



Title	Long-term marine resource use in Hokkaido, Northern Japan : new insights into sea mammal hunting and fishing
Author(s)	Takase, Katsunori
Citation	World archaeology, 51(3), 408-428 https://doi.org/10.1080/00438243.2019.1699854
Issue Date	2020-01-27
Doc URL	http://hdl.handle.net/2115/82335
Rights	This is an Accepted Manuscript of an article published by Taylor & Francis in World archaeology on 27/1/2020, available online: http://www.tandfonline.com/10.1080/00438243.2019.1699854 .
Type	article (author version)
Additional Information	There are other files related to this item in HUSCAP. Check the above URL.
File Information	02_Caption.pdf



[Instructions for use](#)

Figure 1. Map showing sub-regions and the location of sites

Figure 2. Chronological sequence in Hokkaido

Figure 3. The occurrence of harpoon heads (bar) and the ratio of sea mammals in the entire mammal bones (line) in each region

Figure 4. Sea mammals from archaeological sites in Hokkaido

Figure 5. Age and sex of northern fur seal excavated from archaeological sites in Hokkaido (Ad: adult; Ju: Juvenile; PUP: pup; M: male; F: female) (Funadomari: Education Board of Rebun Town 2000; Kabukai1: Oba and Ohyi 1976, 1981; Tokorochasi: Graduate School of Humanities and Social Sciences The University of Tokyo 2012; Nusamai: Education Board of Kushiro City 1996, 1999; Tenneru: Hokkaido Center for Rescue Archaeology 2008, 2011; Higashikushiro shell midden: Takahashi 2010; Toi shell midden: Education Board of Toi Town 1993; Tatesaki: Hokkaido Center for Rescue Archaeology 2017; Kitakogane shell midden: Education Board of Date City 2013; Minamiusu 6: Sapporo Medical College 1983; Kotan-onsen: Education Board of Yakumo Town 1992; Takasago shell midden: Ohshima and Dodo 1987)

Figure 6. Composition of archaeofaunal remains in Hokkaido

Figure 7. Harpoon heads and composite fish hooks using 'fish-shaped stone objects' in Hokkaido (1-5: the Early Jomon; 6-10: the late Middle Jomon to the early Late Jomon, 11-15: the Late Jomon; 16: the Final Jomon; 17-19: the Epi-Jomon; 20 and 21: the Okhotsk; 22-24: the Satsumon; 25 and 26: the Ainu) [1 and 5: Kitakogane shell midden

(Kaneko 1973; Watanabe, M. 1973); 2 and 3: Higashikushiro shell midden (Kaneko 1973; Sawa 1974); 4: Shizukawa 22 (Education Board of Tomakomai City and Tomakomai Center for Rescue Archaeology 2002); 6: Chatsu shell midden (Institute for Cultural Properties in Hokkaido 1990); 7: Kotan-onsen (Education Board of Yakumo Town 1992); 8: Takasago shell midden (Education Board of Abuta Town 1998); 9 and 15: Irie shell midden (Education Board of Abuta Town 1994); 10: Toi shell midden (Education Board of Toi Town 1993); 11, 12 and 14: Funadomari (Education Board of Rebun Town 2000); 13: Midorigaoka (Sawa 1974); 16: Mitsuya shell midden (Watanabe, M. 1973); 17 and 18: Usu-Moshiri (Ohshima 2003); 19: Estimated use of 'fish-shaped stone object' (Takase 1996); 20 and 21: Kabukai 1 (Oba and Ohyi 1976, 1981); 22-26: Kamoenai Kannon cave (Ishizuki 1983; Education Board of Kamoenai Village 1984; Chiyo 2003)]

Figure 8. Fish composition in Hokkaido created by aggregating results reported based on NISP

Figure 9. Fish composition in Hokkaido created by aggregating results reported based on weight

Figure 10. Result of size reconstruction of bastard halibut using dentary bones and vertebrae from the Esan shell midden (modified from Takase 2014)

Figure 11. Grave goods from the Late Jomon to the Early Epi-Jomon (Education Board of Eniwa City 1981; Education Board of Hokkaido 1977, 1979; Uwaya 2003)