



**Technical Hearing - Oswego, NY
International Joint Commission, Canadian Section - LOSL Hearing
Proposal for Lake Ontario St. Lawrence River Regulation
July 17th, 2013**

Lana Pollack: Good morning. I'm Lana Pollack. I'm one of the 6 Commissioners and I am the Chair of the U.S. Section and it's my pleasure and honour to be chairing this morning's session. We have 2 panels that we will hear from, each with 5 people; everybody is here. While we have adequate time for people to speak; we still have to observe the speaking limits or we will run into a meeting we have with your Editorial Board that follows this public session.

Let me just start this morning by asking my colleagues to introduce themselves. We'll start with Commissioner Bouchard.

Benoît Bouchard: Thank you. Good morning, my name is Benoît Bouchard I'm from Montreal. I'm a new member of the Board appointed recently. I'm looking forward to have your opinion this morning and I will do my best with my colleagues to answer your questions as we can. Thank you.

Dereth Glance: Good morning everybody. My name's Dereth Glance, U.S. Commissioner. I live just down the road in Syracuse, New York. It's very wonderful to be here this morning.

Rich Moy: Good morning, my name is Rich Moy. I'm a U.S. Commissioner and I'm from the West, but I worked my whole life in water resources so I'm very intrigued by this issue and very interested in learning more from you today.

Joe Comuzzi: Good morning. My name is Joe Comuzzi, I'm a Commissioner. I come from Thunder Bay which is on the North Shore of Lake Superior. We have very good water on Lake Superior and we ship it down to you by about 13 billion litres a day, so use it but don't abuse it. *(Laughter)*

Gordon Walker: I'm Gordon Walker. I'm a Canadian Commissioner. I live across the water in Toronto and lived on the Great Lakes probably all my life. I'm pleased to be here. Thank you for coming out.

Lana Pollack: Thank you. So at this technical hearing we may ask questions but I think we will let panel complete before we have any dialogues, so let one panel complete and then we'll have the Commissioners ask their questions.

Just to give a little background, many of you know this and some of you do not. The IJC was established under a Treaty in 1909, so we have a long history. History dealing with issues on water boundaries that stretch from the Atlantic to the Pacific; this is not just a body that's concerned with Great Lakes issues although we are very concerned with Great Lakes issues. But we deal with the waters that we share of the two countries from the Atlantic to the Pacific, also the Yukon and Alaska boundary as well.

To the point of this hearing, we're here of course to consider a proposal for the managing of water flows in Lake Ontario and the St. Lawrence River; it rises out of the hydro power project of the 50's. This project compared to any of our projects is relatively new 50's. When the two governments asked the IJC for permission to build this project because it would have an impact on the flows and any time there's an impact on the flows of waters that we share the IJC has jurisdiction. They asked us to, under the Treaty, create an Order. Under the Order we need to look at a variety of interests. All interests must be considered. All interests impacted by the waters must be considered. And there's an Order of Concern that's written into the Treaty.

But in this case back in the 50's the government said something additional and I think it's important and important to remind ourselves. They asked the IJC if after we considered every other interest that we were supposed to consider, that we could compress the highs and lows, the fluctuations that would normally be a part of the natural flow of the River and the natural impact on the Lake. And the IJC at that time, not all at once but it evolved over time and essentially what we have now is 1958 D. That Plan definitely ignored entirely the environment. So for those who say today "why are we so focused on the environment?" it's because the issue before us when the governments came back to us a decade or so ago was to say "you ignored the environmental impacts that are asking in the 50's. We now see there are some problems that have arisen by compressing it. Can you come up with a new Order?" So that's what we're doing. However, now that we're looking at the issue that was ignored the first time around, the environment, we still have to take into account all of the other issues. We can't just flip over to one side and ignore the other demands of the other interests that are recognized in the Treaty. So this is always a balancing act and that's what we're trying to do today and in these hearings; hear from the public.

One more thing: as I used the analogy yesterday, this cake is not baked. We have before us a proposal, a Plan, which was not developed by the Commissioners that you see before you. It was developed by staff expertise, scientists and with the input specifically in the last round of meetings of the State of New York, the Province of Quebec, the Province of Ontario, and

federal governments from Canada and the United States. Those were the people in the room. So people who say “we were excluded from the room,” excluded from those meetings, but not excluded from the process because the process is ongoing and this is the public part of the process, although there was consultation along the way with other people who were not in those closed meetings.

So we’re here to listen today but unlike the public, well this is public as well of course, but unlike the town hall meetings, these technical meetings are designed to hear a little more in depth from people who have particular expertise from different perspectives, and then to allow us to ask questions.

The other point is if you cannot complete your presentation within the allotted time, I can be a little flexible this morning but not terribly flexible on the time. Please remember we are expecting to have a lot of homework. That is to say to read a great deal. So we appreciate submissions in writing that we will consider, and submissions in writing can be made by you or anybody else until the 30th of August. So I think that’s what I needed to say. I know there will be some presentations with PowerPoint; we’re not looking at you we’re looking down here. We have a screen here, you have a screen there... so that’s where the eye contact is going to be going.

I think that I will begin then with the first panel, which is there’s an environmental panel followed by a coastal and recreation panel; different interests and we’ll hear from everybody. So let’s ask Sarah Fleming, regional biologist from New York Ducks Unlimited, Lee Willbanks, the Executive Director of Save the River, Sandra Bonnano, independent Environmental Consultant, Gerry Smith, Development Chair Onondaga County Audubon Society, and Dr. Douglas Wilcox, Professor of Wetland Science SUNY Brockport. And we thank each of you for being here today and we’ll let you decide who goes first in the order of your presentations. Introduce yourself and please proceed.

Douglas Wilcox: I am Dr. Douglas Wilcox. I retired from USGS 5 years ago and took a faculty position at SUNY Brockport. I’ve been working on Great Lakes wetlands my entire career and I’ve been working on the issues that are before us on Lake Ontario for even longer than that.

I’m not used to using a Mac so...

Lana Pollack: Let me say take a second as this gentleman approaches, we have had excellent technical support throughout these hearings and I’d like to acknowledge our IT people and thank them.

Douglas Wilcox: My approach this morning is to give you a tutorial on the wetland science part of the study which you’ve been hearing a lot about. And I did much of the work on that

so I'm going to try to fill you in on it. I've been working on Great Lakes wetland my entire career from the west end of Lake Superior to the east end of Lake Ontario and down the River for a ways. I've seen a lot of things and a lot of different wetlands down both sides of the border.

The primary thing that drives every wetland is water level fluctuations. They vary – I don't have the ability for a pointer here so I'll try and describe it. If you look at Lake Michigan, Huron and Lake Erie which are non-regulated lakes you see a lot of variability in there. Low lake levels, we can mention Huron for example: low lake levels began in 1999, they're still going on today. Lows in the mid 60's, lows in the mid 30's, lows in the late 1890's and lows in the 1860's; they're part of a longer high cycle. These things have been going on for thousands of years. In a Paleo study that we did for climate change, we have 4700 year record lake level history which shows these patterns roughly 30-year cycles have been going on for a long, long time. Lake Michigan, Huron and Erie are not regulated. Superior and Ontario are, and I'll get to Ontario in a second.

So how do these fluctuations affect wetlands? If you look at the horizontal line A on the screen that is the highest high the lake experiences; anywhere above that never gets flooded and only goes into rock and vegetation. Horizontal line C is the lowest low lake level and anything below that is never dewatered, always has standing water on it. That generally results in submersed and floating plants with a few shallow water emergent plants. The broad area in between gets flooded sometimes and dewatered some times. That's the action zone where everything is happening.

What actually happens there if you look at the top section of this figure, during the high lake level the high waters are too deep and they flood out cattails, phragmites, some of the invasive canopy dominating wetland species but they also flood out the invading trees and shrubs from the upland. When water levels go down it exposes sediment and the seed bank, all the other seeds from species that are present and have deposited their seeds are exposed to the air and get a chance to grow. As the low lake level continues, the other invasive species then invading the invasive wetland species and upland species come back again too. And they grow and get big again and crowd everything out. But then the cycle comes back again and we have another high lake level and the whole thing starts over. It's been happening like this for thousands of years and the biological communities, both plant and animal communities that are there have adapted to that; they've evolved to handle that kind of condition.

Go to Lake Ontario, the water levels of Lake Ontario historically did much of the same thing that I show for Lake Michigan and Huron until regulation began in 1960. There was a low supply period in the mid 1960's that had a little dip in lake level, Lake Ontario, but after

that there haven't been any lows. Even under Plan 1958 DD there have been occasional highs.

If you take the water supplies from the 1900 to 2000 and operate them using 1958 DD and pack them on for the next century, you get a picture of what the possibility of lake levels in Lake Ontario could look like for the rest of eternity. I'm not saying it's really going to happen but it's demonstrative of it. This is the absolute worst thing you could ever do to the Great Lakes wetland. Lake Ontario has some really nice wetlands, nice wetland complexes. This is the east end of the Lake. There's a whole complex of State owned wetlands there. I will be there this afternoon doing field work on another project.

I got started in the IJC process in the Water Level Reference Study in 1988. In the early 1990's, we did samplings around 17 wetlands in Lake Ontario and 18 in Lake Superior. This figure from one of the promo documents that I produced from that Study shows the difference between minimally regulated Lake Superior where there's a change in diversity vegetation communities that go from deeper water to shallow water on the shore. Lake Ontario basically only has submersed aquatics dominated by/and full species then you get a wall then and then there's some cattail. This happens in every wetland on Lake Ontario that I've seen.

The IJC, the Commissioners appreciated you were aware of this along with a number of other colleagues some of them presented information. They decided it was important to have the Lake Ontario/ St. Lawrence River Study. I had experience in this and designed much of the wetland environmental part of it. So I'm going to run through that so you understand where all these data and claims of wetland damage are coming from.

One, we had an inventory of all the wetlands on Lake Ontario which is shown here. There are 4 different geomorphic types: Wetland that are behind barrier beaches and protected from wave attack; those that are in drowned river mouths up the river they're still at lake level they're protected from wave attack, they're protected abetments that are deep enough so they don't get wave attack, then there are open abetments that do get wave attack and have much smaller wetlands in them.

For the Study, we used 30 preselected 32 wetlands, have on the U.S. side and them on the Canadian side, 8 each of the 4 geomorphic types and some of the wetlands that we chose we selected so they did not have obvious other environmental factors, major pollution, things that are affecting vegetation we wanted to factor out just the water level influence.

There are 2 parts to the Study: one of them was the Uniform Interpretation Retrospective Study. To do this we got false color infrared photos taken in 2001, went to the field and mapped the vegetation and used the air photos and did photo interpretation. This is Stony Creek, north of here a little ways. Each of the pixels here is a vegetation type delineated in

the air photos then went to the field to verify what you were looking at. We then went back roughly a decade and got historical air photos and back tracked these vegetation types through the years going backwards. We did that for all the sites. The example for the one I just showed you, Stony Creek, we ended up getting back to 1959 so we could show what things were pre-regulation. What you see here is at the top of meadow marsh sedge grass meadow vegetation, so the upper left corner is the amount you stand of meadow marsh pre-regulation.

I'll move over to the side, 1966 during that dip in low water levels there's actually expansion in meadow marsh which is what it's supposed to do. Then we went through high lake level periods and never had a low again and you go through the other sequence of the 2001 photo and the meadow marsh just basically disappeared. There were virtually no cattail in 1959 in all the area that used to be dominated by meadow marsh is now dominated by cattail. This is a pattern repeated over and over again for every wetland that we looked at.

When I began this Study it was my impression that the problem, the cattail invasion was due to lack of high lake levels; to flood them out like I presented earlier. I learned a lesson. It was a lack of low lake levels. We did an evaluation of our data and looked to see from the starting point where the cattail was. When we began the Study which direction it invaded. Did it invade toward the Lake or toward the land? As you can see here most of it invaded toward the land. What is happening is the meadow marshes dominated by sedges and grasses, like the grasses on your lawn when they go through a drought period and they turn brown but they won't die. When it rains and they're wet again they're still alive. Cattails are big plants with large fleshy roots and they have a much larger water requirement. They cannot tolerate those water level dry periods. Therefore it gives the sedges and grasses a competitive advantage. Cattails are this big and they're this big but they can dominate because they have the competitive advantage. The lack of low lake levels gave the competitive advantage to the cattails. They said "sorry we're bigger than you are. We're taking over," and they did.

So if you look at the typical Lake Ontario wetland in an oblique photo you count them out standing then the water drops off into deeper water dominated by the submersed aquatics. Go along the shore and there's actually a pretty wide sedge meadow zone and should be a whole lot wider but this is about the best we get right now, actually still being invaded by cattail.

The other thing that the Study Board wanted for the IJC Study was a model to predict the impact or the change in wetland that would occur for any new regulation Plan they came up with. The Study I had done a decade before I used a 2 dimensional model. Now I had 10 years to plan the new model. The new one was a 3D model and it founded on all sample

along elevation contours that have normal water history. So you look at the top elevation it's 75.6 metres that if you sample vegetation along the elevation contour, it's not been flooded for 30 years. You go to the bottom end at the 74.25 elevation they should not have been dewatered during the growing season for 68 years.

Here it's a reflection model of the 7 elevation we sample. They had known water level histories so we're looking to see if you had a lake level plan that gave you X number of years they had since they'd been last flooded or last dewatered, what proportion of the wetland would be occupied by different plant communities. It turns out transected A, B and C are basically dominated by the sedge grass meadow. The G transected deeper waters dominated by submersed aquatics. E and F are dominated by cattail. And D is Huron sedge grass meadow not being invaded by cattail.

I want to point out we have a lot of data. We have a lot of side to all lot of transects and sampling quadrats so it took us a good part of summer to do this so it was a very comprehensive study.

Lana Pollack: Dr. Wilcox I want to give you a few extra minutes but if everybody takes too much longer we'll take 2 hours instead of one so, so how much do you need? What do you think is reasonable?

Douglas Wilcox: 5 minutes. I would ask my colleagues if I could have my time.

Lana Pollack: Go ahead, fine. It's very interesting and we will read it and we will ask questions but we want to have time for questions, so we want to hear from everybody. Thank you.

Douglas Wilcox: Ok. We needed geomorphic models to put all this in to and we did topographic metric data from all the sides and created models for each of the 4 geomorphic types so we knew at any time whatever the lake level was in plan, we knew what percentage of the water, we'd have water how deep.

All these were run through the computer program that modeled everything and these were the results: pre-regulation as if there was no regulation at all in the percentage in each of the geomorphic types the percentage of meadow marsh in the wetland. In Model 1958 DD be much lower; B+: the precursor to 2014 had a lot. The other plans were somewhere in the middle.

The other component of this is the seasonal end of it. Muskrats and northern pike were 2 of the indicator species. People make fun of muskrats but they are a really important species. They eat vegetation; they are the primary consumer of cattails. They are keystone species that create a lot of open water. In addition to eating cattails they pile it up and make houses out of it which opens up a lot of area, which creates habitat for a lot of other animals and

birds. Muskrat houses; they build the mound and they burrow up inside of it with the entrance below the bottom of the ice level so in the winter time they can get out under the ice and forage. What Plan 1958 DD does is it drops the level of water down really low in the wintertime. Muskrats have built their houses then the water then the water's dropped out and there's no water left and the muskrats die and they can't exist anymore. There's no water, there's no muskrats eating cattails, and there's a lot of reduction in fish and wildlife habitat.

Northern pike adults feed in wetlands. The adults spawn in the flooded meadow marsh and northern pike, the young in the year live and grow up in wetlands. If the water levels are kept low over the winter and then in the spring, there's no water for the northern pike to get into the wetlands to spawn. If they can get past the cattails there to the meadow marsh, the meadow marsh doesn't have it they want to spawn and doesn't have any water on it. So the northern pike population have been reduced very greatly.

I want to finish off by commenting on shoreline processes. You've been receiving a lot of information from people about shoreline damages and they have very legitimate concerns. I will point out every one of the shoreline damages that have been complained about happened under 1958 DD. 1958 DD never allows a low lake level to occur. I want to point out that the low lake levels to them are really, really needed and critical.

Some of the work that I've done, places that I've worked on, on the other lakes, and being there in the South Shore Lake Michigan in 1986; they're really, really high lake level. There was an armoured shoreline here with concrete wall barrier then the waves were crashing right up against it no beach in front of it. Water levels dropped in 1999 following the high in '97 and have been low ever since. Three years after they dropped in '99, that very same location you can't find that armoured structure because it buried under sand dune. If you go up the shoreline to Holland, Michigan, to Ludington Michigan, people have armoured structures. Their groins are missing; they're sitting under the growing sand dunes. This is the natural protective feature that those people need along the shoreline for the next high lake level, which will come.

One of you asked to see this yesterday: long-term lake level hydrograph if there's no regulation. Here it is. The highest high would be at 76.18 metres. 1958 DD knocks that down to 75.68 metres. All the arguments you've been hearing saying that Bv7 or 2014 were raised water levels; it can raise water levels 2.4 inches higher than the highest high under 1958 DD. That's what people are screaming about. So you need to understand that.

Lana Pollack: Let's complete this now. We'll also get this in writing. I think we have your presentation.

Douglas Wilcox: I've given you the IJC one that I gave last fall. That's available to you and covers all this in much more detail. And I gave you results scientifically peer reviewed science and I gave you handouts to show that. I encourage you to read the green thing which tells you what all the Great Lakes that you're managing should be doing.

Lana Pollack: Thank you very much. Who would like to go next? Please introduce yourself.

Lee Willbanks: Thank you Commissioners for inviting me to speak today as part of the environmental panel. My name is Lee Willbanks. I'm the Upper St. Lawrence River Keeper and the Executive Director of Save the River. I'd like to point out that our organization was founded 35 years ago and we are still the only organization with the singular focus of preserving and protecting the ecological integrity of the Upper St. Lawrence River. We work to accomplish that mission through research education advocacy.

As the River Keeper, we strive to assure that the upper St. Lawrence remains swimmable, fishable and drinkable. In short we work every day to help keep that body of water a truly shared water body in every sense of the phrase: usable by the greatest range of compatible interests that we can. I'm here representing our almost 4000 members and followers to answer the questions you posed in your invitation to me, but I'm also here to express Save the River's unambiguous support for Plan 2014. We've all been here before: at the initiation of the process to review the impacts of the current Plan and to support B +, last year to support Bv7, and now here today.

We've given this task our all as an organization and supported each Plan in succession not because the previous Plans or 2014 are the perfect plan for regulating water levels in the lake and river but because they are so far superior to what we have had for the last 50 years and because we know that every year, and excuse me I have to say, you've delayed the return to more natural levels and flows. Our river suffers more and greater damage, and when our river suffers, so do the species and the people who depend on it. Because this has been a decades-plus long process, almost everything to be said has been said multiple times in multiple forums.

The science of wetlands restoration presented during the 5-year study period and reviewed since has not changed. And to a large extent, neither have the inaccuracies and misstatements used to attack this Plan or any plan. I don't think it is productive for me to re-hash so I'll try to be brief. In preparation for today, I reviewed the original invitation to this hearing and the slide that was up had the original 3 questions. I will try to answer them as best I can.

The first was what specific changes in environmental conditions do you expect will result from the proposed regulation Plan? First I think it's appropriate that I make a general

statement and I'm going to paraphrase from our friends at the Nature Conservancy. Plan 1958 DD has reduced the range of water levels to the point of causing extensive damage to coastal wetlands to the detriment of many key species dependent on the health of those wetlands and by extension to the detriment of the economy and people who depend on them. Plan 2014 will restore these benefits, enhance the resiliency of the shoreline in a changing climate, increase water quality and flood protection, provide greater economic opportunities for all people in the region. What we are fairly certain will not change: nature will remain variable. It may well continue the recent trend toward greater variability with more intense storm events and more extreme swings in precipitation. We also believe that man-made structures built in proximity to this large complex and dynamic water body will continue to be impacted by those fluctuations in natural events in the system regardless of plan.

What we believe will change; and I will tell you here I'm very pleased to be supported and surrounded by the experts so I will just in many ways skim through their testimony. The wet meadow which has suffered a dramatic 50% reduction under 1958 DD will rebound by at least 40%, improving water quality and enhancing coastal resiliency. Numerous key species all profoundly negatively affected under 1958 DD will see significant increases in their numbers. Among them, northern pike by 40%, black tern by 19% and yes the muskrat by 259%. We also believe there will be restoration of natural barrier structures during periods of low supplies in lower levels.

I do have to say as an aside about the lowly muskrat which has become the poster child for the foolishness of environmentalists like myself who focus on an unattractive species to the presumed exclusion of our fellow man, or in this case our fellow man's waterfront homes. I imagine the canary in the coal mine was treated with disdain until his condition changed dramatically for the worst.

The other question you asked was: what measures other than a new regulation Plan could be pursued to restore coastal wetlands and how effective are those measures? I believe we've all done the survey. There have been efforts throughout the basin to use mechanical means to clear cattail, choked wetlands and return at least a portion of them to wet meadow. These have proven expensive, complicated to be undertaken in carefully mattered times and conditions lest they negatively impact other factors on the lands. The mechanical restoration of 64 000 acres of wetlands to meadow marsh will be both expensive and time consuming in an era of constrained financial resources. TNC is current conservatively we believe on the low side estimating the cost of restoring the estimated 34 000 acres of impacted wetlands on the U.S. side at \$17.4 million; we believe that's something that Plan 2014 can accomplish for free. We did do a project last year where we took 7th graders into a wetland and they pulled for the better part of a day. We don't think that's a productive use of their time.

The last question you asked was: does the proposed adaptive management strategy focus on the right monitoring priorities? Our answer to that is: yes. If I have a little time left, I'll say that from my reading of the proposal set out in Plan 2014 we believe the adaptive management plan will do what 1958 DD never could. That's one of the reasons why we're here and support it. I can quote from your text: *"it will take advantage of future scientific and management advances to assure that the impacts of regulation are those which have been calculated, and to adjust for any possible long-term changes in the amount of water entering the system."* Clearly something we have to face. I will say that we are concerned about funding and coordination and we intend to stay vigilant and outspoken about the need to make certain that any adaptive management plan performs as expected.

I guess perhaps all this is why Plan 2014 enjoys broad support, we believe throughout New York State. It's had almost 2000 expressions of support, many of those from the Lake Ontario region, the support of 42 environmental conservation and sportsman organizations, 35 businesses including the New York State Business Council, including in our area numerous towns and villages and county governments. In the River region, our economy is directly tied to our environment and recreational opportunities it provides. This Plan will improve both.

Plan 2014 was formulated over the course of 10 years with the input of more than 180 stakeholders, representatives, experts and scientists from government agencies, academia, NGO's and industry of New York, Ontario and Quebec. The diverse coalition strongly supports 2014 as it will increase the overall health of coastal habitats, the species they serve and provide greater economic opportunities for the people that depend on them. They have joined with us who live, work and play, visit and love the River and believe it can be restored and believe that you, the IJC, can't give up now because all of us, even those who don't own a piece of the shoreline, have a place on the water. Thank you.

Lana Pollack: Thank you Mr. Willbanks. Who would like to go next? Sarah Fleming

Sarah Fleming: Good morning and thank you for having me here today. I would like to thank the panel and thank everyone here for the opportunity to come speak to you about the new Plan 2014. My name is Sarah Fleming, I am the New York Regional Biologist for Ducks Unlimited and my primary role is to deliver our conservation programs here in New York State. I'd also like to take the opportunity to thank a lot of our partners, interest groups and stakeholders that have been contributing to refining this particular Plan, and we see continued benefits of the new Plan and we also recognize there are regional, local cost benefits and we support both sides with regards to acknowledging and working with our stakeholders.

Ducks Unlimited is the world's leader in wetlands and waterfowl conservation. Our primary mission is to conserve and restore wetland habitat and associated upland habitats

for North American waterfowl, and of course these habitats will benefit people and wildlife. To date, we have restored over 13 million acres continentally. We have organizations in Canada and Mexico as well and we all work cooperatively to restore critical wetland habitat.

In New York State in 2012, we restored over 15 projects that led to 1700 acres of wetland, wetlands both inland and coastal wetlands that were conserved. In New York State we currently have almost 14 000 members and total acres conserved have been close to 46 000. Ducks Unlimited members have raised \$1.7 million for wetland conservation in New York State alone.

Now hunting and fishing is very important to New York State and plays a very critical role in our economy. I'd like to take just a minute to show you this particular slide. When you look at the total number of fishermen and hunters in New York State compared to the rest of the country, you'll notice that New York State comes out in the top 10 in most cases. Similarly there were over 2.11 million people that hunted and fished in New York State in 2011, and sportsmen and women have contributed almost \$5 billion hunting and fishing in 2011 alone. That's more than the revenue of the dairy products for that particular year, which is one of the State's top agricultural commodities.

So we've already heard a lot about the habitat challenges that we've seen in Lake Ontario since the implementation of Plan 1958 DD, and we've seen substantial loss of our critical marsh meadow habitat. Dr. Wilcox did a very good overview of that. This particular slide is just mimicking a lot of the images we saw before. We look at 1960's we see that change in the green represents marsh meadow habitat and the brown is cattail, then we see a drastic change in the loss marsh meadow habitat to one dominated by cattail. With this dominant cattail we've seen a significant loss of our keystone species; black tern, muskrats, a lot of our marsh birds and the northern pike. Many of these particular species are critical to anglers as well as hunters in New York State.

So the question was addressed as to what specific changes in environmental conditions do we expect to result from the proposed Plan? Well as I said, hunting and fishing plays a very critical role in New York State's economy; specifically sportsmen and women have generated \$623 million dollars, again this is from 2011 data from State and local taxes.

Now as we move forward we start looking at this transition. In the coastal marshes we've seen a reduced recreational opportunity that can be linked directly to the loss of marsh meadow habitat. Marsh meadow is required for spawning for many of our sport fish such as northern pike, largemouth bass and many of our pan fish. Similarly, waterfowl respond to areas that are 50/50% vegetation to open water. These particular areas are usually rich in vegetative communities in our marsh meadow habitats and support quality forage such as invertebrate seeds and tubers.

As we've seen waterfowl populations on seasonal and long-term time scales really benefit wetland habitat, and there's a lot of scientific information to support this. Vegetation regenerates in low water levels as Dr. Wilcox has already indicated, and in high water levels it actually acts as a flushing system to recharge vital nutrients.

Lake Ontario residents speak of times when they use to see cattail chunks the size of houses flowing down the St. Lawrence and these were critical to helping us regenerate those marsh meadow habitats.

Coastal wetlands are critical to begin life cycle needs of waterfowl in the Atlantic flyway. There are over 34 waterfowl species that either breed or migrate through New York State. Some of the most common species include over 50 000 wintering populations of northern pintails, Atlantic geese, black ducks, blooming teal, green winged teal, ring necks, canvasbacks and mallards just to name a few. All these particular waterfowl rely on the health and function of coastal wetlands. Dense cattail mats reduce the diversity and abundance of waterfowl food which will result in a decreased capacity of our New York State waterfowl to meet their energy needs, especially during the migration period. Our marshes are becoming quickly reduced in quality and as a result we've been seeing less waterfowl utilizing these coastal marshes. In the end what could ultimately end up happening is we'll see waterfowl spending less time in these marshes or they may end up skipping over them completely. Therefore this would significantly reduce hunting opportunity and viewing opportunity of our State's waterfowl species. Healthy wetlands in and along our coasts and ponds and rivers will support stronger population of native fish and wildlife and improve the areas hunting and angling and strengthen the recreational economics that rely upon them.

So what measures other than the Plan have been pursued? Ducks Unlimited in association with many local, State and partners have been working to restore critical areas along the coast of Lake Ontario. Many methods have included evasive species control, planting aquatic vegetation, removing carp, managing water levels through diking and pumping and restoring channels and pot holes by cutting in and opening up the hydrology and allowing flow into these dense cattail mats. Monitoring has indicated that the results of these particular methods have shown some positive trends towards our keystone species however the same monitoring efforts have indicated that only in areas where water levels could be managed and fluctuated did we support the healthiest ecosystems of wildlife and fish populations.

Through federal funding Ducks Unlimited has invested in the past 2 years \$2 million into the State's St. Lawrence and Lake Ontario watersheds to restore coastal wetlands. This is in cooperation with our partners both federal and state, and local entities. We've restored over 700 acres of coastal wetland habitat through the restoration of 16 acres of potholing

and channels. Although this has been very active, very supportive to the local community and a lot of hunters have expressed birds are utilizing these potholes months after they've been restored, and similarly the pike have been captured utilizing these newly restored channels less than 2 months after restoration. These efforts are small in comparison to what could be done simply by changing seasonal fluctuations within the Lake Ontario watershed. Ultimately this represents less than 1% of the total Lake Ontario coast that's been restored. It's been expensive; \$2 million dollars has been invested. Really this only acts as a Band-Aid when you consider there's 64 000 acres that needs to be restored.

A basin wide management plan to increase variable water levels can lead to greater diversity of wetland plant communities and improve fish and wildlife habitat. Only a basin wide management plan will ensure basin wide restoration of critical coastal wetland ecosystems.

I'd like to take this opportunity to just say that we do support the current management Plan and the monitoring efforts. We are a science based organization, and we support as I said, the current goals and objectives of the Plan as well as the keystone species that are utilized to monitor our critical ecosystems. And as I said there's a direct quote from the Plan is "*to gather and share critical information over time, to assess the information with state of the art tools, develop adaptive management strategies, measure success of the impacts on extreme water levels and adapt accordingly.*" Similarly our partners up in Canada, they have also sent me a quote. They were unable to attend today but I would like to acknowledge that they too support this Plan and the monitoring efforts and as I say we're working on a cross-border collaboration to implement this particular Plan.

So with that I would like to conclude and say that Plan 2014 includes environmental benefits such as diversity and functioning of coastal wetlands habitats that will filter run off, reduce erosion and provide habitats for hundreds of fish and wildlife species. The Plan will favour marsh meadow habitats, which act as an indicator of wetland health and provide several keystone species such as northern pike, muskrats, black terns and marsh birds' critical habitat. The Plan will also provide economic benefits to hunters and anglers for many generations to come. Ducks Unlimited encourages the IJC to continue to advance Plan 2014.

Lana Pollack: Thank you very much. Next we have Sandra Bonnano.

Sandra Bonnano: Yes thank you. My name is Sandra Bonnano and I'm an Oswego County taxpayer and I've studied and worked to concert the coastal dunes and wetlands of Oswego and Jefferson Counties for 25 years now. Today I'm offering testimony in my personal and professional capacity. My experience is included in both paid professional and volunteer work over this entire time including service, and I think perhaps I was the only one who served on two study groups of the regulation review; both the Coastal Processes

Committee and the Environment Committee. I've been involved in this process since the year before it began and it was being first organized.

I'm heartened that a primary objective is to incorporate environmental benefits into any new Plan and I also note that the opposition to 2014 would prefer not just the way it is, but less fluctuation than is currently in place under 1958 DD. There seems to be no reconciliation.

The coastal ecosystem of Lake Ontario is home to the most extensive concentration of high quality natural habitats and diverse population of plants and animals on the U.S. shore of Lake Ontario. In the Eastern Shore coastal zone alone the New York Natural Heritage Program has records for 14 rare plants, 8 rare animals and 12 significant natural communities. That same area also features many highly valued private lakeshore properties as you well know. My work has given me ample opportunity to be very familiar with many of them and their landowners. I understand the bind that landowners are in. Problem is I don't think regulation can solve their problem.

After careful consideration, I believe there is more reason to support Plan 2014 than to oppose it. Nobody benefits from the 8 years we have spent wrangling since the Review Study was over. Oswego/Jefferson County may well be the coastal area with the most to gain on the U.S. side with regards to natural resource values given the concentration of high quality habitats and species populations.

I strongly encourage IJC to adopt Plan 2014 and get started on it with the adaptive management so that regulation can be refined with collection and analysis of hard data on the performance indicators that underline its development. I also encourage as part of this process that the governments waste no time in finding ways to ease the economic burdens of the interests who will be economically disadvantaged. Some of the economic and natural resources issues that I've considered, well we know there will be high water costs to Lake Ontario landowners. Mostly to maintain or repair currently installed erosion measures such as break walls and shoreline riprap. I know that expected costs to landowners have been considerably reduced with each successive iteration that IJC has presented for review, including this one. I also know that this time the establishment of the seasonally adjusted triggers that warrant deviations for distressed interests and I laud the IJC for these efforts.

Number two: bluff shorelines erode; that's what they do. They erode due to failure, due to ground water seepage, which has nothing to do with regulation, as well as from storm driven waves during high water. It's unclear to me whether the cost estimates to riparian landowners acknowledge and separate the cost associated with those 2 sources.

Number three: it's also unclear to me whether the models of either IJC or the landowner groups assign an economic benefit value to the natural shore replenishment that occurs

during the low water events that have happened during 1958 DD, few though they are, and the increased such occurrences that are expected under 2014. IJC estimates the cost recreational boating above the Dam will cut in half from Bv7 to 2014. Costs will still be primarily due to the increased dredging costs in low water as has been noted by Dave White.

The Plan will result in increased benefits to hydro energy generation although a bit less than was modeled the last time. Benefits are also expected to shipping and this includes a huge benefit to Oswego County through increased business opportunities at the Port of Ontario but only if the needed dredging proceeds.

You asked specific changes that I expect. Well I concur with the Environment Study Group scientists that meadow marsh was a very good indicator to choose, and we've heard eloquently why. It serves as an excellent indicator because the greater fluctuation that breaks up cattails and benefits it will also benefit many other parts of the system. Some of the other habitats and communities and species are less well studied, and may be more difficult to study, but I wanted to give just a few coastal eastern Lake Ontario examples that can be expected to come along with improved meadow marsh:

- 1) The dunes – they'll benefit where they are not constrained by shore hardening and perhaps even where they are. Especially on un-armoured shore higher water takes out some of the fore-dune and the beach grass. It doesn't make it disappear, it takes it into the near shore; it's still part of the littoral system and become re-deposited again when the water level comes down. Beach grass fragments readily re-establish when they're thrown back on the beach and they trap newly water sand that is being blowing around to begin to restore dunes. Since beach grass declines under stabilized conditions this process should result in a wider band of rejuvenated dune at the back of the beach. Three rare species of plants there: Champlain beach grass, dune willow and sand cherry would also come along with rejuvenated early dune habitat because that's where they live.
- 2) Federally endangered piping plover used to nest on eastern Lake Ontario. U.S. Fish and Wildlife Service developed a recovery plan for the Great Lakes population and it considers Eastern Lake Ontario dunes critical habitat. What is critical habitat? Defined as beaches at least 7 metres wide with sparse vegetation at the back of the beach. Currently this rarely if ever happens, at least during the breeding season on Eastern Lake Ontario. We haven't seen birds there once in that last 30 years or so, and not breeding. A wider range of water levels should result in a wider band of that early intermediate disturbance, rejuvenation, recovery zone providing a wider habitat for piping plover. Whether they would come back? Is this the only stress?

No, but that's one, and just because it isn't the only one doesn't mean we shouldn't address it.

- 3) New York endangered bog buck moth. Ten colonies in the world, five of those colonies occur in coastal fen habitat in the lee of Eastern Lake Ontario. Five out of ten in the world. One of those colonies has disappeared in the last decade. Three more are extremely tenuous. That means one healthy population is left. One immediate reason is the loss of the food plan. That food plan is bog buckbean. It likes sun. Several of the fen opening are undergoing rapid in growth of shrubs that's shading out the buckbean. Higher high water should disadvantage shrubs as we've already heard today while lower low levels could then give the moths time to rebuild their populations.
- 4) Those fens themselves are among those significant natural communities that are tracked by the heritage program. Most of the rare species associated with them are species of open fen habitat. Their habitats would be improved by the greater fluctuation afforded by the new Plan.

You asked about other methods than regulation to affect restoration-

Lana Pollack: You have to wrap up in the next couple of minutes please.

Sandra Bonnano: As we've heard, there are pilot projects but they're stopped at measures; they don't address the underlying processes that supports the system, which is the hydrology, the timing, the frequency, the magnitude, all of that. I think it would be a better use of federal and state funding to find ways to relieve the economic burden to landowners and recreational boating so that we can restore the underlying hydrology.

Just a word about adaptive management: the stated economic and environmental costs and benefits of Plan 2014 are based on models. Models are based on both data and assumptions. The controversy we have makes it clear that different people have different assumptions. These are hypotheses; they need to be tested. Adaptive management does that. To that end, I'm really encouraged and I see the IJC not only have the Plan but they have some commitments for data collection. I am really glad about that. I think it's important that it is the performance indicators that are measured. That's what we all agree were important, and I'm really hopeful.

Again thank you for allowing me to testify.

Lana Pollack: Thank you very much. Now we're going to hear from Gerry Smith from the Onondaga County Audubon Society.

Gerry Smith: Thank you. Actually Onondaga Audubon is the chapter for the Eastern end of Lake Ontario, extending from Onondaga to Jefferson/Cayuga counties etc. Our 1800 members include birders and a lot of other environmental interest types, naturalists of all types. But the bottom line here is we are very supportive of Plan 2014. We hope that it will be implemented as quickly as possible.

I will not reiterate the wonderful science that's been coming out of this group, because I don't have to. I'm going to sort of briefly mention something very personal. That is the Onondaga Audubon owns 180 acres of sanctuaries along the South Shore of Lake Ontario. Of that there are several hundred feet at a place called Derby Hill that is an eroding bluff. The good news is that we own that bluff and nobody's going to build a house on it.

What it comes down to more than anything else is that very often you will have people talk personally about their impacts: what will impact their cottage, whatever...? Well I can speak personally to an impact. The decaying condition of Lake Ontario wetlands has resulted in impacting me and many others like me who have very few birds that once were common, to watch. I realize that people would perhaps not think that's important but I certainly think it's important and from an economic standpoint we should all think it's important because bird watching, if you believe the U.S. Fish and Wildlife Service, is the fastest growing outdoor hobby in this country. The bird declines are very well documented. I have observed them. I've been field birding in this area since I was 15 years old. The bottom line here is the changes are dramatic with things like black tern.

Where I'm coming from and where the Society's coming from is I have sympathy for the property owners. But bluntly put, the Plan 2014 in its increased variability, there might be a couple of high water incidents in the next 25 to 50 years that could be quite high or low or whatever. But here's the point: from our standpoint, I sincerely hope that many of us in this room are around in 50 years and I think we have to take the long view here. The resource is far more important than any petty human concerns including whether one's cottage will eventually wash away. I'm sorry but it is time, as you all indicated, that 58D did not take the environment into consideration. I understand your regulatory requirement to take other things into consideration but the environmental concerns need to move up in priority and if necessary trump other concerns.

The late Senator and Governor of Florida, Bob Graham, had a wonderful story about how his grandfather was governor of Florida and was responsible for draining the Everglades. But one of the last things Bob Graham did at the end of his life was trying to begin the process of restoring the Everglades.

I was a kid in the 1950's but my mother told me we had relatives that worked on the St. Lawrence Seaway. Well let's face it; the St. Lawrence Seaway would probably not exist if it had waited 15 years because the National Environmental Policy Act and others probably

would have prohibited that. The bottom line here is that our generation onward has the responsibility to attempt to restore these wetlands and the function of the system regardless to the cost to us. That means if you lose some structures etc..., that is part of the deal. You have to have a priority, and this priority at least in my opinion is far higher.

And I will say this: we own an eroding bluff. If this Plan in some way increases erosion then we're going to have to find a way to deal with it. That bluff has been eroding for ten thousand years. It's probably going to keep eroding, and we need to adapt to the lakes, not want this unchanging stability which is unnatural in nature and does incredible amounts of damage and frankly also damages many aspects valuable to humans. Bottom line on this is we will be providing comments in writing.

I will end with one little anecdote. I've been going to these hearings for years. It just seems like decades. The fun thing here is, at a hearing in Oswego a few years ago there was an irate gentleman from Sodus who, after our support of Plan Bv7 at the time, came up and spoke after me and basically his end line was: "well, I'm at least as important as a muskrat." The upshot here is perhaps one of the things which is going to be important to our evolution as a society and learning to live with the natural world is to say "okay, maybe not from the standpoint that the concerns of a muskrat population and a healthy marsh may be far more important." They are in my opinion. He might disagree. But far more important than some concerns about the structures and places where they bloody well shouldn't be in the first place. Thank you.

Lana Pollack: Thank you very much, and thank the five of you. Yes Commissioner Bouchard

Benoît Bouchard: I'm from part of Canada which has a lot of beavers. The animal is loved by many, hated by others. I was told that the beaver is a good, positive, healthy sign in an ecosystem. Since we're here in New York State, I felt the same relationship exists between the muskrat and the people. There are those, from what I heard in the last 3 nights, who do not have a special friendly relationship with this animal; or others are more dedicated to the environment consider, as I understand, a demonstration of a good ecosystem. But does it represent in terms of the reality of the environment here more than just the demonstration? Or is it a species among other species which where they are not present in that environment means that we have great problem for the environment? So...anyone can answer that question.

Douglas Wilcox: The additional thing is muskrat's not just an indicator; it is an ecosystem engineer in that it's primary consumer of cattails. The big thing that's happened due to regulation is invasion of cattails and nobody would eat them. So it's not just muskrats being a nice little indicator; it's needed part of the system to help cure the problem.

Benoît Bouchard: Ok thank you.

Richard Moy: Yes I have a question for Dr. Wilcox. I've been hearing yesterday and today that it's pretty clear that our shoreline vegetation, littoral zone and wetlands and meadow marsh all evolved naturally. With the 20-30 year dry cycles and fluctuations of a river/lake system in a given year, and that the existing Plan 58D that maintains that level had a higher, smaller elevation fluctuation actually has had a very negative effect on the littoral zone. Is it an argument that it actually may enhance erosion of the shoreline, or not?

Douglas Wilcox: 58DD enhancing erosion? I believe personally that it has because keeping the wave attack at the same portion of shoreline most every single storm keeps attacking the same zone. On a natural shoreline some storm events hit at this elevation, some hit at this elevation. Erosion's a natural process as my colleagues have said. The way that it works along shorelines erosion grabs sand from one area and moves it down shore and it's re-deposited somewhere else. It's a movement of material around the lake. When the erosion isn't occurring either because of armouring the shorelines or the erosion has eaten up everything it can get in an area, there's no material to move down shore to rebuild beaches. That's been part of the problem. The armouring of the shorelines defies the laws of physics; it does not work. There are scientific documents that show that.

Richard Moy: Thank you.

Gordon Walker: I have a question for Sarah. Ducks Unlimited: my question relates to the Ontario chapter of it. You indicated that you were working in cooperation with them, and of course there are joint projects. We're not hearing from Ducks Unlimited in Ontario I don't believe; I don't recall that we are having them at any of our technical meetings. Are you speaking on behalf of them as well? Are you saying that they have resolved in support of 2014?

Sarah Fleming: Yes. The direct quote that was in the presentation was sent to me from Ducks Unlimited Canada saying that they do support the current Plan and the adaptive management strategies. They also were in support of Bv7 and we did submit letters of support and we did do cooperative signed documentation with regards to their support of both Plans. Although I am not a Ducks Unlimited Canada employee, I can say that I have been in direct communication with them and they do support the current Plan. The reasoning behind them being unable to attend the technical section meetings is that our Board meetings were overlapped at the same time as the meeting in Toronto was occurring and so they were unable to attend due to other conflicts. So I will reach out to them and have them put something formal in writing if that would help the situation as well. But I can say we both have signed documentation for Bv7 and we are both in support of Plan 2014.

Richard Moy: I want to make sure I understand this. The “current Plan,” are you talking about the current Plan 58D or are you talking about the new proposal?

Sarah Fleming: No, I apologize. The current proposed Plan, Plan 2014 with the proposed adaptive management strategies.

Richard Moy: One more question involving the threshold. I’m looking at the famous mountain map that we’ve often seen; the graph that so often is presented to us. The high point for water in Lake Ontario is 248.1 feet and the low point appears to be about 243 feet, maybe just a bit less than that. There are moments when the threshold is at its highest, usually in the summer in July; if that level were somewhat lower, what does that do from the point of it? We’ve heard the point about how we need highs and we need lows in terms of the range of water levels in order to improve the wetland’s lows, improve the wetland’s highs; improve the wetlands in their own special way. Is there something magic about, for instance, that level of 248.1, and similarly the lows? I come from a water area where the lows right now on Lake Huron where I happen to have some residences, is severely debilitating; it’s very, very difficult at the moment. But here we’re talking the low being 243 feet roughly. So can someone speak to the question of threshold moments? The lowest point and the highest point, and whether or not it’s extremely imperative to go below for instance 243 or 243 and a half, or extremely important to go above say 247 and a half and maybe even 248.

Douglas Wilcox: The 2014 Plan was not driven to try and achieve certain highs or certain lows; you get what nature offers you, in water supplies. This is the response of those Plans to the water supplies. The answer to your question I believe is it’s a gradient approach. If the highest high that occurs every, say, 30 years is a little bit lower, the difference is you don’t get quite as much loss or flooding out of the invasive uttam species. If the lowest low doesn’t get quite as low it means you don’t have quite as much expansive an area of meadow marsh returning. So it’s a matter of degree. Even under Plan 2014 in the future as we go through cycles of supply, we have a high supply or low supply, one low period is not going to be the same low as the next low or one high is not going to be as high as the next one. The point is that the lows and highs have to occur. The highs are going to happen anyway because when there’s a lot of water you can’t just make it disappear. The lows, 58DD has been very effective in eliminating the lows. It is the lows that we are missing. Getting any low, a really low low is beneficial to meadow marsh, but any low at all is helpful.

Gordon Walker: I’m presuming the lows at certain times of the year are more important.

Douglas Wilcox: We’re talking from a meadow marsh standpoint. We’re talking low during the summer growing season. For the muskrats and pike the highs are needed during the wintertime for access through the water.

Gordon Walker: If I may interject, there's another ecological impact of the current pattern, and that is with the high water for the year often occurring between late-May and onto July/early August, what you have is limited shoreline habitat for migratory shore birds coming down from the arctic during that timeframe. So resting, feeding, loafing areas and that sort of thing are in short supply. A number of these species are documented as declining. If you had a more available shoreline habitat in that timeframe it would certainly help the survivorship of those birds during migration.

Lana Pollack: Thank you. I'm cognizant of the time; we are going to have adequate time for the next panel. I have one question and one comment.

The question is...perhaps for Miss Fleming or Professor Wilcox; when the restoration projects that are ongoing now rather expensive are undertaken, but they're undertaken under Plan 58 D, are they permanent or do you have to keep repeating them? Do they maintain themselves?

Douglas Wilcox: For the process and I'm involved in one of the potential GLI funded projects that Sarah's been talking about, and they are short term fixes as she said. They will not be sustained and the investment of federal dollars within them will not be sustained unlike Ontario ventures unless the regulation Plan is changed. There still going to get re-invaded.

Lana Pollack: Okay. That wasn't clear. And thank you.

Sarah Fleming: I'll add a couple of comments briefly. We're using them as baseline models to try to get an idea of how these particular restoration activities will benefit the system as a whole. We're designing the plan such that the hydrology will allow for these channels to be open as long as they can be. We're currently working on a 20-year period. Past restoration plans have shown that the channels have remained open for that period of time but our primary goal is that eventually water level regulations will be restored to Lake Ontario and thus these systems will greatly benefit, our restoration efforts will benefit from that fluctuating water levels.

Lana Pollack: Okay, so here's my comment: once again to reiterate, this Commission has made no decisions. We have before us and you have before you a proposed Plan. But what we have heard from everybody is some acknowledgment that the Plan has to some degree winners that would be the environment which was totally ignored for the last 50 years under 58 D, and losers to some degree, some increases... the Plan admits it... you admit it. We can argue with people about how much but there's a negative impact on some of the shoreline residences and other commercial properties.

We also have acknowledgment that the current properties are not... from everybody, that the current properties are already suffering under this current Plan. We've had many suggestions that it would be good to have some further investment in shoreline protection; financial investment by the governments or NYPA or somebody. These are things that have come through testimony.

What I am suggesting is that those who have not been able to agree on anything, I would hope that you could agree to work together to try and gain more resources. I am a former legislator; there are other former people here. The easiest way for a unit of government to say "no" is to have contesting voices coming at them. "Oh don't spend it on this!" "Oh do spend it on that!" The hardest thing to say no to as a sitting legislator is an expenditure where you get a unified request from unlikely allies for a better investment in something. So you may come at it for different reasons, because some groups are primarily concerned about environmental protection and some primarily concerned about property protection. Insofar as people can see their way clear to talk to those that they don't think they like at all, everybody's got a better chance of winning. That's true no matter what the IJC decides. So sometimes we have to swallow it and just do it for something we believe in.

Lee Willbanks: I guess I would like to say, and maybe I'm just speaking for our organization, I don't believe we could agree with you more. I would like to point out that in many respects from our perspective, and I have personal experience in the legislature and understand the process, the other perspective sometimes is that you don't want to play poker against yourself, and we've tried. I think your experience through the iterations of the Plan may be that every time you've responded to those who have complained the loudest and attempted to accommodate those interests, the marker has moved and the answer has been "no."

So we have a certain frustration because we do hear the idea that we should compromise. When I look at the benefits that were proposed under B+ for the interest I represent and I look at the change in those benefits under Plan 2014, I would tell you we have compromised. We have been at meetings throughout New York State where we have said words that I'm not proud to say. Where the shore has been hardened and it needs to be reinforced or repaired, it should be reinforced and repaired. That's not a position I would normally want to take because we're not all about shore hardening. When ports need to be dredged, they need to be dredged. Many of the things that we are willing to work on, we believe the other side should be willing to say "that's great," and work with us.

So we think we've tried. We appreciate 100% what you've said. We wish the process were one where those kinds of dialogues were productive and not just an exercise.

Lana Pollack: Thank you. Since I started this I feel I need to hear from you, but if it's not essential we need to wrap this up, but let me just clarify what I was saying: I'm not sure you

can agree on that kind of dialogue, but perhaps there could be agreement that funds coming for recognized needs and leave the other off the table. Mine was more: everybody wants more money, recognizing there are some needs that could be met with more money. It's not easy to get money out of governments these days. I think we will all agree on that. If it's not absolutely, would I be...

Douglas Wilcox: I can address the question you asked before. I think the opportunity's very clear that two different sides, the shoreline property owners and the environment, can get together. The problem has been my criticism with the entire IJC Study where there's not an education component, there's a PHAG but nobody educated the people about how the system works. The problem is that the erosion studies did not include the benefits of low waters to rebuild beaches so people don't know about that. People that are complaining about the erosion should be here begging for Plan 2014 because it's the only Plan that will ever give them a low lake level, which they really need. If they understand that we'll all be on the same side.

Lana Pollack: Thank you professor. Okay Dereth and then the last word will go to Mr. Smith.

Dereth Glance: I think that's an excellent point. I want to thank everybody that has served in the IJC process and for your comments today. I'm hopeful that you'll provide additional comments by the end of the comment period with other focus, but specific focus on the governance. I think the education component is an important component, there's a 5-year review for the adaptive management piece that we're considering, and the composition of the Board and the overall execution of the trigger levels and I would really encourage you to take a look at those particular issues and give us your thoughts. There's been a number of other suggestions that we've heard at other hearings about different trigger levels and I think we would really welcome your views on the impacts of those as well as we continue to consider these.

Lana Pollack: Okay Mr. Smith you have 30 seconds. Yes.

Gerry Smith: I come back to the whole concern that we as a society need to be looking out a lot farther than we are. It may well come to the point where certain areas of housing are unsustainable. We need to be trying to look several generations out to deal with problems before they develop, and correct those that we have got right now.

Lana Pollack: Thank you. And in 5 minutes, if the other panel would be at the table we'll be grateful. We are running late but you will be heard.

5 minute break

Lana Pollack: Let me informally then start where we left off with the last group. You think there's a possibility of coming together in terms of the one thing that everybody might agree on that would be desirable to find some additional resources from the state, the feds, the hydro power industry, wherever else you can be creative to bring to this region to address some of the problems, and is it possible to...? You don't have to commit. You don't even have to respond, but do you think I'm crazy? As an old legislator I just know it's so easy to say "no" when somebody's pulling you in this direction and somebody is pulling you in that direction, but so hard to say "no" when everybody's together pulling you in the same direction.

(Time code 1:30:44), unidentified speaker: Conceptually there's always room. I think it would come down to: what is the compromise? What are possibly alternative solutions? In order to come to some common agreement, absolutely agree that it's only through cooperation that you're going to get the funding; the competitive environment just doesn't do it for you. But the devil will be in the details. I think of what it is we're able to work out.

Lana Pollack: Just to clarify then we'll start because we have our full panel now. I would love it if people would really be ambitious and sit down together and see if they could come up with something. We'd still have to... it would be a suggestion back to us like these others are suggestions, but what I'm saying is you could start maybe with an agreement that it would be good to have some resources brought into the area. You don't have to agree on everything to agree on something.

Tom McLeod: I was just going to say my presentation kind of speaks to that.

Lana Pollack: Excellent. Shall we start with you? Introduce yourself and let's begin.

Tom McLeod: My name's Tom McLeod. I'm a very conflicted member of the stakeholder community in that on the presentation slide the red circle is where I live. It's on the north end of the Sandy Pine Complex. We face the Lake although we live behind a dune. At that circle is where I live year-round whenever we're not travelling. We back up on a wetland, a marsh as you can see in the lower section of the photo that's on the presentation.

My goal here today is as a shore owner, to lend some perspective and also my support for the goals of the Plan 2014. I think there are certain things that have to be modified a little bit but the goals will certainly help my situation on the beach because if we do get lower waters, I will be a very happy person.

My next slide shows some historical perspective. That's our beach in 1958 in the top picture. In 1970 you can see that it's about the same time of year, they're all wearing swimming suits, and the beach is receded. Now this is before the 1970's high water so in the background of the second picture you notice that the beach is not armoured at all.

This is a picture taken. The first slide is last November. It shows our beach showing some sand accretion. David Klein said this would happen. I was very happy when it did.

Unfortunately here we are in July of 2013 and this is a picture showing the same beach. All the sand has been washed back into the lake. The cobbles there is a natural seam of river rock, beach rock. We sit in about a hundred feet of clear space where no one armoured. I have stone block to the north and rip rap to the south.

This is a northerly view which shows the rip rap and shows sand clearly accreting in front of that last November. And in July just a couple of days ago this is the status of the beach basically today. No sand accretion, no blowing of sand up onto the rocks as does occur.

This is a section farther down the beach to the south. This is about the widest section of the barrier beach in the Sandy Pine area. Again the top picture shows November; the accretion and the wide beach at this location and underneath the picture shows what it is today in July. There's a very narrow beach, nowhere near the 7 metres that the piping plover needs at this time of the year.

This is facing north and this shows another rip rap structure, shows November, the accretion of the sand. The same view below it, it's all back to rock.

Just to kind of explain some of the problems we experience on the beach, this is just documenting a typical gale in our area. What it was before, I was lucky to have taken some pictures prior to a fairly major gale event. This is why it's so important to understand that we're dealing in our beach area with not only the Lake levels, but we're dealing with seiche events, and that is the wind driven tide that comes with a gale. In our section of the Lake, we can easily reach 16 to 18 inches of additional water depth at the beach. So the top picture shows the beach before this particular gale which was in 2006. The bottom picture show the day after the gale let up and we could get to the beach. The center section shows my 5 foot 4 inch wife standing in front of the eroded dune. As you can see it's about 10 foot high at that point.

Now the structure of the gale is not that these big waves come crashing in and gouge it out like you see in breakers hitting rock walls. It's kind of creepy. The wash of the water comes in, and it comes in hard enough that it takes out a little, little, little. But this particular gale was a 2-day blow. We had wave action over a 2-day period and that's typical of what happened along the beach.

Now the reason- everybody showed this picture and I'm so glad because I've been telling people during this whole process that we need lower lows. So I talked to John Kangis probably 10 years ago in a meeting and I said you know, looks to me like we've got this reservoir and we've taken out 16 inches of the lower water, or the access to the lower water. He says "oh no, we've just had way too much input." I know we've had input but I'm

willing to take high waters if we can get low waters. I'm a firm advocate of low water strategy.

These are depths of the Lake at Oswego. This graph basically shows from October 6th, 2006 through the event that I showed you that eroded the beach. And it shows clearly a 12 inch seiche spike on 10/29. The issue there is that the baseline water at that point was about 245.2 and we ended up at about a 246.2 maximum height during that event. So it's a significant variation on what everybody sees on the averages.

And then the bottom graph shows this is the water level rising from the pictures taken on November 30th 2012 and the pictures taken on the 15th of July.

Now this is the deviation chart which includes the period of time, and I can't quite read it. I got to get my glasses on-

Lana Pollack: If I might say, neither can we. In the interest of time if you could summarize very quickly because we're-

Tom McLeod: Basically in July the trigger point is somewhere, and actually from June to July the trigger point is 248, which is pretty high compared to an event on our beach. And the trigger points for lows are really quite high for lows. I would love to see trigger points much lower for lows.

Now to come to funding I've got basically.... NYPA generates \$3 billion dollars' worth of revenue. The shipping industry, this is from an impact study on the Great Lakes, generates \$33.6 billion dollars and that's just for the shipping and the handling of containers. That does not include the cost of merchandise or whatever goods are being transported; it's just the transport cost. And they're all using the infrastructure. It's my position that over the years there has been a hidden cost that has not been recognized for the people that are generating significant revenues out of the system and that the burden on individuals and cities relative to the scale is quite high. So I'm proposing a mitigation fund that is funded in some way from NYPA, navigation and other stakeholders. I'd be willing to take a little more tax to carve out some money out of my local services to help bridge the gap because we do need mitigation on the beach. We do need sand transported because the sand, as Dr. Wilcox said, we have been impacted by not having the lows. So that's my position.

Lana Pollack: That's excellent, that's very clear. Thank you so much. Who would like to go next?

Bea Schermerhorn: I want to thank you, Commissioners, for inviting me to this event today. My name is Bea Schermerhorn and I am a St. Lawrence riparian. My late husband and I established Schermerhorn Boat Sales and Marina in the 1950's and we were in business for over 50 years. And in order to give an accurate present day amount of

information relative to how water levels are affecting boaters and marina operators, I polled 9 marinas in the Thousand Island area. There were two common comments that came from all of them that talked to me:

They were happy with the present water levels, thanking Mother Nature and the rain.

The second comment that they all made was one word: frustration. Frustration because it has taken so long to arrive at a Plan to replace the 50 year old one that has done so much damage to our part of the River environmentally, and it has caused economic problems in the Thousand Island region just to begin with.

It was the year 2000 that the Study started. This is 2013. Thirteen years and water levels are still being controlled today by Plan 1958 DD. I notice most everybody's talking about Plan 1958 D; it is 1958 DD, and the "D" is for deviation. Very high on the frustrating list was the draw down of water in mid-summer which often led to boaters having to get their boats out of the water in August because of dropping levels. You know 50 years ago, summer ended Labor Day but that is not true today because boaters want to be able to, in our area and bear in mind I speak for the Thousand Islands area, boaters want to be able to use their boats to the end of October at least. Recreational boating is tied very strongly to tourism and vice versa. When the season is cut short by about a month and a half to two months it takes a big chunk out of the local economy.

Now, here's just a few results of my polling: there was one marina has been dredging and needs to do more dredging, and dredging is very expensive. One marina was quite upset at being told by a person from the Corps of Engineers that they never should have built where they did. But the truth of the matter was that that business was there before the project. All of them were in agreement that marinas try to establish themselves in protected waters and that makes a lot of common sense. But it made them more sensitive to the fluctuations of water levels. There are some marinas, again the Thousand Island region, in the Alex Bay area and some in Clayton that are located closer to the main channel; they do not feel so much that variation but not all marinas there.

All that I spoke to agreed without a doubt that a new Plan is needed. Unfortunately there are still in this group many doubts about the cares and concerns of recreational boaters and the industry that serves them, that their cares and concerns do not... they don't want to stay at the bottom of the food chain. They and I sincerely hope that the River is not just looked upon as only the conduit, taking the waters of the Great Lakes to the sea which is exactly what has happened during the tenure of Plan 1958 DD. These are but a few of the comments, but remember frustration can cover a big territory.

Now to the comments on Plan 2014; unfortunately you guys, ladies, are going to be wounded by what I'm going to report to you.

Lana Pollack: But at least you're giving us fair warning....

Bea Schermerhorn: They have said that they've kind of lost faith... that there's anything that's going to include the cares and concerns about recreational boaters and the industry that serves them because we have been at the bottom of the food chain. I hope that because the South Shore of Lake Ontario has had a tizzy fit about this new Plan, and too many of the marina people I talked to said it's ad nauseum, it's the way it has always been. We don't want it to be that way and we don't want it to stay that way.

I shared some new information with them because this is- you've got to bear in mind this is the busy season for marina operators/boat sales, so not too many of them do too much and I think because they have become so frustrated they just threw up their hands. So I tried to share some information about the new Plan with them. One concern now is about the new Board of Control. Questions: will there be special interests represented on that Board as there are on the present ones? Will those chosen persons be New York State residents? Better yet somewhere up in the north country. Do you have a plan to screen the people that you're thinking about putting on the Board? I made an effort to try to explain something called adaptive management because I personally believe that this is the part of the new Plan that will make that Plan work and will address a bushel of your problems and a bushel of my industry's problems. Personally, I would just like to ask you to drop that 15-year idea down to 10, but that's just my own personal request.

I also believe it has to be mandated! The reason it has to be mandated is we can't be wishy washy; it's got to happen. And I believe that the governments of Canada and the United States should get their act together and have this happen because this is such an important thing. It is going to bring everything in the 20th century. Personally, and there are a lot of people in the same industry that I spent my life in, that we know there has to be a change.

Now in conclusion, personally I'm proud of the industry that I worked in for over 50 years, and many of the marinas on the River are family operations, including mine. They are also boaters, including mine. Ten minutes isn't quite long enough to touch on all the problems but I have tried to share some of them with you. Too long our concerns have been put on the back burner. Please inform the South Shore interests and Montreal that they are each stakeholders, and are not the chosen few. We are all stakeholders. We have to work together. It is not possible to have everything your way all of the time. South Shore interests have caused serious damage to the St. Lawrence River and commercial shipping gave us the oil spill of '76 as well as invasive species. Please remind them that Mother Nature is alive and well and she is a very important player and commands much respect. Thank you.

Lana Pollack: Thank you very much. Much appreciated.

Edward Leroux: Thank you for the opportunity, again. My name is Edward Leroux. I'm president of Save Our Sodus Inc. SOS is a non-profit organization comprised of volunteers who care deeply about the health of Sodus Bay. As an organization we're dedicated to improving, protecting and preserving the water quality in the bay and the Sodus Bay watershed. Founded in 1999, Save Our Sodus currently has a membership base of over 600 year round and seasonal families. These stakeholders include local residents, vacationers, property owners, businesses, farmers, boaters, fishermen who recognize the importance of preserving the Bay's natural beauty and usability. We clearly understand the value of healthy, functional wetlands and the contribution they make to water quality. Our continued opposition to this Plan is based on the method, not the desired outcome.

It is important to understand that Sodus Bay is an economic community as well as a watershed community that provides approximately \$10 million dollars per year in tax revenues to Wayne County alone. This business community in Sodus Bay includes 18 restaurants, 29 retail establishments, 6 marinas, 600 commercial slips, 29 lodging establishments, 3 museums and 3 campgrounds. I have provided to your panel a copy of an economic study provided by Camoin Associates done in 2008 from which this information is derived. While the scope of this study did not include employment figures, there are hundreds who owe their livelihood to this community, who also own residences outside the boundaries of the Bay itself. Consequently there is an additional significant tax contribution not reflected in that study.

Embayments were excluded from consideration in the proposed changes to the water level regulations. They are not however excluded from impact. Photos provided to the panel in that same package of Sodus Point flooding. Each time the lake level reached 248 or near it, flooding has occurred. Prior to regulation, particularly in the '40's Sodus Point was flooded several times. Since regulation, flooding has occurred in '73 and '93, partial flooding in '98. In '73 average levels for May and June were at 248.46, 248.36 meaning for a 2-month period the water remained at flood level; the duration is the issue. At these levels marinas are not able to function, nor are restaurants or any of the businesses on the Bay. This represents loss of revenue, reparation costs and loss of recreational access.

Crescent Beach, the barrier bar between Ontario and Sodus Bay, is crucial to the integrity of the Bay and is especially vulnerable to high water. The Huron Town Board and the residents of the sandbar have worked together to protect the environment by revised septic laws. Implementing higher water levels would greatly compromise the effectiveness of the new septic systems which represents a significant health and environmental hazard. Low water is just as impactful. In 2012 the average water level was 244.4, and 243.9 for September and October respectively. During this time marinas called customers to bring their boats to storage 2 to 3 weeks earlier than normal. Boat ramps stopped being useful

causing a shortened season for transient boaters as well; again a revenue impact to the business community.

Of biggest concern in addition to the absolute lows is the frequency of occurrence. The latest proposed trigger points on either extreme would come in to play well beyond the range in which damage will have already occurred. Secondly the frequency and duration of allowing a greater range of extremes subjects the community to repeated damaging conditions. Within a tourism based economy, the concern is that customers will quite simply take their business elsewhere when faced with the repeated conditions. Not only will customers leave but so will merchants not wanting to endure the damages as well as the cost of repair, replacement and prevention. For low water the only solution for marina operations is dredging for which there is no funding support under Plan 2014. Neither is there compensation.

In a period where resiliency and adaptive management should be complimentary strategies, it's really puzzling why mitigation is specifically excluded from the proposals. If the Plan 2014 is consciously imposing water levels it knowingly adds such financial burdens and impacts with no offsetting access to financial support. How is that justified within a context of climate uncertainty and the need for adapting and preparing for such uncertainty?

For more than 10 years the IJC and the Study team has put forward a single solution to address the stated objective of wetland restoration. Whether it was B+, Bv7, Plan 2014, the essential proposition has been one of using lake level controls as a means of improving and restoring the condition of wetlands. No alternatives have been offered or even discussed. Based on the magnitude and publicity and discussion of the environmental benefits of the proposed regulation, one would have to assume that wetland restoration is the primary reason for Bv7, Plan 2014. Perhaps it is the wrong interpretation but it is believed that commercial shipping is the higher priority followed by hydroelectric needs with respect to regulation. If this is true, much less is said about the need or demand for these proposed changes to address these higher priority concerns. If increases to the range of control limits are not required by shipping or hydro, then it must be assumed these changes are being made to accommodate wetland restoration. Let's examine how much restoration is to be accomplished by changing these control levels. According to control models it's not expected that the lower St. Lawrence will receive any appreciable impact.

Quoting from the material in Plan Bv7 "*under the proposed regulation Plan, the portion of coastal wetlands with conditions that favour meadow marsh would be more than 40% greater than the area with favourable conditions under the current Plan which are 13 000 acres.*" Forty percent improvement on 13 000 acres represents an increase of 5200 acres that would favour growth of meadow marsh. As a percentage of the entire wetland acreage

of 64000 within the total system, this represents an 8% improvement. It seems immensely out of proportion to impose the magnitude of disruption this proposal represents to achieve this kind of result. If the proposed controls are for the benefit of shipping and hydro it needs to be more clearly presented. If it is for environmental benefit the degree of benefit does not warrant the disproportionate impact.

As previously stated, no alternatives have been discussed or presented. Perhaps no alternative to wetland restoration are practically available. We need to hear that such possibilities have been considered and rejected if that is the case. There are however projects occurring on the Lake that give evidence that alternatives may be possible. I'm aware that Ducks Unlimited made a presentation this morning. I'll quote from some of their work: "restoration efforts included excavating channels to enhance fish passage, creating spawning pools and pothole habitat and controlling invasive plant species to provide habitat connectivity and restore functional hydrology to the coastal marsh system." That all sounds pretty good... "Early indications are the project is achieving its intended effect as well as spawning industry nursery habitat for northern pike and other wetland dependent wildlife." While these projects are not as sweeping in scope as 2014 represents, their effectiveness and specificity of application should be considered as a possible trade-off to the larger scale disruption of 2014. While these projects may also be expensive, they are minimal compared to the cost of actual infrastructure damage and investments in protection; it's a matter of who pays, and what you pay for.

Beyond the volumes of material promoting Plan 2014, the public needs to hear about alternative solutions for wetlands. We need to be shown examples of success or failure, or inadequacy. As a population of people who will bear the burden of the proposed single solution, we need to at least be given the consideration of being informed of the viability of alternatives. From the outset the proposed changes have represented a disproportionate impact: benefit to the River, benefit to the environment, negative impact to the Lake and its embayments. This imbalance needs to be re-examined.

This concludes my remarks and thank you again.

Lana Pollack: Thank you very much. Yes sir.

Jeff Garnsey: Good morning. My name is Jeff Garnsey, I'm from Clayton and I own Classic Island Cruises and I occupy positions on the Board of Directors at the Chamber of Commerce, the Thousand Islands Museum, I'm the Director of the Musky Hall of Fame, as well as a member of Save the River and on their Board.

But the reason I'm here is not to speak of those other organizations. I bring a little bit extra to the conversation in that my family for the last 7 generations has lived on a farm on the head of Grindstone Island. Why that is significant is that is one of the foremost breeding

and spawning beds for both the warm and cold water spawners which of course we talked about earlier, being the northern pike and I haven't actually heard anybody mention, musky. Our population has been diminished in that region by as much as 70%. I was fortunate enough to be a kind of member of a time capsule. I left in 1983 after being raised on Grindstone Island and went into the military for 26 years. When I got back I was able to compare what I saw when I left with what's there now.

All of the members on both Boards have brought some great points to bear but what's very important to understand is that if the ecosystem collapses or doesn't at least get some significant Band-Aids these are all going to be moot points. Nobody wants to come to a dead river to boat and if it's taken over by these invasives we're not going to have a place to invite people up for. Flynn's Bay is a primary spawning ground of the northern pike, and I heard several people mention "just that 2-inches," well what that 2 inches means to the northern pike is the ability to spawn or not to be able to spawn. If the dorsal fin isn't just out of the water up in those higher flood plains in the spring, they're not going to go in and spawn. Instead, them and the muskies will try to go off and absorb their roe. The attrition rate becomes huge and then we see these large fish that have been right at the very apex of their breed, dying off to try to survive because they weren't able to reach the spawning beds. A great deal of emphasis has been brought to "what are we going to do with the shore fronts?" Our farm is about 600 acres on the head of Grindstone and I was there in the 70's when our docks washed away. Our adaptive management on the River has always been: don't change the waterfront, just lower or raise your bumpers. That's how we've adapted. We've all survived with extreme damage, but it's not about us. It's not about the folks who moved here.

To me, I think the 2014 Plan represents the best hope that we have now to begin to start to stabilize those natural water levels and the natural flow. High water has an impact and low water has an impact. But if I go out in the low water and ding my prop, you're not responsible. I can adapt. The fish don't get a vote in it. So if you take nothing else from what I say, take the fact that I've witnessed over two and a half decades, the degradation of a spawning ground that was amazing when I left. Now it's nearly stagnant. The marsh grasses have moved, the cattails are huge; you can barely see the home that my great-great-great grandfather built, through it.

I am absolutely in support of Plan 2014 and I'm absolutely willing to adapt to anything that brings a better chance for the fish to survive. Thanks for having me.

Lana Pollack: Thank you all. This has been an excellent panel. Paired with the previous panel, we've all learned a great deal. Commissioner Walker

Gordon Walker: I'm not quite sure where to direct the question, but where is the magic number, and I think you might have touched on it Mr. Leroux, where's the magic number in

terms of the low level or at least the low, on Lake Ontario that provides the River with adequate water in say the fall like September or maybe even into the middle of October; what is the magic number in terms of level, in terms of feet that's required in order to not be touching your propeller, with which I have a great deal of sympathy because I have touched a few propellers on the ground, but what is your number?

Jeff Garnsey: I would love to be able to put a number on that, and I don't think one exists. I think natural level has to do with natural deviation high and low. I don't think just based on what we've heard before about allowing some highs and lows, that there is magic medium number. That magic medium number is what's stagnated our area for the last several years. Look at last year: we had amazing low levels after not allowing the River to freeze since 1924; that's the first time it didn't freeze, and then we had these monster lows with no spring runoff, no spring rains that were significant to the west, and we started low and worked our way lower. It did wonders for those areas that were allowed to see air that hadn't for years and years.

This spring, the natural benefit that came from that when we had some relatively decent spring rains and spring runoff, you can see it in just a year. So I don't think that the natural level for the props is the issue. There's plenty of room for the ships to run up and down through, and Montreal is able to load them up as long as they have what they need in their ports. I don't believe that we have a magic level. I think we just have to be aware of our surroundings a little bit more keenly when we are low.

Gordon Walker: Did you not touch on a level, Mr. Leroux, when you were...

Edward Leroux: I spoke of the levels where the marinas had difficulty-

Gordon Walker: That's what I was thinking of.

Edward Leroux: On the other side, where our infrastructure becomes damaged and potential breaching of barrier peninsula, those are the extremes. I think I would share the view that it's very difficult to know, and even if you did know, how do you control precisely to it under all conditions of supply, or lack of supply?

Gordon Walker: I've recognized the need for Solomon to be on this panel, or at least on this side of the panel, and has been rather difficult but I'm a recycled Commissioner because I was around 20 years ago and I remember what we did in, I think it was '93 or '94, when there were high levels in the very early spring in May. It was an unusual jet stream that caused immense input into the 2 lower lakes, not a drop it seemed in the upper lakes, but in the lower lakes they just flooded and people around Toronto had to build on top of their docks, they had to build something in order to get to the yacht clubs and all that kind of thing. So the IJC in its "wisdom", which I would put in quotation marks, decided to lower

the level on Lake Ontario and for 6 days put enough over the dam to be something in the range of about double Niagara Falls and managed to put, I think it was like, 360 000 cubic feet per second, they put it over. Ran it for 6 days, closed the Seaway because they didn't want an oil boat to overturn in the River, and made the Seaway people pretty upset. But the net effect was it lowered the level of Lake Ontario, despite doing that, by 1 and a half cm and really didn't accomplish very much in spite of all that. Yet 3 months later in August, Mother Nature had taken over, and the boats in Alexandria Bay were running to ground. So they were hitting the bottom in the marinas all along there. You probably would remember that period of time. So sometimes wonder if we're damned if we do or damned if we don't. That might not be the right word to use, "damn" around here. In any case, what a problem.

Bea Schermerhorn: I think that there is something that we need to put into an equation, and that is: you're asking for numbers; the window by which Plan 1958 D had. I believe, and I'm probably exaggerating a bit, that those figures were grabbed here. We did not have the technology then that we have today. They were using slide rules. That's why I think that the adaptive management part of Plan 2014 is so terribly important. Because we've got all this technology, we're not guessing, we're not grabbing things here. This window has become sacrosanct with a lot of the users. In other words, this is it. But that window was created by Man, and Man did not have the tools that Man has today.

Lana Pollack: Thank you. Commissioner Glance.

Dereth Glance: Thank you very much for your comments. This has been very helpful. I just have a quick question for clarification with Mr. Leroux. I just want to make sure I understand what you mean by "no alternatives were examined." Are you speaking about the study plan with D+, A+, B+, or are you specifically talking about different ways to restore wetlands?

Edward Leroux: The latter.

Dereth Glance: Only about wetlands?

Edward Leroux: Yeah. The alternatives were variations on a theme. When I say "one proposition" it's the use of water level control to try to achieve wetland improvement. I'm saying what we haven't seen are alternative methods such as Ducks Unlimited; constructed wetlands, or restored wetlands through mechanical means. And as I said in my remarks, it may not be that they are a permanent solution, but if it lasts 20 years, that ain't bad.

I'd like to see the value of that, the cost of that, as compared with the cost of reparation or damage. Those kinds of alternatives I think need to be put forward. It's really hard for me to say after 13 years the homework hasn't been done, but I do believe we've got to see alternatives.

Dereth Glance: I just wanted to make sure I understood the exact scope of what you meant by alternatives. So thank you very much and I think you said you came in a little late and Ducks Unlimited was here so their presentation will be online. They provided some very good figures on 3 specific projects that they have federal funding for and support, which was very helpful this morning, so thank you.

Lana Pollack: Other comments or questions? My last one is to follow up. Dr. Wilcox was one of the presenters on the earlier panel too. He's a wetlands specialist. I asked him pretty much the same question you've asked. I got an answer; a brief one. I know I'm sounding like a tape that keeps replaying itself, but I encourage all the people that we have heard, to talk to each other. It doesn't mean he's the only source of wisdom on this but if people can find each other and sit down and talk, doesn't mean you're going to agree at all, but we always learn when we listen. So there are answers out there. Let me just say this too, especially in response to what I think a very important point that you Mr. Leroux raised: other alternatives; have we considered them?

Some of the alternatives, if there are alternatives, could be outside the reach of IJC's authority as we're only allowed to do certain things by the government that established us. But we all have some learning to do and these processes of hearings have been just terrific for us, and we thank you for your contribution.

I think with that that we can conclude. Anybody that wants to submit further information, we're accepting that until August 30th. We take it very seriously. Thanks.

End of Transcript