

Examining Stakeholder Perspective of Human-Seal-Shark Overlap on Cape Cod

By Nathan Alexander

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Background

Gray and harbor seals have been associated with human use in the Cape Cod coastal ecosystem for over 4,000 years (Bowen, 2011). Archaeologists have found evidence supporting the fact that indigenous peoples and early European settlers hunted seals for sustenance (Lelli & Harris, 2006). It wasn't until the late 1800s that seals became commonly viewed as pests that competed with fishermen for resources. As a result, seals were extirpated from the area via bounty programs, which led to the ecosystem becoming almost completely devoid of gray and harbor seals by the mid-twentieth century (Lelli et. al., 2009).

Bounties largely remained in place until the 1960s, when seals were given local protection in Maine and Massachusetts (Lelli et. al., 2009). Then, in 1972, the Marine Mammal Protection Act (MMPA) was passed and seals were protected on the national level. The first census of gray seal populations in the northwest Atlantic was conducted in Maine in 1973, approximately one year after the MMPA was enacted. The census found only 30 gray seals in Maine's waters (Richardson, 1973). This highlights the effect that bounties had on seal populations in the waters of Maine and Massachusetts.

Today, gray and harbor seal numbers have replenished significantly in the area. This is almost exclusively due to the cessation of the bounty hunts and the protections put in place by the MMPA. Gray seals are now a common sight on the beaches and in the waters around Cape Cod and this has led to certain controversies surrounding the effects that seal recovery has on the local ecosystem, the local economy and public health and safety.

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Project/Goal

Interviews were conducted with stakeholders in what is summarized as the human-seal-shark overlap on Cape Cod. Interviews were conducted in person and via telephone and ranged from approximately 15 – 45 minutes. Interview questions can be found in Appendix A.

Interviewees were asked to share their own individual thoughts, ideas and opinions, which are summarized in this report. Their words do not represent the official views of their respective organizations. The sample (n = 17) demonstrates the variety of stakeholders who have an interest in human-seal-shark overlap. The goal of this report is to summarize the priorities that need to be addressed within the human-seal-shark conversations taking place on Cape Cod. This report will be used as a tool for reference in navigating these conversations in a manner that is inclusive of all parties and is intended to help move conversations forward collaboratively and productively.

Interviewees

Interviewees had a wide range of affiliations including The Center for Coastal Studies (n = 2), charter boat companies (n = 1), commercial and recreational fishermen and business owners within the fishing industry (n = 4), journalists (n = 1), The Coalition to Amend the MMPA (n = 1), The National Oceanic and Atmospheric Administration (NOAA) (n = 2), The Cape Cod Commercial Fishermen's Alliance (n = 1), The Massachusetts Division of Marine Fisheries (n = 1), The National Marine Life Center (n = 1), The International Fund for Animal Welfare (IFAW) (n = 1), The Humane Society of the United States (n = 1), The University of Massachusetts in Boston (n = 1), The Cape Cod National Seashore (CCNS) (n = 1) and local Cape Cod government officials (n = 1). There was some overlap between groups since some

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interviewees held multiple titles. The different groups represent research organizations, government organizations, NGOs, the media and coalitions.

Results and Recommendations

1. Economics

Of the 17 interviewees, 9 made comments regarding economic concerns. There was agreement among most stakeholders that increased beach safety would have a positive economic impact on Cape Cod. One interviewee stated that “enhanced beach safety [would] help to reverse the ‘dark cloud’ effect of the 2018 fatality.” Another interviewee pointed out that “people want 100% safety assurance” but “[research] will never give 100% safety measures.”

Economic concerns were also voiced from within the commercial and recreational fishing industries and acknowledged by other stakeholders about the effects that seal resurgence has on the local economy. These concerns were centered around the effects of depredation and the damage to fishing gear caused by seals. Fishermen reported feeling that their industries are threatened, either due to the sheer number of seals or because of the lack of knowledge about seals. Calls to action were made from within the fishing industries for population management (lethal and/or non-lethal). Calls were also made for a prioritization of research on seal-fisheries interactions and for amendments to be made to the MMPA to allow for delisting.

It was a commonly held belief with the commercial and recreational fishing stakeholders that “if seals were gone, tourism would return.” One stakeholder who owns a local fishing company stated that the return of seals has led to the loss of a significant portion of their business. This is a result of the absence of retired fishermen who used to come fishing

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recreationally on the Cape in June. These fishermen no longer come because there are fewer fish to catch around the Cape, which hurts local businesses that depend on this part of Cape tourism. Another interviewee shared a similar observation, saying “[tourists] would come, rent homes and spend day and night at the beach for 2-3 weeks. As distinct from the typical seal-watch tourist, who gets on a boat, sees seals and goes home.” The point being made is that not only are individual businesses suffering, but also that the “blue economy” does not generate the same level of income as traditional recreational fishing tourism.

Interviewees also pointed to the economic effects of great white shark redistribution. They cited anecdotal stories about local businesses suffering and beach parking lot attendance decreasing over summer 2019 because people were afraid to swim. On the other hand, several interviewees argued that great white shark presence on the Cape is actually enhancing tourism because people want to see sharks.

Recommendations

Based on the sentiments and comments presented throughout interviews, it is clear that beach safety measures need to remain up to date with the most current research findings on white shark and seal behavior. This should be catalyzed by actively maintaining open lines of communication between parties. These continuously evolving safety measures will help to reverse the fear-effect that the 2018 fatality has had on Cape Cod’s beachgoers. Although this is being done by the Cape Cod National Seashore, it needs to be expanded on and new research findings should be prioritized and constantly introduced into the public forum. Additionally, identical messaging needs to be spread by all stakeholders involved. This means that messaging

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must be agreed upon by all who have an interest in human-seal-shark overlap, especially those whose livelihoods are being affected by diminished economic activity.

Secondly, the effects of depredation and gear damage need to be made a priority for the sake of the fishing industry, which has been at the center of the controversy of seal resurgence long before the 2018 fatality. Although the public discourse did not ramp up until recently, fishermen have been talking about the threat to their culture and livelihoods for decades. Fishermen have an important role to play in this debate, and in the regional economy. Changing their behavior to minimize negative encounters with seals is effective, but their needs can also be addressed in the form of adjustments to fishing gear that deter seal activity and prevent depredation. This needs to be made a research priority. Additionally, the economic effects of gray seal resurgence need to be quantified in terms of how much money the seal-centered economy (i.e. seal watching tours) brings in as compared to the recreational fishing industry. This will inform an area of this debate that continues to be controversial because tourism is at the center of the Cape Cod economy. Thus, determining whether tourism is being diminished, increased or unaffected as a result of seal presence is of vital importance to communities on the Cape.

Finally, the impact of great white sharks on Cape Cod's economy also needs to be computed in a collaborative manner between stakeholders for the same reason as the impacts of grey seal resurgence. Specifically, it needs to be evaluated if great white shark presence may be benefiting the local economy, as well as how great white sharks may impact the recreational and commercial fishing economies, so that stakeholders will know with certainty how their livelihoods will be affected, both short-term and long-term, by top-predator presence.

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2. Behavioral/Cultural Change

Throughout interviews, 10/17 interviewees discussed the idea of a behavioral shift towards a culture centered around coexistence with seals and sharks. This is a sensitive concept within the human-seal-shark conversation and it should be addressed as such. One interviewee argued that “humans should not have to change their behavior” and “by implying otherwise, it puts the responsibility on the individual when entering the water.” The point being made here is that humans have recreated in Cape Cod waters for generations without fear and should not have to adjust their behavior in response to new factors in the ecosystem. Other stakeholders make the point that it is, in fact, the individual’s responsibility to stay safe when entering the water. Between these two views, there is a clear disconnect that needs to be addressed regarding who is responsible for ensuring human safety. Several stakeholders pointed to the need for a cultural change towards places that have human-seal-shark overlap as a regularity of life.

Recommendations

With seals and sharks present as a new part of the local ecosystem, it is important to consider how an individual’s values will affect his or her behavior and willingness to adapt to change. Other jurisdictions, such as California and South Africa, need to be looked at in depth. This means a comprehensive analysis of their history with cultural shifts and their relationships to large predators with whom they share waters and recreational areas. It is important to explore these other jurisdictions that have dealt with similar conflicts because it will illuminate what

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actions are helpful in terms of mitigating ecological changes and the economic consequences that come as a result. It also needs to be demonstrated to stakeholders how value-shifts to a framework centered around “coexistence” would benefit them. This evaluation could be done as a part of quantifying the economic effects of a shared ecosystem.

3. Sharks

Of the 17 interviewees, 14 talked about the urgency to address the redistribution of great white sharks throughout Cape Cod. This was discussed from a variety of perspectives, most commonly having to do with public safety.

Several interviewees cited the 2018 fatal shark encounter as a focal event for bringing the human-seal-shark overlap into the public eye. The “inevitability of more fatal encounters” was highlighted as a major concern regarding white shark distribution. One interviewee described the 2018 fatality as “Cape Cod’s 9/11.” Regarding how sharks should be viewed on Cape Cod, no one denies the potential threat to public safety. Where statements differ is in how that threat should be addressed.

Stakeholders from across the spectrum agree that more research on sharks needs to be completed. Even so, some stakeholders highlight the importance of keeping the shark threat in perspective. For example, one stakeholder pointed out that “accidents are going to happen, and, like traffic accidents, they are rare.” Another mentioned that, prior to the 2018 shark-related fatality “there were lots of drownings reported in the media.” Additionally, multiple stakeholders pointed to the fact that there are places, like South Africa, California, etc., around the world that have coexisted with sharks for generations. In short, this way of looking at shark distribution

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focuses on keeping statistics in perspective to minimize the effects of a fear response to shark presence.

On the other hand, several stakeholders maintain that, to address the safety issue associated with sharks, the seal population needs to be managed. Some interviewees discussed the need to amend the MMPA to allow for the delisting of gray seals. Others talked about the “sustainable level” of seal populations, which is supposed to be defined by the MMPA. Their concern is that the “sustainable level” of gray seals has never been quantified and it is therefore impossible to have an accurate conversation about what a healthy population of seals looks like. This is a point of concern for many stakeholders who are affected by gray seal repopulation and great white shark presence. One stakeholder commented, saying “the counter-argument for delisting is that seals need to reach sustainable levels, but those have never been defined, so how can we have conversations about healthy populations?”

Recommendations

Other jurisdictions that have sharks present within their ecosystems and recreation areas and have culturally adjusted to shark-presence need to be kept in constant contact so that stakeholders on the Cape can look to them for expertise in navigating shark redistribution. For example, in Cape Town, South Africa, there is a program in place called “Shark Spotters” (Engelbrecht, Kock, Waries & O’Rain, 2017). This program has been put in place specifically to deal with human-shark overlap and has been shown to be successful in minimizing negative encounters. This is just one instance of a successful measure for mitigating conflict and it

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highlights why it is important to look at jurisdictions that are successful in navigating human-predator overlap.

Additionally, the concept of a “sustainable population” number for gray seals needs to be shared so that everyone in this conversation can know what indicates a healthy population. This will help address people’s concerns surrounding the MMPA and will allow for meaningful conversations about population management to take place. The definition of “optimal sustainable population” exists within the MMPA (The Marine Mammal Protection Act of 1972). Revisiting this definition with a focus on gray seals and an objective of quantifying sustainable gray seal populations in the northwest Atlantic needs to be made a priority to help facilitate conversations. This is an understandably difficult task because sustainable seal populations are dependent on the entire ecosystem. Ecosystem-based management practices are being employed to navigate consequences associated with seal resurgence but there should still be an effort to communicate some sort of reference number for “optimal sustainable populations” of gray seals in order to help move conversations forward.

4. Need for more research/funding/outreach

Nearly every stakeholder (14/17) talked about the need for more data and research across the board. Specific topics included “how nearshore habitat is being used,” “localized depletion of resources,” “understanding seal behavior at night,” “seal population management practices,” “seals’ impact on fisheries/ecosystems,” “depredation,” “when/where do sharks attack seals and if there is a way to predict that,” and “understanding the biology and ecology to understand what interventions may or may not work.” There is a wide range of study priorities present in this

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conversation. In order to decide where to allocate funding more urgently, there needs to be an evaluation and prioritization of topic areas for research. Most stakeholders also communicated the need for more research funding, especially from the state.

Recommendation

There is a consensus that more research needs to be done to understand all aspects of the human-seal-shark overlap. This research would help inform policy, minimize negative human-wildlife encounters, enhance public safety and allow outreach organizations to present accurate, up to date and consistent messaging. Although research priorities vary between groups it is clear amongst stakeholders that securing state funding would be hugely beneficial to addressing these topics. This is true for federal funding as well, but throughout interviews state-level funding was identified as vital for furthering the development of critical research. Therefore, greater effort needs to be undertaken to show the state government the magnitude of importance behind the human-seal-shark overlap. A stronger attempt should be made to secure state funding in order to address all aspects of this topic more fully.

5. Inclusivity

There was concern expressed amongst stakeholders from the fishing industry that their thoughts and opinions were not heard or acknowledged as much as they should be. Additionally, non-fishing industry stakeholders communicated that there needs to be a more concerted effort to listen to the fishermen and business owners in this ongoing conversation.

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Recommendation

There needs to be a greater effort to be inclusive of the fishing industry in these conversations. The Northwest Atlantic Seal Research Consortium is credited with doing this. Even so, multiple stakeholders commented on the lack of representation of the fishing industry relative to the presence of animal advocacy groups at NASRC meetings. Attempts to bring fishermen and the fishing industry into these conversations need to be more aggressive. These are the people who are on the ground every day and whose industry has been suffering. They have been vocal for decades about seal recovery and it is imperative that they continue to be given a voice at the center of these conversations.

Summary

Interviews were conducted to gather a diverse sample of stakeholders pertaining to the human-seal-shark conversations taking place on Cape Cod. Based on the data collected and analyzed through these interviews, the following recommendations should be considered by the Northwest Atlantic Seal Research Consortium, whose purpose is to be a collaborative body between all groups involved in these conversations:

- Arguably the most important priority in navigating human-seal-shark overlap is to secure state-level funding. This was communicated by several interviewees as a necessity for moving these conversations forward. State funding would ensure that more research is done on a wider breadth of topics and would therefore allow for these topics to be addressed more quickly and efficiently while making sure everyone's priorities are being heard

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- Prioritize maintaining the voice of the fishing industry within these conversations and at NASRC meetings
- Quantify the economic impacts of seal and shark presence on Cape Cod in terms of commercial and recreational industries gain/loss and tourism
- Maintain communications with other jurisdictions around the world who have always had human-seal-shark overlap or have culturally adjusted to human-seal-shark overlap to gain relevant information on how to successfully navigate these topics
- Maintain scientifically up-to-date safety measures and messaging that are unanimously agreed upon by all stakeholders
- Make a concerted effort to prioritize research around the needs of the fishing industry in terms of minimizing depredation and gear damage
- Communicate what “optimum sustainable population levels” are under the MMPA and then establish how that can be quantified in terms of gray seals in order to help facilitate a conversation

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Appendix A

Human-Seal-Shark Overlap Interview Questions

1. What is your organization/position title?
2. In your own words, how would you define/describe the seal and/or shark conversations on the Cape?
3. What do you perceive as the biggest challenge in addressing these conversations/concerns on the Cape?
4. How have these topics changed over time?
5. What steps need to be taken to further and productively address these topics?
6. What would you say is the number one priority in terms of addressing these conversations/topics on Cape Cod?