

Article

A Cultural Landscape Emerges: Analyzing the Evolution of Two Historic North Pole Expedition Bases in Virgohamna, Svalbard, from Trash to a Protected Cultural Heritage Site

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Abstract: The identification and preservation of cultural landscapes worthy of protection is a challenging task, as their significance is often not immediately apparent. Analyzing the process through which a site or landscape became a heritage site and understanding the historical context and the factors that contributed to its designation allows making informed decisions on the management and preservation of the site. To provide research-based knowledge, this paper aims to analyze the transformation of the degraded remains of the North Pole expedition bases of Andrée and Wellman in Virgohamna, Svalbard, into a protected historic landscape and the subsequent emergence of the site as a current popular tourist destination. Virgohamna serves as an illustrative case for examining the heritagization process of cultural heritage sites in Svalbard. This article adopts a multidisciplinary approach, drawing upon case studies, mapping and categorizing the historic and current landscape, the condition and vulnerability assessment of historic remains, behavior studies on visiting tourists and guides on-site, expert interviews, and document studies. The findings highlight the complex processes that have influenced the making of the cultural heritage landscape in Virgohamna, the enduring narrative associated with the site, and the need for continued efforts to ensure the preservation and dissemination of its historical significance. Analyzing the process through which Virgohamna has become a heritage site and understanding the historical context and the factors that have contributed to its designation as a heritage site has the potential to enhance comprehension regarding historical importance and heritage values. Furthermore, it might facilitate engaging stakeholders and formulating management approaches and provide insights for policy suggestions. The comprehensive examination serves as a foundation for responsible and sustainable heritage management, ensuring the preservation and promotion of Virgohamna's cultural heritage for present and future generations.

Keywords: cultural heritage; cultural landscape; expedition site; heritage values; heritagization; Svalbard; tourism



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1. Introduction

The identification and preservation of cultural landscapes worthy of protection is a challenging task, as their significance is often not immediately apparent [1]. Research on heritagization processes and the criteria for determining the worthiness of heritage sites okfor protection has been a subject of scholarly investigation (e.g., [1,2]). Understanding the factors that contribute to the recognition and preservation of cultural heritage is essential for effective conservation practices and responsible management of these sites [3]. This study focuses on the case of Virgohamna, an Arctic landscape in the Svalbard archipelago, which was initially described by Fridtjof Nansen as a desolate and eerie place [4]. Despite its initial characterization, Virgohamna later gained recognition as a cultural heritage site due to the presence of two historical expedition bases: the staging area for Swede Salomon August Andrée's attempts to reach the North Pole by balloon in 1896 and 1897 and the base camp

of American Walter Wellman's airship expeditions in 1906, 1907, and 1909. According to Polar historian Arlov [5], the renowned polar ventures undertaken by Andrée and Wellman constitute captivating chapters in the history of Svalbard, and the expeditions have left enduring cultural landmarks that rank among the most frequented on the archipelago.

The term "heritagization" refers to the procedural aspect of cultural heritage, that cultural heritage is something that occurs and is happening [6]. Løkka et al. describe it as a phenomenon being defined as cultural heritage within a specific context, thereby acquiring a new status [7]. It is this process that underlies the concept of "heritagization". Swensen upholds that mechanisms in our contemporary society determine what is worth preserving and why [8]. The process of heritagization is also defined as the formal process of heritage making. However, the development of cultural environments in Virgohamna goes beyond the formal selection and preservation of elements as a cultural heritage site. In this article, the term heritagization encompasses all the additional aspects, including physical development, intangible narratives, and the way visitors interact with the cultural environment.

The study of the heritagization of the cultural heritage landscape in Virgohamna is significant. This unique site encompasses a rich historical tapestry that stretches back to the 1600s and includes early whaling activities, as well as the expedition bases of Andrée and Wellman [9]. The earliest traces of whaling activities from the 1600s provide a window into the Arctic's maritime history and its economic importance at that time [10]. The expedition bases of Andrée and Wellman shed light on the intense race among explorers to conquer the North Pole and the challenges they faced in their quests. These elements also annotate the pioneering developments in aeronautics during that era [11]. By examining the process of heritagization in Virgohamna, valuable insights into the historical significance of this cultural landscape will be gained. Furthermore, the development of early aeronautics represented by these bases showcases the human desire to push boundaries and expand scientific knowledge.

Exploring the heritagization of Virgohamna is important for managerial reasons. Delving into the process through which the site became a heritage site will provide valuable insights that inform effective management and conservation practices. Understanding the historical context and the factors that contributed to its designation allows making informed decisions about the site's preservation.

Knowledge of the site's heritage values is another important aspect to consider. Studying its history and significance can make it possible to identify the key elements that make Virgohamna significant, whether it be its cultural, historical, or natural values. This knowledge helps prioritize conservation efforts and ensures that the site's most important heritage values are safeguarded as long as possible for future generations.

The research field of the heritagization of cultural landscapes and cultural heritage sites is a dynamic and evolving area of study, actively exploring various aspects of heritagization, contributing to a deeper understanding of its complexities.

Conceptual frameworks to analyze heritagization processes often incorporate multidisciplinary approaches, drawing on fields such as discourses of heritage [12,13], critical heritage studies [14,15], landscape research [16–18], and anthropology [19,20]. They provide a theoretical foundation for understanding the social, cultural, ecological, and political dimensions of heritagization.

According to O'Hare [21], the character of a site originates from historical interactions between the natural and cultural components within the landscape. A significant focus of research has been on identifying and understanding the heritage values and criteria that inform the selection and recognition of cultural landscapes and heritage sites. This involves exploring the different dimensions of value (e.g., [22–26]), the meaning of places [27], and how places shape identity [2]. Researchers have examined how these values are assessed, negotiated, and prioritized within various cultural contexts.

Discussing cultural heritage sites and identity refers to the conceptualizations, perceptions, and understandings related to the cultural, social, and historical aspects of a specific

place or site [2,28,29]. It encompasses the beliefs, values, narratives, and symbolic meanings associated with the site's significance and its role in shaping individual and collective identities [30]. The concept of identity reflects the connections people establish with the cultural heritage site, how they interpret its past, and how it contributes to their sense of belonging, heritage, and cultural identity.

The importance of community engagement and participation in heritagization processes has gained considerable attention. Researchers have explored the role of local communities [31,32] in shaping and managing cultural landscapes and heritage sites. This research emphasizes the significance of participatory approaches, inclusive decision making, and empowering local communities in heritage conservation.

There is growing recognition of the need for sustainable heritage management practices. Research in this area explores strategies for balancing conservation, tourism, and sustainable development [33]. It addresses the challenges of managing visitor pressure [34], promoting community benefits, and ensuring the long-term viability and resilience of cultural landscapes and heritage sites [35].

In Svalbard, the pursuit of knowledge-based management regarding cultural and natural heritage sites is an esteemed objective, particularly in response to the escalating tourism levels and anticipated impacts of climate change [9,36].

While there is a wealth of national and international literature of historical and archaeological information concerning Svalbard's cultural history available (e.g., [5,37–44]), the accessibility of knowledge-based information specifically related to heritagization is limited. This holds true for the cultural heritage site in Virgohamna as well, despite the fact that archaeological research and thorough investigations have been conducted on the expeditions of Andrée and Wellman, with particular emphasis on the comprehensive study of Wellman's base [11,39,45–47].

In order to provide research-based knowledge, Virgohamna serves as an illustrative case for examining the heritagization process of cultural heritage sites in Svalbard. This paper aims to analyze the transformation of the degraded remains of the expedition bases of Andrée and Wellman into a protected historic landscape and the subsequent emergence of Virgohamna as a current popular tourist destination.

The analyses encompassed four key areas:

1. Policy documents and legal framework:
 - a. To what extent has the overarching policy of the authorities influenced the management of cultural heritage, and what implications does it have on the cultural environment of Virgohamna?
 - b. How has the evolution of cultural heritage legislation specific to Svalbard impacted the cultural environment?
2. Physical transformations of the region:
 - a. Which natural forces have caused degradation within the site?
 - b. In what ways have human activities influenced the condition of the site?
3. Narratives and cultural heritage value:
 - a. What narratives have existed and currently exist about Virgohamna?
 - b. Which heritage values can be associated with, or can be ascribed to, the site?
4. Impact of tourism:
 - a. How has tourism influenced the perception and interpretation of the site?
 - b. In what manner has tourism affected the utilization of the site?

Today, the historic environment is being worn down by trampling visitors, and the paper offers suggestions for measures that can preserve heritage values and at the same time allow visitors to experience this magnificent environment. An analysis of the heritagization process of Virgohamna can contribute to a deeper understanding of its historical significance, identify heritage values, engage stakeholders, develop management strategies, and inform policy recommendations. This comprehensive examination serves as a founda-

tion for responsible and sustainable heritage management, ensuring the preservation and promotion of Virgohamna's cultural heritage for present and future generations.

This article is structured as follows: To answer how the transformation and heritagization of Virgohamna were studied, the Materials and Methods section is organized with subsections displaying the case study area and outlining the mixed methods used for data collection and analysis. The results obtained are presented under the heading Results organized with subsections in accordance with the four key areas introduced above: (1) Policy documents and legal framework; (2) Physical transformations of the region; (3) Narratives and cultural heritage value; and (4) Impact of tourism, including a short description of the historic landscape of the site. Next is the Discussion section reasoning with the findings and debating further development of the historic site. Finally, a short section with concluding remarks completes the article.

2. Materials and Methods

This article adopts a multidisciplinary approach, drawing upon archival research, historical analysis, and field observations. Archival research involved examining expedition records, trappers' personal diaries, and published and unpublished official reports to gain insights into the historical context and significance of the expedition bases and the process leading to the listing of the site. Field observations were conducted in Virgohamna, documenting the current state of the historic landscape, visitor activities, and potential threats to its preservation. Interviews with local authorities and heritage professionals provided valuable perspectives on the management of the site and visitor experiences. The different methods were selected according to which research questions they were to elucidate:

Mapping and categorizing landscape and historic landscape were used to analyze the physical transformation of the region and help answer the following research questions: (1a) Which natural forces have caused degradation within the site? (1b) In what ways have human activities influenced the condition of the site? (3b) Which heritage values can be associated with, or can be ascribed to, the site?

Condition and vulnerability assessment of historic remains was used to analyze the physical transformation of the region and help answer the following research questions: (1a) Which natural forces have caused degradation within the site? (1b) In what ways have human activities influenced the condition of the site? (3b) Which heritage values can be associated with, or can be ascribed to, the site? (4a) How has tourism influenced the perception and interpretation of the site? (4b) In what manner has tourism affected the utilization of the site?

Behavior studies on visiting tourists and guides were used to analyze the physical transformation, the narratives and cultural heritage values, and the impact of tourism and help answer the following research questions: (2a) Which natural forces have caused degradation within the site? (2b) In what ways have human activities influenced the condition of the site? (3a) What narratives have existed and currently exist about Virgohamna? (3b) Which heritage values can be associated with, or can be ascribed to, the site? (4a) How has tourism influenced the perception and interpretation of the site? (4b) In what manner has tourism affected the utilization of the site?

Expert interviews and document studies were used to help answer all eight research questions.

2.1. Case Study Area

The case study area Virgohamna is situated on the northern side of Danskøya (Danes Island) on the north-western coast of Spitsbergen, the largest island in the Svalbard archipelago. Danskøya is surrounded by icy waters and characterized by a rugged and remote Arctic landscape, with snow-capped mountains, glaciers, and vast expanses of tundra. The region experiences harsh Arctic weather conditions, including long, cold winters and relatively cool summers.

In this part of Svalbard, the coastline features a captivating archipelago with small fjords, straits, and islands, surrounded by Alpine rock formations and glacier fronts plunging into the fjords. The bedrock mainly consists of metamorphic rocks such as granite, gneiss, and migmatite. The landscape is shaped by the glaciers, continuing eroding the bedrock and leaving the mountains with pointed ridges [48]. The inland region, however, is challenging to access due to its rugged mountains and glaciers. When Wilhem Barentz's expedition discovered Svalbard in 1596, the north-western corner of present-day Spitsbergen was the second landing, next to Bjørnøya [42]. The expedition's resulting map only depicted this specific north-western section of Spitsbergen [49].

The sea ice conditions are among the most favorable in Svalbard, making it a popular hunting ground throughout the centuries [42]. Furthermore, it stands out as one of the most northerly regions worldwide that remains free of ice during summertime [42]. This factor played a significant role in choosing Virgohamna as a base for expeditions to the North Pole.

The area's remote location in the far north is an inherent attraction for many visitors. Moreover, it offers breathtaking scenery, abundant wildlife, and a rich concentration of cultural sites spanning various periods in Svalbard's history [9,42,49,50]. Large cruise ships, limited to a few landing spots, smaller expedition vessels, and small private boats make Northwest Spitsbergen a primary destination. Consequently, this region has been and continues to be most frequented during the summer, placing significant strain on its cultural environments [36,49].

Virgohamna derives its name from "Virgo's harbor", Andrée's expedition ship, and is a small inlet nestled within the strait of Danskegattet [51]. This picturesque location is shielded by sheer cliffs and scattered islets, creating a protective embrace for the harbor. The site itself is situated on a rocky beach at the foot of the cliffs, facing north to the green and icy sea (see Figures 1–4).



Figure 1. To the left: Maps showing Svalbard with Longyearbyen, the capital of Svalbard, and Virgohamna, both located on Spitsbergen, the largest island of the archipelago. To the right: Virgohamna on Danskøya (Danes Island) in detail. Map by A.C. Flyen, reproduced from Norwegian Polar Institute with permission.



Figure 2. Virgohamna in 1906 seen toward west. In the foreground, remnants of Andrée's expedition base can be seen, to the right is Pike's House, and in the background, Wellman's base with the airship hangar and several buildings is shown. Photo: Wilse, A.B./Norsk Folkemuseum [52].



Figure 3. Tourists visiting Virgohamna in 2014 with the historic remnants from Dutch whaling station Hardingers Kokerij, Pike's House, and Andrée's and Wellman's expedition bases. Photo: Anne-Cathrine Flyen/NIKU.

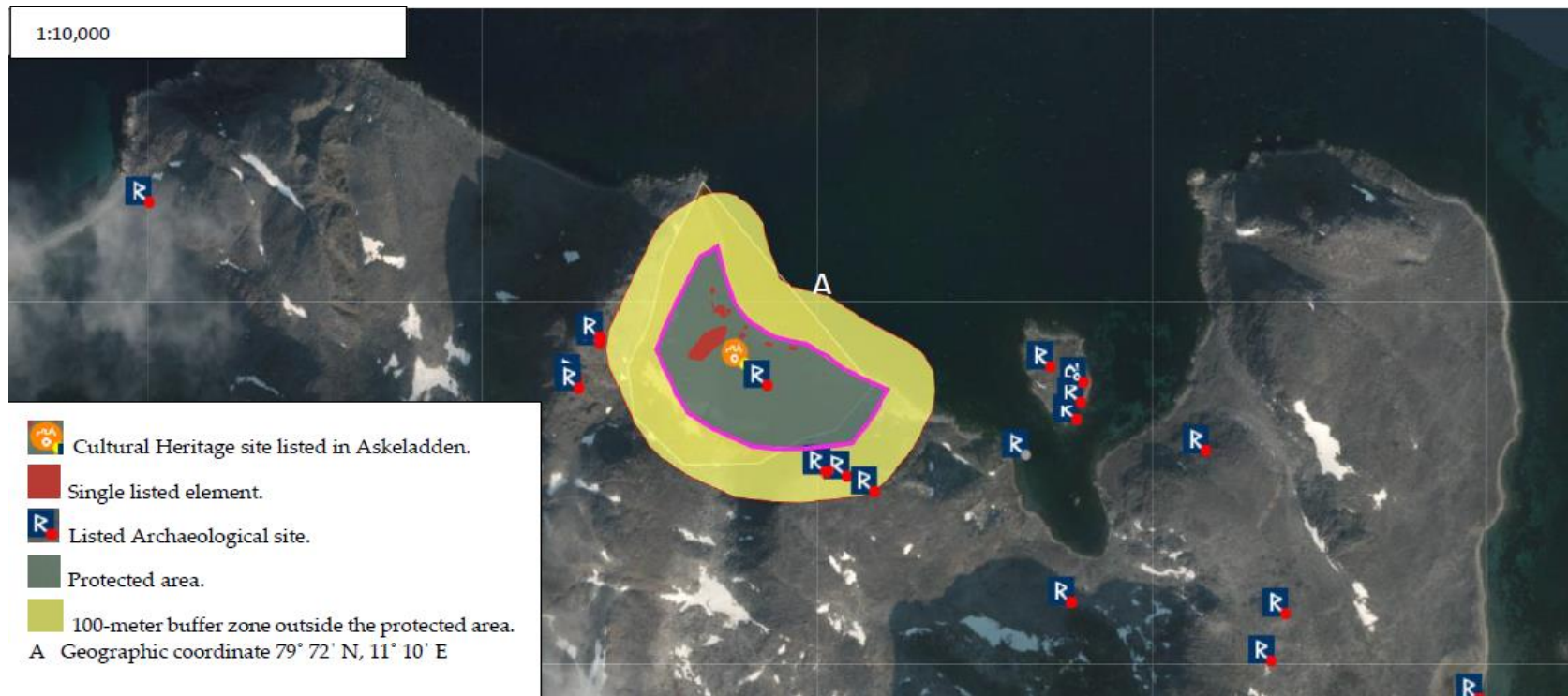


Figure 4. The protected area in Virgohamna, as it is registered in the Norwegian cultural heritage database, named “Askeladden”. The information in Askeladden is only available to the public cultural heritage administration. However, most of the information (except for the aerial photo in the background) can be retrieved from the publicly accessible service “Kulturminnesøk” [53]. The area is marked on the aerial photograph, which includes the protected cultural environment and a buffer zone of 100 m surrounding it in all directions. All cultural heritage sites and cultural environments in Svalbard have such a 100-meter buffer zone, which is regulated as strictly as the single element or site itself [54]. Map by A.C. Flyen, reproduced from Askeladden with permission.

2.1.1. Harlinger Kokerij

The stony beach of Virgohamna preserves the remnants of a Dutch whaling station known as Harlinger Kokerij. The station was established in 1636 in what was then referred to as Houker Bay [48] including houses and lard ovens. However, within a few years, the fjords and coastal areas of Svalbard saw a sharp decline in whale populations, necessitating a shift toward hunting them in the open sea [55]. According to Johansen et al. [48], German physician and naturalist Friedrich Martens observed the decay of Harlinger Kokerij in 1671, describing how the remnants of the former whaling station were covered by layers of formidable ice.

Today, the remains of the houses are still visible in Virgohamna, as are foundations for three double lard ovens including ramps on the side for facilitating the transport of blubber to and from the cookware (see Figure 5). At least 12 graves are situated east of the ovens, and historical relics from the daily life of the station, like remnants from the whalers' chalk pipes, are still lying on the beach.



Figure 5. Remains of the blubber ovens from the Dutch whaling station. The stone painted with number 1 is part of the information structure made by the Governor of Svalbard. Photo: Anne-Cathrine Flyen/NIKU.

2.1.2. Pike's House

Englishman Arnold Pike wintered in the bay with his skipper Kræmer and six Norwegians from September 1888 until May 1889, in a wooden dwelling transported from Norway [42,56,57]. According to Chapman [57] who retells from Pike's daily journals, the wintering, along with the voyage preceding and following their stay in Virgohamna aboard the ship *Seggur*, was an adventurous expedition centered around hunting pursuits. Pike is regarded as the first wintering tourist in Svalbard [58]. The hut was left on the

shores of Danes Island and was later used by Andrée and Wellman [59] as part of their expedition bases.

The house was constructed on the remnants of the ancient Harlringer Kokerij (see Figure 4). Both the name and the cookery itself had been forgotten, and for a brief period, the place was known as Pike’s Bay [51,59].

According to Bjerck et al. [59], Pike’s House was relocated to Barentsburg in 1925. Trapper Waldemar Kræmer wrote in his diary in 1925 that his family had previously acquired the house from Pike [60]. Since Pike’s winter stay in 1988–1989, the house had been used by wintering trappers. Many trappers had also helped themselves to materials from the house. As the house could not remain undisturbed, Kræmer wrote in his diary that he demolished the building and took the materials to Grønnfjorden. Around 1925, there were several coal mines in operation there, and he exchanged the materials for “provisions and oil” [60] (p. 38). What happened to the materials afterward is unknown. Today, the stone foundations, some sills and sleepers, and a pipe leading out of the ruins are telling the story of Pike as one of the first tourists wintering in these waters (see Figures 6 and 7).



Figure 6. Pike’s House to the left. Remnants of Andrée’s balloon house to the right, and tourists visiting the commemorative monument of Andrée’s expedition. Photo: Wilse, A.B./Museene for kystkultur og gjenreisning i Finnmark IKS [61].

2.1.3. Andrée’s Expedition Base

With the aim of reaching the North Pole aboard the hot air balloon “Örnen” (The Eagle), Swedish engineer Salomon August Andrée established his expedition base in Virgohamna during the summer of 1896 [42]. According to Arlov [42], a dedicated structure for housing the balloon and a separate facility to produce hydrogen gas, necessary for inflating the balloon, were constructed in the bay (see Figure 8). Unfortunately, the weather conditions were unfavorable that season, leading to the cancellation of the journey to the Pole. Andrée returned the following year for another attempt to leave the base which this time succeeded. A fleet of cruise ships anchored in the fjord off Danskøya to witness the departure. The balloon headed north, disappearing behind glaciers and mountains [42]. For 33 years, the fate of the expedition and its participants remained a mystery until the remains of the expedition and its members were discovered on Kvitøya [42].



Figure 7. The remnants of Pike's House in Virgohamna. Photo: Anne-Cathrine Flyen/NIKU.

Presently, the remnants of Andrée's expedition base in Virgohamna are clearly visible but scarce. While parts of the hydrogen gas production facility persist, only a few planks from the balloon house remain. The location where the balloon house once stood is discernible, and at the center of the circular foundation, a stone monument stands as a tribute to Andrée and his comrades (see Figure 9). Scattered around the area, lies remnants of the balloon house and the gas plant, including nails, bolts, wires, fragments of planks, fasteners, and piles of rusted iron filings. These scattered artifacts serve as poignant reminders of the remarkable journey undertaken by Andrée and his team.

2.1.4. Wellman's Expedition Base

Through his meticulous investigations and analyses, Polar researcher Capelotti has carefully documented and described various aspects of the Wellman base [11,39,45–47]. Capelotti [11] describes the expedition base providing a detailed account of the constructions. Wellman's headquarters, the largest building after the hangar, had ample space to accommodate a diverse range of individuals, including 40 scientific staff, engineers, aeronauts, mechanics, sailors, and workmen. Among the various structures present, there was a machine shop, a boiler house, a steam engine, a steam pump, and a shed specifically designed to house the gas apparatus used for inflating the dirigible. Notably, the airship hangar itself was an immense structure, featuring nine sturdy arches using timber for the floor construction salvaged from Andrée's abandoned balloon house [59] (see Figure 10). According to Capelotti's account [11] (pp. 12–16), Wellman brought an impressive quantity of building materials, including three or four hundred tons of timber and iron, which were utilized in the construction of the hangar and other supplementary buildings. Additionally, the expedition carried 125 tons of sulfuric acid and 75 tons of scrap iron filings for producing hydrogen for powering the airship.



Figure 8. The balloon “Örnen” within the balloon house in Virgohamna. The hydrogen gas production facility in front; Pike’s House to the left (partly visible). Photo: Grenna Museum– Andréexpeditionen Polarcenter [62].



Figure 9. Historic remains from the expedition base of Andrée. Part of the hydrogen gas production facility to the right. At the very back of the picture, the Andrée monument is visible looking like a small cairn. Remnants from Pike's House to the left. Photo: Anne-Cathrine Flyen, NIKU.



Figure 10. The airship hangar in Virgohamna showcases the pioneering work of Wellman and his crew in the field of airship technology. The photograph taken in September 1906 captures the presence of engines, the hangar, and a basket gondola attached beneath the airship, providing space for the crew and machinery. Photo: Wilse, A.B./Norsk Folkemuseum [63].

Today, the remnants of Wellman's expedition base are strikingly evident in the flat yet rocky landscape along the shores of Virgo Bay (see Figure 11). The colossal wooden beams, once part of the airship hangar, now rest upon the ground, serving as a testament to the grandeur that once occupied this site. Amidst the foundations of stone and scattered woodwork, the ruins of other structures emerge, revealing glimpses of their former glory. The area is marked by the presence of numerous iron barrels and vast quantities of scrap iron, occupying a substantial space. A considerable quantity of fragmented ceramic pipes adds to the mosaic of artifacts strewn across the site. In this remarkable location, even remnants of the airship wreck itself can be found, including fuel tanks, the frame within the airship's nacelle, and fragments of cloth, offering haunting echoes of the airship's ill-fated voyage.



Figure 11. Historic remains from the expedition base of Wellman. Rusty barrels dominate the scenery; to the right, remnants of one of the houses; to the left, parts of the enormous airship hangar. Picture from July 2014. Photo: Anne-Cathrine Flyen, NIKU.

2.2. Data Collection

2.2.1. Mapping and Categorizing Landscape and Historic Landscape

The mapping and categorization of natural and cultural landscapes form the basis of understanding the spatial context and characteristics of cultural heritage sites. This contributes to answering the following research questions: (1a) Which natural forces have caused degradation within the site? (1b) In what ways have human activities influenced the condition of the site? (3b) Which heritage values can be associated with, or can be ascribed to, the site? The method involves a systematic survey and analysis of the physical features, landforms, vegetation, and historical elements present in the landscape. To carry out this method, field surveys are conducted to document the physical features and topography of the landscape. This includes a brief identification of landforms guided by NiN [17] cultural elements after Hagen et al. 2014 [64]. While conducting fieldwork, certain challenges arose as parts of Harlinger Kokerij and Wellman's base were covered by snow, hindering

a comprehensive examination of the entire area. To overcome this obstacle, measurements were collected and subsequently compared and contrasted with surveys conducted by the Governor of Svalbard [58] and researchers Capelotti [11] and Hagen et al. [65] and the database of the Directorate for Cultural Heritage called Askeladden. Unpublished historical documents from the archive of the Governor of Svalbard, maps from the Norwegian Polar Institute [66], photographs from the Norwegian Polar Institute [67], the digital photo archive maintained by the Directorate for Cultural Heritage [68], and DigitaltMuseum [69] are also examined to gather additional information about the historic site and its evolution over time. DigitaltMuseum is a joint database of collections in Norwegian and Swedish art and cultural history museums. Within DigitaltMuseum, the digital photos maintained by the Svalbard Museum, Norges Arktiske Universitetsmuseum, Museene for kystkultur og gjenreisning i Finnmark IKS, Tromsø Museum, Sør-Troms Museum, Grenna Museum, Norsk Folkemuseum, and Norsk Teknisk Museum have been studied.

2.2.2. Condition and Vulnerability Assessment of Historic Remains

This method focuses on assessing the condition and integrity of both the cultural environment and the individual historic structures within it as well as conducting vulnerability assessments for the site and single heritage structures. This contributes to answering the following research questions: (1a) Which natural forces have caused degradation within the site? (1b) In what ways have human activities influenced the condition of the site? (3b) Which heritage values can be associated with, or can be ascribed to, the site? (4a) How has tourism influenced the perception and interpretation of the site? (4b) In what manner has tourism affected the utilization of the site? The aim is to identify deterioration, damage, or potential risks that may affect their resilience and longevity and to chart their susceptibility to human activities. Since the historic remnants in Virgohamna consist of ruins, remnants of construction materials, and artifacts, the condition assessment is conducted as a general evaluation. The vulnerability assessments follow the guidelines presented in Hagen et al.'s [64] handbook, which outlines a methodology for assessing vulnerability to human activities.

2.2.3. Behavior Studies on Visiting Tourists and Guides

These methods contribute to answering the following research questions: (2a) Which natural forces have caused degradation within the site? (2b) In what ways have human activities influenced the condition of the site? (3a) What narratives have existed and currently exist about Virgohamna? (3b) Which heritage values can be associated with, or can be ascribed to, the site? (4a) How has tourism influenced the perception and interpretation of the site? (4b) In what manner has tourism affected the utilization of the site? This approach entails the observation and mapping of visitor behavior, preferences, and patterns within the site. It offers valuable insights into the impact of tourism on the site's physical and social environment, as well as visitor interactions with cultural heritage structures and information. These observations also provide insights into how guides function within the group and how they inform and monitor tourists. Additionally, it sheds light on the effectiveness of the information system implemented by the Governor of Svalbard to manage site operations. During the observation period, a total of 6 medium-sized expedition cruise ships, typically carrying between 12 and 500 passengers, visited Virgohamna. These ships disembarked groups of 10 to 15 tourists per guide. The total number of visiting groups during the observation period was 39. In addition, a private boat visited the site with 6 individuals.

2.2.4. Expert Interviews

This method contributes to answering all the research questions. Interviews are a valuable method for gathering in-depth information and insights from key individuals or stakeholders. Semi-structured in-depth expert interviews were conducted with the regional cultural heritage management in Svalbard (The Governor) and at the directorate

level in Oslo. At the regional level, five in-depth interviews were conducted, while at the directorate level, two interviews took place. The advisors at the regional level are periodically replaced due to fixed-term positions. Therefore, all five interviews were conducted with advisors/cultural heritage managers who had previously worked in the regional management of cultural heritage in Svalbard (at the Governor's office). Both advisors at the directorate level had or had been responsible for the management of cultural heritage in Svalbard. The interviews were not conducted on-site.

2.2.5. Document Studies

This method contributes to answering all the research questions. Document studies involve the examination and analysis of various historical documents, archival records, literature, and photographs related to the cultural heritage site. Studies were conducted on documents from the archives of the Governor of Svalbard and the Norwegian Directorate for Cultural Heritage. They also involved studying the photographic databases as referred to in Section 2.2.1. This method provides valuable insights into the historical context, significance, and evolution of the site, as well as the traditional construction techniques, materials, and cultural practices associated with it.

3. Results

The Results section presents the findings and outcomes of the study, focusing on the four key areas highlighted in the Introduction section including a short description of the historic landscape.

3.1. *The Historic Landscape of Virgohamna*

Virgohamna is a bay on Amsterdam Island in the far northwest of Spitsbergen. It is surrounded by up to 100-meter-high mountain walls to the south, and to the north, it is separated from Amsterdam Island by Danskegattet. The landscape in Virgohamna can be categorized as either a fjord landscape or a coastal plain, but detailed information is currently lacking precision. If the sea depth is significant, it will be defined as a fjord landscape extending up the valley slopes. There are small islands and some flat land in the area. Virgohamna's rocky and moss-covered terrain is scattered with cultural heritage sites that bear witness to significant periods of Svalbard's history from the 17th to the early 20th century. These include remnants of European whaling from the 17th century, a foundation from the first tourist to overwinter in Svalbard, remnants of Andr e's scientific and adventurous expedition with a hot air balloon to the North Pole in the late 19th century, and remnants of Wellman's large base for his three attempts to reach the North Pole by airship in the early 20th century. The cultural landscape also encompasses the development of tourism in Svalbard, as Virgohamna has been and still is a beloved tourist destination, evident from signs and well-trodden paths indicating this activity. The cultural heritage sites in Virgohamna are located partly on a rocky north-facing beach with sparse vegetation, including patches of moss. These sites have undergone significant deterioration, particularly the wooden structures, metal parts, and iron filings in Wellman's base. The historical remnants of whaling activities are difficult to perceive and easy to overlook. Additionally, it is challenging to avoid stepping on loose cultural heritage sites as paths pass through and partially overlap them. This makes the cultural heritage sites in Virgohamna highly vulnerable to visitors.

3.2. *Policy Documents and Legal Framework*

Until 1920, no nation had any form of sovereignty over the islands, then known as Spitsbergen. Consequently, there was no overarching responsibility for historical remains [39]. In 1920, the Svalbard Treaty was signed, and after addressing land ownership issues, implementing mining regulations, and establishing a treaty text and comprehensive legal framework [70] for the ratification and enforcement of the treaty, Norway obtained sovereignty over the archipelago in 1925 [42]. Even in this initial legal framework, called the

Svalbard Act, a provision regarding the preservation of cultural heritage was included [70], stating that “general regulations” could be issued for “ancient remains”.

3.2.1. Overarching Goals and Guidelines

Despite the possibilities outlined in the first Svalbard Act, no regulations specifically related to cultural heritage and preservation were introduced until 1974 [71]. In this legislation, all cultural heritage sites and environments dating back to before 1900 were automatically protected [72]. Accordingly, parts of the cultural environment in Virgohamna, including the historical remains of Harlingers Kokerij, Pike’s House, and Andrée’s expedition base, were automatically preserved, while Wellman’s expedition base fell outside the scope of protection. In 1992, new regulations extended the scope of automatic preservation to include all cultural heritage, both movable and immovable, predating 1 January 1946 [73]. In consequence, Wellman’s expedition base was also automatically protected. These regulations were later replaced by the Svalbard Environmental Protection Act, which came into effect in 2002 and was revised in 2012 [74]. The cultural heritage chapter is incorporated into this act as part of a comprehensive environmental legal framework, integrating cultural heritage considerations throughout the environmental protection legislation.

A united Norwegian Parliament has agreed upon the overall goals of Norwegian Svalbard policy for several decades. These goals, formulated in the 1980s and remaining unchanged since then, enjoy broad political consensus [75]. The overarching goals are as follows (author’s translation from Norwegian) [76–80] (p. 12):

- “Consistent and firm enforcement of sovereignty.
- Proper compliance with the Svalbard Treaty and ensuring its adherence.
- Preservation of peace and stability in the region.
- Conservation of the unique wilderness and nature of the area.
- Maintenance of Norwegian communities in the archipelago”.

It is also emphasized that Svalbard possesses a distinct natural and cultural heritage, which Norwegian authorities have a particular responsibility to preserve. Environmental protection, therefore, constitutes a fundamental aspect of Norwegian Svalbard policy, and all economic activities, resource utilization, and research must operate within the framework established for the conservation of Svalbard’s natural environment and cultural heritage [79].

At the same time, conscious efforts have been made to facilitate three specific industries in order to sustain activity in the archipelago and create job opportunities that support a community-oriented environment. These three industries are coal mining, research and education, and tourism [79]. Since 2016, coal mining has been phased out, and other economic activities, primarily tourism, have been developed [81].

Comprehensive reports in the shape of White Papers to the Norwegian Parliament (Storting) on Svalbard have historically been presented approximately every five to ten years [78–80,82]. The latest White Paper on Svalbard was presented in 2016 [80]. These reports have provided guidance for the development of the archipelago for several years, and the comprehensive review has contributed to coordinated development within the framework set by the objectives of Svalbard policy. All the White Papers specifically mention cultural heritage sites and environments, setting high goals, including [79] (pp. 52–53) (author’s translation from Norwegian):

- “Based on its internationally significant natural and cultural heritage, Svalbard shall be one of the best-managed wilderness areas in the world.
- Environmental considerations shall prevail over other interests in cases of conflict between environmental protection and other interests, within the framework of treaty and sovereignty considerations.
- The extent of wilderness areas shall be maintained.
- Flora, fauna, and valuable cultural heritage sites shall be preserved as close to their natural state as possible, allowing natural ecological processes and biological diversity to develop with minimal human impact”.

Furthermore, there have been White Papers within the fields of environmental protection and cultural heritage preservation for Norway as a whole, which also address the cultural environments in Svalbard [83,84]. In particular, St. Meld. nr. 16 Living with Cultural Heritage [83] (pp. 59–60) focuses on cultural heritage in greater detail and emphasizes Norway's international obligations in Svalbard as a steward of international cultural heritage (author's translation from Norwegian):

“Norway bears the responsibility for managing an important national and international cultural heritage on Svalbard, representing the activities of many nations. The government will maintain a restrictive practice with regard to activities and interventions that could harm or diminish the value of the cultural heritage on the archipelago.

Outside settlements, cultural heritage sites should remain undisturbed as scattered traces of human use of the Arctic landscape for over 400 years.

It is neither practically feasible nor desirable to implement measures against natural deterioration for all cultural heritage sites. However, for certain cultural heritage sites of great historical or experiential value, preventive measures may be considered”.

3.2.2. Local Legislation

The Norwegian Ministry of Climate and Environment holds the primary responsibility for overseeing environmental protection management in Svalbard, including cultural heritage protection, as well as coordinating environmental management efforts [85]. This ministry plays an important role in developing and implementing policies related to environmental conservation and sustainability on the archipelago.

In the realm of cultural heritage management in Svalbard, the Norwegian Directorate for Cultural Heritage assumes the authority and overall responsibility [85]. The Directorate is tasked with safeguarding and preserving the cultural heritage sites and artifacts found on the islands. They play an important role in formulating guidelines, conducting research, and coordinating activities related to cultural heritage protection.

The Governor of Svalbard serves as the regional cultural heritage authority and carries out the day-to-day administrative tasks associated with cultural heritage management. This includes preparing cases for protection and exemption, conducting inspections, and enforcing regulations [85]. The Governor works closely with the Norwegian Directorate for Cultural Heritage to ensure effective implementation of cultural heritage policies in Svalbard.

The management of cultural heritage sites on Svalbard follows the overarching policy established by legislation, all the aforementioned White Papers, international treaties which Norway has endorsed concerning cultural heritage, and official guidelines specifically developed for Svalbard, as stipulated in the current cultural heritage plan. Since 1994, a cultural heritage plan has been in place for the management of cultural heritage on Svalbard, and the plan has been expanded and renewed in two subsequent versions [49,50,71]. The cultural heritage plans are developed by the Governor of Svalbard to serve as a tool ensuring predictability and long-term management of Svalbard's cultural heritage [71]. In the 2000 cultural heritage plan [50], a prioritization of the 50 most important cultural environments was conducted, which was expanded to include the 100 most important cultural heritage sites and environments on Svalbard in the 2013 plan [71]. These sites are intended to be protected through predictable and long-term management. Currently, the Governor of Svalbard is working on a revision of the existing plan [86].

In 2000, the Ministry of Environment launched the Regulation on Area Protection and Traffic Control in Virgohamna, Svalbard. The cultural environment in Virgohamna, including a safety zone of 100 m on all sides of the cultural environment, was already automatically protected under the Svalbard Environmental Act [74]. However, the increasing tourism exerted a heavy toll on the cultural environment and individual monuments. Therefore, the Governor found it necessary to impose restrictions to reduce the impact. The regulation involved introducing restrictions on access and requiring all visitors to obtain

permission from the Governor for landing [87]. This way, the Governor could maintain control over who and how many people landed and provide specific guidelines on where visitors were allowed to move within the cultural environment. A separate system was established with maps and brief descriptions [88], as shown in Figures 12 and 13. The map illustrates an absolute ban on access in parts of the area where particularly vulnerable historic remains are located. The accompanying description explicitly states that it is not permitted to step on or move building components, building materials, objects, or other historical remains.

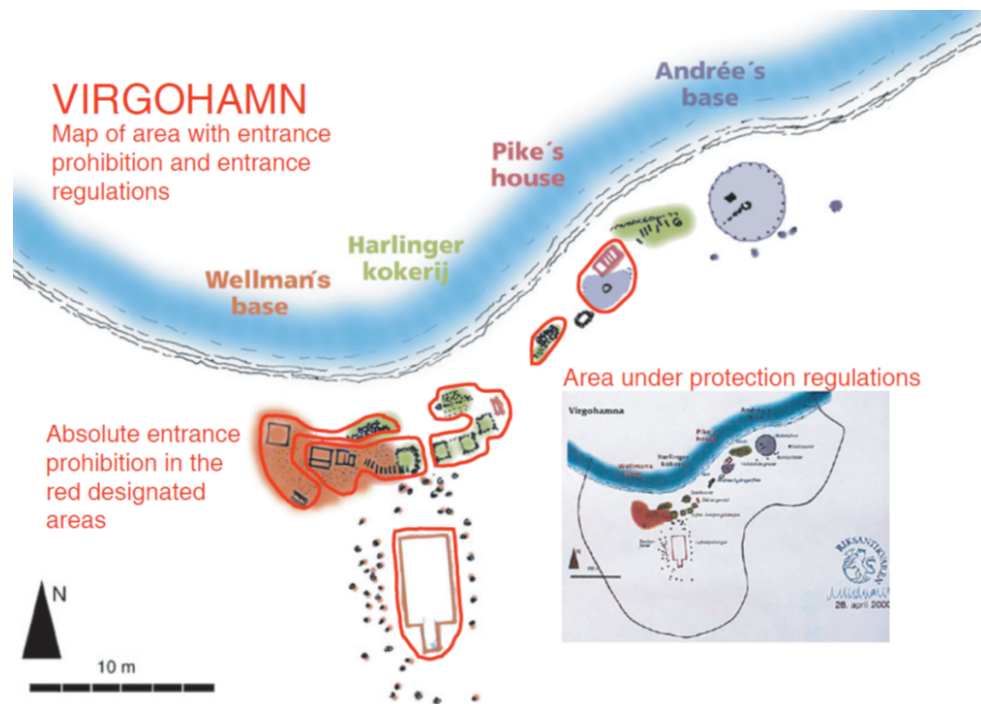


Figure 12. Virgohamnna: Map of the area indicating prohibited entry and entrance regulations made by the Governor of Svalbard [88].

3.2.3. Interview with Local and Overarching Administration

The interviews with the administration (former advisors to the Governor's Office and the Directorate for Cultural Heritage) were divided into two main sections: a general overview of the management of cultural environments in Svalbard and a more specific focus on the management of the cultural environment in Virgohamnna. The advisors who were interviewed had worked with cultural environments in Svalbard over the past four decades, representing a significant time span. In general, the advisors emphasized that the cultural heritage plans for Svalbard were valuable and important tools for management. Particularly, it was highlighted that these plans are crucial in compensating for the lack of continuity in the advisory role at the Governor's Office, where there is relatively high turnover due to fixed-term positions. Several interviewees were uncertain about the significant impact of overarching political guidelines on cultural heritage management. However, they specifically emphasized the importance of incorporating cultural heritage regulations into comprehensive environmental legislation when the Svalbard Environmental Protection Act was enacted in 2001 [74]. This led to an increased focus on cultural heritage considerations and their integration with the management of natural environments. All the advisors also noted that there are numerous tasks and limited staff to handle them. Many also believed that there was a lack of overarching systems to monitor the deterioration, wear, and development of cultural heritage sites. Regarding the management of the cultural environment in Virgohamnna, all the advisors highlighted the informational booklet primarily showcasing the historical background of the present cultural environment. The advisors believed that this booklet had been and still is crucial in shaping visitors' perception of

the site, and many purchased it to prepare for their visit and familiarize themselves with the historical context. Thus, according to the interviewed advisors, many visitors were well-prepared regarding the historical narrative but lacked an understanding of how to physically interact with the existing elements. As tourism has increased in Svalbard, the cultural environment in Virgohamna has suffered more wear and tear, necessitating the implementation of restrictions. However, since the cultural environment is highly significant and popular as a visitor site, the Governor's Office and the directorate did not want to completely close it off to visitors. Therefore, a dedicated information system with maps and descriptions was developed to guide visitors and restrict access to the most vulnerable historical remains [88]. Restrictions were also imposed on group sizes, and all groups were required to be accompanied by a guide. This approach aimed to provide comprehensive information and ensure oversight of tourists. The advisors believed that this information system had served its purpose effectively. All the advisors agreed that both trappers and tourists had contributed to the development of the cultural environment and the heritagization of Virgohamna over time. This includes conscious actions by trappers to extract materials, building components, and objects for use elsewhere on Svalbard, as well as souvenir collecting by tourists. Unintentionally, visitors walking around the site have also contributed to trampling and degradation shaping today's heritage environments.



Figure 13. Virgohamna: Map and text expanding the map of the area indicating prohibited entry and entrance regulations made by the Governor of Svalbard [88].

3.2.4. Observations of Visitors

On-site observations during casework indicated that the guidelines appeared to be somewhat confusing and unclear. The system initially established a trail to be followed in parts of the area around Wellman's base. This area holds a significant number of historical remains, such as wooden structures from the buildings, iron shavings, rusted barrels, and various metal parts that cannot withstand being stepped on (see Figures 12 and 13). However, it turned out that old paths used by visitors in the past, which were no longer allowed, were much more distinct in the terrain than the new approved paths. This led most tourists to believe that the most visible paths were the ones permitted. As a result, the tourists followed the old forbidden paths. Both the old and new paths passed directly through the historical remains, making it impossible to walk on the path (either the old unauthorized one or the new authorized one) without stepping on protected artifacts. As a result, it was not possible to comply with the Governor's requirements, despite following the Governor's other guidelines. The observations also revealed that several guides climbed onto the blubber ovens, which are slightly elevated in the landscape, to better address the tourists. This was done despite all the blubber ovens being clearly marked as off-limits on the map provided by the Governor.

3.2.5. Key Findings

The analysis of the policy documents and the legal framework surrounding the heritagization process of Virgohamna, as well as the interviews with the administration of the historic environment, revealed several key findings. The overarching policy of the authorities clearly states that cultural heritage protection is an important responsibility of the Norwegian administration of Svalbard. The evolution of cultural heritage legislation specific to Svalbard has also impacted the cultural environment of Virgohamna. The legislation has undergone changes over time, with increasing recognition of the historical and cultural significance of the region. Specific management plans have been developed that describe guidelines for the preservation of cultural environments, and 100 particularly prioritized cultural environments have been defined to receive extra attention from the authorities. The cultural environment in Virgohamna is among these. This recognition has resulted in strengthened protection measures and regulations aimed at preserving the heritage values of Virgohamna. However, challenges such as limited enforcement mechanisms and ambiguity in certain provisions seem to have affected the effectiveness of the legislation. Travel restrictions have been implemented for Virgohamna, along with a specific arrangement for visitors aimed at preserving particularly vulnerable parts of the cultural environment. Even so, these guidelines are somewhat unclear and difficult to follow. Additionally, it appears that the guidelines are not being followed by the guides.

3.3. *Physical Transformations of the Cultural Heritage Site*

Cultural environments and cultural heritage in polar regions are facing increasing pressure (e.g., [36,89–92]). The effects of climate change combined with growing tourism contribute significantly to this situation (e.g., [93–97]). The impacts of climate change and its subsequent effects are stronger the further north one goes, making the Arctic particularly vulnerable [98]. This has also influenced tourism, and the concept of "last chance tourism" reflects the desire to experience natural phenomena, wildlife, and cultures before they disappear due to climate change (e.g., [99–102]). In Svalbard, these climate effects are highly evident [103], while tourism has seen a significant increase in the past 10–15 years, except for the two pandemic summers in 2020 and 2021 [104]. In Virgohamna, natural decay and human-induced decay have reinforced each other.

There are few descriptions of how natural decay has affected the cultural environment in Virgohamna. However, the high-Arctic nature and climate are harsh on vulnerable buildings, typically constructed with simple foundations and designed to last only a few seasons. These structures often feature a significant amount of wood and are located along the coast, often at the base of mountains or slopes. The extreme weather conditions,

including strong winds, heavy snowfall, freezing temperatures, and fluctuating sea ice, pose significant challenges to the durability and longevity of these buildings [49,50,71]. Weather and wind erosion pose strong destructive forces on standing buildings in Svalbard [49,105]. If the buildings are partially decayed, for example, due to polar bear damage or trappers' plundering, the forces of wind can take a firm grip. Once gaps or vulnerabilities occur, the buildings rapidly deteriorate. Coastal erosion is a significant problem in Svalbard [92,93,106], and the cultural environments in the archipelago are often located very close to the coastline, just like in Virgohamna. The relentless pounding of waves and the erosive action of ice can lead to the gradual retreat of the shoreline, putting coastal structures and heritage sites at risk. The combination of storm surges, sea ice dynamics, and thawing permafrost exacerbates the process of coastal erosion. This ongoing erosion poses a constant threat to the preservation of cultural sites in Svalbard, including those in the Virgohamna area. Even slower processes such as rot and rust take hold more effectively when buildings and building components are no longer protected by roofs or sheltering walls. Although it was long assumed that rot barely existed in Svalbard, research in recent years has shown that the timber is also degraded by wood-decaying fungi [90,91,107].

It seems that wind forces are particularly strong in the bay. Trappers who have spent winters in the buildings of Virgohamna recall several periods of winter winds reaching hurricane strength [60,108]. Norwegian trapper Paul Bjørvik recounts a hurricane during Christmas in 1908 that toppled Wellman's hangar [108]. When Nansen visited Virgohamna in 1912, Wellman's airship hangar had blown down, according to Nansen, because trappers had helped themselves to the steel supports that held the structure standing. The gas facility was still there, but all metal parts had been taken. The residential house was still intact, and Nansen described it as large and spacious but unwelcoming, with a large room in the middle surrounded by various rooms along the outer walls. He mentioned the presence of a bathroom with a bathtub, a kitchen, and a darkroom for developing photographs [4].

Tourist A. Schibsted recounts a trip to Svalbard, then known as Spitsbergen, in 1908. His letters have been published, and he describes André's balloon house as a "pile of beams" [109] (p. 39) and explains that the balloon house collapsed already a year after the expedition left Virgohamna in the balloon and disappeared in the fog. This tourist trip was 11 years later, and Schibsted also mentions "a giant mark carved into the mountain" [109] (p. 39). The mark depicted the Masonic symbol, and Schibsted mentions that André, who was a high-ranking Freemason back in Sweden, had carved the mark himself. Furthermore, Schibsted talks about all his fellow tourists eagerly and meticulously collecting souvenirs from the ruins. He describes how they took with them nails, pieces of pipes, scraps of fabric, timber, and ropes [109].

Wellman hired trappers to overwinter in the expedition base to look after equipment and buildings. It was well-known that trappers helped themselves to materials, building components, and machine parts, gradually dismantling and taking everything usable. This was considered a tradition and a necessity in these remote areas, where every man and woman had to fend for themselves, and it has become part of the historical development of trappers' cabins [42,60,71,110]. Trapper Bjørvik writes in his diary in 1908 that he and another trapper overwintered in Wellman's base to "look after Wellman's things" [110] (p. 3). Bjørvik also writes that the two of them were taking over from two other trappers who had overwintered since 1907 and that he himself had overwintered there from 1906 to 1907 [108,110]. Several Svalbard trappers and also polar explorer Fridtjof Nansen mention the plundering of materials, metals, and parts of machinery carried out by trappers, as well as tourists who visited the area right from the start of the expeditions and took souvenirs with them [4,39,60,108,109,111]. Nansen visited Virgohamna to find a part for his damaged boat engine and points out that he himself contributes to the decay. He also describes how hunters have removed fittings and latches from doors and windows, causing them to no longer seal properly, and how this contributes to the natural decay of the buildings in Virgohamna [4].

A few years after Wellman had left Virgohamna, the buildings were no longer in use by trappers and hunters, and they rapidly decayed. However, cruise ships continued visiting the site, and over the years, thousands of tourists have continued to trample upon the historical remains and take souvenirs with them. Today, there are no standing buildings remaining, but there are still numerous historical traces. A significant amount of timber from buildings, especially from the large lattice arches of Wellman's airship hangar, lies scattered around. Like in other parts of the archipelago, the timber has been heavily degraded by biological activity, primarily by wood-decay fungi [90,91]. This makes the wood highly vulnerable and susceptible to damage, leading to its collapse. Similarly, there are substantial amounts of scrap metal in the form of metal shavings used for gas extraction, as well as metal barrels and remnants of machinery and metal pipes from the airship itself. All the metal is affected by rust. Climate change is expected to further enhance several of these degradation processes, including the growth of wood-decay fungi, rust attacks, and strong gusts of wind [91,93].

Pike's House was dismantled and removed, but the bottom sills remain. These have been decayed by rot and are not very resilient to pressure. The remains of Andrée's expedition are not as extensive as Wellman's, but there is part of a wooden structure remaining from gas production, also heavily decayed.

The remnants of Harlinger's Kokerij mostly consist of low mounds and elevations from the blubber ovens where whale blubber was melted into oil. These are primarily susceptible to human-induced decay. During field work, tourists were observed trampling in the ruins and among the historic remains, and guides were observed standing on the remains of the blubber ovens talking to the tourists. This demonstrates that both natural and human-induced decay persists.

3.4. Narratives and Cultural Heritage Value

3.4.1. Narratives

The narrative of Virgohamna can be understood as the story or account of the historical, cultural, and natural significance of the landscape. In the historic context of polar exploration, Andrée and Wellman are considered pioneers for their attempts to conquer the North Pole using the airway [11]. While many explorers focused on ground expeditions or sea voyages, Andrée and Wellman ventured into the uncharted territory of using aircraft to reach the pole. Their endeavors represented a groundbreaking approach to polar exploration, pushing the boundaries of what was previously considered possible [11]. Though their attempts were ultimately unsuccessful, their pioneering spirit and willingness to explore new avenues in the quest for the North Pole left a lasting impact on the history of polar exploration [112].

The history of polar exploration is marked by heroic expeditions. Toward the end of the 19th century, the Arctic and Antarctic regions, especially the poles, remained uncharted territories on the world map [42]. Many men courageously ventured into the great unknown, hoping to be the first to reach the pole [113]. Some were adventurers, while others were scientists, and many expeditions included researchers [42]. Figures such as William Edvard Parry, John Franklin, Adolf Erik Nordenskiöld, Fridtjof Nansen, Roald Amundsen, and Umberto Nobile loom large in the history of Arctic exploration [42]. In Antarctica and the sub-Antarctic regions, notable figures include James Weddell, James Clark Ross, Carl Anton Larsen, Henrik Bull, Carstens Borchgrevink, Adrien de Gerlache, Robert Falcon Scott, Otto Nordenskjöld, William Speirs Bruce, Ernest Shackleton, and Roald Amundsen, among scientists, explorers, and adventurers [114–117]. However, by the late 19th and early 20th centuries, few had explored the possibilities of reaching the pole by air [11,42]. In this regard, Andrée and Wellman were the pioneers. Later successful and unsuccessful attempts to reach the North Pole by air built upon the achievements of these two pioneers [11]. This included, for example, Amundsen and Ellsworth's 1925 expedition with Dornier Wal flying boats as a preparation for the airship expedition in 1926, Byrd and co-pilot Bennet's claim of being the first to reach the North Pole in their Fokker F VII plane in 1926, which was later

rejected and deemed false [112,118], and Amundsen, Ellsworth, and Nobile's successful overflight of the North Pole in 1926 [4,112,119].

Among his contemporary journalist colleagues and scientists, Wellman was accused of engaging in pseudo-science and being more concerned with creating headlines in newspapers than achieving scientific accomplishments [11]. After all, he failed in all his attempts and was portrayed by Nansen as something of a fool [4]. Interestingly, even though Andrée also failed in his goal of flying over the North Pole, Nansen depicted him as a hero [4]. Nansen describes the site and the historical remains of the two expeditions as "the cabin of the Swedish hero-tragedy and the noisy mess of the American magazine- and aerial humbug." [4] (p. 193) (author's translation). According to Diesen and Fulton [120], the airship attempt in 1906 garnered significant media attention internationally. The polar expedition had already become a media sensation long before Wellman embarked on his journey to the northern regions. Diesen and Fulton also argue that Wellman's inadequate preparations affected all of his several attempts to reach the North Pole through various means: on foot (1894), by dogsled (1898–1899), and using airships and motorized sledges based in Virgohamna (1906–1909) [120].

The interest surrounding the expedition in its time was significant, and tourist cruises were organized to witness the departure [4,42,109,120,121]. Wellman had made sure to have photographers present to document his every step [120]. Andrée's story was greatly influenced by the fact that the expedition disappeared. Swedish author, illustrator, and medical doctor Bea Uusma, who has devoted her life to unraveling the fate of the Swedish expedition members, succinctly captures the mystery surrounding the departure of the Eagle from Virgohamna. She describes how the Eagle vanished in the mist over Norsköyene (the Norwegian islands) northeast of Virgohamna and disappeared [122]. A carrier pigeon with a message and a buoy were the only signs of life. Despite extensive search expeditions, no trace of the Eagle with its three men was found [120,122]. It was not until 33 years later that their tent and human remains were discovered on Kvitøya [42]. This mysterious "disappearance" and the wonderment about what had happened may have added to the mystique surrounding the expedition. And when unexposed film that could be developed and diaries that could be deciphered were found after 33 years, the interest was revived.

Through his archaeological research, Capelotti has shown that there is more than just the homeland of Andrée and Wellman that makes the cultural environment in Virgohamna an international cultural setting [46]. Capelotti has demonstrated that both Andrée and Wellman utilized French technology for generating hydrogen, and even Andrée's hot air balloon was of French origin. Based on these findings and subsequent expeditions that also utilized international technology, Capelotti suggests that despite the national historical portrayal of these expeditions, they were technologically very international [46]. Capelotti has contributed to elevating Wellman's "reputation"—emphasizing that both Andrée and Wellman have contributed to "testing the frontiers of technology, geography, and personal and national ambitions" [11] (p. 85), also stating that these flights, especially Andrée's, "remain fixed in the collective human consciousness" [11] (p. 85). The discovery of the diaries and the developed films significantly contributed to the fascination surrounding Andrée's expedition [42,122,123]. The insight into intimate details and firsthand descriptions of what actually happened, right up until the men landed on Kvitøya, added to the intrigue.

According to Bea Uusma, the Andrée expedition is Sweden's most extensively covered polar expedition, with over 50 books published about it [122]. The narratives are perceived and shaped based on individuals' own experiences, knowledge, and observations. This seemed evident in the observations of Swedish tourists visiting Virgohamna. In more recent times, doubts have been raised about Andrée's heroic motives [42]. Nevertheless, Andrée remains important to the Swedish people. Observations in Virgohamna showed that Swedish tourists almost always went straight to the Andrée monument where the balloon house once stood. After spending some time by the remains of the balloon house and listening to the guide, they walked back to the beach and proceeded to Wellman's base.

Another narrative can shed light on how difficult it is to understand, even for an official person, that what may seem like garbage can be worthy of preservation. In 1995, the current Minister of Environment, who in Norway is responsible for nature and cultural heritage conservation, visited Virgohamna. When he saw the historical remains of Wellman's expedition in the form of rusty barrels, scrap iron, broken ceramic pipes, and scattered wood, he exclaimed that it needed to be cleaned up, and he would ensure funding for it [124]. However, at that time, the entire area was automatically protected under the new regulation of 1992, stating that historical remains predating 1 January 1946 are automatically protected [73]. No cleanup took place.

3.4.2. Cultural Heritage Value

Beyond their historical significance, the historical remains in Virgohamna possess cultural, scientific, educational, and experiential value, reflecting the tenacity of human endeavors, the spirit of scientific curiosity, and the desire to conquer and comprehend the natural world. This assessment examines the multifaceted heritage value of the Virgohamna historical remains, highlighting their contributions to research, education, public awareness, and the preservation of Svalbard's cultural and historical heritage.

Historical Value: The historical remains in Virgohamna hold significant historical value as they represent a large time span in Svalbard's cultural history. The heritage site is associated with Wellman's and Andrée's spectacular polar expeditions, representing pioneering efforts in exploring the Arctic and pushing the boundaries of human achievement. Despite the expeditions' ultimate lack of success, they encapsulate crucial historical trends and events, such as the race for the North Pole and the emergence of aviation in Arctic regions. Andrée and Wellman's experiences were significant for Amundsen when he planned his expeditions together with Ellsworth using the Dornier Wal seaplanes N 24 and N 25 in 1925 and with Ellsworth and Nobile using the airship Norge in 1926 [112]. Linked to the remarkable polar expeditions of Wellman and Andrée, these remains showcase pioneering efforts in Arctic exploration and the pursuit of extraordinary human accomplishments.

Cultural Value: The cultural significance of the historical remains lies in their representation of human endeavors, challenges, and achievements in the harsh Arctic environment. They reflect the spirit of exploration, scientific curiosity, and the human desire to conquer and understand the natural world. Adding to the cultural value is the possibility for visitors including tourists and researchers to experience the site.

Scientific Value: The historical remains in Virgohamna provide valuable insights into the technological advancements, survival strategies, and cultural practices of past polar expeditions. They offer opportunities for scientific research, including studies on material deterioration, climate change impact, and historical documentation. The landscape on the north-western part of Spitsbergen surrounding Virgohamna including the glaciers, the fiords, and the valleys provides information on past climate and might offer valuable data for understanding current and future climate. Ecosystems are particularly vulnerable in Arctic regions, and climate change is considered the most important influencing factor. The environment surrounding Virgohamna offers extreme living conditions for flora and fauna, adding to the scientific value. Key species such as polar bears and most mountain bird species are found in the area, and the sparse vegetation belongs to the northern Arctic tundra zone.

Educational Value: The historical remains serve as educational resources, offering opportunities for learning about Arctic exploration, the history of scientific advancements, and the challenges faced by early explorers. They contribute to the public awareness and understanding of the region's cultural and historical heritage.

Experiential value: The narrative of the Andrée expedition holds a strong presence in the experience of the cultural environment in Virgohamna. The powerful story of the three men who disappeared in the fog and were later rediscovered after 33 years is fascinating. The fact that the expedition took place in such a remote and harsh landscape further enhances the experiential value and sense of awe. The heritage value of the

historic remains in Virgohamna is enhanced by the breathtaking landscape, which further contributes to the overall experience. The location within the Arctic environment adds an additional layer of significance to the site. The remains are situated amidst stunning natural landscapes, including coastal areas, mountains, and glaciers, enhancing their aesthetic and ecological significance. Although the expeditions were unsuccessful, they reflect important historical trends and events: the race for the North Pole and the relatively new field of aviation, both in general and specifically in Arctic regions. Andrée and Wellman's experiences were significant for Amundsen when he planned his expeditions together with Ellsworth using the Dornier Wal seaplanes N 24 and N 25 in 1925 and with Ellsworth and Nobile using the airship Norge in 1926.

The historical remains in Virgohamna hold significant cultural heritage value. They represent a rich historical timeline in Svalbard's cultural history, associated with the pioneering polar expeditions of Wellman and Andrée. The heritage value assessment of the historical remains highlights their multidimensional significance. With their historical, cultural, scientific, educational, and experiential value, they contribute to preserving and promoting Svalbard's cultural and historical heritage. The remains not only reflect important historical events and trends but also offer opportunities for scientific research and educational exploration. The combination of their captivating narrative, the harsh Arctic environment, and the breathtaking natural landscapes further enhances their overall value. As a result, preserving and understanding the historical remains in Virgohamna is crucial for maintaining the cultural heritage of the region and facilitating a deeper appreciation for Arctic exploration and human achievements in extreme environments.

3.5. Impacts of Tourism

Tourism in Svalbard is highly regulated [87,88,125–127]. While the overarching guidelines for the preservation of natural and cultural heritage values in Svalbard are strict, tourism is also a desired activity [80]. Therefore, arrangements are made for cruise ships with tourists to visit large parts of the archipelago and disembark at numerous visitation sites. The medium-sized coastal cruise ships and small, private boats explore a greater number of locations, while larger cruise ships primarily focus on one or two sites outside of the settlements [128]. Cruise traffic in Svalbard is typically divided into three main groups, as shown in Table 1. Only cruise ships and vessels belonging to categories 2 and 3 visit Virgohamna.

Table 1. Type of cruise ships visiting Svalbard [104] (p. 5) (translated by the author).

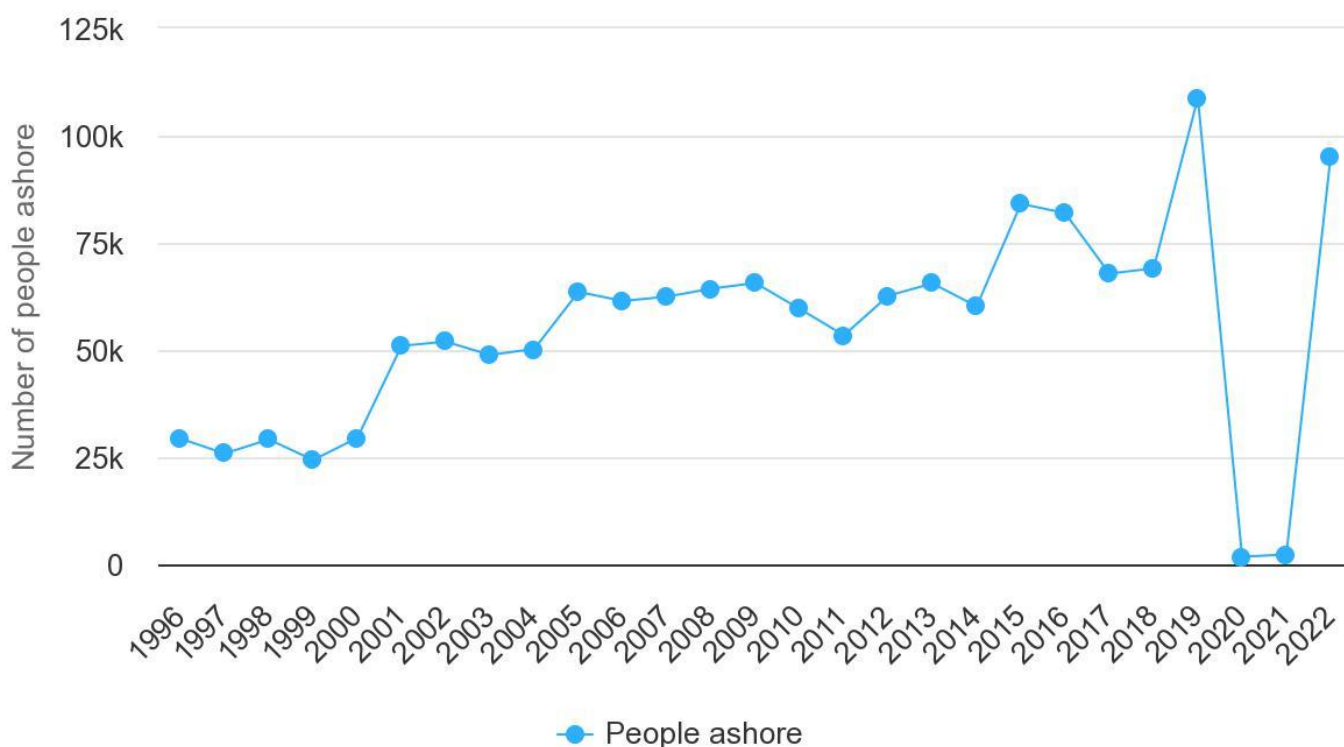
Category 1: Conventional Cruise Ships	Category 2: Expedition Cruise Ships	Category 3: Small Vessels
Also referred to as overseas cruise ships: large vessels often accommodating thousands of people on board. Cruises usually start in Europe, sail along the Norwegian coast with stops at several ports and include a couple of days in Svalbard before returning south. Visiting Longyearbyen, Ny-Ålesund and some also sail to Gravnset in Magdalenefjorden.	Also known as coastal cruise ships: come in various sizes, typically accommodating 12–500 passengers. Those vessels commonly exchange passengers in Longyearbyen (fly to/from Svalbard). Cruises last 4–20 days, with an average of 7–10 days. In normal operating years, many sail around Spitsbergen, some navigate the entire archipelago. Almost all operators are members of AECO ¹	Boats less than 24 m in length carrying 12 or fewer passengers. These are often sailboats, some are operated purely for commercial purposes, others are privately owned vessels with commercial operations, and some are chartered with a skipper/crew. During the summer, there can be a relatively large number of such vessels in Svalbard (around 40 in 2019).

¹ Association of Arctic Expedition Cruise Operators.

According to the Governor, cruise tourism in Svalbard has significantly increased in the last 10–15 years [128]. The Governor and the tourism industry in Svalbard consider the 2019 season as an “all-time high” (Governor's Annual Report 2019, 2020, 2021, and 2022) and realize increasing tourism may have negative effects on the environment and cultural heritage [128].

The Governor’s office monitors the tourism industry, which must annually report the locations they wish to visit and the number of tourists they intend to disembark. The number of people disembarking each year remained stable from 1996 to 2000. 2001 saw an increase of approximately 72%. After a period of steady growth, 2010 and 2011 witnessed a significant reduction. The largest increase occurred in 2015, with an approximately 40% rise compared to the previous year. Expedition cruise ships have shown a steady increase over the years and contributed the most to the 2015 increase. In the subsequent years, they also had the highest number of disembarkations and utilized the most sites outside the settlements. During the period of 2015–2019, the number of foreign ships decreased, but they became larger with more passengers on board. The low figures in 2020 and 2021 were due to the COVID-19 situation (see Figure 14). Figures from 2022 indicate that the number of people disembarking is approximately 90% of the level from the previous normal year (2019). According to the Governor [128], cruise traffic is continuously spreading to new areas in Svalbard. The Governor also indicates that if there are many vessels in one area, tour operators often seek new areas to disembark guests and go on excursions. The number of landing sites has steadily increased along with the number of people disembarking. In 2020 and 2021, there were hardly any tourists disembarking at the visitation sites due to the COVID-19 situation.

Number of people going ashore outside the settlements and Isfjorden



Data: The Governor of Svalbard

Figure 14. Number of visitors going ashore on sites in Svalbard outside the settlements and the Isfjord area [128].

The guides on the expedition cruise ships are hired by the cruise ship operators and are mostly based in Longyearbyen. Most guides only stay for a few seasons, and the turnover is high. Currently, there are no legal regulations or formal requirements demanding certification or training of guides. A course plan for guides exists; however, it is voluntary. Accordingly, the knowledge on the sites is varying. The sites outside the

settlements are managed by the Governor of Svalbard. However, due to vast distances and a lack of infrastructure, the sites are seldom visited by the Governor. Some listed buildings are conserved and maintained, although most historic structures are left to deteriorate at their own pace.

In Virgohamna, the necessity of applying for permission for landing regulates the traffic. However, the Governor's office states that everyone who applies is granted permission but must adhere to the guidelines for travel. The Governor's office keeps statistics on the number of permits issued, and in 2022, 73 ships applied for and were granted permission for landing [129], as shown in Table 2. Each cruise ship is normally visiting Virgohamna several times during one season. There are no statistics available on the number of visitors.

Table 2. Number of permissions to land in Virgohamna issued by the Governor's office [129].

Statistics	Number of Permits 2021	Number of Permits 2022
Permits for sensitive natural and cultural environments in Virgohamna	32 permits	69 permits for 73 vessels

Tourism in Virgohamna has both negative and positive consequences. Cultural environments do not possess inherent value like living organisms. Cultural heritage and cultural environments derive their most significant value from being experienced by people. In Svalbard, cultural environments constitute important elements of the archipelago's history, representing visible traces of international activities. Therefore, cultural environments are also important in the tourism industry, even though studies initially show that tourists come to Svalbard to experience pristine nature [64]. Nevertheless, many tourists report that cultural environments have made a significant impression [64].

Norway has an international obligation to preserve the cultural environments in Svalbard [80] and has declared that tourism should be a vital industry in the archipelago. Therefore, it is natural for cultural environments to be facilitated for tourism. In Virgohamna, Norwegian authorities have supported careful behavior through the established information system. No other measures to preserve the historic remains have been approved or planned. So, how has tourism influenced the perception and interpretation of the cultural environment?

In terms of positive impacts, tourism has brought increased awareness and greater attention to the cultural environment in Virgohamna, making it more widely known and recognized among visitors. The presence of tourists has reinforced the historical significance of the cultural environment in Virgohamna, highlighting its importance as a site of exploration, scientific endeavors, and human activities in the past. Tourism has provided a platform for interpretation and storytelling, allowing guides and experts to share knowledge and narratives about the cultural heritage of Virgohamna with visitors. The influx of tourists has also led to increased awareness of the need for preservation and conservation of the cultural environment. Efforts have been undertaken to protect the site and its artifacts from potential damage caused by tourism activities. Tourists' behavior and interaction with the cultural environment play a role in shaping its interpretation. Their respect for preservation guidelines and adherence to responsible tourism practices can contribute positively to the understanding and conservation of the site. However, it is important to note that while tourism can have positive impacts on the perception and interpretation of the cultural environment, there are also potential negative effects such as overcrowding, degradation of sensitive areas, and the commodification of cultural heritage.

Most Svalbard guides do not stay for an extended period on the island [36,130]. Observations on-site indicate that most guides lack proper knowledge and control over the vulnerable cultural environments in Virgohamna. They often positioned themselves on top of the delicate whaling ovens to gain a higher vantage point when providing information about the visitation sites. Furthermore, they allowed tourists to trespass into restricted areas, disregarding the regulations. While there was no direct evidence of souvenir taking, many tourists handled and examined historical artifacts and remnants before returning them.

Consequently, this behavior contributes to the deterioration of the cultural environment, and the guides themselves bear a significant responsibility in this process.

The observations provided a comprehensive overview of how guides and tourists navigate through the cultural landscape. Particularly within the section encompassing Wellman's base, there are abundant historical remains. Paths meander both within and atop these historical remnants. The information provided by the Governor's Office indicates the designated paths to follow, but the older paths from previous visits are more prominent than the new ones to be followed. As a result, tourists and guides tend to walk on the most visible paths, mistakenly assuming they are the correct ones.

The guides appeared to focus primarily on Andrée's and Wellman's bases, placing less emphasis on presenting the complete historical picture of Virgohamna. The history of whaling was showcased to a much lesser extent. The path from the beach near the landing site up to the remains of Andrée's balloon house partially traverses several whaling graves. Although these graves are not highly visible, they remain vulnerable to inadvertent footsteps. The guides did not try to indicate to tourists where they should avoid stepping near the graves. The remains of Andrée are less prominent, yet his story appears to resonate the strongest. The remains of Wellman's expedition base are numerous and detailed, and even though tourists also explored among them, many tourist groups seemed more captivated by Andrée's base and history.

4. Discussion

Analyzing the heritagization process of Virgohamna indicates that the cultural heritage landscape has been shaped by multiple complex processes. The formal process of selecting, identifying, and designating the historic elements and what unfolded there, forming the historic landscape in Virgohamna, was initiated by the authorities. However, the cultural environment itself was not defined as worthy of protection through a separate process but became part of a larger process where all traces of human activity on the archipelago before 1900 were automatically protected under a specific regulation for cultural heritage on Svalbard. Later, this boundary was extended to include all cultural environments before 1946. This preservation approach has likely saved many cultural environments from being cleared, including Virgohamna, and has influenced the development of the cultural landscape there. It is, however, important to note that the preservation measures were implemented almost 90 years after Andrée and his men left Virgohamna in the balloon *Ørnen* and 65 years after Wellman packed up and departed. Much had happened during this time, leaving only ruins and remnants to be protected. On paper, Norwegian authorities expressed high ambitions for the preservation of cultural environments in Svalbard, and since the first cultural heritage plan was launched for Svalbard's cultural environments, Virgohamna has been a prioritized location for conservation and follow-up due to its high heritage value. However, restoring ruins is not an easy task, and little was done to preserve them. Under different circumstances, the ruins would have been defined as rubbish and discarded, as described by a visiting Norwegian environmental minister. Fortunately, it was clarified that he was referring to valuable cultural heritage sites. Nevertheless, this incident can be seen as a symbol of how natural values seem to override cultural heritage values in Svalbard, despite the high and declared ambitions of the authorities to preserve both. In Norway, natural values are highly regarded, and in Svalbard, the interest in and awareness of natural values are far higher than cultural heritage values. When natural decay and wear from visitors became too pronounced, restrictions on visits and an information program were implemented. According to the authorities, this has proven effective, but in practice, wear and tear continue. In this way, it can be said that the formal heritagization of the Virgohamna cultural environment has happened somewhat randomly and was unplanned, despite the authorities' high ambitions. In its own way, this has also influenced the heritagization processes in Virgohamna.

The narrative of Virgohamna and what transpired there is strong and alive. The story of Andrée and his men, their bravery, and their fate is particularly impactful. Historic

remains from Wellman's base are still numerous and visible, and the narratives surrounding his attempts to reach the North Pole are flourishing. Tourism has greatly contributed to maintaining the narrative of Virgohamna and its expeditions, both through visiting the site and retelling the stories. Although few visible traces of Andrée's base remain, it is still an obvious and significant experience to visit the place. This offers hope that the stories of what happened there can be carried on even when the physical traces have disappeared in Virgohamna. Perhaps it is precisely the tourists who have played the most significant role in preserving Virgohamna as an important cultural environment through their eagerness to visit the site and their awareness of the stories, despite the impact of tourism wearing down the place.

Further Development of the Cultural Environment in Virgohamna

The delicate cultural heritage of Svalbard faces a growing threat from the combined effects of climate change and increasing tourism. The impact of human activities, along with natural decay processes, creates a complex web of degradation, highlighting notable gaps in our understanding. To tackle these challenges, the Cultural Heritage Administration is advocating for an evidence-based management approach that aligns with the United Nations Sustainable Development Goals, placing a strong emphasis on the preservation of both global cultural and natural heritage. The analysis performed in this article can inform the development of effective management strategies for Virgohamna. It can provide insights into sustainable tourism practices, conservation measures, interpretation methods, and visitor management, ensuring the site's preservation while promoting educational and recreational opportunities. Involving the visitors more consciously and firmly in the preservation of the historic environment, for example, through monitoring activities and citizen science, can make visitors aware of heritage values and preserve the site. Tourism revenue, which has previously been introduced in Svalbard, might also contribute to the preservation of Virgohamna.

Sustainable tourism practices and responsible visitor behavior are crucial for balancing the benefits and impacts of tourism on the cultural environment. Visit Svalbard states in the Master Plan for Svalbard following the "White Paper for Destination Development" that while the visits of large and medium-sized cruise ships are decreasing due to regulations, there is growth potential in smaller expedition cruises [131]. These are the types of cruises that visit Virgohamna, and therefore, increased visits to the site can be expected. In addition, the Governor has announced that they will remove the visitation restrictions in Virgohamna. This will likely lead to the loss of the restrictive effect on visitation activities. Therefore, it is likely that the deterioration will accelerate. Alongside the expected natural deterioration, it will probably not take many years before this increased burden becomes evident on the historical remnants in Virgohamna.

Despite apparent high goals set by the authorities for the management of cultural environments in Svalbard, there are indications that these goals are not effectively implemented in practice regarding cultural environments. Environmental monitoring organized by the Governor heavily favors wildlife and nature, with hardly any programs dedicated to monitoring cultural environments. MOSJ (Environmental Monitoring of Svalbard and Jan Mayen) is an environmental monitoring system that is part of the national environmental monitoring in Norway [132]. One of its important functions is to provide a basis for assessing whether the political goals set for the environment in the northern regions are being achieved. This system has been in place since 1996, and monitoring reporting is conducted through numerous programs focused on wildlife and the natural side [132], but nothing has been initiated yet regarding cultural environments [132]. The Destination Svalbard Towards 2025 discussion, for example, only addresses nature and nature experiences, with no mention of cultural environments [131].

The narratives surrounding the expeditions originating from Virgohamna are powerful, strong, and alive. The story of Andrée and his men, their bravery, and their fate is particularly impactful. Tourism has greatly contributed to maintaining the narrative of

Virgohamna and its expeditions, both through visiting the site and retelling the stories. The physical remnants contribute to telling the story and strengthening the narrative. Although few visible traces of Andrée's base remain, it is still an obvious and significant experience to visit the place. This offers hope that the stories of what happened there can be carried on even when the physical traces have disappeared in Virgohamna. Perhaps it is precisely the tourists who have played the most significant role in preserving Virgohamna as an important cultural environment through their eagerness to visit the site and their awareness of the stories, despite the impact of tourism wearing down the place. It is, nevertheless, an open question how the narrative will be affected when the physical remnants disappear. Archaeological investigations and documentation work have also been conducted in Virgohamna. However, the physical traces of the expeditions are the most tangible historical evidence—and much remains hidden in the remnants of the expeditions in Virgohamna.

The authorities characterize Virgohamna as one of Svalbard's most valuable heritage sites. However, even the most valuable environments will eventually disappear.

Future research directions in Virgohamna may include exploring alternative methods of preservation or documentation to ensure the continuation of the narrative and historical significance even after the physical site has deteriorated. Additionally, examining the impact of tourism and visitor management on the preservation of the cultural landscape could provide insights into sustainable strategies for protecting similar heritage sites.

Overall, the findings highlight the complex processes that have influenced the cultural heritage landscape in Virgohamna, the challenges of preserving ruins, the enduring narrative associated with the site, and the need for continued efforts to ensure the preservation and dissemination of its historical significance.

5. Concluding Remarks

This analysis of the evolution of the heritage site, including the heritagization process of Virgohamna, can contribute to a deeper understanding of its historical significance, identifying heritage values, engaging stakeholders, developing management strategies, and informing policy recommendations. This comprehensive examination serves as a foundation for responsible and sustainable heritage management, ensuring the preservation and promotion of Virgohamna's cultural heritage for present and future generations.

All four key areas introduced in the Introduction have influenced the development in Virgohamna. It is primarily the expedition bases of Andrée and Wellman that best illustrate this development. The development has gone through several main stages, from initially being built as main bases for expeditions to the North Pole, then functioning as storage facilities for trappers, to being seen as almost a dump, and finally emerging as a valuable protected cultural environment where no parts can be touched or moved.

1. Policy documents and legal framework. The overarching political framework.

The overarching political framework has shaped this development, but the political guidelines were not put in place until Norway assumed sovereignty over Svalbard in 1925. Even then, the guidelines for cultural heritage management were inadequate. Trappers searching for materials for their cabins and tourists on souvenir hunts helped themselves for many years before legislation and overarching political guidelines put a stop to it. Originating from before 1900, the cultural heritage sites in Virgohamna, with the exception of Wellman's base, were automatically protected in 1974 when the first cultural heritage regulations were implemented. Wellman's base was included in the protection when the boundary was moved to 1 January 1946, with new regulations in 1992. That was also when the first cultural heritage plan for Svalbard was introduced, and Virgohamna was among the 35 initial cultural environments prioritized for follow-up.

2. Physical transformations of the region.

The deterioration is amplified by the natural processes taking place in Virgohamna, where strong winds, erosion, solifluction, decay, and rust are among the most evident.

Combined with the gradual dismantling of cultural heritage by trappers and tourists, degradation occurs.

3. Narratives and cultural heritage value.

The focus of cultural heritage management on the understanding that what may appear as garbage can also be valuable for preservation has likely saved the historical remains in Virgohamna. Over time, this understanding has become more widespread. However, if it were not for the strong stories and the fate of the participants in the expeditions, the interest would probably not be as strong. Perhaps there would have been less wear and tear from tourism, while the nation of Norway's strong commitment to environmental protection and pristine nature could have led to the "garbage" being cleaned up in Virgohamna. In addition to this, Capelotti's archaeological surveys and documentation work have revealed a wealth of information hidden in the "garbage".

4. Impact of tourism.

The strict overarching goals set by the Parliament and Government from the 1980s onward contributed to focusing on the preservation of cultural environments, even though the emphasis was on the natural environment. The strict goals of managing Svalbard's natural and cultural values as the best-managed in the world likely played a part in putting an end to souvenir picking and scavenging for building parts. However, wear and tear from tourism have increased significantly in recent years, and the goal of "best-managed cultural and natural environments" is difficult to reconcile with the clearly stated goal of increasing tourism as part of economic activity in Svalbard. The Governor's plan for visitor behavior in Virgohamna has many weaknesses and contributes partly to confusion and increased deterioration.

Today, Virgohamna is a heavily visited and highly sought-after cultural environment. If it is to continue being a source of experiences and wonder, providing information about technological development and insights into European history, some action should be taken. The impact of climate change is accelerating, and increasing tourism is exerting pressure. Furthermore, there is still more information hidden in the historical remains.

Three keywords can contribute to the future preservation of cultural heritage values: comprehensive documentation, improved visitor management, and knowledge dissemination/training of guides and tourists. Digital documentation of the entire vast cultural landscape can contribute to an increased understanding of cultural heritage values and ensure that at least a digital model exists when the cultural environment eventually breaks down completely. Better prepared and clearer information provision can make it easier for visitors to contribute to the preservation of the most vulnerable parts of the cultural environment. Training guides and visitors, emphasizing how to behave and move in the field, and not just focusing on the history itself, can spare the cultural heritage from excessive impact by visitors.

This way, the fascinating cultural environment with all its incredibly exciting stories and myths can live on for a long time, despite the physical decay that nothing can resist.

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