

Observations on developing a maritime cultural landscape approach to managing US National Marine Sanctuaries

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Abstract

Effectively managing marine protected areas requires considerable knowledge of these special places people value and to which they are sometimes strongly attached. Usually, this knowledge is limited to the present state of resources and changes observed in the recent past, which is used to inform the development of management actions to address current and emerging threats to biodiversity and underwater cultural heritage (UCH) resources. However, while acquiring this “snapshot” of the current status of natural and cultural resources is necessary, it is often not sufficient. Understanding the longer-term history of that site, illuminating its “maritime cultural landscape” (MCL), can provide critical context to interpreting that somewhat static “snapshot”. MCLs represent the historical imprint of human interactions with these special places, providing a deeper base of social and historical information to inform and empower stewardship of natural and UCH resources. The National Marine Sanctuary System (NMSS) sites are already managed as landscapes – through ongoing implementation of ecosystem-based management (EBM) – and integrating MCL approaches offers opportunities to expand and enhance our deeper understanding of how these socio-ecological systems were formed, changed over time, and how coastal communities adapted to, and influenced, these changes. Better understanding these historical interactions can offer significant insights, integrated with knowledge attained through EBM, that can inform and guide contemporary management decision making. The NMSS has developed a vision and strategy for implementing an integrated EBM/MCL approach to stewardship, and is in the process of implementing that strategy.

Key words: Maritime Cultural Landscapes, Underwater cultural heritage, Ecosystem-based management, Marine protected areas, Stewardship

Introduction: Valued Places

We all have “special places”. Places that have deeper meaning to us, places that evoke especially memorable activities or events, or places we seek out, either physically or in our minds, when we need a retreat from the pressures of life. It is our deep connection to these places that imbues our lives with meaning, defines who we are, and influences our values and behavior. These places are, in turn, affected by our connection to them, our reliance on them for physical and spiritual sustenance, our recreation and

livelihoods. Senegalese conservationist Baba Dioum has written “in the end, we will only conserve what we love”. Given this, it should not be too surprising that many of these special places have been preserved by society under law and policy as protected areas. It should also not be too surprising that the managers of these protected areas would have a keen interest in this essential human/environment relationship, what people find special about the place they manage, and how they can effectively preserve whatever compels and elicits such connections. If we do not have some knowledge of this relationship, of what people value about that place, how can we possibly offer the stewardship such a special place deserves?

Protecting these special places in the coastal and ocean waters of the United States is the mission of the National Marine Sanctuary System (NMSS). The National Marine Sanctuaries Act (U.S.C. 16, Chapter 32, Sections 1431 et seq.), the principal statutory authority for establishing and managing marine protected areas in the waters of the US Exclusive Economic Zone, provides the framework for protection and management of such special places. This authority extends to preserving both ecosystem biodiversity and integrity, as well as maritime cultural heritage. The former is addressed in the NMSS through the implementation of ecosystem-based management (EBM), generally defined for the marine environment, by Leslie and McLeod (2007), as follows:

“Marine EBM is about interactions: interactions among different spatial and temporal scales, within and among ecological and social systems, and among stakeholder groups and communities interested in the present and future health of coastal and marine areas”.

It is about explicitly integrating humans into management, recognizing and accounting for the potential affect that humans have on ecosystem structure and function, but also incorporating their interests and aspirations into how places are managed and what strategies are used to accomplish management goals established collaboratively with these communities. As the authors clearly state, however, it is the communities’ interests in the “present and future” of these places that embodies EBM. It is largely based on understanding the present state, the drivers that are currently influencing the ecosystem and management strategies that lead to a future state that sustains, or improves, the ecosystem over time. Conversely, preserving the cultural heritage of that place is necessarily focused on the past, how humans have influenced these places

through time, and how those communities have, in turn, been shaped by these places. Understanding the cultural heritage of a place offers the knowledge and experience acquired by the community over a broader sweep of history. It involves a deeper understanding of how that community has responded to ecosystem changes in the past, how their actions have altered the socio-ecological system over time, and perhaps shedding some light on how resilient that community might be to adapting to future changes. To effectively integrate this cultural heritage preservation component into the management of national marine sanctuaries, the concept of maritime cultural landscapes (MCL) was identified as a complementary mechanism to EBM that offers a compatible framework for understanding, and ultimately more effectively managing, these special places in the oceans and along the coasts.

What are “Maritime Cultural Landscapes?”

As described in Barr (2013), the concept of “maritime cultural landscapes” builds on the older and more widely applied notion of cultural landscape in terrestrial environments. As first suggested by Westerdahl (1992), maritime cultural landscapes (MCL) were defined as “human utilization of maritime space by boat, settlement, fishing, hunting, shipping and its attendant subcultures”. MCL “comprises the whole network of sailing routes, old as well as new, with ports and harbors along the coast, and its related constructions and remains of human activity, underwater as well as terrestrial” (Westerdahl, 1992). Jensen et al., (2011) provided an eloquent definition of “cultural landscapes”:

“Cultural landscapes capture the living past that surrounds us and give us a better understanding of the links the natural history and human history of a place. They illustrate how we have shaped the world, and how the world’s natural environments have shaped us. Perhaps most importantly, cultural landscapes can also provide us with valuable insights into the future, such as the relationship between the health of natural resources and human well-being and prosperity. At their most basic, cultural landscapes are specific places where combinations of human activity and natural forces have left a discernable mark on the world. Cultural landscapes are reservoirs of human experience that preserve undeniable examples of human triumph and loss. Retaining the intangible as well as the tangible parts of human culture, cultural landscapes can do what the natural sciences alone cannot. They convey the human meaning of places”.

MCL encompasses not only this cultural history of the physical maritime environment, but also the “cognitive landscape”, defined as “the mapping and imprinting of the functional aspects of the surroundings in the human mind. Man in landscape, landscape in man” (Lofgren, 1981; cf Westerdahl, 1992). It embraces both the changes observed over time with regard to the physical environment and human use, but also the perception of these changes by the people who have lived, and are living, in that place throughout history. How this maritime and ecological landscape has shaped and been shaped by the human activities that have occurred there throughout its history provides the foundation for understanding, and ultimately more effectively preserving, these cultural landscapes.

As Tuan (1974) has observed, geographic spaces become “places” when people imbue them with meaning, a process that influences self-identity and affects the way in which we perceive and behave toward these places. Understanding the maritime cultural landscape of a place identifies not only our collective contributions to sustaining and improving these places we have given meaning, but of how people have contributed to what they have become, offering insights and experience acquired by the community along the way. Such deeper knowledge of place is likely to be a valuable asset to guide and inform place-based management. This last point is worthy of emphasis. This deeper knowledge may indeed have considerable potential value that contributes to a more holistic and effective management approach to preserving the natural and cultural resources of an MPA, but a more traditional reading of the literature on cultural landscapes suggests that there should be no direct connection between the process of cultural landscape analysis and place-based management. Cultural landscape approaches are focused on engaging the various stakeholder and cultural communities in acquiring knowledge about the human/environment relationship through time, and offering a forum for this engagement.

Integrating EBM and MCL

EBM is about including the “human dimension” in sustaining ecosystem structure and function through collaborative management, engaging the community in establishing management goals for that place, and the strategies implemented to achieve those goals. It is a prospective process, informed with knowledge of the current state of the

ecosystem, and leading to some agreed upon desired future state. In most cases, EBM utilizes various management tools and strategies, such as zoning, regulations, and voluntary mechanisms to balance sustainable use and preservation. MCL approaches also involve these same people as a key element in understanding and preserving heritage resources of this valued place, but it is a retrospective process. It focuses on the history of the human use of that place, illuminating what has happened, through time, which has left an imprint of this use on the socio-ecological system. It identifies how the system has changed over time, how human uses have changed, and how the system has responded to those changes. MCLs also help to ascertain what attributes and elements of the human/environment relationship are relevant and contribute to the deeper meaning and value the communities ascribe to this place, thereby offering some insight into which of these elements and attributes are most important to preserve and protect. While EBM and MCL could be implemented independently - which would be an easier path to follow - an integrated management approach involving both EBM and MCL would seem to offer opportunities not readily available if executed separately.

Clearly, both EBM and MCL involve “taking a step back”, looking at the “bigger picture” of why this place is valued, which human uses have (and are leaving) an imprint on the environment. The both have people as a central and important element of their implementation. MCL offers the opportunity to acquire deeper knowledge of place through the lens of history (both remote and recent) to learn what the state of the ecosystem is today, what human activities may have led to the current state, and what knowledge was acquired as these communities adapted to, accommodated, and caused environmental change. They appear to be quite complementary, and are likely, as they both seek the active engagement of the interested and affected public, to potentially offer some efficiency in implementing them together rather than individually and separately.

With regard to the practice of MPA management, one other rationale to consider in this integrated implementation of EBM and MCL is the potential to break down some of the internal barriers between those MPA management staff focusing on natural resource protection, and their counterparts that apply their energies to preserving cultural heritage. In this age of specialization, when it is beyond the capabilities of anyone to

become what used to be called a “Renaissance Man” (or woman), managers cleave to their specialties, and organizations of MPA programs are almost always set up with “natural resource” and “cultural resource” staff in different organizational units. Through the integrated implementation of EBM and MCL, there is greater opportunity for collaboration and knowledge sharing between these two usually isolated operational units within an MPA program. If Young (2010) is correct in his assertion that institutions, particularly environmental governance systems, are similar to other socio-ecological systems in that they are made more resilient, adaptive, and more resistant to stress through effective implementation of adaptive management and social learning, this sort of interdisciplinary integration may contribute to not only successfully achieving the mission of the program, but also to sustaining the organization over time, avoiding what Olson (1982) has termed “institutional arthritis”.

“The Devil is in the Details”

Making such an integrated approach operational for an MPA program like the NMS System is no small feat. There are institutional and practical challenges to effectively integrating EBM and MCL. Seeking acceptance of the idea of broadening the way managers think about their sites to include MCL, let alone integrating EBM and MCL, represents a challenge to MPA Programs that have been in operations for decades and where their approach to management has become rigid and somewhat inflexible (“the way we’ve always done it...”). For an MPA system like the NMSS, which includes fourteen sites operating largely under a single statutory authority but quite different in composition and management focus, not all sites will embrace this change simply because the leadership of the MPA program has decided it should be so. Not all sites have the necessary staff with expertise relevant to cultural heritage preservation, and the site budgets may be insufficient to consider the additional costs associated with the background research and public engagement required to successfully implement an MCL approach. Therefore, it has been determined that the implementation of this approach should be on an opportunistic basis, with each site deciding whether they will incorporate MCL, and the integration of MCL with EBM, into their management planning when their site plans are being reviewed and updated. If they choose to do this, additional support will be provided to them from the national program, bringing needed

expertise in history, archaeology, and relevant planning and public engagement support from NOAA's Maritime Heritage Program (MHP) and operating units from other sites and headquarters who can offer such expertise.

For sites that express a willingness to begin the process, an MCL "synopsis document" is developed that generally identifies the scope and elements of what the MCL for that site would include, providing an overview of the historical human uses of the area, the various cultures that were involved in that use, discussions of how those cultures left their imprint on the ecosystem, both physically and cognitively (through such things as place names and knowledge of differing perceptions of the cultural landscape among the cultures who lived in that place). Such a "synopsis document" has been prepared by the MHP for the proposed expansion of the Gulf of the Farallones and Cordell Banks National Marine Sanctuaries along the Northern California "Redwoods" coast (Delgado, Unpublished MS). This document is made available to those who are developing the proposed management planning documents for this possible expansion of these sanctuaries, with the promise of further support should the sites agree to proceed with the implementation of this MCL initiative.

Other opportunities may involve more targeted support toward implementation. There has been some interest expressed by the State of Wisconsin for a possible sanctuary in the waters of Lake Michigan off their coast. While a considerable amount of research has been assembled on the shipwrecks of this region, this is the home lands and waters of a number of maritime indigenous cultures, and little was known about their use and habitation of this place over time. To begin to identify and collect relevant information regarding this indigenous cultural landscape, a MHP Graduate Fellow was identified to conduct this essential research (Tate, Unpublished MS). In this case, the more specific focus on the Indigenous contribution to the MCL was essential, and the research provides a starting point for better understanding and incorporating these cultures' contributions to the MCL of this area that may be considered for sanctuary designation at some point in the future. Where there are many cultures that value a place all need to be heard and given the opportunity to contribute to our deeper understanding of that place.

It is expected that the implementation of an Integrated EBM/MCL approach to management for the NMSS will be something that will take considerable time and effort, but this will be addressed as opportunities arise. Budgets and staff resources, both currently in short supply are contributing to this slow pace of implementation. However, perhaps this is not the issue it might appear to be. Organizational cultures change and adapt very slowly. Therefore, even if resources were not severely limited, it is likely that the pace of adoption of this proposed change in the management approach for the national marine sanctuaries across the System would only progress as the institutional culture continues to evolve and adapt. We have built the trough, have filled it with fresh, clean water, and have led the horse to it, but are prepared to wait until it gets thirsty enough to drink.

Not another Solution in Search of a Problem

All too frequently, we encounter situations where, in times of great uncertainty, we reorganize or begin another round of strategic planning. Neither should careful scrutiny of our organizational structure nor strategic planning be considered unworthy endeavors when there is a demonstrated need to engage in these actions. However, they are pointless when the strategic plan for an organization is serving its purpose, and the organizational structure is sufficient to get the job done. When we are resource limited, we should spend what time and energy we have on addressing real problems, seeking innovative and creative solutions to the many challenges we face. As Barr (2013) offers, the oceans and coasts, and the communities that inhabit these areas, are facing many complex and significant problems. Global climate change is increasing the severity and frequency of storms. Coastlines are being altered, sometimes significantly, and there is considerable damage to infrastructure from these storm events. While there has been some recovery of the economy, coastal communities remain hard hit, with collapses in fisheries, and the increasing reliance on tourism providing less well-paying jobs but also resulting in seasonal surges in population and increasing demands for services. The societal burdens from the continued economic pressures are being exacted on coastal communities in these challenging times. To add to the challenges, these are “wicked problems”, difficult or impossible to solve because of incomplete, contradictory, and changing requirements that are often difficult to recognize (Skaburskis, 2008). Finding

practical solutions will not be an easy task. Concurrently, as summarized by Barr (2013) our governance system is also being challenged:

“...as the severity of these problems increases, potential management responses that involve trade-offs and compromise are perceived as unacceptable. Communities are deeply polarized by diminishing resources and challenges that exceed our capacity to effectively address using more traditional management approaches. There is also sometimes deep mistrust of others who may have differing views and perspectives. In the history of those places, however, similar challenges have confronted, and these communities have successfully adapted to those changes, or learned much by their failures. This history and experience has considerable value in offering some hope for resolving problems being encountered today”.

MCL can provide this historical context for our management of these special places. It offers a forum for public engagement that involves not just addressing problems, but speaks to the proud heritage of these communities, resilient places that have “weathered the storms” and persisted. EBM is necessary, as incorporating the “human element” in ocean and coastal stewardship has demonstrated its importance, but it may not be sufficient. We can benefit considerably by “learning from the past”, so that we are not “doomed to repeat it”. The effective integration of MCL and EBM in addressing these challenges has the potential to be one of the creative and innovative solutions to help “turn the tide” for coastal communities, and the MPA managers that work with them to sustain their way of life.

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References

- Barr, B. W., 2013. Understanding and managing marine protected areas through integrating ecosystem-based management within maritime cultural landscapes: Moving from theory to practice. *Ocean and Coastal Management*, Vol. 84: 1984-1992.
- Delgado, J. P., (Unpublished Manuscript). *The “Redwood Coast:” The maritime cultural landscape of the potential expansion of Cordell Bank and Gulf of the Farallones*

National Marine Sanctuaries. NOAA Office of National Marine Sanctuaries, Maritime Heritage Program.

Jensen, J. O., Mather, R., and Gray, J., 2011. Viewing the future through the lens of maritime cultural landscapes. *Sanctuary Watch*, Vol. Fall: 2-3.

Leslie, H. M., and McLeod, K. L., 2007. Confronting the challenges of implementing marine ecosystem-based management. *Front. Ecol. Environment*, Vol. 5: 540-548.

Lofgren, O., 1981. Manniskanilandskapet-landskapetimanniskan. In L. Honko, and O. Lofgren (Eds.), *Tradition OchMiljii*, Lund, Sweden: 235e261.

Olson Jr., M., 1982. *The Rise and Decline of Nations*. Yale University Press, New Haven, CT.

Skaburskis, A., 2008. The origin of “wicked problems”. *Planning Theory and Practice*, Vol. 9 (2): 277-280.

Tate, S., (Unpublished Manuscript). *Native American Cultural Presence and Usage of Wisconsin’s Lake Michigan Coasts*. NOAA Office of National Marine Sanctuaries, Maritime Heritage Program.

Tuan, Y. F., 1974. *Topophilia: a Study of Environmental Perception, Attitudes, and Values*. Prentice Hall, Englewood Cliffs, NJ.

Westerdahl, C., 1992. The maritime cultural landscape. *International Journal of Nautical Archaeology*, Vol. 21 (1): 5-14.

Young, O., 2010. Institutional dynamics: Resilience, vulnerability and adaptability in environmental and resource regimes. *Global Climate Change*, Vol. 20: 378-385.

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