

## General Introduction : Marine Resources and Anthropology

著者(英)	Nobuhiro Kishigami, James M. Savelle
journal or publication title	Senri Ethnological Studies
volume	67
page range	1-9
year	2005-02-18
URL	<a href="http://doi.org/10.15021/00002657">http://doi.org/10.15021/00002657</a>

## General Introduction: Marine Resources and Anthropology

**Nobuhiro Kishigami**  
*National Museum of Ethnology*

**James M. Savelle**  
*McGill University*

1. Introduction
2. Maritime Anthropology in Japan
3. A Research Project “Indigenous Use and Management of Marine Resources” at the National Museum of Ethnology, Osaka, Japan
4. Summary of This Volume

### 1. INTRODUCTION

Currently, human societies are facing serious depletion of many resources. Solving the problems connected to these depletions is of greatest urgency. One such quandary is how to manage renewable resources such as fish and trees sustainably. The discipline of anthropology has a long history of accumulating knowledge connected to indigenous use and management of natural resources across time and space. Consequently, we believe that as anthropologists, we can contribute significantly to solving the world’s resource crises.

Seventy percent of our planet’s surface is ocean. The relationship between humans and the sea has a long history. Humans have exploited and used a variety of marine resources in various ways for tens of thousands of years. For example, it is known that Jomon people in Japan made full use of fish and shellfish resources along the shores from approximately 12,000 years ago. However, anthropological studies focusing on the relationships between marine environments and human activities have rarely been conducted, with some notable exceptions [e.g., CASTELL and QUIMBY 1975; SMITH 1977; GUNDA 1984; CORDELL 1989; POLUNIN and ROBERTS 1996]<sup>1)</sup>. This volume addresses this issue.

Furthermore, particularly in Japan, applied research has been less highly regarded than pure academic research in anthropology. These studies of this volume are meant to redress this imbalance, concentrating specifically on applied research of marine resources and fishing people. Moreover, though the core of these studies is cultural anthropology, they are interdisciplinary in approach. It is our hope that it will encourage the development of new research areas in anthropology.

In this introduction, we (a) present a brief history of maritime anthropology in Japan, (b) summarize a maritime anthropology project at the National Museum of Ethnology, Osaka, Japan and (c) briefly review the contents of this volume.

## 2. MARITIME ANTHROPOLOGY IN JAPAN

The late Asahitaro Nishimura [1972] stressed the need for “marine ethnology (anthropology)” research. He defined it as “the study of all biological, biocultural, and cultural phenomena or facts concerning human activities directly or indirectly connected with the sea” [NISHIMURA 1973: 12]. Because fishing cultures are often constrained or shaped by environmental factors, he employed cultural ecological approaches in his examination of them [NISHIMURA 1974: 34]. He extensively reviewed the existing literature concerned with fishing cultures and summarized research trends in marine ethnology [NISHIMURA 1973]. In addition, he carried out a series of field research projects on stone tidal weirs in Okinawa, mud sleds used in the muddy tidal zones of southeast Asia and the Ariake Sea in Japan, and fishing cultures in eastern Java [NISHIMURA 1975; 1979; 1981; 1984].

Since the beginning of the 1980s, Kenneth Ruddle and Tomoya Akimichi have been among the principal anthropologists in maritime anthropology. Ruddle [1986; 1993; 1994a; 1994b] explored traditional local management systems of marine resources in Japan and Southeast Asia, while Akimichi [1988; 1995a] conducted extensive field research on fishing cultures in Southeast Asia and southern Pacific regions.

While Nishimura was interested primarily in fishing techniques and equipment, and the property rights of fishing gear and fishing grounds in several societies, Akimichi’s interests were more varied. His research addressed questions not only relating to the material culture of fishermen, but also to navigation, space and time recognition, folk knowledge, fish food culture, trade, whaling problems, customary marine laws, and resource management [AKIMICHI 1988; 1995a, b; 1996; AKIMICHI and TAWA 1998; AKIMICHI and KISHIGAMI 2002]. Ruddle and Akimichi organized a symposium on marine tenure institutions in the western Pacific, the results of which were published in Ruddle and Akimichi [1984]. The various papers in their symposium demonstrated the existence of traditional marine resource management systems in Japan and the South Pacific. Currently, many Japanese anthropologists are conducting research on fishing cultures and marine resource management in the Arctic, Pacific, and Southeast Asia (e.g. AKIMICHI [1996]; KISHIGAMI [2003]).

## 3. A RESEARCH PROJECT “INDIGENOUS USE AND MANAGEMENT OF MARINE RESOURCES” AT THE NATIONAL MUSEUM OF ETHNOLOGY, OSAKA, JAPAN

While descriptive or “basic” research has a long history in Japanese academic traditions, applied studies have been less commonly undertaken and are often regarded as being of secondary importance only. This results from the fact that in academia, including Japanese anthropology, it is often stressed that research should be “neutral” or politics-free. However, with globalization, Japanese anthropologists and other social scientists are now stressing the need for active participation in applied research related to the problems facing many societies throughout the world.

At the National Museum of Ethnology, one of the results of this increasing interest in applied anthropology was the establishment in 1998 of a new research unit, the Department of

Advanced Studies in Anthropology. As an appointed member of the department, Nobuhiro Kishigami initiated research on the indigenous use and management of marine resources with Professor Akimichi (who was director of the Department of Social Research at that time). While Akimichi was primarily concerned with the tropical and sub-tropical regions, Kishigami focused on the Arctic and Sub-Arctic regions. This research took place over a three year period, from April 1998 to March 2001, and was financially supported by the Museum. A related field research project was undertaken from April 1999 to March 2002, and was financially supported by a Grant-in-Aid for Scientific Research from the Ministry of Education, Science, Sports and Culture (Monbusho) and by the Japan Society for the Promotion of Science (JSPS).

These two projects focused on marine resource use and management in local societies of Arctic North America, the Northwest Coast of Canada, the Kamuchatka Peninsula of Russia, Okinawa, Korea, the Philippines, Indonesia, the Solomon Islands, Samoa, the Torres Islands and Arnhem Land of Australia, and New Zealand. More than ten researchers participated in the projects, and examined contemporary indigenous exploitation, use, distribution and management of marine resources, focusing on local ecological knowledge, co-management, trade, ownership, harvesting regulations, indigenous and state environmental conservation, and commercial development. The results from the projects were published in a book entitled "Troubled Waters: Anthropology of Marine Resource Management" [AKIMICHI and KISHIGAMI 2002], and in two research reports, "Indigenous Use and Management of Marine Resources" [KISHIGAMI 2002] and "Anthropological Study of Indigenous Use and Management of Marine Resources" [KISHIGAMI 2003]. The primary results can be summarized as follows:

- (1) In the Arctic/Sub-arctic regions, there are fewer marine species, although they tend to be larger and more abundant than in the tropical/sub-tropical regions. In the latter regions, there are a greater number of species but they tend to be smaller. Furthermore, in the Arctic regions, indigenous people harvest primarily sea mammals and fish for subsistence, while in the tropical regions, although subsistence harvesting takes place, there is also extensive exploitation of certain marine products for export to external markets through Chinese or local traders. This has led to the development of extensive inter-ethnic trade networks connected to Chinese markets.
- (2) In the Canadian Arctic and the Torres Strait region of Australia, marine resources are rarely depleted, as long as the indigenous populations do not exceed the carrying capacity, and commercial harvesting does not conflict with the subsistence use of the resources. However, there are exceptions as species such as the beluga whale in some regions of the Arctic and dugongs in some Torres Strait regions are said to have been over-exploited by indigenous peoples, leading to the need to employ conservation measures. In Canada and Australia, co-management and/or community-based resource management strategies are employed by both the federal/provincial governments and local resource users.
- (3) Co-management or community-based resource management may be the most effective systems in the management of marine resources in general for subsistence use by indigenous people. In developing these systems, the most important consideration is that local users of the resources can willingly and positively participate as managing partners. Both Traditional Ecological Knowledge (TEK) and Scientific Ecological

Knowledge (SEK) should be fully utilized in the management process.

- (4) In the case of several marine resources such as salmon in Canada and Russia, and sea cucumbers and groupers in Indonesia and the Philippines, once they are harvested by indigenous people for purely commercial purposes (e.g. monetary profit), they tend to be over-harvested, and thus depleted. Commercial distribution systems and the demand for the resources in international and domestic markets must be taken into consideration in developing management systems.
- (5) In regions in which migratory marine resources have high monetary value in domestic and international markets, co-management or community-based resource management are usually inadequate. One alternative solution is the development of international eco-management regimes across international borders or integrated coastal resource management regimes in large multi-national regions.
- (6) The most important point is not to develop management systems simply to conserve marine resources, but to create systems for the sustainable use of these resources. Furthermore, contemporary management of marine resources should consist of three components: maintaining resource quantity, equitable use, and quality (e.g., keeping them free of contaminants).

When the first phases of the research projects were completed, an international symposium on indigenous use and management of marine resources was organized by Kishigami and Akimichi. The purpose of this symposium was to examine several effective use and management systems of marine resources from an inter-disciplinary perspective, and compare how various groups of fishers and hunters have exploited and managed marine resources in the Pacific, Arctic and other regions. Kishigami requested his co-researchers to nominate 25 scholars from Japan and abroad as participants in the symposium. The speakers were made up of researchers from various disciplines such as cultural anthropology, ecological anthropology, marine ecology, fishery science, marine biology, archaeology, nutritional science and environmental chemistry. The symposium, "New Interdisciplinary Approaches to the Study of Indigenous Use and Management of Migratory Marine Resources," was held at the National Museum of Ethnology, Osaka, Japan from December 2nd to 6th, 2002.

#### **4. SUMMARY OF THIS VOLUME**

At the 2002 symposium the topics covered were the co-management of fisheries resources, indigenous and commercial whaling, and management of marine resources by indigenous cultures worldwide. This volume consists of revised papers from that symposium and consists of five parts: Part 1—Overview: Theoretical and Empirical Considerations; Part 2—Indigenous and Commercial Whaling; Part 3—Use and Management of Marine Resources in Tropical and Sub-Tropical Regions; Part 4—Marine Resource Use and Indigenous Knowledge in Australia, Arctic Canada and New Zealand; and Part 5—Environmental and Political Issues of Indigenous Marine Resource Use.

Part 1 consists of papers by Berkes, and by Pollnac and Johnson. Berkes discusses the management of migratory marine resources in terms of Commons Theory. Common property resources are associated with problems of exclusion and subtractability. Theoretically, community-

based management (a type of co-management) systems can solve these two problems. Berkes outlines the possibility of co-management based on cross-scale institutional linkage and points out its strengths and limitations. Pollnac and Johnson examine the relationship between indigenous management and resource conservation. They argue that the effectiveness of any indigenous custom or practice of resource conservation must be empirically tested with appropriate data.

Part 2 focuses on indigenous and commercial whaling issues and consists of papers written by Savelle, Freeman, Barnes, Hamaguchi, Iwasaki-Goodman, Kishigami and Ohmagari. Savelle describes the exploitation of whales in archaeological and historical perspectives. Freeman discusses the social, cultural, economic, and nutritional importance of whales in indigenous societies across the Arctic regions. Barnes describes indigenous use of whales and various other marine resources in East Flores and Lembata, eastern Indonesia, where neither indigenous people nor the Indonesian government engage in any whale conservation management. Hamaguchi describes the history, international politics and cultural significance of contemporary indigenous humpback whaling in Bequia, St. Vincent and the Grenadines. Iwasaki-Goodman discusses the successful co-management of beluga whales in the western Canadian Arctic by the Inuvialuit. Kishigami describes the current state of co-management of beluga whales in Nunavik, Canada, points out serious problems in the management system and proposes a new form to improve its effectiveness. Ohmagari describes the eco-politics of contemporary general meetings of the International Whaling Commission. In the past, there were two primary views on whales within the Commission, one that saw the whales as tourist resources and the other that saw them as renewable food resources. However, Ohmagari points out that because whales are now also used as eco-political resources by the IWC, the IWC is not functioning as an effective international management body.

Part 3 is concerned with the use and management of marine resources in tropical and sub-tropical regions, and consisted of papers by King, Kamuma, Ruddle, Iida, and Akamine. King examines several cases of failed centralized management systems for marine resources in the Pacific and proposes community-based co-management systems as alternatives. Kakuma compares marine resource management systems in Okinawa, Samoa and the Philippines. He stresses the importance and usefulness of offshore Fish Aggregating Devices (FADs) as an alternative to income from near-shore marine sources for fishers. The use of FADs should in turn contribute to less exploitation of coastal marine resources and therefore may prompt resource conservation in the coastal regions. Ruddle describes the use and traditional management of small clupeoids in central Viet Nam. He describes the ecological context, fermentation processes, and traditional shrine-based fisheries management systems. Iida describes temporal changes in fishing activities among the Vezo of southeastern Madagascar. He outlines some of the serious limitations of community-based management through a case study of fishermen who undertake seasonal fishing in remote areas for commercial purposes. Akamine describes the history of exploitation and trade of sea cucumbers in the Philippines, and the multi-ethnic network chains from fishermen to consumers through Chinese traders in their harvesting and distribution. He argues that cultural and political factors relating to this resource should be taken into account in any conservation attempts.

Part 4 is concerned with the use and indigenous knowledge of marine resources in Australia, New Zealand and Arctic Canada, and consists of papers by Kwan, Newman and Moller, Omura,

Stewart, and Wenzel. Kwan reports on a sustainable dugong fishery management in Torres Strait in Australia. She argues that dugongs are a symbol of Torres Islanders' cultural identity, and thus the islanders' beliefs and customs should be incorporated into the co-management system between them and the state. She also emphasizes the necessity of managing them on both local and regional levels. Newman and Moller describe the joint research on seabirds by university biologists and Maori people. They argue that although Maori traditional knowledge and western scientific knowledge are not always in agreement, complementary use of both in research benefits the Maori and the scientists. Omura describes several problems in the use of Inuit knowledge and scientific knowledge in the management of wildlife resources in Nunavut, Canada. He argues that Inuit Traditional Ecological Knowledge (TEK) based on an ideology of tactics, and Scientific Ecological Knowledge (SEK) based on an ideology of strategy, cannot be integrated into a single co-management system. Instead, he suggests that each be considered on a case by case basis in co-management. Stewart stresses the importance of fish as a food resource in traditional and contemporary Inuit society in the Canadian Arctic. He describes several fishing methods from Kuggaruk (Pelly Bay), and traditional taboos and ritual practices related to fish and fishing among the Pelly Bay Inuit. Wenzel describes the history and current state of the polar bear sport hunt in Nunavut, Canada. He argues that since the polar bear sport hunt is an important cash income source to Nunavut's cash-poor communities, some thought should be given to increasing the proportion of the annual quota to sport hunting within each community.

Part 5 discusses current environmental and political issues related to marine resources in the Arctic and Australia. This part is composed of papers written by Kunlein et al., Nuttall, and Peterson. Kuhnlein et al. describe the nutritional, economic and cultural significance of country food across the Canadian Arctic. They also describe contamination from Persistent Organic Pollutants (POPs) and heavy metals in marine mammals used by the Inuit and other aboriginal groups. They report on current problems in local food consumption in northern regions through research conducted by the Centre for Indigenous Peoples' Nutrition and Environments (CINE) at McGill University, in cooperation with indigenous groups and the Government of Canada. Nuttall deals with climate change in the Arctic, and its impact on the ecology and indigenous use of marine resources<sup>2</sup>. Peterson discusses marine tenure systems of Arnhem Land Aborigines in Australia's Northern Territory. He outlines the history and structure of their marine tenure systems. While Peterson's work is related to Aboriginal Land Claims in Australia, the issue of indigenous sea rights will be important in other regions in the near future, given that a majority of the land claims in the past have concentrated only on land rights<sup>3</sup>. The topics dealt with in this part are in the process of emerging and there is an urgent need for both indigenous peoples and the states concerned to address them.

Until recently, problems relating to the use and management of marine resources have been addressed primarily by marine scientists and resource economists. On the other hand, as noted earlier, the authors of this volume include scholars from several different fields, including sociocultural and ecological anthropology, archaeology, nutritional science, biology, marine science, and environmental ecology. We believe that, in order to establish effective management and sustainable use of marine resources, interdisciplinary approaches are necessary. This includes approaches at the local level, and, given international political disputes and distribution systems

in international markets, at the global level as well. We the editors sincerely hope that this volume will stimulate our colleagues to undertake new research that will contribute to the development of the field of maritime anthropology.

## ACKNOWLEDGEMENTS

We thank the Japanese Ministry of Education, Science, Culture, Sport and Technology and the National Museum of Ethnology for their financial support of the symposium and this volume. We are grateful to Professor Tomoya Akimichi at the National Institute for Nature and Humanity, Kyoto, Japan for his academic advice on the symposium.

## NOTES

- 1) For reviews of maritime anthropology, see Nishimura [1973], Landerg [1979] and Acheson [1981]; for traditional and contemporary fisheries management system, see Berkes et al [2001], Freeman, Matsuda and Ruddle [1991], Johanness [1978; 1981; 1998], Pnkerton ed. [1989], Poggie and Pollnac [1991], Ruddle [1993; 1994a; 1994b; 1996; 1998], Ruddle and Akimichi [1984]; and for indigenous and small scale whaling, see Freeman et. al [1988; 1998].
- 2) For a review of climate change and human ecology, see Peterson and Darryll [1995].
- 3) For reviews of indigenous sea rights, see Peterson and Rigsby [1998], and Mulrennan and Scott [2001].

## REFERENCES

- ACHESON, James M.  
1981 *Anthropology of Fishing. Annual Review of Anthropology* 10: 275–316.
- AKIMICHI, Tomoya  
1988 *Ethnology of Marine People*. Tokyo: Nippon Housou Shuppan Kyoukai. (in Japanese)  
1995a *Maritime Ethnology*. Tokyo: University of Tokyo Press. (in Japanese)
- AKIMICHI, Tomoya (ed.)  
1995b *Marine People of Dolphins and Trepangs*. Tokyo: Nippon Housou Shuppan Kyoukai. (in Japanese)  
1996 *Coastal Foragers in Transition* (Senri Ethnological Studies No.42) Osaka: National Museum of Ethnology.
- AKIMICHI, Tomoya and Nobuhiro KISHIGAMI (eds.)  
2002 *Troubled Waters: Anthropology of Marine Resource Management*. Kyoto: Jinbunshoin. (in Japanese)
- AKIMICHI, Tomoya and Masataka TAWA.  
1998 *Natural History of Marine People*. Nishinomiya: Kwansei Gakuin University Press. (in Japanese)
- BERKES, Fikret et al.  
2001 *Managing Small-Scale Fisheries: Alternative Directions and Methods*. Ottawa: International



Development Research Centre.

CASTELL, R. W. and G. I. QUIMBY (eds.)

1975 *Maritime Adaptations of the Pacific*. The Hughes: Mouton Publishers.

CORDELL, John (ed.)

1989 *A Sea of Small Boats*. Cambridge: Cultural Survival, Inc.

FREEMAN, M. M. R. et al.

1988 *Small-Type Coastal Whaling in Japan*. Edmonton, Alberta: Boreal Institute for Northern Studies, University of Alberta.

1998 *Inuit, Whaling, and Sustainability*. Walnut Creek, CA.: Altamira Press.

FREEMAN, M. M. R., T. MATSUDA and K. RUDDLE (eds.)

1991 *Adaptive Management of Marine Resources in the Pacific*. Philadelphia: Harwood Academic Publishers.

GUNDA, Bela (ed.)

1984 *The Fishing Culture of the World*. Budapest: Akademiai Kiado.

JOHANNES, Robert E.

1978 Traditional Marine Conservation Methods in Oceania and Their Demise. *Annual Review of Ecology and Systematics* 9: 349–364.

1981 *Words of the Lagoon*. Berkeley: University of California Press.

1998 Government-Supported, Village-Based Management of Marine Resources in Vanuatu. *Ocean and Coastal Management* 40: 165–186.

KISHIGAMI, Nobuhiro (ed.)

2002 *Indigenous Use and Management of Marine Resources*. (Research Report of A Grant-in-Aid for Scientific Research A(2), JSPS. Fiscal Year 1999–2001). Osaka: National Museum of Ethnology. (in Japanese)

2003 *An Anthropological Study of Indigenous Use and Management of Marine Resources* (Senri Ethnological Reports. No.46) Osaka: National Museum of Ethnology. (in Japanese)

LANDERG, Leif C.W.

1979 *A Bibliography for the Anthropological Study of Fishing Industries and Marine Communities, Supplement 1973–1977*. Kingston, R.I.: International Center for Marine Resource Development, University of Rhode Island.

MULRENNAN, M. and C. SCOTT

2001 Indigenous Rights and Control of the Sea in Torres Strait. *Indigenous Law Bulletin* 5(5): 11–15.

NISHIMURA, Asahitaro

1972 Maritime Ethnology. Paper presented at the Conference on Traditional Fishing. Muzeum Ethnograficzne, Torun, Poland, 2–3, December.

1973 *A Preliminary Report on Current Trends in Marine Anthropology*. Occasional Papers of the Center of Marine Ethnology. No.1. Tokyo: Waseda University.

1974 *Marine Ethnology*. Tokyo: Nippon Housou Shuppan Kyokai. (in Japanese)

1975 Cultural and Social Change in the Modes of Ownership of Stone Tidal Weirs. In Castell, R. W. and G. I. Quimby (eds.) *Maritime Adaptations of the Pacific*, pp. 79–88. The Hague: Mouton Publishers.

1980 Living Fossil of Fishing Gear. *Japanese Journal of Ethnology* 44(3): 223–259. (in Japanese)

1981 Maritime Counterpart to Megalithic Culture on Land. *Journal de la Societe des Oceanistes* 72–73: 255–266.

- 1984 Fishing in Indonesia from the Marine Ethnological Viewpoint with Respect to Wallace's Line. In Gunda, Bela (ed.) *The Fishing Culture of the World*, pp. 677-703. Budapest: Akademiai Kiado.
- PETERSON, David L. and Darryll R. JOHNSON  
1995 *Human Ecology and Climate Change*. Washington, D.C.: Taylor and Francis.
- PETERSON, Nicolas and Bruce RIGSBY (eds.)  
1998 *Customary Marine Tenure in Australia* (Oceania Monograph No.48) Sydney: University of Sydney.
- PINKERTON, Evelyn (ed.)  
1989 *Co-Operative Management of Local Fisheries: New Directions for Improved Management and Community Development*. Vancouver: University of British Columbia Press.
- POGGIE, John J. and Richard B. POLLNAC  
1991 *Small-Scale Fisheries Development: Sociocultural Perspectives*. Kingston, R. I. : International Centre for Marine Resource Development, University of Rhode Island.
- POLUNIN, N. V. C. and C. M. ROBERTS (eds.)  
1996 *Reef Fisheries*. New York: Chapman and Hall.
- RUDDLE, Kenneth  
1986 Supply of Marine Fish Species for Fermentation in Southeast Asia. *Bulletin of the National Museum of Ethnology* 11(4): 997-1036.  
1993 External Forces and Change in Traditional Community-Based Fishery Management Systems in the Pacific Island Region. *Maritime Anthropological Studies* 6(1/2): 1-37.  
1994a Guide to the Literature on Traditional Community-Based Fisheries Management in the Asia-Pacific Tropics. *Fisheries Circular* No.869 FAO: Rome.  
1994b Local Knowledge in the Future Management of Inshore Tropical Marine Resources and Environment. *Nature and Resources* 30(1): 28-37.  
1996 Traditional Management of Reef Fishing. In N.V.C. Polunin and C.M. Roberts (eds.). *Reef Fisheries*, pp. 137-160. New York: Chapman and Hall.  
1998 Traditional Community-Based Coastal Marine Fisheries Management in Viet Nam. *Ocean and Coastal Management* 40: 1-22.
- RUDDLE, Kenneth and Tomoya AKIMICHI (eds.)  
1984 *Maritime Institutions in the Western Pacific* (Senri Ethnological Studies No.17) Osaka: National Museum of Ethnology.
- SMITH, Estellie  
1977 *Those Who Live from the Sea: A Study in Maritime Anthropology*. St. Paul: West Pub. Co.

