I'd like to welcome Senator Whitehouse to give some remarks. (Applause.)

SENATOR SHELDON WHITEHOUSE (D-RI): Thank you, Whit, for that very nice introduction.

Thank you all for being here on a very important subject.

Thank you so much to CSIS for hosting us and for your interest in this topic. It is not the only topic that CSIS makes important contributions in. I had the opportunity to bring Heather Conley to the Judiciary Committee to talk about Russia's role trying to disturb the political equanimity of other countries. And the work that she and CSIS have done in that space has been really remarkable.

I want to say a very, very big thank you to Phil Stephenson for starting this effort and for the wisdom and foresight of connecting oceans issues and national security issues.

And I want to recognize the brains of the operation in my family, one of the Whitehouse couple who actually has a Ph.D. in ocean science, my wife, Sandra, who is here keeping an eye and making sure I don't say anything too stupid. (Laughter.)

On a happy note, let's open with a few successes from the Oceans Caucus and some thank-yous. We were able to get four fisheries treaties and the Port State Measures legislation to address international pirate fishing done in the Senate. Those four treaties passed in a day. If you went back through the Senate calendar to add up how long it took for the four previous treaties to clear, it was nine years. So four in a day was a very good day in the Senate. And I want to particularly thank Roger Wicker for his bipartisan support in that effort.

We then moved onto marine plastic debris. And we have what we call SOS passed into law. It became so popular it actually became a taxi into which other senators wanted to put other passengers. (Laughter.) And the issue over what passengers would be allowed in the taxi really became the matter of delay. The idea of the bill passing was very, very firmly established. And now Senator Sullivan and I am working on SOS 2.0. And I want to give Dan enormous credit for the leadership he has shown in this area, not only in terms of getting the hearing done and getting the bill done, but also chasing this issue through the halls of the executive branch of government. And as soon as the government

reopens, and we can clear a last few details through NOAA, Senator Murkowski and I will be announcing a very significant ocean data bill that we've been working on for a long time.

So the Oceans Caucus has been venue for significant legislative bipartisan success in the oceans space. But CSIS is not a place where you come to talk about the stuff that is easy, or that has been done. It's where you face challenges. So I want to start my presentation with a fact and a proposition. The fact, as reported in the 2017 Climate Science Report that the federal government produced, is that the oceans are annually absorbing more than nine zettajoules of excess heat energy due to climate change and carbon emissions – again, every year. The proposition is that America is and remains and must be the indispensable nation, exception, and exemplary.

So let's unpack the fact a little bit. More than nine zettajoules of excess heat energy going into the ocean annually. Well, first, what the hell is a zettajoule? (Laughter.) A zettajoule is a sextillion joules – 10 to the 21st power. That's a lot of zeros. Stated more practically, nine zettajoules is about a dozen times humankind's totally energy consumption annually. Which makes for an interesting loop. Our energy consumption – or, at least the fossil fuel part of it – is producing ocean heating at 12 times the energy of our entire consumption. That's not a good feedback loop. Said more kinetically, the added heat our oceans absorb is equivalent to four Hiroshima-sized nuclear bombs exploding in the ocean every second, with all of the thermal energy of that release captured by the ocean. So every minute 240 Hiroshima bombs. In the time of my remarks, more than 4,000 Hiroshima explosions – with the oceans capturing every joule of that excess heat energy.

Now, let's unpack the proposition a little. America is the world's indispensable, exemplary nation. Years ago Daniel Webster described the work of our founders as having, and I quote him here, “set the world an example.” His was not a unique vision of America. From Jonathan Winthrop to Ronald Reagan, we have called ourselves a city on a hill – set high for the world to witness. From President Kennedy to President Obama, inaugural addresses have noted that the glow of our ideals lights the world. And President Clinton has argued that people the world over have always been more impressed by the power of our example than by any example of our power. When Daniel Webster said that our founding fathers had set the world an example, he went on to say this: “The last hopes of mankind therefore rest with us; and if it should be proclaimed, that our example had become an argument against the experiment, the knell,” as in, the death knell, “of popular liberty would be sounded throughout the earth.”

So that brings us to how the fact of nine zettajoules and the proposition of exemplary indispensability interact. I would note three ways. First, the nine zettajoule fact is one of many climate chaos facts that mankind will increasingly have to bear. And these climate chaos facts have national security consequences. America's national security experts could not have made it much plainer. And this is not new. The Pentagon's 2014 Quadrennial Defense Review described climate change as a global threat multiplier, warning that, and I quote, “The pressures caused by climate change will influence resource competition while placing additional burdens on economies, societies, and governance institutions around the world.”

Former Admiral Samuel Locklear, as head of the U.S. Pacific Command, warned in 2013 that climate change was the biggest long-term security threat in his area of operations, noting the need for the military to organize for, quote, “when the effects of climate change start to impact these massive populations. If it goes bad,” he said, “you could have hundreds of thousands or millions of people displaced, and then security will start to crumble pretty quickly.” These policy-level warnings about competition, conflict, and instability over-shroud a lot of simple human suffering – suffering person by

person, suffering family-by-family. The poorest, those who live closest to the land, who lead subsistence lives, will suffer most the brunt of the coming change.

Which brings us to the second relation. Henry Kissinger once told me that the great revolutions of the world have always come from, what he called, a confluence of resentments. It's a good phrase – a confluence of resentments. In our world, where international alliances support parliamentary democracies and a market capitalist economy – the modern foundations of our society – revolution is risky. Resentments, therefore, are to be avoided. So let's divide the world into three groups. One group, the poorest, starves when its fisheries collapse. A second group, the middle group, is distressed when fisheries collapse, but has the resources, with some difficulty, to find alternative food sources and manage.

At the top, we don't really give a damn. The fish in our air-conditioned supermarkets may cost a little bit more and may come from a different part of the ocean. And we may have to drive home in our SUVs with a slightly larger receipt in our grocery bag. But that's as much as we will notice of it. The first two groups will bear justified resentments when they get pounded by the changes driven by decisions made by the SUV-driving part of the world. And if you turn the pain up high enough, then good luck defending the regime of parliamentary democracy and market capitalism that brought this on through omission and commission.

The third relation involves something very specific to America. And that is: How does America fare as the exemplary nation through all of this? I submit, very badly. First of all, expectations are higher for us than anyone else, so the burden of failure will fall more on us than anyone else. Second, democracy and capitalism are our hallmarks, and their failure will redound to our peril. And the reason for it – the reason for it will be the most damning fact of all, and that is that our American democracy, our city on a hill, our example to the world of popular governance will have catastrophically failed to meet its responsibilities despite abundant and at this point legitimately undisputed science because of the nefarious political activities of the industry with the most massive conflict of interest perhaps in history. We know the fossil fuel industry has this conflict of interest. It's not hidden. What is hidden is the extent to which the fossil fuel industry funds politics, uses its capacity to fund politics to threaten even without funding in the political sphere, and maintains a very large and complex armada of false-front organizations designed both to obscure the hand of the fossil fuel industry and to propagate junk and false science to counter the legitimate science that the world knows.

That's not a good story for a city on a hill. Although the climate-denial apparatus has won unseemly influence in Congress now, it will surely lose the test of time. The consequences of climate change are determined by laws of chemistry and physics and biology. These laws are not repealed or wished away. Propaganda can manipulate people, passions, and politics, but it has zero effect on the immutable laws of nature. So the climate-denial apparatus will ultimately be exposed as a fraud and a scandal, and history will condemn it as one of the great American frauds and scandals. With all the dread power that history has to inflict on wrong, the judgment will come.

Unfortunately, it's not just the industry's success at propaganda and denial that will be judged; there is a commensurate failure of American democracy that will also be judged, and will stain and disgrace our great American experiment. James Madison in "The Federalist Papers No. 63" warned of "moments in public affairs when the people, misled by artful misrepresentations of interested men, may call for measures which they themselves will afterwards be the most ready to lament and condemn."

End quote. Well, we have certainly been misled by artful misrepresentations from the fossil fuel industry.

It can be hard for us in the comfortable world of air conditioning, SUVs, and imported fresh fish to contemplate resentment of the scale that may be created and revolution if the confluence of resentments takes us there. But the harms to the ocean of nine zettajoules are on a – is on a collision course with America's exemplary standing. And when that collision comes, powered by worldwide and justified resentments, the scenario is not pretty.

To dig out of this, to succeed, we, first, need to be honest. We, second, need to show that market capitalism and democracy don't fail when presented with big problems. And we need to head off the confluence of resentments we are now making inevitable if we do not change course.

I'll close with two warnings that have appeared recently that suggest that the collision may come sooner than we think and may actually come higher up in the economic strata than we think.

The first is a warning regarding coastal property value collapse. Perhaps the most credible and neutral indicator of that is a warning from Freddie Mac, the great U.S. housing corporation, that a coastal property value crash is predicted and that in its scale it will match the 2008 mortgage meltdown, which damaged the entire global economy.

A second and separate warning comes from a variety of sources. Again, perhaps most credibly, the Bank of England acting as the insurance and financial regulator for the companies that it supervises, warning of a carbon asset bubble collapse of a sufficient scale to create what the bank calls systemic risk. "Systemic risk" may be the two scariest, least-scary-sounding words in the economic vocabulary. What it means is that the crash is not limited to the fossil fuel industry when the carbon asset bubble bursts, but it takes down the world economy with it. And I think that groups like Freddie Mac and the Bank of England are entitled to our fair consideration when they make those warnings.

So I'll close again where I began with thanks to Phil Stephenson and CSIS for seeing the link between what we are doing in our oceans and the national security vulnerabilities that America carries into the decades ahead. Your wisdom and foresight I hope will be rewarded with a significant change in direction in the Congress.

Thank you very much. (Applause.)

MR. SAUMWEBER: Thank you, Senator, for those really excellent remarks. And incredibly on point, I think, for what we're trying to do here.

SEN. WHITEHOUSE: Now it's on.

MR. SAUMWEBER: So thank you for your remarks. Incredibly on point for what we're trying to do here in the Stephenson Ocean Security Project here at CSIS.

You really cut to the heart of the matter, I think, when you talked about the confluence of resentments and the idea that there is this competing set of forces that we as the world's only indispensable nation need to be grappling with both as a leader and an impactor and as a partner.

SEN. WHITEHOUSE: Yeah.

MR. SAUMWEBER: So I'd like to think about a little bit – maybe as a first question and then we'll pass it on to the audience – what we can be doing now in the Congress. We have a divided Congress, that's no secret. You've referenced some of the challenges that we have politically with mitigating climate change. Scientists will tell us that mitigating climate change is the most important thing we can do to mitigate impacts in the ocean. But taking a moment to step beyond that and think about what are some of the other things that we can be doing to mitigate the confluence of resentments as a good partner, what are some of the opportunities that you see beyond climate mitigation, beyond capping carbon emissions that we can make progress on to be a good partner, to be a good ally, to help our neighbors move forward? Are there – are there opportunities in the Congress to work in a bipartisan manner on these issues?

SEN. WHITEHOUSE: I think, as I mentioned early on, there are oceans topics that have real bipartisan opportunity as demonstrated by the fact that they've had real bipartisan success. So I think that, in some respects, the oceans are a safe bipartisan space. And there's been an enormous amount of very good work done in the corporate sector as well as in the private sector. So I think that is a good opportunity.

I think that, if you go a step beyond that to the question of the confluence of resentments and our standing in the world, we need to very much upgrade I think it's called the commerce, science and technology tranche in the Department of State. And I think it needs to be a part of our embassies' tasking in virtually every country to be ready to be helpful as these climate change-driven disturbances affect that country, whether it's fisheries moving about or sea levels rising or intense flooding or drought, whatever it is. You know, we have a very significant hand in the blame for all this, but we also have the best scientists in the world. We have extraordinary technology. We've got incredible capabilities through our military to deliver various services and supports. And I think we need to take on that responsibility so that when bad things happen we're offsetting our hand in having caused them to happen by being there on the ground in the rescue, recovery and support mode. So I think that's going to be a very important issue in our foreign policy going forward.

We may want to dump the idea of Space Command and think whether, like, rescue and support command might be a good thing so that wherever things go very, very badly wrong in the world, our platform is there delivering the resources that are necessary to bring people back from the – from the disasters that are there.

Again, that brands ourselves in a very good way and an exemplary nation needs to defend its brand.

MR. SAUMWEBER: Well said. Thank you.

We'll turn to the audience now. In the back right there.

Q: Yes. Yes. Hello. I'm a consultant for the ministry of tourism in Mexico. I'm very privileged to be here and to be able to tell you that I believe so much in the city on a hill. And I'm so sad that the city is not functioning for the world now.

My question is –

SEN. WHITEHOUSE: Me too.

Q: You talk a lot about China, you talk about the Arctic, but we have a very terrible problem now in Mexico, especially in all the Riviera and Cancun, the sargassum problem. And that's why I came here. And it's related also to your shores in the Gulf of Mexico. So I think that would be great if what you're saying that we can work together and that we can solve the problems, we can solve the economy and there is no need for what you're discussing now.

So I think we will rise in our income and that resentment will reduce and you'll have much conflict on your borders. So I think that I feel privileged that I could tell you this in this forum because we want to – you want to change, the city on the hill has to help us to make a better world. Thank you.

SEN. WHITEHOUSE: Thank you. We share a common gulf which has many common problems and then we share a Pacific coast which has many common problems. And I hope that your government and the Canadian government work together to develop the carbon pricing effort that will help support decision-making in your country in between.

MR. SAUMWEBER: Thank you.

Let's go in the back here. Sir?

Q: Yes. Randy Showstack, reporter with Eos, news service of the American Geophysical Union.

And I have a two-part question for you, Senator.

SEN. WHITEHOUSE: Thank you for your organization's terrific work in this space.

Q: Thank you very much. And thanks for coming for the recent conference here in D.C.

SEN. WHITEHOUSE: My pleasure.

Q: First of all, to build on an earlier question asked in the previous panel, how would you grade the current administration, as a softball, for oceans and climate? And what can be done to work with the administration on those issues?

And secondly, with the continuing government shutdown over the issue of security on our Southern border, how would you equate the security there and the security that we're talking about here today with ocean security?

SEN. WHITEHOUSE: At some of the more specific and localized levels, I think the administration is doing reasonably well. I think Admiral Gallaudet at NOAA is doing a good job. I don't think NOAA has been heavily politicized. I don't think the denial operation has done a very effective job at infiltrating NOAA and trying to shut down its scientific efforts. The president signed the marine plastic bill and spoke about how irritated he was that other countries were using our beautiful oceans as their landfills. And I think that the Navy continues to be very strong and sincere about worrying about the facilities near Hampton Roads, Norfolk Naval Station and in the Indian Ocean and other places where they've got real perils. So there are specific areas where I think common sense and factuality continue to exist.

But you get to the drivers of all of this, you know, the ocean is acidifying like crazy because of the CO2 concentration in the atmosphere. There's no way around that. That's a very elementary chemical experiment that you could do in a middle school, heck, elementary school science lab. And the temperature warming and all of that. And until we solve that problem, I don't want to give them much credit for these isolated islands of factuality and the extent to which this administration has been – to put it very bluntly in the terms the Founding Fathers would use – corrupted by an interested party is almost unprecedented in our history. And it's a – it will increasingly prove to be a disgrace.

Q: And the same question about security.

SEN. WHITEHOUSE: I think all you need to know about the extent of the national security crisis at the Mexican border – the southern border is that 18 days ago it was not identified as a national security crisis, and 18 months ago it wasn't identified as a national security crisis. Nobody was talking about emergency measures at the time. I view the discussion about the border as a national security crisis as largely being a rhetorical cudgel designed to try to work through the problem that the administration caused itself by sabotaging the deal it had signaled to the Republicans it would go for and pitching us into a shutdown that they don't know how to get out of and that is kind of a negotiating black hole because it's hard to know where to go in this administration to negotiate.

When you send the vice president of the United States, the chief of staff to the president of the United States, and the son-in-law of the president of the United States all up to Congress with an offer, and that afternoon undercut them and ridicule the offer, you're left in a very – like, it's a negotiating black hole in which there's nothing firm to hold to. And that makes negotiating very difficult. So they've got to fight their way out of this. I think they're trying to use the national security rhetorical argument to try and push the public and shore up Republicans and batter Democrats. And I don't think it's working. And I don't think it's true.

MR. SAUMWEBER: Let's go in the back there.

Q: Sir, I'm a researcher on Arctic infrastructure and indigenous peoples.

SEN. WHITEHOUSE: A researcher on what? I'm sorry.

Q: Arctic infrastructure and indigenous peoples.

SEN. WHITEHOUSE: Yes.

Q: And my question is how do – as you said, those who live closest to the land suffer the most. How do those voices come up? What are some mechanisms that might be doing through Congress or other political mechanisms where their voices get heard?

SEN. WHITEHOUSE: You know, it's not easy, because the most powerful forces that get heard in Congress are the interests that bring the most powerful and developed political operations to bear. But that said, I do think that people in Congress still care a lot about their constituents. If the shutdown does not persist too long Chairman Murkowski is leading an Arctic CODEL that I am on, along with a number of other Senators. And I think her interest and her sincerity in this subject comes in large part from – or, at least in significant part – from hearing from the native communities in Alaska about what is happening to the villages that once were protected by sea ice in the winter now being

washed away. And the prey animals that used to be able to find that now are going different places because of the changes in temperature and ice.

So I do think it sinks in. But the problem is that the dominant political force right now in Congress is the fossil fuel industry. And it has a very singular purpose, which is to prevent any action in this space, and to protect its massive, massive subsidy. The International Monetary Fund said that the subsidy that the fossil fuel industry enjoys in the United States is \$700 billion per year. That's their evaluation of it. You can come to it a different way and look at the social cost of carbon and the way the Obama administration looked, all the scientists and the economists, they came with about \$250 billion per year if you equate it. So it's, you know, hundreds of billions of dollars per year.

When that's the prize you're fighting to defend then spending tens or even hundreds of millions of dollars per year is a very lucrative proposition. So it's very, very hard unless you disable the mechanisms for the deployment of that kind of resource to think that the fossil fuel industry's going to stop on its own from its efforts to manipulate our politics in its favor. And so we're up against a hell of an enemy.

MR. SAUMWEBER: I think maybe just one more question today. Back left there.

Q: Thanks. Hi, my name is Tim Holman (sp). I'm an intern with Brookings.

And, Senator Whitehouse, my question for you is with President Trump signaling that the United States is going to withdraw from the Paris agreement, how much does that handicap our country's ability to fight climate change, to fight carbon emission, and everything that's going on? And if so, how can we work as a bipartisan Congress, with the Democrats controlling the House and Republicans controlling the Senate, to combat and circumvent those efforts?

SEN. WHITEHOUSE: Yeah, I think it – I'm a little bit on my own on this subject. I think it hurts a little. I think it sends a lousy message. I think it, frankly, does more damage to our brand in terms of walking away from an international responsibility where we'd shown leadership than it does harm to the actual technical proposition of solving the problem of keeping it 1.5 degrees centigrade. It wasn't going to work anyway. It was an opening bid towards further steps.

To me, the really critical step is going to be what the corporate forces of America do in this Congress. There are basically three groups.

There's the fossil fuel industry itself.

There are the good guys, the Cokes and the Pepsis and the Apples and the Googles and the Bank of Americas and the Goldman Sachs and BlackRock, who take this very seriously and who stood up in favor of getting into Paris and in many cases against coming back out of Paris. So I call them the good guys, and there are probably 70 or 80 really big American corporations in that space.

And then there's the trade association sort of sidecar on all of this.

And at the moment the fossil fuel industry, although some CEOs claim that they take climate change seriously and that they support a price on carbon, that message has not gotten beyond the C-suite. And the entire political and electioneering and lobbying effort of that part of corporate America remains 100 percent dedicated to preventing any climate action. So that's a tough crowd to deal with.

Corporate America has not shown up in Congress yet. Even the good guys take literally zero interest in this problem insofar as their relations with Congress are concerned. They may do wonderful things within their corporate sphere. Many do wonderful things pushing their principles out their supply chains and communicating the importance of this issue. But the instant they get through the doors of Congress they dump all of that concern and all of that energy and all of that interest, and it's abandon hope all ye who enter here, and they don't lift a finger. That's a very tough contest for a Republican senator or congressman to look at and say how do I survive in this world when one group is like a Soviet May Day parade of political armamentarium pointed right at you and the other group looks like a Sunday School picnic of lollipops and balloons. I mean, they're just not there.

And then you go to the third group, which is the Chamber, National Association of Manufacturers, API, Farm Bureau, and essentially all of them have been totally coopted by the fossil fuel industry. Tom Donohue cannot explain how his policy against any climate action aligns with the policy of his corporate board members because they don't align.

So our project to solve this is to get the fossil fuel industry people to knock it off, to get the good guys to actually show up and take an interest in Congress so that if you're a Republican looking for a safe place to engage on this issue you see a friend somewhere, and to change the position of these various lobbying organizations to be more consistent with the public-facing positions of the corporations they represent. Since all of them are saying the right thing, this ought not to be a very significant lift. But I hate to break it to you: Sometimes in politics people say one thing and do another. (Laughter.) But that, to me, is where you turn this.

And so the thing that's interesting to me about the Paris deal is the corporate support for it, and to get the corporate support for it to say, OK, enough about Paris; now let's look at Washington. Let's solve the problem there. Because if we solve the problem here with a serious price on carbon and some good legislation that changes this, we can do a lot better than we would have under the Paris deal.

MR. SAUMWEBER: I think that's it. I know the senator has obligations back on the Hill to get to. So I want to thank him once again for joining us today. (Applause.)

SEN. WHITEHOUSE: Thank you.

MR. SAUMWEBER: And I want to – I want to thank all of you for joining us today, and to say that I very much look forward to working with you on mitigating the confluence of resentments moving forward. Thank you.

(END)