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STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

COASTAL RESOURCES MANAGEMENT COUNCIL

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IN RE: Public Hearing
Ecology of the Ocean SAMP Region
Chapter 2

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Date: May 20, 2010

Time: 1:00 p.m.

Place: URI Bay Campus

Corliss Auditorium

CRMCpublicwkshp52010
Narragansett, RI

PRESENT

Brian Goldman, Esquire, Legal Counsel

Grover Fugate, Executive Director
Dr. James Tobey
Alan Desbonnet
Jennifer McCann

I N D E X

PRESENTATIONS:

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(COMMENCED AT 1:00 p.m.)

MR. FUGATE: This is a public workshop. We're going give two presentations here today. One is going to be on the ecology chapter, the other one is on the climate change chapter. After those presentations, and they are general presentations, they are not very detailed, the two chapters are up here for anyone that wants to take them and go through them. They're also on line and have been on line for a while for you to review, after those two presentations are made, and as I said, they're general presentations, we will open it up for public comment.

There is also running at this point a written comment period, which you may submit written comments, and ultimately there will be a public hearing before the full Council on this matter, which you may also make comment at that full-blown public hearing.

So, with that, I think we're going to open it up with Alan Desbonnet. Alan has been working as the chief author on the ecology chapter, and Alan is going to give sort of the highlights on that chapter, and then perhaps what we can do is open it

up for comment on that and then move onto the climate change chapter.

One last thing I forgot to mention is that at the end of each of these chapters the Council is due to essentially in sequence vote on each chapter and conclude that process by July 13th, but then they will open up the entire record for all of the chapters, for one last 30-day comment period, which closes, and there will be a final vote on August 24th, okay. Yes.

MS. JEDELE: Could I ask a question on that point, or do you want me to wait until public comment? It's just on that process?

MR. FUGATE: Why don't we just let -- okay. Alan.

MR. DESBONNET: Okay. Good. Okay. Thank you. I am going to do a relatively brief overview of the chapter on the ecology of the Ocean SAMP area. As Grover mentioned, the chapter is on line, he has some copies up here as well, that goes into the full detail about everything that's obviously in there.

The first place to start really is looking at the overall makeup of the area that we're talking

about. That area outlined in blue is the Ocean SAMP area, or the area that's being covered in this Special Area Plan. Within that region there's two major sounds, that's Block Island Sound and Rhode Island Sound, and then just to the outside of those two is an area that in the chapters is referred to as the inner-continental

shelf region, so it covers

a relatively broad area.

One of the things that's quite unique about this area is that it's sort of a meeting zone for two major bioregions in the area. We have cold water that comes down from the gulf of Maine and works its way down past the Cape and into this area, and then there's the gulf stream working its way up from the southern areas, bringing up some warm water, and while the gulf stream does not come crashing up into the coast of Rhode Island on a regular basis, there are on occasion times when

cores or rings from the gulf stream will break free and work their way up into the area and they bring, of course, warm water, different species, so it really is a mixing area for two very unique ecological kinds of regions, so it is a very special, very different kind of place for that reason.

It's all about the geology, at least back at the very start of things. When we want to look at

the ecology of a place, you really need to look a little bit about how it formed.

Way back during the past glaciation, 15-20 thousand years ago a couple of major lakes were formed in this area. The drainage of those lakes cut the major canyons that we see running through the outer-shelf and then off onto the continental shelf into the ocean deeps. Those lakes cut those canyons, they are a major oceanographic feature, and one of the other things that the glacier did when it came down and stopped around and about this area in through Block Island, Cape

Cod, running out to Long

Island is drop big piles of sand called moraines.

It's not just sand, it's also boulder and a bunch of

materials, but these moraines form really sort of

the basis for the ecology and the bottom

environments in the Ocean SAMP area. So, these

moraines are very distinctive features. They setup

the different type of bottom materials that are

contained, those to some degree setup the conditions

for what can live there. So, the geology is really

sort of the basis for everything. And then over the past thousands of years, of course, the biology works on things. So, the biology is out there messing around with the sediments, working things up. We have got storms, we got different kinds of atmospheric conditions that work through the area, we'll take and churn up the bottom, so to speak. So, it's not a static environment. I'm not trying to portray that. What the glacier dropped 15 or so thousand years ago is the same as what exists today. The basic materials are still

there, but they've

12 been reworked over thousands of years, and it is a

13 process that's always ongoing.

14 It's a highly seasonal environment. It's also

15 somewhat influenced by Long Island Sound and rivers

16 in Connecticut, mainly the Connecticut River and the

17 Thames River, but it is a highly seasonal

18 environment. In that top panel we're looking at

19 water salinity. Water salinity is very important

20 because the salt content to a large degree is going

21 to determine what kind of organisms are there. But,

22 that salinity changes over a seasonal basis, and

23 that happens with fair regularity, year after year

24 there's a fairly clear seasonal figure, and you see

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1 another, in fact, very blatant signal for

2 seasonality in the temperature. The salinity is a

3 little bit messier because when you get years when

4 it rains and there is a lot more precipitation, more

5 snow, more snow melt, you get a lot more flecks of

6 freshwater coming into the environment, so the

7 salinity is a little bit

messy. Temperature,

8 however, is fairly constant over time. When you see

9 that seasonal signal, and you're well aware of the

10 seasons around here, colder in the winter, warmer in

11 the summer and then those transition periods. That

12 seasonality is another determining factor in the

13 ecology of the overall area.

14 When we look at the physical environment in

15 the SAMP area, it's, again, a very dynamic

16 environment. This is a little bit of a messy

17 picture. But, really, what's being portrayed is

18 that the more stretched out the circles are, the

faster the velocity of the currents running through those areas. So, as we look over through much of Rhode Island sound, we see it is a fairly quiescent environment. That's not to say there are no waves. There are currents, but it's generally a slow kind of current. There's much more mixing and faster

velocity currents up and around Martha's Vineyard, and if we go over into Block Island sound and start looking around that interface at Long Island and the

interplay with Long Island sound, we see a very dynamic environment, very high mixing, very high velocities in the water currents. So, in a general sense, when we look at Block Island sound, Rhode Island sound, we see that Rhode Island sound is a much more quiescent kind of environment, a little more stable. Block Island sound, on the other hand, much more dynamic. The water is mixing a lot more. So, while they're interconnected together and interact with each other, we can look at it in a general sense and say, Block Island sound is a

little more well mixed, a little more dynamic. Dave Oman and Dan Codiga have been doing a bunch of work in putting together the big picture of looking at how the water moves through this region, and in a general sense, when you look at these arrows, it's just really a cartoon of how that water moves around. The bigger the arrow, the more water that's moving through an area, and so you see there is a big circulation pattern that's moving water into Rhode Island sound from offshore, and then that

water tends to go down to the south and to the west,

down along and move off into another region off map

called the mid-Atlantic bite area. So, there is a

constant flow of water downwards at the surface.

You can see a big interaction over here with Long

Island sound, and along and through that Block

Island sound area, and then some water moving back

in deep. So, the black arrows are water moving

around at the bottom. The white arrow is water

moving around at the top. So, it is a very dynamic

environment. Long Island sound, there is a big influence on that area, and because of that influence and the freshwater that comes in from Long Island sound, it is a rather different kind of environment than you see oftentimes in Rhode Island sound.

One of the interesting features that jumps out from that interaction with Long Island sound is something that the oceanographers call a front, and what it is is it's a unique different parcel of water that forms up in the summertime in particular, just south of Block Island. It's a very real

physical chemical difference in the water. The water all of a sudden goes from less salty to very

salty, or from cooler to much warmer, and what this does is it really is a biological magnet. Oftentimes in this area around this front it is a hot spot, you will see concentrations of phytoplankton, the minute plants, zooplankton eating that, and then the fish are following right behind. So, oftentimes in the summer

there is a big

concentration of fishermen, particularly

recreational fishermen in that particular area,

taking advantage of that fact, that there's unique

water chemistry is attracting biology, attracting

fish.

That front as the year goes on and the water

cools falls apart, becomes much less distinct, moves

offshore, but it is a seasonal event. When we look

at the Ocean SAMP area, Rhode Island sound, Block

Island sound and then we compare that to other

areas, how productive is it, how much life is there,

how much biology is there in that area on a consistent basis. When we look at it over an array of other environments nearby up and down the eastern seaboard, we see that the Ocean SAMP area is comparable, but perhaps a little less productive overall. Why that is isn't exactly clear. We do

know that in Rhode Island sound things are a little more quiescent, not quite so dynamic, however, the studies that are ongoing now should be shedding some

better light on what is going on a biological scale and looking more at some of this productivity. So, it's not super-productive, it's not unproductive. It's on the low end of the scale from based on what we know now, but really not so different than a lot of other areas.

Much of what's going on in the area, again, has been sort of determined by, initially by the glaciers being here, and if we look at a map mosaic of a variety of different kinds of sediments and environments, you think of the sediments that are on bottom, whether it's sand,

silt, mud, those

different environments are going to be attracted to

certain different kinds of organisms, so the

patchwork that we see with regard to the bottom

sediment characterization is going to be indicative

to some degree with regard to what can live there.

As I was saying right at the very start, what

you see at the bottom was dictated by the glaciers

leaving behind either very coarse materials, cobble

stone size rocks, the pebbles, to very fine sands,

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the biology that has arisen in the area overtime keeps reworking all of those sediments, adding a lot of organics to it, enriching the underwater soils, so to speak. So, this is, one way to begin to look at the ecology is to look at the sediments, and if we can somehow map that out to the organisms that live there, then we would have a real good handle on the ecology. Up at the top you can see that there's just an initial, when you look through what's known about Rhode Island sound and Block Island sound and the actual benthic

invertebrate environment, there's

12 not a whole lot known, but there are some clear

13 associations between like silt and silty sands where

14 you see for the most part a predominance of two

15 dwelling arthropods and a particular kind of

16 bivalve, and when you look in coarse sands and

17 gravels, you see a somewhat different community.

18 How that really plays out at a smaller scale, other

19 than some hand waving and making some general

20 inferences is not really well known. The studies

21 have not been done to a scale that would begin to go

22 about saying, you know, that silty sediments are

holding these kinds of organisms and so forth. It would, with some work, probably get there, and in

today's world intense GIS mapping there's no question that some of those relationships could be pulled together.

Jon King and Jeremy Holley have been doing some interesting work during side scan and sonar imaging, and one of the things that they've pulled together as sort of a first work look at what's

called, I'll just refer to it as bottom roughness, as the terrain on the bottom, at the sea floor goes from sort of just a flat monotone, monotextured sand to something that has more structure. There's some rock, there's some elevation to it. It becomes more complex. It is just sort of a general ecological principle, that as environments become more complex, you see a greater diversity, and usually maybe perhaps a greater abundance of all those, more stuff hanging around.

So, one of the ways to begin to look at the environment that these

researchers put together is

through this imaging to give a first look at image

roughness. How this roughness maps out to actual

different organism distributions is not well

known -- not known at all, beyond not well known.

However, having a map like this and starting

to do some initial sampling out there could easily

start to plug in some of those variables so you

could start to begin to get a sense of what kind of

environments are out there, what kind of organisms are living there, if you can start to map that out, then you can start to get a better handle on what might be there with regard to fish concentrations, what are the really important places for fish.

One of the things that does jump out when we're talking about fish is that at least at Narragansett Bay and at the mouth of Narragansett Bay and Rhode Island sound there's been a rather drastic change in the fishing composition. Around about 1980 there was a significant shift, and this information is based on a

trawl survey that's been

16 conducted here at the University since about 1959,

17 so there's over 50 years worth of information that

18 gets plugged into this graphic, and what jumps out

19 is that through much of the time prior to 1981, back

20 until when the surveys were first started, there

21 were, for the most part, an abundance and a

22 predominance of demersal or bottom dwelling type

23 fishes, flounders, for instance, were the most

24 abundant species to be found. Somewhere around

1980, all of a sudden there was a swap, and you start to see a dramatic increase in pelagic species or species that live in the water column. Although squid is not a fish, it is a pelagic species. You also see a significant increase in squid about that same time. You also begin to see an increase in benthic invertebrate, various species of crabs and lobsters. So, there's been a fundamental change in the fish species, at least in Rhode Island sound, from bottom living species to species that live in the water column. This is a

trend that has been

noted up and down the eastern seaboard in various

places. They don't have 50 years worth of data to

mine back into and come up with some real conclusive

evidence in looking at this. So, of course, the

question is why? The folks who did this work,

Jeremy Holley here at the university, and some of

these colleagues, their first guess is they're

seeing a significant change in the actual ecology,

the biology of the area where there's less

phytoplankton, less plant life making its way to the

bottom and to support a bottom fishery. All that

stuff is being garbled up in the water column,

whether that's because of this change, or, you know,

or a cause of it is a little unclear, but when they

look at some other information, one of the other

things that does jump out is there has been a rise

of about two degrees Celsius in water temperatures

in the same area, and as they mapped that change in

preference in water temperatures back to the species

of fishes that they're seeing

in new abundances,

those species, indeed, like water that's about

two degrees warmer. Coincidence? Perhaps.

Certainly a good indication that global climate

change, or I should say that increasing water

temperatures as a result of changing climate seems

to be a prime cause. Again, just sort of to bolster

that, when they look back into the temperature

record, they find that in, indeed, this change

they're seeing is very well correlated to this

change in temperature. They're also finding some

smaller sized fishes. It's unclear with regard to

what that might be from. Holley thinks that it, indeed, might have something to do with fishing, because as you fish you usually target the larger fishes first, leaving behind the smaller ones, so that would be perhaps something that's related more to the fishing aspect than to climate change or

something like that.

A lot of information has also come out of the studies that have been conducted through the SAMP

planning process, looking at the marine mammals of the area, has shown that, indeed, there are a number of species of whales, dolphins and porpoises, and on occasion manatee working their way up through here indeed use the area, but they are not heavy users of much of the area. They seem to pass through to do some feeding and then seem to be moving off. There seems to be a hotter concentration, probably because of some food off to the east, off towards Nantucket area. Certainly there was a lot in the paper, I don't know, about a month ago, some Right Whales

came up in the area and were hanging around feeding for a week or so before they decided to go play somewhere else. So, the animals do come here and do use the area if the conditions are right. If the food is there they will, obviously, stay and eat.

There is also pinnipeds, harbor seals in particular do use the SAMP waters. To a large degree they are using, obviously, the water as a feeding ground and using the actual land mass of Block Island as a place to haul themselves out of water between their

bouts of feeding. So, marine mammals are a common entity in the area, but they're not really, they are more of a visitor and wandering through kind of, particularly with the whales and dolphins.

A lot of new and good information has come out with regard to seabirds and their use of the area. Obviously, there are the passerine or land birds that do use the area as a fly-through heading towards Block Island and areas. Block Island is a major stopping point and staging area for a lot of

bird species. There is certainly a lot of use on a seasonal basis when you look at how the birds are coming here and using the area. It does seem to be relatively seasonal to a large degree. There is a huge overwintering population of water birds that come and use the area. They seem to disburse in the springtime. There are some others that come up in the springtime and then hang around and breed on shore, terns in particular. They tend to be more land-based feeding over some of the near shore areas. But, there is an active bird population that uses the area heavily for

feeding, both at surface

23 and on bottom, largely restricted to some of the

24 more shallow areas, water that's really about 50 or

1 so feet in depth and shallower. So, I don't know if

2 you want to do questions after.

3 MR. FUGATE: Well, we can take some

4 questions if people have questions regarding the

5 chapter. I should have mentioned there's also one

6 more chapter that will be presented today and that's

existing regulations chapter that will also be presented. Okay. Anyhow, any questions or?

MR. L'HEUREUX: Those are the only two chapters?

MR. FUGATE: Three. There are three chapters today.

MR. L'HEUREUX: Okay. Thank you.

MS. MARKS: To what extent will the relationships implicated by various components, biological components interacting with the physical components of this area be addressed in the SAMP, either by reference or more detailed?

MR. DESBONNET: Where there is information to make those references clearly, then there's been attempts to do so. Those links would be my opinion, guesswork or otherwise, and I tend to not do that because I don't consider myself an expert on those links, and without some grounding in

the published literature I am hesitant to stick my neck out to say some of those things. But where, in those instances where there does seem to be some

connection, we try to make those links back to the physical environment, where possible. It's been very difficult to do so because there isn't a lot out there, particularly for this area. There is some other good information with regard to species and supplages and sediment types in other ecosystems, and some of those will be referenced, but we can't -- I can't make that same sort of leap and tie here based on the relatively little information that's available.

MR. MARKOWITZ: Maury Markowitz. And, I was wondering, that

slide you showed, it

16 showed the bottom feeders in the column of water,

17 how far is that area from the mouth of Narragansett

18 Bay?

19 MR. DESBONNET: About --

20 MR. MARKOWITZ: Do you know, roughly

21 speaking, is it a mile or 10 miles or 20 miles?

22 MR. DESBONNET: Hang on here.

23 You're talking about this in particular one?

24 MR. MARKOWITZ: Yes. I am wondering

where that collapsed in the last few years while the temperature went up? Anyway, I'm just curious.

MR. DESBONNET: Okay. Some were just out here at the mouth of the bay, is where the Rhode Island sound station was, and the other one was more, a little more up in the bay, but still I believe south of the island.

MR. MARKOWITZ: I was wondering, I don't know if it's relevant, but it just occurred to me over the last, I don't know how long it's been, decade or two, we've been cleaning up the bay,

haven't we? Just as layman, I know bottom feeders usually have a connotation about the Type 6 foods they prefer, and I'm wondering if cleaning up the bay took away some of the so-called pollutants that are actually nutrients for bottom feeders could explain why some of the bottom feeders population has gone down? And the reason I do that because is it was a very ironic study when the acid rain was an issue, there was a big lake in the, I think it was in the Appalachian Mountains, I think it was the Appalachian, it was like a poster boy for it because it had become devoid of all

life, totally devoid, it

was like dead, and then it was blamed on acid rain,

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and it turned out the ultimate resolution, because

everyone from living memory said they remembered

fishing with their grandfather, whatever. What

actually happened is it was the compost from the

forest, and when they tested it, they came down

below the lake and they found that the lake had been

a dead lake for thousands of years, and with

clearcutting, had removed the trees from around the lake, that stopped the acid of the runoff from the dead leaves and trees around the lake and that enabled the fish to survive, and then when they passed rules against the clearcutting and allowed the forest to come back, that killed the fish again.

So, I was wondering if a similar type thing could possibly have been? It just occurred to me you were responsible for this.

MR. DESBONNET: I can't go into quite a well-embellished story, or, you know, to that kind of a degree. There

has been and is some

ongoing work looking at the nutrients that are going

into the bay over time, and, yes, with regard to

cleaning up the bay, at least with regard to the

flow of nutrients, nitrogen in particular, there is

some indication that perhaps, that as less nutrients

are going into the bay, there is the possibility, or

the question is trying to be answered, is that

creating less food, is that the cause for this? It

seems, at least from the information that is available and how it was linked up, the answer does not seem to be as well related as the story that you told with regard to the lake.

So if, indeed, there is nutrient reduction that might end up with less food going to the bottom feeders and whether that might change something is a possibility, but it's not -- and it is something that people are looking at at the moment, but there's been no conclusive information pulled out at this point, although there does seem to be some changes in the overall data ecology at the bottom,

so you will have to stay tuned until the research comes out.

MR. MARKOWITZ: It just occurred to me just this minute.

MR. FUGATE: In discussing the issue with Scott, I think it seems to be more of a temperature signal than anything else that we're seeing relative to that.

MR. MARKOWITZ: What is the basis for that?

MR. FUGATE: The increasing temperatures in the waters here seem to be more responsible for the change in the demersal to pelagic than anything else that we've seen so far.

MR. DESBONNET: Yes, yes. With regard to what I was, the information that I was talking about seems to be pretty much a clearcut temperature signal and there doesn't seem to be any communication benefits or any change.

MR. MARKOWITZ: If there is temperature signal on that chart you showed me a

minute ago, it looked like the temperature was just

going up, but the number of pelagic had collapsed,

or the ones in the food, you know, collapsed again.

MR. DESBONNET: The pelagics have

not left. There has been, according to the folks

who do the research, a slight increase in the

demersal fish population and a slight decrease in

the pelagic populations, but it's still

overwhelmingly populated by the pelagic type fishes,

whether it will go back to where it was, unlikely

according to the people doing the work, and I'll

stand on what they have to

tell me.

MR. MARKOWITZ: I'm just wondering, the temperatures, were they the surface temperatures or the deep temperatures?

MR. DESBONNET: I am not positive, but I am going to guess they were surface temperatures but I am not positive on that.

MR. MARKOWITZ: So, I would wonder were how they're going effect the guys down below. The way you said.

MR. DESBONNET: Go ahead.

MR. FROHLICH: I am Reinhard Frohlich, F-R-O-H-L-I-C-H. I'm from the Department of Science at URI. One of the first expressions we heard that it is not necessary to look at the bedrock by a geologist. In a later meeting Professor Spaulding said it's very important to know something about the bedrock because they're going to anchor windmills in the bedrock. There's a paper published that says that it should be better in three or four others that the sediments offshore are

depleted, the glacial sediments.

Now, there is enough material already

published from the bedrock structures, and I'm

surprised to see you don't mention them at all. So,

I think since in that area we also have earthquakes,

that would be kind of dangerous to completely ignore

that, but it's the situation right now, where are

you going.

MR. DESBONNET: The bedrock, when

I'm looking at the ecology, really looking and confining what I'm looking at to the very upper layers of sediment, which is where the biology is, as you get deeper down into those sediments there really is less life, and by the time you were to work down really to the bedrock, as you're suggesting, you're in a fairly life depauperate zone, and so, the other thing is, there's no other information. Most of the work that has been done, which is skimpy to begin with, is really focusing on the life and ecology in that upper layer. The bedrock certainly, and I

think I mentioned in the

chapter somewhere with regard to storms and other

major kinds of things, is that certainly the ecology

of the area could be subjected to an earthquake, to

some other sort of major geological event, and

certainly that has some impact on the ecology, but,

again, for me to make any connections between what

that might be would just be pure conjecture on my

part. So, it's not to say that the bedrock is not

important from an ecological perspective, it is a minor portion, except if it were to shift, crap or otherwise somehow mess up the basic foundations.

MS. JEDELE: Tricia Jedele, J-E-D-E-L-E. Conservation Law Foundation. So, I don't know if maybe Jenn or Grover can answer, and then I do have a substantive question.

CLF filed comments on the informal chapters, and I noticed that with respect to some of the other earlier chapters that there was a response to informal comments that was available, but I couldn't find one for ecology or

climate change. I was just

wondering, I know you're not obligated to do that in

this phase, but I was wondering if you intended to

do it, because it was hard for me to figure out. I

didn't haven't a chance to look at the new chapter

in great detail to figure out where or whether our

comments were considered in relation to the new

chapter.

MS. McCANN: Jennifer McCann, URI.

We do plan on responding to all of the comments, and

they will, even the informal comments, and they will

be on line. Our priority, as you can imagine, is to

update the chapters to the best that we can, and then once that's done, then to, you know, to fill out that form and put it on line. So, yes, they will be on line.

MS. JEDELE: So, if this was addressed, or will be addressed, I apologize if there is redundancy, but CLF raised a concern that there's, you know, there's mention of, for impacts of local climate change in the chapter, but really

no mention of impact of fishing on sea floor habitat or on the ecology of the SAMP area in general, and I was just wondering if you looked at all at studies that are available that discussed the impact of certain kinds of fishing practices on sea floor habitat or the ecology in the SAMP area in general?

MR. DESBONNET: There are a few mentions of fish trawling marked and a other few other references. The short answer is, no, there hasn't been any exhaustive look at the impacts of fishing on the ecology.

One of the things, the next things that we're

in the process of doing is trying to coordinate between fisheries chapter and the ecology chapter to see if there are things that are included in one

that should be in the other, should simply be referenced, and then if there are some holes, then we'll try and plug those holes.

So, the answer is, yes, it is a comment that I remember, it's one that we're working towards, and it was just because the

fisheries was created

somewhat differently, we didn't want to do

duplicative work, and so we're getting there, is the

short answer.

MR. FUGATE: I can only answer from

the fishery chapter perspective. Your comments were

noted and we are trying to update those chapters to

acknowledge the impacts of certain fisheries

activities on habitat, so. Okay. Thank you. Any

other comments? Okay. With that, I will guess we

will move on to the climate change.

MR. TOBEY: Okay. Good afternoon.

My name is Jim Tobey. I am going to present a brief overview of the climate change chapter.

This is a chapter that we developed by looking and reviewing existing literature, scientific literature through a couple of workshops that we've held and through expert review and comments that we received.

31

I just wanted to mention that this chapter has other contributors, Dawn Kotowicz and also Leanna

Hefner. Okay.

Basically, we found that the effects of climate change are being observed globally, regionally and in the Ocean SAMP area, or locally in Rhode Island, and the climate change does effect many of the Ocean SAMP uses and that the effects of climate change, therefore, should be considered when looking at activities in the Ocean SAMP area.

So, what I want to do first is to go through the first point, that climate change effects are being observed, and so what we did is looked at past historical data on what's happening in climate

change areas and projections for those variables on climate changes, not only warmer air temperature, but there's also ocean temperature, sea level rise, storminess, precipitation and ocean acidification, and we look at each of these variables, and what I'm going to do is look through each one of those briefly.

Just to say that, Alan did that, the Ocean SAMP is an offshore area, but we also look at, where there are ties to coastal uses, we also look at the

effects of climate change on those coastal uses.

Climate change. The source of climate change are greenhouse gases in the atmosphere. So, I just want to show this illustration that greenhouse gases have changed, gone up and down historically going back from 400,000 years here, but the recent increase is much more remarkable in the past, preindustrial age, greenhouse carbon dioxide levels in the atmosphere have gone from about 280 to almost 380 parts per million, higher than have been at any

time in 650,000 years. So, that is the source of the global warming, and when we look at projections of climate change impacts, what we're looking at, and these aren't models that we create, but we're looking at the literature, what the IPCC has done, intergovernmental panel on climate change, the year 1990, they created a number of scenarios of the growth of greenhouse, of carbon dioxide in the atmosphere in order to project how those increases will effect air temperature and other variables. These scenarios are scenarios of population, of economic growth, of the

fossil fuel mix, clean

23 technology, and each of these scenarios have

24 different names, and there is a number of them. So,

1 we're looking at the most scenario, the high

2 scenario, and so far since 2000 to 2010 the whole

3 society in general has been following the highest

4 climate change scenario in which the greenhouse gas

5 levels to be the highest. Now, these are economic

6 models. These are models that our global economy

that projects the amount of carbon that society is using. Then climate change scientists use those levels of greenhouse gases, carbon dioxide, put them into general circulation models, these are highly mathematical complex models of how the earth operates in order to determine what effects will be on air temperature, water temperature, storms and whatnot. They're very good at predicting air temperature, very accurate, and can be less accurate or more uncertainty on projecting other types of climate changes.

In terms of air temperature, if we look back

on trends, air temperature has been increasing in Rhode Island. This is a graph of a record of temperature first in Providence, the temperature base was located in Providence, but then it was moved to T.F. Green Airport. So, this is kind of a shift because of the two spots, but in both cases

it's been going up. The projection for the future for the northeast is about a 3 to 14 degree Fahrenheit increase,

depending on whether you're

looking at the low emission scenario or high

emission scenario, and this is a projection by --

most of these projections are given by the end of

the century, 100 years sometimes or 50 years. What

that means is that we could be facing a situation

where our summers, our typical summers feel more

like Chesapeake Bay on the lower emission air

scenario or a higher emission scenario where it

feels more like Virginia. Warmer air temperatures

increase the ocean temperature. The record from

Narragansett Bay and the West Passage of 1960-2010

shows a lot of variability, but increasing.

MR. MARKOWITZ: How do you know which one comes first, what does the warming, or the other? How do you demonstrate that one way or the other?

MR. TOBEY: I don't know. How could the warming of the --

MR. MARKOWITZ: Why would the sea warm the air? It is just common sense it is much more massive, the sea is. Much more massive. I

would think that the sea is the --

MR. FUGATE: No. It's the air warming the sea, and there is a thermal lag in the sea response. As a matter of fact, we can see rising sea temperatures if we go back to see normal temperatures we will continue to see the rise in sea temperature just because of the thermal lag in the ocean.

MR. MARKOWITZ: Is it a consistent and regular normal lag?

MR. FUGATE: Yes.

MR. MARKOWITZ: The air temperature goes up first and then the sea temperature rises?

MR. FUGATE: Yes.

MR. MARKOWITZ: Okay. That's possible.

MR. TOBEY: Under a lower emission scenario, we're looking at a sea surface temperature increase of 45 degrees Fahrenheit, and under a higher Emission scenario of 6 to 8 degrees Fahrenheit.

Sea level rise is a result of warming because of thermal expansion of the sea and because of melt

water into the sea, increased volume.

On the top left is the historical record from Newport, Rhode Island station showing an increase of about 1.9. What it is, if you look at it, in inches it's about .1 inches per decade, I think.

Looking into the projections for the future, there's been new work recently on -- the past projections were projecting up to three feet under the high emission scenario 100 years from now.

New projections that take into account the higher rate of ice melt show projections in the next 100 years up to six feet, six feet increase in sea level rise. For Rhode Island, for our particular area, the sea level rise is projected to be greater than the global sea level rise. It varies depending on where you are. One of the reasons for that is that, with 90 percent certainty, IPCC projects that climate change will effect circulation in the North Atlantic, and once the circulation, which is currently pushing the water away from our coast,

slows down, then there will be additional sea level rise.

Increased storminess, in other words, is another impact. There's a projection of a doubling of Category 4 to 5 hurricanes by the year 2100 for

the Atlantic area. There aren't any projections specifically for the Ocean SAMP, but the projections indicate that the largest increase in storminess will be from 20 degrees north of the latitude,

20 degrees north. The trend in weather in the northeast, the summer getting longer, more precipitation, more high precipitation events and less snow, and the projection for the future for the northeast is the same, more rain and more heavy precipitation events, with winter precipitation increasing up to 20 to 30 percent, but more in rain than in snow.

This graphic on the left shows, where there are red dots indicate places where there have been an increasing number of high precipitation events, more than one inch is the data from 1948 to 2007.

So, I'm not saying it's because of, but the recent high precipitation we've had here in the spring is consistent with the projections.

MR. MARKOWITZ: What were the blue dots?

MR. TOBEY: Those are areas that have actually had fewer one inch high precipitation events.

Another effect of greenhouse gases in the

atmosphere is ocean acidification. Actually, the ocean is doing us a big benefit by absorbing a lot of the carbon in the atmosphere. Currently it is absorbing up to 30 percent of carbon in the atmosphere. But, what happens is when carbon mixes with sea water, it forms carbonic acid and makes the sea more acidic. So far carbon dioxide in the sea, carbon in the sea has increased by 13 percent, and by the end of the century it's predicted to drop another point 3 to 4 units. It doesn't sound like a lot, but DH has expressed on a large arhythmic scale even small changes can be

significant, but basically

the projected increase in the acidity of the sea

would be the highest that it's been in the last

300 million years.

MR. L'HEUREUX: Where is that information from? I don't see any resource.

MR. TOBEY: I would have to check.

I don't see it off the top of my head. Do you remember, Dawn?

MS. KOTOWICZ: Well, the projections are the IPCC.

MR. L'HEUREUX: Thank you. That's

all I need to know.

MR. MARKOWITZ: Those are projections?

MS. KOTOWICZ: Projections.

MR. TOBEY: The chapter will have the references.

MR. MARKOWITZ: It says it has resulted in ocean sea water PH. Has resulted. It doesn't sound like a projection. It sounds like a past.

MS. KOTOWICZ: We're looking it up

right now.

MR. TOBEY: Point one, that's past, that's data. That's actual reduction.

MR. MARKOWITZ: As of the global sea or local sea are we talking about?

MR. TOBEY: Global. So, the reason we look at all these past trends and projections for the future is that because we're interested in how that will effect the Ocean SAMP. It's under the ecology and the human uses. So, we look in the chapter at marine ecology, fish invertebrates, sea birds, marine animals, sea

turtles and various human

uses of the Ocean SAMP, which include all of the

uses that are in the other chapters of the ocean

SAMP.

In terms of ecological impacts, Alan gave a

good overview of the region, saying that it's a very

interesting area because we're kind of in between

the Arcadian marine ecosystem to the north and the

Virginian ecosystem to the south, so we have both

species that are warmer water

and also colder water,

but what that means in terms of climate change is

that this area is probably particularly vulnerable

to these changes.

In terms of the distribution and the

composition of fish species, other impacts that

we're seeing in some places and are projected to be

potential problems or impacts are potential for the

spread of disease organisms and invasive species

with warmer water temperature, increased potential

for harmful alga-blooms, commonly referred to as red

tide, and more acidic water, making it more

difficult for marine animals that form shells and skeletons.

Alan also mentioned that we're seeing changes in the distribution of fish species and invertebrates, even small increases in temperature

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can change the composition or distribution of species.

The science literature we've looked at indicates that the observed data show general pollward shifts of species,

and the global median

range shift is projected to be about 20 miles per

decade, so every decade what was 20 miles to the

south is going to be more frequently found in the

Ocean SAMP area.

Some of the species currently at the southern

extent of their range are lobster, cod and silver

hake. So, with warming temperature, they would be

moving forward, and species at the northern end of

their range, include, for example, black bass,

butter fish, scup, summer flounder, which we see

more of. Also, you see, this is another figure of

what was presented and commented on before, of the increasing ratio of pelagic to dimersive species, pelagic, the one in the water column and the benthics on the bottom. This is data from Woods Hole, I believe, 1964 of 2008. And, also, as Alan said, we do have whales, seabirds, marine turtles that occur in the Ocean SAMP area, usually passing through, and some of these are federally, listed as

federally endangered, so they deserve extra

attention, and climate change will effect these marine animals by changing the way their food is for the most part, and it will change the abundance and timing of the food that they're looking for, and for some species, like the Right Whale, for example, this can be a threat because in some cases they require specific types of plankton or food in a certain level of abundance. So, with climate change can effect when and where that food is going to be located.

Also, seabirds, the oceanic birds, seabirds, like shore waters and petrels

experts say are the

most vulnerable for the climate change because they

rely on food from the sea, they raise only a few

young each other, often they rely on islands,

low-lying islands for resting and for feeding and

that they will be vulnerable to sea level rise.

Also, vulnerable would be shore birds, like piping

plover, if their habitat is effected due to erosion

of the beach. Now, climate change also effects

human uses, such as marine transportation,

navigation and related infrastructure, which could

be a positive effect in terms of having a longer

fishing season, but then, on the negative side, if there is more intense storms and sea surge, sea level rise can make the marine industry and the coastal areas more vulnerable to damages. In terms of recreation and tourism, also possibly the benefits, disadvantages, benefits in terms of longer season, because you have a longer summer, warmer water, but on the negative side, the potential for red tide, for more jellyfish,

which are both

unattractive, for erosion of beaches, shifting of

beaches, and especially barrier beaches, would be

most vulnerable.

So, the chapter basically concludes that the

changes were brought about by climate change are

likely to result in alteration of the marine ecology

and human uses of the Ocean SAMP area, so they

should be taking into consideration when considering

plants for uses of the Ocean SAMP area. And, also,

that we need continuing data collection, monitoring

programs on the climate change, climate variable

changes, changes to climate variables. We should be assessing the vulnerability of different infrastructure to climate change projections. We need to develop design standards for marine

platforms to take account for more intense storms, waves and to support public education and climate change. That's all I have. Thank you.

MR. FUGATE: Okay. Are there any questions or comments? No. Go ahead.

MR. MARKOWITZ: You know, I'll tell you, I didn't really know exactly what the format of it was and I found out about it, people had informed me about it, and I thought it was going to be sort of almost like a testimony type of thing. I didn't have a chance to prepare anything, but I have quite a bit to say about this and in general about the whole procedure.

MR. FUGATE: Okay.

MR. MARKOWITZ: Well, I don't know if I should give me you bona fides to make comments on, but I have a physics

degree from MIT, I graduated from Hope High School, then I worked at a lab there for several years, which is where I was involved in a lot of modeling for the power project, and the man on the moon thing, and I left there afterwards to switch to economics several years later. I've been in economics, and I've self-taught economics and have done fairly well with that. But,

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that's my background. And, additionally, I have

been interested in energy and the ecology type, you know, ever since -- well, all along, I have read, you know, at least 100 books on the subject, maybe not, that might be an exaggeration, it might be 88, it might be 120, I don't know, but somewhere around there, certainly many hundreds of articles.

Certainly. But, anyway, I read physics journals and things like that. I just question the whole -- well, we know now it's -- I just think people should know that the basic science has been absolutely proven, proven to be false. Man caused global warming is not going to

happen. Man has zero

14 effect. And, that's not just my opinion. That's

15 fact. It will be more opinion. It's as much fact

16 as the earth is flat has been proven not to be true,

17 or that, you know, Altima has been proven not to be

18 true. Because a hypothesis, it is very difficult,

19 it's still a global warming hypothesis. They say

20 the scientists settled, that's not correct. If the

21 scientists settle why did they have to. Let's look

22 at other examples of science, we have nuclear

23 science. We have basically plutonium mechanics.

24 When you want to do something, you don't need a

model, you have an equation, we have how it works.

Now we have the science is settled, and we have 20

models, about 20 or 22 models that are big models,

that they all come up with different answers, they

average them and make a projection, and the

differences in what those models project are

sometimes a factor of 25, a factor of 800. It is

very key variables. This is guess work, and there

is lots of chicanery going

on, also, in facts.

It's my belief and the belief of most genuine

scientists who are in the hard sciences who become

acquainted with this issue, they get shocked, they

tend to be trusting, there were a few charlatans in

the business of science the last few years,

basically on this issue, and they have given bad

names to scientists, and so now some of the

scientists, real scientists who were in their test

tubes and didn't worry started to see the importance

of coming out, and many of them trusted these people

and took them at their word, and that's why they

said, well, there must be something on both sides,

but the closer they get to it, the more they realize

there's zero to it, zero, not 0.1 grains of truth,

but zero to the conclusion. The models are

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absolutely -- I mean, they throw them -- they've

been wrong in their projections, contrary to what

you said about the accurate projections for air

temperature, you may have some accurate ones, but if

you look at the history going

back 20 to 25 years

with the temperature condition, but that every

projection these models make, they're wrong and they

have to revise them down by tinkling with their

parameters.

In fact, I graduated from MIT in 1968, and it

was just a couple of years later while I was still

there that the global cooling hoax was going on.

That was started by Professor Stephen Schneider of

Stanford University. He was a young fellow then and

wanted to get fame and was willing to sell his soul

for a mess of pottage, and he was the first one that

brought the computer models into the climate, and he had his side kicks, so on and so forth. He forecasted at the time that, the forecasts were that in the year 2000, this is in the early 70's, the forecast case was that the population in the US, the most industrialized nation of the world, would drop to 10 percent, that 90 percent of us were going to die from starvation because global cooling was going

to decimate, imagine what it would have been for the

rest of the world. The US, I think the population is about 180, 190 million, so he was forecasting there was 20, the population in country was going to be 20 million by 10 years ago. Now, that died a quick death and was very embarrassing for them because there were a lot of politicians, was basically trying to get control of energy. Yet, what was blamed was fossil fuels were blamed. Carbon dioxide was going in the atmosphere, blocking the sun, no heat, we're freezing. We now have equally false science on the opposite side. As you

know, the public and so on, what sells newspapers and elects politicians and so on is disaster scenarios. When something is disproved, it goes on the back of the page, or when the weather is going to be fine, there's no problem, there's no headline.

So, now, what he did was wait a while for the suitable period of mourning, Professor Schneider.

Professor Schneider now happens to be -- and then he came out with the global warming, so he switched from global cooling to global warming. You will see it has cooled for about 20 years and then it warmed for about 20 years and now it

is cooling again.

Now, so anyway, the last 10 years, but nobody knows much of that now. So, he then came up with the global warming, and I have a number of specific objections that, things -- well, you know, one thing I would like to mention to people here, they might want to go to a certain, it's about a 15-minute talk by a fellow named Noah Robinson. It will just --

MR. L'HEUREUX: If anybody wants

them, I have copies.

MR. MARKOWITZ: He gave a talk, a slide show, which debunks a whole lot of what has been said here today. For example, we know, this comes from Al Gore's movie, scientists don't do things, movies and documentation. I should mention just so some people here know, that we have the same 650,000 year chart that you have on CO2, except it correlated it with temperature. They both have a hockey stick at the end. It's wrong. That's data that was for Michael Mann. His work has been analyzed now with after climate data by a panel of

statisticians, and they say he is inept, is how they described him, inept work, okay.

McIntyre, you may be familiar with him, he is the one, couldn't get freedom of information. It's

a tough time getting freedom of information requests, which is the NIS or the GISS, the Goddard Institute for -- whatever studies. I forget the specific name. But, in any case, that's a subpart of that. Those were the two

sources, the two

sources of data for all the research on climate,

basically, the two main sources of all the research

on global warming, and those, by a chance those

data, they now, the climate came out, the data

they've heard for 30 years has been lost. They

don't know where it is. So, isn't that a

coincidence? And, you know what bothers me, you

know, I have a strong background in science. I read

this Chapter 3, I had to skim it, because I only

found out about it a short while ago, and this is

not science in here, the global warming theory.

This chapter, I don't want to use the word that I really describe it because it would be impolite, but if you look at it, the footnotes tell some of the story, but I don't have time to go through -- you don't want me to go through 72 pages and tell you what is wrong with every single thing. But, one examples, just one area of it, look through the footnotes, they're all based on projections, and

let me tell you

something, okay, I sent that Chapter 3 to a fellow,

I think he should remain nameless now, but I got

private e-mails back. He is a known expert on

renewable energy, he has a Ph.D. in physics, he is

Professor Emeritus from a University in New England.

He is retired. He was the editor of a physics

journal on theoretical physics. I won't quote to

you what he said about the whole chapter from

beginning to end is. I will tell you what he said

after I have read it. But what he pointed out to

me, he said that most of these references, the

footnotes at the end of the table, the references

are what if things, what if. In other words, it's

one -- in other words, they commit the violation of

correlation or projection with facts, and then there

are others that, you know, they have, there are five

papers co-authored by Michael Mann, a fellow who is

inept, and who -- I read the climate papers, by the

way, the climate data documents, and those, you

know, when someone is guilty and you bring them in

front of a judge and he says he is not guilty, he

comes up with excuses, if you actually read those

documents, from about ten different ways, there is

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no way, it's more than ten, ten different areas

because there's hundreds of them, not in each case,

but scores on each issue, where it's outright

conspiracy. This was a conscious conspiracy to

defraud the world, okay, at MCRU. That's why

scientists everywhere are upset over it. And we now

have -- the evidence is just overwhelming. I have

known it from the beginning, okay, from the very

beginning, because one chapter put up there, which shows approximately the last 100 years worth of temperatures rising. First of all, I don't know where you get your data, but it's always manipulated, they made tons of errors, the people on global warming, hundreds of errors, who knows, maybe they made thousands, we only got hundreds, but every time you catch one, they say, oops, they have probable, what is it, plausible denial, and every error, not one, is against what they're trying to do, what their agenda is, every single one supports

their political agenda, okay. What we have is the most massive hoax in the history of man kind that there is global warming, the biggest hoax, and I'm not the only one saying that. A lot of scientists say it. IPCC claims to have 2,500 scientists on

their side. Go look at the list, they do the same thing as union of the trends back in the '70's and '80's. They have economic scientists, social scientists, blah, blah, blah, and then they've got

lot of computer scientists. Computer science is mathematics, basically. Computer science is not science per se, it is mathematics. It is a tool. It's like a glorified hand calculator, but you can't say I am a calculator scientist, and, therefore, the world is going to warm. They don't know. They need the input from someone, and the input you get is garbage from the CRU of East Anglia and from people like Stephen Schneider, who has an interest, and people like Al Gore who has an interest. Al Gore, for instance -- here is the reason why this is such

a big thing. I have been intimately involved with this from before its birth, from when it was global cooling and I saw it before it was even called global warming. It was already started. It was I think 1988 when Jim Hanson of NASA, GISS, he gave it the term global warming, but the science, quote unquote, "science" of it was around for several years before that, and the reason is, I want to get into it just a little bit of a link, it might be

used for people, between science and economics. The root link is this. All of economic wealth, all material wealth in the world, you cannot find an exception to this. The way it is produced is by rearranging things. That's all that's involved. You want to take the iron out of the ore and make a tool with it. You know, an apple on the moon is worthless to me, it doesn't have economic value. If you tranport it to my plate, it now has a human value, economic value. And when you move things, it requires what, energy. Every bit of material wealth

on the face of the globe requires energy. He who controls energy. You can forget George Sauros. He is a piker compared to what's going to happen to the people who get to control energy. The richest men in the world is going to be like homeless men for the amount of money that's going to be involved with this because we are going to be bankrupt. And not only that, you know who's going to suffer, we're all going to suffer, but the people who are mostly going to suffer are the people who can least afford it because experts project that if we go through with all the cap and trade, that's

based on this whole

24 science, half a billion people, there's about seven

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1 or eight billion people on the planet now, seven

2 billion, the bottom, the most economically

3 depressed, in places like third world countries,

4 when they don't get their heat, when they don't get

5 the crops because we can't have carbon, we can't

6 make fertilizer, they're depending on the dribbles

7 and dredges from the advanced industrialized world,

and they estimate that up to a half a billion people

will die, if not, more eventually, and there will be

many more than that, many more than that who have

their immune systems more damaged because of the

worst malnutrition than otherwise.

Now, there's three basic elements that are

essential to life. Carbon, oxygen and hydrogen

oxygen makes water, the oxygen we breath. Carbon

dioxide is what oxygen to us is to plants, for

plants, and people don't realize it, this country,

because of the carbon dioxide you pour into the

atmosphere has been gleaning

for two generations.

Every year, just trees alone, 600 pounds of biomass

or more, every year for every man, woman and child

in this country, three times, three years, every

three years go by so there's, more trees, I am not

counting grasses, I'm not counting other types of

plant life, and plant life is the basis of the food

chain. Just use your common sense, look at the

biodiversity and the greenness of the equator. Look

at the biodiversity and the greenness of the north pole. Where warmth is good. Carbon dioxide is good. Professor Sherwood Idso is the world's expert on this. I don't know if you notice, but every greenhouse where you buy flowers and plants and fruits, every greenhouse pumps extra carbon dioxide in there because it's good for the plants. It's also happens to be what -- yeah, they grow faster, not only that, but it makes them more hardy because there are plants also take in, they need water, and they also need heat to keep cool from burning, they need to evaporate some water,

their pores and their

leaves, and when they get poor carbon dioxide, those

pores shrink a little bit. This is true for every

plant, just environmentally every plant. Professor

Idso for three decades has been doing research,

around the world experts on this, on all kinds of

plant life, and all of it, biomass increases

dramatically with a little bit more carbon dioxide

in the air. And, this whole thing is, it's just,

you know, there is too much, when you try to tell

it, because people who aren't familiar with it don't believe it, because but it just sounds impossible that everything I read in the newspapers could be so wrong, but it is, it is. There are many ways to refute this, many ways. A theory, it's hard to prove a theory. In fact, you can almost ever get any absolute proof, except if you are given this, this is true, and we can know it for certain. But, it's very easy to disprove a theory. You find one counter example. You found a counter example.

Okay. Now, if you look at

the chart from his movie,

12 from the big Gore movie, that 650,000 year chart

13 which also had this same mathematics. By the way, I

14 didn't mention that the hockey stick chart showed

15 that you had zoom up was based on the manipulation

16 of the data McIntyre put in many different data

17 streams, and they all have it at the end. He put in

18 the random data and the chart came out random

19 pictures and then shoots up at the end because it

20 was a fraud. It was intended to be done that way.

21 There is a lot of money involved, and there was

22 careers involved, and I'm not saying that people,

23 everyone involved in this supports this theory who

24 is a crook or a charlatan, but they are the victims

1 of crooks and charlatans because they've got the

2 wrong data, and many of them, also, you know --

3 well, I should -- let me tell you a quick story.

4 I'm going all over the place. I was up late last

5 night, I didn't have a chance to make notes, and I

6 was trying to make notes while I was listening to

7 the slide show, and they're

written down here, but

I'm going off the top of my head. Now I forgot what

I was going to say. Oh, yeah.

Back in the mid-'90s I called Professor Idso

because I know him, very slightly, I was introduced

to him, and in the conversation I was asking

questions, because I was just starting to learn and

realize what was going on with this, okay, and, you

know, certain aspects, if I couldn't believe how bad

it was. I wanted to know how come more scientists

aren't speaking out. Well, he said, referred me to

a fellow at Western University. I called him up.

He had the research lab on atmospheric studies and he had about 50 PhD.'s under him, and this might help identify -- that's okay if he's identified.

Well, I shouldn't. He didn't want me. It's okay.

I will just deny it. At the time Harvard was getting the most Government funding for this

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research. His university, his department, his lab grant was the second biggest recipient of funds for global warming research, and

when I first called him

and said to him I would like to talk to him, and he

said, are you a reporter. I had said, no, Professor

Idso gave me your name. He said, what do you want

this for? I said, I just want to know for myself.

He said, okay. You know Professor Idso? He is a

friend of yours? Yes. Okay, fine. He said,

okay,but if you repeat what I tell you now, I will

deny this conversation ever happened, what I am

telling you. So, I'm going to trust you, go ahead,

but if you ever repeat it and attribute it to me.

So, I am going to give his name. But what he told

me was -- this is years ago now, but what he told me was, he had PH 50 -- I don't remember that, I have to say I don't remember if it was 40 or 50, what exactly it was, Ph.D. guys, he said, these are my friends for life, these are geniuses, these are wonderful people. The only way to get money is from global warming research. He says, if you do that you get it. He said, I don't want these guys driving taxi cabs. They will starve. They have to put bread on the table, and there's no jobs right

now for them and they just can't get them. The only way you can get grant money is global warming research. He said, if they ask me, if they say they're going give me $2 million to research how lighting a cigarette in San Francisco effects the rainfall seven years later in Boston, I'll do it, he said, it will put someone to work, and the other rationalization he had is, all knowledge is potentially knowledgeable. So, even if we find out there is no correlation between the cigarette now

and the temperatures and all that, at least now we know there's no correlation, so we don't have to worry about lighting cigarettes in San Francisco.

So, you know, that was that. Now, what's missing from the -- now, when you're doing science, a scientist, most ethical, you know, the highest, ethical demand on them, if he's really doing science, is if he comes up with a theory or a premise, if he's an honest and ethical person, he has to look at everything, every argument against it. He has to rigorously try to throw everything

after it again, and if it still stands up, then he goes to press with it, then he goes to the world. He doesn't just throw things out in garbage in other

people's laps and leave it to them to disprove it.

Now, what we have here is, what we have here are the footnotes, the references to this, to this chapter three, all one-sided, everything in there support, nothing from the skeptics who outnumber the global warmers by a tremendous margin despite them

telling you a lie that the consensus is the other way. The IPCC has 2,500 scientists they claim. I've seen estimates where the only -- the actual number of actual scientists is 400 who are relevant, but they still use 2,500. I know of a fellow who the IPCC also lied, and when they put out their documents, and they had a summary of it at the front, a synopsis of it, most people don't even read the summary, but any reporter, news reporter in the media, politicians, if they're really rigorous about it, they read the summary. Most of them don't even

do that. They just read what's written by the few

reporters who did read the summary, and then

redigest, reconstitute it. Well, the summaries

themselves of the IPCC contradicted the work right

off the bat, of what many of the scientists said.

They said, it's unanimous, it is consensus, it is da

da da. There was one fellow who tried to resign

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because he said, he kept saying, take my name off

your list, take my name off. He was a well-known

scientist, he was a well-known scientist. And take the name off your list. I forgot what his name was.

But, he had to threaten to sue the UN for defamation of character before they finally took his name off their list, because honest people are not on that list, honest scientists.

Thirty one thousand people, meanwhile, who have degrees, over 9,000, over 31,000 now scientists, including over 9,000 with PhD's who have degrees in the relevant sciences, physics, chemistry, biochemistry, geology, atmospheric sciences, 31,000 of them had

signed a petition

15 saying that there is nothing to the global warming,

16 will the Governments please stop trying to stop it

17 because you're going to do harm, carbon dioxide is

18 actually environmentally beneficial, and we should

19 stop this demonizing of carbon.

20 Do you know what organic chemistry is defined

21 as? Do you know the definition of organic

22 chemistry? It's the study of chemicals that have

23 carbon in them. Carbon is a virtual definition of

24 organic. So, that's the enemy. That's what we must

fight. We must fight. And, I'll tell you something, that's correct, that is a correct effort, because what this whole thing is is anti-human, anti-life, anti-earth, anti-green. That's what it is. It's the destruction of energy. It's for people to get wealthy. Multi-trillions involved.

Al Gore, just for example, when Al Gore ran for president in 2000 he had to file a financial statement. His investments were $2 million. Nobody knows what he's worth today.

At least we know he's

worth 100 million, and all he's been doing is global

warming stuff. And, how did he get that money, how

do we know that, because for certain companies that

are large enough and you have to file with the SEC

and this and that, the big investors, their shares

have to be stated, so someone went and searched and

found all the ones with Al Gore, and we know that he

has at least 100 million dollars roughly, whatever

it is, 98 or 102, so we know that there is a minimum

of about 100 million. Anything he has in private

partnerships, or this here and there or whatever,

that's elsewhere. He went from about two million to 100 million in about eight years just doing global warming stuff. How did that happen? And, what's

going to happen, he's going to be a multibillionaire if we pass cap and trade, because it's very easy, the former Shell company, ten guys get together, they put in $100 a each, they issue a billion shares -- what is that?

MR. L'HEUREUX: Stay on the issues.

MR. MARKOWITZ: Well, anyway, let's forget about that. Just, you can figure it out yourself about the finances. I don't know what issues.

Well, me just tell you that -- well, there's 31,000 being kicked to people who are -- who have been, you know, tell you that all this is worthless.

Now, here is one thing I would like to challenge that anybody present here that's working on this stuff to show me.

I would like to find one paper, one scientific paper anywhere in the world, point me out one, where

even evidence, I'm not looking for proof, evidence of a link, of a link between any of man's activities and atmospheric temperature has been shown. Find me one. Ask Al Gore, ask the head of your physics department, ask the head of your chemistry department, ask the head of your ecology department,

your physiology department. All I would like is the name of one paper anywhere in the world in a bona fide peer-reviewed scientific

journal to despite the

4 50 billion minimum of research that's been done.

5 One paper I would like to see that shows, I don't

6 want proof, and I am telling you how many different

7 types of activities is this man involved in.

8 Twenty-five thousand? I don't know. And how many

9 different aspects of it, climate change or

10 atmospheric change. I don't know, 20. Whatever you

11 want. So, there's how many combination, possible

12 combinations of links out here. Hundreds of

13 thousands at least. Show me one. All I want is one

14 paper that, find one evidence for one of them. You

can't do it because it doesn't exist. It's all hypothesis, all projection, all garbage in/garbage out on these models, that has no science underlying them. In fact, Professor Lindor of MIT has proven show -- well, do people here know the difference between negative and positive feedback? A negative feedback system is one where the cause that proves an effect that then works in a positive direction and tries to minimize the cause. Like, if you had a sprinkler system, that when it detected the heat of

a fire spews water out, and that's a negative feedback because the flames produce an effect which counters the flames. A positive feedback is a reinforcing, self-reinforcing thing, which is what Gore says is going to happen when you talk about tipping points and all that, that the earth is going to spiral down or spiral into higher temperatures and all that baloney. But that's if you, you know, if you had a sprinkler system that spued gasoline on the fire, obviously, it would just make it worse.

Now, what Professor Lindon who was the head of the meteorology department at MIT says, and published a paper recently, that he has found that -- well, basically these models, virtually all of them just assumed that there is positive feedback, in other words, you get a temperature rise, you get more CO2, and at a certain point it just goes wild, but the feedback is negative, and he has demonstrated that. There's the factual evidence that all the models have a fatal flaw.

Furthermore, when you look at the chart that

was in Gore's movie and that we have seen half of

today, the 650,000 years of CO2, he put up the

temperature of the atmosphere and it correlates very

well, and it does correlate very well, but

correlation isn't causality, and when you look, it

was purposely chosen on a scale and you couldn't see

the detail, but when you expand it and look at the

detail, yes, they do correlate very well, and

without exception every time the carbon dioxide goes

up after the temperature rises. The temperature goes up first, then the carbon dioxide concentration goes up, and then the temperature turns down, and then later the carbon dioxide turns up. No exceptions, none. So, how can a cause come after its effect? And that's just one thing of many that just shows this thing is just totally worthless.

Now, this paper I really have to say I am very disappointed in. If I were on the committee or responsible for having this published, I would say I resign. I once did have to resign from a company

because of a guy who what he was doing was unethical, and I went to the president and told him, he said, no, no, no, you're wrong, and it turned out two years later the company almost went bankrupt. I was the first to quit. Some other guys, you know. But, anyway, I would have quit, and I think anyone who remains without questioning this is not a

scientist, is not an honorable person, because there's stuff out there, there's tons of stuff out

there, it's all over the place, and there is not one reference to any of it. What about the albedo effect of clouds? What about water? Which is a far more effect on temperature than CO2 does. CO2 is in parts per million.

MS. McCANN: Excuse me, sir, sorry. We do have another chapter we're going to be reviewing. We're very --

MR. MARKOWITZ: Oh, I am sorry. I am going on too long.

MS. McCANN: We're very appreciate of your input. We're recording it. I just want you

to know, you're also welcome to submit comments.

The comment period ends on May 28, so we would be glad to hear any comments you have.

You say you have one more comment, is that correct?

MR. MARKOWITZ: I will do it, you can time me, I'll keep it under 60 seconds.

MS. McCANN: Okay. Ready, go.

MR. MARKOWITZ: If you look at the last 3,000 years, temperature swings are normal. If

you look at them, we had what was called a medieval war period at about the year 1000 or 1050, or 50 years either side of it, that was when you read the books about King Arthur and the round table, and, you know, we breaks growing all over England, and that's why Greenland is called Greenland because it was very green. That was much warmer than it is now. It is a lie if it says that this is the warmest period in history, and that 650,000 year temperature scale that used Michael Mann's inept statistics to create it, to

fudge to make you

12 believe. And, in fact, we then had -- that was

13 followed by what's called the little ice-age,

14 approximately 300 years ago, which was the lowest

15 temperatures we've seen in the last 3,000 years, and

16 that is that why you see pictures of George

17 Washington 50-100 years later when George Washington

18 was crossing the Delaware, there were chunks of ice

19 in the water. It was very, very cold there. And,

20 this was all before man had anything to do with it,

21 and we have been warming for 300 years, and this has

22 been --

MS. McCANN: Thank you very much.

It was 60 seconds, as you requested. We encourage

you to write comments. We greatly appreciate your

input.

Does anyone else have any comments on this

chapter?

MS. JEDELE: I just have one

question. Trish Jedele. I noted that there's a

small mention of salinity in the global climate

change chapter, and I was

just wondering if there

was any plan -- I don't think CLF commented on this

previously, and I didn't look at this revised

chapter, whether you would look at projections for

impacts to salinity in the SAMP area from climate

change, and so that's I guess one question.

Then the other was just whether you intended,

both the ecology chapter and the global climate

change chapter, whether you intended to do a little

more wetting or melding of some of the very good

information you have in this chapter with the

ecology chapter?

MR. TOBEY: Yes, the number two. As Alan said, we're working as a team together to meld the information in different chapters, and some overlap, so we should be consistent in the data information.

On the first, in terms of salinity, you have to refresh me where we say that. Maybe from the runoff, the precipitation runoff causing less salinity. Is that the --

MS. McCANN:

Dawn, can you say your

name?

MS. KOTOWICZ: Dawn Kotowicz,

K-O-T-O-W-I-C-Z, and I am one of the contributing

editors.

The Codiga and Owen reports that Alan

mentioned earlier discusses salinity change in that

area, but there are no projections for salinity with

climate change projections, at least at that

localized level.

MS. JEDELE: Okay. So, the studies

with respect to ice sheets and whatnot don't apply

directly to the SAMP area, they are just projected

over wider areas?

MS. KOTOWICZ: Yes, and there's no way to know how that will resonate at the SAMP location. So, there are projections, but I don't think there's even global projections in terms of salinity off the ocean. There are localized projections near melting ice sheets, but that's the

only thing I've ever seen.

MS. McCANN: Okay. Thank you. Any

other comments on this chapter?

MR. L'HEUREUX: I have a few things I would like to say. Ronald L'Heureux. L-'-H-E-U-R-E-U-X. I'm representing the Rhode Island Tea Party, a lot of rationalist groups in the State of Rhode Island. What I have is copies of all of this science that was done by Arthur Robinson, Noah Robinson, Willie Soon. I want everyone to take a copy of this and read it. And when I testified before the Senate a while ago at the State House, I said the same thing to them I'm saying to this group here, prove me wrong, okay.

If you can't, then what

you're doing is -- I mean, how many people in here

like to be deceived? Anybody like to be deceived?

MS. McCANN: This is a workshop, so please provide us your comments.

MR. L'HEUREUX: Okay. What I'm trying to say is there are statutes in the State of Rhode Island that say that it's a crime to commit a fraud on a public official. I have attached a copy of that statute to this package and given it to everybody, so take it seriously, whatever you do,

because if a public official relies on it and it's inaccurate and it is incorrect, it is a crime in the State of Rhode Island, all right, and not only that, but we as the groups are outraged over this because we also believe this stuff. Like Maury was saying further, and we're realizing it's just a big fraud, and everybody who is perpetrating that fraud now, especially if they are in the science end of it, is guilty of the same crime, and we don't want that to continue.

So, we have copies of that, I have copies of everything to give to the board here, and we will submit more stuff in evidence, the same stuff we submitted to the Senate, and the stuff we submitted to the Attorney General's office for prosecution of the scientists who originally perpetrated these frauds. Thank you.

MS. McCANN: Thank you very much.

Any other comments on this chapter?

(NO RESPONSE)

MR. MARKOWITZ: Can I ask a question?

MS. McCANN: How about we have one more presentation. Sure, do you have a question?

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MR. MARKOWITZ: Just a question. Is it possible that since it's been shown by basic equilibrium chemistry, that when we warm, CO2 actually evaporates from the sea, and what I was just thinking now about the salinity issue, does it make, from one of you that's familiar with this, does it make sense that

whatever it is that causes

the warming then causes the evaporation of -- well,

whatever it is that causes the warming then causes

the evaporation of CO2, I would think that that

would make the PH go up because it becomes more, and

CO2 is an acid, and that would make the CO2 go up,

it would be more basic, so I don't understand how --

well, oh, I guess it would. Well --

MS. McCANN: Okay. Thank you very

much. The question has been recorded and we will

respond -- we will respond. Thank you very much.

We're going to move on to the last chapter

we're going to be having a public workshop on today.

By the way, I'm Jennifer McCann. I'm with the

University of Rhode Island, Coastal Resources

Center.

Our last presenter is Brian Goldman, who is

the lead author for the existing statutes,

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regulations and policies chapter.

MR. GOLDMAN: Hi. Good afternoon,

everybody. I am the CRMC's legal counsel. The

gentlemen that are here, just so you know procedurally, everything you are saying on the record today is part of the record and has to be considered, so, it's public comment, people differ, and just know that we have a stenographer here so that those comments are part of the record and will be read by the full Council.

It's a hard act to follow after that last bit.

I apologize upfront, I don't have any color slides or charts or graphs. Maybe that's symptomatic of the topic I have to cover.

Can I just start off, does anybody going in,

as we read this, does anybody have any questions on what I've done so as far? Because then I can probably -- if no one really has anything going in, I will go through and highlight the things that I have changed as a result of the comment period and then we can kind of go through there rather than go through statute by statute.

So, what I've done is, this draft is the most recent draft. This incorporates all of the changes

that I got from NOAA, the Coast Guard, URI, MMS, the Army Corps of Engineers. It incorporated a select group that I got from Roger Williams and from Naval Underwater System Center, and some of yours, Wendy, not all of them because there was a conflict between what some of the things people would say, and when I met with the people from DEM regarding their statutes and I have incorporated all the changes that the DEM wanted, and although I did condense down the section on the bays and rivers coordination team that I got because it was too lengthy. What

I'll do is I will just go through and sort of highlight what I changed. This is, obviously, the table of contents. One change I'm going to make to this beginning the introduction of it, I just want to make a further clarification. What I'm going to add in here is to, at the end of -- at the end of this first bit, paragraph three, where it says, environment, is just to say, further, this overview is not an interpretation by the CRMC of any rule, regulation or statute, but rather it is a general overview of the statutory and regulatory environment. I just want to

emphasize that point to

24 everybody because some of the comments I got, there

1 was concerns that this was somehow the CRMC taking a

2 position regarding what the statute mean or don't

3 mean. It is not. It's meant to be a general

4 overview, so. And I tried to keep it as simple as I

5 can.

6 The first Section 1010.1, I made some

7 technical changes in response to this. There are

8 some typos and some

grammatical things that I made

that I really don't need to get into, but

essentially there is no substantive change to what

went on with this first section.

I made a couple of minor changes to the

section on the CRMC's authority. Obviously, I was

somewhat judicious about that, because -- I mean,

the CRMC, it's the Council's statute, and I think,

you know, we have a way that we like to interpret

it, so I was a little more stingy about making

changes to this one. What I did do is, there was a

comment on this last bit, where I said, the

Council's authorized to adopt Special Area Management Plans, I made the changes, say using both State and Federal authorities the Council is authorized to adopt Special Area Management Plans.

CZMA section, I made a couple of changes that

NOAA requested, since they're the responsible agency, and then I made some significant changes at the request of NOAA later on in their statute.

The acquaculture

regulation, Grover is

supposed to have a couple of minor comments.

Did we ever get those, Jenn, after?

MS. McCANN: Yes, it was submitted to you.

MR. GOLDMAN: Okay. I don't recall getting those, but Grover wants some tweaking of that, which I'll do.

This section, Fisheries Management, I made some fairly extensive changes at the request of DEM.

Basically, what I had was, originally it ended -- in fact, the sentence says 20-1.5, at the end of that parentheses, that is sort of

where I had it stopped,

17 and at the request of DEM I added the remaining

18 paragraph, it's their statute to administer, so I

19 felt that was appropriate. My philosophy on this

20 was that if an agency responsible for administering

21 a statute felt that the section needed to be

22 clarified, I basically acceded to anything they

23 wanted to do because they're really the responsible

24 one.

1 Nothing really on

energy facility citing.

1020.7, at the request of Ames Colt, I added this whole section under the Bays and Rivers Watershed Coordination Team. That had not been included in the original draft, so I put that in. There is going to be one change where it says that it is a permanent interagency commission. The subcommittee changed, we're going to delete permanent. So, that's a whole new section. If anybody has any questions on that? No. Okay.

Then we get into the Federal statutes. Here I made substantial revisions from what I presented to

the stakeholders.

The CZMA, the Section 1030.1, was essentially -- it's good I don't have a big ego, because it was essentially all redrafted by NOAA and some comments from MMS, so this is new language, similar to what I had drafted originally, and this is what NOAA wanted and MMS wanted, so I included it.

MR. L'HEUREUX: Excuse me. Can I ask you a question? Is this giving the Federal Government authority in Rhode Island waterways to regulate.

MR. GOLDMAN: This is existing statutes. The Federal Government has the authority -- well, they have authority in all Rhode Island waterways, within three miles it's the Army Corps, outside of three miles it's MMS. So, this is just merely a summary of existing Federal statutes and State statutes, not giving anybody more than they have or taking away anything that they already have.

MR. L'HEUREUX: Because I think then already have more than what our State Constitution allows them, they are all cited in there, all the chapters and verses, so I can look them up?

MR. GOLDMAN: It's an overview. I mean, the statutes themselves are several hundred pages.

MR. L'HEUREUX: I know, but the statutes are all cited in there so I can look them up?

MR. GOLDMAN: Yes, they are. They are. And then, you know, whether you think it's

constitutional or not, that's not an issue for this forum.

MR. L'HEUREUX: No. For your

comment.

MR. GOLDMAN: Until a court says otherwise, if they are enacted by Congress, then they're there.

MR. L'HEUREUX: I understand that.

MR. GOLDMAN: On the NEPA I made a couple of changes that MMS wanted, particularly the

last sentence of paragraph one where it says, "NEPA should be issued a competitive basis, whereas, demand, they wanted to add "unless it is determined that there is no competitive interest." So, I included that.

Section two -- excuse me. Paragraph two is the same. This paragraph three is a whole new paragraph they did a complete redraft of, and this is MMS, did a complete redraft of paragraph three, which I thought was very good and very succinct, so I just deleted my old paragraph three and put theirs in.

Then there's no other changes to what was originally there until I get to 1030.6. There was some comments on the National Energy Policy Act, some tweaking, which I did. I think there are a couple of minor ones on 1030.5, which I incorporated

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that. I did that at the stakeholders' meeting.

Okay. 1030.6 is a complete redraft by the Army Corps relating to the Rivers & Harbors Act and Clean Water Act, so I just

deleted what I did and

substituted what the Army Corps asked to be in there, and I say that it was a much tighter draft of what I had done.

So, nothing on clean water section, no comments there. Nothing on 1030.8.

There were a couple of comments from the FAA on Section 1030.9, which I incorporated.

1030.2, the Coast Guard asked me to delete some things, which they said was outside of their authority, which I then did, so this is a shortened version of it.

Nothing on 1030.11.

A couple of minor tweaks in Magnuson-Stevens, which I made but nothing dramatic.

Nothing on 1030.13. That was as it was originally presented.

1030.14, there were really no comments.

Actually, there were a couple of minor comments on language and a few minor deletions and additions, just tightening it up.

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On 1030.15 I had a couple of comments

regarding this from the responsible agency. I made those changes.

Original comment, 1030.17, in the original draft I didn't have anything included about FERC, and the Federal agencies thought that I should include something on FERC, so we did, we added this section on FERC. Since we put it out there no one else has had some comments.

Atlantic Fisheries, 1030.18, that was tweaked as a result of some comments at the stakeholders' meeting.

So, that's all the changes to it. I mean, it's certainly straight

forward. It's a summary of

the statutes and regulations. I'll be happy to

entertain any questions, if there are any. One,

two, three.

MS. McCANN: All right.

MS. JEDELE: I don't have a

question. I don't have a question on this, but I

mentioned to Brian I have a quick question on

process that maybe Brian would be best to answer,

so.

The notice that came out about these three

chapters, and it might just be a lack of clarity on my part, so I am hoping maybe you can help me with this, is notice of the intention to CRMC to change the management plans, and what I was wondering is their approval of each chapter won't -- it was my understanding that their approval of each chapter wouldn't in effect change the management plan until the entire SAMP had gone to comment, so I just wanted to make sure that they're signing off on these chapters after public hearing and final

comment isn't perceived as an incorporation of those three chapters into the management plan as revised without the SAMP in its entirety.

MR. GOLDMAN: You're right. What we're doing, what the Council is doing is, they are, you know, they're going through the subcommittee process, they're going out to public notice, getting public comment, doing the workshop like we are doing here, they are adapting the chapter by itself at the full Council meeting, but we are not sending them to the Secretary of State's office, as --

MS. JEDELE:

Changes to the plan.

MR. GOLDMAN: Well, this is a separate plan. So, none of these changes so far, if

I am correct, have effected anything in the Red Book, so there is no change to the Red Book. And then the plan is, as we originally indicated, is that when all the chapters are done, we are going to readvertise the whole thing as the Ocean SAMP, we're going to advertise that for another public comment

period and then have a public hearing on that at the full Council and then they'll adopt, modify or rejects it, and then after that meeting, then that is what we'll get filed or not filed with the Secretary of State, depending on that the outcome is.

MS. JEDELE: Okay. Will that amend in any way the Coastal Zone Management Plan at that point, or will that be something that happens separately, if it needs to happen?

MR. GOLDMAN: Well, if there need to be changes to the Red Book, then I would expect as

part of the adoption of the SAMP that would happen.

I think we've talked about some changes to the Red

Book, but this is just going to be -- the SAMP is

going to be a standalone regulatory document, like

all the other SAMPs. Most of the SAMPs do not amend

anything in the Red Book, but we've had discussions

at the subcommittee level, that if there are are

things in the SAMP that require changes to the Red

Book then that will be done

subsequently and that

will just go through --

MS. JEDELE: Its own process.

MR. GOLDMAN: -- its own process.

MS. McCANN: Okay. But then I think

after 22 days it gets submitted to NOAA, to then go

through a process so that it is formally

incorporated into Rhode Island's coastal program.

MR. GOLDMAN: As enforceable

policies.

MS. JEDELE: The SAMP?

MR. GOMEZ: The SAMP.

MS. JEDELE:

After it goes to the

Secretary of State or before?

MS. McCANN: After.

MR. GOLDMAN: Well, after the

Council adopts it, I would imagine simultaneously

filing with the Secretary of State and with NOAA,

because NOAA goes through a whole process.

MS. JEDELE: And then NOAA's process

is separate and starts its own trend?

MR. GOLDMAN: Yes. The filing with

the Secretary of State will take care of the State APA requirements, and then the NOAA process goes towards the certification by NOAA of enforceable policies and the consistency review that comes with that.

MS. McCANN: And, as you know, with all of these documents are going through the TAC, and the TAC, the Technical Advisory Committee, is madeup of specialists for each specific chapter, but it's also madeup of all the Federal and State appropriate agencies, so all of these chapters have

been vetted by the appropriate Federal and State agencies, so as we are creating the SAMP document, we're gathering the documents and appropriately intergrading them.

MS. JEDELE: Okay.

MR. GOLDMAN: Anybody else?

MR. L'HEUREUX: You said they already have been vetted or will be vetted?

MS. McCANN: Well, by whom?

MR. L'HEUREUX: By the appropriate agencies. You said all these documents.

MS. McCANN: The Federal agencies

are part of the Technical Advisory Committee for the

SAMP. They have provided comments to the Ocean SAMP team on these chapters. There will then, as we just stated, after it's formally approved by the State, by the full Council, it will then proceed to a formal process at the Federal level. It has not reached there yet. So, we have gotten comments at the Federal level. They are considered more informal at this point.

MR. L'HEUREUX: Do you know who those Federal agencies are?

MS. McCANN: Yes, it is on our website. We have a list, ranging from Minerals Management Service to the US Coast Guard to the Navy. You know, there is a list of about 12 agencies.

MR. L'HEUREUX: On the SAMP website?

MS. McCANN: Yes, the Technical Advisory Committee.

MR. L'HEUREUX: Political Advisory Committee?

MR. GOLDMAN:

Technical. There are

22 no politics here.

23 MS. McCANN: And it represents all

24 State agencies, including DEM, Statewide Planning,

1 the State Historical Preservation Office, and, also,

2 on the Federal level are the Narragansett Tribe.

3 So, quite an extensive list.

4 MS. JEDELE: Jenn, one more quick

5 question. I can't remember if you answered this for

6 me. You may have. I fogged out. There was a lot

of conversation. Before the May 28th deadline for these comments, do you anticipate having informal responses to the previous comments, or should we just kind of refile the comments?

MS. McCANN: That's your choice.

Okay. We are, as you say, those are informal, it's an informal process. We are, as you know, the chapter leads are working very hard on getting these chapters done, so they are submitting comments to the templates, but each one has a different level of inservice. I can't promise you that those informal

comments will be on the website before the 28th.

We will do our best. So, it's your choice whether you resubmit or not, okay.

MS. JEDELE: That will be redundant.

MS. McCANN: That's okay. Any other comments? Yes, sir.

MR. MARKOWITZ: If nobody has, I

abused my privilege, you were very kind before, and maybe I got overexcited. I just wanted to, I had a thought that simply explains

-- might explain the

4 acidity, it's my hypothesis, and this is going back

5 to the previous thought that I thought somebody

6 might want to think of investigating it, to explain

7 that salinity. I presume the explanation was that,

8 you know, that it was because of the increased

9 carbon dioxide in the atmosphere, but since the

10 record shows that that happens after temperature,

11 and it's the basic equilibrium chemistry that carbon

12 dioxide evaporates when temperature rises, whatever

13 it is that is causing it, which is the sun actually,

14 primarily, but solar activity, but if you just look

at the simple, it seemed like simply logical that the earth warms, and when it warms, for non-reasons, obviously, not caused by carbon dioxide, but when it warms, for whatever that other reason might be, the sea then not only evaporates carbon dioxide, but evaporates water, and there's more water in the atmosphere, but the water that evaporates is pure water, and there's much more of it in the sea, which is, obviously, carbon dioxide that's part per millions. Therefore, wouldn't the reduction, the

more massive reduction, you know, extraction from the sea of H2O as compared to CO2 would necessarily, since H2O is seven PH, the PH is seven, it would necessarily increase the acidity, even though the CO2 is coming out, more, you know, more water would be coming. That would explain the 13 percent more in the atmosphere of CO2, but the much more physically massive amount of water that evaporates in the atmosphere, increased humidity would more than outdo that and cause a more concentration of

the water in the sea, you know, more highly concentrated, which means the remaining carbon dioxide would reduce the PH and make it a little more acidic, just arithmetically. I don't know if that's -- it's seems like a logical possibility. Somebody might be interested in checking it out.

MS. McCANN: Okay. Thank you very much for your comments.

MR. FUGATE: Okay. If that's it, I guess we will close the workshop for today. As I said, there's still an open written comment period which you can submit

comments, and there will be a

23 public hearing on this matter, also. So, thank you

24 very much for your attending today. I appreciate

1 it.

2 (HEARING ADJOURNED AT 3:09 P.M.)

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C E R T I F I C A T E

I, Rebecca J. Forte, a Notary Public in and for the

State of Rhode Island, hereby certify that the foregoing

pages are a true and accurate record of my stenographic

notes that were reduced to print through computer-aided

transcription.

In witness whereof, I hereunto set my hand this

24th day of May, 2010.

REBECCA J. FORTE, NOTARY PUBLIC

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