

#	Name	Organization	Section	Comment	Response
1242	Donald Pryor	Brown	300	Policies and recommendations in this chapter, beyond the generality of taking climate change into account, do not provide specifics to aid in spatial planning or zoning of the Ocean SAMP area. Instead of clear policies and recommendations, the chapter proposes seeking funding, setting up committees and commissions, and conducting advocacy campaigns.	Policies have been revised. General Policies are more focused and regulatory standards require public infrastructure projects to provide an analysis of historic and project (medium and high) rates of sea level rise and shall at minimum assess the risks for each alternative on public safety and environmental impacts resulting from the project.
1245	Eugenia Marks	Audubon Society of Rhode Island	300	The rich resource of research from URI's Graduate School of Oceanography is appreciated in this document. The public benefit of such research is illuminated in this document.	Thank you.
1246	Eugenia Marks	Audubon Society of Rhode Island	300	The recent data on increases in CO2 emissions; local temperature, precipitation, and sea-level; ocean acidity; and storm activity make this document particularly useful. We hope that the documents will be amended and that the public will be notified adequately as new data become available.	Thank you. The intention is to amend the document periodically as new data becomes available.
1247	Eugenia Marks	Audubon Society of Rhode Island	300	Climate change mitigation is a human intervention to actively reduce the production of greenhouse gas emissions (e.g. through replacement of fossil fuels with renewable energy) or to remove the gases from the atmosphere (e.g. through eel grass planting). While this document is about marine ecology and examples may come from that context, the limitations of effect and extent possible due to shallow water, minimal CO2 uptake, and other ecological considerations, of using eelgrass planting as an example of mitigation seems weak. Since a transfer from use of fossil fuels to other means of generating electricity, used in the same sentence, is as terrestrial as marine, the example for removing gases from the atmosphere might say "e.g., through planting additional vegetation on land and in water," or "through planting trees and other terrestrial vegetation and eelgrass and marsh vegetation in marine environment."	The sentence was changed to "Climate change mitigation is a human intervention to actively reduce the production of greenhouse gas emissions (e.g. through replacement of fossil fuels with renewable energy) or to remove the gases from the atmosphere (e.g. through planting additional vegetation on land and in water)."

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1248	Eugenia Marks	Audubon Society of Rhode Island	310	It might be useful to the reader to note that Table 1 follows on the next page.	The sentence was changed to "A summary of observed climate change trends described in this section at the global, regional and state levels is given in Table 1 below."
1249	Eugenia Marks	Audubon Society of Rhode Island	310	Suggest that "wildlife" be added to the list of "adversely affected" targets in this section. Although "habitat" is listed, a reference to what uses that habitat should be included. Discussion: Increased precipitation, along with the removal of dams and installation of fish passageways, may alter the diadromous fish use of the SAMP due to increased populations. Eel, various species of herring, and less likely, salmon, may respond to efforts throughout the northeast to improve passage to breeding and development habitats. The following excerpt from an article on salmonid species is of interest, although the article is not from our area and the salmonid restoration in RI largely seems to have failed: "A warming climate is likely to increase ecosystem productivity and result in increased biomass and yields of many targeted species (Reist et al. 2006b).Increased productivity in nearshore areas could boost returns of anadromous fish. However, increased productivity in freshwater systems could lead to a decrease in the frequency of anadromy followed by a decrease in population production. An a	1) "Wildlife" has been added to the list of adversely affected targets. 2) Discussion of habitats and who uses the different habitats is covered in the Ecology and Fisheries Chapter. Not necessary to discuss in this chapter. 3) Although a good idea and a possible future research project, there is no literature relevant to Rhode Island that confirms that increase precipitation, along with the removal of dams etc, may alter the diadromous fish use of the SAMP.
1250	Eugenia Marks	Audubon Society of Rhode Island	320	Figure 7: We ask that the projection for the projections of emissions constant from 2000 be put in aqua or some cooler color. Orange conveys a psychological perception of warning or danger, inappropriate for the best, lowest projection of greenhouse gas emissions.	We do not have the original file to change. The graphic is cut and pasted from another document.
1251	Eugenia Marks	Audubon Society of Rhode Island	330	Although it seems obvious that poleward is to the north, will there be readers who could warp the reading?	The word "poleward" is changed to "northward" in the document
1252	Eugenia Marks	Audubon Society of Rhode Island	330	In first line, I suggest adding "adversely" before "affect lobster populations...."	Suggested change made.

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1253	Eugenia Marks	Audubon Society of Rhode Island	330	<p>Are there not studies showing shift in prey species for marine mammals as a result of warmer temperatures and potential cetacean population impacts? I would prefer that this section be re-written to reflect information in #7 on page 32, which indicates that there are climate change impacts to whale populations, and #10 on page 33, which indicates that disease affects adult mammals. "No research showing direct impact to adult marine mammals' populations as a result of climate in the SAMP is known, however, studies showing indirect impacts are noted below." may be a fair statement. Population sustainability should be the issue.</p>	<p>Sentence changed to "No research showing direct impact to adult marine mammals' populations as a result of climate in the SAMP is known, however, studies showing indirect impacts are noted below."</p>
1254	Eugenia Marks	Audubon Society of Rhode Island	330	<p>last sentence: Instead of "Some of the marine mammals," please state, "Of the XX large marine mammals that use the SAMP area, XX are on the ES list " or alternatively "All of the cetaceans that use the SAMP area are listed under the U. S. Endangered Species Act.." All marine mammals are provided protection from harassment under the MMPA</p>	<p>Last sentence changed to "Of the 29 large marine mammals that use the SAMP area, 7 are listed as Endangered under the Endangered Species Act, and therefore demand an extra level of attention. In addition, all marine mammals are provided protection from harassment under the Marine Mammal Protection Act."</p>

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1255	Eugenia Marks	Audubon Society of Rhode Island	330	is inadequate because it does not distinguish pelagic species that are directly impacted as the ocean in the Ocean SAM area is their habitat. While #1 talks about the 67 species of "oceanic birds" it is not clear, especially considering paragraph #2 whether the 67 species are pelagic or include more terrestrial seashore birds. 1 should at least distinguish pelagics (petrels, etc.), sea ducks, gulls and relatives, and shorebirds, each of which has a slightly different seasonal use of the area. There is no indication of ecological relationship to other taxa. Please add an appendix of birds species that use this area, which partitions for foraging that might be affected by climate change and a few sentences about their general life patterns, seasonal use, etc. that might be affected by climate change. I suggest that several ornithologists including Charles Roman (NPS), Suzanne Paton (USF&WS), or Shai Mitra (SUNY-Staten Island) may be able to provide useful information on climate change impacts to pelagic and off-shore species.	The 67 species of seabirds referenced in the first sentence is a general comment about seabirds and not with specific reference to the Ocean SAMP area. The bird species that use the Ocean SAMP area are described in the Ecology chapter (Section 250.6) and listed in Table 2.11. Further analysis of the impacts of climate change on those species is not readily available and beyond the scope of this chapter at this time. This could be an important research topic and can enter later versions of the Ocean SAMP.
1256	Eugenia Marks	Audubon Society of Rhode Island	330	should at least distinguish pelagics (petrels, etc.), sea ducks, gulls and relatives, and shorebirds, each of which has a slightly different seasonal use of the area.	Added sentence in 350.1.5 "Each type of seabird (e.g. pelagics, sea ducks, gulls and relatives, and shorebirds) has a slightly different seasonal use of the area and, therefore, the impacts of climate change may affect them differently."
1257	Eugenia Marks	Audubon Society of Rhode Island	340	Although "bird-watching" is covered in other chapters, as are fisheries, cultural-historical, etc., I suggest that you give the same note to "pelagic bird-watching" as these other activities, or perhaps more inclusively "wildlife observation" as people do pay to watch not only pelagic birds but also whales off RI as well as even sharks.	The topic of wildlife observation is covered in the recreation and tourism chapter

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1258	Eugenia Marks	Audubon Society of Rhode Island	350	Please add a paragraph that addresses process, equipment and infrastructure designs that cause least harm to vertebrate wildlife. This could include Turtle Excluder Devises, construction practices to minimize wildlife impacts, as well as future designs to protect birds and bats from wind blades.	Policy section has been revised
1259	Eugenia Marks	Audubon Society of Rhode Island		Will there be a section that will propose policy from these data? The SAMP is a plan for use of the area given the characteristics of the area and the social values of Rhode Island, the U.S., and indeed the global community. I trust that the dire predictions of increasing stresses on the environment will result in policy recommendations that will reverse the trends of greatest impact.	Policy section has been revised
1284	Pete Bonk	Citizen, Westerly, RI		This is a disappointing document. It is clear that is was created to arrive at a predetermined conclusion that CO2 is the "Great Satan" and must be controlled at all costs. If this premise is rejected, than a much more honest and useful management plan of the ocean waters of Rhode Island would have been created.	The chapter is a factual review of best available scientific data/information. The Ocean Special Area Management Plan would not be honest and useful if it did not take into consideration global climate change.
1285	Pete Bonk	Citizen, Westerly, RI	300	Only if any changes are meaningful on an appropriate time scale. Do keep in mind that Block Island and offshore island of NY and MA are glacial moraines of very recent origin. Nature doesn't care. there is no "Nature" to care, if your beach house is going to be washed away or left high and dry due to the ceaseless cycles of the world. Enjoy the moment and adapt as needed.	The changes that have occurred and future climate change projections are in a timeframe that is meaningful to coastal and marine planning. That is why the climate change chapter is in the Ocean SAMP.

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1286	Pete Bonk	Citizen, Westerly, RI	300	<p>Sea level has risen significantly, over 100 meters, since the most recent ice age, which was only 20,000 years ago. We are in an interglacial period. The real issue here and throughout this report, is if any of the litany of effects are outside the range of natural variation. Here in New England we have had Nor'easters since long before the rise of the modern Industrial Age. The claim of severity of storms has been challenged by many. The effects on long term climate are extremely complex. The many models uses are hardly kept predictive tools of climate, are full of unwarranted assumptions of the influence of clouds as well as a linear relationship of the greenhouse effect with CO2 levels. Consider the models of hurricane tracking, a much simpler problem than climate in that the time frame of prediction is days and weeks, not years and millennia. The hurricane prediction models are of high practical and economic interest- where to evacuate, etc. Yet even these models are very inexact.</p> <p>For instance, ALL the models in 2004 had Hurricane Katrina heading back NE into the pandle of Florida until Katrina had passed over the southern tip of Florida. In the ensuing years the models have not improved much: In 2009 TS Danny was initially tracked to be aiming for NYC; this storm never achieved hurricane status and was subsumed by another low pressure system.</p>	<p>The paragraph is a factual statement in summary form of climate trends in the past century. Climate changes over historic timeframes, such as glacial cycles, but the recent changes and timeframe for the projected changes are much more compressed than historic natural changes.</p>
1287	Pete Bonk	Citizen, Westerly, RI	300	<p>Error here: Water vapor is a greenhouse gas, and is present in variable amounts up to several percent recall that 1% is 10,000 ppm. Co2 is close to two orders of magnitude less plentiful.</p>	<p>Sentence changed to "The most prevalent greenhouse gas in the atmosphere in terms of anthropogenic emissions, carbon dioxide, has risen from a pre-industrial level of 280 parts per million (ppm) to 385 ppm in 2008, the highest it has been in 650,000 years.</p>

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1288	Pete Bonk	Citizen, Westerly, RI	300	No one argues that CO2 levels have risen in the last 50 years or so when direct measurements were made on a consistent basis. But there is no scientific consensus that CO2 is the driver for all of these dire events. What is ignored and is well known, not speculation, is that an increase of CO2 is beneficial to plant growth for food and foests. How much more biomass is there on the planet now vs. 50 years ago? I have seen estimates of as much as 15% more. Also, what is the time frame over which these claims of more extreme weather events, etc. are being measured? 30, 50 or even 100 years is a pitifully short period on which to base claims of changing conditions, which are always varying anyway, and to pin these changes on a single cause.	The Ocean SAMP chapter on climate change is based on the best available scientific data/information and is fully referenced. In the sea, CO2 forms carbonic acid, which as the chapter recognizes can have detrimental effects on the marine environment.
1289	Pete Bonk	Citizen, Westerly, RI	300	Nature is not static. Animal populations of many species can vary widely over a period of years in a region, even as the average value, measure over a sufficiently meaningful time period appears relatively constant.	Same as previous response (record 1288).
1290	Pete Bonk	Citizen, Westerly, RI	300	Even the stars in the sky don't shine forever. Closer to earth, we know the coastal structures of Rhode Island, and indeed any coast, are subject to violent change. What would Galilee/Jerusalem look like without the constant intervention of channels and dredging? Barrier islands are always getting rearranged. Nature does not care; it will do what it will do	Coastal and marine ecosystems are dynamic, but this fact does not imply that it is meaningless to not understand what global climate change does and might do to the ecosystems on top of natural dynamics.
1291	Pete Bonk	Citizen, Westerly, RI	300	This concern is always dead last in any survey. Quite honestly, we have more pressing issues. REAL problems, which need the always limited resources a society can apply at any given time. We can readily adapt, as we always have, to long term changes that are and always be out of our ability to control.	The paragraph is factual irregardless of what side of the fence the reader is on with regard to global climate change

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1292	Pete Bonk	Citizen, Westerly, RI	300	Oh please. Without access to affordable energy, that currently being provided by natural gas, coal, oil nuclear, hydro, etc. the USA and Rhode Island in particular will continue an economic decline. Poverty is not good for the environment. We all know the rapidly growing economies of China, India and other societies will do nothing or lower CO2 emissions. And they shouldn't! They realize they have more pressing issues of getting major portions of their populations out of poverty. That takes energy use, lots of it. Adapting CO2 reducing policies in Rhode Island and the US in a world that won't do anything significant about their CO2 use will only serve to impoverish Rhode Island and even further deindustrialize the USA.	Reducing greenhouse gas emissions through reduced consumption of fossil fuels and promoting clean energy technologies are policy goals of RI state government
1293	Pete Bonk	Citizen, Westerly, RI	300	You do nothing and adapt as needed. Peoples and societies have always adapted to their environment.	The paragraph refers to 'proactive' adaptation. Proactive means planned adaptation and is different from doing nothing until the problem occurs. The latter is reactive adaptation, which is likely to be less efficient and result in lost opportunities.
1294	Pete Bonk	Citizen, Westerly, RI	300	Don't forget to include how Rhode Island and the entire Northeast has been shaped and reshaped by the four major and many minor glacial epochs that have occurred over the last 2 million years, and as recently as 20,000 years ago. That's some climate change for you - With no intervention at all from humanity - Even in recent recorded history of the last 2000 years or so we know there have been extended 100s of years - of cooler and warmer weather. The Little Ice Age ended around 1850- no wonder there is an observed warming when that is the starting year for observations. It is a good this is has warmed since then!	Don't see the direct relevance of this comment to the text of paragraph 8.

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1297	Tricia Jedele	Conservation Law Foundation	300	<p>The SAMP is a Rhode Island management tool. While CLF understands that climate change is a global issue, insofar as reducing greenhouse gas emissions in a meaningful way involves a global effort, and that in this respect, “society” will have a number of choices available to it, including, the choice to do nothing about climate change, Rhode Island also has the ability to make its own choices. The SAMP can take responsibility for recommending RI-specific actions, policies and management tools with respect to adaptation to climate change or the SAMP can cloak climate change as a societal problem over which we have little to no control. CLF strongly prefers that the Rhode Island SAMP address climate change in a Rhode Island-specific voice to the extent that is possible. Paragraph 6 and 7 should talk about the choices that Rhode Island can make. Furthermore, CLF urges the authors to recognize that the need to reduce green house gas emissions and the need to respond to a changing climate by incorporating adaptation policies are not mutually exclusive choices. We can and should do both. Finally, CLF strongly objects to including the last sentence of paragraph 7. Doing nothing and facing the consequences is not an option and should not be presented as one. CLF suggests deleting this last sentence altogether.</p>	<p>Changed "society" to "Rhode Island" and added “wait for climate changes to occur and react to them. Reactive adaptation is likely to be less efficient and result in lost opportunities.” and deleted “do nothing and face the consequences” to clarify statement regarding options for Rhode Island in dealing with climate change impacts. Note that CRMC's position is that while reactive adaptation (non proactive adaptation) is not a preferred option, it is in fact, an option.</p>
1298	Tricia Jedele	Conservation Law Foundation	310	<p>Table 1:CLF's comment that “The authors should check the statement regarding the “current pH in the surface ocean is 0.1 units lower than pre-industrial levels” was unaddressed and the Table was unchanged. CLF assumes that this means the accuracy of the pH statistics used in this table has been verified.</p>	<p>Positively confirmed and cited in 310.6.2</p>

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1299	Tricia Jedele	Conservation Law Foundation	310	<p>CLF believes that the 3rd sentence of paragraph 3 is irresponsible, inaccurate, and misleading and should be removed. Moreover, this sentence is entirely inconsistent with other statements made throughout the chapter. For example, see the first and last sentences of the same paragraph discussing “numerous effects on the marine ecology” and “serious societal costs of coastal land and infrastructure loss. If we suffer serious damage to our ports, seawalls and revetments, docks, roads, bridges, etc... as a result of sea level rise, what is the value of a longer shipping season? See Section 310.4, para. 4, p.11 and Section 340 describing potential damage from increasing storm intensity and past damage to the ports of Providence and East Providence. If we are losing species to global warming, losing coastline, barrier beaches, drinking water supplies, and as a result, losing tourism and recreational benefits, what possible benefit to tourism, recreation and fishing could be created?</p> <p>The authors should use caution when making statements that attempt to define some economic advantage that will be created as a result of global climate change.</p>	<p>Beginning with the third sentence of this paragraph, these statements were revised as "This impact of climate change may have some benefits for tourism and recreation, fishing, and other Ocean SAMP uses that are more easily conducted in warmer weather. Shorter, warmer winters and reduced icing on vessels' gear and structures could be beneficial to winter navigation and shipping. In the long run, warming may also produce other global changes that will affect the Ocean SAMP area, positively and negatively." However, CRMC recognizes the potential for both positive and negative impacts from climate change based on the perspective of the relevant user group to the specific impact; these determinations stated in this document (positive or negative) reflect those of the literature consulted in writing this section.</p>
1300	Tricia Jedele	Conservation Law Foundation	310	<p>In the 2nd to the last sentence where the chapter discusses how increased sea surface temperatures are partially responsible for Harmful Algae Blooms, the chapter should seize the opportunity to mention some of the other culprits. For example, the sentence could read: “It is also partially responsible, along with increased significant rain events contributing to run-off from point and non-point sources, for HABs.”</p>	<p>Pollution from point and non-point sources are not primary impacts of climate change upon this Ocean SAMP area. This section focuses on the most direct impacts associated with sea surface increases in temperature.</p>
1301	Tricia Jedele	Conservation Law Foundation	310	<p>should defined the term “subsidence” in this paragraph.</p>	<p>Added a definition of 'land subsidence', the downward movement relative to sea level, to the sentence.</p>

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1302	Tricia Jedele	Conservation Law Foundation	310	Should reference salt water intrusion of freshwater aquifers.	Saltwater intrusion is a land-based impact of sea level rise which is out of the focus of this chapter which focuses on the ocean and coastal impacts that most significantly impact the Ocean SAMP area.
1303	Tricia Jedele	Conservation Law Foundation	310	Figure 3: the notes describing the Figure should explain why it is relevant that sea level data is measured relative to the baseline for vertical surveying and measures the absolute change in sea-level rather than to the adjacent coast. Why does that distinction matter?	The distinction matters because the associated discussion states that locally, sea level rise differs from global estimates, and incorporates a variety of dynamics including thermal expansion of the ocean and subsidence.
1304	Tricia Jedele	Conservation Law Foundation	310	Suggest that this paragraph, rather than simply provide references, explain in a little more detail why storm intensity having increased in the North Atlantic correlates well with variations in tropical Atlantic sea surface temperature.	Revised per suggestions by Isaac Ginis
1305	Tricia Jedele	Conservation Law Foundation	310	In addition to the discussion about the projected impacts of acidification on the physiology, reproduction, and calcification of marine organisms, and an acknowledgement that the ultimate effects on most marine organisms over the projected CO2 range is largely unknown, there should be some reference to the significance of bivalves as a part of the food chain.	Added the phrase "many that are valuable to the food chain" after the list of examples of marine animals with shells or skeletons of calcium carbonate.
1306	Tricia Jedele	Conservation Law Foundation	320	It may be more helpful to the reader if you could consolidate potential impacts in categories. For example address the projected impacts to marine organisms/habitat in one section (how does increased precipitation, decreased wind speeds, ph, storminess, river flow, etc ... impact marine organisms). It is difficult to track all of the projected impacts because they are scattered throughout the chapter.	Due to difficulty in addressing the collective impacts of projected climate change, the document provides a review of existing research by climate driver.

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1307	Tricia Jedele	Conservation Law Foundation	320	The SAMP should address the potential impacts to shellfish not only because acidification could be a concern for animals that have shells or skeletons but also because these marine animals are a critical part of the food chain and larger ecosystem and will likely be first and most severely impacted by ocean acidification – an impact that could have serious consequences for the SAMP area.	There are no local studies that discuss potential impacts to shellfish in the Ocean SAMP area. This is an area of research that has been identified for further investigation to be included in future versions of the Ocean SAMP document.
1308	Tricia Jedele	Conservation Law Foundation	330	The first sentences has an extra word. The word “have” should be deleted.	Corrected as suggested
1309	Tricia Jedele	Conservation Law Foundation	330	Should include a reference to non-point source pollution and run-off or Chapter 2, Section 250.1.6 should include a reference to non-point source pollution.	Pollution from point and non-point sources are not primary impacts of the ecology or of climate change upon the Ocean SAMP area. This section focuses on the most direct impacts associated with sea surface increases in temperature.
1310	Tricia Jedele	Conservation Law Foundation	330	More should be said about the impacts on commercially important species from both climate change and overfishing. For example, the first sentence could read: “It is possible that warming waters, in addition to overfishing, may be a significant cause for the decline of ecologically and commercially important winter flounder, etc... This is a also good example of how the chapters need to do a better job at cross-pollinating where relevant. If the Fisheries chapter is going to address climate change and its impact on ecologically and commercially important species more fully, then the reader should be directed to that chapter. If not, then the reader should be referred to a climate change section within the fisheries chapter or an ecology section within the fisheries chapter or should be referred to these chapters altogether. Finally, the discussion of this point in this chapter should be fuller.	Added sentence stating, "It is possible that warming waters, in addition to other stresses, may be a significant cause for the decline of ecologically and commercial important species (see also Section 340.5 of this chapter)." Section 340.5 - Fisheries Resources and Uses provides additional information on the impacts of climate change on commercially important species.

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1311	Tricia Jedele	Conservation Law Foundation	340	<p>Not sure what value is added by this paragraph or Figure 13. The second sentence of the paragraph is not clear even with the addition of the sentence “added to the complexity is the fact that a number of variables interact in a positive feedback loop...” If the paragraph remains it should be clarified and should be less equivocal with its terminology. We should be able to project the consequences of climate change on human uses.</p>	<p>There are few specific projections for this section and this paragraph states the importance of projections on human uses while explaining its uncertainty. In addition, the addition in the second sentence illustrates that this is a review of direct impacts from climate change upon these uses but not net impacts due to the complexity of the interaction of these. The final sentence of this paragraph is revised for clarification, "Added to the complexity is the fact that a number of these variables interact in a variety of ways, making the net impact of climate change drivers upon human uses unpredictable given the amount of research available at this time."</p>
1312	Tricia Jedele	Conservation Law Foundation	340	<p>CLF objects to the inclusion of this paragraph in the chapter. Again, that navigational channels may be easier to travel, and that we may have a longer shipping season, are not facts that necessarily imply a “positive” impact. Without further study or documentation that increased shipping seasons will actually be possible, especially given increased storm intensity and Nor’easters, or without data demonstrating that increased shipping will not also bring with it an increase in invasive species, have other detrimental impacts on the ecology of the SAMP area, or the fisheries, recreation and tourism, CLF believes it would be irresponsible to make this blanket statement. CLF suggests the following language, “although it is projected that increasing air temperatures will reduce concern of icing in waterways and on vessels and infrastructure, it is not clear, given the potential for negative impacts to infrastructure and ports, what impact this will have on shipping in the SAMP area.”</p>	<p>Revised sentence based on this suggestion to "Although it is projected that increasing air temperatures will reduce concern of icing in waterways and on vessels and infrastructure, it is not clear, given the potential for negative impacts to infrastructure and ports, what net impact this will have on shipping through the SAMP area."</p>

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1313	Tricia Jedele	Conservation Law Foundation	340	Table 6: CLF finds it disturbing that the SAMP team would even attempt to assign potentially positive values to the various effects of climate change which will be dynamic and systemic. It creates the sense that CRMC is attempting balance the benefits of increased navigability with the loss of barrier beaches or port closures. This table in its current form adds little value and should be removed.	Revised sentence in paragraph 2 which references the table for clarification. It now reads, "Table 6 presents a summary of the primary drivers of climate change with direct potential impacts to the user groups associated with marine transportation, navigation and infrastructure."
1314	Tricia Jedele	Conservation Law Foundation	340	The slide show used at the public hearing on May 20, 2010 made this point in a clearer and more appropriate way. Again, if sea level rise will make it difficult to unload cargo and passengers, and affect the use of infrastructure in ports and harbors, how can the authors make the point in para 8. on p. 43 that increased ease of navigability may lead to an increase in shipping of goods to and from Rhode Island ports?	The information presented in this section is based on direct impacts with respect to the direction of change only and not the magnitude, which is unknown at this time. In addition, the net result of these sometimes counteracting impacts is indeterminate at this time.
1315	Tricia Jedele	Conservation Law Foundation	340	These sections should more fully address the adaptation option addressed at the outset of the chapter. The SAMP team should define the projected impact that sea level rise and increased storm intensity should have on coastal development in the SAMP area. Substantial changes need to be made to the way we permit and zone our coastal areas in the face of sea level rise and storm intensity and the SAMP should reflect a CRMC commitment to rethink the plans for building in the coastal area.	Policies pertinent to this concern are outside of the Ocean SAMP area but within the Red Book jurisdiction in which these concerns are addressed. Please see Section 350, paragraph 1 which states the current Red Book policies and states "This [section] is the controlling provision for the upland areas within the Council's jurisdiction and the immediate shoreline areas and seaward to a distance of 500 feet offshore. Section 350 is intended to be the controlling policy for the ocean waters from beyond the 500 foot mark out to the three mile limit."
1316	Tricia Jedele	Conservation Law Foundation	340	Table 7:CLF finds it disturbing that the SAMP team would even attempt to assign potentially positive values to the various effects of climate change which will be dynamic and systemic. It creates the sense that CRMC is attempting balance the benefits of longer cruise ship seasons with the inundation of beaches and unique coastal habitat. This table in its current form adds little value and should be removed.	Revised the final sentence of this paragraph which references the table for clarification. "Table 7 presents a summary of the primary drivers of climate change with direct potential impacts to the user groups associated with recreation and tourism in the Ocean SAMP area."

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1317	Tricia Jedele	Conservation Law Foundation	340	Should reference increased beach closures in the SAMP area. The likelihood of increased beach closures has not been discussed anywhere else in the chapter and probably should be mentioned in several additional places. Beach closures, will also, of course, impact tourism and recreation.	Statement was added to paragraph 3 of this section "For example, in 2008 there was a significant increase in beach closures in Rhode Island over 2007. Although there was an increase in water quality sampling, the increase in closures also coincided with higher rainfall during the summer months in 2008 (Dorfman and Rossetol 2009)."
1318	Tricia Jedele	Conservation Law Foundation	340	regarding coastal lagoons was deleted. Please provide an explanation for the deletion prior to the hearing on June 22, 2010.	This paragraph was not deleted but is now number 7 in this section.
1319	Tricia Jedele	Conservation Law Foundation	340	regarding salt marshes was deleted. Please provide an explanation for the deletion prior to the hearing on June 22, 2010.	This paragraph was not deleted but is now number 8 in this section.
1320	Tricia Jedele	Conservation Law Foundation	340	Section 340.4 is not complete. It is impossible to provide comments in compliance with the APA at this time. CRMC should address how the exclusion of this chapter will impact public comment and the hearing scheduled for June 22, 2010.	Added an introductory paragraph to address this incomplete section that reads, "Climate change drivers could impact the preservation and maintenance of historical and cultural assets in a variety of ways. Potential impacts include, sea level rise and storm surge, which could increase erosion of coastal assets, and more severe storms and ocean acidification could increase damage to submerged assets. Due to the lack of research on the impacts of climate change upon these assets, these issues will be targeted for future research in the Ocean SAMP area and results will be reported in future versions of this document." The following sections (340.4.1 and 340.4.2) of the document describe projected impacts given the current research available.

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1321	Tricia Jedele	Conservation Law Foundation	340	When referencing fisheries most likely to be impacted by climate change, both the lobster and the shellfisheries should be included.	The lobster fishery is cited in 340.5.2 paragraph 1 as a species likely to move north, decreasing in abundance and/or extent of time in which they can be caught by fishers in the Ocean SAMP area. Other shellfish fisheries are not considered to be significantly impacted by climate change with respect to their potential commercial or recreational fishery.
1322	Tricia Jedele	Conservation Law Foundation	340	This continues to be a gaping hole in the Future Uses chapter and in the Climate Change chapter. We need to understand the capacity of the Ocean SAMP area to accommodate all of the uses we already impose on it and need from it before we can make sound planning decisions about whether the identified future uses are actually feasible or justifiable. The policies and recommendations section should recognize the limitations of the Future Uses chapter and this chapter should more fully address the concern that climate change may seriously impact our projected future uses and our approval of projects and uses in the SAMP area will have to be adjusted proactively and not reactively.	The intent of this paragraph is to state that climate change impacts will be considered in any proposal for future use when it is proposed. A sentence was added to this paragraph to emphasize this statement: "Due to the time sensitive nature of climate change drivers, these impacts would have to be considered when these uses are proposed in order to consider the effects as accurately as possible."

#	Name	Organization	Section	Comment	Response
1323	Tricia Jedele	Conservation Law Foundation	350	<p> This section should more fully explain with greater specificity how the CRMC intends to take climate change into account when assessing projects and uses in the SAMP area. It would be very useful if we understood the climate change criteria against which project and uses will be measured after the SAMP is approved. It is simply not enough to insert CRMC's climate change policy from January 15, 2008. CLF would like to see an affirmative statement that suggests a course to proactively reassess the interplay between the policies and plans incorporated in the climate change chapter and the remaining SAMP at least every five years so that the policies can be adjusted accordingly. The Marine Protected Areas Federal Advisory Committee's April 2010 report entitled: Climate Change in the Ocean: Implications and Recommendations for the National System of Marine Protected Areas, artfully states what we already know, "there is abundant scientific evidence that marine ecosystems are undergoing substantial changes – physically, chemically and biologically – due to the direct and indirect effects of c </p>	

#	Name	Organization	Section	Comment	Response
1324	Tricia Jedele	Conservation Law Foundation	350	CLF agrees that it is important to require an analysis of the historic and projected rates of sea level rise but believes that before requiring the most robust infrastructure and design materials, the CRMC should also have a set of criteria that guide decision-making with respect to building in the first instance or whether rebuilding of coastal infrastructure after it has been damaged by a storm will be allowed. Before we assess whether we are using the right materials, we should be assessing whether we are building in the right location or whether we should be building in the first instance.	
1325	Tricia Jedele	Conservation Law Foundation	350	The SAMP should require a minimum review period of at least every 5 years, as opposed to "periodically," which is not an enforceable timeframe.	As with all SAMPs, CRMC will review the Ocean SAMP on a regular basis to incorporate new science, information, and policy revisions, as refined in the policy section of this Ocean SAMP. In addition, the CRMC Red Book has a similar policy to reflect periodic review of policies and programs.
1326	Tricia Jedele	Conservation Law Foundation	300	should read "Rhode Island is inexorably linked to the ocean and therefore faces a number of challenges from climate change that are specific to the coastal and marine landscape." Without the inclusion of "a number" the sentence reads as though these are the only climate change challenges we face.	Corrected as suggested
1327	Tricia Jedele	Conservation Law Foundation	300	should include salt water intrusion into fresh water aquifers as one of the changes expected from sea level rise.	Corrected as suggested
1328	Tricia Jedele	Conservation Law Foundation	300	suggest using a more ocean specific example when talking about removing GHG gases from the atmosphere. So, instead of tree planting, maybe use eel grass planting.	Corrected as suggested

#	Name	Organization	Section	Comment	Response
1329	Tricia Jedele	Conservation Law Foundation	300	CLF has two points here. First, the authors write "The other proactive choice that society can make is 'adaptation'." CLF would suggest making this specific to Rhode Island, not society. Second, the authors write, "Beyond these two choices, the only other option is to do nothing and face the consequences." From CLF's perspective, this is not really an option at all and should not be presented as one. CLF suggests deleting this last sentence altogether.	1. This is a definition of adaptation and not meant as an example. 2. Sentence changed to: Beyond these two choices, the only other option is to wait for climate changes to occur and react to them. Reactive adaptation is likely to be less efficient and result in lost opportunities. Note that CRMC's position is that while reactive adaptation (non proactive adaptation) is not a preferred option, it is in fact, an option.
1330	Tricia Jedele	Conservation Law Foundation	300	Suggest that last sentence be changed to read: "With advanced planning, the harm and costs associated with these potential impacts can be mitigated and may be avoided."	Corrected as suggested
1331	Tricia Jedele	Conservation Law Foundation	300	In last sentence, use the term "data" instead of "hard facts."	Corrected as suggested
1332	Tricia Jedele	Conservation Law Foundation	300	CLF would like to see an affirmative statement that suggests a course to proactively reassess the interplay between the policies and plans incorporated in the climate change chapter and the remaining SAMP at least every five years so that the policies can be adjusted accordingly.	Major review will occur every 5 years. In addition, the SAMP will convene a biannual public forum to present updated information, science and policy issues. As with all SAMPs, CRMC will review the Ocean SAMP on a regular basis to incorporate new science, information, and policy revisions.
1333	Tricia Jedele	Conservation Law Foundation	310	Table 1: The authors should check the statement regarding the "current pH in the surface ocean is 0.1 units lower than pre-industrial levels."	Positively confirmed and cited in 310.6.2

#	Name	Organization	Section	Comment	Response
1334	Tricia Jedele	Conservation Law Foundation	310	Delete the 3rd sentence. This seems out of place and inconsistent with other statements made in the chapter. For example, see Section 310.2, para.3, discussing impacts to the marine environment, and Section 310.3, para. 6, impacts on recreation and tourism. See also, Section 340 discussing impacts on recreation and tourism. If we are losing species to global warming, losing coastline, barrier beaches, drinking water supplies, and tourism and recreational benefits, what is benefit of improved navigation? The authors should use caution when making statements that attempt to define some advantage that will be created as a result of global climate change.	CRMC recognizes the potential for both positive and negative impacts from climate change based on the perspective of the relevant user group to the specific impact; these determinations stated in this document (positive or negative) reflect those of the literature consulted in writing this section.
1335	Tricia Jedele	Conservation Law Foundation	310	In the 2nd to the last sentence where the chapter discusses how increased sea surface temperatures are partially responsible for Harmful Algae Blooms, the chapter should seize the opportunity to mention some of the other culprits. For example, the sentence could read: "It is also partially responsible, along with increased significant rain events contributing to run-off from point and non-point sources, for HABs."	Pollution from point and non-point sources are not primary impacts of climate change upon this Ocean SAMP area. This section focuses on the most direct impacts associated with sea surface increases in temperature.
1336	Tricia Jedele	Conservation Law Foundation	310	should defined the term "subsidence" in this paragraph.	Added a definition of 'land subsidence', the downward movement relative to sea level, to the sentence.
1337	Tricia Jedele	Conservation Law Foundation	310	Should reference salt water intrusion of freshwater aquifers	Saltwater intrusion is a land-based impact of sea level rise which is out of the focus of this chapter which focuses on the ocean and coastal impacts that most significantly impact the Ocean SAMP area.
1338	Tricia Jedele	Conservation Law Foundation	310	Figure 3:the notes describing the Figure should explain why it is relevant that sea level data is measured relative to the baseline for vertical surveying and measures the absolute change in sea-level rather than to the adjacent coast. Why does that distinction matter?	Revised to clarify the data presented. The distinction matters because the associated discussion states that locally, sea level rise differs from global estimates, and incorporates a variety of dynamics including thermal expansion of the ocean and subsidence.

#	Name	Organization	Section	Comment	Response
1339	Tricia Jedele	Conservation Law Foundation	310	Suggest that this paragraph, rather than simply provide references, explain in a little more detail why storm intensity having increased in the North Atlantic correlates well with variations in tropical Atlantic sea surface temperature.	Revised per suggestions by Isaac Ginis
1340	Tricia Jedele	Conservation Law Foundation	310	First sentence should read: "Some studies have reported an increase in the number of tropical cyclones in certain areas, including, the North Atlantic.	Revised per suggestions by Isaac Ginis (URI Prof of Oceanography). Additional information in section 340.2.1.6
1341	Tricia Jedele	Conservation Law Foundation	310	Should include a reference to dam stability and potential breaching. And, in last sentence, paragraph should mention impacts to barrier beaches and coastal habitat.	Revised per suggestions by Isaac Ginis (URI Prof of Oceanography). Additional information in section 340.2.1.6
1342	Tricia Jedele	Conservation Law Foundation	310	Not sure of the relevance of declining wind speeds until much later in the chapter. Should probably include more explanation as to how and why declining wind speeds are significant.	There is a sentence in the following paragraph explaining the relevance of the subject and there is further explanation later in the chapter because local windspeeds at T.F. Green are not comparable to those being considered for offshore windfarms in the Ocean SAMP Area.
1343	Tricia Jedele	Conservation Law Foundation	310	CLF thinks that paragraph 4 is too important to appear this late in the discussion of the impacts associated with precipitation. This information should be upfront in this section and in the chapter.	The structure of the document is to provide statements of fact followed by a paragraph explaining the relevance of these facts to the Ocean SAMP area. Given this, we added language to introduction to include impacts due to "more rain, salinity changes, runoff"

#	Name	Organization	Section	Comment	Response
1344	Tricia Jedele	Conservation Law Foundation	310	This section should be more specific to Narragansett Bay. CRMC should look to the reports prepared by Dr. Steven D'Hondt of URI with respect to the predictions for shellfish in upper Narragansett Bay and Narragansett Bay as a whole. For example, the predictions are that by 2030 there will be no aragonite in Upper Narragansett Bay, and that by 2060/2070 the shellfish will no longer be able to precipitate out of the Bay. There should be some discussion here about the projected impacts of acidification on the physiology, reproduction, and calcification of marine organisms, and acknowledgement that the ultimate effects on most marine organisms over the projected CO2 range is largely unknown.	The SAMP team did an extensive literature review and did not find additional acidification information relevant to the SAMP area. Please send reports or peer reviewed information. Unsuccessful attempts were made to engage Dr. D'Hondt.
1345	Tricia Jedele	Conservation Law Foundation	320	It may be more helpful to the reader if you could consolidate potential impacts in categories. For example address the projected impacts to marine organisms/habitat in one section (how does increased precipitation, decreased wind speeds, ph, storminess, river flow, etc ... impact marine organisms). It is difficult to track all of the projected impacts because they are scattered throughout the chapter.	Due to difficulty in addressing the collective impacts of projected climate change, the document provides a review of existing research by climate driver.
1346	Tricia Jedele	Conservation Law Foundation	320	Should say more about potential impacts to shellfish.	We were not able to identify local studies that discuss potential impacts to shellfish in the Ocean SAMP area. Please provide additional studies if available. Also, see section 330.2.1.
1347	Tricia Jedele	Conservation Law Foundation	320	reference in the 3rd sentence should be to the SAMP "area".	Corrected as suggested
1348	Tricia Jedele	Conservation Law Foundation	320	CLF would suggest using the term "projected" in place of the term "possible in the first sentence.	Corrected as suggested
1349	Tricia Jedele	Conservation Law Foundation	330	Again, should include a reference to non-point source pollution and run-off.	Pollution from point and non-point sources are not primary impacts of climate change upon this Ocean SAMP area. This section focuses on the most direct impacts associated with sea surface increases in temperature.

#	Name	Organization	Section	Comment	Response
1350	Tricia Jedele	Conservation Law Foundation	330	This is the first point in the chapter where decreased wind speed is connected to a potential negative impact on SAMP ecology. This connection should be made earlier.	There is a sentence in the following paragraph explaining the relevance of the subject and there is further explanation later in the chapter because local windspeeds at T.F. Green are not comparable to those being considered for offshore windfarms in the Ocean SAMP Area.
1351	Tricia Jedele	Conservation Law Foundation	330	Footnote 3:This footnote seems to be at odds with the section on decreased wind speeds.	This footnote has been deleted and the information has been revised, expanded and inserted as a part of Section 310.5 Precipitation and Weather Patterns are Changing.
1352	Tricia Jedele	Conservation Law Foundation	330	More should be said about the impact on commercially important species. This is a good example of how the chapters need to do a better job at cross-pollinating where relevant. If the Fisheries chapter is going to address climate change and its impact on commercially important species more fully, then the reader should be directed to that chapter. If not, then the reader should be referred to a climate change section within the fisheries chapter or should be referred to this chapter altogether, and the discussion in this chapter should be fuller.	Most recent relevant studies are referenced in this discussion. There is little information regarding how specific commercially important species will be impacted.
1353	Tricia Jedele	Conservation Law Foundation	330	This is also another example for the need to appropriately cross-reference other relevant chapters. The marine mammals chapter should include a section on climate change or should refer the reader to this chapter for the discussion of how climate change could impact marine mammals. The policy recommendations in each chapter should also cross reference each other, or be incorporated by reference.	There is no marine mammals chapter and they are covered here because they are of special concern due to the Marine Mammal Protection Act.
1354	Tricia Jedele	Conservation Law Foundation	330	typo in the first sentence. The word "may" should read "many."	Corrected as suggested
1355	Tricia Jedele	Conservation Law Foundation	330	This is a good example of the effective cross-reference to another relevant chapter and the relevant section where the information on Lobster shell disease is described more fully.	No response needed

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1356	Tricia Jedele	Conservation Law Foundation	340	Not sure what value is added by this paragraph or Figure 13. The second sentence of the paragraph is not clear. If the paragraph remains it should be clarified and should be less equivocal with its terminology. We should be able to project the consequences of climate change on human uses.	There are few specific projections for this section and this paragraph states the importance of projections on human uses while explaining its uncertainty with multiple drivers.
1357	Tricia Jedele	Conservation Law Foundation	340	CLF objects to the inclusion of this paragraph in the chapter. Again, that navigational channels may be easier to travel, and that we may have a longer shipping season, are not facts that necessarily imply a "positive" impact. Without further study or documentation that increased shipping seasons will actually be possible, especially given increased storm intensity and Nor'easters, or without data demonstrating that increased shipping will not also bring with it an increase in invasive species, have other detrimental impacts on the ecology of the SAMP area, or the fisheries, recreation and tourism, CLF believes it would be irresponsible to make this blanket statement.	CRMC recognizes the potential for both positive and negative impacts from climate change based on the perspective of the user group relevant to the discussion; these determinations (positive or negative) reflect those of the literature consulted in writing this section
1358	Tricia Jedele	Conservation Law Foundation	340	These sections should more fully address and explore the projected impact that sea level rise and increased storm intensity will have on coastal development in the SAMP area. Substantial changes need to be made to the way we permit and zone our coastal areas in the face of sea level rise and storm intensity and the SAMP should reflect a CRMC commitment to rethink the plans for building in the coastal area.	Policies pertinent to this concern are outside of the Ocean SAMP area but within the Red Book jurisdiction in which these concerns are addressed. Please see Section 350, paragraph 1 which states the current Red Book policies and states "This [section] is the controlling provision for the upland areas within the Council's jurisdiction and the immediate shoreline areas and seaward to a distance of 500 feet offshore. Section 350 is intended to be the controlling policy for the ocean waters from beyond the 500 foot mark out to the three mile limit."

#	Name	Organization	Section	Comment	Response
1359	Tricia Jedele	Conservation Law Foundation	340	Should reference increased beach closures in the SAMP area. The likelihood of increased beach closures has not been discussed anywhere else in the chapter and probably should be mentioned in several additional places.	Statement was added to paragraph 3 of this section "For example, in 2008 there was a significant increase in beach closures in Rhode Island over 2007. Although there was an increase in water quality sampling, the increase in closures also coincided with higher rainfall during the summer months in 2008 (Dorfman and Rossetol 2009)."
1360	Tricia Jedele	Conservation Law Foundation	340	When referencing fisheries most likely to be impacted by climate change, both the lobster and the shellfishing fisheries should be included.	The lobster fishery is cited in 340.5.2 paragraph 1 as a species likely to move north, decreasing in abundance and/or extent of time in which they can be caught by fishers in the Ocean SAMP area. Given information available at this time, other shellfish fisheries within the Ocean SAMP are not considered to be significantly impacted by climate change with respect to their potential commercial or recreational fishery.
1361	Tricia Jedele	Conservation Law Foundation	340	This a gaping hole in the Future Uses chapter and in the Climate Change chapter. We need to understand the capacity of the Ocean SAMP area to accommodate all of the uses we already impose on it and need from it before we can make sound planning decisions about whether the identified future uses are actually feasible or justifiable. The policies and recommendations section should recognize the limitations of the Future Uses chapter and this chapter should more fully address the concern that climate change may seriously impact our projected future uses and our approval of projects and uses of the SAMP area will have to be adjusted proactively and not reactively.	The intent of this paragraph is to state that climate change impacts will be considered in any proposal for future use when it is proposed. A sentence was added to this paragraph to emphasize this statement: "Due to the time sensitive nature of climate change drivers, these impacts would have to be considered when these uses are proposed in order to consider the effects as accurately as possible."

#	Name	Organization	Section	Comment	Response
1362	Tricia Jedele	Conservation Law Foundation	350	This section should more fully explain with greater specificity how the CRMC intends to take climate change into account when assessing projects and uses in the SAMP area. It would be very useful if we understood the climate change criteria against which project and uses will be measured after the SAMP is approved.	This is specifically addressed with respect to public infrastructure in the CRMC Red Book (public working draft revision) and the Ocean SAMP policies also reflect this suggestion
1363	Tricia Jedele	Conservation Law Foundation	350	The CRMC should not simply be requiring the most robust infrastructure and design materials, but should also have a set of criteria that guide decision-making with respect to rebuilding coastal infrastructure after it has been damaged by a storm. Before we assess whether we are using the right materials, we should be assessing whether we should be building in the first place.	Coastal infrastructure and land use planning is out of the jurisdiction of the Ocean SAMP policies and is covered by CRMC policies in the Red Book.
1364	Tricia Jedele	Conservation Law Foundation	350	The SAMP should require a minimum review period of at least every 5 years, and the Council should do more than merely endorse the develop of design standards for coastal infrastructure.	Major review will occur every 5 years. In addition, the SAMP will convene a biannual public forum to present updated information, science and policy issues. Land-based coastal infrastructure within 500' is under the regulatory jurisdiction of the CRMC Redbook. Within the Ocean SAMP, this paragraph states that CRMC "endorses" and "will work" to develop standards, and RI is currently engaged in this national discussion and process. Design standards (350.2.1) also incorporate an analysis for SLR. .