3 Bringing Sardines to the Shore

In spring of 1677, fishermen from the hamlet Kōbuchi on the Oshika Peninsula met one of their gods. While looking for cod fish, the fishermen had ventured out onto the open sea, keeping the island of Kinkazan as a last connection to the realm of men always in sight. South of Kinkazan, they found a dead whale drifting on the water. Overjoyed with gratitude, the fishermen might have thanked the gods of the sea over this unexpected gift. They knotted the carcass to their boats and brought it back to the village. Here they flensed the animal as good as they could and found a merchant who was willing to buy the whale meat. Even after paying the tax to the Sendai domain, they still had a considerable amount of money left.

However, soon thereafter the trouble began. One of the newly arrived foreigners from the faraway domain of Kii, a man called Kondō Kihei, went to the local magistrate and the district headman and claimed that he and his crew had hunted this whale before it got away mortally wounded. Therefore, half of the profit should belong to them. To the dismay of the locals, the magistrate judged in Kihei's favour and the fishermen had no other choice but to give away their newly earned fortune. This did go against all conventions on the Oshika Peninsula, as a drifting whale always belonged to the group who had found it. It was clear that Kihei would lay claim to every drifting whale from now on. This confrontation was just the latest of many grievances the locals had against the outsiders from Kii that had recently begun to hunt fish and whales in the region. For the first time in recorded history, all forty-four fishing communities of the Oshika Peninsula set aside their internal differences and composed together a petition to the magistrate in Ishinomaki, demanding the immediate suspension of all bonito fishing and whaling by the Kii groups. For the Oshika fishermen, there was much more at stake than just the banning of unwanted competition. Without whales, their whole livelihood was in danger.

The whaling dispute of 1677 stood at the beginning of the slow transition from subsistence fishing to the proto-industrialisation of sardine and

bonito fertiliser production at the Sanriku Coast. The transfer to a different economic system required a new evaluation of how humans perceived, lived, and made use of their local environment. As I will argue in this chapter, the Oshika fishing communities believed that the cetosphere was crucial to conduct proto-industrial fishing with the tools and technologies they had at their disposal. In their eyes, the killing of whales directly threatened the socio-economic and ecological survival of the village. It did not matter for the fishermen whether whales competed for the same fish resources as humans, as without whales, fish were just too far away from the coast to be caught with methods the fishing communities had available. Rather than seeing proto-industrial marine fertiliser production or whaling as independent activities, the locals regarded these two activities as directly related. Pursuing both at the same time could potentially disturb the delicate ecological balance and lead to negative ramifications for the coastal communities' fishing endeavour. The interweaving of ecological conservational thought with socio-economic and cultural practices aimed at securing long-term sustainability of marine resources.[1] The 1677 petition helps us to reconstruct the ecological knowledge the Oshika fishermen held in regard to whales, broadening our understanding of how proto-industrial fishing was deeply intertwined with the well-being of the cetosphere. Furthermore, a close reading of the petition reveals how Oshika fishermen did not regard the ocean as a static uniform entity. Instead, they divided it into several spatial spheres in which humans, fish, and whales played different roles.

Fishing Disputes on the Oshika Peninsula

Like most early modern societies, the Oshika communities had a deeply moral view of how economy and ecology were interconnected. Rural communities embedded their ecological worldview in a web of vernacular traditions, moral values, and religious beliefs. The resulting practices did not appear out of nowhere nor did they remain unchanged over time but were in constant flux. Thus, the local ecological knowledge of a community was constantly renegotiated not only among its members but also with its neighbours, higher political authorities and even with the environment itself. The process of renegotiating a moral framework was not harmonious, but rather came about in a series of conflicts as groups

[1] I do not argue that this worldview led inevitably to a life 'in harmony with nature' that was truly sustainable, however. As we will see, the success of proto-industrial fish fertiliser eventually led to a decline in fish stocks. See also Krech, *The Ecological Indian*; Hughes, *North American Indian Ecology*; Cronon, 'The Uses of Environmental History'.

and individuals with different interests and expectations towards the use of the environment clashed.

An illuminating genre of sources that highlight these renegotiations in early modern Japan is petitions. Petitions were letters written by commoners or their representatives to the next higher authorities in the domanial hierarchy.[2] When disputes among commoners could not be solved locally or when criminal activities were discovered, commoners could write petitions to the authorities, who then acted as judges. Petitions could also contain requests directed at the authorities, for example for lowering taxes after a bad harvest. Writing a petition was not without danger, however. A group of petitioners not only risked being ignored by the higher authorities but even faced the possibility to be punished if their request was perceived to transgress the boundaries of the social order. Especially precarious were situations when commoners were at odds with their direct domanial superiors, as they were often not allowed – under the threat of death – to appeal to even higher authorities, circumventing the direct hierarchy.[3] As this practice allowed corruption and mismanagement among lower governmental retainers, some domains began installing petition boxes, where commoners could appeal directly to a daimyo or even the shogun, without the fear of being punished.[4]

To understand the importance of the 1677 petition we have first to take a closer look at the social and political situation on the Oshika Peninsula (Figure 3.1), which was part of the Sendai domain and adjacent to the port city of Ishinomaki. In 1698 around 15,000 people lived in and around Ishinomaki, while the 44 coastal communities on the Oshika Peninsula and the surrounding islands had a total population of around 10,000.[5] The highest political authority in the region was the Ishinomaki magistrate (*daikan*), a low-ranking samurai working for the domanial government. He was responsible for taxation and jurisdiction over four districts (*kumi*; lit. groups): the inland district of Kugazama and the three coastal districts of Onagawa, Kitsunezaki, and Kuganari, the latter three

[2] In the primary sources, farmers and fishermen were called *hyakushō*. In older literature, this term was translated as farmers, but Amino Yoshihiko has convincingly shown that the term was used more broadly and meant 'commoners', see Amino, *Rethinking Japanese History*, chap. 1; Iwate-ken, *Iwate-ken gyogyōshi*, 38–40.

[3] One way to mitigate the risk was that all petitioner signed the letter in a circle so that no single person could be made out as a ringleader and be punished as an example. See Sumitake, 'Tenryō Hida no Ōhara sōdō', 85.

[4] Roberts, 'The Petition Box in Eighteenth-Century Tosa'.

[5] Oshika chōshi hensan iinkai, *Oshika chōshi: Jōkan*, 100–1. Not every village on the Oshika Peninsula was a coastal community, however. Sometimes several small villages – often not more than a few houses – were under the jurisdiction of a single village headmen and formed together a coastal community, see Watanabe, *Miyagi no kenkyū*, 4:127.

Figure 3.1 Map of the Oshika Peninsula in the Early Modern Period

all on the Oshika Peninsula. Each district was managed by a district headman (*ōkimoiri*), who was elected by his peers from the commoner class. District headmen were the direct link between the samurai and commoners' class, and it was often them, who wrote the petitions to the magistrate.[6] Beneath them, was the village headman (*kimoiri*), who allocated the collective tax burden among the villagers and settled minor disputes.[7] Similar to district headmen, village headmen were also elected for life and could only be dismissed from their position by orders of the domain because of illness or old age. As can be expected, it was usually the most wealthy and influential individuals in a village or district who were chosen for their position by their peers, and as we will see in the next

[6] Oshika chōshi hensan iinkai, *Oshika chōshi: Chūkan*, 799–800; Chiba, *Sendairyō no ōkimoiri*, 1–7.

[7] In other domains, the position of village headman was also called *shōya* or *nanushi*. *Kimoiri* translates into 'roasting a liver', which means 'good deeds', 'sponsor', or 'organiser'. *Kimoiri* can also be understood as 'someone who takes great pain to save someone else from said pain'.

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chapter the title of village and district headman became often a de facto hereditary title.

Economically, the coastal districts were focused almost solely on the exploitation of the rich coastal ecosystem, even though most villages had a few small fields near the village. Among the most common marine resources harvested were abalone, octopus, various smaller fish, tuna, and occasionally even dolphins. Most fishing was done near the shore with trap nets, but to hunt some species, the fishermen had to travel to the sea near the sacred island of Kinkazan, a little east of the peninsula. Another source of income was the production of salt, which was won by vaporising seawater. This method required substantial amounts of firewood, however, which became scarce by the end of the seventeenth century.[8]

Because of their dependence on coastal and marine resources, the Oshika communities had a vital interest in securing access to the coastal ecosystem as well as protecting the marine resources against overuse. A local law book from 1741 details that the land, coastline, and sea surrounding a coastal community was exclusively harvested by the closest community, while everything out on the open sea was considered under the common stewardship by all communities, called *iriai* (common ground).[9] The oceanographer Yanagi Tetsuo argued that the *iriai* was an early example of how coastal communities could increase the productivity and biodiversity of a coastal ecosystem through careful management of the marine resources.[10] He argued that the Japanese *iriai* often avoided the 'tragedy of the commons' trap, that is, the overexploitation of common resources caused by human actors seeking to maximise their profit, by allowing only a few communities to enter the *iriai*, while rules concerning the period of harvest and the methods of the harvest had to be rigorously followed.[11] In the eyes of the locals, they had a moral obligation to follow these conservation rules, unless they wanted to face starvation a few years later. If we follow Yanagi's argument, the Oshika *iriai* system seems to be an illuminating example of how moral-based rules

[8] Iwate-ken, *Iwate-ken gyogyōshi*, 23–42.
[9] Wilhelm, 'Ressourcenmanagement in der japanischen Küstenfischerei', 82, 212–13.
[10] Yanagi called the human management of coastal areas *satoumi* (ocean near the village), derived from the more popular *satoyama* concept (mountains near the village), see Yanagi, *Sato-Umi*. For a general discussion of *satoyama* and *satoumi*, see Knight, 'The Discourse of "Encultured Nature" in Japan'; Japan Satoyama Satoumi Assessment, 'Satoyama-Satoumi Ecosystems and Human Well-Being'; Honda, 'Satoyama-Satoumi no bunka to seitaikei sa-bisu no hensen'.
[11] Yanagi, *Sato-Umi*, 75. For more on the 'tragedy of the commons', see Hardin, 'The Tragedy of the Commons'. For a possible solution of 'the tragedy of the commons', see Ostrom, 'Coping with the Tragedies of the Commons'.

contributed to a sustainable harvest of marine resources. If we take a closer look, however, cracks appear in this image.

For example, by the nineteenth century, the continued expansion of the fish fertiliser economy and other marine proto-industries slowly diminished the fish stocks at the Oshika Peninsula.[12] This was partly because the natural fluctuations in sardine abundance caused by inter-decadal shifts in water temperature made it more difficult to notice an overall drop in long-term sardine catches.[13] This situation has been called the 'shifting baseline syndrome' because scientists (or fishermen) naturally orientate themselves to the baseline ecosystem they experienced when they started their observations and the next generation of observers again sets the temporal baseline at the start of their careers.[14] Changes over several generations, such as smaller fish stocks, often go unnoticed and the baseline of the targeted stock of each generation becomes smaller than that of the previous generation.[15]

Moreover, the *iriai* system was far from clearly defined and was the cause of constant disputes and conflicts. Not only was it often unclear where the exclusive zone of one village ended and that of another began, even inside an *iriai* some communities proclaimed to have the exclusive right to harvest a certain resource or use a certain fishing technique, while the harvest of other marine resources were considered unrestricted, as long as a community possessed the right to access the *iriai*.[16] Alone in the Kitsunezaki district over thirty conflicts between villages, were recorded in the form of petitions.[17] Interestingly, petitions only covered disputes between communities. Conflicts inside a community were resolved locally by the village headmen. Even though some of the communities had fewer than fifty households, petitions were used to strengthen the internal cohesion by reconfirming the independence from other communities.[18]

Conflicts often started when one community began to harvest marine resources at a new spot or with a new technique that infringed on the perceived traditional rights of another community. For example, in 1664, the fishermen from Ōhara caught ten dolphins with a dragnet (*hikiami*) in the *iriai* a bit offshore.[19] However, the dolphins had been directly heading

[12] See Chapter 6. [13] Kawasaki, *Regime Shift*.
[14] Jackson, Alexander, and Sala, *Shifting Baselines*; Klein and Thurstan, 'Of Seascapes and People'.
[15] Klein and Thurstan, 'Of Seascapes and People'.
[16] Wilhelm, 'Ressourcenmanagement in der japanischen Küstenfischerei', 82–3.
[17] Watanabe, *Miyagi no kenkyū*, 4:133–4.
[18] Watanabe, *Miyagi no kenkyū*, 4:127, 170–1.
[19] Dolphins often got entangled in tuna nets, which were erected near the coast. Tuna could reach over two metres in length and be killed with spears. The same technique could also

towards a fixed tuna net installed by fishermen from Kyūbun closer at the coast. Therefore, the Kyūbun fishermen argued that without the Ōhara people interfering, the dolphins would have been caught by them inside their exclusive fishing zone. The conflict was settled when five of the ten captured dolphins were given to the Kyūbun fishermen.[20] This example illustrates the moral component of the *iriai* system. One could have argued that the Ōhara fishermen were in their rights to hunt these dolphins as the animals were at the time of capture in the open sea, and therefore free to take for anyone. However, as the dolphins would have entered soon into the exclusive fishing zone of the Kyūbun fishermen, it became a moral obligation that at least a part of the catch was given to these fishermen. In this way, both involved communities profited from the catch. On the other hand, it seems that the Ōhara fishermen had initially not volunteered half of the catch but needed to be forced to do so after a petition was put forward. Nevertheless, this new precedent determined the correct moral behaviour for similar situations in the future. Thus, a more or less fair allocation of marine resources laid at the core of these rules, which were negotiated through disputes, often in the form of petitions.

The Arrival of the Kii Fishermen

As we have discussed in Chapter 1, Kii fishermen followed the whale pilgrimage around the Japanese Archipelago since the early seventeenth century. While their fleets were quite successful in the west, their travels east on the Kuroshio were met with more local resistance. For example, on the Bōsō Peninsula east of the capital Edo, the Kii fleet successfully introduced new fishing techniques, such as the beach seine (*jibikiami*), where a long net lying in the coastal water is pulled to the beach by two groups of fishermen.[21] After 1630, between forty and fifty sardine and bonito fishing ships from Kii were operating off the cape of Chōshi between spring and autumn each season.[22] However, with the growth of the capital Edo came an increased demand for marine products in the Kanto plain. The Kii fishermen, who sold their products in the Kansai region, were seen as unwanted competitors and conflicts regarding the harvest of the marine resources began to increase.[23] The locals prevailed and instead of delivering fish fertiliser and other marine products to

be used for the larger dolphins. It is believed that opportunistic dolphin hunting was quite common on the Sanriku Coast, see Tōhoku rekishi shiryōkan, *Sanriku no gyogyō*, 1–7.

[20] Watanabe, *Miyagi no kenkyū*, 4:139. [21] Miura, *Zusetsu Chiba-ken no rekishi*, 152.

[22] Miyashita, *Katsuobushi*, 1989, 1:367.

[23] Wakayama kenshi hensan iinkai, *Wakayama kenshi*, 4:448–52.

Kansai, they sold it directly in Edo. The Kii fishermen had no other choice than to look for new fishing grounds in the north. However, here their expansion was severely limited for the time being, as crossing the cape of Chōshi, where the Kuroshio meandered into the open ocean, was extremely dangerous. Thus, reaching the undeveloped Sanriku Coast and eventually Ezo was a considerable challenge.[24]

Even less successful were the Kii groups with the introduction of whaling techniques in the east. As I will discuss later in the chapter, fierce resistance on the Izu Peninsula, prevented the establishment of proto-industrial whaling in the region. Only in Katsuyama on the southern tip of the Bōsō Peninsula was a new harpoon whaling group founded in 1655. Unlike their counterparts in western Japan, however, these whalers focused on Baird's beaked whales, a species otherwise rarely hunted. It is, therefore, unclear to what degree – if at all – Kii whaling knowledge influenced the formation of this group.[25]

A first attempt to cross the dangerous cape of Chōshi was made by Kii fishermen in 1654 when a Kii boat reached the city Miyako on the Sanriku Coast but in 1661, all eight crewmen of one such ship from Kii were lost in a storm.[26] Traditionally, cargo was unloaded at Chōshi and shipped via a nearby river, but as Edo grew and more commercial goods were imported from the northern domains, this became less practical every year. In 1667, Nanbu Naofusa, the first daimyo of the newly established Hachinohe domain, navigated around the cape of Chōshi to reach Edo. With this, he not only demonstrated the shipping power of Hachinohe but also that a safe passage around the cape was possible.[27] Just three years later, in 1670, the merchant Kawamura Zuiken found a safe sea-route around the cape of Chōshi. Together with the new sea-route through the Tsugaru Strait (between Ezo and Honshu), which merchants from the Akita domain had found in 1655, the Northeast was now connected to Edo and subsequently Osaka.[28]

The discovery of the safe sea-route around the cape of Chōshi allowed the Kii fishermen to expand to the Northeast. In 1671, a trader from the Morioka domain invited ten fishermen from the Kii Peninsula to introduce new techniques for bonito fishing to the region. In the following years, Kii groups arrived for the first time in the Sea of Kinkazan, just off the Oshika Peninsula. Shortly after arriving in the region, the Kii groups

[24] Furutae, *Kinsei gyohi ryūtsū no chikiteki tenkai*, 53–61.
[25] Nakazono and Yasunaga, *Kujiratori emonogatari*, 33.
[26] Miyashita, *Katsuobushi*, 1989, 1:368.
[27] Walker, 'Commercial Growth and Environmental Change in Early Modern Japan', 333.
[28] Wilhelm, 'Ressourcenmanagement in der japanischen Küstenfischerei', 153; Toyota, *Tōhoku no rekishi*, 2:181–2; Kamagasawa, *Kinsei Sanriku no iwashi ami no hattatsu*, 10–12.

introduced the beach seine and the tongue-tie-net (*kojitaami*) that trapped sardines in a bag-like net. The latter technique used four boats with ten fishermen on each one and could be used wherever sardines were found, but it produced a much smaller harvest than a full beach seine. The locals quickly adopted both techniques and sardine fertiliser became the first proto-industrial product of the Sanriku Coast.[29] Some locals immediately saw the benefits of learning these techniques and invited Kii fishermen to their village, as recorded on the Hei Coast in Morioka domain.[30]

Far more controversial than sardine fishing, however, was the introduction of bonito fishing. When the influential Kodate family from the Karakuwa Peninsula near Kesennuma in Sendai domain invited a group of over ninety Kii fishermen to their village in 1675, the fishermen from the surrounding villages drafted a petition complaining that these foreigners were using too much firewood and food while taking away the bonito stock from the locals. The Kodate family countered with their own petition explaining that the Kii fishermen were here to resurrect bonito fishing, which had been given up in Kesennuma twenty years ago. Most locals had not even known that migrating bonito stocks arrived not only in winter but also in the early summer months outside of the bay. Also, the amount of additional imported rice was minimal and the higher prices for firewood just meant better payment for the locals gathering wood. In the end, the Kii fishermen were allowed to stay for the rest of the season and returned to their home province with a good harvest.[31]

We do not know exactly when the first Kii fishermen arrived on the Oshika Peninsula. Considering the geographical position of the peninsula, we can assume that it must have been their first stop before going farther north to Kesennuma or even to the Morioka domain. In any case, the new sardine fishing technique had been disseminated successfully among the local fishing communities by 1677. According to the 1677 petition, the number of travelling fishing groups had increased in recent years and in 1676 the Sendai domain had banned all foreign fishing activities. However, two groups of Kii fishermen headed by Kondō Kihei and Tokuzaemon respectively were excluded from this ban for unknown reasons.[32]

[29] Kamagasawa, *Kinsei Sanriku no iwashi ami no hattatsu*, 12–13, 99.
[30] Sasaki, 'Sanriku kinkai no ōmono gyogyō', 141.
[31] Kesennuma shishi hensan iinkai, *Kesennuma shishi: Kinsei*, 3:246–9.
[32] The historian Tajima Yoshiya suggested that these groups might have been protected by the Kii-Tokugawa family. As the rulers of Kii Domain, the Kii-Tokugawa family supported the migration of their fishermen to other domains to bring back fish fertiliser to trade in Osaka to boost their local economy. It is reasonable to assume that they provided

It was against these activities of Kondō Kihei and Tokuzaemon that in 1677 a petition entitled *Request to stop the whalers from Kishū* (Kii domain) was drafted.[33] While this first petition was concerned with banning whaling and bonito fishing activities conducted by those two Kii fishing groups, a second petition from 1685 repeated the request to ban bonito fishing but not whaling, which had probably already been given up at this point. The 1677 petition was signed by all forty-four village headmen of the Oshika Peninsula and the three district headmen of the Oshika coastal districts. In contrast, the 1685 petition was signed by only eleven people, including the district headman of Kitsunezaki and the village headman of the island of Tashirojima. No official answer from the government has survived, but the 1685 petition gives us a few clues of how the first petition was received.

Polluting the Coast

What makes the 1677 petition so interesting for our purposes is that it is the earliest written document from the Sanriku Coast that shows the role whales and whaling had in the local ecological knowledge of the fishing communities. The petition is divided into five complaints made against the Kii fishermen. The first three of these complaints are concerned with the Kii whaling operations, while the fourth complaint is a protest against bonito fishing – a point that is repeated in the 1685 petition – and the last complaint is about the general ecological and economic impact of the travelling fishing groups. The petition indicates that both leaders of the Kii fishermen, Tokuzaemon and Kihei, came to the Oshika Peninsula to conduct bonito fishing. At some point Kihei's group also began to target the plentiful whales that were roaming in the Sea of Kinkazan. It is unclear if the whaling operations had been part of the original intent of Kihei or if this was an *ad hoc* decision. For the latter speaks that Kihei was apparently not using the newly developed net whaling method from his home domain but the simpler harpoon whaling method.

The petition does not give us much detail about the specifics of Kihei's whaling venture, but there exists a single whale scroll that possibly depicts

official travel permits for their fishing groups and used their political influence to ensure that they were not rejected in the other domains. Sendai Domain might have been unwilling to risk a dispute with the powerful Kii-Tokugawa family or it may have encouraged the activities of the Kii fishermen to promote bonito fishing in the region, see Tajima, *Kinsei Hokkaidō gyogyō to kaisan butsu ryūtsū*, 127–8.

[33] My analysis of the primary sources is based on the reprints in the Ishinomaki source compilation. Up until 2011, the originals were stored in the Ishinomaki Bunka Center, but since the 2011 tsunami, the centre has been closed to the public and it is unclear if the original still exists. See Ishinomaki shishi hensan iinkai, *Ishinomaki no rekishi: Shiryōhen 3 Kinsei*, 9:274–5, 290–1.

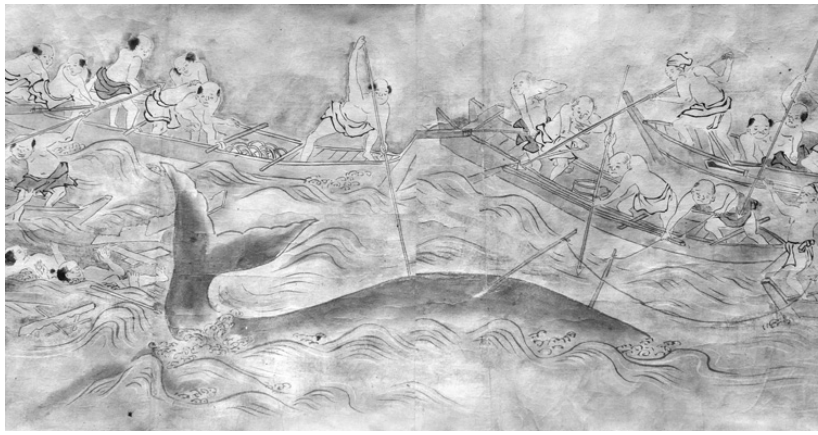

Figure 3.2 Scene of harpoon whaling on the Ayukai Whale Scroll (ca. 1700). Courtesy of Ayukai Ayako.

such a harpoon whaling operation in the Northeast that was produced around the same time. This scroll is part of the private collection of the Ayukai family in Kesennuma. During the Edo period, the Ayukai clan was a senior vassal of the Sendai domain and ruled over Kesennuma. It is not clear if the scroll shows a Kii whaling operation or an attempt by locals to conduct harpoon whaling, but it gives us some visual indications on how such an operation might have looked like in the Northeast.[34] On one part of the scroll (Figure 3.2), we see how a group of fishermen have surrounded a whale on the open water and attacked it from all sides with simple harpoons that are shot into the back of the whale. Afterwards, the captured whale is fixed with ropes to the boats and towed to the beach.

On the scroll we can see that during the hunt one ship is destroyed (maybe rammed by the whale?), indicating the dangers of harpoon whaling. And indeed, whales were often able to escape injured, leaving behind a trail of blood, grease, and oil in the water. For the petitioners, this was a major problem:

According to an old saying, when [you] pierce a whale, the oil will float into the bays and seaweed, octopus, and abalone won't grow or live in the area. This saying

[34] I am indebted to Ayukai Fumiko, who invited me into her home and showed me the scroll during my fieldwork in 2017. Furthermore, I would like to thank Kawashima Shūichi and Saito Midori for their help in securing the reprint copyright permission. The scroll was also exhibited in 2016 in the Tōhoku History Museum, see Tōhoku rekishi hakubutsukan, *Tokubetsuten*, 23.

is actually true. The oil of the whale is driven by winds and currents and does harm. [Because of this] there are no seaweed, octopus, and abalone at the coast of Izushima, Enoshima, and Kinkazan. Until this year between spring and middle of summer … [we] brought abalone to Minato and Ishinomaki to sell them. Since there were no abalone this year, however, business cannot be done at Minato and Ishinomaki, which has caused distress for the fishing villages.[35]

The petitioners made a direct connection between the pollution caused by harpoon whaling and the well-being of the coastal ecosystem on which they depended. As we have seen, the bodies of whales' function in the cetosphere as massive biomass containers full of nutrients. When whales are killed or injured close to the shore, these nutrients are spilled into the ocean and subsequently spread across the coastal ecosystem by currents and wind. The concentration of biomass often proves too much for the system to absorb and local flora and fauna are literally drowned in nutrients, leading to their withering, and dying.[36] This directly influenced the economic prospects of the fishing communities as these relied on the harvest of seaweed, octopus, and abalone to sell at the market in Ishinomaki. The economic and ecological impact of Kihei's whaling is further stressed later in the petition, where it is stated that his group was stationed on the island Izushima a bit north-east of the peninsula. Unsurprisingly, the pollution was the most severe here, as whale grease accumulated near the shore, making it impossible to fish or produce salt at the beach.[37] The petitioners explained:

Izushima is indeed so small an island that even the few fishing crews cannot find lodgings here … [The island] is experiencing a shortage of firewood, and if Kihei is to bring so many of his crew along and cut the trees, there will be no firewood to boil [the lords] cauldrons [to make salt] from now on, and the forest will become bare.[38]

As in many other places in Tokugawa Japan, firewood had become a scarce resource in the late seventeenth century in the Sendai domain. The founder of the domain, Date Masamune (1567–1636), had already implemented strong regulations concerning the use of wood. Without

[35] For smoother reading, some of the words are rearranged and repetitions are left out. I stay as close to the original meaning as possible, however. Also, there is no punctuation in *sōrōbun* sentences; therefore, I treat the verb *sōrō* as an end of sentence marker when it seems appropriate. Cited after: Ishinomaki shishi hensan iinkai, *Ishinomaki no rekishi: Shiryōhen 3 Kinsei*, 9:274.

[36] Kondō, *Nihon engan hogei no kōbō*, 291–4. We will return to the question of pollution caused by whaling in later chapters.

[37] For more on the production of salt on the Sanriku Coast, see Iwate-ken, *Iwate-ken gyogyōshi*, 43; Ishinomaki shishi hensan iinkai, *Ishinomaki no rekishi: Minzoku Seikatsu*, 3:346–8.

[38] Ishinomaki shishi hensan iinkai, *Ishinomaki no rekishi: Shiryōhen 3 Kinsei*, 9:275.

official permission, it was forbidden to cut bamboo or trees, but the gathering of dead branches and smaller wood for firewood was allowed if overseen by the village headmen.[39] On a small island like Izushima, the possibilities of gathering wood were limited, especially as firewood was needed for cooking saltwater to produce salt, which the locals did for the authorities and was their primary source of income. Kihei needed the firewood probably to produce transportable marine products he could bring back to Edo and Kii, such as fish and whale oil or fertiliser.

From these descriptions we can see that the ecological impact of whaling had immediate consequences for the local ecosystem. Kihei's activities were perceived as disturbing the ecological balance of the coast, which directly threatened the economic foundation of the communities. On the other hand, the large influx of whalers and their activities was also a direct strain on landlocked resources such as firewood, which had already become scarce due to overuse by the locals. The petitioners claimed that the Oshika Peninsula had little farmland and that marine products were the only means of income for the locals. Should the whaling operations not be stopped, the tax payment to the government was, therefore, also in danger.

As historian Luke S. Roberts has argued, the central pillar in the relationship between the samurai caste and common people in Tokugawa Japan was the commoners' duty to pay taxes, while the authorities had to ensure that commoners were able to practice their occupations. In times of crisis, for example, during famines or war, it was the duty of the authorities to find a solution by either reducing the tax burden, changing the policies, or organising relief supplies.[40] The threat of being unable to pay taxes was, therefore, a common trope in the petition genre.

For example, in 1639, Kii whalers had tried to establish whaling on the Izu Peninsula southwest of Edo. This led the village headmen (*nanushi*) of six villages on the west side of the Izu Peninsula to come together to write a petition that stated that: 'because of the many whales killed, blood and liquid float on the water making it hopeless to capture fish, either with nets or fishing rod'.[41] To further emphasise the gravity of the problem, the village headmen added that fishing was responsible for a third of their yearly tax payment, which was now in danger. The petition claimed that if the situation was not resolved quickly, the fishing communities would all starve to death. By claiming that whaling would threaten the fishing communities' ability to pay their taxes or even endanger their livelihood,

[39] Totman, *The Green Archipelago*, 55; Kinsei sonraku kenkyūkai, *Sendai-han nōsei no kenkyū*, 138.
[40] Roberts, *Mercantilism in a Japanese Domain*, 173.
[41] Cited after: Ishida, *Nihon gyominshi*, 20.

the Izu and Oshika petitions elevated their disputes with the whalers from an internal matter to a crisis the government had to solve. In the eyes of the petitioners, it was the elite's moral duty to ensure the well-being of the coastal ecosystem so that the economic base of the fishing communities was not endangered.

Bringing a Whale to the Village

While the Oshika fishermen were not actively hunting whales, when they found drifting or beached whales, they did not hesitate to make use of the carcass. As we have seen in the previous chapter, the nutrients a whale contained, often in the form of meat and oil, were highly valued among the locals. The question to whom a drifting whale body belonged was often of great importance for the Oshika fishermen. Let us return to the fishermen of Kōbuchi, which we have met at the beginning of this chapter, and take a closer look at how their struggle was presented in the petition:

> Every year the people of Tōshima (Oshika Peninsula) find several drifting whales (*yorikujira*, lit. approaching whales) by chance and picked-up whales off the coast and brought them back to the mist of the beach (*hama no kasumi*). In the third month [of this year], the fishermen from Kōbuchi bay found a drifting whale (*nagarekujira*) while fishing cod 150 *ri* south of Kinkazan.[42] They captured and killed it and presented [part of the whale] to the lord as is demanded and sold the rest to an outside merchant. However, Kihei and his crew [went to the district headman and magistrate], claiming that he and his crew targeted the whale with their own hands [before it got away]. The magistrate ordered the district headman to give half of the sale to Kihei.[43]

According to the petitioners, Kōbuchi fishermen had found a severely injured whale drifting in the Sea of Kinkazan and brought it back to their village for flensing and selling the meat and oil. Kihei, however, claimed his crew had injured the whale and therefore half of the profit belonged to him. Disputes among fishing groups caused by beached whales were a common occurrence on the Sanriku Coast. In 1753, a whale was chased by a killer whale into Kesennuma Bay. When the carcass was found a few days later at a nearby beach, two local fishing groups went to harvest the remains. Shortly after that, a third group arrived arguing that this beach belonged to their village and therefore a part of the profit from the whale

[42] A *ri* is a measurement originally from China that was used in the Edo period. One *ri* is approximately 3.9 kilometres. In this case, the authors seem to have made a mistake as it is unlikely that the fishermen traveled 600 kilometres.

[43] Cited after: Ishinomaki shishi hensan iinkai, *Ishinomaki no rekishi: Shiryōhen 3 Kinsei*, 9:275.

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belonged to them, causing a massive dispute among the three groups.[44] However, we can also see here clear parallels to the dispute of 1664, where the Kyūbun fishermen had felt that the Ōhara fishermen had stolen their dolphin catch, as the dolphins would have swam into their village's exclusive fishing zone. In the end, the Kyūbun fishermen did indeed receive half of the catch, despite not having hunted a single dolphin, so Kihei's demands do not seem completely unreasonable on a first glance. However, in the case of Kihei and the Kōbuchi fishermen, it is important to also consider the spatiality of ocean.

Kihei, as a fisherman from a different domain, did not possess an exclusive fishing right near the coast, but could only hunt in the open waters which were part of the *iriai*. Here, every fishing group had the same claims, so when the Kōbuchi fishermen found a drifting whale without another group nearby, they could reasonably expect to keep their catch for themselves. They further solidified their claim by bringing the whale to the 'mist of the beach', a term used to describe the exclusive harvest zone of a village.[45] Everything inside the 'mist of the beach' was considered part of the village, which not only included the houses, fields, and the nearby forest but also the bay with all the marine resources. In the eyes of the petitioners, by bringing the whale from the open water into the 'mist of the beach', the whale rightfully belonged to the people of Kōbuchi and could no longer be challenged. This spatial exclusivity was so important that in the case of Ōhara-Kyūbun dispute, the mere chance that the dolphins would have swam into the mist of the beach of the Kyūbun community was enough that the other side had to give up half of their catch.

Kihei's interference by the magistrate threatened to disrupt these spatial zones of exclusivity. From Kihei's perspective, every whale that had been injured by his crew belonged to him, regardless of where the particular whale was found or transported to. The petitioners feared, as they laid out in the following paragraphs of the petition, that in the future Kihei would claim every stranded or beached whale found in the Sea of Kinkazan, by arguing that he had chased them beforehand. This was a problem, as Kihei's group was the only one that did engage in whaling, while the Oshika fishermen did not actively pursue whales, but waited until they beached at the shore or drifted in the ocean. In this way, Kihei would gain exclusivity over the resource 'stranded whale', undermining the spatial rights of the local fishermen and denying them the chance to profit from injured and dead whales.

[44] Ōshima kyōdoshi kankō iinkai, *Ōshimashi*, 307–9; Kesennuma shishi hensan iinkai, *Kesennuma shishi: Shiryōhen*, 8:82–3.
[45] Private discussion with folklorist Kawashima Shūichi, October 2017.

The spatiality of the ocean also plays a central role in the fourth paragraph of the 1677 petition. Here, the petitioners explain that Kihei and Tokuzaemon have larger boats that could host up to fifteen people, compared to ten people on the local boats. Furthermore, the Kii boats had more space for provisions and could even be slept on, making it possible to stay out on the ocean for several days, while the Oshika boat had to return to the beach every few hours to change crews. With these boats, the Kii fishermen would roam the coast and the open sea to catch sardines, which they used as bait to attract bonito offshore. This method of fishing was troublesome for the locals, as it allowed the Kii fishermen to harvest the *iriai* much more efficiently than the locals, taking out up to 300 bonito in a single day.[46] Thus, the bonito would be hunted before they reached the coast, making the near-coastal nets of the locals useless. A key feature of a sustainably managed commons is the assumption that all participants have only limited access to the commons so that ecosystem cannot be overused. In case of the open sea *iriai*, this restriction had been ensured by the small size of the Oshika fishing boats that had not allowed a longer stay in the offshore regions. With the introduction of the Kii boats and their new fishing techniques, fish could now be harvested farther offshore, removing them before they could reach the shore. The 1685 petition shows that in the intervening seven years, the Oshika fishermen had adopted the bonito fishing techniques and Kii boat designs. In this petition, it is explained that the petitioners had recently started bonito rod fishing and that the continued activities of Kihei and Tokuzaemon would interfere with these efforts.

Driving Sardines into Coves

There was one more complaint from the petitioners regarding Kihei's whaling activity. This complaint is very brief, and a less observant reader could easily overlook it and go straight to the next paragraph. For me, however, this brief paragraph is the most intriguing one in the whole of the 1677 petition. It reads:

> When fishermen were to fish sardines off the coast of Tōshima, [sardines] were driven into the cove by whales. Since Kihei found a whale [there] and caught it with a spear, sardines stayed away from the cove, which is troublesome for the local fishermen because they cannot fish sardines anymore.[47]

[46] This was the amount six Kii vessels were able to harvest per day in Kesennuma in 1675. We can assume that Kihei and Tokuzaemon's groups were about the same size: Kesennuma shishi hensan iinkai, *Kesennuma shishi: Sangyōhen*, 5–2:111.

[47] Cited after: Ishinomaki shishi hensan iinkai, *Ishinomaki no rekishi. Shiryōhen 3 Kinsei*, 9:275.

According to the petitioners, whales were responsible for bringing sardines into coves and harpoon whaling was, therefore, hurting fisheries. To the best of my knowledge, this paragraph marks the first instance where such a relationship between whales, sardines, and humans was recorded in Japanese sources.

The Sanriku fishermen were also not the only ones who made a connection between whales and fish catches. Let us return once more to the Izu Peninsula, where over 150 years after the 1639 petition, in 1796, a would-be whaler tried to establish whaling for a second time on the peninsula. In response to his request for a three-year trial whaling permission, thirty-eight local village headmen complained via a petition to the local magistrate. The petitioners explained that they had heard from their forefathers that when whaling had been conducted in Kanei 17 (1639–40), the fish catch of that year had been non-existent. Picking up dead whales from the water had, in the past, led to bad fish catches for the respective village. Since old times, whales had been crucial for driving large fish swarms of bonito and sardines from the open sea into the small coves of the Izu Peninsula, where the fishermen had installed their nets and fishing rods. The locals would even call the fish that could always be seen in proximity 'children of the whales' (*kujira ko*). Should the whales be killed, they could no longer drive the fish into the coves. The petitioner explained that poor fish catches would also affect agriculture as sardines were essential to produce fish fertiliser.[48]

Unfortunately, our primary sources do not specify the species of whales that was allegedly responsible for bringing sardines closer to the shore. The most likely candidates were, however, sei whales. The name sei whale comes from Norwegian where in 1828 an unidentified whale species was given this name ('seje' means 'black codfish') as it was believed that this species would drive codfish towards the shore.[49] In Tokugawa Japan, sei whales were similarly called *iwashi kujira* (sardine whale) or *katsuo kujira* (bonito whale) as they were often encountered with these two fish species.[50] This makes a strong case for the whales mentioned in the 1796 Izu petition also being sei whales as they were accompanied by sardine and bonito swarms, which the petitioners called 'children of the whales'.

There was some confusion regarding the whale species, however. For example, Bryde's whales were also called *iwashi kujira* (nowadays named *nitari kujira*, meaning 'look-alike whale') and rorqual species like minke

[48] Unfortunately for the Izu fishermen, the magistrate did not rule in their favour and trial whaling was allowed. Cited after: Ishida, *Nihon gyominshi*, 20–3.
[49] Andrews, *Whale Hunting with Gun and Camera*, 122–3.
[50] Ōtsuki, 'Geishikō', 1926, 88–9.

whales were not identified as separate species at all.[51] It seems likely that the Sanriku and Izu fishermen were referring to sei whales in their respective petitions, or at least to other rorquals who feed sometimes on small fish like sardines and anchovy. In the whaling regions, rorquals were not often hunted as they were too big and strong to be captured with nets. Also, sei whales were more common in northern Japan as they do not travel along the Kuroshio but reach the Japanese Coast in spring and summer from the open sea to the east.

One curious point is the naming of sei whales as bonito whales (*katsuo kujira*) in Japanese. Unlike sardines, the larger bonito are not part of a rorqual's diet. Nevertheless, our sources often place these fish close to sei whales. According to Japanese historian Tajima Yoshiya, the close connection in the historical sources between bonito and sei whales was, however, no accident but part of a survival strategy developed by the bonito. Bonito are often pursued by sharks and carnivore tuna species and would swim before or between the bigger 'bonito whales' to give the appearance of having a giant bodyguard. This relationship was not one-sided, however. The main targets of the bonito are small fish like sardines and during a hunt, a bonito swarm will disperse and attack a sardine school from all directions at the same time. The sardines react to this by clumping together and swimming towards the surface, where they are hunted down by the bonito. The sardines that escape this trap are then swallowed up by the nearby whales.[52] These bonito-whale-hunts were rare in western Japan but common in the Northeast. Before the sei whale stock off the Sanriku Coast was eradicated in the early twentieth century, columns of sei whales and bonito reached up to ten kilometres each spring.[53] Sanriku bonito fishermen would look for sea birds called *katsuo-dori* (bonito bird) above the whale-bonito columns as they knew that the birds were also hoping to catch scattered sardines from the hunts.[54]

This hunting regime is an interesting example of how in the cetosphere not only humans but also other species, such as bonito and sea birds, were directly profiting from the presence of whales. As baleen whales, sei whales and other rorquals were no direct danger to bonito and birds, but rather provided protection against other predators and opportunities for easy fish catch. Through observation, fishermen were aware of these hunting regimes and were constantly on the lookout for gatherings of sea birds and whale columns, as these indicated the presence of sardines and

[51] Omura, 'Bryde's Whale from the Coast of Japan'.
[52] Tajima, *Kinsei Hokkaidō gyogyō to kaisan butsu ryūtsū*, 123; Miyashita, *Katsuobushi*, 2000, 26–8.
[53] Ishinomaki shishi hensan iinkai, *Ishinomaki no rekishi: Minzoku Seikatsu*, 3:527.
[54] Miyashita, *Katsuobushi*, 2000, 26–8.

bonito. Dispersing, or even killing whales disrupted this regime, making fishing much more difficult.

Conclusion

As demonstrated in this chapter, the Oshika fishing communities had learned how to make use of cetaceans when venturing into the Sea of Kinkazan. Prior to the arrival of the Kii fishermen, the sea around the Oshika Peninsula was separated into two different spheres: the human-influenced near-coastal regions; called the mist of the beach and the offshore Sea of Kinkazan which reached into the perturbed region where Kuroshio and Oyashio intermingled. While the Sea of Kinkazan was considered *iriai*, open for all fishing activities, the human presence was quite limited here as weather, currents and the inadequacy of the small fishing vessels made longer stays in this region dangerous. Instead, marine megafauna, especially cetaceans, were here the primary initiator of top-down pressure on the ecosystem. Entering this cetosphere, local fishermen are believed to be dependent on the help of whales for successful fish catches.

The analysis of the 1677 petition has allowed us to identify the different roles whales fulfilled in the local ecological knowledge of the Oshika fishermen: drifting or beached whales were seen as a rich resource that could be harvested and brought riches to a community, while hunting whales directly was not commonly practiced. For one, whales were mostly foraging in the offshore regions of the Sea of Kinkazan, making it difficult and dangerous to reach in the small boats of the Oshika fishermen. Furthermore, killing a whale risked polluting the coastal flora and fauna, negatively affecting the harvest of other marine resources, while the cooking of whale meat and production of whale oil needed a substantial amount of firewood, a resource that was already scarce. Whales were also responsible for bringing fish towards the shore. As we have seen in the previous chapters, whales are seen as agents that can be reasoned with and that actively influence the lives of the coastal communities through their behaviour. The appearance of the Kii fishermen at the Oshika Peninsula had many social and ecological repercussions. With their larger boats and better equipment, they pushed the boundaries of the human influence zones farther offshore, not only allowing a more stable harvest of offshore fish but also began hunting whales actively, disturbing the socio-economic and ecological foundation of the locals.

Overall, Kihei's whaling operation seems to have not been very successful. The 1685 petition implies that Kihei had given up whaling in the intervening seven years. It remains unclear if the local opposition had

influenced this outcome. As David Howell has argued, the introduction of new fishing techniques often caused social unrest as they threatened the social and economic order of the community. Typically, authorities initially tried to forbid or limit the use of these technologies before they became widely accepted and adapted by the locals.[55]

While the locals tried to ban whaling, without securing the technology for themselves, the situation was different in the case of the sardine and bonito fishing techniques brought by the Kii fishermen. The Sanriku fishermen first incorporated sardine fishing into their repertoire in the early 1670s and then bonito fishing after 1677. With its many cliffs and few open beaches, places to install the long beach seines for sardine fishing were limited on the Oshika Peninsula.[56] In addition, many of the shallow parts of the shore were already being used for salt production. Therefore, while the northern parts of the Sanriku Coast became specialised in sardine fertiliser production, the Oshika Peninsula instead focused on bonito fishing. Despite the initial opposition, some of the Kii fishermen moved permanently to the Oshika Peninsula in 1684, helping to develop a new proto-industry based on the export of *katsuobushi* (bonito flakes) and bonito fertiliser to Edo and Osaka, while sardines were relegated to a role as live bait.[57] The introduction of new fishing techniques from Kii allowed the expansion of the human sphere farther into the ocean, while also slowly diminishing the underlying fish stocks over time, causing a shifting baseline syndrome, as we will explore in future chapters.

[55] Howell, *Capitalism from Within*, 52.
[56] Oshika chōshi hensan iinkai, *Oshika chōshi: Chūkan*, 170.
[57] Oshika chōshi hensan iinkai, *Oshika chōshi: Chūkan*, 193–8; Miyagi kenshi hensan iinkai, *Miyagi kenshi*, 10:70.