

THE HAMILTON PROJECT AT THE BROOKINGS INSTITUTION

FALK AUDITORIUM

CASTING THE NET:
A MORE EFFICIENT APPROACH TO
U.S. FISHERIES MANAGEMENT

Washington, D.C.

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PARTICIPANTS:

Welcome and Introductions:

ROBERT E. RUBIN
Co-Chair, Council on Foreign Relations
Former U.S. Treasury Secretary

ROUNDTABLE: AN ECONOMIC APPROACH TOWARD MORE SUSTAINABLE
FISHERIES:

Moderator:

MELISSA KEARNEY
Senior Fellow and Director, The Hamilton
Project
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Author:

CHRISTOPHER COSTELLO
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Discussants:

LEE CROCKETT
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PARTICIPANTS (CONT'D):

JOHN PAPPALARDO
Executive Director
Cape Cod Commercial Fisherman's Alliance

STEVE TOMENY
Captain
Steve Tomeny Charters

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P R O C E E D I N G S

MR. RUBIN: Good afternoon. I was just told by Laura who does logistics that we have wondered how large an interest there might be in fisheries. It's sort of a mini subject if you will. We just had to add extra chairs to accommodate the people who wanted to be here so we are delighted. I'm Bob Rubin and on behalf of my colleagues at the Hamilton Project, I welcome you to today's discussion, "Casting the Net: A More Efficient Approach to U.S. Fisheries Management". Since we started the Hamilton Project quite some years ago now, we have focused on broad national issues and what we viewed as being critical policy challenges with jobs, healthcare, poverty, we view incarceration as an economic issue, helping those released from prison re-enter mainstream society, education, fiscal responsibility and a great deal else.

Today we do something we have never done before, and that is to focus on a specific industry -- commercial and recreational fishing, that rarely garners attention in policy circles in Washington, but

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nevertheless, is of enormous importance for reasons I will get into in a few moments. To understand why we decided that fisheries was relevant to what we endeavor to do, let me say a word or two about the Hamilton Project before then going on with the program. About eight years ago, a group of us who cared deeply about economic policy got together and we formed what we then called the Hamilton Project. Our purpose was to support analytically rigorous and evidence based economic policy, development and also serious policy deliberation and it seems to me at least that that purpose, particularly serious policy discussion and deliberations have become ever more important as our political environment has deteriorated and policy discussions become more and more influenced by ideology and politics. Unique is an overused and badly misused word, but I truly do think that the Hamilton Project, having said that, is unique. We are not an institution, but rather we are a small partnership of policy experts, academics, former government officials, and business people who

are organized in the form of an advisory council. We are self-funding. The combination of people from various areas, from diverse areas, gives us, I think, a distinctive perspective on public policy issues as the advisory council informs the activities of the Hamilton Project. We are a totally open architecture. That is to say, we do not develop our own policy proposals, but rather we look to leading academics and policy people around, and practitioners around the country. We commission papers. The proposals that we are presented at Hamilton Project events are given the platform the Hamilton Project has, but we do not endorse; we simply present for consideration.

The Hamilton Project is in partnership or works in partnership with The Brookings Institution and the intellectual vitality of The Brookings Institution contributes enormously to what we do. We believe the objectives of economic policy should be growth, a broad based sharing, the benefits of growth and economic security. We believe that they can be, that those objectives can be mutually reinforcing

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rather than is so often said, antithetical to each other. We support market based economics, but equally we believe in strong government to provide and serve the purposes that markets by their very nature will not serve, and today's subject is a very good example, which is to say, the sustainability of an important national resource, our ocean fisheries. In this context, we decided to focus on this topic of ocean fisheries for three important reasons, and I might add as a personal comment, I am an avid salt water fly fisherman, not necessarily a skilled one, but an avid one, and this is a subject that I've been very much aware of and focused on for a long time, and that had nothing to do with our choice to do this. But it has, I think, given me a personal sense of how important and how complex this issue is. In any event, the three reasons that we focused on this particular industry, as I say, it's the first time we have done an industry specific discussion, are as follows -- first, the long term vitality of the commercial and fishing sectors, while it may be small and is small in

the context of the national economy, is of enormous importance to individual communities from New Bedford, Massachusetts to Kodiak, Alaska.

Secondly and very importantly, fishing is emblematic of many similar industries that are individually small in comparison to the whole economy, but are critical to their specific communities and whose future is heavily dependent on effectively addressing industry specific policy issues. And if you take all those industries in the aggregate, they are an important part of our global economy, rather of our national economy, and as a consequence, if you take all of the policy issues in totality, they are very important to our economic future.

And thirdly, our country has enormous natural resources. It's one of our great strengths, and it can contribute greatly to our future economic well-being. However, if we're going to realize the benefit of that national or natural endowment, these resources have to be managed so that they'll be sustainable for the long run rather than being

depleted in the short run for current benefit.

Achieving resource sustainability is obviously very difficult, as many of you know, politically and substantively, but it can be done.

A great deal has been written about the deterioration of the ocean and the fishery globally, and that is a deep, serious and I think in many ways deeply concerning problem. But there has been real progress made in the United States and federal waters, which as you know, extend out 200 miles and in theory at least, start out three miles, between the year 2000 and 2012, fish sustainability increased by 72 percent and today only 40 of the 230 fish docs monitored by NOAA are classified as overfished. And stocks have recovered. Over the past 15 years, it is estimated that 34 fish stocks have recovered from an overfished status. Having said that, there is an enormous amount to do, both to preserve the progress that has been made in the face of increasing pressure, both from new technologies and increasing demand, and also to deal with the many fisheries that are still suffering from

overfishing.

I'd add one more comment. Obviously, we're focused here on U.S. policy and the U.S. fisheries. But it is also in many ways an even more serious problem globally. I'm a member of something called the Africa Progress Panel which is led by Kofi Annan, who as you know is the Secretary General of the U.N. and they put out a report recently which talked about the horrendous hardship that the problems in the oceans are creating for many many African communities and how critical the objective is of trying to achieve some degree of sustainability in those fisheries. One broader comment in relation to the United States, I mentioned a moment ago that our vast national resources are a tremendous part of, or a tremendous contribution to what I think is the potential for us to do very well over the longer run economically, and that includes the fisheries that we are talking about today, arable land, water, the national parks, the national forests and so much else, but all of these issues -- all of these areas of resource, have their

own sustainability issues and we have a political system that will deal with them. On that note, I might add, Hamilton Project in partnership with Stanford University, so the Hamilton Project and Stanford University next month are going to present jointly in California, a discussion similar to this that will focus on the pressing problems of water, which as you know have now become almost an emergency in some parts of our country.

Let me finish on a broader note if I may. I've been around economic issues for a long, long time and I believe that the United States has enormous strengths, comparative advantages in the global economy and I believe as a consequence that we are well positioned to succeed economically over the long run, even as the global economy transforms because of, as it goes through an historical transformation because of the technology and globalization and the emergence of countries like China, India and the like. But if we are going to achieve the potential that that gives us to succeed over the long run, we must meet

hugely consequential policy challenges and its addressing those challenges that is really the object of The Hamilton Project. However all we can do is try to generate policy development and policy discussion. In order to address those policy challenges, we must have an effective government. And I believe that the fundamental and determinative factor with respect to the future of the United States is whether or not we can restore effective government in our country.

And that takes us to today's program. We have a terrific group of panelists, experienced, knowledgeable, distinguished and from a broad array of areas. In accordance with our practice at The Hamilton Project, I'm not going to go through their resumes. They're all in your materials. It's a terrific group of people. I will introduce the panelists by name and I will also mention at the same time that we have a strategy paper, which I think is highly insightful about this industry and I strongly recommend you read it, it's in your materials as well.

Our panel is entitled, "An Economic Approach

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to More Sustainable Fisheries". The panel starts with a paper that's written by Chris Costello, University of California, Santa Barbara, where he's a Professor of Environmental and Resource Economics. The discussants are John Mimikakis, Associate Vice President for Oceans Environmental Defense Fund, Steve Tomeny, Captain of Steve Tomeny Charters, Lee Crockett, Director, U.S. Oceans Pew Charitable Trusts, and John Pappalardo, Executive Director, Cape Cod Commercial Fisherman's Alliance. The moderator is Melissa Kearney, Professor of Economics, University of Maryland and Director of The Hamilton Project.

When you look at the range of capabilities that we hoard and engagements in the fishing industry that we have on this panel, including a recreational fishing charter captain, an environmental organization, a foundation that's focused on the oceans and the director of a commercial fishermen's alliance, it really is a remarkable group to bring together into one discussion. Our Hamilton Project discussions are always the product of a great deal of

work, both substantive and logistical and I'd like to thank four people for bringing this together. Melissa Kearney, I've already mentioned, the Director of The Hamilton Project, Karen Anderson, the Managing Director of The Hamilton Project, Ben Harris, the Policy Director of The Hamilton Project, and Brad Hershbein, with a Visiting Fellow from The Upjohn Institute. And we also thank our staff who are hard-working and engage in long hours and great intellectual effectiveness to put together the kind of program that we're having today. And with that, I will turn the podium over to Melissa.

MS. KEARNEY: Thank you for joining us today for this discussion about the economic challenges and opportunities in the U.S. Fishing Industry. We're going to start this off with a brief overview from Chris Costello on his proposal. So he has written a proposal for The Hamilton Project on fostering the sustainability and the economic vitality of the U.S. Fishing Industry. We're then going to have a free flowing conversation among the panelists and

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eventually after that, we'll open it up to audience Q and A.

So at the outset I do want to say that what we as an economic policy group have found so interesting about this topic is that it seems like in the case of the challenges of the U.S. Fishing Industry, the ecological or environmental and economic seem to be aligned, and furthermore, that there seems to be reasoning and evidence that perhaps market forces in particular, property rights can be leveraged to achieve the goals of both sets of ecological goals and economical. So Chris is not going to call for property rights assignment necessarily, as he'll describe, but the proposal pushes in that direction. And we're going to have a great discussion among the panelists, different viewpoints on that proposal and the broader economic policy, political challenges that set the context for this proposal. So Chris, why don't you kick it off with the discussion?

MR. COSTELLO: Excellent. Thank you

Melissa. Again, I'm Chris Costello. I'm a Professor

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of Natural Resource Economics at UC Santa Barbara and a member of the National Bureau of Economic Research and it's a real pleasure to be here speaking with you today and we've got an outstanding set of panelists to comment on this proposal. I'd like to just spend a few minutes providing some background for the proposal, get into the proposal itself and then I think Melissa will lead the discussion among the panelists.

One of the things that attracted me to, as an economist, to work on fisheries, is that with fisheries, unlike many other sectors of the economy, you know the economy and the environment go hand in hand, at least in principle. You know, if you collapse a fishery, you can't have a thriving fishery, a thriving fishing community. And if you look globally, it turns out that many many fisheries, maybe even most fisheries, have under-performed along both dimensions. The fish stocks have been collapsed and the communities that depend on them, and even the consumers that depend on them, have the economies in

those sectors have collapsed. But in the U.S., we have a very strong piece of legislation, called the Magnuson-Stevens Act which really requires paying special attention to the underlying biological stocks. And I would argue, and I think the panelists would likely agree that we've done a pretty good job in the U.S. at managing those stocks. Sure, there's work to be done but for the most part when you compare the U.S. against other countries, the underlying biological resource is in pretty good shape.

So that's not really the point I want to make. I don't want to argue that all of our fisheries are collapsing. What I want to argue is that, that sole focus on the biology, on the underlying size of the fish stock, which is important, is key, is a necessary condition for economic prosperity, but it's not a sufficient condition for economic prosperity. You can have a perfectly thriving biological stock and still have a collapsed fishing port. And so, that's really the nature of my comments today. I'd like to address these issues in the Magnuson-Stevens Act about

the effects on fishing communities, the effects on what they call optimum yield, which is really an economic concept, and what I'd like to argue is that, how you manage a fishery is likely to be at least as important as the biological targets you set. And I think the Magnuson Act has really focused mostly on the biological targets' side of things.

So why is it that management type matters so much when you care about the economics of a fishery of the communities that depend on fisheries? Well clearly without any kind of management, you're going to have a tragedy of the commons and we see that in many parts of the world. That has played out. That's not really the case in this country, at least for most fisheries, because most U.S. fisheries are in fact managed. So why am I arguing that management type matters so much, even here in the U.S.? Well let me contrast two situations. The first case is what I would call the status quo fishery institution, used for most federal fisheries in the U.S., which basically limits catch by limiting the fishing season.

The fishing regulator says, okay fishermen in this fishery, we got to limit the catch so you can only fish for three weeks or for two weeks or for three days in some cases, and we'll use other top down controls like, here are the places you can fish, and here are the gears you're allowed to use. And you know, it sounds like this could control fishing mortality and in many cases it does in the U.S. but it leads to extremely inefficient fisheries economies. It leads to a race to fish, unsafe fishing conditions, inefficient harvesting behavior and very low fish value; at least it tends to in most fisheries. So even if it's biologically solvent, even if the underlying stock is okay, the fishing communities may not thrive.

I want to compare that against another institution that is based on the principles of rights based management of property rights and NOAA calls these catch shares, and the basic idea is to give fishermen a long run stake in the outcome of the resource. Now I'm sure we'll be getting into the

various details of these catch shares but you know, what we find generally speaking, there are of course exceptions, but generally speaking, what we find are higher prices, lower costs, much more efficient fisheries, the value of the fishery, economic value often more than doubles, you see a lower risk of collapse and often more stable catches over time. So this sounds pretty promising, at least if you design these things appropriately. So that raises a question -- can U.S. fisheries adopt these things, adopt these catch shares? And the answer is yes, they can, but it has been extremely politically contentious and I suspect that we'll spend the next hour discussing those issues, and I think if you boil it down to what's the cause of that that political contention, it comes down to the idea that most people view catch shares as a one size fits all solution. Something that was developed in New Zealand in the 1980's, you can't just take that model and apply it to every fishery in the U.S. and expect to get the outcomes that you'd like to have.

So one of the key points I'd like to make is that this class of solutions, these catch shares, is not a one size fits all solution. It's all about the design to try to meet different kinds of objectives. The MSA -- the Magnuson-Stevens Act allows for catch shares, and it even recognizes that good design will achieve the kind of triple bottom line that I show on the slide. So you know, how do we move forward designing these things and adopting them and determining in which fisheries they're most appropriate? Well I would argue that we lack any kind of comprehensive transparent way at the federal level to determine the kinds of fisheries that are likely to benefit from these types of approaches, and what the likely benefits are likely to be through different designs.

And that brings me to the proposal. So I propose through this project, and I should have said at the outset that I'm tremendously grateful to The Brookings staff and Hamilton Project staff for their guidance and support on this project, but I'll take

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all the heat for the proposal, so I propose an amendment to the Magnuson-Stevens Act that would essentially require fisheries meeting certain criteria to undertake an analysis and the analysis would compare the economic, the social and the ecological effects or trade-offs between the fishery management system that's currently used in a fishery, with a number of alternatives, including an alternative that's really focused on community prosperity. How do you maintain the vitality of a fishing port, or perhaps revive the vitality of a fishing port? And a second alternative would involve something that's designed for economic profitability or economic optimization. The Council, at their discretion, could include other alternatives to this. And I lay out a number of criteria that would help the Council determine which fisheries they ought to conduct this analysis in.

Now this probably raises more questions than it answers, and so there are a number of discussion points that I know we'll be getting to later, but I

wanted to touch on just a few very briefly right now. The first is recreational fisheries. Many of our most important fisheries are shared by a commercial fishery and a recreational -- I'm a recreational fisherman, so this is of special interest to me, and one question is, how does this proposal affect recreational fisheries, or can we kind of isolate recreational fisheries away from this proposal, and I think that would be a big mistake. I think that recreational fisheries actually could thrive under this proposal if it's implemented well.

Secondly, I think there's a question of whether this kind of analysis that I'm proposing would relegate or promote stakeholder involvement in the design of fishery management institutions. I think we've learned from experience that stakeholder involvement is very important and I think this proposal actually promotes that.

Third, there is a question of what are the community affects and would this proposal promote the design for community wellbeing and the answer is -- I

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think the answer is yes and we can debate that later, but that was really the motivation behind this proposal, is that, while the biology of the fish stock might be in fine shape, the fishing communities are not.

And finally, I think there's a really important issue of what would be the fiscal impacts of this proposal. In the short run, I'm proposing an increase in the NOAA budget from Congress to help kick start this program. I think in the long run there is the potential, through something called the catch share policy that was adopted a few years ago to actually recover those funds and we can get into the details of that but essentially that upside that I talked about, that more than two fold increase in economic value -- a small fraction of that could be tapped to help pay back the costs of doing this, of executing on this program that I'm proposing. So I think I'll leave it at that and Melissa can moderate. Thank you.

MS. KEARNEY: All right. Thanks so much.

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I'm hoping at the outset we can get some general reactions from all of our discussants to the main ideas of the proposal. So to just kick this off, I'll pose a question to Lee Crockett. Lee runs all of Pew's U.S. Fishery Campaigns. So Lee, you've written or said, made statements in the past that agree with Chris's observation that catch share should not be viewed as a one size fits all solution. So how do you view his proposal? Had Chris walked the line between balancing the need for fishery autonomy and the environmental and ecological concerns?

MR. CROCKETT: Well let me just -- I want to address one thing he had up in his slide there, and it was something to the effect, how you manage a fishery is more important than the biological reference points you're using. We at Pew think that's not the right way. You have to know what you're managing to. You have to know what a sustainable level of fishing is and quotas are, irrespective of what sort of allocation or management system you have. That's fundamental to it. That needs to be addressed first,

and then we can talk about how we're going to allocate those and what's the most economically sound way to do that, and those are absolutely important questions. But to us, the fundamental question is restoring and preserving the health of the resource is the utmost importance. You know we at Pew think that Pew catch shares can be useful tools if they're designed right. We have a paper we put out a number of years ago that says "Design Matters" and there's a variety of things that can be done to address nearly every problem that people associate with a catch share program. So there is great benefit there and we've supported these. We've supported most recently, a catch share for bi-catch in a fishery for swordfish and tuna long the East Coast and the Gulf of Mexico. It's a long line fishery, and they use these string hooks across the surface. They catch a variety of other things including blue fin tuna which is severely depleted, so NIMS has put out a final EIS that says we're going to put a cap on how much you can catch of blue fin tuna and if that cap is exceeded, we're going to shut down

the fishery. And so all the fishermen, it's like 135 of them; they're like, okay, wait a minute. I don't want to be held hostage to what my colleagues do. I want to control my own destiny. So they asked for individual bi-catch quotas, so they can control their own destiny and they're responsible for their behavior. And I think that's a perfect example of how these types of programs should work, that they need to be a bottom up, they need to be fishermen saying we think this is the right way to go. This is good for us. Steve's down there -- Steve Tomeny's group is trying to do that in the gulf red snapper fisheries, to pull off the charter for hire fleet and manage that differently than the rest of it. So where I take exception to what Chris has proposed is that sort of -- the Magnuson Act Amendment that says you're going to have to analyze four management systems -- what you're currently doing, one that you choose and then two catch share systems. And the Councils are going to have to do this so, the Councils, maybe they have an economist on staff. They have very small

staffs and so they're not going to be able to do this, so they're going to have to go to the government, the National Fishery Service to get the information for it, so just the sort of physical ability to do it is questionable. And then, politically there's a larger issue. Catch shares are pretty politically volatile. I think it's less so in the commercial fisheries now but there are many people -- we need to consider that a catch share program has winners and losers. So there are some people, when you put a catch share program in, who are not going to get enough quota to continue in fishery or they may be excluded totally from the fishery -- those are the losers. Now they may be able to sell out and make a little money on the way out the door, but those are the people that the politicians and the press hear from. So they're going to be out talking about, this is bad. The government's going to put me out of business, and so you got that group of people. And then as Chris mentioned, you have a number of fisheries that have significant recreational fishing

components. These go from like New York all the way to Texas, so you have maybe 60 percent of the fisheries' commercial, 40 percent is rec. Some it's almost 50-50. So you're going to tell a recreational fisherman who, you know the history of recreational fishing in this country is, you can go fishing. There might be rules about the season and size of fish, but you don't need a permit to go fishing, you never needed a permit to go fishing. And so if you're going to put one of these kinds of programs into a recreational fishing, like a tag program perhaps, similar to what we use for big game, so if you want to hunt the deer, you got to get a tag, or a moose, you got to get a tag. So we could put these kinds of things in place for a recreational fishery and there are obvious benefits from it, from controlling the amount of fish that are killed and getting data and things like that, but you know, most of my job is dealing with politics, and I'm here to tell you, the politics of that are, at least right now, are pretty difficult and you know, the national -- when Jane

Lubchenco took over NOAA at the beginning of the Obama administration and Monica, who ran this effort is here somewhere, you know, she proposed a similar thing. If they're going to change the management system or do a new amendment, they got to consider catch share programs. And there's this huge outcry from fishermen, but primarily recreational fishermen, and it led to appropriation riders, they were block funding for it and all kinds of political hoo-haw. So I understand the desire to move the ball forward. From my experience in our view, it's better done bottom up rather than top down.

MS. KEARNEY: And let's take up on that with an opening question to John Pappalardo. By way of reminder, he's the CEO of the Cape Cod Fisherman's Alliance and has the experience of guiding the implementation of two catch shares in the area. So to be clear, Chris walked the line, he didn't mandate that fisheries adopt catch shares, but clearly pushes in the direction of consideration of catch shares. How does that correspond to your experience in the New

England case and what's your reaction? Let's pick up on Lee's term. Is this a tops down approach or would you consider this a bottoms up approach?

MR. PAPPALARDO: I think Chris is going to have -- Chris's proposal is going to have a hard time getting traction based on what I know right now, but that doesn't mean that it's not a good idea. I mean, intellectually, I enjoy the possibility that we could have that analysis, as a former Council member and chair of the Council, having access to that analysis would have been very helpful. However, just because we have answers or information, doesn't mean we're going to use it or make those decisions, and I think as Lee points out, especially in New England, catch shares have been a very charged issue. I myself was anti-catch share, anti-ITQ in the 1990's and early 2000's, and I think the turning point for me was when my organization and the fisheries that we depend on were in such a horrible state that our Council was considering shutting us down but allowing others to continue to fish on that stock. And so we said, well,

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wait a minute. So all of a sudden I had to start considering catch share for my little group. And so we went in and convinced, in almost a two year campaign to convince our Council at the time that rather than regulate us out of business, that they should give us a higher level of accountability and responsibility, in exchange for a small amount of fish. And so we ran a pilot program for a couple years, and during that period, we learned a bit about what a catch share -- what the opportunities catch share provide to our community were. So I think when Magnuson changed and required annual catch limits, it's been said by people I know on the hill, the reason it actually explicitly had to say that was because New England wasn't doing it. The rest of the country had figured it out and was doing it that way, but that was the New England clause, and I think some of you in the room will concur. So when that happened, it almost set in motion a chain of events that led to and will continue to lead the catch shares, at least considered if not ultimately

transition to catch shares in New England, fishery by fishery. But I will say, one of the things that you've mentioned in your paper but I think is actually the most important thing, the most important thing in management, and now that we have scientifically set catch limits, is accountability to those limits, is investment in enforcement on the water and dockside, as well as at sea observation and without that, you end up in a situation where you have a fishery management plan that could be a catch share in name, but no oversight or accountability to your goals. And you end up with a declining resource, like we have with cod fish right now. It's in a catch share, but there's widespread corruption going on in the management process and the management system not being forced and as a result, it's very easy for people to catch one type of stock, one type of codfish in one region and claim they're landing it, catching it from a different region. And so that's contributing to undermining what some people would consider the stock that built this country.

So I think without -- whether it's a catch share or any other type of management program, if you're not willing to invest in enforcing your decisions, and sticking to the science, it doesn't really matter what type of program you use. I think what a catch share does offer a fishery, is a way to more flexibly deal with issues that come up, inter-cycle. And what I mean by that is in between decision making cycles of the Council, the management body, or the government's ability to react to rulemaking, stuff happens on the water. And if you've got resources allocated out and you have issues happen inter-year, fishermen or communities or organizations can address those issues by swapping or trading or leasing quota and becoming more efficient in the utilization of what we're supposed to be able to catch.

MS. KEARNEY: Okay. So next I'll pose a question to John Mimikakis from the Environmental Defense Fund. So it seems that in this case, both environmentalists and economists studying the issue, feel like a push towards property rights is a good

idea. Economists and environmentalists are not always on the same team. Is that a fair assessment? Can you elaborate on that?

MR. MIMIKAKIS: I think that is a fair assessment and I think that increasingly also that fishermen who have had a chance to fish under a system of fishing rights recognize that it gives them greater flexibility. It allows a greater kind of accountability that John spoke about. And it helps tilt the playing field a little bit so that instead of having to operate in the system, a byzantine system of rules where the incentives are for the fisherman to overfish, and for there to be a cat and mouse game between fishermen and fishery managers, you can actually get partnerships and more cooperative behavior and that's what we've seen a lot of. There are literally hundreds of catch share programs around the world, managing hundreds more kinds of species. Two-thirds of the catch in the U.S. today, the catch in U.S. federal waters are caught under catch shares. Some of these programs have been in place for decades

and so there are lots of lessons learned about how to make programs like this really work, and I think that's one of the benefits of Chris's proposal. What we've found at EDF in helping to try to achieve sustainable fisheries, is we've seen what Lee pointed out, that there's tremendous politics in this, whenever you're dealing with a natural resource and you're dealing with equity issues in a natural resource, there's bound to be lots of politics, and fisheries is fraught with politics. And Chris's proposal won't solve that, but it will help. Because one of the things that we found is, the more information you can provide and the more you can work with fishermen to understand what it would be like to operate under a different kind of system, what sustainable fishing really could mean for them, what would their profitability look like, what would the rules be like, what kind of flexibility would they have, what are the specific regulations they'd have to comply with -- the more familiar they can be going into it, the more they can contribute to a

conversation about how to design a program that's effective.

At EDF we've put together, we've studied a lot of those programs that I mentioned that are around the world, and we put together a catch share design manual that tries to identify all the different ways that you can customize a catch share for a particular fishery. This is a highly regulated sector. Most fishing businesses are small businesses. What we found is that the more we can bring in examples, the more we can bring in fishermen to talk with other fishermen, to share their views and experiences and the more we can show them -- explain to them the trade-offs and the design options, the better it will be and I think that Chris's proposal goes to this.

It won't solve the politics because at the end of the day, there still will be a decision that would have to be made about how to allocate resource rights among a variety of users, but I think the system is better off when all the parties -- the government and the fishermen, who both have to be at

the table -- this is both a top down -- it is necessarily a top down and bottom up approach. It's a regulated fishery, so the government is necessarily involved. I'm sorry -- it's a regulated sector. And these fishermen in the communities have their livelihoods at stake, so both have to be at the table. And the more informed and educated and skilled fishermen participants are in coming to the table and helping to craft their own future, the better off these kinds of discussions will go.

MS. KEARNEY: That's a perfect tee up for our real live fisherman on the panel. Captain Steve Tomeny's been an avid recreational fisherman since childhood, with vast experience in Gulf of Mexico fisheries issues. How does that inform your view of this proposal?

MR. TOMENY: Well, we've, like I've said earlier, I've been living this, what's in Chris's paper. Thirty years ago when I started in the charter fishery or even further back, I was decking on boats forty years ago, but when I started my own business

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thirty years ago, there were basically no rules. It was pretty wide open. I think I remember the first rule I ever remember on red snapper was in the late 1980's. They put a size limit on them. It was only 12 inches -- very small. And so we went a couple years, I got into one of my bigger boats and got started full time into it and here came the regulations. And that is the scariest thing, to all of a sudden be able to run with no rules, to have, I mean, a bag limit and we didn't have seasons yet, but we had a bag limit on red snapper which was always our biggest draw, to catch red snapper. And at the same time, they were regulating the commercial fishery and there was lots of resistance and push back. You'll find a lot of the folks that are fishing -- it's a little bit of an alternative lifestyle, they kind of tend to end up in that to not be in such a regulated business environment and low and behold, you become very regulated and doing a lot of paperwork, reporting fish, whether it's commercial or charter, and it can be a little ironic that you have so much regulation in

life. But having thirty years to look back at it -- so many things have worked so well. The red snapper commercial fishery that went into an IFQ system has changed our lives and there's not a fisherman, for all the guys that will complain, and whine about this rule or that rule or this part of the IFQ system, if you ever just take one and button him down and say would you like to go back to where it was ten years ago? And to the man, nobody will ever say they want to go back. So you know, comparing, so here we are now, into the recreational end of it. We've had this decline in the red snapper seasons in our recreational charter fishery. It's been forecast. The folks at the National Marine Fisheries have told us this is what's going to happen. And yet we've had this belligerent, let's stay with status quo going on at the councils, and it's not only particular council members and the other private recreational, it's within our industry in the charter fleets. But when you get down to a seven day federal season, now they come to the table. And we have great industry

movement right now for something better than what's been going on.

And so, very soon, hopefully at the next Council meeting, we have this amendment 40 should be up for vote. It was discussed quite a bit at this last meeting, and so, we're on the stage of getting a separate allocation for the charter fleets. It's not quite a catch share, but most of the industry charter boat guys that are a little forward thinking -- I can think of several of them that three years ago or two years ago, if I had said something to them about having an IFQ on the charter fleets, they'd, well they'd just tell you there's no way, we're not going to have it. And it's, like I say, people now are trying or going to try to embrace this. So I think most people in the charter fleets have realized that we'll never go back to the wide open access that we had. And once that -- that's a big hurdle, it's a big mentality to make with some of these fishermen. And we're even seeing it in the private rec fishermen, the guys with their own boats. Lee was alluding to it

before. It's just, you know -- I have a right to go catch these fish and you know, and I want to do it several times a year, not just when the government tells me to. So there is that, and some of the push back that I feel -- Lee's paper hits on so many good things and so many things that I have seen just come through in my life on the water. The race to fish in a commercial fishery -- we were fishing ten day seasons. The price of red snapper was in the tank. Your prices go down, it's dangerous, you're having to go when the season's open, not when the weather's good. You're flooding the market with fish because the buyers know you got to go on those ten days that it's open and they take the best shot at getting the fish as cheaply as they can. So catch shares have relieved so many of those things for us in the commercial fishery and now you have the charter fleet coming to say, we want this for our fishery. And they know it's got to be designed different and none of it's the same. I mean, there are so many different kinds of boats, just even in a recreational fishery.

In the charter fishery, you've got big boats, new boats, expensive boats, and yet you've got a guy competing with you that has a less expensive boat that is in not that great a shape, so, and there's a lot of price differences. The charter fleet is a completely different animal because it's not controlled just with the price of fish at the market. There's a lot to do with personality of the captains and the crew and how nice you treat people and what you offer. And so you don't always have to have this big catch. It's great for repeat business. It's what you build your business with. I ended up with four big 65 foot boats in a year where we had, in the charter fishery, we were overfishing our quota. We were overfishing it every year, but there was a -- I think for about an eight year period, we had a six month season with a four fish bag limit, and it was great for business. Now the fish catch was actually going down, but business was good. You didn't have to catch your limit. You just had to treat people well and do good.

MS. KEARNEY: So Chris you've got a range of
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support versus skepticism for both the specifics of your proposal and the broader push towards catch shares. Do you want to weigh in?

MR. COSTELLO: Of course. Maybe I'll just make a couple of very brief comments, and then I'd like to hear from other people. But the one thing I disagree with that I heard was from Lee about a claim I made about biology. I think it's -- I want to emphasize something I said. A strong robust underlying biological stock is a necessary condition for a thriving fishery's economy -- absolutely. It's not that you forget stock assessments and don't get fishing mortality under control. That's essential to it. That's an essential underpinning to a thriving fishery's economy. My point was that it's not a sufficient condition for a thriving fishery's economy. You could have lots of fish in the sea, but manage the fishery in a way that the fishery's economy collapses, and that was the point, and I think I'd be interested to hear if people disagree with that clarification of what I said. So there's that, and then I guess I --

this is a great panel you've put together and a very interesting set of perspectives and I also just want to make the point and I think people who are involved with fisheries know this is the case. When you talk about fisheries in New England and you talk about fisheries in Alaska, and you talk about fisheries in the Gulf, you're going to get very different viewpoints, because the experience has been very different in those cases. And so I think, you know, we don't want to zero in on one bad case and sort of have that bad apple destroy the whole batch. But at the same time we don't want to look at one great example and just keep pointing to the same poster child if it isn't representative. So --

MR. PAPPALARDO: Wait, so who's the bad apple?

MR. COSTELLO: Sorry. No but, you know, there's a lot of discontent with New England, with the way that that cashier was rolled out and I think a lot of that has to do with the fact that quotas went down at the same time, so it wasn't the fault of the

cashier, it was the fault of, you know, the earlier overexploitation, but that's an issue we can dig into if we want. But the last point I would just make Melissa is, to be perfectly frank; I'm not hanging my whole career on this particular proposal. This is a way to open a discussion about the way we manage fisheries in the United States and I'd like to -- I don't want to necessarily just focus on the details of this particular proposal but more about this idea of, to achieve economic prosperity in our fisheries, if that's one of our goals, then is the idea that we could provide more rights and responsibilities to the fishermen a way we want to go, and I think it is.

MR. PAPPALARDO: I could respond to that. Let's go back to the bad apple days. New England, when I was chairing the Council and even before that when I was on the Council and maybe before that when I was stuck in the audience at those Council meetings, there were years when we would amend, or frameworks would change our ground fish plan, which is cod fish, it would change it three and four times in a year.

And we were on like this merry-go-round to hell. And we would meet, and we'd meet until 11, 12, one in the morning, and people are throwing chairs and flipping over tables and you know, you ruined Christmas for me, and a bunch of other stuff I shouldn't say here, but you know, we made this transition to a catch share, a type of catch share that requires fishermen to self-select and join a group, form a group so that they can unlock their shares, of their historical catch, and then they're supposed to co-manage it. It's worked really well for some communities, not so great for others. You're right, the quotas that came in after that plan was put into place really turned a lot of people's anger towards the catch share as opposed to anger towards the status of the resource, because whether we were in the old system or this new system, the fact that the resource was in bad shape was really the story. But spin doctors and others really help people point a finger towards catch shares. And so that was sort of the reason that catch shares got a bum rap in New England. Quietly we have another sort

of catch share system. Five percent of our Atlantic sea scallop fishery is in a catch share, it's in an ITQ and there's hardly any complaining or any need for managers to get involved. And that's one of the great things I think about a community based catch share, which you reference in your paper. The opportunity for the Council process, the federal process to receive community based solutions, and to allow communities to take responsibility and make investments in their future, is a great promise for certain types of catch shares. We certainly, in my organization, we're doing that. We've gone out and borrowed money and invested money in catch shares and we now pool this quota and lease it back to new fishermen, as a way to mitigate one of the hurdles that people constantly point to when you go to a catch share, is that -- once you go to catch share, it's impossible for the next guy to get in, and all the people that are granted the rights are free out of the gate, they win. And the only way for it to go forward is for some other big guy to gobble up the guy that's

not quite as big as him and get bigger, and eventually it just escalates, right? That's the story you hear. Well, there's certainly examples of that, I mean, I think Serve Plan is an example of the first fishery that went on ITQ, the first catch share in the nation, certainly ended up hyper-consolidated, but I tell you, there are organizations, ours included, that went out and bought a small piece of the Serve Plan and brought it back to Cape Cod. We lease it out to four or five fishermen that are young, and because we back them and have the quota banks, we underwrite them and allow them to invest in their business. We're trying to build businesses with catch shares too. It doesn't necessarily need to be the end of business and the consolidation of business. But you need to have a community or an organization that's willing to take a long term look into the future and actually roll up its sleeves and get involved in this stuff and not say, well that's Fisheries Management, I'm not getting involved with that. Actually, I think that was one of the problems in New England. We did way too much

micromanagement at that table, and so having the opportunity as a community or as a cooperative or a group of fishermen or businessmen, come up with our own solutions to have conservation equivalency if you will within the requirements of federal law, but do it in a way that works for our business. That would be fantastic. So again, that might be something as a by-product of this. I'll just make this last point if I might. The entire time that I was on the Council, and when I chaired this Council, we never ever talked about how many jobs do we want to create or maintain, how many dollars do we want to generate out of this fishery or that fishery. Those types of discussions never happened, not explicitly. If you pour through the appendix, you can look at, well this option, we think will cut jobs in this port for this gear type and then this option will increase these and this one might be neutral. It's all in the appendix, but the Council itself, and even its advisory panel, which is all industry, never said, hey, look, we want to increase the amount of protein that this management

plant produces. We want more food production, we want more jobs, we want more dollars. We never talked about it but it was always we want more that drove our decision making. We just didn't lay it on the table. I think that would be refreshing to have those metrics and also have those goals explicit in a plan.

MS. KEARNEY: I don't hear much suggesting that this isn't a good idea, but rather, there are political or cultural obstacles to moving this forward. I mean, what's the nature of the political backlash? Is it economic in some places? Is it reactive to a particular historical experience? How much of it is philosophical?

MR. TOMENY: I could give one example in the Gulf. A bad rap that catch shares got, the particular year that the catch share program was implemented happened to coincide with the lowest quota we'd ever had. It had nothing to do with catch shares, it just happened to be that it came right after the revisions in the Magnuson Act in 2006, so in 2007, they severely lowered the total allowable catch on red snapper that

year to comply with the law and it just happened to be the same year that catch shares were implemented. So there were people saying those catch shares lowered out quota. It had nothing to do with it, and those are perceptions that we're having to overcome. And there is just a belligerence towards the property rights part, especially in the private recreational angle. I think, and I started -- that's how I started in my life -- just a private guy with a love for boats and things. And so you've got these people who are used to going out and obeying the law, and catching the limits and things, but there being so many, it's an unconstrained group. And often we'll hear some of the private recreational angler group leaders will get up at the Council meetings and testify, and for some reason, they use a number, I have no way to challenge it or anything, but they like to use a number of about four million recreational anglers in the Gulf. And we know they don't all go red snapper fishing. So usually if I go behind one of those guys and do my testimony, I'll say well, you use the four million

number. I'll say, let's just take a million. Just take a quarter of it and send them red snapper fishing in the Gulf. And we have a great fishery right now. We have plenty of fish and they're big and an average fish is way bigger than it was. And the NIMS uses an eight pound average fish and we have a limit of two, so let's send a million people out and catch their limit one time. You come up with 16 million pounds. And the total allowable catch or quota is 11, for the commercial and the recreational fishery. So it's a numbers problem that's really hard to break down to people to say, we've got a big problem with just the amount of folks that want to catch them and we have a great fishery, and the fish are there, and they're easy to catch and they're bigger than they used to be, so they weigh more and you knock the quota out quicker. So that's what we're dealing with -- some of what we're dealing with. And the economies of it, depends on which user group you are. Everybody's raising their hand and saying there's four million of us and we send people, put them in hotel rooms and

they're buying boats and burning gasoline and all this is great for the economy and the charter boat guys will say I'll take twenty at a time, and they're all in the hotels. And everybody's important and then commercial fishermen, you know, we supply food to the country and we represent the other 97 percent of the folks that don't go fishing in the Gulf. So there's where all the head butting comes from.

MS. KEARNEY: But would you say the status quo is not sustainable?

MR. TOMENY: No, the status quo is just not working. And nobody's happy. That's part of some of the other angst that's coming from it. And so now we're seeing another user group, the charter fleets are about to embrace some kind of a catch share program and at least the very first part of it is to have a separate quota for the charter for hiring. And that's not a catch share on its own, but pretty much if you're going to go further with it, you have to start with your own quota. And you'll be able to afford accountability measures. We're actually

proposing putting VMS's, which is a GPS tracking device, where the NOAA will know who went fishing every day. And we'll have a corresponding catch report that is emailed off of this satellite tracking device. So we have the technology and it's in place in some pilot programs now in the Head Boat collaborative. And my boats are head boats. We have an app that we send in our catch reports weekly. But that's the only part of the charter fleet that's fully accountable right now. The rest of it's all done through surveys of the anglers after they get off the boat. We're moving real quick into a very stringent accountability measure for all the charter boats.

MS. KEARNEY: John, you want to jump in?

MR. MIMIKAKIS: Sure, Melissa you asked about whether there's ideological opposition. And I think that there has been. I think that the good news is that that's starting to dissipate as there are more and more examples of catch shares on the water that work for different constituencies. I think that maybe what led to some of the ideological concerns earlier

were you know this -- like we talked about -- these are equity issues, they are equity fights that are going on. You can't erase those. They have to happen. Hopefully you can set up a process that is fair and that it is informed, so that you can reach a fair decision at the end of the day. You know, it's impossible for anyone to look at a situation and decide a priori what's fair. But hopefully if you set up a fair process, people can work out their differences and come to some conclusion that's fair. I think that increasingly, people realize that any kind of fishery management system creates equity concerns. Any fishery management system creates winners and losers, whether it's open access or not. That's always involved. And what's different here when you're talking about a catch share, is you're making that very explicit when you're allocating specific rights to numbers of fish or poundage of fish or areas or things like that. I think as some of the examples have gone on the water that show how these can actually work, what people realize is wow, you

know, when you're actually talking about this issue explicitly, you can do things like what John talked about. You can set up a bank. You can enable other new fishermen to come in. And those are hard things to do if you're not, if the denominator there isn't actually fishing quota. So it enables you to take into account equity concerns. It enables actually what the kind of analysis that Chris is talking about. Let's figure out what would be the impact on communities. It helps just make some of those issues a little bit more explicit. And I think that one of the things that we found that I think is consistent with what Steve is saying, is when we've gone to work with fishermen in different communities, and they say, well don't talk to us about catch shares. And we say, okay, well what kind of system do you want. And they say, well I want a system where I've got quota that I can manage myself. And we say okay, let's do that then. It's a catch share. We can call it whatever you want. And the same thing happened in the Gulf with this pilot program there in the Head Boats, where

there was a lot of discomfort with the idea that there might be a kind of catch share in a recreational sector. The program went on the water in January. They started fishing. People who belong to this group started fishing in January. It was a nine day season for everybody else. They're still out there fishing on the water today and all of a sudden everybody looks over and says I want what they have. So I think that --

MR. TOMENY: That was in the design.

MR. MIMIKAKIS: It was in the design.

MR. TOMENY: To say, we want the other guys to point their finger and say I want what he has.

MR. MIMIKAKIS: That's right.

MR. TOMENY: Because we worked on that Head Boat thing. Sure.

MR. MIMIKAKIS: So the evidence speaks for itself.

MS. KEARNEY: So as someone who hasn't lived through the politics of this issue, it seemed to me that Chris's proposal is a bit of a soft nudge. You

have to take this analysis, right? And then the view is, once you're equipped with information, you're going to make this choice. I mean, is there -- given that there is skepticism about this, if not this what? Or could Chris have even gotten further and proposed something more stringent?

MR. CROCKETT: Well I guess, I'll say this again. I don't consider his proposal to be a soft nudge.

MS. KEARNEY: Because it requires an analysis that you think will be costly resource-wise.

MR. CROCKETT: Right. And the councils are ill equipped to do, the idea that we're going to get 50 million dollars extra appropriated to pay for this, I think is not likely and there is -- many people would argue that there are better uses for that money from just assessing the health of the resource. I think, you know what John talked about and all these guys talked about, is that a better way that's going to be more sustainable to get people to do this is to -- as these fisheries get into the system and they

start looking like the red snapper commercial fishery. Those guys are fishing all year long. They got their quota and the charter guy -- like Steve can look at that and go, well why can't I do that. I mean if I can only fish nine days, that's not a good business plan. So those sort of positive examples of how these things work and they're economically beneficial, I think will do a much better job of selling the programs. Now, it you're -- that's going to take a while. So if you're going to -- if you wanted to really push the ball forward, you know, that's when I think you're going to start getting the push back from people, and like John said, he was opposed to these. I was helping him oppose these things in the early 1990's. And these things are great to demagogue. I mean there are all kinds of analogies.

We're going to turn fishermen into share croppers and we're going to Walmart-ize the ocean, and you know that whole property rights kind of stuff. So if you don't -- if you're opposed to this stuff, there's some really inflammatory stuff you can kind of

throw on the table, and I think we saw that, you know, when the catch share policy from NOAA came out in I guess it was 2005 or so, you know, that's what people did, and that has resonance. So you know, it's kind of like, do you want to try to really get the ball rolling fast, or do you want it kind of slow and steady, build on examples of success and help them use that to get to the right conclusion?

MR. COSTELLO: Just a quick reaction. One reason I stopped short of let's say a proposal that would recommend implementing catch shares in all U.S. fisheries, or something like that, is that A, I'm not 100 percent convinced they're appropriate in every U.S. fishery, and B, I think just as I think our panelists would all agree, I think the appropriate design for a given fishery A is going to be different than the appropriate design for fishery B. And so that's why the proposal is to do the analysis of not just several versions of a catch share with different objectives but also potentially another, the status quo and even another alternative that doesn't involve

a catch share. And at the end of that analysis if a non-catch share turns out to meet the objectives of the fishery in a better way, then I think that's the management system that ought to be adopted.

MS. KEARNEY: So you say from a practical point of view, we need fisheries to design their own management systems, and we hear also for political buy in, we need that, but Lee says they don't have the resources to do that.

MR. COSTELLO: Yeah.

MS. KEARNEY: So what do we do?

MR. COSTELLO: Well I have a first cut response for that and I'd be interested to hear the other panelists' thoughts. So first of all, I didn't propose a 50 million dollar increase in NOAA's budget. It was like a 10 or 20 million dollar increase. It's to bring the total up to 50. But anyway, we can go back and look at that. So I propose a short run increase in NOAA's budget to sort of kick start these analyses, but the concept is -- so there's this thing called the catch share policy that was adopted by NOAA

three or four years ago. And in that policy there's explicit language about revenue sharing, so if a management system increases the wealth of a fishery, a fraction of that upside can be tapped by the federal government to pay for analyses like this. And I propose using that mechanism so that in the long wrong, this is fiscal neutral.

MS. KEARNEY: Yes.

MR. MIMIKAKIS: We also, EDF and a number of academic researchers also did a study some time ago that looked at what the impact would be if the U.S. were to adopt catch shares more broadly, what would be the impact on the U.S. Treasury. There are some additional expenses in monitoring things like that for an individual catch share program, but as Chris has mentioned, when you can manage a fishery sustainably, and you can recover the fish population and the fishery is operated in a more economical way, that fishery generates more resources. Even without any kind of repayment mechanism like what Chris was talking about, just with the existing tax base, if

you've got a more profitable fishery, then the government's realizing more revenues out of that. The study that I mentioned talked basically about how catch shares pay for themselves, given the additional revenue to the federal treasury. So that could be -- this could be just one of the things where these kinds of analyses could basically help pay for themselves at the end of the day.

MS. KEARNEY: Time for audience Q and A.

Lisa will bring you the mike.

MR. NELSON: Hi, John Nelson, with Wall Street Without Walls. Thank you very much. Just to make a policy point, I believe you talked about New Zealand and New Zealand's very first effort in this came from the Resource Management Act of the 1980's because the country was facing a federal bankruptcy. So the connection between finance and policy is extremely important. So could we in terms of finance, have a catch share exchange possibly, where you have -- you can monetize the value of an exchange, just like you do the carbon exchange. Could you have

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a securitization of catch shares? Could there be social performance bonds related to the catch share management? These are financial innovations that would help drive the policy context. I'm just curious about your reaction.

MR. COSTELLO: I think that's a very very interesting idea, and in fact, at a micro level they are securitized. So the ITQs that were adopted in New Zealand and in many U.S. fisheries, Alaska and a number of other fisheries, they are secure assets and there is a market exchange. So they are transferred and you can look at the quote price and it changes on a daily or weekly basis for all the different species that are covered. So to that extent, that sort of thing is already occurring, but I think more of that could be done.

SPEAKER: I think what Chris is proposing is to create some more information, and the critique of the information, nothing more, right? And the critique of the information is we don't have enough money for it, and it doesn't guarantee a better

outcome. And I think those are sort of not the right critiques because there is always a cost in the value of information and we should look at whether the value of this information justifies the cost, right? And I think in this case, to create in some fisheries which are slowly recovering, are nowhere near the economic potential, spending a little bit more money at looking at different ways ought to be one where the cost vastly -- where the value of the information is vastly greater than the cost. And then at that point we're just talking about how to pay for it, which shouldn't be so hard. And the second point is, no, of course logos never guarantees pathos or ethos, but you're not going to get pathos or ethos without the logos, right? So that's for me, not a particularly valid argument. Thanks.

MS. KEARNEY: Are there others who want to jump in? Want to get one from here?

MR. RUBIN: Hi, Andrew Rubin, Oceana. No relation to Bob. So catch shares are not always without their negative incentives. In certain

circumstances and settings, it's possible that catch shares may encourage mining of fish, in certain circumstances with different players. What corresponding policies would you suggest? I think this is towards the panel, but specifically towards Mr. Costello, to offset such an incentive.

MR. COSTELLO: I think that's a really important point, and we just sort of tiptoed around it throughout the panel, but I think that's absolutely right. Strong monitoring and enforcement for example, is really key, but, and so I want to make two points about this. The first is that when you change the fishery management institutions, it changes the incentives to cheat. And I think often, if a catch share is well designed, it changes them for society's benefit. You're pointing out that it is possible to design a catch share that changes it for society's detriment, and I think that's true. So the sort of thing that I think you'd want to encourage increasing is individual accountability. So for example, in the West Coast Ground Fish Fishery which adopted an ITQ

catch share in 2011, there are something like 60 different species that each have their own quota. So as a fisherman, you pulled some sort of quota share in roughly 60 different species and they actually monitor. They send someone out on your boat every day to monitor what you catch and count it against your individual quota. So that's an example of something that I think is a good idea to help maintain the vitality of the program.

MS. KEARNEY: Right here in the front row.

SPEAKER: Thank you for the discussion -- a lot of discussion about recreational versus charters versus commercials. There was a report recently by Johnny Morris and Scott Deal talked about recreational fishing and providing some new ideas for that but I don't think they talked about any of these issues here and part of this discussion has been I think this growing gulf between the recreational people and the commercials and others. What can we be doing -- what sort of dialog should be happening with that community to bring them better in line in terms of overall

common perspectives and approaches to dealing with these issues?

MR. CROCKETT: I'll take a crack at that. You know, I'm an avid recreational fisherman. I've spent tens of thousands of dollars on boats and gear and stuff like that so I have some idea what drives these folks. And what's driving a lot of this is misinformation. And there's this -- we at Pew have done a lot of focus grouping and things like this to kind of figure out what recreational fishermen think and how they feel about regulations in themselves and one of the kind of benchmark things is, they don't see themselves as the problem, because they look at themselves as an individual and they go, how can I, how can Grandpa taking out his two kids, catching four fish, be a problem? So they look at it from their individual realm and say, I can't. Look at all these commercial guys. I'm just catching a few fish. What they don't recognize is, there are four million of them in the Gulf. And so what I think we need is some leaders in the recreational community who have

veracity and trust to start talking about, you know, look, there's a lot of us and if we want to preserve our avocation, we need to think about a better way to do this. But unfortunately, we're not having that discussion. We're having a discussion that talks about -- this is in the Morris Deal report -- we want more fish. There are four million of us in the Gulf, so we should get 75 percent of the red snapper quota. So they're trying to, you know, the idea there I guess is, if we get enough quota that we can't possibly exceed it, that will solve our problems. So you got that going on. And then, there's also a big push, and Steve can talk about this, to sort of take recreational fishing in certain parts of the world, like the Gulf of Mexico, out of federal management. Put it in the hands of the states, because the states, they argue, would do a better job. What's really going on there is the states have much laxer rules. So you go from a system where you got to have a catch limit and accountability measures and consequences if a quota is exceeded, to where you don't have any of

that. Now I would argue that's a self-defeating policy in the future, but that's the kind of stuff that's going on. There's not a real -- I shouldn't say this -- honest, but they're not really looking at the whole complete picture and having a discussion of the whole range of the problem and what potential solutions are. And you know, until they start having that discussion in a real way with trusted leaders taking positions, we're going to have a problem with those guys for quite a while.

MS. KEARNEY: Chris, do you want to weigh in on this?

MR. COSTELLO: Just a quick comment on that, Lee, thanks. You know, I think I agree with Lee that one of the huge issues between recreational and commercial is this allocation idea. In the Gulf, it's been about 50-50. About 50 percent recreational, 50 percent commercial, and what you hear a lot from the recreational sector is that our sector's growing, and so our percentage ought to keep growing over time.

Now I think catch shares present an interesting

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opportunity there. Without catch shares, the way your percentage grows, is you pay a bunch of lobbyists to come here and argue for a larger share, and maybe you win and maybe you don't. With catch shares, the way you increase your percentage is through a market transaction, just like everything else you do in your life. And so, I think there are many many issues to be resolved in that debate, but I think catch shares may present an opportunity for growing the recreational sector. They don't necessarily impose a cost.

MS. KEARNEY: We have time for maybe two more questions -- in the back?

MR. KNUCKLES: Hi, Will Knuckles. Thinking bigger picture than just catch shares, where the federal government's emphasis has gone sort of in my lifetime has been controlling how we kill fish for a while because we realize our fish killing practice wasn't very sustainable and it was putting people out of work and then in sort of the Clinton Gore years, they had an emphasis on water sheds and we sort of

looked at that as a habitat thing. We focused on that for a while and we went in the Bush years, and there was a wetlands emphasis at that time with central fish habitats sort of dovetailing over into those administrations which hit a bit of a roadblock when we really tried to control anything. It was on the land, so we backed off from that. And then more recently, it's really been catch shares, catch shares, catch shares, catch shares, which has worked in some parts of the country and in other parts it's politically failed pretty much outright. But my question is, as we're talking about attention and allocation of resources, both intellectual resources and funding resources. If you went down this road and it really worked, with sort of the waning of all that looks at anything other than how best we manage killing fish, how far can we get towards either, whatever your metric is, whether it's MSY or whether it's going to be towards a healthy eco-system? Just how impactful do you think this tool is, if it works as well as it can?

MR. COSTELLO: So I'll take that. That's an

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outstanding question. And frankly, that's the nature of my proposal. It says let's look at what the potential impacts are over time of different approaches to managing the fisheries. So I mean really, that's what I'm proposing we do. I think that raises a question of can we do it? Do we have the ability to actually make these kinds of projections and I think the answer is yes. We do this sort of thing for stock assessment all the time and so, looking at adding in kind of an economic or social dimension into that, which, there's precedent for doing this, I think we have the ability to do that. Now how big is that potential? You know, many studies have come out over the last, let's say, five to ten years, looking at different forms of fishery management and what their effects are. And so we have good benchmarks to have a sense of what is the upside potential in jobs or in economic vitality over time, in biomass of fish in the water. I quoted one number; I said a two-fold increase. We just finished a study in the Gulf on the commercial sector, and found that

the value of the permits went up ten-fold with the adoption of catch shares. Now that's just one metric and it's one fishery. But there's lots of evidence that it's starting to mount that gives us some idea of what the upside potentials are.

MR. MIMIKAKIS: So we've been talking in our conversation up here about the United States, but globally a lot of fisheries are in trouble. And I think that, if you just think about catch shares as a set of principles that can be adopted in many different fisheries and you look around the world, there are many examples of property rights, fishing rights that have been adopted in many different fisheries. By and large many of those have worked. It seems like of all the environmental problems that you could look at, there really are a suite of solutions here that can solve the problem. And so I think that in contrast to some of the other global problems, you look at the ability to try to focus on global overfishing and tackle that, there really is, I think, a lot of hope that within our lifetimes we

could totally solve this problem.

MS. KEARNEY: And Lee.

MR. CROCKETT: I just wanted to add to that. You know, I think catch shares offer a great, if done right and designed right and all that sort of thing, are a great tool to make single species management work well. But they don't obviate the need to do larger management of the system. So it doesn't mean you don't have to worry about protecting habitat areas that are important for spawning and protection and it doesn't mean you ignore bi-catching species, or you worry about leaving enough forage fish, food fish in the water to feed the larger eco-system. So it's a tool that could be very useful in having sustainable single species but we also have to think broader and in a more eco-system focus and how fishing impacts the eco-system and how the eco-system impacts fishing and take that into consideration in our management considerations of what quotas we set, where we allow fishing to take place, how the fishing, what types of fishing we allow -- all those things have an impact on

the eco-system, and we need to consider that. We can't -- you know; it's not this or that. It's all of it.

MS. KEARNEY: I like that. That brings us to the end of our allotted time and I like to end on a positive note. That was mostly optimistic. So thank you all for being here, and let's give a round of thanks to our panelists. Thanks.

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