

VALUING UNDERWATER CULTURAL HERITAGE AS RESOURCE FOR SUSTAINABLE DEVELOPMENT: A CASE STUDY OF BANTRY BAY HARBOUR

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Abstract

Maritime cultural heritage is increasingly recognized as a valuable resource for sustainable development and the well-being of local communities. A critical aspect of this is Underwater Cultural Heritage (UCH), which includes any trace of human existence with cultural, historical, or archaeological significance that has been underwater for at least 100 years. These sites, ranging from shipwrecks to ancient settlements, provide unique insights into human history, technological development, and the long-standing relationship between coastal communities and the sea. In Ireland, research on UCH remains limited, with a primary focus on shipwrecks as a means of cultural memory or legal protection. This study seeks to bridge this gap by evaluating UCH in Bantry Bay not only as a heritage asset but also as a driver for biodiversity protection and community engagement. By integrating cultural, ecological, and social dimensions, the research demonstrates the broader significance of Bantry Bay's maritime underwater cultural heritage for environmental protection and sustainable local development.

Keywords: *underwater cultural heritage, sustainable tourism, marine protected areas, blue economy.*

INTRODUCTION

Beneath the waters of Bantry Bay lies a hidden world where history, culture, and nature converge. This being said, maritime cultural heritage is recognized as a valuable resource for sustainable development and the well-being of local communities around the world. An increasingly studied aspect of maritime cultural heritage is underwater cultural heritage (UCH). Under the UNESCO 2001 Convention on the Protection of the Underwater Cultural Heritage, underwater cultural heritage includes any trace of human existence with cultural, historical, or archaeological significance that has been underwater for at least 100 years, such as shipwrecks, submerged archaeological sites, and ancient settlements. These sites provide unique insights into human history, technological development, and the long-standing relationship between coastal communities and the sea.

This study aims to highlight the value of Bantry Bay Harbour's maritime cultural heritage, with a focus on submerged underwater cultural heritage, including shipwreck sites such as *La Surveillante*, as a case study. It explores the potential creation of a marine protected area to safeguard these cultural sites, promote marine biodiversity, and ensure long-term conservation. The research also investigates the possibility of sustainable tourism development through active participation and engagement of local communities, as well as the intentional formulation of new UCH sites by contemporary actors. By integrating cultural, ecological, and social dimensions, the study demonstrates the broader significance of Bantry Bay's maritime underwater cultural heritage for heritage preservation, environmental protection, and sustainable local development.

AIMS, OBJECTIVES, AND RESEARCH QUESTIONS

This research project is driven by three primary aims: to assess the value of Underwater Cultural Heritage (UCH) in Ireland through a case study on Bantry Bay, Cork; to explore how UCH can be incorporated into marine spatial planning and marine protected area (MPA) frameworks, ensuring that cultural, ecological, and community values are considered together in sustainable marine management; and to explore the potential of UCH to support sustainable tourism, including options such as underwater cultural heritage museums or heritage trails and diving tourism in the area. To achieve these aims, the study is structured around several core objectives, including determining the cultural, historical, ecological, and socio-economic value of UCH in Bantry Bay through archival research, literature review, and interviews with state officials from the Ministry of Culture and underwater heritage authorities. Furthermore, the project seeks to evaluate the potential of marine protected areas and coastal/maritime zoning as tools for protecting and managing UCH by analyzing existing GIS data to map the geographical and socio-economic zones of Bantry Bay, particularly in relation to the shipwreck site near the working harbour. Finally, it aims to examine existing policy frameworks and stakeholder participation in the governance of UCH in Ireland by reviewing existing legislation, conducting interviews with relevant stakeholders, and organising workshops with the local community as it relates to existing but also future UCH.

These objectives are guided by three central research questions:

1. Is it feasible to utilize underwater cultural heritage in Bantry Bay sustainably, following established international best practices, and to what purposes?
2. To what extent does UCH in Bantry Bay align with the objectives of the EU Blue Economy, including sustainable development, marine conservation, and community benefit?
3. How feasible are policy and governance changes to formally incorporate UCH into a marine protected area (MPA) framework in Bantry Bay, and what would be the implications for maritime activities and local stakeholders?

LITERATURE REVIEW AND STATE OF THE ART

Foundational frameworks, such as UNESCO's 2001 Convention and the ICOMOS Principles, provide the international context for protection and sustainable management of UCH. Additionally, studies from southern Europe (e.g., Pérez-Reverte Mañas et al., 2021; Koutsi & Stratigea, 2019) demonstrate how UCH has been successfully integrated into Blue Economy strategies, particularly through sustainable tourism and participatory spatial planning, offering models for adaptation to the Irish context. However, recent scholarship (Kyvelou & Chiotinis, 2022) emphasizes the need to reconnect cultural and natural capital, reinforcing the proposal's aim to situate UCH within broader socio-ecological systems. In Ireland, research on UCH remains limited, with most attention focused on shipwrecks as cultural memory (Delaney, 2018) or on legal mapping and protection (Kelleher et al., 2025). To date, little consideration has been given to their socio-economic or tourism potential as well as socio-ecological implications. This proposal builds directly from these contributions, proposing to evaluate UCH in Bantry Bay not only as a heritage asset but also in the contexts of sustainable local development, biodiversity protection, and community engagement.

This project advances the state of the art by critically examining successful paradigms of underwater cultural heritage (UCH) management from Southern European contexts to Ireland, where integration of UCH into sustainability strategies remains limited. Existing Irish research has focused on documentation of shipwrecks, cultural memory, and legal protection, but has not addressed UCH's potential socio-economic, ecological, or tourism value (Delaney,

2018). Similarly, work on legal mapping and protection highlights important frameworks but leaves open questions on sustainable reuse and local engagement (Kelleher et al., 2025). By situating Bantry Bay Harbour as a case study within the EU's Blue Economy framework, this project tackles this gap, demonstrating how UCH can be mobilised not only as a heritage asset but as a driver of sustainable development and biodiversity protection. Theoretically, the project also contributes by reconnecting cultural and natural capital, answering calls by Kyvelou and Chiotinis (2022) to bridge heritage and ecology. The concept of "reconfiguring ruins" underscores that cultural ruins are not inert remains but active sites shaping identity, resilience, and future imaginaries (DeSilvey & Harrison, 2020). This perspective is particularly relevant for submerged heritage, which has often been overlooked in broader debates about cultural and environmental futures. By applying this lens, the project reframes UCH as part of socio-ecological systems, rather than as isolated artefacts, thereby advancing debates in heritage studies and sustainability science.

Furthermore, the project engages with emerging critiques of the Blue Economy's ambiguity and risks of exclusion. Recent work highlights the need to embed justice, equity, and community voices at the centre of blue economy initiatives, cautioning against exploitative "blue growth" models that privilege economic gains over ecological or social sustainability (Germond-Duret et al., 2022). By foregrounding local participation, stakeholder engagement, and inclusive governance, this research responds directly to such critiques, proposing a model for a just and sustainable integration of UCH into environmental and development policies. The timing of this project is particularly advantageous, as it engages with Bantry Bay before emerging demands and uses around underwater cultural heritage intensify. By proactively exploring sustainable management and community engagement, the research aims to anticipate potential conflicts and support equitable, forward-looking strategies for heritage and ecological protection. In sum, the project contributes new empirical evidence for Ireland, extends theoretical debates by positioning UCH within justice-oriented and interdisciplinary sustainability frameworks, and provides practical tools for policymakers. It ensures that Irish scholarship not only aligns with but extends European and international best practice by demonstrating how heritage, biodiversity, and community well-being can be co-advanced.

RESEARCH DESIGN AND METHODOLOGIES

This research employs an interdisciplinary design that synthesizes perspectives from geography, ecology, maritime archaeology, and tourism management. The study utilizes a mixed-methods approach, combining qualitative and quantitative data to assess the diverse values associated with Underwater Cultural Heritage (UCH) in Bantry Bay and to evaluate the feasibility of regional sustainable tourism. The framework further bridges theoretical and practical dimensions by examining relevant policy structures alongside the perspectives of stakeholders, including national and local cultural authorities, Cork County Council, and the local community.

The methodology is structured into the following key components:

Theoretical Analysis

During the doctoral research, core concepts and theoretical frameworks serviceable to Irish UCH will be identified, evaluated, and applied. A comprehensive literature review will examine existing research on UCH in Ireland, specifically focusing on Bantry Bay. Archival sources, including the Irish National Monuments Service, the Shipwreck Inventory of Ireland, and the Underwater Archaeology Unit, will be accessed alongside local libraries and digital

databases to investigate the shipwreck *La Surveillante*. This investigation will cover the circumstances of its discovery, archaeological studies to date, and its current status within heritage management frameworks. Additionally, participatory research will be undertaken to highlight and anticipate other existing or emerging typologies of UCH in Bantry Bay.

GIS-Based Spatial Analysis

Spatial analysis will be conducted using Geographic Information System (GIS) data for Bantry Bay obtained from the INFOMAR and GeoHive databases. INFOMAR provides high-resolution seabed mapping, including bathymetry, sediment types, and shipwreck locations, essential for identifying and analyzing UCH sites (Quinn, R. et al,2002). GeoHive offers critical terrestrial spatial data, including coastal zones, land use, infrastructure, and maritime activity areas.

Integrating these datasets within a GIS platform enables the research to:

- Study and map the precise location of UCH in the Bantry Bay area.
- Assess the spatial relationship between UCH sites, coastal zones, and various maritime activities.
- Support the strategic planning of Marine Protected Areas (MPAs) and sustainable tourism initiatives.

This combined approach ensures a holistic understanding of both ecological and human factors relevant to the conservation and management of UCH in the region.

Interviews and Questionnaires

To explore the sociological and economic dimensions of underwater heritage, questionnaires will be distributed to recreationists and tourists in Bantry Bay during the spring and summer months to assess interest in the shipwreck as a cultural and tourism attraction (Khater, M. *et al*, 2024). Furthermore, semi-structured interviews will be conducted with key stakeholders to capture a wide range of institutional and community perspectives:

- **Cork and Bantry County Councils:** To understand institutional perceptions of the shipwreck's value and the willingness to invest in its protection and sustainable use.
- **Non-governmental Organizations (NGOs):** To assess the impact of the shipwreck on marine biodiversity and evaluate existing conservation measures.
- **Local Tourist and Harbor Businesses:** To evaluate the potential economic benefits derived from the utilization of the shipwreck.

This multifaceted approach ensures a comprehensive understanding of community attitudes and institutional perspectives, directly supporting the development of robust, sustainable management strategies for UCH in Bantry Bay.

RESEARCH RISKS AND CONTINGENCY FRAMEWORK

In this research project, the foundational phases involving the literature review and GIS analysis present minimal risks, significantly contributing to the overall feasibility of the study. The primary potential challenge lies in securing sufficient participation from local stakeholders, recreationists, and tourists during the empirical data collection phase. To mitigate this, a robust contingency plan has been established to ensure the timely completion of all research objectives. For the theoretical and archival components, if access to specific primary databases is restricted, alternative sources such as open-access repositories and university archives will be utilized to maintain comprehensive coverage. Given that GIS data for Bantry Bay are predominantly open-access via INFOMAR and GeoHive, these reliable spatial datasets provide a stable technical foundation. Regarding qualitative engagement,

participants will be contacted in advance to secure informed consent, and should the initial sample of recreationists prove insufficient, outreach will be expanded through local organizations and digital travel groups to ensure a robust dataset.

DISCUSSION

The integration of Underwater Cultural Heritage (UCH) into the maritime spatial planning of Bantry Bay presents a transformative opportunity to bridge the gap between cultural preservation and environmental sustainability. By applying the "Alonissos Paradigm," this research suggests that shifting UCH from a state of static legal protection to an active socio-economic resource can catalyze local development while simultaneously enhancing biodiversity. Submerged sites, such as the *La Surveillante*, function as more than archaeological artifacts; they are active components of a socio-ecological system that shape community identity and resilience (DeSilvey & Harrison, 2020). However, the feasibility of this model in an Irish context requires navigating complex challenges, including the current lack of a formal national Marine Protected Area (MPA) definition and potential conflicts with established industrial activities in the harbor. Moving toward a justice-oriented Blue Economy requires that local participation and inclusive governance remain at the center of development policies to avoid exploitative "blue growth" models (Germond-Duret et al., 2022).

CONCLUSION

In conclusion, valuing UCH as an integral part of the Blue Economy offers a just and sustainable pathway for coastal governance in Ireland. This research moves beyond traditional documentation to propose a framework where heritage preservation, biodiversity protection, and community well-being are co-advanced (Kyvelou & Chiotinis, 2022). By utilizing GIS-based spatial analysis and interdisciplinary stakeholder engagement, the study provides practical tools for policymakers to anticipate and mitigate conflicts before industrial demands on marine spaces intensify. Ultimately, the transition toward a UCH-integrated MPA in Bantry Bay ensures that Ireland's hidden maritime history becomes a visible driver for long-term regional resilience and environmental stewardship. By reconnecting cultural and natural capital, Irish scholarship can align with and extend international best practices, demonstrating that heritage sites are not inert remains but active assets for a sustainable future.

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