Chapter 15
Marine Mammals

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Abstract The coasts of the East Sea (Japan Sea) of the Korean Peninsula are known to have been populated by whales since prehistoric times. This association has lasted throughout the history of Korea's dynasties without interruption. Traces indicating the presence of whales are written in petroglyphs and in the histories of the dynasties. From the late 19th century, many foreign whaling ships started entering Korean waters, especially in the East Sea. After Japan won the Russo-Japanese War, monopoly whaling by the Japanese funded by their capital lasted until 1945. At that time, statistical data on whaling in the East Sea was first recorded. According to those records, the major species of whales were fin whales and the minke whales, with gray whales, humpback whales and others. Koreans introduced Japanese-style whaling ships and started whaling in postcolonial times. Commercial whaling in Korea continued actively, focused mainly on minke whales, until the International Whaling Commission declared a moratorium on commercial whaling in 1986. According to whaling data, bycatches and stranding, the baleen whales observed in the East Sea are northern right whales, blue whales, fin whales, sei whales, Bryde's whales, minke whales, humpback whales, and gray whales. Thus far, the minke whale has been the dominant species. For toothed whales, there are large species such as sperm whales, Baird's beaked whales, and Stejneger's beaked whales, which are discovered once or twice every year through bycatches or stranding. Small and medium-sized species are extremely diverse, including killer whales, Pacific white-sided dolphins, Risso's dolphins, harbor porpoises, and common dolphins. The most commonly observed species are common dolphins and Pacific white-sided dolphins. In the case of common dolphins, about a hundred of them are bycaught or stranded every year along the coast of the East Sea. These species are distributed throughout the year in the East Sea, but Dall's porpoises and harbor porpoises show changes in latitudinal distributions

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depending on seasonal changes. Pinnipeds living in the East Sea are the Steller sea lion, the northern fur seal and the spotted seal. Most of them live in the northern East Sea and a few migrate to the south coast of the Korean Peninsula. The Japanese sea lion was once abundant in the East Sea, but it is now extinct.

Keywords Marine mammal · Cetacean · Pinniped · East Sea (Japan Sea) · Whaling

15.1 Introduction

Interest in wild animals and marine mammals has certainly increased not only in the academic world but also among the general public. The media, as well as scientific institutions, societies, government administrators, and environmental activists are all expressing intense interest in wild animals and marine mammals. The general public wants to see for themselves and experience wild animals to satisfy their desire for both education and adventure. At the same time, there is an increasing awareness of the importance of marine mammals in maintaining a healthy state of the marine ecosystem, and the impact of human activities on marine mammals and their habitats has become a worldwide issue.

Most biologists classify marine mammals into five mammalian groups: Cetaceans (whales, dolphins, and porpoises), pinnipeds (seals, sea lions, and walruses), sirenians (manatees, dugongs, and sea cows), marine and sea otters, and the polar bear. The five groups that we call marine mammals have different species of origin and show considerable differences in their life cycles. What they do have in common is that all the animals that we call marine mammals find all of their food (or most of their food) from the sea (and often in fresh water). All marine mammals are adapted to living in water. Cetaceans and sirenians spend their whole life cycle under the water, while other marine mammals live on the beach during specific periods for various reasons (reproduction, molting, or resting). With regard to morphological modifications, cetaceans and sirenians have obsolete legs and developed tails, while pinnipeds have legs that evolved to gain thrust in the water. However, cetaceans, sirenians, and pinnipeds have all evolved a streamlined body to increase their hydrodynamic efficiency. These types of morphological modifications in marine and sea otters and in the polar bear are less adapted for marine life, and most of them are similar to those of land mammals in their surroundings.

Of the seas surrounding the Korean Peninsula, the East Sea shows a remarkable diversity of marine mammals, but there are not many data on them. Accurate statistics and research on species classification in the past were limited to large whales, which were utilized commercially until the 1980s, whereas until the 21st century, almost no statistical information was produced for other species such as small cetaceans, or pinnipeds. To find out more about the ecological features, migration patterns, and statuses of the marine mammals distributed in the East Sea, efforts such as consistent investigations, research, and cooperation with neighbouring countries in the East Sea are necessary.

In this chapter, the historical records of whales and whaling in Korean waters, mainly focusing on the East Sea, is described. And through data on whale fishing and recent research, I introduce information on the distribution, occurrence, and abundance of marine mammals (especially, cetaceans and pinnipeds) with some biological characteristics, if any are known for Korean waters including areas of the East Sea.

15.2 The Historic Records of Whales in Korean Waters

The relationship between Korea and whales became known to the world, several decades ago; the world recognized Korea as a strong whaling nation when Korea argued for continued whaling in order to maintain Korea's food culture of eating whales. Although Korea drew the world's attention to its whaling tradition only a few decades ago, the East Sea area had maintained connections with whales since prehistoric times, and these connections did not break but survived on the Korean Peninsula throughout several dynasties. However, there are relatively few people who are aware of this, not only outside Korea, but also within Korea.

In 1971, an array of petroglyphs, 10 m long and 3 m wide, were discovered at Ulsan, located in the southern East Sea. A total of 200 carvings with 75 types of art depicting land animals and humans hunting them, including whales, tigers, wild boars, and deer, were drawn on this rock. In particular, more than 10 species of whales are depicted, each with clearly visible morphological differences, a number that is larger than that found on the oldest known whale petroglyph found on Røddøy Island in Norway. There is also a scene of a ship carrying several people who have captured a whale using a harpoon with a rope attached. Therefore, it is thought that people were already hunting and using whales at the time the carvings were made, and that the people depicted in this art had considerable knowledge of whales. Although there is some debate among Korean academics about the time period during which these petroglyphs were created, the general consensus is that they originated in the Neolithic era or the early Bronze Age. This series of petroglyphs earned the name "Bangudae petroglyphs" and was designated as national treasure No. 285 in 1995.

The early written history of the Korean Peninsula contains several records of sightings of a large type of fish in the history books of the Three Kingdoms (BC57–AD668) and Unified Shilla (AD668–AD918) periods. Also, according to the records, people ate this fish. This large fish was most likely a whale. Later, during the Goryeo and Joseon dynasties, 918–1392 and 1392–1910, respectively, a history book written about the Goryeo dynasty recorded that an ambassador from China came to Korea and obtained some whale oil from the East Sea coastal areas. There are also several records of whales from the last Korean dynasty, the Joseon dynasty, describing the finless porpoise in detail, as well as records about dolphins, such as killer whales. Hendrik Hamel, a Dutchman who arrived in Joseon in 1653 after a shipwreck, wrote in his book that the people in Joseon harvested whales (Park 1987).

In the late 19th century, the Joseon dynasty began to deteriorate and this coincided with many whaling ships entering the seas surrounding the Korean Peninsula, especially into the East Sea. Although many whaling ships from Western nations arrived in the East Sea, the existing ship journals of American whaling ships are the most numerous and the most revealing. The first records are from 1848, when the journals of several ships recorded sightings of Joseon people, or recorded that the ships had entered the East Sea. There are records of almost 40 ships, and in reality there were probably more. However, the largest number of American whaling ships entered the East Sea in the following year, 1849, when records from the journals of 120 ships stated this. One ship journal written in 1848 from an American whaling ship contains a record of its encounter with both French and German whaling ships. Thus, American whaling ships as well as whaling ships from other Western nations entered the East Sea.

In 1849, encounters with many French whaling ships were recorded in the journals of American whaling ships. In fact, the French whaling ship Liancourt discovered Dokdo (Dok Island). Henceforth, Dokdo is referred to as Liancourt Rocks on Western maps. It appears that German whaling ships fished for whales in the East Sea until the 1860s. From the 1870s, the whaling industry began to deteriorate because the population of right whales, which was the main target of the whaling ships, decreased. This led to a decrease in the number of whaling ships entering Korean waters (Park 1987).

Although the advance of Russian whaling ships into the East Sea was later than other Western nations, they engaged in a substantial amount of whaling in the East Sea and in the northwest Pacific. The whaling operations were based in Vladivostok, a city located in the northern East Sea. The Russians first started whaling in 1889, entering into an agreement with the Joseon, which tried to open its doors to Western nations and become a modern nation. Until the early 1900s, the Russians continued to enter various ports in Vladivostok and Korea to conduct significant whale hunts (Park 1987).

Like Korea, Japan has a long whaling history, achieving as well modernization earlier than Korea in the 19th century. As Japan started whaling with modern equipment, it began to compete with Russia and advanced into various locations in the Joseon area for effective whaling. In 1905, as the Russo-Japanese war ended with Japan's victory, Japan had no more competition in the East Sea as the Russian whaling ships pulled out. Later, as Japan forcefully annexed Joseon and it became a Japanese colony, the Japanese monopoly on whaling in Korean waters, including the East Sea, began as Japanese whaling companies advanced into Joseon. Although the Korean people had harvested whales and used them from ancient times, there was neither systematic development of the practice nor being institutionalized. Therefore, it soon died out with the introduction of modern technology and mass whaling by foreign powers. Japan, however, succeed in modernizing and institutionalizing traditional whaling, and this practice was modernized.

As the Japanese began monopolizing whaling in Korean waters, a system evolved which produced accurate statistics on caught whales. The official number of whales caught of each species was recorded from 1911 onwards. Modern

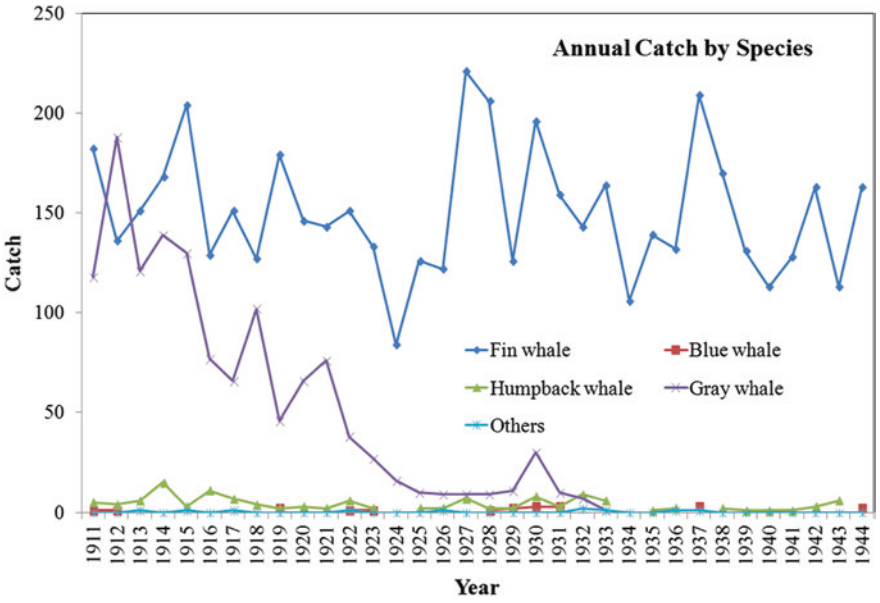

Fig. 15.1 Annual catch of cetaceans in Korean waters by Japanese whaling vessels from 1911 to 1944

whaling in Korean waters can be divided into that occurring before Korean independence and that conducted after independence. Before Japan surrendered and Korea gained its independence in 1945, only whaling companies that had received permission from the Japanese colonial government could catch whales in Korean waters, which meant that whaling was a monopoly for the Japanese people and for Japanese capital.

The types and numbers of whales captured in Korean waters by Japanese whaling ships before Korean independence are shown in Fig. 15.1. Statistical data exist for dates between 1911, which was the year after the forced annexation of Joseon by Japan, and 1944, which was the year before Japan surrendered. The whales that were captured in the largest numbers during this period were fin whales and gray whales. The annual number of fin whales captured ranged from 84 to 221, with a total of 5114 fin whales captured during this period. More than 100 gray whales were captured each year until 1915 and more gray whales than fin whales were captured in 1912. After then, the number of gray whales captured decreased year by year until no more were captured after a single gray whale was taken in 1933 (Fig. 15.1). The total number of gray whales captured during this period was 1306. In addition to these two species, humpback whales were captured almost every year, as were blue whales, sei whales, sperm whales, and right whales (Park 1987).

Immediately after Korean independence in 1945, several Koreans took over Japanese whaling ships to begin a very small-scale whaling industry. The number of whaling ships increased after the Korean War as people renovated fishing

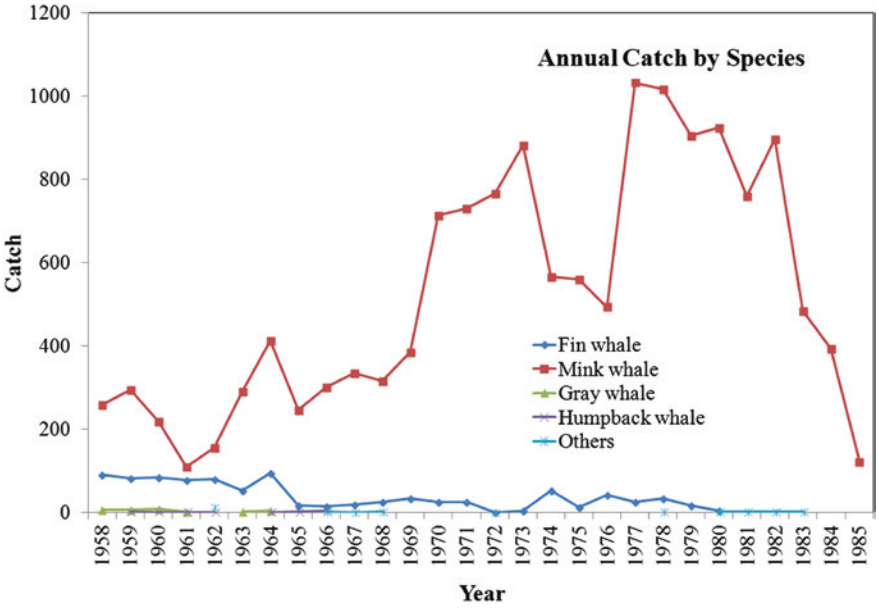

Fig. 15.2 Annual catch of cetaceans in Korean waters by Korean whaling vessels from 1958 to 1985

vessels or purchased whaling ships from Japan; the numbers increased from 17 whaling ships in late 1950 to 20 in the 1960s, and 22 in the 1970s. In 1979, Korea became a member of the IWC (International Whaling Commission), and continued active whaling in Korean waters until the commercial whaling moratorium was enacted in 1986 (Fig. 15.2).

The collection of statistics on caught whales after Korean independence only started after 1958 due to the confusion caused by the U.S. military government and the Korean War immediately after independence. Figure 15.2 shows the number of whales caught in Korean waters starting in 1958 until 1985, when whaling was banned. The main species that were caught were minke whales and fin whales; when the population of fin whales, which were the main target species, decreased, people began hunting minke whales, and minke whales consequently became the most important target species. The number of minke whales captured each year ranged from 110 to 1033, with a total of 14,587 captured during this period. The number of fin whales captured each year decreased to 100 after Korean independence, and continued to decrease, until no more were captured after 4 fin whales were captured in 1980 (Park 1987).

When commercial whaling was banned in 1986, Korea captured 69 minke whales on the grounds of scientific research, but immediately stopped whaling due to the lack of scientific investigations. For the last 20 years, and continuing until the present time, whaling has been banned on the Korean peninsula. The coastal areas of the East Sea have maintained a culture of whale meat consumption, using whales that have become trapped in nets and died, or dead whales that have drifted to shore.

In an effort to continue the long history and food culture of whales on the Korean peninsula, the people in the coastal areas of the East Sea argued for permission to conduct aboriginal subsistence whaling, such as has been allowed in Alaska in the United States, Chukotka in Russia, and in Greenland, but the general consensus is that such whaling is not applicable to Korea because it has achieved high economic development. There are also arguments for whaling for scientific purposes, as occurs in Japan, but this view has not received much support in Korea, much less around the world.

15.3 Marine Mammals

15.3.1 Cetacean

15.3.1.1 Baleen Whales

Northern Right Whale (*Eubalaena japonica*)

In the northern Pacific Ocean, baleens are distributed over temperate climates and subpolar regions, such as the East Sea, East China Sea, the Sea of Okhotsk, and the Bering Sea. They mainly feed on copepods and other small crustaceans (mainly Calanoida), and they feed by slowly swimming with open mouths to filter food that is concentrated near the surface.

Right whales in the northern Pacific Ocean became depleted in the 1800s, and there are records of large-scale whaling by foreign whaling ships between 1848 and 1913. However, only two right whale was captured in Korean waters after 1911, which was when statistics on whaling began to be recorded. Two right whales were captured in 1915 and 1974 respectively. Although there are no reliable population estimates or population trends known for right whales, they are thought to be seriously endangered. Scarcely any research on right whales has been conducted, even on an international scale.

Blue Whale (*Balaenoptera musculus*)

The worldwide population of blue whales is estimated to be between 8,000 and 9,000, but accurate estimates are lacking (Calambokidis and Barlow 2004). There are records of 20 blue whales being captured in Korean waters, including the East Sea, between 1911 and 1944.

Fin Whale (*Balaenoptera physalus*)

Fin whales are distributed around the oceans of the world; they prefer deep seas and stay away from warm areas. Their exact migration is not known because

almost no research has been conducted on fin whales of the northern Pacific Ocean. They feed in the East Sea, the Yellow Sea, the East China Sea, and the Sea of Okhotsk during summer, and breed in warm waters during winter (Aguilar 2002). Around the Korean peninsula, fin whales are observed in the East Korea Bay in North Korea during spring and autumn, in the central and southern regions of the East Sea during August and November, and in the Yellow sea from October to May. In the East Sea, they aggregate around the East Korea Bay, along the coasts of North and South Gyeongsang provinces, and around Ulleungdo (Ulleung Island), and they appear to be distributed throughout the Yellow Sea. They tend to group more strongly than other whales, forming schools of 2–7 whales. Their swimming speed is rather fast at 37 km/h. They hardly show their tail flukes when they submerge, and they sometimes emerge on the sea surface (Aguilar 2002).

Fin whales have historically been a target species for commercial whaling. 921 fin whales were captured in Korean waters from 1911 to 1982. For nearly two centuries between the 18th and 20th century, fin whales in Korea were hunted by foreign whaling ships. Almost none have been observed near the Korean coasts recently, although one mature fin whale, 9.8 m long, was stranded at Songdo, Incheon, in 1996.

Minke Whale (*Balaenoptera acutorostrata*)

Minke whales are distributed in all oceans, from equatorial to polar seas. Although different hypotheses have been proposed, it is likely that there are three stocks in the northern Pacific Ocean. Other stocks in the east are the East Sea-Yellow Sea-East China Sea stock and the Sea of Okhotsk-Western Pacific Ocean stock. They are known to feed in the northern East Sea and the Sea of Okhotsk during summer, and they spend the winter in the southern East China Sea and near equatorial regions (Perrin and Brownell 2002). However, they are observed on the Korean coasts all year round. The main stomach content of minke whales captured in Korean coastal waters is recorded to be anchovy.

Because minke whales are relatively small, they were not traditional targets for commercial whaling, but they were hunted from the 1900s onwards and were heavily hunted until whaling was banned altogether. Almost all large whales have disappeared from the East Sea, and the most frequently observed baleen whale there is the minke whale. Around 80 minke whales are bycaught in nets in Korean waters every year (Fig. 15.3a).

Humpback Whale (*Megaptera novaeangliae*)

Humpback whales are distributed throughout the northern Pacific Ocean, and their breeding ground is usually found in the tropical regions. They migrate across the ocean to the glacial zones of subpolar regions, which is their feeding ground. There is one stock of these whales that migrates from the Sea of Okhotsk to the

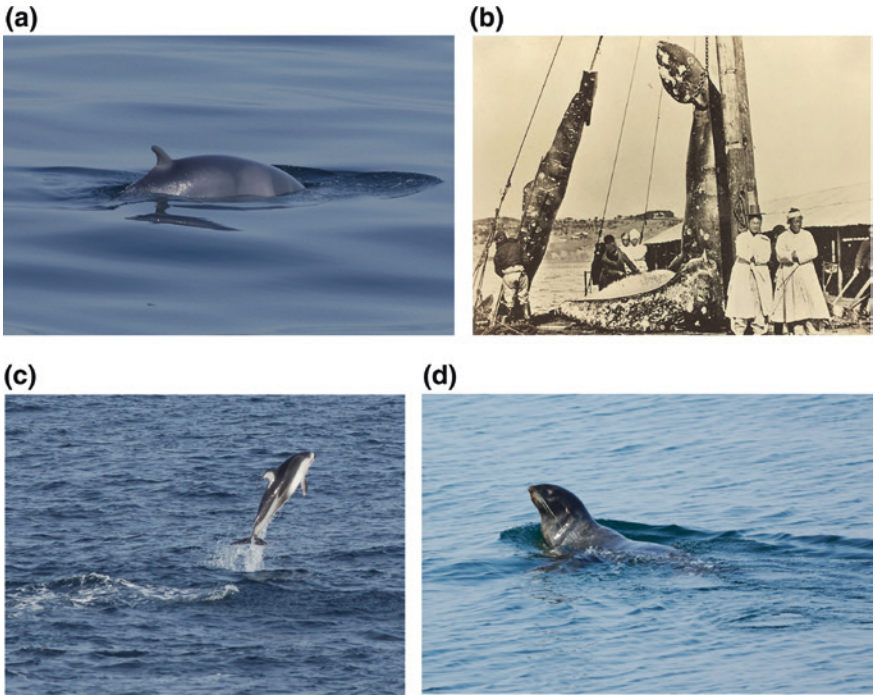

Fig. 15.3 Observations of whale species in the East Sea. **a** A minke whale sighted by a Korean sighting survey in May 2007, **b** Landed gray whales in Ulsan by a Japanese whaling ship in the early 1900s, **c** Pacific white-sided dolphins, and **d** A northern fur seal found in September 2009

East Sea, the Southern sea of Korea, and the Yellow Sea. They usually migrate in groups of 1–3 but form large groups in their feeding grounds or breeding grounds (Clapham 2002).

Humpback whales also used to be targets of commercial whaling, and their hunting was banned from 1965 on. There are about 6,000–8,000 humpback whales in the northern Pacific Ocean (Calambokidis and Barlow 2004). In Korean coastal waters, there are records of 128 whales captured between 1911 and 1944, and 13 captured between 1959 and 1966.

Gray Whale (*Eschrichtius robustus*)

Gray whale stocks in the Atlantic Ocean have become extinct, and currently there are stocks in the northwestern Pacific Ocean and the eastern Pacific Ocean. The northwestern Pacific Ocean stock, also called the Korean gray whale, feed in the shallow waters of the northern East Sea and the Sea of Okhotsk during summer and move towards the south in late autumn to reproduce in the Yellow Sea and the East China Sea, after moving south along the East Sea coast during November and

December. They then return north between March and May, passing through the East Sea.

After fin whales, gray whales were the most hunted species in the East Sea up until the early 1900s because they are relatively large and move slowly (Fig. 15.3b). 1338 gray whales were captured between 1911 and 1964, but the number captured rapidly decreased thereafter. No more gray whales were captured after 5 were taken in 1964; indeed, they were thought to be extinct for some time. Recently, gray whales were observed to feed in the Sea of Okhotsk, and estimations of individual identifications and stock biomass are being made through photographs. This stock has been estimated to be about 100 in number (Weller et al. 2002).

15.3.1.2 Toothed Whales

Sperm Whale (*Physeter macrocephalus*)

The sperm whale is the most widespread species of all whale species. Sperm whales are distributed in all oceans, from the tropics to the poles. They are rarely observed in the East Sea and the Sea of Okhotsk and are rather concentrated in the southern East Sea and the East China Sea. Sperm whales form a matriarchal society, in which 20–40 whales form a group to care for infants, and from which mature males leave the infant care group to roam the oceans alone or in schools of several whales. During the mating season, which is during summer and autumn, the males return to the breeding grounds and partake in breeding for a short period of time (Whitehead 2002).

It is estimated that at least 44 thousand sperm whales live west of 170° east latitude in the northern Pacific Ocean. Five sperm whales were captured in the East Sea between 1911 and 1944, 9 were observed in the East China Sea in June 1999, and 8 were observed in the East Sea in March 2004.

Baird's Beaked Whale (*Berardius bairdii*)

This species is not very well known. Some are being directly captured in the northwestern Pacific by the Japanese, and some are bycaught or stranded from time to time. A total of 12 Baird's beaked whales were bycaught in the East Sea between 1996 and 2012.

Stejneger's Beaked Whale (*Mesoplodon stejnegeri*)

There is hardly anything known about this species. There are records of them occasionally being captured by Japanese salmon drift nets. In Korea, 24 Stejneger's beaked whales were reportedly stranded or bycaught on the coasts of the East Sea between 1996 and 2012.

Killer Whale (*Orcinus orca*)

There is little known about killer whales in the East Sea. However, 3 killer whales were bycaught near Busan in 2008, and a dolphin was found inside its stomach; from its external features, this killer whale is thought to be a Type A transient killer whale.

False Killer Whale (*Pseudorca crassidens*)

False killer whales are distributed around the tropical and temperate open seas between 50° northern latitude and 50° southern latitude. They can be observed around the Korean coasts, including the East Sea, between May and July, when the temperature of the sea water is above 17° Celsius.

They form schools with numbers ranging from tens into the hundreds, and they have been observed to mingle with bottlenose dolphins off the coasts of Jejudo (Jeju Island). There are many cases in which false killer whales became stranded as a group by following their leader. It is estimated that there are about 3000 killer whales in the eastern part of the East China Sea. Six whales were bycaught or stranded in the East Sea between 1996 and 2012.

Pacific White-Sided Dolphin (*Lagenorhynchus obliquidens*)

This species is only found in the northern Pacific Ocean; they are usually found in the neighboring seas across temperate and polar regions, they also come and go to continental shelves and coastal areas. Due to their strong collective behavior, they form schools of a few hundred to a few thousand. They display various behaviours, such as surfing, jumping, flicking water, and doing somersaults (Fig. 15.3c). Pacific white-sided dolphins are the most numerous species in the East Sea along with common dolphins, and they concentrate in waters with temperatures between 7 and 25 °C. Their estimated number in the East Sea is 5,000. Every year, around 10–40 of them are stranded or bycaught in the coastal areas of the East Sea.

Short-Beaked Common Dolphin (*Delphinus delphis*)

Short-beaked common dolphins tend to concentrate mainly in tropical and temperate seas between 50°N and 50°S. They display strong collectivity and crowding behavior (several thousand dolphins in a group). Their numbers in the Pacific Ocean is not known, but there are thought to be more than 30,000 of them; they are the most commonly observed species in the East Sea.

Dall's Porpoise (*Phocoenoides dalli*)

As an indigenous species of the northern Pacific, they are distributed widely between 30 and 62°N, mainly around the coasts. They are distributed above 35°N in the East Sea. The Dall's porpoises found in the East Sea are dalli-type porpoises; truei-type Dall's porpoises are distributed only along the Pacific coasts of Japan and the Sea of Okhotsk.

Finless Porpoise (*Neophocaena asiaeorientalis*)

Finless porpoises are the most typical marine mammal species around the Korean Peninsula. The body is mainly greyish white in color. A finless porpoise has no dorsal fin. It has a crista 2 cm high that is similar to mastodon bones running from the thorax to the caudal peduncle. Its pectoral fins are relatively large, being one sixth of their body length. The tail fluke is also relatively wide, being a quarter of the body width.

Finless porpoises inhabit large rivers, shallow seas, and coastal zones, especially in shallow waters within 5–6 km of the coast, through the East Sea; the Southern sea of Korea; the Yellow Sea; the Japanese coastal areas; and around Taiwan, China, Borneo, Sumatra, and Singapore. They have also been seen in the Persian Gulf. In recent research, finless porpoises have been divided into finless porpoises that inhabit waters between Persia and southern China (*N. phocaenoides*), and finless porpoises that inhabit central and northern China, Korea, and Japan (*N. asiaeorientalis*) (Wang et al. 2008).

Around the Korean Peninsula, they are frequently observed in the Yellow Sea and Southern sea of Korea coasts, and are observed very close to the coast in the southern East Sea. They are eurythermal animals that can live in temperatures between 5 and 28 °C.

They usually do not form groups; although they may form groups in scores when shoals of anchovy form around the coast, they do not swim close to each other. They do not approach ships, and when followed, they swiftly swim away. They feed on various organisms, such as fish, squid, shrimp, and crustaceans. Although there are known to be about 30,000 of them in the Yellow Sea, there is nothing known about their numbers in the Southern sea of Korea and in the East Sea (Park et al. 2007).

15.3.2 Sea Lions, Seals, Walrus

15.3.2.1 Fur Seals and Sea Lions

Steller Sea Lion (*Eumetopias jubatus*)

Groups of Steller sea lions are distributed around the western, northern and eastern coasts of Hokkaido (Hattori et al. 2009). They are not distributed in groups around

the Korean coasts, but are sometimes observed around East Sea coastal areas; two Steller sea lions were discovered, one in 2008 and the other in 2009. One dead Steller sea lion was seen in the Southern sea of Korea, on Jejudo in 2013.

Northern Fur Seal (*Callorhinus ursinus*)

Northern fur seals are widely distributing in the waters of the North Pacific. Eight seals in total were observed between 2009 and 2013, one of which was discovered dead. In 2013, one seal that drifted onto the coast was discovered and rescued, and it was decided that an aquarium would continue to house it considering that the seal was blind in both eyes (Fig. 15.3d).

Japanese Sea Lion (*Zalophus japonicus*)

A large population of Japanese sea lions is known to have inhabited areas around the coast of Hokkaido, including the East Sea; in particular, they were also found around Dokdo. They appear to be completely extinct at the present due to commercial hunting in the 1950s (Reijders et al. 1993).

15.3.2.2 True Seals

Spotted Seal (*Phoca largha*)

Spotted seals are distributed only around the northern Pacific Ocean, including Alaskan coasts, the Bering Sea, coasts of the Kamchatka Peninsula, the Sea of Okhotsk, the coasts of Hokkaido, and the Yellow Sea (Lowry et al. 2000). There is a high possibility that the spotted seals in the Yellow Sea and the East Sea are of different stocks. Satellite tagging was used in 2008 to confirm that spotted seals in Bohai, China, migrated to Baekryeongdo in Korea. In 2013, spotted seals that were captured in the southern East Sea and given satellite tags were found to have moved to Vladivostok in Russia. Spotted seals have not been observed to live in groups in the East Sea; the closest winter habitat is the Sea of Okhotsk, where the population is estimated to be around 100,000–130,000 (Burns 2002).

15.4 Summary

The coasts of the East Sea on the Korean Peninsula have had connections with whales since prehistoric times, and this connection was not broken but continued through the many dynasties which ruled the Korean Peninsula. Beginning in the late 19th century, many foreign whaling ships started entering Korean waters,

especially the East Sea. The records that reveal the most about this period of whaling come mostly from the journals of American whaling ships, and they record that it wasn't only American ships that hunted there but also whaling ships from other western nations that entered the East Sea.

The Russians nearly monopolized whaling in the East Sea for a brief period in the early 1900s, but after Japan defeated Russia in the Russo-Japanese War, the Japanese people and Japanese capital monopolized whaling in the East Sea until 1945. At this time, beginning in 1911, statistical data on whaling in the East Sea began to be recorded. The main catch targets were fin whales and minke whales, with gray whales, humpback whales, and others captured as well. Commercial whaling in Korea continued after independence; it was begun by introducing Japanese whaling ships and continued actively, focused mainly on minke whales, until the IWC declared a moratorium on commercial whaling in 1986.

According to whaling data, bycatches and stranding, the baleen whales observed in the East Sea are northern right whales, blue whales, fin whales, sei whales, Bryde's whales, minke whales, humpback whales, and gray whales. Up to the present, the minke whale has been the dominant species. For toothed whales, there are large species, such as sperm whales, Baird's beaked whales, and Stejneger's beaked whales, which are discovered once or twice every year through bycatch or stranding. Small and medium-sized species are extremely diverse, including killer whales, Pacific white-sided dolphins, Risso's dolphins, and common dolphins. The most commonly observed species are common dolphins and Pacific white-sided dolphins; for common dolphins, nearly one hundred are bycaught or stranded every year around the coasts of the East Sea. These species are distributed throughout the year in the East Sea, but Dall's porpoises and harbor porpoises show changes in their latitudinal distributions with changes in the season.

Some of the pinnipeds that are distributed in the East Sea include Steller sea lions, northern fur seals, and spotted seals. Most of them live in the northern East Sea in groups, but they are sometimes found in the southern East Sea. Japanese sea lions used to live in the East Sea, but they are now extinct.

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