

Author accepted manuscript. This is a self-archived – parallel-published version of an original article. This version may differ from the original in pagination and typographic details. When using please cite the original:

Mantere, V.N. 2026. From Sea to Stone—Depictions of Halibut (*Hippoglossus hippoglossus*) in Norwegian Prehistoric Rock Art. *Arctic Anthropology* 60(2): 129–149. doi:10.3368/aa.60.2.129

From Sea to Stone—Depictions of Halibut (*Hippoglossus hippoglossus*) in Norwegian Prehistoric Rock Art

Ville Niilo Mantere

Abstract. *Halibut has historically held notable cultural and symbolic significance for northern coastal communities. Its prominence is also evident in Norwegian prehistoric rock art, indicating a longstanding special relationship between humans and halibut. This study provides an in-depth examination of halibut representations in Norwegian hunter-fisher-gatherer rock art, found at 15 sites along the coastline, with most depictions dating from 6800 to 3000 BP. By comparing these depictions with ethnographic data from Norway and North America, this analysis offers valuable insights into early halibut fishing. The study suggests that prehistoric halibut fishing was a prestigious, male-dominated activity intertwined with rituals, taboos, and beliefs concerning luck, fertility, and respect for the halibut. Furthermore, the connection between halibut and cervids in rock art points to a refined observation and profound understanding of species-specific seasonal patterns and their interrelatedness, providing important perspectives for interpreting rock art and prehistoric human-animal and human-environmental relationships in the north.*

Animals occupy a central role in the prehistoric hunter-fisher-gatherer rock art of northern Europe, reflecting their importance in subsistence, cosmology, and identity formation within these societies (e.g., Fuglestad 2018; Gjerde 2010; Helskog 2004; Mantere 2023). While previous research has primarily focused on large mammals such as Eurasian elk (*Alces alces*) and reindeer (*Rangifer tarandus*) that dominate the rock art imagery, northern rock art also features numerous other animal species. Although less commonly portrayed and studied, these depictions provide significant insight into the lifeways, economic practices, and symbolic expressions of hunter-fisher-gatherer societies. Within this context, the rock art of Norway stands out for its depictions of marine species in coastal areas, where subsistence relied heavily on the sea (e.g., Gjerde 2016; Kolpakov 2015; Stølting 1991; Zhulnikov et al. 2024). These images not only bear witness to the special significance of certain marine animals but also demonstrate the intricate relationship between humans and their environment.

The most common type of fish depicted in the hunter-fisher-gatherer rock art of Norway is flatfish (*Pleuronectidae*). It is also the only kind of fish represented in rock art fishing scenes, which further attests the special significance of flatfish to prehistoric coastal groups in this region. Although undisputable species identification is often impossible based on the morphology of flatfish representations in Norwegian rock art, the prevailing view amongst scholars is that these depict Atlantic halibut (*Hippoglossus hippoglossus*) (see e.g., Stølting 1991; Zhulnikov et al. 2024). This is also

the standpoint taken in this study. Yet, why does halibut, among all fish species, occupy such a distinctive role in Norwegian rock art, and what do depictions of halibut tell us about past human relationships with this exceptional flatfish species?

Depictions of flatfish are found already in Paleolithic art (Citerne and Chanet 2005), indicating a considerably long-lived human relationship with these animals. Traces of this special relationship are also reflected in various beliefs and taboos related to halibut and its fishing practices, documented in historical times. In Norwegian folklore, the halibut holds an unparalleled status that sets it apart from other fish species (Bratrein 1975). Likewise, together with salmon, the halibut occupies a central position in the rich ethnography of the Pacific Northwest Coast Indigenous peoples (e.g., Jonaitis 1981; Stewart 1982).ⁱ However, despite their prominence and the clear indications of halibut's long-term and widespread significance to humans, a thorough study focusing on the halibut depictions in Norwegian rock art has hitherto been lacking.

The objective of this article is to, for the first time, compile and analyze depictions of halibut in Norwegian rock art within a comprehensive, interdisciplinary framework. The study investigates how, when, where, and why halibut were represented in rock art. Drawing on halibut biology and ethnographic data from northern regions, the study also explores what fishing scenes reveal about real-life halibut fishing in the Stone Age, and addresses the intriguing connection between halibut and cervids in rock art. Through this multifaceted approach, the study contributes to a broader understanding of human-animal relationships in prehistoric northern Europe. The article begins with an overview of the biology of halibut, followed by a discussion of its role in zooarchaeological and ethnographic records.

Halibut Biology

The Atlantic halibut is the world's largest flatfish species and one of the largest fish species in Norway. Female halibut exceeding 300 kg (660 lbs) in weight and 3m in length have been caught in recent years, and early 20th-century accounts exist that describe even larger individuals with a weight of around 400 kg (880 lbs) and a length of 4m (Andersson 2009:279; Snekvik 2011). Male halibut, by contrast, are considerably smaller (maximum weight around 50 kg or 110 lbs) and more short-lived (maximum age around 30 years) compared to females (greater than 60 years). Apart from the sexual size dimorphism, there are no apparent visual differences between the sexes (Haug 1990:5). The halibut has a diamond-shaped body with a sharp-edged, concave caudal fin. The eyes are located contiguously on the right side near the halibut's large mouth. The dorsal fin begins at the level of the eyes, while the anal fin starts at the level of the pectoral fins. Both fins extend to the relatively thin caudal peduncle. The left (blind) side of the halibut is pale (Fig. 1), while the blotchy coloring of the right side is usually dark brown but may range from yellow-brownish to blue-grayish and to almost black (Lehtonen and Varjo 2017:472).



Halibut are widespread in northern maritime waters and occur along the entire Norwegian coastline. The species thrives mostly near the sea bottom at depths that range from 20m to 2,000m. In summer and early autumn, halibut can be found close to the shore in considerably shallow waters, where they are sometimes even visible to the naked eye on sandy bottoms (Eliassen 1983:6). In early winter, halibut begin migrating to their spawning grounds in fjords and the open sea, typically at depths of 300 to 700 m, and sometimes even deeper. The spawning usually occurs

Figure 1. Mayor of New York, Fiorello La Guardia, with a 300-pound (136 kg) halibut at the Fulton Fish Market in 1939. Photo by C. M. Stieglitz. Library of Congress, Prints and Photographs Division, NYWT&S Collection, [LC-DIG-ppmsca-12771].

between January and March, after which halibut move to northern waters to feed (Eliassen 1983:6; Lehtonen and Varjo 2017:472; Myklebust 1991:180). The halibut diet consists primarily of other bottom fish, but young individuals also eat squid, lobsters, mussels, and other invertebrates. However, occasionally halibut also actively prey in surface waters and are even reported to prey on seabirds (Lehtonen and Varjo 2017:472).

The Halibut as Quarry

Halibut has long been a coveted and versatile yet unpredictable catch. A single halibut provides great quantities of meat, enough to nourish a large group of people. Halibut is also well-suited for preservation and was, for instance, dried and smoked by many Native American tribes (e.g., Arima 1983:56; Boas 1966:10; Drucker 1951:74; Niblack 1890:138; Stewart 1982:145). Dried halibut meat (*rekling*) and fat (*rav*) were also important trade items in Norway in the past. The halibut's gallbladder was dried in historical times and used for curing diseases, and the dried, semitransparent stomach could replace glass in windows and lanterns (Bratrein 1975:14; Hauan 1996:10).

Unfortunately, we are left with little to study the prehistoric usages of halibut in a meaningful way. The zooarchaeological material from Norwegian coastal sites is, in many ways, sporadic and partial as regards fish remains. Nonetheless, data from different regions and periods indicate that while fishing constituted a key livelihood during the Stone Age, other fish species, particularly cod (*Gadus morhua*), were far more important in the diet than halibut (e.g., Bergsvik and Ritchie 2020; Helsing 1983; Hodgetts 1999; Mjærum and Mansrud 2020; Ritchie et al. 2016). Remains of other flatfish species seem also to be more commonly represented in the archaeological refuse fauna than bones of halibut, which occur only occasionally (e.g., Hodgetts 1999:56–83; Mansrud 2024:131). This stands in sharp contrast to the halibut's prominent role among depictions of fish in rock art.

However, strict customs historically applied in Norway to the bones of halibut. These were not allowed to be cut or broken but should instead be burnt or buried (Bratrein 1975:17; Brox 1970:94–95; Westerdahl 2015:151). Similar taboos related to the treatment of the remains of the most important prey species are noticeably widespread among hunter-fisher-gatherers universally, and probably of great antiquity (Paulson 1968). This naturally raises questions about the reliability of the available zooarchaeological data. Remains of halibut were not necessarily treated in the same manner as those of other fish species, potentially causing their role in prehistoric diets to appear misleadingly small (cf. Mansrud 2024:131).

The Halibut in Norwegian Tradition

The halibut is the most prominent fish species in Norwegian folklore. The term *halibut* is etymologically derived from words meaning “holy” and “flatfish” (or “flounder”) in English and Scandinavian languages (e.g., Westerdahl 2015:151). While such designations are usually associated with the medieval Catholic Lent, Christer Westerdahl (2010:281, 2015:151) argues that these may, in fact, have prehistoric roots. The halibut's large size, its immense strengths, and delicate meat are probably the key reasons why this species was ascribed from early on with numerous mythical connotations, beliefs, and taboos.

A central theme in human-animal relations among northern hunter-fisher-gatherers is that of luck (e.g., Brandišauskas 2017; Nelson 1983). This is also an essential concept in traditional Norwegian beliefs related to halibut. As Håvard Dahl Bratrein (1975:16–17) notes, only a few selected fishermen were considered to possess “halibut luck,” which was considered as being independent of skill, equipment, or the occurrence of fish. Meanwhile, halibut fishing luck could be transferred to others, acquired by following various precautions, and lost if one was careless. For instance, the first halibut caught during a new fishing season should be returned to the sea, and drinking its blood was believed to give the fisherman luck (Bratrein 1975:16–17; Brox 1970:94–96).

Precautions that pertained to halibut were critical before, during, and after the fishing act. Careful attention was paid to any signs encountered prior to halibut fishing, especially to those faced in dreams. When at sea, it was strictly forbidden to mention the halibut or the fishing equipment by their real names. Meanwhile, a belief existed that a hooked halibut could be coaxed into the boat by using flattering words (Bratrein 1975:16–17). Westerdahl (2015:151) recounts that fishermen were ought to dress themselves in their best clothing for appropriately calling for “the virgin” [*jomfrua*], which was a euphemism given to the halibut. Various other, often feminine, so-called *noa* names were also used of this species to circumvent the taboo of addressing its real name. Names such as “queen,” “princess,” “wife,” and “grandma” were associated with the halibut but not with more common fish species such as cod (Bratrein 1975:14–16). It is noteworthy that similar feminine euphemisms existed elsewhere as well. Northwest Indians, for example, referred to halibut as the “Old Woman” (Stewart 1982:46, 174).

A highly interesting aspect related to the many beliefs surrounding halibut is their evident sexual connotation, which is also a recurring theme in the beliefs and practices related to game

animals in the northern hemisphere (e.g., Tanner 1979; Willerslev 2007). Moreover, the relationship between the female sex and halibut luck seems to have been highly ambiguous and paradoxical, which similarly echoes general Indigenous conceptions relating to women and hunting (see e.g., Brightman 1993:124–132). On the one hand, women were believed to possess halibut luck, which men could obtain from them by undertaking appropriate actions. On the other hand, women were also blamed for bad fishing luck and believed to cause misfortune near halibut fishing gear (Bratrein 1975:16; Brox 1970:96–98). As Bratrein (1975:16) points out, such conceptions were undoubtedly founded on ancient beliefs associated with fertility or sympathetic magic.

Marit Anne Hauan (1996:11) notes that almond-shaped carvings, so-called *vesica piscis* symbols, are found on old fishing boats and boathouses in those parts of northern Norway where halibut fishing was important. These signs, sometimes depicted with a dividing middle line, not only symbolized fish and Christ but also purity, virginity, and the female genitalia. According to Hauan (1996:11), the north-Norwegian symbols were associated, namely, with this last meaning, and with halibut fishing, and were thus possibly related to fertility magic. In her view, the multifaceted associations that existed between halibut, women, female genitalia, and sex suggest that masculinity was earlier manifested through men's success in halibut fishing. She further proposes that prosperous fishermen were prestigious in their community and fortunate in their love life as well (Hauan 1996:13).

An old concept in northern Norway that explicitly associated halibut fishing with human (hetero)sexuality was known varyingly as *hald*, *haill*, or *vadhald*. This entailed the belief that having sexual intercourse before halibut fishing was a way of ensuring fishing luck (Brox 1970:98; Hauan 1996:10–17). Thus, a strong correlation existed between being a man and being a fisherman. In both roles, it was important to appear attractive: to females and halibut, respectively. In Hauan's (1996:15) view, the concept of *hald* was a means of steering sexual power and control to men in the society. However, this complex power relation was also laden with ambiguity. It was the women who possessed the *hald* that (fisher)men were dependent on. Thus, the *hald* tradition was not only associated with fertility but also with complementary gender roles and the life-enabling, reciprocal, and codependent relationship that existed between masculinity and femininity (Hauan 1996:15–16). These perceptions typify human-animal relationships in Indigenous communities and can essentially be seen as responses to the unpredictability of the most important animal resources (cf. Günther 2022:141–143; Mantere 2023:338). Consequently, these notions are potentially relevant for the study of halibut figures in prehistoric rock art also.

Materials and Methods

Identifying animal species in rock art is often complicated, and this particularly holds true for depictions of fish (cf. Cole et al. 2024). This is due to the varying styles, the general lack of rendered details, and the fragmentary nature of many fish figures. Additionally, depictions of fish in Norwegian rock art often bear a close resemblance to figures representing whales. While depictions of flatfish are generally recognizable from other motifs, exact species identification often remains difficult or impossible (see e.g., Sognnes 2006:553–554; Zhulnikov et al. 2024:41).

To circumvent the evident problem of identification, only sites that in earlier studies were determined to involve depictions of halibut were included in this study. All potential halibut images were then identified and extracted from preexisting tracings of these rock art sites. Particularly fragmented and/or uncertain figures were excluded. The selected images were digitally processed in Corel Photo-Paint 2024 to enable their reciprocal comparison and analysis. Depictions that were part of fishing scenes were examined both as extracted individual images and with reference to adjacent figures.

In addition to obvious fishing scenes, rock art panels in the Alta region in northernmost Norway include some depictions where the presumed fishing lines are notably short, and the fish figures lack tails. This makes the images reminiscent of paddles or spears (cf. Helskog 2014:87). However, given the presence of evident fishing depictions alongside such carvings, factors such as poor preservation or intentional incompleteness cannot be dismissed as potential explanations. Consequently, lines attached to oblong shapes were considered here as probable representations of halibut fishing, regardless of the level of morphological detail.

For clarity and ease of comparison, the halibut figures are presented below with their heads uniformly oriented to the left. While this inevitably results in some figures appearing horizontally inverted, this approach nevertheless enables a more lucrative point of view for comparison. The figures were carefully observed for their morphological traits, including body and head shape, gill covers, and other inner markings, as well as the number, position, and shape of fins.

Results

Through an extensive review of rock art literature and documentation reports, 15 Norwegian rock art sites were identified that include figures

Table 1. List of Norwegian rock art sites with proposed depictions of halibut. Proposed dates based on: Gjerde 2010, 2024; Glørstad 2010; Kjeldsen and Sørgaard 2024; Stebergløkken 2016; Tansem 2022.

No.	Rock art site/ panel(s)	Number of proposed halibut figures	Size of proposed halibut figures	Fishing scenes	Number of other figures	Meters above sea level	Estimated dating
1	Slettnes II	1(?)	20 cm	Yes(?)	30	12	6500 BP
2	Amtmannsnes (2)	2–4	20–41 cm	No	14–80	14–15	3400 BP
3	Storsteinen	1–3	14–25 cm	No	700	21–22	6000–5000 BP
4	Kåfjord (2)	7–9	10–110 cm	Yes	1000	20–25	6000–5000 BP
5	Hjemmeluft (8)	13–15	10–52 cm	Yes	30–300	10–25	6000–3000 BP
6	Forselv	3	39–47 cm	Yes	100	32	<5800 BP
7	Fykanvatn	1	192 cm	No	30	110– 130	<9500 BP
8	Vistnesdalen II	1	62 cm	No	20	32	<6300 BP
9	Reppen I	1	35 cm	No	8	24	<4100 BP
10	Hammer V	1	58 cm	No	100	35	<5000 BP
11	Kvennavika	14–17	44–69 cm	No	(4)	35	<5000 BP
12	Hommelvik II	2	151–168 cm	No	(1)	35	<4900 BP
13	Reitaneset	1(?)	66 cm	No	1	12	<3400 BP
14	Skogerveien	2	50–88 cm	No	30	59	6800–6500 BP
15	Åmøy I	2–4	62–174 cm	No	450	6	3000 BP
	Total	50–64	10–192 cm	30 %	(1)–1000	6–130	9500–3000 BP

previously interpreted by scholars as depictions of halibut.ⁱⁱ Depending on interpretation, between 50 and 64 individual halibut figures are found at these sites altogether (Table 1).ⁱⁱⁱ After excluding the most fragmented and uncertain figures, 57 depictions were included in the analysis. It should be noted here that the only possible depictions of halibut in northern European rock art outside of Norway are a couple of figures found in the rock art of Lake Kanozero, northwestern Russia (Kolpakov and Shumkin 2012:303).^{iv} Thus, when contrasted to the hunter-fisher-gatherer rock art of Fennoscandia, encompassing more than 20,000 figures dispersed over 300 sites, halibut are depicted at less than 5% of the sites and represent less than 0.5% of all figures (cf. Gjerde 2010:58; Zhulnikov et al. 2024:28).

Although relatively rare overall, halibut are by far the most frequently depicted fish in Norwegian rock art. Other fish species occur only at four prehistoric rock art sites. Painted images of salmon (*Salmo salar*) are found at Honnhammar (11 figures) (Gjessing 1936; Linge 2014) and Teksdal (1) (Møllenus 1962) in central Norway. Carvings representing undefined fish (8) are found at Lånke near Trondheim (Sognnes 1983), and sporadic images interpreted as salmon (1–4) and spiny dogfish (1) (*Squalus acanthias*) at Hjemmeluft in Alta (Helskog 2014). More than two-thirds of the fish figures in Norwegian rock art are thus likely to represent halibut. The subsequent sections will provide a detailed examination of these depictions, beginning with their distribution and age.

Location and Age of Halibut Figures

The geographical distribution of Norwegian rock art sites involving supposed halibut figures corresponds to the natural dispersal of this species. Depictions are found along the entire coastline, from Slettnes in northernmost Norway to Drammen in the southeastern part of the country (Fig. 2). All sites are found close to the present-day seashore, no more than a few hundred meters away. In prehistoric times, this shore connection would have been even more evident. The elevations of the rock art panels involving halibut figures also provide general frames for dating.

Dating suggestions based on shoreline chronology indicate that halibut figures were made mainly in the period 6800–3000 BP^v (Tab. 1). The single exception to this rule is a large halibut figure found at Fykanvatn in Nordland (Fig. 5.54),



Figure 2. Map of Norwegian rock art sites with proposed depictions of halibut. Numbers correspond to the sites listed in Table 1. Map: Ville Mantere/NatGeo MapMaker.

which is made by polishing and not by pecking as the rest of the figures. Unlike other rock art sites containing halibut figures, the Fykanvatn site is also found at a significantly higher elevation above sea level. This makes its geological dating unreliable. However, it has been argued that it may date back to as early as the 10th millennium BP/9th millennium BC, that is, the Early Mesolithic period (Gjerde 2010:188, 386; Hesjedal 1990:112). The halibut depicted at Fykanvatn is thus likely to be the oldest representation of this motif in northern rock art.

By contrast, the most recent halibut figures in Norwegian rock art are probably those found at the site of Åmøy 1 near Stavanger (Fig. 5.52–53). These could, in theory, stem from the Stone Age based on their style and dimensions (Hallström 1938:463; Høgestøl et al. 1999:24, 35). However, their low elevation and lack of water erosion make Bronze Age date more likely (Kjeldsen and Sørgaard 2024:81). Halibut figures dated to the Bronze Age are also found in Alta (Helskog 2014:190). Thus, while it was never a common motif, images of halibut were carved on rocks for a considerably long period.

In total, proposed halibut figures are found on 24 individual rock art panels, the size of which ranges from a few figures to immense panels involving around a thousand images (Tab. 1). Also, more than half of the panels include anthropomorphic figures, even though fishing is represented in less than one-third of the panels only. As a rule, other fish species do not occur on the same panels with halibut, but depictions of other animal figures, especially cervids, are common in their vicinity. In fact, there are only four panels with halibut depictions that do not involve depictions of reindeer and/or elk (Kvennavika, Hommelvik, Reitaneset, and Åmøy). This thought-provoking connection between halibut and cervids will be revisited later. Next, however, it is worthwhile to look at one rock art panel in detail.

Kvennavika

Most panels with halibut depictions only include one or two representations of this motif. The Kvennavika panel in Nord-Trøndelag is a notable exception, displaying a unique arrangement of 14–17 flatfish placed in a half circle (Fig. 3). This panel has evoked a lot of interest among scholars (e.g., Fuglestvedt 2018; Gjessing 1936; Hallström 1938; Mansrud 2024; Sognnes 2006; Stebergløkken 2021). The Kvennavika site is located west of Skarnsund, which Theodor Petersen (1932:183) and Gutorm Gjessing (1936:129) mention as being a lucrative fishing location for flatfish, traditionally famous for its fish stocks. According to Kalle Sognnes (2006:554), the depth of Skarnsund was around 60m at its shallowest in the Mesolithic–Neolithic transition. As will be seen below, fishing this deep would have been within the limits of Stone Age technology. The fish carved at Kvennavika were initially interpreted as halibut, but it is impossible to identify the exact species merely based on their morphology (Stafseth 2006:75). The Kvennavika figures are carved on a smooth, dome-shaped rock outcrop with a gentle slope (Fig. 4), covering an area of around 4 · 5m and reaching a height of 1.48m (Petersen 1932:182). Gustaf Hallström (1938:259) and Kalle Sognnes (2006:558) both devoted much attention to the placement of the fish on this panel and

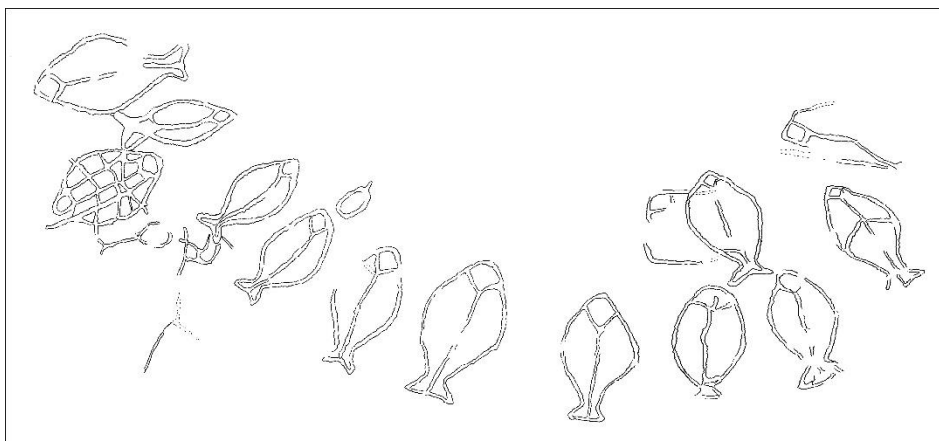


Figure 3. Depictions of flatfish on the Kvennavika rock art panel. Tracing from Stebergløkken 2018. Not to scale.

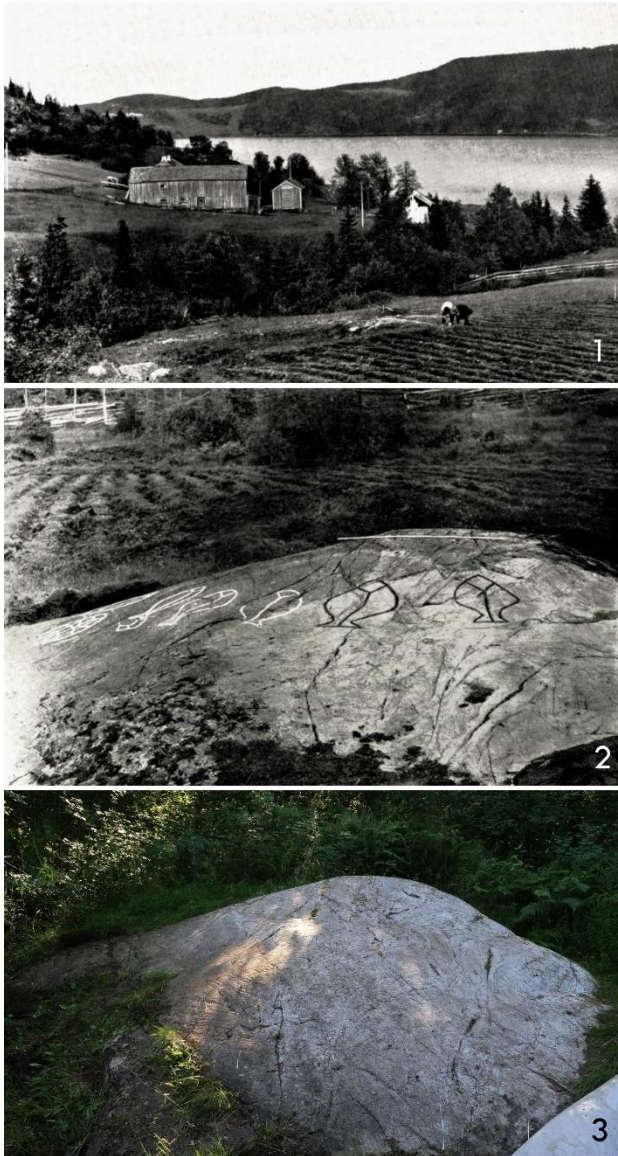


Figure 4. The Kvennavika rock art panel and its surroundings photographed in 1931 (1–2) and 2025 (3). Photos: 1–2. Johannes Petersen (from Gjessing 1936); 3. Ville Mantere. Compilation: Ville Mantere.

contemplated its role as an “altar-like” platform for the “magician” that performed rituals in front of the fish figures. However, neither Hallström nor Sognnes paid attention to the fact that the shape and proportions of this “altar” are greatly reminiscent of the rhombic and relatively thick body of a halibut. The prominent shape of the rock outcrop is particularly evident in older photographs, which show its protruding location in the landscape, right next to a ploughed field (Fig. 4.1–2). Various macro-topographical features in rock art have been identified at many places, and the interplay between the Kvennavika rock outcrop and its figures would not be unparalleled in Norwegian rock art (e.g., Gjerde 2010; Løddøen 2010). Perhaps the platform the alleged ritualist stood on was, in other words, itself considered a giant halibut.

The interpretation of the Kvennavika figures as halibut was later questioned because of their small size (around 45–70 cm) compared to adult halibut in the wild (e.g., Mansrud 2024:140; Sognnes 2006:554). As noted above, however, male and female halibut differ considerably in terms of size. In fact, the moderate size of the Kvennavika carvings largely corresponds to that of sexually mature male halibut (see Haug 1990:7). By contrast, if the rock outcrop itself represented a large halibut, it obviously referred to a female individual. Thus, instead of portraying an array of dead fish (Hallström 1938:259), representing a fisherman’s dream catch (Hagen 1976:91), or reflecting mass harvesting of plaice (*Pleuronectes platessa*) (Mansrud 2024:142),

the carvings at Kvennavika perhaps signified swimming male halibuts approaching an enormous female halibut as represented by the rock. The appearance of the fish images could support this interpretation, for as Heidrun Stebergløkken (2021:182) notes, these are not identical but differ from one another in their depiction of bodies and tailfins. Such differences are probably not coincidental but instead comparable to the divergent depictions of elk in northern rock art, and explicable as living animal *individuals* crucial for the reproduction of the species (Mantere 2023:184, 246). If a link thus existed at Kvennavika between the rock surface and the carvings—the large female halibut in the rock and the male halibut carved onto it—the fundamental meaning of the composition could relate to halibut reproduction and fertility magic.

Stone Age fishers obviously did not witness halibut spawning with their own eyes, as it took place in considerably deep waters. Meanwhile, they were familiar with the spawning behavior of other (flat)fish species spawning in shallower waters, such as plaice and flounder (*Platichthys flesus*). This involves multiple males surrounding a female individual (e.g., Myklebust 1991:187). Therefore, rock artists likely had a conception of halibut reproduction that—no matter how mythical—was at least to some degree based on natural observations of spawning fish in general. While I do not share the opinion of Anja Mansrud (2024:141–142) that the Kvennavika figures would represent plaice rather than halibut, I concur with her basic idea that the meaning of the Kvennavika panel involved connotations surrounding reproduction and respect towards fish. Irrespective of whether the carvings resulted from one or several events (Stebergløkken 2021:184), the meaning of these fish images was thus probably more or less like that proposed for depictions of elk in northern rock art: to guarantee their reproduction and to gain success in catching them (Mantere 2023).

Halibut Depictions in Norwegian Rock Art

In order to visualize the appearance of depictions of proposed halibut in Norwegian rock art as illustratively as possible, these are presented both to scale (Fig. 5) and as similar-sized images that better enable their comparison (Fig. 6). Looking at these compilations, one instantly notices the great variation in the shape, size, and style of the figures. While stylistic differences exist within individual rock art sites, the variation between

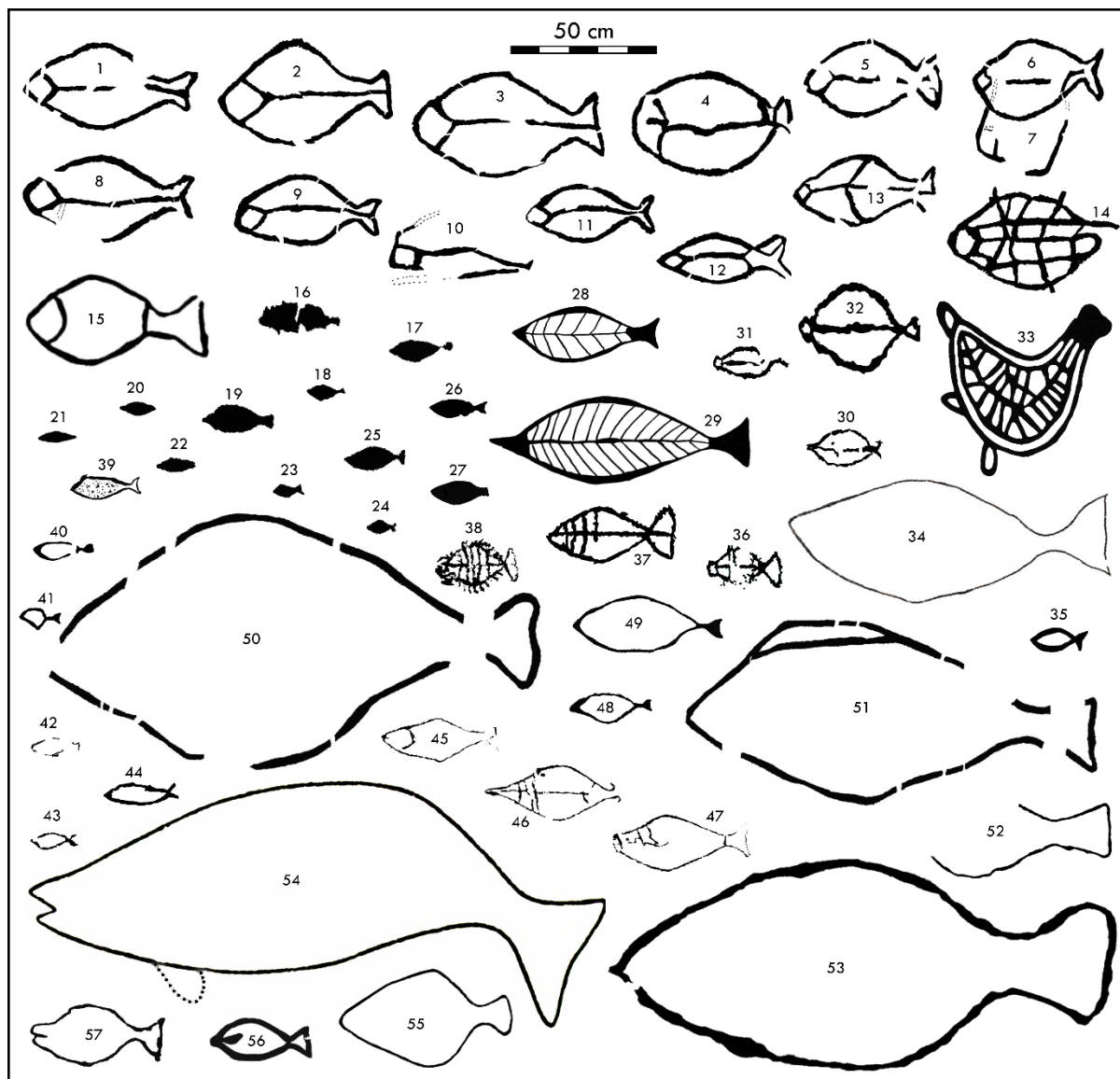


Figure 5. Proposed halibut figures in Norwegian rock art. 1.–14. Kvennavika; 15. Vistnesdalen II; 16–23. Kåfjord 1, Alta(A); 24–25. Ole Pedersen 1, A; 26. Bergbukten 8A, A; 27. Bergheim 1, A; 28–29. Skogerveien; 30. Storsteinen, A; 31–32. Amtmannsnes 1B, A; 33. Reitaneset; 34. Kåfjord 2, A; 35. Slettnes II; 36. Apana Gård 1, A; 37. Apana Gård 5, A; 38. Apana Gård 14, A; 39–41. Bergbukten 4B, A; 42–43. Storsteinen, A; 44. Amtmannsnes 2A, A; 45–47. Forselv; 48–49. Bergheim 1, A; 50–51. Hommelvik II; 52–53. Åmøy I; 54. Fykanvatn; 55. Hammer V; 56. Reppen I; 57. Ole Pedersen 11A, A. Tracings extracted from: Alta Museum Rock Art Archive/Karin Tansem and Rune Normann (16–27, 30–32, 34, 36–44, 48–49, 57); Bakka (1988) (55); Engelstad (1934) (28–29); Evers (1988) (45–47); Fett and Fett (1941) (52–53); Gjessing 1932 (54); Møllenus (1968) (33); Pettersen and Lindgaard (2015)/Kalle Sognnes (50–51); Sognnes (1981) (56); Sognnes (1989) (15); Stebergløkken (2018) (1–14); Stølting (1997) (35). Compilation: Ville Mantere.

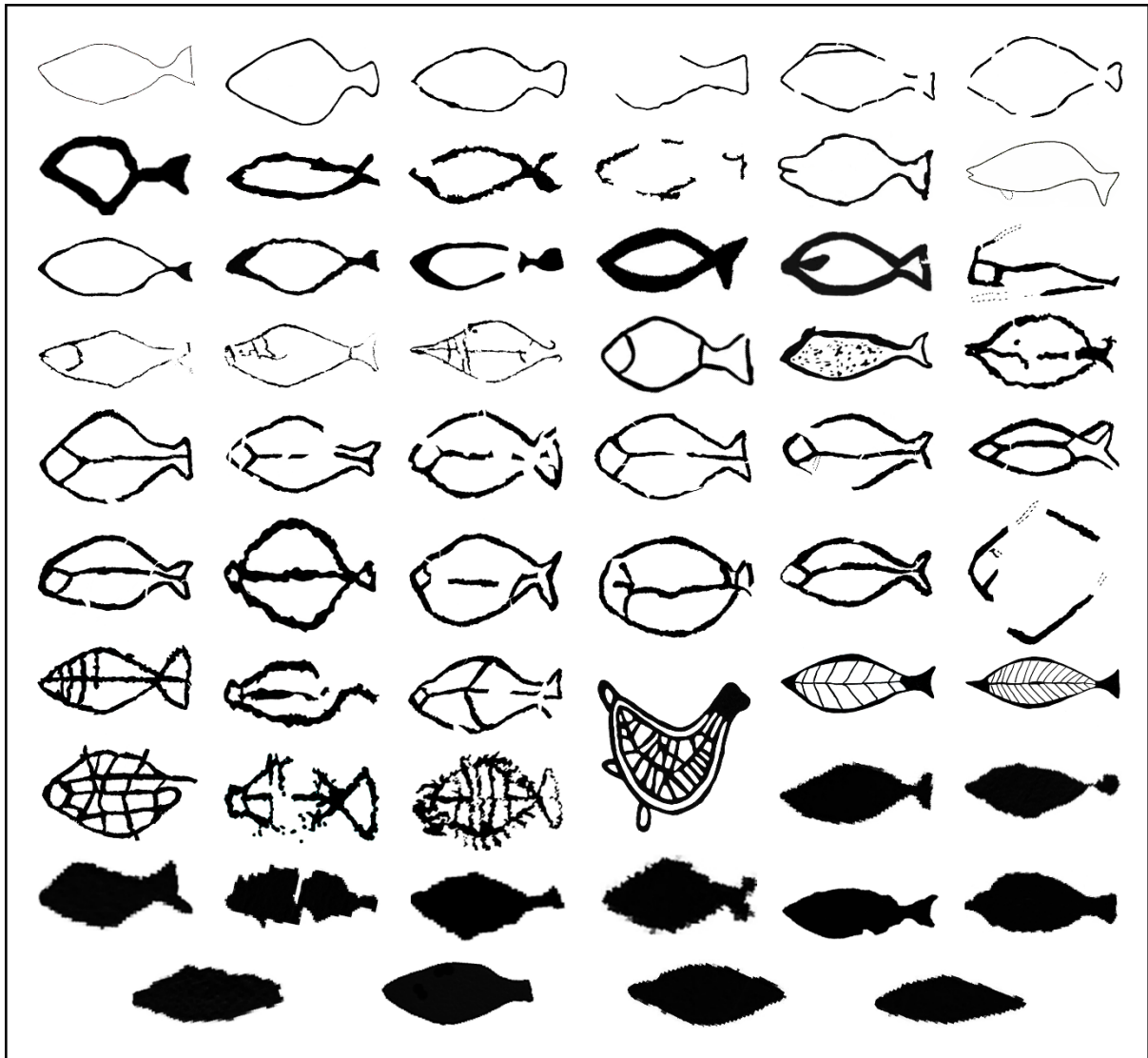


Figure 6. Proposed halibut figures in Norwegian rock art. For individual figure details, see Figure 5. Compilation: Ville Mantere. Not to scale.

different locations is especially noticeable. Halibut figures were carved as wholly scooped-out, partly scooped-out, and outlined images. Scooped-out depictions are rare, however, and only represented by small figures (less than 27 cm) dated to the 6th millennium BP/5th millennium BC in Alta. Outlined figures, by contrast, occur in all sizes, regions, and periods, from the Mesolithic to the Bronze Age, indicating that there were no stylistic developments in depicting halibut over time.

The size of halibut figures ranges from 10cm to almost 200 cm, with an average length of 50 cm. At least the four largest depictions in the material (151–192 cm) most probably not only refer to life-size halibut but to female individuals of this species specifically. Zooarchaeological data from Alaska confirms that halibut measuring more than 190cm in length were caught around 3000 BP (Knecht and Davis 2004:126–127). There is no reason to doubt that conditions for catching enormous halibut existed in prehistoric Norway as well. Meanwhile, not all halibut figures in rock art show life-sized fish. Depictions that are part of fishing scenes are significantly smaller, which must be taken as a practical convention that was applied so that the other figures in the scene would not become overly large. The fact that the fishing scenes, too, involve large-sized (female)

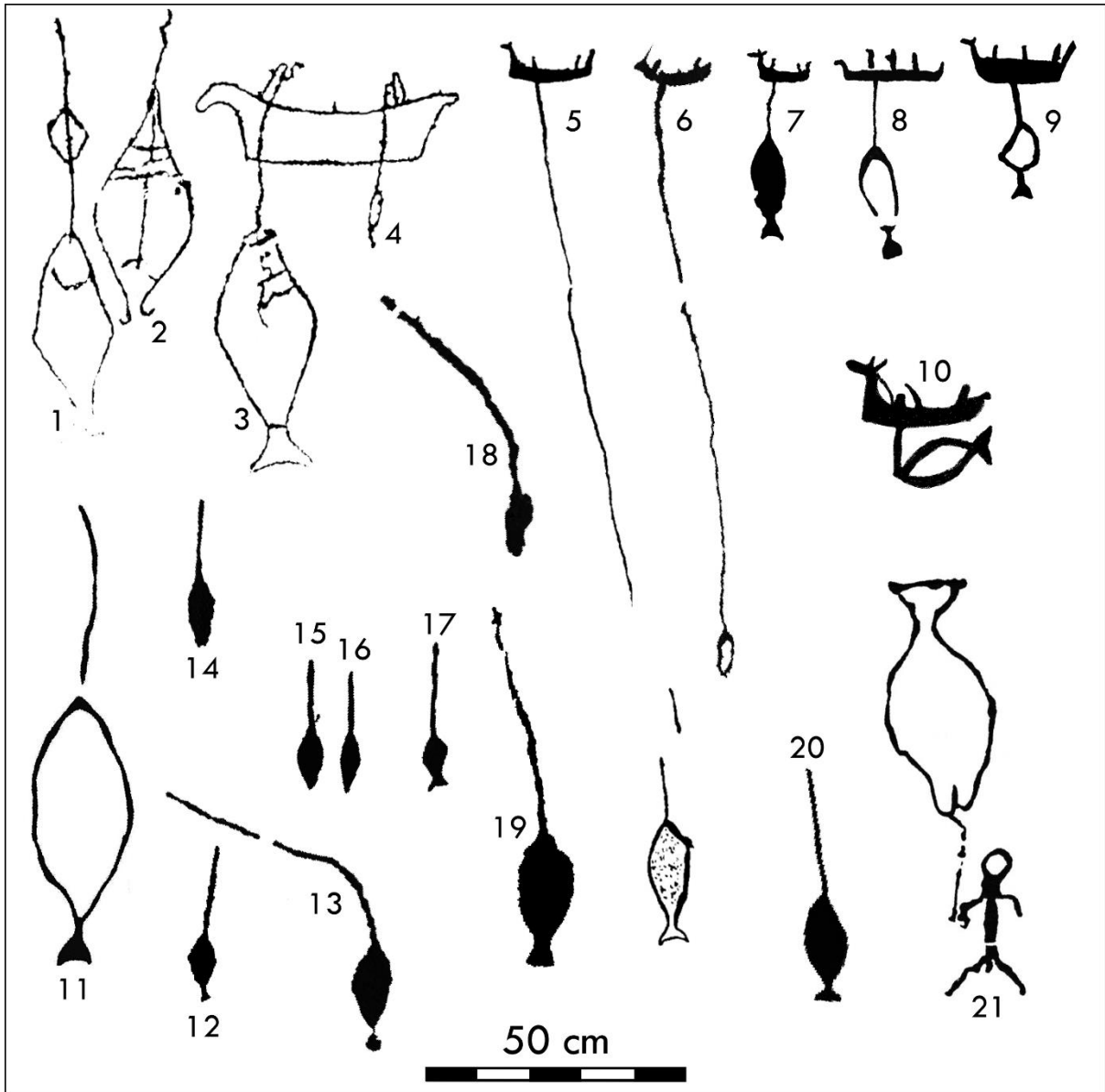


Figure 7. Proposed depictions of halibut fishing in Norwegian Stone Age rock art. 1–4. Forselv; 5,8–9. Bergbukten 4B, Alta; 6,12–19. Kåffjord 1, Alta; 7. Bergbukten 8A, Alta; 10. Slettnes II; 11. Bergheim 1, Alta; 20. Ole Pedersen 1, Alta; 21. Ole Pedersen 11A, Alta. Tracings extracted from: Alta Museum Rock Art Archive/Karin Tansem (5–9, 11–21); Evers (1988) (1–4); Stølting (1997) (10). Compilation: Ville Mantere.

halibut is evident in their considerable proportions compared to adjacent boat and human figures (Fig. 7.3–10, 21).

In contrast to depictions of other animals in rock art, halibut are not represented in profile but, understandably, as seen from above. However, in terms of body shape, these exhibit great variation even within single sites. Some figures are elongated while others are oval or almost spherical, and whereas some are fusiform, others have a more angular diamond shape. This variation does not necessarily imply that different fish species are depicted. It may also be explainable by the fact that the silhouette of some halibut is rendered with the dorsal and anal fins included, whereas others only display the body itself. The only figure that clearly has these fins marked out is found at Apana Gård 14 in Alta (Fig. 5.38).

Most of the depictions show the fish in a natural position, but the unusual figure from Reitaneset is a notable exception, showing a heavily curved animal body (Fig. 5.33). This depiction was by Kristen Møllenus (1968:10) interpreted as a wriggling halibut that would appear like this when caught onboard a boat. While this seems like a credible explanation, it must be noted that this extraordinary figure has by some been taken as a seal or a bird (Stebergløkken 2016:147). Undeniably, the Reitaneset figure is peculiar, and it deviates from most halibut depictions also in that it exhibits the pectoral/ventral fin(s), though located somewhat lower than on natural halibut. The pectoral fin is clearly discernible also on the curved halibut figure from Fykanvatn (5.54), but this is most likely a later addition (see Hallström 1938:145).

While most depictions of halibut lack fins other than caudal, the caudal fins themselves are noticeably divergent. Even though all can be recognized as homocercal caudal fins characteristic of halibut, their shape ranges from forked to emarginate, truncated, and even slightly rounded. The caudal fin is sometimes scooped out in contrast to the outlined body. The caudal peduncle is in a couple of figures marked by a line that separates the body from the tailfin. Correspondingly, the head is sometimes marked out by a line or as a scooped-out part that contrasts with the body. Half of the halibut figures have different kinds of inner designs and details, but it is thought-provoking that these are not found on the largest depictions that would have provided most space for rendering such internal details. Moreover, like inner designs rendered on depictions of elk in northern rock art, those portrayed on halibut figures depict both anatomically accurate inner organs/body parts and lines that cannot be traced to a natural origin (cf. Fuglestedt 2018:183–193; Mantere 2023:129–133). For instance, the horizontal and vertical lines on the figures at Apana Gård in Alta (Fig. 5.36–38) probably indicate the vertebral column and dorsal ribs of halibut (Helskog 2014:190). The fishbone pattern on the figures from Skogerveien (Fig. 5.28–29) is axiomatic (Engelstad 1934:38). Likewise, most of the Kvinnavika figures (Fig. 3) have inner drawings that seemingly represent the operculum (gill cover) and the lateral line. However, one of these figures (Fig. 5.14) is divided by lines that neither correspond to the anatomy of any flatfish nor to practical cutting marks (Hallström 1938:260–262). A similar segmentation of the body is apparent in the figure from Reitaneset (Fig. 5.33). Such designs possibly indicate the halibut's mottled body coloring (cf. Møllenus 1968:9–10). At least, a figure that evidently displays the characteristic blotchy skin of halibut is found at Bergbukten 4B (Fig. 5.39).

Not only are the details rendered on halibut depictions of interest, but traits that were not depicted are also worth considering. For instance, most figures lack a detailed mouth, and despite varying inner designs, all halibut also seem to lack a so-called “life-line” (see Gjessing 1936:140–146). This line, running from the animal's mouth to the heart, is found commonly in northern hunter-fisher-gatherer rock art on depictions of elk, reindeer, bear, and whales, but not halibut. We can only speculate why this is the case, but a certain taxonomical separation between fish and mammals possibly existed in prehistoric thought, and the life-line was linked to the latter only.

Perhaps the most noticeable common denominator for the halibut figures is their lack of eyes. For some reason, the contiguous and unilateral eyes, a rather distinctive feature for halibut and flatfish, were not subject to portrayal. This probably relates to a wider convention of producing rock art, for the eyes are rarely depicted on animal figures in northern hunter-fisher-gatherer rock art. However, ethnographic accounts also tell us that burning halibut eyes was necessary to preserve fishing luck (Bratrein 1975:17; Brox 1970:95–96). Perhaps depicting the halibut's eyes would thus similarly have affected future fishing luck negatively.

Halibut Fishing Scenes

The only representations of fishing in Norwegian rock art, around 20 instances in total, are found at Forselv, Alta, and possibly at Slettnes (Fig. 7). It is noteworthy that all these fishing scenes are found in the northern part of Norway. With a single exception (see below), these also seem to have a concurrent Late Mesolithic date in the period 6500–5000 BP/5500–4000 BC. The fishing scenes consist of figures commonly accepted as halibut, connected to a line that obviously represents the fishing line (e.g., Gjerde 2010, 2016). However, less than half of these lines end in boat figures. This is probably, in some cases, explainable by the bad preservation status of the carvings, but it is likely that some line depictions were never connected to boat figures in the first place.

The boats in the fishing scenes are relatively small. Most boats, if not all, have an animal-headed prow that probably represents the head of an elk or a deer (see Mantere 2023:212–241). The boats are depicted with two or three people onboard, either as simple strokes or as slightly more detailed anthropomorphic figures. The crew members do not exhibit sex markers. However, another possible fishing scene likely dated to the 5th millennium BP/4th millennium BC is depicted at Ole Pedersen 11A in Alta (Fig. 7.21). Here, a large halibut seemingly connects to a human figure with a line, even though no boat is shown (Helskog 2014:125). The proposed halibut fisher has a line drawn between his legs, suggesting that a male fisherman is specifically

portrayed. This representation, at least, thus aligns with historical accounts that describe halibut fishing as an activity traditionally performed by males. While the fishing scenes in Norwegian rock art are neither numerous nor particularly detailed, they still provide significant insights when analyzed in the light of halibut behavior and ethnographic sources. Firstly, the fishing lines in these scenes warrant separate discussion.

Halibut Fishing Lines

Given the substantial size and immense strength of halibut, the requirements for the fishing equipment were exceptional. We know from rock art scenes in northwestern Russia that Stone Age populations possessed equipment robust enough for whale hunting (Kolpakov 2015). Still, even modern fishing lines can break when catching fish as sizable as halibut. The most likely materials used by Stone Age fishers for making durable fishing lines would have been animal sinews, hair, plant fibers, whale baleen, or combinations of these (e.g., Pickard and Bonsall 2004:282). Indians of the American Northwest especially utilized fibers of bull kelp (*Nereocystis luetkeana*) for fishing lines (Stewart 1982:26–29). A comparable kelp resource (*Laminaria hyperborea*) would have been abundant in coastal Norway also. Mechanical experiments have shown that a properly processed fishing line made from kelp can have a strength of up to 128 lbs (58 kg), which is enough for fishing male halibut and smaller female individuals but would not withstand the largest female halibut (LaBarbera 1985:635). It is conceivable, however, that bladders were used in early times as buoys for minimizing line stress and drag, and for tiring out large halibut.

Irrespective of the type of material used for fishing lines, it is evident that not every halibut that was hooked was successfully brought on board the boat. Many times, the halibut would simply not have stayed on the hook. The larger the fish, the higher the probability that the fishing line would break during the fight. Moreover, as Gro Mandt and Trond Løvdøen (2005:63) point out, engaging in a struggle with a large halibut from a small fishing boat could rapidly escalate into a life-threatening situation. Therefore, while the loss of a large halibut was a calamity itself (Bratrein 1975:15), in most extreme cases, the fishermen were likely forced to cut the fishing line and let the halibut go with it to avoid even further disaster. In these scenarios, fishers had to admit their inferiority to the halibut, which likely reinforced the special qualities ascribed to this species. The prevalence of seemingly unfinished halibut fishing scenes suggests that at least some of them are deliberate and perhaps related to such meanings.

We can only assume the length of fishing lines used by Stone Age halibut fishers, but the fishing scenes in rock art provide us with some clues. While these display significant variation, there are two instances in Alta where the fishing lines are considerably long compared to the size of the fishing boats (Fig. 7.5–6). At Bergbukten 4B, the fishing line measures around 130 cm, whereas the length of the boat is 18 cm. At Kåfjord, in turn, the fishing line is around 105cm in length, and the boat figure measures around 15 cm. thus, in both cases, the fishing line is roughly seven times longer than the boat figure it is attached to. Now, assuming that the boats depicted on these panels are skin boats similar to the traditional Inuit umiaks, as suggested by several scholars (see e.g., Gjerde 2021; Kashina et al. 2024), we can suppose their average length to have been about 8m (see e.g., Arima 1963:4–7). With these parameters, the fishing lines would in both scenes be around 50–60m in length. While obviously tentative in nature, the result of such a calculation is surprisingly compatible with halibut biology, as well as with ethnographic and archaeological sources.

Halibut Fishing Based on Rock Art Scenes

Climatic data suggests that fish migrations in the northern parts of Norway have remained virtually unchanged for the past 2,500 years (Eliassen 1983:3). This pattern probably extends to earlier times as well. The evident halibut fishing scenes in Alta and Forselv stem from the 6th millennium BP/ 5th millennium BC, during which the shoreline was higher, and the annual average temperature was 2–3 degrees warmer than today. Despite this, it is likely that there were no significant differences in the ichthyofauna, except for a greater abundance (e.g., Helskog 2014:27). As regards halibut specifically, prehistoric populations of this species presumably exceeded those of the present day and had a greater number of individuals growing large and approaching closer to the shore compared to current populations (cf. Salmen-Hartley 2014:42, 123).

Frequent remains of several deep-water fish species found at three Mesolithic sites along the Varangerfjord in northern Norway concretely demonstrate that Stone Age populations did also practice deep-water fishing (Pickard and Bonsall 2004:281). However, as Catriona Pickard and Clive Bonsall (2004:281) convincingly argue, this most probably did not take place offshore but was rather a type of inshore fishing carried out in the deep Varangerfjord. Similarly, the halibut fishing scenes in Alta and Forselv are likely to reflect fishing in the nearby waters of Altafjord and Ofotfjord, respectively. Ethnographic data from North America gives reason to believe that favorable halibut fishing spots in prehistoric Norway were located using landmarks, and that ownership of them could be restricted (see e.g., Arima 1983:27–28; Drucker 1951:260; Garfield 1951:15; Niblack 1890:335).

Likewise, knowledge of good halibut banks was probably transmitted over numerous generations (cf. Salmen-Hartley 2014:109; Simonsen 1983:13).

In northern Norway, the sea remained open throughout the year, and fishing was theoretically possible in any season. However, halibut spend the winter months in considerably deep offshore waters. They also cease feeding during the spawning season, and therefore longline fishing in Norway was historically halted in early winter (Lindgård 2023:6). It is thus highly unlikely that halibut would have been fished during winter in prehistoric times. Moreover, while Mesolithic longline fishing with lines longer than 150m has been proposed (Pickard and Bonsall 2004:281–282), the rock art depictions do not decipher such a technique. Instead, they depict active single-hook fishing with a hand line, a method most probably comparable to jigging [*juksafiske*]. Prehistoric stone sinkers and large fishhooks found in Norway also suggest the use of this technique for catching halibut (Damm 2024:96; Olsen 2024:36).

The rock art scenes lack recognizable fishhooks, but depictions of small oval figures at the end of the fishing lines at Forselv and Kåfjord probably represent baits such as mollusks or small fish used for halibut jigging (Fig. 7.4,6,18). Dietrich Evers (1988:100) interprets the figure at Forselv (Fig. 7.4) as a baited gorge hook. However, while gorge hooks can truly be successful for catching smaller fish species, their functionality in halibut fishing raises doubts. Hilary Stewart (1982:46–57) demonstrates that the renowned V- or U-shaped adorned halibut hooks used by Northwest Indians have an undecorated barbed arm that penetrated the halibut's mouth when the fish took the bait (see also Malindine 2017; Salmen-Hartley and McKechnie 2022). Even so, far from every fish stayed on the hook. Thus, the hooks used by Norwegian Stone Age halibut fishers were likely not gorges but hooks adjusted specifically to halibut and thus inevitably more or less like the Northwest hooks. The latter were commonly made from wood. As Mansrud (2024:136–138) points out, such hooks may be difficult to identify archaeologically, even if they were probably common in the Stone Age. Bratrein (1975:17) also notes that it was strictly forbidden to mention the halibut hook when at sea. Another feasible explanation for the absence of hooks, in rock art at least, could thus be related to early taboos concerning halibut fishing.

In the fishing scenes in Alta, no sinkers are depicted, but one of the fishing lines at Forselv clearly shows a stone sinker (Fig. 7.1), providing further proof and information about halibut jigging (Gjessing 1942:443). According to Povl Simonsen (1983:12–13), the mean weight of Neolithic sinkers is around 500–600 g (11–13 lbs), and experiments indicate that these were suited for fishing at depths of 15 to 30m. Meanwhile, the largest sinkers weigh up to 1.5 kg (33 lbs) and could have been used for fishing at waters of 50–60m deep (see also Gjessing 1942:443–445). This is exactly the supposed length of the two longest fishing lines depicted in Alta. Likewise, Eugene Arima (1983:28) notes that the halibut line used by the Nootka Indians, composed of long kelp stems, measured approximately 30 fathoms (55 m) in length. Together, these notions strongly suggest that in Stone Age Norway, halibut were also caught from water depths of tens, not hundreds, of meters at most. This information, in turn, provides important clues about the season when halibut were caught.

Seasonality in Halibut Fishing

Today, sport fishing by jigging for halibut in Norway takes place mainly in the summer months, with the peak season occurring between June and September. In all likelihood, this period was the main halibut season during the Stone Age, also. The halibut would have spent the summer months in warmer and shallower coastal waters actively feeding, resulting in their meat being of superior quality compared to the spring, when the fish had depleted their fat reserves. In other words, the availability and quality of halibut as a resource would together have made it preferred prey during the summer and early autumn. In theory, Stone Age fishers probably possessed the skill required for crafting fishing lines of several hundred meters, but the proportions of the fishing lines depicted in rock art suggest their use during the milder months. The ethnographic data gathered amongst Indigenous tribes from northern North America similarly show a clear connection between halibut fishing and the warmer months of the year (e.g., Arima 1983:27; Drucker 1951:244; Niblack 1890:138).

Most of the fishing lines depicted in Norwegian rock art are considerably shorter than the two already discussed. In fact, the fishing lines are sometimes even shorter than the boat and halibut figures these are attached to (Fig. 7.3,7–10). Of course, such scenes do not necessarily indicate shallow-water fishing. These may also depict halibut fishing in general or signify the critical moment when the halibut was nearly brought onboard from the depths of the sea. Nonetheless, ethnographic accounts describe the harpooning of halibut by leisters on sandy bottoms (see e.g., Bratrein 1975:12; Damm 2024:97; Mansrud 2024:136). Some of the fishing scenes could thus depict halibut leistering as well. Halibut were perhaps at times caught even from the shore, as is common in Iceland (Pickard and Bonsall 2004:281). The said depiction at Ole Pedersen 11A (Fig. 7.21) could depict such an event.

The examination of halibut figures and fishing scenes depicted in Norwegian rock art has provided valuable insights into early halibut fishing practices. Before concluding this study, it is

essential to consider what these findings imply about the relationship between prehistoric northern populations and halibut, particularly when compared with ethnographic and biological data.

Discussion

As Bratrein (1975:15) notes, the traditional fishing for halibut was the most difficult and uncertain type of fishing that could be practiced in northern Norwegian waters. Finding halibut in the sea was not easy in the first place, not to mention the long-lasting struggle to get the fish to the surface and eventually onto the boat. In addition, fishing for halibut at sea was dangerous. As Aldona Jonaitis writes of the Alaskan Tlingit:

[H]alibut fishing relates to the view of a world composed of two complementary parts: one, the secure realm of the village and its environs; the other, the far less secure and potentially hazardous external realm beyond human settlement. To fish for halibut is to penetrate the external world and to subject oneself to its dangers (Jonaitis 1981:3).

The rich ethnography on halibut demonstrates that diverse rules and taboos were linked to this species. Their fundamental meaning was closely related to the concept of luck, either by way of bringing fishing luck or by avoiding misfortune. Assuring luck, not only in catching halibut but also in surviving safely at sea, would have been at least as important to prehistoric fishermen. Most probably, various beliefs and activities were thus related to halibut (fishing) from very early on. It is not far-fetched to assume that Stone Age halibut fishing was a liminal activity that involved rituals before going to sea and when returning from there. It is feasible that the halibut figures depicted in rock art, too, were associated with the theme of luck. Conceivably, carving halibut figures by the shore was a way of asking for good luck and showing respect for the fish before setting out to sea.

Additionally, the meaning of halibut carvings was possibly in some way associated with the theme of reproduction. While direct evidence of such connotations in Norwegian rock art is lacking, the halibut-shaped Kvennavika rock art panel with its unusual arrangement of flatfish could be interpreted in this manner. As noted above, some of the historical conceptions and symbols related to halibut are supposed to reflect older beliefs related to fertility magic. It is fully possible that such beliefs existed in prehistoric times already and were conveyed through rock art. The halibut was not depicted as a yonic symbol in rock art, however, and the sex of halibut figures cannot be identified based on their morphology. Still, the dimensions of the largest figures and those involved in fishing scenes suggest that these, at least, represented female halibut specifically. This not only corresponds with the fact that the halibut was often in folklore regarded in female terms but is also logical considering the biology of halibut. Only the female individuals reached enormous dimensions, which was most certainly known by the rock artists.

As Anders Hesjedal (1992:45) and Knut Helskog (2014:171), among others, point out, halibut can be paralleled with terrestrial big game due to its considerable size and strength. In fact, struggling with a giant halibut could demand more physical strength and endurance of the catcher than big game hunting. In this light, it is not surprising that halibut fishing, as described in Norwegian and North American ethnography, was a male activity. This probably was the case with prehistoric halibut fishing also. Unfortunately, most halibut fishers depicted in rock art lack sex markers, and we can therefore not draw far-reaching implications based on the single instance that seems to depict a halibut fisherman (Fig. 7.21). Nevertheless, *if* halibut were commonly regarded in feminine terms and their fishing was a masculine activity, ideas reminiscent of the *hald* tradition presumably existed in prehistoric Norway also. In other words, women were likely to hold an important symbolic role in the process of successfully catching halibut, even though their practical engagement with this endeavor would have been restricted. Meanwhile, the ethnographic data provide sound reason to assume that prestigious male individuals within the community not only fished for halibut but also performed ritual actions related to this animal. Presumably, such individuals stood for the halibut carvings in rock art also.

Many of the rock carving sites involving proposed depictions of halibut are noted to be found close to good fishing spots for this species (e.g., Gjessing 1936:129; Møllenus 1968:10; Petersen 1932:183). It is unlikely that this is a coincidence. Albert Niblack (1890:303) noted that precontact Northwest Coast peoples chose settlement sites based on proximity to halibut banks, and there is reason to believe that prehistoric Norwegian coastal groups also lived and made rock carvings near halibut-rich areas. However, no matter how good a fishing spot was, halibut were not ever-present there. In addition to being a strong, mysterious, and dietarily significant animal, halibut was a highly seasonal resource. Several indicators connect the depictions of halibut with summer and the milder months. However, what still calls for discussion is the peculiar link between halibut figures and depictions of cervids in rock art.

At as many as 20 out of the 24 examined rock art panels, halibut figures coexist, and sometimes even superimpose or interact, with depictions of cervids. This is hardly a coincidence, for the connection between halibut and cervids is evident in the animal-headed boats depicted in fishing scenes also (Fig. 8.4–5). Indeed, as noted by Helskog



Figure 8. Proposed depictions of halibut in Norwegian rock art: 1. Skogerveien; 2. Bergheim 1, Alta; 3. Apana Gård 5, Alta, 4–5. Bergbukten 4B, Alta. Photos and compilation: Ville Mantere. Not to scale.

(1988:28) and Mandt and Lødøen (2005:63), depictions in Alta and Forselv suggest that halibut fishing was in some way connected to reindeer and/or elk. The authors take this as an indication of the symbolic or mythological connotation of the rock carvings. While this interpretation seems credible, the connection between halibut and cervids may have entailed other connotations also, grounded in real-life observations of these species.

It is widely acknowledged that early hunter-fisher-gatherers inhabiting the northernmost regions of Europe were not only highly dependent on, but also adapted to, seasons and the cyclical patterns of animals, and that this is reflected in their rock art also (e.g., Gjerde 2010; Günther 2022; Helskog 2004). Although the link between land and sea animals in rock art may appear strange to the modern viewer, for people living off the land (and sea), this probably was self-evident. While halibut and cervids occupied different habitats, both were seasonal species that behaved and moved variably within their respective realms in the course of the yearly cycle. At a certain time of the year, however, the characteristic behavioral cycles of these species correlated with one another in a way that must have been a highly important sign for coastal hunter-fisher-gatherers. We can only speculate upon the details of this seasonal connection, but it probably pertained to the time when halibut were known, through long experience, to come to certain locations where they could be caught. This event likely coincided annually with a specific observable trait in the local cervid species and was probably related to their physical appearance (e.g., antler growth, molt), feeding patterns (shifts in diet and circadian rhythm), or movements in the terrain (calving, herd migrations). A similar phenological connection has been documented, for instance, among the Nuu-chah-nulth, who timed the beginning of halibut spawning migration and halibut fishing with the blooming of red elderberries (see Lantz and Turner 2003:273, 278).

It seems reasonable to assume that the pragmatic, temporal link that assumedly existed between halibut and cervids was not only long-awaited in coastal communities. In addition, it likely caused and strengthened the symbolic and mythological associations between halibut and cervids in the minds of prehistoric fishermen. A hint of these connections is observable in a scene at Bergbukten 4B in Alta, where a reindeer touches a halibut fisher sitting in an elk-head boat (Fig. 8.5). Conceivably, the elk or the (rein)deer functioned as a luck-bringing and protective liminal agent of halibut fishers when at sea, and boats decorated with the heads of these species were therefore used in halibut fishing (cf. Westerdahl 2010:281). Regardless of the details, however, at the core of such beliefs there likely existed a sophisticated observation and comprehension of natural patterns and their interrelation.

Meanwhile, the link between halibut and cervids was not unparalleled in prehistoric thought. Similar multi-species phenological connections must not only have been manifold during the annual cycle but also essential for people inhabiting northern regions (see e.g., Lantz and Turner 2003; Turner et al. 2000). Observing and interpreting the interactions between different species was a natural part of the intricate relationship between prehistoric humans and their environment. It is not surprising, hence, to find indications of such interactions in their rock art also.

Conclusion

This study has examined depictions of halibut in Norwegian rock art from different perspectives. Depictions of halibut were identified on 24 rock art panels at 15 sites along the Norwegian coastline. With a single exception, these figures are made by pecking and dated to the period 6800–3000 BP. The images display considerable variation, and most figures do not exhibit enough details to allow precise species identification. However, having also examined their relation to other carvings and the landscape, it is not far-fetched to assert that most of these figures, if not all, depict halibut specifically. Despite their relatively low proportion in contrast to other rock art motifs and the lack of direct zooarchaeological data, it is evident that halibut was a highly prized catch and held special significance to prehistoric Norwegian coastal populations. With the aid of northern ethnography, the depictions of halibut in rock art have unfolded some of their secrets in a way that permits us to draw a few well-grounded conclusions pertaining to halibut and its fishing in prehistoric Norway.

Based on rock art, large halibut individuals were caught already in the Late Mesolithic period. Various evidence suggests that halibut were caught relatively close to shore, and in fairly shallow waters at depths of up to 60 m. Fishing took place in the summer months, probably between June and September. The timing of halibut fishing was linked to annual seasonal markers such as observable changes in the behavior and/or appearance of local cervids. Halibut were jigged from small animal-headed skin boats, carrying a couple of fishermen, but could occasionally be caught from the shore and with leisters, also. Hand-held fishing lines made of organic materials were sometimes weighed with stone sinkers. Fishhooks presumably resembled those used by Northwest Indians and were baited with small fish or mollusks.

Halibut fishing was a demanding activity. Ethnographic data suggests it was performed by male individuals, and it was likely subject to

various rituals and precautions that aimed to ensure the fishermen's luck. Another expected purpose was to show reverence to the halibut and to assure its reproduction. These intentions were probably the reasons for carving halibut figures in rock art also. Depictions of halibut are characterized by their variation, suggesting that these represent halibut as individuals, perhaps even as persons. Their shared lack of life-lines and eyes correspondingly points to the existence of widespread and noticeably long-lasting beliefs related to halibut as a species.

Overall, the halibut's exceptional role among fish depictions in Norwegian rock art corresponds to the outstanding role of this species in Norwegian folklore. Both sources tell of the special relationship that existed between humans and halibut. However, the unparalleled size and strength of this animal are not the only factors that explain this relationship. Halibut was, moreover, an exceptionally restricted resource. Access to this animal was only possible under favorable weather conditions during a few months of the year. Even so, a great deal of luck and effort was needed in catching halibut, and far from every fishing expedition ended successfully. Ultimately, it was the unpredictability and limited availability of this species that not only endorsed the status of halibut fishers but also made the halibut stand out from other, more common fish species, most of which were never depicted in rock art.

Acknowledgments. The author wishes to express heartfelt thanks to Heidrun Stebergløkken (NTNU), Rune Normann (Alta Museum), Ingrid Sommerseth (UiT), Trine Anna Johnson (Nordland Fylkeskommune), Gitte Kjeldsen, and Wenche Brun (University of Stavanger) for their valuable assistance with acquiring rock art tracings and answering questions. Many thanks also go to Ekaterina Kashina (State Historical Museum), Georg Haggrén (University of Turku), and Ismo Luukkonen (Turku University of Applied Sciences) for valuable comments that improved the manuscript. This study was made possible by financial support from the Finnish-Norwegian Cultural foundation, the Emil Aaltonen Foundation, and the Ella and Georg Ehrnrooth Foundation, to whom the author extends sincere gratitude.

Endnotes

ⁱ While ethnographic accounts from this region describe the fishing and role of Pacific halibut (*Hippoglossus stenolepsis*), this species is so similar to the Atlantic halibut that scholars earlier disagreed upon whether the two even constitute separate taxonomical species (Haug 1990:2–3).

ⁱⁱ The sites of Amtmannsnes, Storsteinen, Kåfjord, and Hjemmeluft (including panels at Apana Gård, Bergbukten, Bergheim, and Ole Pedersen) in the Alta area are here treated as individual rock art sites. It should also be noted that Gutorm Gjessing (1932:24) interpreted a large, polished animal figure at the Leiknes site as a possible depiction of a halibut. However, the figure more likely represents a porpoise (*Phocoena phocoena*) and is therefore excluded from the material discussed in this study.

ⁱⁱⁱ Although beyond the scope of this study, two carvings possibly representing halibut are also rendered on Stone Age stone sinkers from Skeiet in Bodø (Ts4867b9) (Simonsen 1958:60–61) and Frøneset near Stavanger (S12386) (Bang-Andersen 2009).

^{iv} According to paleolimnological studies, Lake Kanozero was a freshwater lake during the Holocene (Kolpakov and Shumkin 2012:14). Thus, the possible halibut figures at Kanozero were not made by the seashore, unlike those found at the Norwegian rock art localities. Many depictions of whaling at Kanozero similarly reveal the unusual character of this rock art site, where the activities depicted do not have an immediate connection to the local landscape.

^v All BP dates given in this article are uncalibrated radiocarbon dates.

References Cited

- Andersson, Niclas (ed.)
2009 Fiske i Norden. Stockholm: Norstedts.
- Arima, Eugene Y.
1963 Report on an Eskimo Umiak Built at Ivuyivik, P.Q., in the Summer of 1960. Bulletin no. 189. Anthropological Series, 59. Ottawa: National Museum of Canada.
- 1983 The West Coast People: The Nootka of Vancouver Island and Cape Flattery. British Columbia Provincial Museum Special Publication Series, 6. Victoria: British Columbia Provincial Museum.
- Bakka, Egil
1988 Helleristningene på Hammer Beitstad, Steinkjer, Nord-Trøndelag. Granskingar i 1977 og 1981. Rapport arkeologisk serie, 1988(7). Trondheim: Universitetet i Trondheim, Vitenskapsmuseet.
- Bang-Andersen, Sveinung
2009 Evig eies kun det tapte – med alle sine hemmeligheter. Refleksjoner rundt en gjenstand av klebstein funnet ved Håelva på Jæren. In Tverfaglige perspektiver. Marianne Nitter and Einar S. Pedersen, eds. AmS-Varia 49. Pp. 75–86. Stavanger: Universitetet i Stavanger, Arkeologisk museum.
- Bergsvik, Knut Andreas and Kenneth Ritchie

-
- 2020 Mesolithic Fishing Landscapes in Western Norway. *In* Coastal Landscapes of the Mesolithic: Human Engagement with the Coast from the Atlantic to the Baltic Sea. Almut Schülke, ed. Pp. 229–263. London: Routledge.
- Boas, Franz
1966 Kwakiutl Ethnography. Helen Codere, ed. Chicago: University of Chicago Press.
- Brandišauskas, Donatas
2017 Leaving Footprints in the Taiga: Luck, Spirits and Ambivalence Among the Siberian Orochen Reindeer Herders and Hunters. Studies in the Circumpolar North, 1. New York: Berghahn Books.
- Bratrein, Håvard Dahl
1975 Litt om kveitefisket i gamle dager. *Ottar* 85(4):11–17.
- Brightman, Robert A.
1993 Grateful Prey: Rock Cree Human-Animal Relationships. Berkeley, Los Angeles, Oxford: University of California Press.
- Brox, Arthur
1970 Folkeminne frå Ytre-Senja. vol. 1. Norsk Folkeminnelags Skrifter 105. Oslo: Universitetsforlaget.
- Citerne, Pierre and Bruno Chanet
2005 Les représentations de poissons plats [Teleostei: Pleuronectiformes] dans l'art paléolithique européen. *MUNIBE (Antropologia-Arkeologia)* 57:65–77.
- Cole, Noelene, Christine Musgrave, Roseanne George, Lynley Wallis, and the Laura Indigenous Land and Sea Rangers
2024 Categorising Catfish, Jewfish and Eel Motifs in Laura (Quinkan) Rock Art, Cape York Peninsula, Australia. *Rock Art Research* 41(1):28–40.
- Damm, Charlotte
2024 Fiskesøkker og hverdagens magi i steindalderens kystlandskap. *In* Fragmenter av Nord-Norges fortid. Roger Jørgensen, Marianne Skandfer and Inger Storli, eds. Pp. 91–110. Instituttet for Sammenlignende Kulturforskning. Serie B: Skrifter, 189. Oslo: Orkana akademisk.
- Drucker, Philip
1951 The Northern and Central Nootkan Tribes. Smithsonian Institution, Bureau of American Ethnology, Bulletin 144. Washington: U.S. Government Printing Office.
- Eliassen, Jens-Eric
1983 Fisk og fiskerier i Nord-Norge. *Ottar* 145(6):3–7.
- Engelstad, Eivind S.
1934 Østnorske ristninger og malinger av den arktiske gruppe. Instituttet for Sammenlignende Kulturforskning. Serie B: Skrifter, 26. Oslo: H. Aschehoug & Co. (W. Nygaard).
- Evers, Dietrich
1988 Felsbilder arktischer Jägerkulturen des steinzeitlichen Skandinaviens. Stuttgart: Franz Steiner Verlag.
- Fett, Eva Nissen and Per Fett
1941 Sydvestnorske helleristninger. Rogaland og Lista. Stavanger: Stavanger museum.
- Fuglestedt, Ingrid
2018 Rock Art and the Wild Mind: Visual Imagery in Mesolithic Northern Europe. London & New York: Routledge.
- Garfield, Viola Edmundson
1966 The Tsimshian and Their Neighbors. *In* The Tsimshian Indians and Their Arts. Viola E. Garfield and Paul S. Wingert. Pp. 1–72. Seattle & London: University of Washington Press.
- Gjerde, Jan Magne
2010 Rock Art and Landscapes: Studies of Stone Age Rock Art from Northern Fennoscandia. Ph.D. dissertation, Department of Archaeology and Social Anthropology, UiT The Arctic University of Norway.
- 2016 Marine Ventures in the Stone Age Rock Art of Fennoscandia. *In* Marine Ventures: Archaeological Perspectives on Human-Sea Relations. Hein B. Bjerck, Heidi M. Breivik, Silje E. Fretheim, Ernesto L. Piana, Angélica M. Tivoli, Birgitte Skar and A. Francisco J. Zangrando, eds. Pp. 337–354. Sheffield: Equinox Publishing.
- 2021 The Earliest Boat Depictions in Northern Europe: Newly Discovered Early Mesolithic Rock Art at Valle, Northern Norway. *Oxford Journal of Archaeology* 40(2):136–152.
- 2024 Frequency, Phases and Chronology of Rock Art: Spatiotemporal Studies of the Alta Rock Carvings, Northernmost Europe. *Oxford Journal of Archaeology* 43(2):108–134.
- Gjessing, Gutorm
1932 Arktiske helleristninger i Nord-Norge. Instituttet for Sammenlignende Kulturforskning. Serie B: Skrifter, 21. Oslo: H. Aschehoug & Co. (W. Nygaard).
- 1936 Nordenfjelske ristninger og malinger av den arktiske gruppe: mit deutschem Resumé. Instituttet for Sammenlignende Kulturforskning. Serie B: Skrifter, 30. Oslo: H. Aschehoug & Co. (W. Nygaard).

-
- 1942 Yngre steinalder i Nord-Norge. Instituttet for Sammenlignende Kulturforskning. Serie B: Skrifter, 39. Oslo: H. Aschehoug & Co. (W. Nygaard).
- Glørstad, Håkon
2010 The Structure and History of the Late Mesolithic Societies in the Oslo Fjord Area 6300–3800 BC. Lindome: Bricoleur Press.
- Günther, Helena
2022 The Rhythm of Rock Art Animals: Picturing Reindeer, Elk and Bear around the Seasonal Cycle in Stone Age Alta. Stockholm Studies in Archaeology, 80. Ph.D. dissertation, Department of Archaeology and Classical Studies, Stockholm University.
- Hagen, Anders
1976 Bergkunst: Jegerfolkets helleristninger og malninger i norsk steinalder. Oslo: J.W. Cappelens Forlag.
- Hallström, Gustaf
1938 Monumental Art of Northern Europe from the Stone Age. The Norwegian Localities. Stockholm: Thule.
- Hauan, Marit Anne
1996 Kveita som mangetydig symbol i fiskerimiljø. *Ottar* 213(5):10–17.
- Haug, Tore
1990 Biology of the Atlantic Halibut, *Hippoglossus hippoglossus* (L., 1758). *Advances in Marine Biology* 26:1–70.
- Helskog, Ericka
1983 Finnmarks fiske i yngre steinalder. *Ottar* 145(6):8–11.
- Helskog, Knut
1988 Helleristningene i Alta: Spor etter ritualer og dagliv i Finnmarks forhistorie. Alta: Bjørkmanns Trykkeri.
- 2004 Landscapes in Rock-Art: Rock-Carving and Ritual in the Old European North. *In* Pictures in Place: The Figured Landscapes of Rock-Art. Christopher Chippindale and George Nash, eds. Pp. 265–288. Cambridge: University Press.
- 2014 Communicating with the World of Beings: The World Heritage Rock Art Sites in Alta, Arctic Norway. Oxford & Philadelphia: Oxbow Books.
- Hesjedal, Anders
1990 Helleristninger som tegn og tekst: en analyse av veideristningene i Nordland og Troms. M.A. Thesis, Department of Archaeology, University of Tromsø.
- 1992 Veideristninger i Nord-Norge, datering og tolkningsproblematikk. *Viking LV*:27–53.
- Hodgetts, Lisa Maye
1999 Animal Bones and Human Society in the Late Younger Stone Age of Arctic Norway. Ph.D. dissertation, Department of Archaeology, Durham University.
- Høgestøl, Mari, Gitte Kjeldsen, Bakke Bitten, and Catinka Borgarp
1999 Helleristningsfeltene på Austre Åmøy, Stavanger kommune, Rogaland. Dokumentasjon, sikring og tilrettelegging av feltene I til VI-5. Del I. AmS-Rapport 9:19–86. Stavanger: Arkeologisk museum.
- Jonaitis, Aldona
1981 Tingit Halibut Hooks: An Analysis of the Visual Symbols of a Rite of Passage. *Anthropological Papers of the American Museum of Natural History* 57(1):1–48.
- Kashina, Ekaterina A., Ville N. Mantere, and Evgeniy M. Kolpakov
2024 Reconstructing Prehistoric Watercraft in North-Eastern Europe by means of Stone Age Rock Art: One More Attempt. *In* Delivering the Deep – Maritime Archaeology for the 21st Century: Selected Papers from IKUWA 7. Kristin Ilves, Veronica Walker Vadillo and Katerina Velentza, eds. Pp. 85–98. BAR International Series: Cultural Studies in Maritime and Underwater Cultural Heritage. Oxford: BAR Publishing.
- Kjeldsen, Gitte and Kristine Orestad Sørgaard
2024 Gods and Animals in Disguise: An Analysis of Rock Art and Iconography in Southwestern Norway. *Adoranten* 2023:74–86.
- Knecht, Richard A. and Richard S. Davis
2004 South Channel Bridge Project No. MGS-STP-BR-0310(S)/52930. Amaknak Bridge Site Data Recovery Project. Final Report. Unalaska: Museum of the Aleutians.
- Kolpakov, Evgeniy M.
2015 Morskoy promysel v petroglifakh Fennoskandii. *Zapiski IIMK RAN* 2015b(11):23–32.
- Kolpakov, Evgeniy M. and Vladimir Ya. Shumkin
2012 Petroglify Kanozera: Rock art of Kanozero. Saint Petersburg: Art of Russia.
- LaBarbera, Michael
1985 Mechanical Properties of a North American Aboriginal Fishing Line: The Technology of a Natural Product. *American Anthropologist* 87(3):625–636.
- Lantz, Trevor C. and Nancy J. Turner

-
- 2003 Traditional Phenological Knowledge of Aboriginal Peoples in British Columbia. *Journal of Ethnobiology* 23(2):263–286.
- Lehtonen, Hannu and Markku Varjo
2017 Suomen ja Pohjolan kalat. Keuruu: Otavan Kirjapaino Oy.
- Lindgård, Edvin Laberg
2023 Stock Assessment of Norwegian Atlantic Halibut North of 62°N Latitude Using a Data-Limited Approach. M.A. Thesis, Fisheries and Aquaculture Science, UiT The Arctic University of Norway.
- Linge, Trond Eilev
2014 Rørsle gjennom fjordlandskapet – om nyfunne bergmalingar på Honnhammar i Tingvoll. *Viking LXXVII*:7–36.
- Lødøen, Trond K.
2010 Concepts of Rock in Late Mesolithic Western Norway. *In* *Changing Pictures: Rock Art Traditions and Visions in Northern Europe*. Joakim Goldhahn, Ingrid Fugløstvedt, and Andrew M. Jones, eds. Pp. 35–47. Oxford & Oakville: Oxbow Books.
- Malindine, Jonathan
2017 Northwest Coast Halibut Hooks: An Evolving Tradition of Form, Function, and Fishing. *Human Ecology* 45:53–65.
- Mandt, Gro and Trond K. Lødøen
2005 *Bergkunst: Helleristninger i Norge*. Oslo: Det Norske Samlaget.
- Mansrud, Anja
2024 Fishy Relations? Human-Fish Engagement in the Norwegian Late Mesolithic (6300–3900 BCE). *In* *Reimagining Human-Animal Relations in the Circumpolar North*. Peter Whitridge and Erica Hill, eds. Pp. 127–146. *Arctic Worlds*, 7. London & New York: Routledge.
- Mantere, Ville N.
2023 The Relationship Between Humans and Elks (*Alces alces*) in Northern Europe c. 12 000–1200 calBC. Karhunhammas, 21. Ph.D. dissertation, Department of Archaeology, University of Turku.
- Mjærum, Axel and Anja Mansrud
2020 Resource Management in Late Mesolithic Eastern Norway? Fishing in the Coastal, Interior and Mountain Areas and its Socio-Economic Implications. *In* *Coastal Landscapes of the Mesolithic: Human Engagement with the Coast from the Atlantic to the Baltic Sea*. Almut Schülke, ed. Pp. 264–299. London: Routledge.
- Møllenus, Kristen R.
1962 En ny bergmaling på Fosenhalvøya. *Det Kongelige Videnskabers Selskab museets årbok*. Pp. 95–98.
1968 To nye veideristninger fra Nordmøre og Romsdal. *Det Kongelige Norske Videnskabers Selskabs skrifter* 1968(3):1–10.
- Myklebust, Bjørn
1991 *Norske fisker i sjøen: Fiskeribiologi*. Oslo: Gyldendal Norsk Forlag.
- Nelson, Richard K.
1983 *Make Prayers to the Raven: A Koyukon View of the Northern Forest*. Chicago: University of Chicago Press.
- Niblack, Albert P.
1890 *The Coast Indians of Southern Alaska and Northern British Columbia*. Washington: U.S. National Museum.
- Olsen, Bjørnar J.
2024 De første – om Kjelmøyfunnene og deres skjebne i norsk arkeologi. *In* *Fragmenter av Nord-Norges fortid*. Roger Jørgensen, Marianne Skandfer and Inger Storli, eds. Pp. 19–48. Instituttet for Sammenlignende Kulturforskning. Serie B: Skrifter, 189. Oslo: Orkana akademisk.
- Paulson, Ivar
1968 The Preservation of Animal Bones in the Hunting Rites of Some North-Eurasian Peoples. *In* *Popular Beliefs and Folklore Tradition in Siberia*. Vilmos Diószegi, ed. *Uralic and Altaic Series*, 56. Pp. 451–458. Bloomington: Indiana University Press.
- Petersen, Theodor
1932 En nyopdaget helleristning av den arktiske gruppe på Kverneviken i Verran, Nordtrøndelag. *Det Kongelige Norske Videnskabers Selskabs forhandlinger* IV(48):182–185.
- Pettersen, Kristian and Eva Lindgaard
2015 Befaring av ristningslokaliteter i Sør-Trøndelag. *Arkeologisk rapport* 2015-9. Trondheim: NTNU Vitenskapsmuseet.
- Pickard, Catriona and Clive Bonsall
2004 Deep-Sea Fishing in the European Mesolithic: Fact or Fantasy? *European Journal of Archaeology* 7(3):273–290.
- Ritchie, Kenneth, Anne Karin Hufthammer, and Knut Andreas Bergsvik
2016 Fjord Fishing in Mesolithic Western Norway. *Environmental Archaeology* 21(4):309–316.
- Salmen-Hartley, Jacob U.
2018 Towards a Historical Ecology of Halibut Fishing on the Northwest Coast. M.A. Thesis, Department of Anthropology, University of Victoria.
- Salmen-Hartley, Jacob U. and Iain McKechnie

-
- 2022 An Examination of Indigenous Halibut Fishing Technology on the Northwest Coast of North America. *Arctic Anthropology* 59(1):87–105.
- Simonsen, Povl
1958 Arktiske helleristninger i Nord-Norge II. Instituttet for Sammenlignende Kulturforskning, Serie B: Skrifter, 49. Oslo: H. Aschehoug.
- 1983 Gamle fiskesøkk. *Ottar* 145(6):12–16.
- Snekvik, Per
2011 Fikk storkveite i garnet. *Avisa Sør-Trøndelag*. <https://www.avisast.no/nyheter/i/w8re31/fikk-storkveite-i-garnet>.
- Sognes, Kalle
1981 Helleristningsundersøkelser i Trøndelag 1979 og 1980. Det Kongelige Norske Videnskabers Selskab, Museet. Rapport Arkeologisk serie 1981(2). Trondheim: Universitetet i Trondheim.
- 1983 Helleristninger i Stjørdal II. Stjørdal og Lånke sogn. Det Kongelige Norske Videnskabers Selskab, Museet. Rapport Arkeologisk serie 1983(6). Trondheim: Universitetet i Trondheim.
- 1989 Rock Art at the Arctic Circle. Arctic and Agrarian Rock Engravings from Tjøtta and Vevelstad, Nordland, Norway. *Acta Archaeologica* 59:67–90.
- 2006 En flyndre svømmer stille: omkring helleristningene i Kvennavika, Nord-Trøndelag. *In* Samfunn, symboler og identitet. Festskrift til Gro Mandt på 70-årsdagen. Barndon, Randi, Sonja M. Innselset, Kari Klæboe Kristoffersen, and Trond K. Lødøen, eds. Pp. 551–562. UBAS Nordisk 3. Bergen: Arkeologisk institutt, Universitetet i Bergen.
- Stafseth, Terje
2006 Veideristninger og landskap: En visuell landskapsanalyse av bergkunstlokaliteter og deres tilknytning til omliggende landskap. M.A. Thesis, Department of Archaeology, NTNU.
- Stebergløkken, Heidrun
2016 Bergkunstens gestalter, typer og stiler. En metodisk og empirisk tilnærming til veidekunstens konstruksjonsmåter i et midtnorsk perspektiv. Doktoravhandling ved NTNU 2016:38. Ph.D. dissertation, Department of Archaeology, NTNU.
- 2018 Tilstandsvurdering og nydokumentasjon av Kvennavika/Selset, Inderøy, Nord-Trøndelag, Bevaringsprogrammet for bergkunst (BERG) 2017. Arkeologisk rapport 2018:8. Trondheim: NTNU Vitenskapsmuseet.
- 2021 Rock Art in Central Norway: Challenges with Chronology and Rock Art Narratives. *Revista ArkeoGazte Aldizkaria* 11:173–190.
- Stewart, Hilary
1982 Indian Fishing: Early Methods on the Northwest Coast. Vancouver: Douglas & McIntyre.
- Stölting, Siegfried
1991 Fische und Fischfang auf Skandinavischen Felsbildern. *Deutsches Schifffahrtsarchiv* 14:199–222.
- 1997 The Boats of Slettnes: Sources of Stone Age Shipbuilding in Northern Scandinavia. *The International Journal of Nautical Archaeology* 26(1):11–25.
- Tanner, Adrian
1979 Bringing Home Animals: Religious Ideology and Mode of Production of the Mistassini Cree Hunters. New York: St. Martin's Press.
- Tansem, Karin
2022 Helleristningene i Alta: Estetikken, geologien og figurine. Ph.D. dissertation, Department of Archaeology, History, Religious Studies, and Theology, UiT The Arctic University of Norway.
- Turner, Nancy J., Marianne Boelscher Ignace, and Ronald Ignace
2000 Traditional Ecological Knowledge and Wisdom of Aboriginal Peoples in British Columbia. *Ecological Applications* 10(5):1275–1287.
- Zhulnikov, Aleksandr M., Igor V. Askeyev, Dilyara N. Shaymuratova, and Sergey P. Monakhov
2024 Izobrazheniya ryb v naskalnom tvortchestve drevnego naseleniya Severnoj Evropy. *Povolzhskaya Arkheologiya* 1(47):27–46.
- Westerdahl, Christer
2010 'Horses Are Strong at Sea': The Liminal Aspect of the Maritime Cultural Landscape. *In* The Global Origins and Development of Seafaring. Andersson, Atholl, James H. Barrett, and Katherine V. Boyle, eds. Pp. 275–287. McDonald Institute Monographs. Cambridge: McDonald Institute for Archaeological Research.
- 2015 Contrasts of the Maritime Environment – Possible Implications in Prehistory – A Very Short Course of Cognition in the Ancient Maritime Cultural Landscape. *In* Ritual Landscapes and Borders within Rock Art Research: Papers in Honour of Professor Kalle Sognes. Heidrun Stebergløkken, Ranhild Berge, Eva Lindgaard, and Helle Vangen Stuedal, eds. Pp. 141–154. Oxford: Archaeopress Publishing Ltd.
- Willerslev, Rane
2007 Soul Hunters: Hunting, Animism, and Personhood among the Siberian Yukaghirs. Berkeley, Los Angeles & London: University of California Press.