

A Cultural Landscape Approach to Submerged Cultural Resource Management: Cultural
Heritage Ecotourism Opportunities for the Shipwrecks of Lake Union, Seattle, Washington

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Abstract

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The interdisciplinary field of marine and environmental affairs focuses on the dynamic relationships between society and the natural world. These interactions overtime create a *cultural landscape* where archaeological resources, such as historic shipwrecks, serve as a tangible link to the interactions between humans and nature that have shaped the modern landscape. The *cultural landscape approach* offers a framework to address interconnected social-ecological systems in a holistic manner consistent with the direction of modern natural and cultural resource management. This thesis utilizes the cultural landscape approach and the ideals of ecotourism to develop tourism recommendations for incorporating shipwrecks and other submerged cultural resources into the modern social-ecological system of Lake Union, Seattle, Washington.

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Introduction

The field of marine and environmental affairs is focused on the interface between society and the environment. Humans have relied on earth's coastal and aquatic environments for thousands of years and continue to count on this realm for sustenance, transportation, energy, and recreation. Consequently, the study of fisheries, shipping, renewable energies, and tourism are all important aspects of marine and environmental affairs. Understanding the overlapping aspects of science, policy, and law in the multidisciplinary study of marine and environmental affairs is essential. Examining the dynamic relationships between humans and their natural world has become the central focus at the School of Marine and Environmental Affairs.

The interdisciplinary nature of this field is a product of the multiple and overlapping uses. Conflict between these overlapping resources is thus expected. Should an area be utilized for its fisheries resources or renewable energy potential? Should an area be developed for commercial use or preserved for its historical significance? Can we balance the needs of these conflicting pursuits within this natural and social system? The relationships between these resources are at the heart of the discussion in the field of marine and environmental affairs.

The interactions between social systems and the environment have played an important reciprocal relationship in shaping modern landscapes. Society is shaped by the local environment just as the environment is impacted by the social interactions within. The result is a cultural landscape. The development of cultural landscapes is a fluid and continuous process overtime and often there are modern reminders of the past. These cultural resources serve as a link to the past, and the process of forming the modern cultural landscape of an area. The remnants of this

unique processes, whether they are tangible (e.g. archaeological artifacts) or intangible (e.g. a sense of place) can serve a community in a variety of ways socially and ecologically.

The purpose of this thesis is not to claim that cultural resources should be elevated above other land use actions, but rather to demonstrate that cultural resources worthy of preservation can also present opportunities for sustainable tourism development. This framework for analysis and discussion of cultural resources within a cultural landscape and environmental sustainability context will highlight opportunities for proper and needed management and use of submerged cultural resources, as well as accompanying benefits.

Plan of the Thesis

Part I of this thesis outlines concepts and ideas relevant to understanding the conceptual angle from which I have approached my analysis. Chapter 1 begins with defining cultural resources and understanding the complexities of their importance and value to society. Chapter 2 discusses the origins and evolution of the *cultural landscape approach* and the benefits of this perspective, as well as the methodology for its appropriate use. Chapter 3 continues with a synopsis of cultural resource management including the policy and laws surrounding submerged cultural resources. Chapter 4 is focused on the ideals of ecotourism and how cultural resources fit into the ecotourism arena, and a discussion the relationship between ecotourism and the cultural landscape approach. After these background concepts and ideas are understood, Part II applies the concepts and methodology of cultural landscapes and ecotourism to the submerged cultural resources of Lake Union in Seattle, Washington.

Part II of the thesis provides a cultural landscape analysis and case study for Lake Union, Seattle, Washington. Chapter 5 outlines research goals and methods used in this study. Chapter 6 compiles a cultural landscape profile of Lake Union, illuminating the geography, ecology, and history of the lake. The Broker-Local-Tourist (BLT) Model of Tourism is used to describe the modern tourism system of Lake Union. The chapter continues with an inventory and maps of the identified submerged cultural resources. Chapter 7 uses the background concepts and the cultural landscape profile, to identify opportunities for economic and educational benefit through tourism for the submerged cultural resources of Lake Union. Chapter 8 discusses the feasibility of the various opportunities that have been identified and makes recommendations for tourism uses for the shipwrecks of Lake Union. The thesis concludes with a general discussion of the relationship between cultural landscapes and ecotourism opportunities and identifies future research needs and the possibility of applying the methodology of this thesis to additional locations.

PART I

Theory and Concepts

Chapter 1: Submerged Cultural Resources

1.1 Defining Cultural Resources

Delineating what constitutes a ‘cultural resource’ has been done in different fashions depending on management objectives. It is broadly defined by academia, while some government institutions and laws outline specific and differing attributes for what is a ‘cultural resource’ relevant to their pursuits.

A holistic definition from Thomas F. King (2011) serves as the foundation for analyzing cultural resources and states:

“Cultural Resources are all the aspects of the physical and supra-physical environment that human beings and their societies value for reasons having to do with culture. Included are culturally valued sites, buildings, and other places, plants and animals, atmospheric phenomena, sights and sounds, artifacts and other objects, documents, traditions, arts, crafts, ways of life, means of expression, and systems of belief” (King, 2011, p. 2)

Casting a broad net when defining cultural resources allows for the inclusion of both tangible items such as historic properties, archaeological sites, Native American cultural items, cultural items, shipwrecks, et cetera, as well as the intangible aspects of culture including songs, stories, and religious beliefs (King, 1998; Figure 1.1).

While attempting to encompass all the various forms of cultural resources, both tangible and intangible, is useful in discussion and theory, government institutions and managing parties have focused more on tangible artifacts. A narrower classification of ‘cultural resources’ allows for more targeted management and identification. The visible, physical cultural resources such as shipwrecks are easier to identify and delineate than an intangible artifact, for example a religious belief.

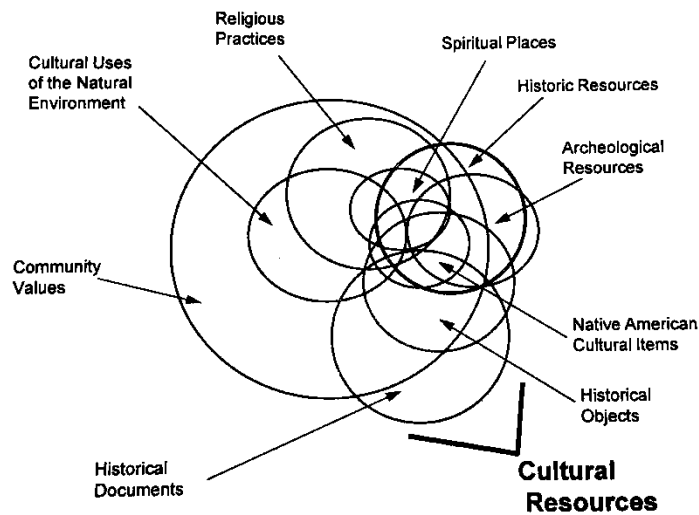


Figure 1.1: The different categories of tangible and intangible cultural resources. (King, 1998; p. 4)

Lacking consensus on a definition has resulted in management challenges and miscues. Without acknowledging what does and does not constitute a cultural resource, communication deficiencies arise in management plans and specific issues are not addressed (King, 1998). This thesis does not attempt to delineate what exactly constitutes a ‘cultural resource,’ as this is an ongoing debate in academia and practice (King, 2011). This analysis assesses an area containing a variety of broadly defined cultural resources and illuminates opportunities to sustainably and responsibly utilize these resources to benefit society.

It is important to note in describing ‘cultural resources’, internationally the term ‘cultural heritage’ is used while in the United States the default is ‘cultural resource’. In this thesis, the terms are used interchangeably, with the use of ‘cultural resource’ being more prevalent.

1.2 Defining Submerged Cultural Resources

Simply stated, submerged cultural resources are cultural resources that are under water. Whether these are shipwrecks, historic docks, submerged paleoshorelines and accompanying archaeological sites, or other tangible artifacts, the term submerged cultural resource has come to refer primarily to tangible artifacts that are found underwater (UNESCO, 2014). However, these physical relics are not without links to terrestrial environments where ideas, viewpoints, human values and other intangible cultural resources have a reciprocal relationship with the tangible artifacts. This thesis will largely target the physical, charismatic submerged cultural resources (i.e. shipwrecks) while maintaining the connection these resources have with the intangible sociocultural aspects of Lake Union as well as the relationship between cultural and natural resources in a landscape setting.

1.3 Importance of Submerged Cultural Resources

Submerged cultural resources straddle the natural and cultural environments in a unique position. Embedded into the seafloor, a shipwreck often serves as habitat for fishes and a foundation for reef ecosystems, giving the wreck biological significance. In contrast, the wreck could be a significant source of pollution damaging the local aquatic environment (Monfils, Gilbert, and Nawadra, 2006). Under the conflicting roles a wreck can play in the biological realm, a culturally complex scenario is at play. As historical link to the past and a potential gravesite for sailors, a shipwreck is an important component of maritime antiquity. Shipwrecks have served as memorials for those lost, and often can be a symbol of a tragic event. The

combination of cultural and natural appeal of a shipwreck presents a variety of potential impacts on society and the environment.

In discussing the impact and value that cultural resources have on society, it is important to understand that these are in fact ‘resources’ that can benefit people. A cultural resource is a unique and non-renewable resource that, once used or destroyed, cannot be replaced. Sustainable management of these resources is vital to ensure their longevity as a testament to past human experiences and as a beneficial resource to modern society. The benefits of cultural resources are multifaceted.

Potential societal benefits of preserving and utilizing cultural resources can be economic, educational, and cultural. Economically, these resources present an opportunity for tourism, bringing revenue to the local area and creating additional job opportunities. The educational value of these resources is two-fold, both for visitors and local communities. Through this interpretation of local history, a sense of place is strengthened and local culture is enriched.

However, submerged cultural resources are facing pressures that threaten their existence and ability to provide these benefits to society. Without knowledge of submerged cultural resources, recreational boaters and fishermen can unknowingly damage or destroy these relics with anchors and fishing gear. Looting and illegal salvage of known, but unprotected wrecks leads to the loss of many irreplaceable cultural resources. Additionally, unsustainable tourism practices and natural processes of deterioration can damage sites. One challenge of proper management for submerged cultural resources is mitigating these negative pressures and promoting preservation through education (Hutchinson, 1996).

1.4 Valuing Submerged Cultural Resources

With the multiple benefits, as well as the potential downfalls of submerged cultural resources, a major challenge in management is determining the actual value these resources have to society. As discussed, submerged cultural resources (i.e. historic shipwrecks) are unique resources that have economic and societal importance. The combined intrinsic and educational value of these historical relics, as well as the potential economic value gained by sustainable use through responsible tourism, makes cultural resources an important commodity. However, there are challenges in managing these non-renewable resources in a manner that promotes both preservation and societal benefits economically. The problem is two-fold in that the valuation of these resources is difficult to quantify and that in order to extract benefits from these resources there must be continued preservation of these submerged cultural resources.

The first challenge is one of data collection necessary in order to accurately determine economic value. While the value of submerged cultural resources is often discussed as both an existence value (the presence of cultural resources benefits society through rich cultural heritage) and as economic (these resources benefit the economy through tourism). In order to accurately assess the value of submerged cultural heritage, both of these positive values must be taken into account. Currently, available data on value of submerged cultural resources is scarce and has mostly been done in a conceptual manner. However, a study by Whitehead and Finney (2003) sought to determine how much a household in North Carolina (location of many historic shipwrecks) are willing to pay to maintain shipwrecks in their pristine state. Through a phone survey, the willingness to pay for these submerged cultural resources was a \$35 one-time increase in state tax (Whitehead and Finney, 2003). This suggests that society recognizes the intrinsic value of having these historic shipwrecks. Additionally, tourism studies in locations

known for their maritime heritage could also provide information useful to value submerged cultural heritage. A method for this is to look at the travel cost of tourists to reach cultural heritage sites (Alberini and Longo, 2006). However, the availability of this data is limited temporally and spatially, and additional study would be required for an accurate depiction of the economic value of submerged cultural resources in a particular area.

The desired outcome is for historic shipwrecks and other submerged cultural heritage to be protected and preserved as a record of the region's maritime heritage, while still serving as a magnet for tourists. The physical conditions of many significant wrecks are monitored, and often tourism pressures can have detrimental impacts on these wrecks. However, a balance can be reached when sustainable ecotourism practices are promoted, and the visitation a historic shipwreck receives can produce public support for continued preservation. For example, in many of the National Marine Sanctuaries of the United States, the submerged cultural resources serve as a tourism destination for many, and the positive attention received from this further promotes their protection and continued monitoring (i.e. Thunder Bay National Marine Sanctuary) (Vrana, and Vander Stoep, 2003).

The challenges faced in valuing historic shipwrecks and other submerged cultural heritage pose a threat to properly assessing the societal benefits that these resources can provide. Without a proper and consistent valuation methodology, economic estimates will be difficult and most likely inaccurate. Further complications arise from unidentified externalities such as the potential positive or negative environmental impact a historic shipwreck would pose. Positively, shipwrecks often serve as artificial reefs promoting biodiversity and ecological benefits. However, negatively, some sunken vessels could pose pollution risks through oil spills and chemical leaks which has become an increasing environmental concern (NOAA, 2013). Again,

these externalities are hard to quantify and further complicate the situation faced by managers in the cultural resource arena.

Chapter 2: Cultural Landscape Theory

2.1 Cultural Landscape

Scientists and managers have taken an important step in cultural and natural resource management by recognizing the integrated reality of these resources at an ecosystem level. The historic gap between cultural resources and the natural world can be bridged by taking a cultural landscape approach to management. Recognition of the relationship of cultural resources within the natural environment, and the symbiotic influence of these two realms, has enabled a better understanding of a complex social-ecological system.

The growing body of literature illustrates that the interface between the natural world and society is overlapping and highly contingent on the counterpart. A variety of terms have been used to describe the frameworks associated with this approach to understanding the relationship between society and nature such as complex adaptive systems (Holling, 2001), the Coupled Human Natural Systems (Liu et al., 2007), social-ecological system (Collins et al., 2011; Figure 2.1), and, in this thesis, a cultural landscape approach.

Among the first in the United States to use a cultural landscape approach in management was the National Park Service (NPS) (NPS, 1998). The NPS has defined a cultural landscape:

A cultural landscape is a geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with an historic event, activity, or person, or exhibiting other cultural or aesthetic values. (NPS, 2014)

A cultural landscape then is an assortment of different processes throughout time and is made of the physical components from a number of historic periods resulting from human activity and modification to the natural features and elements (Taylor, 1989:16-17). This basic fundamental

idea of change through time resulting from the interaction between humans and nature can be seen in most definitions of a cultural landscape (Sauer, 1925; Wagner and Mikesell, 1962; Melnick, 1984; von Droste, Plachter and Rossler, 1995; Pearson and Sullivan, 1995; Lennon and Mathews, 1996; Fowler, 2003; Brown, 2008).

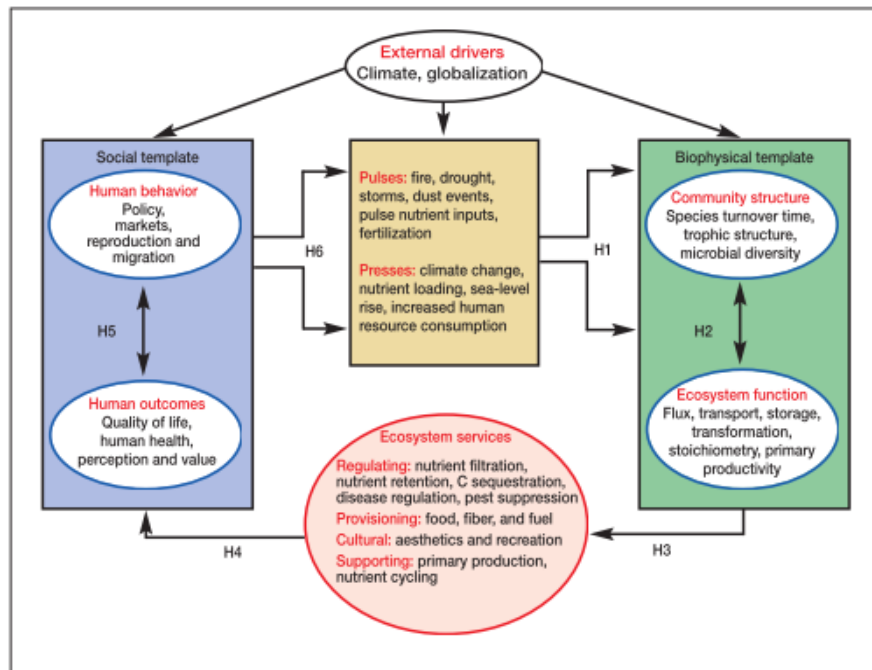


Figure 2.1: Conceptual model of a social-ecological system showing the reciprocal relationships between society and the environment (Collins et al., 2011).

The cultural landscape is an interdisciplinary idea that has been evolving from the fields of archaeology, geography, and history (Ford, 2011), with influence from ecology, biology and resource management. First appearing in the field of geography in a paper titled *'The morphology of landscape'* Carl Sauer (1925, p. 6) has written: "The cultural landscape is fashioned from a natural landscape by a culture group. Culture is the agent, the natural area is the medium, the cultural landscape is the result." In this introduction of 'cultural landscape' one already sees the recognition that the natural world and society are interacting to change the geographic area. These ideas were also shared in field of archaeology where archaeologists were

examining the relationships between space and people and how ecological patterns influence social systems (Llobera, 2013).

Clark (1939) and Steward (1955) explored this relationship between societies and their environment as they discuss how culture changes through adaptation to the environment based on ecological constraints (Llobera, 2013). In *A Land* by archaeologist Jacquetta Hawkes (1951), she brings to light the idea that sense of place is fundamental to understanding a cultural landscape, and contends that the relationship between humans and their land shapes, and is shaped by, the evolving landscape. These early renditions and applications of a cultural landscape have led to the modern approach we see today. In not only recognizing the reciprocal relationship between society and nature (Figure 2.2), but also the implications this relationship has on management of natural and cultural resources, we can apply the cultural landscape approach to conservation and sustainability ethos.



Figure 2.2: The modern landscape is a result of the ongoing complex relationships between people and the environment. (Guilfoyle, 2006 and Phillips, 2002 as cited by NSW Department of Environment and Heritage (NSW DEH), 2010)

2.2 Cultural Landscape Approach

The history and heritage of an area is not only represented by tangible artifacts left behind from a previous era, but in how these artifacts shape the modern landscape of today. Constantly evolving and growing, a cultural landscape represents the relationship between man and nature and the resulting impact the two have had on one another. A cultural landscape is not limited to the physical objects, but rather a method of interpreting, analyzing and evaluating places (Longstreth, 2008). Cultural landscape theory is breaking the traditional approach that separated cultural and natural resource management by recognizing the influences and overlapping aspects of these fields and taking a holistic approach through incorporating this relationship into management practices.

A Cultural Landscape Approach (CLA) seeks to illuminate the integrated historical relationship between cultural heritage and the natural environment (Mather and Jensen, 2010). Represented equally through tangible artifacts and cultural identity, an understanding of the complexities in this temporally dynamic connection between cultural heritage and nature is important for proper cultural and natural resource management (Longstreth, 2008). A CLA serves as a conceptual tool (Brown 2012) for managers and policy makers to recognize the interconnectivity of history and culture with ecology and biology (Buggey, 1999; Pretty et al., 2009; Rössler, 2006, Brown, 2012 +others). Historically, cultural and natural resources have been managed separately without regard to their intersection and mutual influence (MPA FAC, 2011).

As managers and policy makers move toward integrated management through avenues such as eco-system based management (EBM) and marine spatial planning (MSP) (McLeod and

Leslie, 2009), a CLA ensures that cultural resources are recognized and the symbiotic influences between cultural resources and natural resources are acknowledged.

In outlining the framework for a Cultural Landscape Approach developed by New South Wales Office of Environment and Heritage (NSW DEH, 2010) (Fig 2.2), key fundamental aspects of this method come to the foreground. Implementing the cultural landscape approach has been done in this step by step fashion in Part II of this thesis.

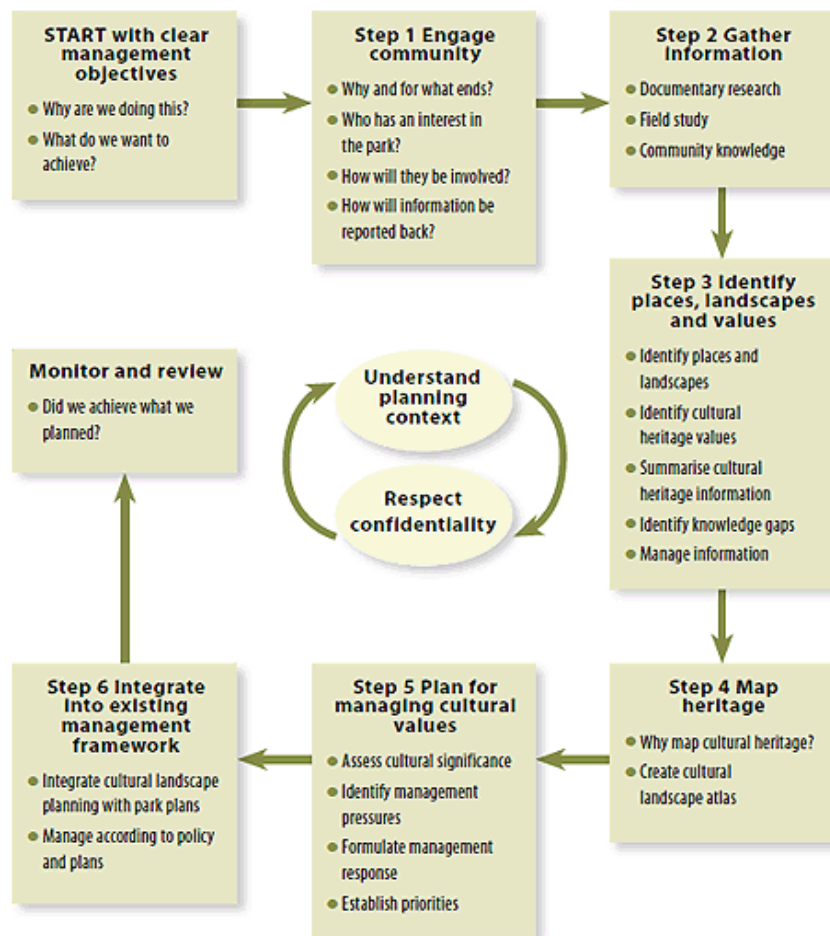


Figure 2.3: Framework for applying a cultural landscape approach developed by New South Wales Department of Environment and Heritage 2010 (NSW DEH, 2010)

Adapted from the framework outlined by New South Wales Department of Environment and Heritage (NSW DEH, 2010), the basis of the framework was altered slightly to focus on the implementation of ecotourism as the tool for resource management. The process of the cultural landscape analysis utilized in this thesis is as follows:

- Start (Chapter 5): Outline research goals and methods including the purpose of the thesis.
- Step 1 (Chapter 6: Section 6.1): Identify stakeholders with the BLT model for analyzing social-ecological tourism systems.
- Step 2 (Chapter 6: Section 6.2): Gather information through review of background concepts as well as through review of local history, current social-ecological system (step 1), and review of cultural resource survey (step 3)
- Step 3 (Chapter 6: Section 6.3): Identify submerged cultural heritage through compiling cultural resource inventory based on sonar and dive surveys.
- Step 4 (Chapter 6: Section 6.4): Map of identified submerged cultural resources in step 3.
- Step 5 (Chapter 6: Section 6.5): Identify ecotourism opportunities related to the submerged cultural resources.
- Step 6 (Chapter 6: Section 6.6): Recommendations on how to incorporate select ecotourism opportunities into existing social-ecological system.
- Step 7 (Chapter 6: Section 6.7): Future direction of research as well as observations and reassessment of implemented cultural landscape approach

2.3 Maritime Cultural Landscape

In this context, the term ‘maritime’ refers to associations between humans and any water-based environment (e.g. oceans, lakes, rivers, streams, wetlands) (Vrana and Vander Steop, 2003). Applying the cultural landscape theory to an aquatic and coastal environment has yielded the *maritime cultural landscape*. Coined by Westerdahl (1992), the maritime cultural landscape is concerned with the interaction between society and water. While the idea of the maritime cultural landscape has been around since its inception by Westerdahl in 1992, it is still in the early stages of development and use as a tool for submerged cultural resource management (Ford, 2011). The opportunities present when implementing the maritime cultural landscape concept are significant and far-reaching. Outlined by Vrana and Vander Steop (2003, p 24-25), the opportunities arising from this conceptual framework in regard to research and cultural resource management include:

- “1. A more robust analysis of maritime culture that focuses on the association and relationships among various aspects of the living and nonliving resources;
2. integration of the cultural past with the needs of present communities to better protect, manage, and sustain the landscape for the future;
3. meaningful public interpretation of these associations and relationships within protected areas, museums, and visitor centers;
4. stronger foundations for private-public partnerships within a landscape area;
5. a geographic framework for analyzing social-cultural significance and making research-based decisions in allocating limited resources to research and resource management;
6. a more systematic basis for evaluating geographic areas with maritime and coastal resources for designation as protected areas and heritage areas;
7. a more systematic basis for evaluating the results of existing protected areas in protection and management of maritime cultural resources.”

Utilizing a maritime cultural landscape approach offers a holistic methodology for ensuring the goals in all four arenas (education, preservation, economic, and ecological) are met. As outlined in Section 2.2, the cultural landscape approach offers a framework to address interconnected social-ecological systems in a holistic manner consistent with the direction of modern natural and cultural resource management.

Chapter 3: Cultural Resource Management

3.1 Implementing Cultural Landscape Theory

The first use of the cultural landscape as a management framework in the United States, as well as the largest use of a cultural landscape approach still to this day is from the National Park Service (Park et al., 1999). As the definition and understanding of ‘cultural landscape’ grew in academia, it was in the 1960’s when resource managers started to look at the grounds or geographic area along with historic structures and artifacts (Park et al., 1999). The growing acknowledgement of a link between nature and man slowly trickled into cultural resource management frameworks and in 1981 we see the National Park Service (NPS) first use the term ‘cultural landscape’ to identify a type of cultural resource (NPS,1981; Page et al., 1998).

The cultural landscape approach employed by the NPS has provided a holistic understanding of cultural history and the environment. Allowing for proper preservation and sustainable extraction of educational and economic value of historic rural landscapes, cemeteries, battlefields, and abandoned mining communities.

The use of a cultural landscape approach has largely been applied to terrestrial systems; however, in the marine realm, governmental institutions responsible for resource management are recognizing the usefulness of an integrated approach and beginning to implement cultural landscape thinking. The Marine Protected Area system is one legislative process that has the potential to positively impact preservation of submerged cultural heritage.

The National System of Marine Protected Areas (MPA) was set in place ‘to protect significant *natural and cultural* resources within the marine environment for the benefit of

present and future generations.’ (Executive Order 13158, 2000 as cited in MPA FAC, 2011). Now, over a decade later, it is obvious that the focus has been largely on the preservation of natural resources, while protection of cultural resources in MPAs has lagged behind. This undervaluing of cultural heritage resources is evident in that of the 1,729 designated MPAs, only 151 are classified as Marine Cultural Heritage Areas (MPA Inventory, 2013).

This imbalance has been recognized by the Marine Protected Area Federal Advisory Committee (MPA FAC, 2011) and submerged cultural resources are beginning to gain the attention they deserve. In July 2010, President Barack Obama issued Executive Order 13547. This outline of the National Ocean Policy directs agencies to ‘respect and preserve our Nation’s maritime heritage, including our social, cultural, recreational, and historical values.’ (Executive Order 13547, 2010; as cited in MPA FAC, 2011). The difficulties of navigating through the current complex legislation can be simplified by MPAs which “have the potential to bring new levels of integration and protection to the management of cultural heritage resources in coastal and marine environments.” (MPA FAC, 2011 p. 8) The preservation of cultural heritage is beginning to gain momentum, which is evident in the adoption of an MPA Cultural Heritage Vision Statement in April 2010 by the Marine Protected Areas Federal Advisory Committee:

“Achieving and maintaining healthy coastal and marine ecosystems requires a fundamental understanding of the relationships between people and the environment. Cultural heritage, which belongs to all people, emphasizes these connections, whether that heritage takes the material form of, for example, maritime resources (such as shipwrecks), natural resources (such as marine species and habitats), or sacred places. Through the national MPA system, cultural relationships among people and historic, natural, and place-based heritage resources are preserved and perpetuated in ways that recognize and share multiple cultural voices and knowledge systems for the benefit of all.” (MPA FAC, 2011 p. 7)

While the MPA FAC and MPA Center have recognized the necessity of increasing awareness of cultural heritage in order for proper cultural resource management, the majority of coastal states lack programs or specialists in underwater cultural heritage (Grussing, 2012). This lack of dedicated personnel is an overarching obstacle to involving submerged cultural resources in MPAs and designating Marine Cultural Heritage Areas.

Pursuing proper management of natural and cultural resources, managers of MPAs have begun to turn to a cultural landscape approach (MPA, 2012). Applying and adapting these historically terrestrial frameworks to coastal and marine environments will allow for resource managers to preserve, educate, and even benefit economically from proper management of maritime cultural and natural resources.

3.2 Policy and Laws Protecting Submerged Cultural Resources

In the broadest sense, the main objective of cultural resource management (CRM) is the recognition and preservation of cultural heritage. Protecting submerged cultural heritage has been attempted at varying degrees of success through different governmental regulations both nationally within the United States (Street, 2006) and internationally (Flatman, 2009, Street, 2006). The protection of historic shipwrecks in the United States is complex and disjointed, and many underwater cultural heritage resources fall under multiple laws (Street, 2006).

Internationally, the 2001 UNESCO Convention of the Protection of the Underwater Cultural Heritage was intended to allow for better protection of submerged cultural resources by nations (UNESCO, 2001). With relatively few signatories on this international convention to protect these resources, and a grim outlook for ratification by some major maritime nations, this

attempt for global coordination in underwater cultural heritage management has had limited success (Flatman, 2009). Having entered into force in 2009 after the twentieth country's ratification, as of March 2014 there are 45 States Parties (UNESCO, 2014). Although a number of key countries are conspicuously absent as signatories, including the U.S., they do follow the Convention's guidelines and ethics.

Turning to the United States, the primary laws addressing submerged cultural heritage are the National Historic Preservation Act of 1966 (NHPA), the National Marine Sanctuaries Act of 1972 (NMSA), the Abandoned Shipwreck Act of 1987 (ASA), and the Sunken Military Craft Act of 2004 (SMCA) (Grussing, 2009). Figure 3.1 shows the overlapping jurisdiction of laws addressing submerged cultural heritage in the U.S.

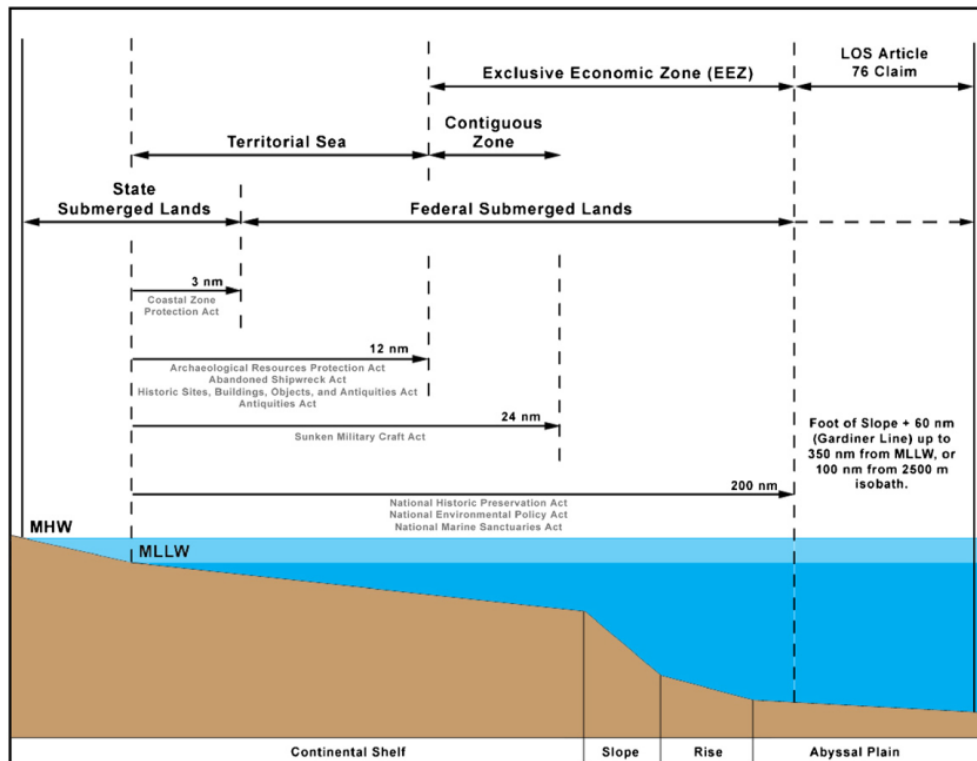


Figure 3.1: United States federal historic preservation laws and their zones of jurisdiction offshore (Claesson, 2009).

The National Historic Preservation Act of 1966 serves as the foundation for cultural resource preservation in the United States, with section 106 of the NHPA being the most known and applied part of the law (King, 2013). This section requires federally funded projects to consider the potential impacts to cultural resources and the overall purpose of the law is to recognize historic preservation. Additionally, the NHPA created the National Register of Historic Places, the list of National Historic Landmarks, the State and Tribal Historic Preservation Offices, and the Advisory Council on Historic Preservation (ACHP).

In the National Marine Sanctuaries Act of 1972, once again there is a nod to preservation of submerged cultural resources as the act “authorizes the Secretary of Commerce to designate and protect areas of the marine environment with special national significance due to their conservation, recreational, ecological, historical, scientific, cultural, archeological, educational, or esthetic qualities as national marine sanctuaries” (NMS, 2013). As discussed, these attributes of a potential protected area are interlinked, and a specific recognition of historical, cultural, and archaeological significance points to tangible submerged cultural heritage.

The policy that most directly targets submerged cultural resources is the Abandoned Shipwreck Act of 1987 (ASA). While the ASA directly targets shipwrecks, and the basic goal of the legislation is protection of historic shipwrecks, the unfortunate holes in the ASA are evident and detrimental to the law (MPA FAC, 2011). The major issue with this legislation is defining the term ‘abandoned,’ which has proven to limit the ability of the act to be applied to shipwreck protection. In U.S. federal courts, cases involving the ASA have not been able to come to a consensus on the definition of an ‘abandoned shipwreck’ (MPA FAC, 2011). This loophole has weakened the effectiveness of the law, and left a gap in current legal protection for submerged cultural heritage.

Beneficially, the ASA does provide ‘guidelines’ for shipwreck management for state and federal agencies, and list the basic components of a shipwreck management program:

- (a)** Locate and identify shipwrecks;
- (b)** Determine which shipwrecks are abandoned and meet the criteria for assuming title under the Abandoned Shipwreck Act;
- (c)** Determine which shipwrecks are historic;
- (d)** Identify recreational and other values that a shipwreck may possess and the shipwreck's current and potential uses;
- (e)** Provide for the long-term protection of historic shipwrecks;
- (f)** Protect the rights of owners of non-abandoned shipwrecks;
- (g)** Consult and maintain a cooperative relationship with the various shipwreck interest groups;
- (h)** Cooperate with State and Federal agencies and sovereign nations having an interest in shipwreck management;
- (i)** Provide sport divers with reasonable access to explore shipwrecks;
- (j)** Provide for public appreciation, understanding, and enjoyment of shipwrecks and maritime history;
- (k)** Conduct archeological research on shipwrecks where research will yield information important to understanding the past;
- (l)** Provide for private sector participation in shipwreck research projects; and
- (m)** Provide for commercial salvage and other private sector recovery of shipwrecks when such activities are in the public interest. (NPS, 1990, para. 6)

While these guidelines are not mandated, they are in place to encourage best practices, though the lack of enforcement means these guidelines are rarely implemented (Grussing, 2009). Cultural heritage ecotourism presents an arena where many of these recommended guidelines of a shipwreck management plan, as defined by the ASA, can be achieved.

Washington State Law

The legal framework targeting submerged cultural resources at the state level in Washington is similar to the national platform. In addition to the applicable federal laws the State Environmental Policy Act (SEPA) and Shoreline Management Act (SMA) have the potential to address submerged cultural resources. SEPA, similar to NHPA and the National Environmental Policy Act (NEPA), requires that projects identify impacts to environmental resources as well as archaeological, historical, and cultural resources (DAHP, 2013). The SMA recognizes that many of the state's cultural resources are located on the shorelines and again requires protection for 'historic, cultural, scientific, and educational elements' (SMA, as cited in DAHP, 2103)

In addition to the regulatory framework in preservation and conservation of shipwrecks and other submerged cultural relics, cultural resource managers must continue to pursue additional avenues for protection. Cultural heritage ecotourism used as a tool to promote cultural resource management presents an opportunity to fill some gaps in protective legislation by promoting a stewardship ethic through community involvement and awareness in preservation, protection, and education.

Chapter 4: Ecotourism and Cultural Resource Management

4.1 Defining Ecotourism

Many definitions of ecotourism exist, and academics invested in the field seem to all prefer a different and ever evolving definition of the term. However, the fundamental groundwork for the definition can be isolated, and the foundations of ecotourism solidified. An analysis of 85 definitions of ecotourism by Fennell (2001) found 5 recurring themes; (1) where ecotourism occurs, (2) conservation, (3) culture, (4) benefits to locals, and (5) education. These pillars of ecotourism are built upon one of the first presented definitions of ecotourism. Hetzer (1965) saw ecotourism as “tourism based principally upon natural and archaeological resources such as birds and other wildlife, scenic areas, reefs, caves, fossil sites, archaeological sites, wetlands, and areas of rare or endangered species” and laid out four principles of ecotourism; (1) minimum environmental impact, (2) minimum impact on and maximum respect for host cultures, (3) maximum economic benefits to the host country, and (4) maximum satisfaction to visitors (Hetzer, 1965; Miller, 1993).

For the purposes of this thesis, which focuses on the cultural heritage aspect of ecotourism, the author has examined the many different academic definitions of ‘ecotourism’ and sought to develop a definition and viewpoint from which to access ecotourism as a viable tool for cultural resource management that influences increased awareness, preservation and sustainable use of these resources.

A widely cited definition of ecotourism presented by Ceballos-Lascurian (1991 p.25) will serve as the foundation to build the definition used here, and the argument for ecotourism as a tool for submerged cultural resource management:

*“[Ecotourism] involves traveling, to relatively undisturbed or uncontaminated natural areas with the specific object of admiring, studying, and enjoying the scenery and its wild plants and animals, as well as any existing **cultural features (both past and present)** found in these areas.” (Ceballos-Lascurian, 1991 p.25)*

This definition invokes the aspects of ecotourism which are present during a visit to submerged cultural resources by an ecotourist. Submerged cultural resources are in a unique position as a natural and culturally significant ecotourism destination, and the definition presented by Ceballos-Lascurian (1991) encompasses both of these distinctions. Through the lens of a cultural landscape approach, the defining characteristics of ecotourism encompass the blend of natural and cultural resources that a cultural landscape approach is designed to assimilate.

This definition however is not flawless. The absence of acknowledging the economic benefits to local communities is detrimental to this definition. The economic benefits of ecotourism are present in many definitions, and were identified by Fennell (2001) as a fundamental aspect of the term. Sustainable use of submerged cultural resources must include benefits for the local community, which in turn will increase local awareness and accountability for the protection of these resources. The economic benefits extracted from these resources are to benefit the local economy.

Furthermore, the inclusion of ‘relatively undisturbed or uncontaminated natural areas’ is problematic and is not inclusive of all aspects of ecotourism and should be questioned when defining ecotourism. The relationship between humans and nature is an important aspect of ecotourism, and is a shaping force of cultural heritage as well as the modern natural environment. Landscapes can fall into a wide spectrum of varying degrees of human interaction ranging from little human presence in wilderness areas, to urban areas of significant

anthropological influence on the environment (Vrana and Stoep, 2003). As cultural heritage is a product of human environment interaction, ecotourism most certainly could occur in urbanized areas especially when cultural heritage is the ecotourism destination.

To account for the shortcomings of the definition provided by Ceballos-Lascurian (1991) with respect to the role of cultural heritage tourism in ecotourism I turned to Weaver (2008). In his book *Ecotourism* Weaver (2008, p. 17) defines ecotourism,

*“Ecotourism is a form of tourism that fosters learning experiences and appreciation of the natural environment, or some component thereof, within its associated **cultural context**. It is managed in accordance with industry best practice to attain environmentally and socioculturally sustainable outcomes as well as financial viability.”* (Weaver, 2008, p.17)

This definition incorporates additional components of ecotourism that are fundamental, and bolster the argument for ecotourism as a tool for cultural resource management. Incorporating the educational aspect important to ecotourism strengthens the working definition of ecotourism. Educating the public through ecotourism presents an opportunity to increase awareness thus protection of our cultural heritage. As one of the fundamental themes of ecotourism identified by Fennel (2001), education is a vital part of ecotourism and the goal of promoting sustainable resource use. This represents an important aspect for the future of the ecotourism industry as a continued shift toward sustainability and education to promote preservation of our natural environment as well as our associated cultural heritage.

Keeping the goals of cultural resource management in mind, as well as the fundamental aspects of ecotourism outlined above, a definition of ecotourism must be in a fashion that represents the full potential of ecotourism as a driver for sustainable resource use and promoting natural and cultural resources. For the purposes of this thesis, combining the previously outlined

definitions and related discussion of ecotourism, and to endorse the use of ecotourism as a tool for cultural resource management, ecotourism is defined as follows:

Ecotourism involves traveling to areas with the specific object of admiring, studying, and enjoying the scenery and its wild plants and animals, as well as any existing cultural features and technologies (both past and present) found in these areas. Ecotourism provides economic benefits to local communities and incentive and motivation for preservation.

4.2 Cultural Heritage Tourism is Ecotourism

Incorporating cultural heritage tourism into ecotourism has been common in the literature for many years (Weaver and Lawton, 2007; Wilson, 2006; Erickson, 2004; Mckercher and du Cros, 2003; Mckercher and du Cros, 2002; Spenneman et al., 2001; Sirakaya et al., 1999; Jamieson, 1998; Steele-Prohaska, 1996; Miller, 1993; Ceballos-Lascurian; 1991; Hetzer, 1965) and is apparent in the definition of ecotourism developed above. In defining ecotourism, cultural resources were included as a fundamental aspect, but what exactly cultural heritage tourism includes should be delineated. Ecotourism includes not only travel to natural environments, but also to the associated cultural landscapes of the natural world. Through a broad lens of examination, cultural heritage tourism can be viewed as ethnic, indigenous, and /or historically motivated travel (Wilson, 2006). As defined by Jameison (1998, p. 65), cultural heritage tourism is:

“travel concerned with experiencing the visual and performing arts, heritage building, areas, landscapes, and special lifestyles, values, traditions and events... [and] includes handicrafts, language, gastronomy, art and music, architecture, sense of place, historic sites, festivals and events, heritage resources, the nature of the work environment and technology, religion, education, and dress”.
(Jameison, 1998, p. 65)

It is important to define what constitutes cultural heritage, as this thesis focuses on the tangible cultural resources (i.e. shipwrecks), while incorporating the cultural identity of the study area in constructing ecotourism recommendations. Both tangible and intangible cultural heritage are important for consideration, and in outlining the broad scope of cultural heritage tourism, the diverse setting of cultural heritage is evident. As a sector of ecotourism (Figure 4.1), and its principles of environmental and cultural respect and conservation, cultural heritage tourism presents an opportunity for increasing awareness and protection of these unique sites accompanied by local economic growth through sustainable tourism development (Weaver and Lawton, 2007; Wilson, 2006; Erickson, 2004; Mckercher and du Cros, 2003; Mckercher and du Cros, 2002; Spenneman et al., 2001; Sirakaya et al., 1999; Jamieson, 1998; Steele-Prohaska, 1996; Miller, 1993; Ceballos-Lascurian; 1991; Hetzer, 1965).



Figure 4.1: Visualization of how cultural heritage tourism and the idea of tourism involving cultural resources is part of modern ecotourism.

4.3 Broker-Local-Tourist (BLT) Model

In discussing tourism potential of an area, using a framework for analysis ensures appropriate assessment. Traditionally, tourism was viewed as an ‘us’ and ‘them’, or ‘host’ and guest’ (Smith, 1989). However, this static model fails to recognize the dynamic nature of tourism as well as the multiple roles that people of an inhabited area can fill. The broker-local-tourist (BLT) model (Miller and Auyong, 1991) illuminates three groups of actors, (brokers, locals, and tourists) as well as the interaction these groups have amongst each other and with the natural and technological setting of the tourism destination (Figure 4.2).

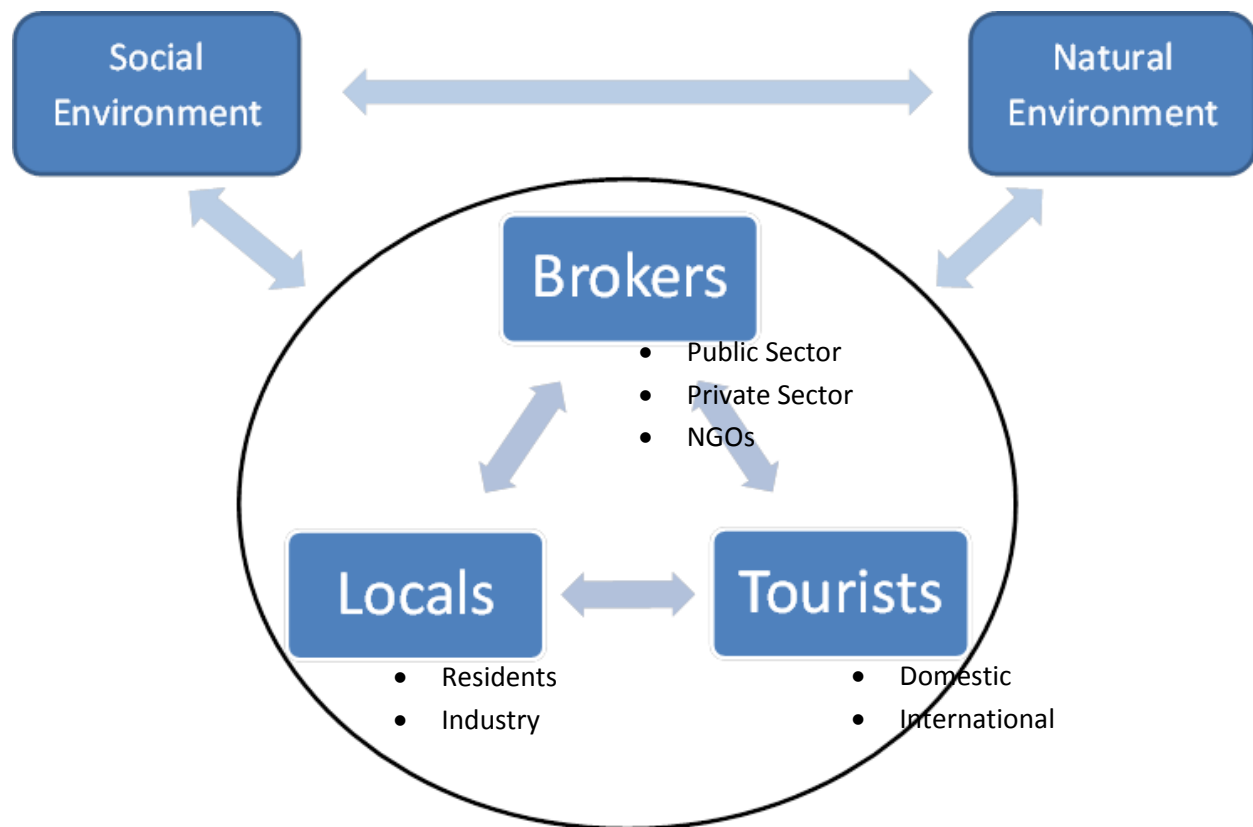


Figure 4.2: Broker-Local-Tourist Social-Ecological Model of Tourism
(Adapted from Miller and Auyong, 1991)

The ‘brokers’ in this model represent anyone who is directly involved in the tourism industry of an area. These brokers could be in three groups, the tourism service providers (tour guides, travel agents, etc.), the public sector government (policy makers, National Park employees, etc.), or the non-governmental civil society organizations (World Wildlife Fund, The Nature Conservancy, etc). All of these potential brokers are directly involved with the tourism industry. The ‘locals’ are those who live in the area but are not directly involved with tourism. While these people are outside of the tourism industry, they are not exempt from the impacts tourism has on the local society and environment. Finally, the ‘tourists’ group are those who come to temporarily visit a location. The model depicted in Figure 4.2 is dynamic. Individuals can change roles and the impacts between two groups often influence many aspects of the social-ecological system.

The BLT model (Miller and Auyong, 1991) will serve as a useful framework to discuss the modern tourism activity and identify stakeholders within the cultural landscape of Lake Union, as well as a predictor for how incorporating submerged cultural heritage into the existing situation will have an impact on the social-ecological system associated with Lake.

4.4 Ecotourism and Cultural Resource Management

Ecotourism employed at irreplaceable cultural heritage sites provides a venue for preservation and conservation of submerged cultural heritage, but also has the potential to present some risks to the site with increased visitation and improper education (McKercher & du Cros, 2002; Grussing, 2009).

While an important goal of cultural resource management is the preservation of cultural resources, education of the public is also vital. These two goals can be achieved often simultaneously, but can also clash. While cultural heritage ecotourism promotes awareness, interest, and economic benefits that can all motivate increased protection and conservation (Grussing, 2009), the increase in tourist interaction with the resource can also be a threat. Inappropriate interaction with the site due to lack of knowledge has the potential to cause harm.

Keeping in mind the ideals of natural and cultural awareness and conservation, cultural heritage ecotourism illuminates the economic attributes for the local economy and provides a vehicle for increased conservation. Implementing cultural heritage ecotourism as a means to simultaneously protect and preserve submerged cultural resources, and also facilitate recreation and education, will benefit local stakeholders culturally and economically. Cultural heritage ecotourism has the power to lead to increased preservation and protection of the submerged cultural heritage and improved cultural resource management.

Submerged cultural heritage sites are nonrenewable resources that can be enjoyed sustainably using a combination of ecotourism and resource management ethics. The economic incentive for local stakeholders to preserve and educate others about submerged cultural resources is through cultural heritage ecotourism.

Additionally, cultural heritage ecotourism has the ability to transcend current legislation complexities and provide an arena to promote protection and preservation of shipwrecks as cultural resources, and an opportunity to improve public education and awareness through sustainable recreation and interaction with local maritime heritage.

Cultural heritage tourism has been implemented in a various places in the United States and abroad as a means to educate about, as well as to preserve, submerged cultural resources. Through examining the successes, conflicts, and failures of cultural heritage tourism of shipwrecks with respect to the goals of the cultural landscape approach and ecotourism, a set of best practices emerges for the incorporation of submerged cultural resources into tourism schemes. While there are many examples of cultural heritage tourism in practice, I introduce shipwreck trails here as they will provide a solid foundation to build alternatives and recommendations for the opportunities that are present with regards to the submerged cultural resources of Lake Union, Seattle.

Shipwreck Trails/Maritime Heritage Trails:

One method of utilizing submerged cultural resources, shipwrecks in particular, is the idea of a ‘shipwreck trail.’ Some areas that have multiple submerged cultural resources have grouped them into a trail to lead tourists from site to site (Spirek and Scott-Ireton, 2003). Whether these trails are followed by SCUBA diving, kayaking, or walking, the benefits of linking these resources into one trail are a holistic experience ensuring interpretation of a variety of sites, as well as increased visibility of an area’s submerged cultural resources.

The idea of a ‘shipwreck trail’ allows important themes to be communicated to visitors, and connections from the land-based maritime heritage to the shipwrecks of the area. Potential relevant themes important to extend to visitors, as identified by Terrell (2003) in regards to the Florida Keys National Marine Sanctuary Shipwreck Trail include:

- “Historic ship architecture: site guides help identify structural features within wreck remains.

- Historic events: incidents associated with local maritime history
- Site aesthetics: provide aesthetic experiences and also good photographic backgrounds
- Historic preservation message: educate visitors about the value of historic preservation to the public
- Self-policing community protection: since enforcement is often limited in its capabilities, visitors are encouraged to help protect the sites by reporting incidents of vandalism
- A sensitive diving message: educate divers about the importance of controlling buoyancy, fin activity, et cetera with regards to damaging a shipwreck
- Interpretation: educate visitors about the natural resources that have colonized the wrecks and the surrounding area, and the cultural significance that a shipwreck has one maritime history” (Terrell, 2003).

Shipwreck trails and maritime heritage trails have been used in areas where there is a concentration of sunken vessels. Examples include the Florida Keys National Marine Sanctuary Shipwreck Trail (Terrell, 2003), the Ashley River and Cooper River Underwater Heritage Trails of South Carolina (Spirek and Harris, 2003), as well as the use of these ideas abroad in Australia’s numerous coastal Maritime Heritage Trails (Philippou and Staniforth, 2003).

These potential themes are all opportunities to educate and promote awareness of the submerged cultural resources in an area, as well as the environmental issues, using cultural heritage tourism as the mode. Interpretive signage and brochures can effectively and efficiently communicate the fundamental information to visitors to ensure education and enjoyment.

PART II

Cultural Landscape Analysis and Ecotourism Recommendations for Lake Union, Seattle, Washington

Chapter 5: Research Goals and Methods

The cultural landscape of Lake Union has been shaped by decades of industry and the lake has grown into a symbol of identity for Seattle. There are many identities for Lake Union, a tourism hub, native fishery, maritime industry, and link to the history of the area. In drawing from the concepts outlined in Part I, this section describes the complex and overlapping aspects of the modern cultural landscape of Lake Union. These concepts provide the foundation for the subsequent analysis of the submerged cultural resources situation in Lake Union, Seattle.

The purpose of this study is to develop recommendations on how to increase awareness and education, and sustainably derive economic value from the shipwrecks of Lake Union, Seattle through ecotourism. In examining the feasibility and benefits of tourism alternatives for the lake, recommendations will be issued that maximize the goals of educational, environmental, societal, and economic benefits which are associated with ecotourism and the cultural landscape approach.

Applying a cultural landscape approach to explore ecotourism opportunities of Lake Union's submerged cultural resources is a multi-step process. In following the cultural landscape framework (NSW DEH, 2010) the first step is to clearly state the goal of the analysis.

The overall goal of this study is to identify potential ecotourism opportunities associated with known submerged cultural resources, without compromising the identity of the current cultural landscape of Lake Union. The exploration of the shipwrecks in Lake Union presents an opportunity to build our knowledge of Seattle's maritime past as well as serve as a physical reminder of the city's maritime heritage.

Identifying the stakeholders in this situation is an important next step. As Lake Union has a large tourism focus, and a goal of this study is to identify new ecotourism opportunities, the Broker-Local-Tourist (BLT) model (Miller and Auyong, 1991) can serve as a conceptual model to recognize the stakeholders and the current tourism practices of the area. Using this model will not only allow for clear identification of the players in the tourism realm, but also those who are part of the Lake Union landscape as locals. Comparing the modern landscape to the historic uses of the area, the BLT model provides context for the evolution of the landscape and the history of the local culture. In identifying our stakeholders, and how they interact within the BLT framework, we have built our cultural landscape profile of the area. This will serve as the baseline for determining the impact recommendations will have on society and the environment.

An inventory of the submerged cultural resources within our cultural landscape is compiled and mapped. A register of the documented submerged cultural resources was created using survey data collected by the Maritime Documentation Society, in conjunction with the Center for Wooden Boats and Washington State Department of Natural Resources, through side scan sonar and dive survey. A series of maps helps to visualize the locations of the submerged cultural resources in the context of Lake Union.

With the principles of ecotourism and a cultural landscape approach, a discussion of possible ways to incorporate the identified submerged cultural resources into the modern profile of the lake can ensue. Through the examination of the best practices of other locations that have incorporated shipwrecks and other submerged cultural resources into an ecotourism plan, many alternatives have come to light. A discussion of the feasibility and effectiveness of these alternatives in relation to the goals of ecotourism and this study are discussed and final recommendations are provided.

Chapter 6: Cultural Landscape Profile of Lake Union, Seattle, WA

The cultural landscape of Lake Union is diverse and multifaceted. In composing a cultural landscape profile for Lake Union, the geography and ecology of the lake are outlined to provide context and location for the study area. Then the cultural landscape analysis framework is followed in a step by step fashion. This history of the lake has shaped the modern cultural landscape. As we look at the tourism system of Lake Union, we can begin to understand and envision how the identified submerged cultural resources fit within the system to maximize the goals of education, preservation, ecological sustainability, and economic gain. The opportunities for incorporating the relics of Lake Union into current tourism operations will provide a clear path for the future of these unique cultural resources submerged in the heart of the city of Seattle.

6.1 Step 1: Identify Stakeholders

6.1.1 Research Setting

Lake Union, as part of the Puget Sound watershed, was forged during glacial retreats over 12,000 years ago. Originally surrounded by dense forest, the lake edges now are largely a concrete jungle. Fully encased in Seattle city limits, Lake Union is an urbanized freshwater lake. As the linking body of water between Lake Washington and the Puget Sound, Lake Union has served as an important waterway for the area for many years (Figure 6.1).

Despite the urbanization and heavy pollution Lake Union has endured, this lake still serves as habitat for many species of fish and birds, including migrating salmon. While the pristine wilderness and natural habitat of Lake Union is impossible to restore, it is important to

recognize the survival of non-human life systems in such a highly urbanized environment and strive to maintain this balance, and work toward improvement. In keeping the ethos of a cultural landscape approach and ecotourism principles, the natural component cannot be ignored. While the relationship between the environment and industry on Lake Union has not always been balanced, when developing our goals and future vision for Lake Union, the natural environment should remain a priority.

The relationships between the natural and social worlds are evident in the modern cultural landscape of Lake Union. As the history of local industry, along with the modern day social-ecological system of Lake Union are examined, the inner workings and history of this complex relationship can be remembered through the submerged cultural resources that have gathered at the bottom of Lake Union over the years.

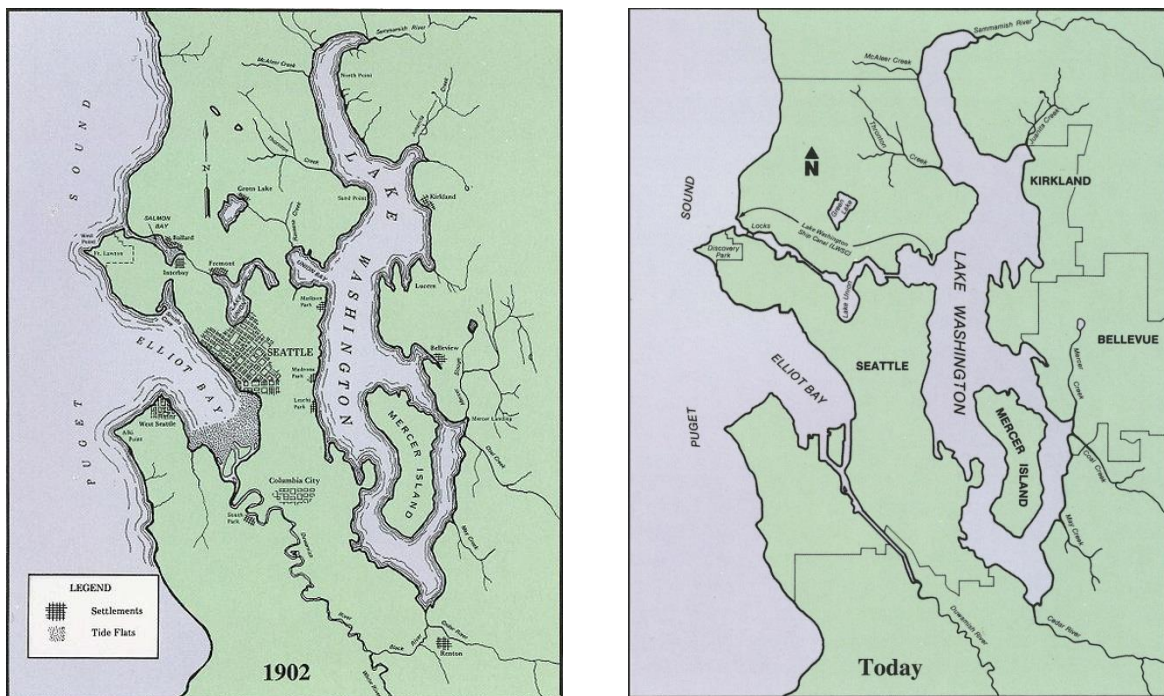


Figure 6.1: Comparison of the study site Lake Union, and surrounding areas between 1902 and today from the US Army Corp of Engineers. Original source US Army Corp of Engineers, 1999; images found online Wikipedia.org

6.1.2 Social-Ecological Tourism System of Lake Union

As introduced in section 4.3, the Broker-Local-Tourist (BLT) Model (Figure 6.2) will serve as the framework and conceptual tool to build and examine the social-ecological tourism system of Lake Union. By examining the inner workings of this framework, we will illuminate the stakeholders in this situation and the potential role they play in introducing a public ecotourism plan for the submerged cultural resources in Lake Union. Additionally, this method will ensure that stakeholders who are tangentially impacted by tourism on Lake Union are accounted for, and any potential negative impacts to locals who call the lake home or the environment are acknowledged.

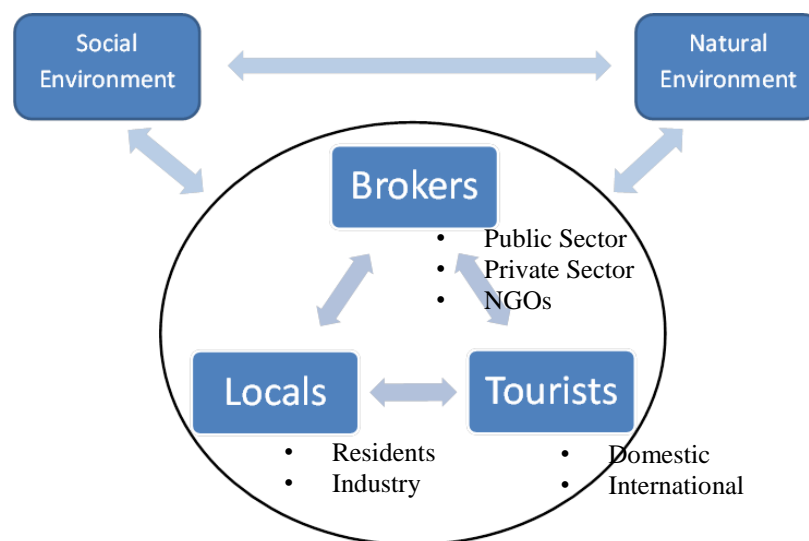


Figure 6.2: Broker-Local-Tourist Social-Ecological Model of Tourism
(Adapted from Miller and Auyong, 1991)

Brokers:

Many industry brokers are directly involved in the tourism of Lake Union including the three museums around the lake, Center for Wooden Boats, Museum of History and Industry, and the History House, numerous boat tours with Ride the Ducks and Argosy Cruises being the two

largest. In addition, there are kayak and paddleboard rental companies, and a seaplane airport operated by Kenmore Seaplanes landing tourists right on the lake. In addition, there are public sector brokers associated with government such as Seattle Parks and Recreation operating many parks and the Chesiahud walking trail around Lake Union, and the Washington State Department of Natural Resources.

Locals:

Residents of house boats and floating homes call the shores of Lake Union their home. Many non-tourism industries are also operating on the lake, such as boat and ship repair companies, as well as other industrial businesses.

Tourists:

Tourists in the Lake Union setting can come to visit domestically or internationally. As Lake Union is within a large city, international visitors are common.

These components of the social-ecological tourism system of Lake Union will play a vital role in the discussion of potential ecotourism opportunities regarding the submerged cultural resources. While the identified list of stakeholders is not exhaustive, it provides a sample of those interested and invested in Lake Union. In moving forward, stakeholder involvement will be foundational for public support and eventual success of any plan to incorporate submerged cultural resources into the social-ecological system of Lake Union.

6.2 Step 2: Gather Local Historical Information

6.2.1 Brief Industrial History of Lake Union

The industry associated with Lake Union over the years has changed with the geographical landscape. As an isolated lake, Lake Union saw minor industry endeavors in lumber, coal transportation, and brick making from the mid-19th century (Hammond, 2005). The opening of the first canal in 1886 linking Lake Washington with Lake Union enabled the transport of logs, thus sparking a rise in sawmills. The benefits of being on Lake Union were many as millworkers were relieved of the corrosive nature of saltwater as well as the wood-eating saltwater shipworm (Hammond, 2005). Additionally, operations were easier as a freshwater lake is not subject to the ebbs and flow of the tides on the sound, easing these operational difficulties. This resulted in the sawmilling industry dominating the lake (Figure 6.3) until another major change was brought to the local waterways.



Figure 6.3: Boat towing logs on Lake Union, Seattle, 1955.
(Photo courtesy of: Museum of History and Industry, Seattle)

In 1911, the Army Corp of Engineers began work on widening, dredging, and straightening the existing creeks and canals linking Lake Washington, Lake Union, and the Puget Sound, via the Lake Washington Ship Canal. Creating 100-foot-wide and 30-foot-deep canals, the lakes were now accessible to ocean going vessels upon completion of the Hiram M. Chittenden Locks in 1917. This, paired with the U.S. entering World War I, led to a dramatic shift for industry on Lake Union, and the shipbuilding industry came to the banks of the lake. As time went on, Lake Union remained attractive to businesses as an inland, freshwater lake with access to the Puget Sound as well as rail running nearby on the north shore. By the mid-20th century, Lake Union's shoreline was full of ships, barges, sea planes, floating docks, and other industrial structures, cementing the working waterfront as part of the history in Lake Union (Figure 6.4).



Figure 6.4: Lake Union Air Terminal, Seattle, 1929.
(Photo courtesy of: Museum of History and Industry, Seattle)

Links to the history of industry on Lake Union are evident on the lake bottom where discarded or lost logs sit in piles, historic wooden ships, military vessels, and other submerged cultural resources all lie in the murky waters, serving as a reminder and link to the maritime history of Seattle and the Puget Sound. The evolution of Lake Union continues today, as we have seen industry contract overtime and give rise to residential house boats and floating homes as well as public water access through parks promoting recreation and tourism.

6.3 Step 3: Identify Submerged Cultural Resources

6.3.1 Submerged Cultural Resources Inventory

The historical maritime role of Lake Union is evident in the shipwrecks that litter the substrate of this inner-city lake. Until recently, the contents of the bottom of Lake Union were largely unknown despite it only being an average of 34ft deep. A project spearheaded by the Center for Wooden Boats, Department of Natural Resources, Maritime Documentation Society, and DCS Films to explore beneath the lake and learn more of the maritime heritage from its contents have discovered a multitude of shipwrecks and other cultural resources covering the depths of the lake.

An initial sonar mapping of the lake identified many potential shipwrecks, and the following dive survey by the Maritime Documentation Society identified many of these historic wrecks and began to shed light on the historical implications of this study. The inventory (Table 6.5) and maps (Figure 6.9 and Figure 6.10) that follow were adapted from the data compiled by Warter (2013) and the Maritime Documentation Society (MDS, 2013) based on the initial survey and exploration. There is no doubt that further study and investigation will lead to a more

comprehensive list of identified shipwrecks as well as discoveries of additional submerged cultural resources.

Table 6.5: Submerged cultural resources in lake union identified by Maritime Documentation Society (Warter, 2013 and MDS, 2013)

	Name	Latitude	Longitude	L (ft)	W (ft)	H (ft)	Material	Notes/History
00	Unidentified-Sailboat	47° 38.80163°N	122° 20.89256°W	30	10		Metal, Wood	
01	Pile of Logs	47° 38.76768°N	122° 20.80001°W	20	30	8	Wood	
02	Piling/Log	47° 38.45044°N	122° 20.38579°W	30				
03	Unidentified-Old Barge	47° 38.35942°N	122° 20.33692°W	70	23	5	Wood	
04	Unidentified-Personal Live Aboard	47° 38.11417°N	122° 20.33462°W	30	12	9	Wood	
05	Tree Trunk (piling?)	47° 38.13170°N	122° 20.29689°W	32	1		Wood	
06	Buick	47° 37.66566°N	122° 20.29491°W				Steel	
07	Unidentified-Old Barge	47° 38.96610°N	122° 19.70984°W	90	30	?	Wood	
08	Foss 54	47° 38.69087°N	122° 20.23370°W	110	30	8	Wood	Built 1908 US NAVY Bremerton
09	Irene	47° 38.69576°N	122° 20.26903°W	48	11	?	Wood	
10	Unidentified-Converted LCVP	47° 38.69169°N	122° 20.29141°W	34	9	4	Wood	Converted WWII Landing Craft
11	Log	47° 38.68634°N	122° 20.30655°W	24	1.5		Wood	
12	Dock section	47° 38.71212°N	122° 20.37547°W	14	5	2	Wood	
13	Kahlenberg	47° 38.79545°N	122° 20.57283°W	49	11	?	Wood	Navy tender, shrimp boat
14	Tree Trunk	47° 38.76744°N	122° 20.56686°W				Wood	
15	Piling	47° 38.78675°N	122° 20.80273°W	27			Wood	
16	Tree Trunk	47° 38.76372°N	122° 20.54224°W	62	3		Wood	
17	Logs	47° 38.65831°N	122° 20.17432°W	33			Wood	
18	PA-201 (LCVP)	47° 38.62664°N	122° 19.90233°W	34	8	4	Wood	WWII era
19	J.E. Boyden	47° 37.92969°N	122° 20.10330°W	95	20	?	Wood	Built Seattle 1888, Sunk 1935

20	Unidentified-Draft marker boat	47° 38.572'N	122° 20.498'W	63.5	16	?	Wood	
21 a	Jeanette	47° 38.111'N	122° 20.364'W	40	10		Wood	
21 b	Jeanette pilot house	47° 38.112'N	122° 20.376'W				Wood	
22	PC 1138	47° 38.075'N	122° 20.362'W	?			Steel	USS Lapeer, subchaser
23	Unidentified-Sternwheeler?	47° 38.049'N	122° 20.342'W				Wood	
24	Sea Bee-Personal Sailboat	47° 38.035'N	122° 20.366'W					
25	Harley Davidson	47° 37.866'N	122° 19.691'W				Steel	
26	YMS 105 (Gypsy Queen)	47° 37.955'N	122° 19.762'W	136	26		Wood	WWII minesweeper, intact
27	Unidentified-Personal Sailboat (double ended sailer)	47° 37.962'N	122° 19.736'W				Wood	
28	...ANN (wooden pleasure craft)	47° 37.961'N	122° 19.729'W				Wood	
29	Unidentified-Cannery tender	47° 37.952'N	122° 19.720'W	58 (to barge)	17		Wood	Barge crushing stern, pilot house intact
30	Unidentified-Metal hull	47° 38.396'N	122° 20.415'W				Metal	
31	Unidentified-Sailboat hull	47° 38.402'N	122° 20.411'W	34	10		Wood	
32	Unidentified-Sidewheeler?	47° 38.615'N	122° 20.583'W	130				
33	Unidentified-Steel work boat	47° 39.039'N	122° 19.764'W	35	7		Metal	
34	Unidentified-Steel fire boat?	47° 38.820'N	122° 20.468'W	30.5	11		Metal	
35	Unidentified-Gunwale boat	47° 38.300'N	122° 19.880'W	20	5		Wood	
36	Onondaga (WPG-79 CG Cutter)	47° 39.965'N	122° 23.460'W	165	36	13' 7"	Steel	Coast Guard "A" Class cutter
37	Karinda (Pleasure craft)	47° 38.828'N	122° 20.707'W	20	8		Wood	
38	HI-YU-ALL (Pleasure craft)	47° 38.827'N	122° 20.695'W	24	8		Wood	
39	Unidentified-Wood pleasure craft	47° 38.828'N	122° 20.719'W	25	10		Wood	
40	Unidentified-Small wood barge/platform	47° 38.913'N	122° 20.791'W	12	5	4-5	Wood	
41	Unidentified-Small wood boat	47° 38.910'N	122° 20.791'W	15	5	1.5	Wood	

42	Unidentified- Large wood boat (tug or fishing?)	47° 38.841'N	122° 20.698'W	70	12	18	Wood	
43	Gypsy Trader	47° 37.771'N	122° 19.915'W				Wood	

6.3.2 Sample of Identified Historical Shipwrecks in Lake Union

While many of the wrecks remain unidentified until further exploration, at least 8 have been identified and may be eligible for the National Register of Historic Places. These historically significant wrecks have been mapped in figure ##. While all of these historic cultural resources have stories, highlighted below are the history of the *Kahlenberg* and the *J.E. Boyden* as they are influential in the maritime history of Seattle, and the USS *YMS-105 (Gypsy Queen)* as this ship played an integral role in our nation’s military history. The stories of these ships shed light on the dynamic role a single boat can play throughout time and the relationship these submerged relics have with the maritime culture of Seattle and the United States.

6.3.2.1 Wreck 1: The Kahlenberg

The story of the *Kahlenberg* has unique ties to Seattle’s history. At a century old, the *Kahlenberg* was constructed in 1913 as a 50ft US navy supply ship. Used in the waters of the Pacific, the ship was used to transport supplies and personnel between fleets. Eventually decommissioned by the Navy, the ship eventually landed in the hands of Captain France (Franz) Nelson for use in the Puget Sound as a commercial shrimping vessel. Under Captain Nelson, the *Kahlenberg* was quite successful as a shrimp trawler supplying local seafood (Figure 6.6).

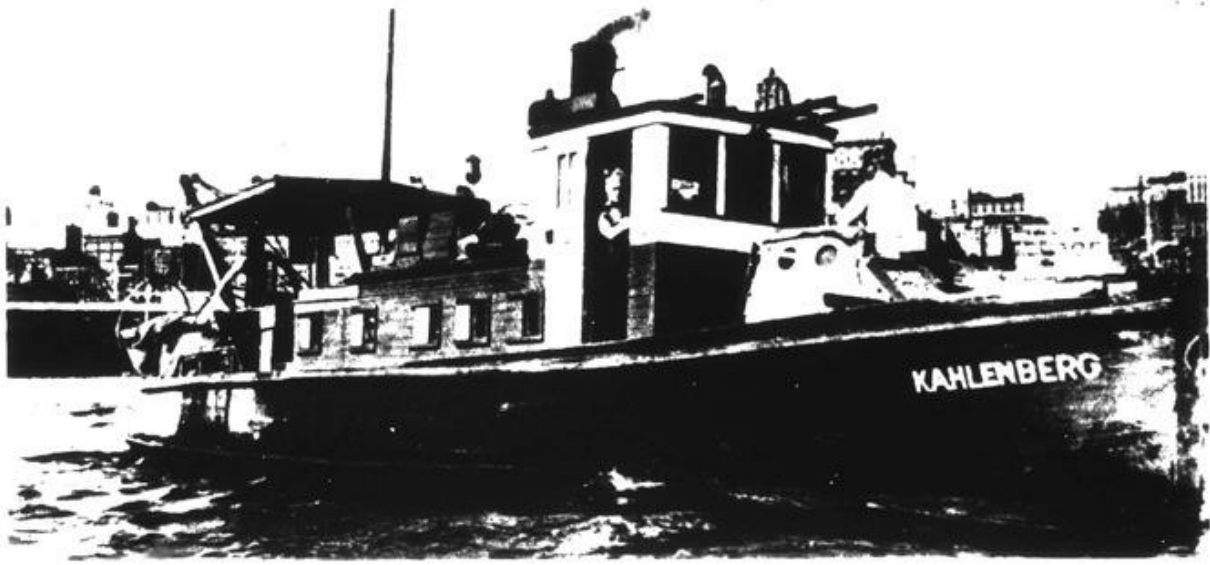


Figure 6.6: The Kahlenberg as a commercial shrimping vessel in the Puget Sound.
(Photo courtesy of: Museum of History and Industry, Seattle as cited by MDS, 2014)

Ivar Haglund, the founder of the famous Ivar's Seafood restaurants in Seattle, came on board the *Kahlenberg* examining and purchasing the catch for his restaurant (Figure 6.7). It is unknown exactly when and how the *Kahlenberg* ended up on the bottom of Lake Union. The historical links to the once thriving commercial shrimping fleet in the Puget Sound, along with the connections with Ivar's Seafood restaurants that remain iconic to Seattle today provide a prime example of the historical and cultural significance that the submerged cultural resources in Lake Union represent. (DCS Films, 2013)



Figure 6.7: Ivar Haglund (left) of the famous Ivar's Seafood hand picking shrimp caught by the crew of the Kahlenberg for his restaurant. (Photo courtesy of: The Seattle Times as cited by MDS, 2014)

6.3.2.2 Wreck 2: *The J.E. Boyden*

The sonar image of the *J.E. Boyden* (Figure 6.8) shows the final resting place of the Seattle-born tug boat in the middle of Lake Union. Built in 1888 in Seattle, the 85-foot tug boat was integral to Seattle's maritime industry for much of its life. The *J.E. Boyden* was involved in transporting coal, copper ore, railcars and timber on barges throughout the Puget Sound.

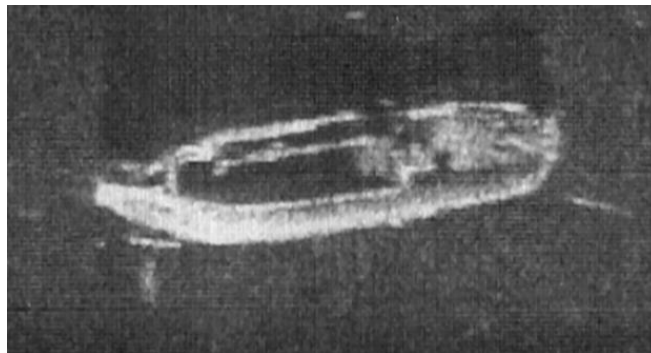


Figure 6.8: Sonar image of the *J.E. Boyden* on the bottom of Lake Union, Seattle, Washington. (Photo Courtesy of: MDS, 2014)

Additional evidence of the shipping involved in these industries can be seen in numerous piles of logs, likely lost during shipping, that also litter the bottom of Lake Union. The integral role early steam tugs similar to the *J.E. Boyden* played in the commodities trade of the Puget Sound is remembered through the wreckage in the substrate of Lake Union. Spending most of its life in the Pacific Northwest, the *J.E. Boyden* sank in 1935 in the middle of Lake Union, Seattle after being stripped and likely intentionally scuttled. (DCS Films, 2013)

6.3.2.3 Wreck 3: *The YMS-105 (Gypsy Queen)*

One of the military vessels submerged in Lake Union is the Yard class Minesweeper (YMS) USS *YMS-105*. These minesweepers played an integral role during WWII, ensuring navigable waters were mine-free and safe for the rest of the WWII allied fleet. The *YMS-105* was completed in 1942 and served as part of the Eastern Sea Frontier patrolling and sweeping the east coast of the United States from Canada to Florida. As a wartime Navy vessel this ship has extraordinary military historical value and an important reminder of the nation's maritime military history. After its military service, the *YMS-105* was decommissioned and changed owners and names many times, eventually ending up being purchased and registered by Thomas Stanly Hill in the late 1950's as the *Gypsy Queen*. Moored in Lake Union, the *Gypsy Queen* appears to have sunk at its moorage in South Lake Union in 40 feet of water. (DCS Films, 2013)

This sample of the stories associated with the wrecks that lie on the bottom of Lake Union offer links to the historical and cultural history of Seattle and the United States. As evident in their stories, these wrecks provide a tangible connection to the past, and offer an opportunity for education as well as economic gains. Though tourism opportunities presented by

the discovery and identification of these submerged cultural resources, goals of preservation, education, and economic benefits can all be achieved.

6.4 Step 4: Mapping Submerged Cultural Resources

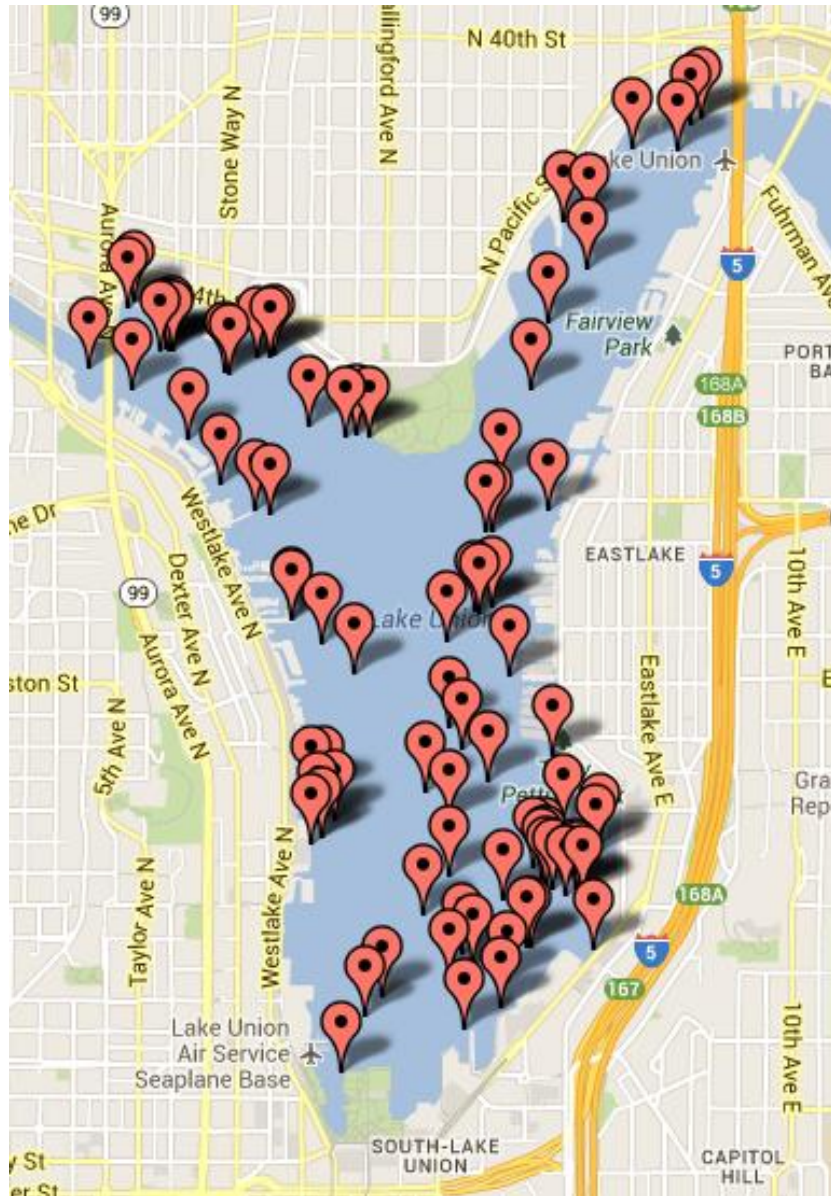


Figure 6.9: Map of over 40 potential submerged cultural resources based on side scan sonar survey. (Adapted from MDS, 2013)

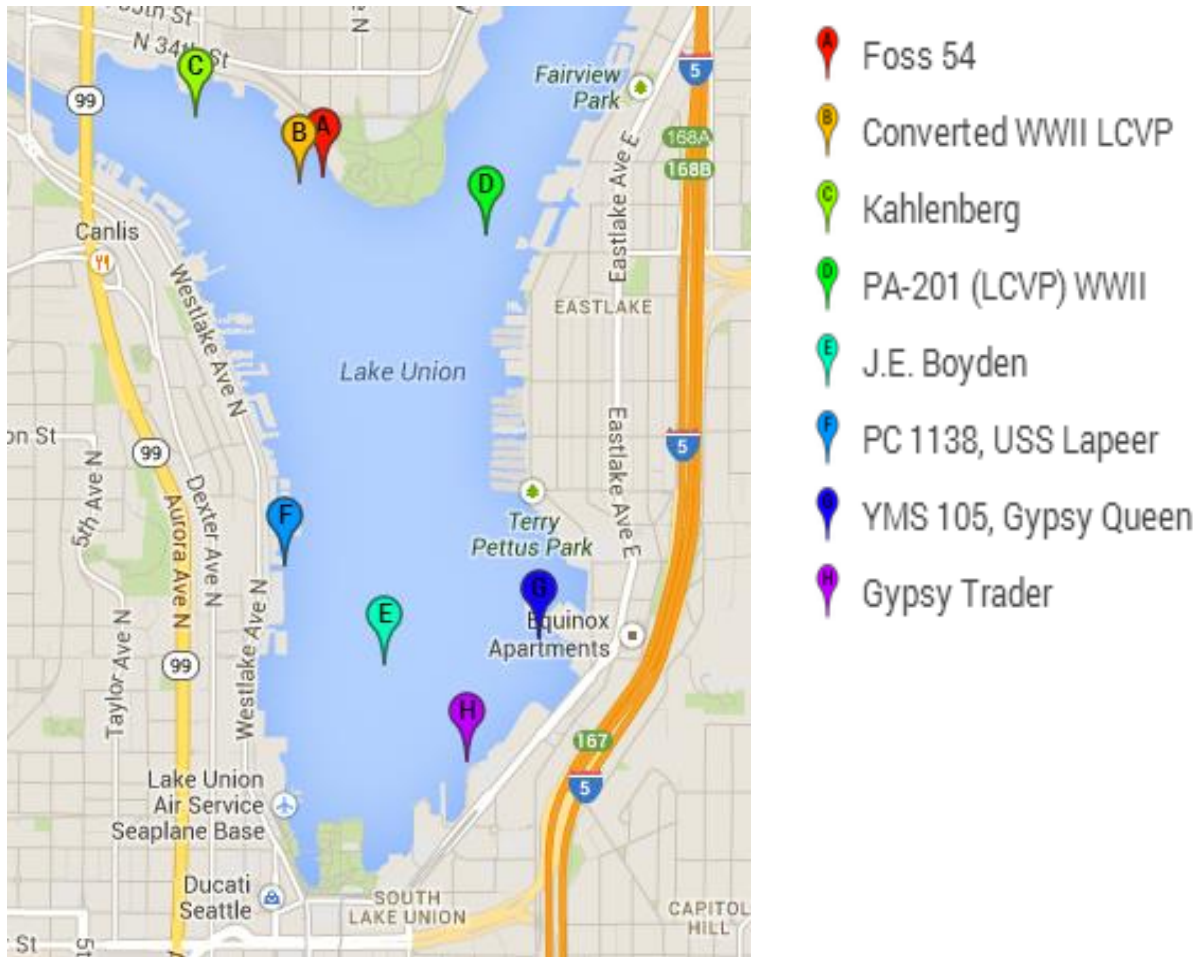


Figure 6.10: Map of select identified historic shipwrecks of Lake Union based on SCUBA dive survey and eligibility for National Register of Historic Places. (Adapted from MDS, 2013)

6.5 Step 5: Identify Cultural Heritage Ecotourism Opportunities

The identified submerged cultural resources of Lake Union present an opportunity for industry and government to collaborate and ensure proper management and use of these unique resources. As previously discussed, submerged cultural resources not only have economic value through tourism, but also educational and cultural value to both locals and tourists. In analyzing the situation of the many recently discovered submerged cultural resources in Lake Union

through a cultural landscape lens, clear alternatives for management and use are evident. Combining the identified alternatives for interpreting the shipwrecks and other submerged cultural heritage of Lake Union with the ideals of a cultural landscape approach and ecotourism will yield recommendations that balance the conservation, education, ecological, and economic goals of these frameworks.

In striving to strike a balance between the goals of the cultural landscape approach, an examination of cultural resource management and best practices from cultural heritage tourism, many alternatives for sustainable use of these resources through tourism are illuminated. While not all alternatives are feasible for this situation, nor are they exclusive, a discussion of all are included, since this analysis and conceptual approach can be applied to similar situations which may yield different recommendations. Through a discussion of the alternatives' impact on the goals (conservation, education, ecological, and economic), and potential brokers (industry and/or government), a thorough understanding and set of clear recommendations will be evident to move forward and ensure the proper management and sustainable use of these rare and irreplaceable submerged cultural resources of Lake Union.

6.5.1 Dive tourism

Largely the most common and obvious way of experiencing submerged cultural resources, especially shipwrecks, is dive tourism. Historic shipwreck sites accessible by SCUBA offer a unique and substantial tourist destination through wreck diving. Wreck diving is a recreational or tourist activity where a submerged cultural resource is explored, often using SCUBA technology. Dive tourism is an opportunity for individuals to get an in-person look at a submerged cultural resource.

Unfortunately, in Lake Union, SCUBA diving is illegal due to the dangers present from extensive boat traffic. This option is therefore not feasible. Subsequently, dive tourism did not receive further consideration, since the logistics are impossible. As coming face-to-face with the historic shipwrecks at the murky bottom of Lake Union is impossible for tourists, the stories and knowledge of these submerged cultural resources must be brought to the surface.

6.5.2 Shoreline Signage

Lake Union attracts many visitors to its shores, especially to Gas Works Park on the north shore and Lake Union Park on the south shore. These shoreline access points to Lake Union offer great locations to bring the shipwrecks to the shore in the form of interpretive signage. Interpretive signage offers a permanent medium for educational outreach to guests of the lake, serving to increase awareness of the historic shipwrecks in Lake Union. While there is no direct economic incentive for implementing interpretive signage at public parks, local museums could benefit through increased visitation due to an increase in curiosity and consciousness of local maritime history.

The tangential economic benefit to museums could indicate their potential willingness in funding such a project in conjunction with Seattle Parks and Recreation, which manages multiple city parks along the shores of Lake Union. These parks offer a prime location for placement of signage as they are likely the locations with the most public traffic, resulting in the greatest dissemination of information.

One challenge for when shoreline signage has been implemented in other locations is continued upkeep and maintenance. Once signs are placed they have largely been ignored

(Spirek and Scott-Ireton, 2003). An important aspect of implementing shoreline signage will be ensuring proper upkeep and maintenance. Local stakeholders including museums and other entities that are gaining economically from the shoreline signage would be in a prime position to fund and maintain shoreline signage moving forward. Additionally, Seattle Parks and Recreation may provide support as they are currently maintaining the paved Chesiahud loop, and many city parks along the path.

6.5.3. Interpretive Walking/Biking Shipwreck Trail

Building upon the implementation of interpretive shoreline signage, there is great potential for the creation of a ‘shipwreck trail’ uniting the shipwrecks. Shipwreck trails have been instituted in other places where many submerged cultural resources are in close proximity. The infrastructure for this option is already in place with the Chesiahud Lake Union loop (SPR, 2013). Created by Seattle Parks and Recreation and the Seattle Parks Foundation, this six-mile multi-use path circling Lake Union offers the foundation to integrate interpretive signs among the many parks that line the shores of the lake for a connected shipwreck trail. Suitable locations for sign placement have been identified based on number of visitors likely and proximity to historical wrecks (Figure 6.11).

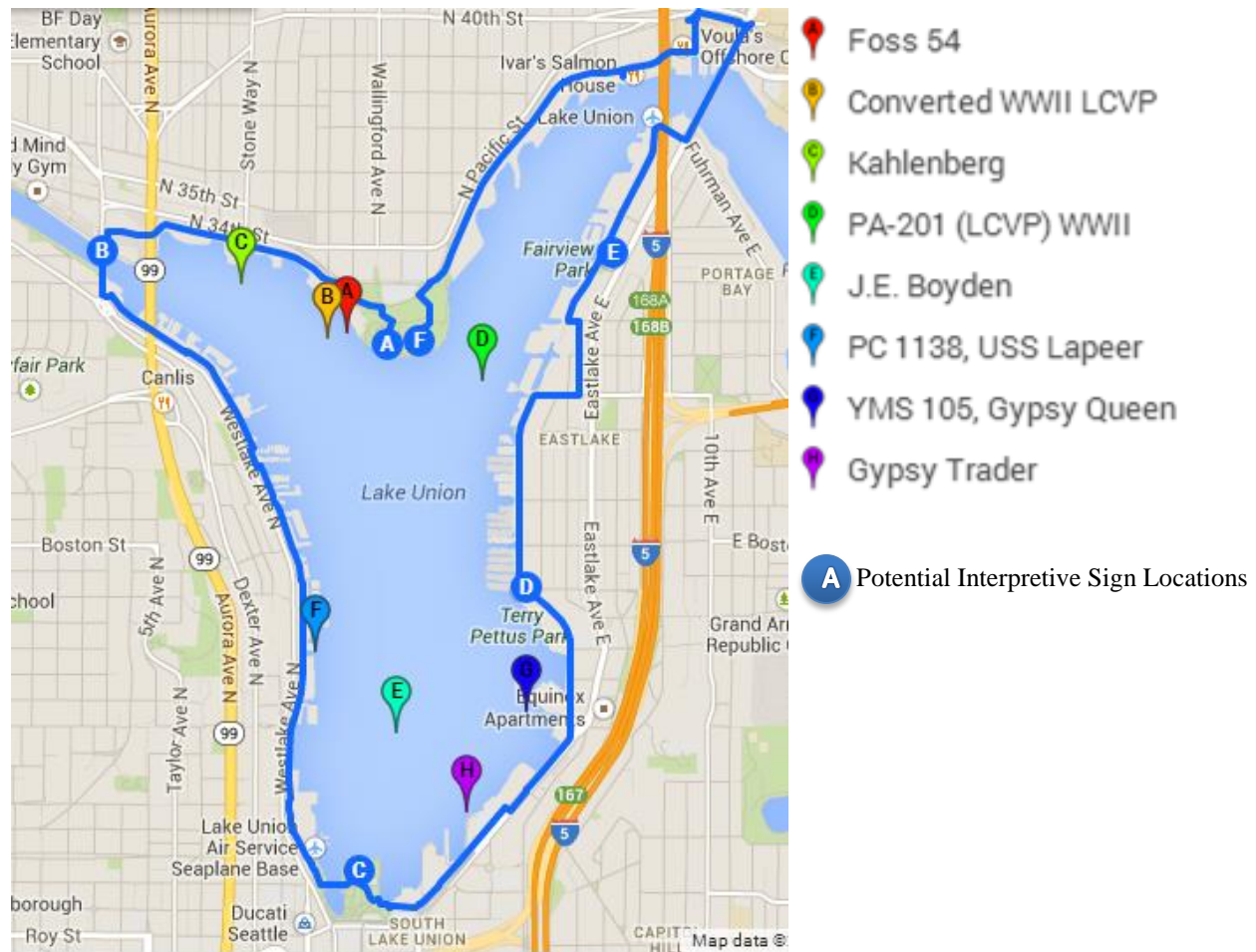


Figure 6.11: Map of Lake Union Shipwreck Trail, with potential locations for shoreline signage.
 (Adapted from MDS, 2013 and SPR, 2013)

6.5.4 Interpretive *Kayak/Paddleboard Shipwreck Trail*

A further extension of the Lake Union Shipwreck Trail can be accessed on the water by kayak, paddleboard, or boat. These activities are popular among visitors to Lake Union, and a description of what lies beneath the surface of Lake Union is sure to intrigue and delight visitors. Implementation of this additional interpretive option for the shipwrecks of Lake Union could be completed by kayak and paddleboard rental companies through brochures outlining the aquatic shipwreck trail with information regarding the history of the shipwrecks and their links to

maritime history of Seattle. Markers for the sunken vessels such as mooring buoys could serve beneficial to kayakers and others approaching aquatically to ensure the locations of the ships are easy to identify.

6.5.5 Expansion of Boat Tours

The current tourism system on Lake Union has tour boat operators playing a major role. Ride the Ducks is a quirky amphibious Seattle city tour that takes tourists through the streets and out on the water of Lake Union in converted military landing crafts. Bringing tourists onto the water of Lake Union provides a perfect opportunity for discussion of the maritime history of Seattle, and the shipwrecks scattering the lake bottom. Others operating on Lake Union including Argosy Cruises may be interested in incorporating the Lake Union shipwrecks and their stories to passengers on their vessels.

6.5.6 Expansion of Museum Exhibits (MOHOI, Center for Wooden Boats, History House)

The museums that are located in close proximity to Lake Union are major stakeholders and would clearly have a strong interest in increasing awareness and education about local shipwrecks and their ties to the maritime history of Lake Union. The Center for Wooden Boats has been integral in the discovery of the shipwrecks in Lake Union as a partner and funding party for the sonar and dive surveys in the lake. While all three museums have elements of maritime history in their exhibits, these key brokers can be fundamental in the implementation of the tourism extensions such as shoreline signage and an integrated shipwreck trail. All three

museums fall within the Chesiahud Lake Union Loop and thus would be prime locations for additional information regarding the shipwrecks and other submerged cultural heritage of Lake Union, as well as potential starting or ending points for tourists interested in the Lake Union Shipwreck Trail. The economic incentive is evident in the increased visitation a ‘shipwreck trail’ would provide for participating brokers.

These various ecotourism opportunities to use the submerged cultural heritage of Lake Union as a commodity for tourists should be measured in their ability to achieve the goals of ecotourism and a cultural landscape approach with regard to educational benefits, ensuring historic preservation, providing economic benefit to the local economy in a sustainable manner, and maintaining ecological awareness. Based upon these goals, and the political and economic feasibility of these alternatives, the following are recommendations for incorporating submerged cultural resources into the current social-ecological system of Lake Union, Seattle.

6.6 Step 6: Recommendations for Implementing Cultural Heritage Ecotourism to Lake Union

When discussing an implementation of cultural heritage ecotourism for Lake Union that includes identified submerged cultural resources, it is important to engage local stakeholders. As identified through the BLT model in section 6.1.2, there are many interested and invested parties involved in the activities on Lake Union and its surrounding areas.

The identified tourism opportunities in section 6.5 are not exclusive and can be implemented in a fashion that builds upon itself. The four identified opportunities that are recommended are the addition of shoreline signage, which through existing infrastructure will create the walking/biking shipwreck trail (Figure 6.11). Expanding on this, an aquatic trail for

kayakers and paddle-boarders to access the sunken vessels from the water is a logical next step. Finally, a discussion of the ships at the bottom of Lake Union, as well as the unique stories that tie them to Seattle can be utilized by the boat tours currently operating on Lake Union. These recommendations and the impact they have on the conservation, education, ecological, and economic goals of the cultural landscape approach and ecotourism frameworks that are used in this assessment.

The added attention and resulting community awareness of the maritime heritage and tangible links represented by the submerged cultural resources in Lake Union will provide continued incentive to maintain, as well as expand these tourism options.

	Impact on Goals				Potential Broker
	Conservation	Educational	Ecological	Economic	
Shoreline Signage	+	+	=	+	Museum of History and Industry, Center for Wooden Boats, History House, Seattle Parks and Recreation
Shoreline Shipwreck Trail	+	+	=	+	Museum of History and Industry, Center for Wooden Boats, History House, Seattle Parks and Recreation
Kayak Shipwreck Trail	+	+	=	+	Kayak/Paddleboard Rental Companies
Boat Tours	+	+	=	=	Ride the Ducks, Argosy Cruises

Table 6.12: Impact of recommendations on goals and potential broker responsible for implementation of recommendation.

+ Positive Impact
 - Negative Impact
 = Neutral Impact

These recommendations are not intrusive and have low start-up cost as they are largely adding to pre-existing tourism activities. There would be small cost associated with new interpretive signage and brochures, but the economic gains of attracting more visitors to the

Center for Wooden Boats, Museum of History and Industry, and Ride the Ducks specifically will provide private industry incentive for implementing and funding these public projects.

6.7 Step 7: Future Direction of Research

As we look toward the future, implementation of these recommendations will require minimal additional upkeep with only sign maintenance, and the addition of new information as it becomes available. The cost of continuing these opportunities is small, and the educational benefits, along with the economic boost these resources could provide to local tourism stakeholders create an ideal opportunity for the area. Continued monitoring through tourist feedback at the museums could provide information about what consumers of these resources are enjoying and potential areas for improvement. The museums on the shores of Lake Union offer a prime location to incorporate educational and interpretive programs that utilize the shoreline signage and shipwreck trails that are developed.

Looking to expand interpretation beyond shipwrecks to include the rich Native American history, as well as the role Lake Union has played in the lives of Seattle residents throughout time could strengthen these recommendations. Additionally, expanding interpretation would allow for the information to reach a broader audience with more people becoming aware of the importance of the cultural resources of Lake Union, and what they represent for Seattle.

Furthermore, a successful implementation of these recommendations could lead to the desire to extend the application of the shipwreck trail to include Lake Union's larger sister to the east, Lake Washington (Figure 6.13). With many unique shipwrecks, Lake Washington presents an opportunity for the application of these recommendations at a larger scale.

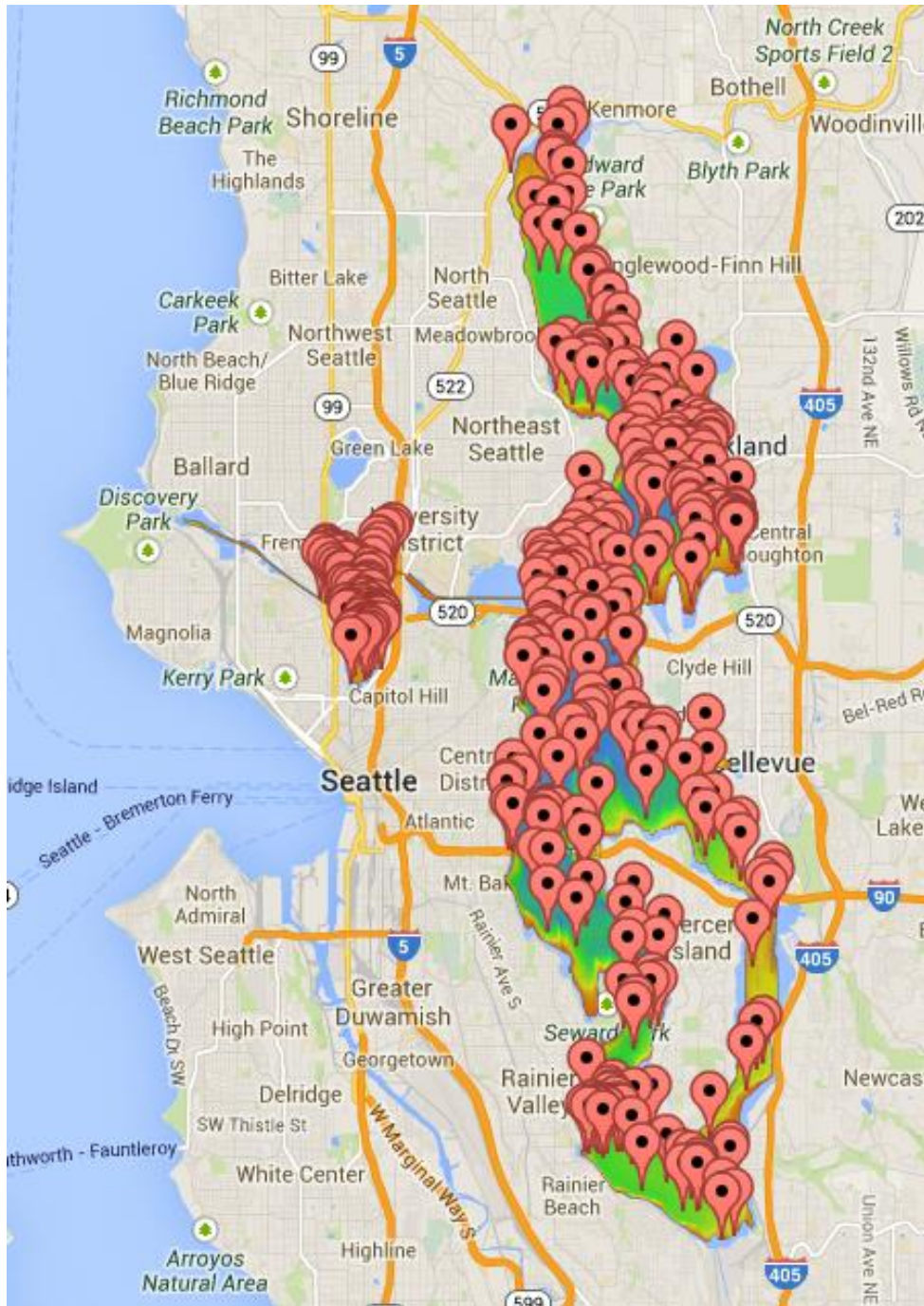


Figure 6.13: Map of potential submerged cultural resources in Lake Union and Lake Washington identified through side scan sonar surveys. (Adapted from MDS, 2013)

Conclusion

This thesis was an application of a cultural landscape analysis to the submerged cultural resources in Lake Union, Seattle, Washington. The results have shown that there are numerous ecotourism opportunities that can help achieve a balance of goals in preservation, education, environmental concerns, and economic gain as derived from the cultural landscape approach and principle of ecotourism.

This analysis demonstrates that cultural resources are worthy of preservation can also present opportunities for sustainable tourism development. The frameworks of analysis and discussion of cultural resources within a cultural landscape and environmental sustainability context highlight opportunities for proper and needed management and use of submerged cultural resources, as well as accompanying benefits.

The interactions between social systems and the environment have played an important reciprocal relationship in shaping modern landscape of Lake Union. Society is shaped by the local environment just as the environment is impacted by the social interactions within. The submerged cultural resources of Lake Union serve as a link to the past, and the process of forming the modern cultural landscape of an area. The remnants of this unique processes, whether they are tangible (e.g. archaeological artifacts) or intangible (e.g. a sense of place) can serve a community in a variety of ways socially, ecologically, and economically as the recommended implementation of cultural heritage ecotourism shows.

The cultural landscape is an extension of social-ecological thinking central in the School of Marine and Environmental Affairs. The interdisciplinary nature of this field yields to the ideology of a cultural landscape approach, and this thesis has outlined and executed a

methodology for analyzing cultural and natural resources in a holistic manner. The framework outlined, should serve resource managers, policy makers, practitioners, and future students in this and related fields to gain a higher understanding of the cultural landscape and its role in the complex global social-ecological system.

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