Review of Literature/Information Regarding Marine Mammals in the Vicinity of Sakhalin Island, Okhotsk Sea, Russia

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Review of Literature/Information Regarding Marine Mammals in the Vicinity of Sakhalin Island, Okhotsk Sea, Russia

by

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Introduction

The Sakhalin Island region of the Okhotsk Sea supports a rich diversity of marine life, including marine mammals and sea associated birds, plus a diverse assortment of fishes and invertebrates. Although many Okhotsk Sea populations or stocks of marine mammals have been depleted through overharvesting, many are now recovering after several decades of protection and monitoring.

Efforts to develop the rich oil and gas reserves on the continental shelf east of Sakhalin Island in an environmentally responsible manner have provided the impetus for organizing all available information on marine mammals and birds that may be present near areas where development is likely to occur. This report describes the abundance, distribution, and status of marine mammals (whales, pinnipeds and Sea Otters) that have been documented in the Okhotsk Sea, in the waters offshore Sakhalin Island, or more specifically could be present in the Pil'tun-Astohkskoye license area where Marathon Upstream Sakhalin Services, Ltd. (MUSSL) proposes to drill for oil. Little focussed research has been carried out within the specific license area, so the scope of this report is necessarily large in order to account for the great distances moved by marine mammals over the course of a year. Many species are migratory and their numbers in any one location may fluctuate from abundant to absent depending on the time of year.

This report on marine mammals is one of three prepared for MUSSL. The other two deal with (1) sea associated birds (Shuntov et al. 1996) and (2) the potential impacts of petroleum development in marine waters on marine mammals and sea associated birds (Thomson and Johnson 1996).

This literature/information review for marine mammals was written by prominent Russian scientists who have conducted most of the recent research on marine mammals in the Okhotsk Sea and Sakhalin Island area. The authors provide a review of methods used to study marine mammals, present results of relevant studies in the area, and discuss the status of marine mammals known or suspected to be present in the Pil'tun-Astokhskoye license area. Various maps and a summary tables are also provided that describe the region of maximum abundance, season of maximum abundance, numbers of individuals present in the region and season of maximum

abundance, the major activity of the species during this period, total numbers present in the Sea of Okhotsk, and the status of the species in Red Data Books.

Materials and Methods

Pinnipeds

An aircraft was usually used to survey and count seals on ice. The twin-engine fixed-wing IL-14 aircraft turned out to be best suited for seal surveys, expecially in terms of maneuvreability, cruise speed, and endurance. Almost all recent surveys of pinnipeds in the Okhotsk Sea have been conducted from an IL-14 or MI-8 twin-engine helicopter, with only a few surveys done on the larger 4-engine IL-18. The usual timing of surveys was during the pupping and molting period, when the seals were concentrated on fairly small areas of ice or on floes, and were easily detected and counted. The flights were usually conducted at an altitude of 200 m, and occasionally at 100 m when weather conditions dictated. The survey transects were 200-m-wide for each of the two surveyors (one on each side of the aircraft). Because the IL-14 does not have an automatic GPS, and thus sightings could not be geo-referenced, all encounters were geo-referenced as one point every five minutes. Then, the total area surveyed was computed, and total numbers and densities of seals per km^2 were calculated. At the same time during the flight, a hydrologist recorded the condition of ice (Fedoseev, Goltsev and Kosygin 1970; Fedoseev 1971). Identifications of the different species of seals were made from the aircraft by experienced observers. Detailed surveys and counts of pinnipeds and Sea Otters (Enhydra lutris) near the coast and on rookeries were done by quietly landing an observer with binoculars or a spotting scope on a high point on the landscape. At sea, a boat travelling parallel to the coast was used if weather allowed.

Cetaceans

Surveys of whales were conducted using various aircraft and ships. For aerial surveys, AN-2 and IL-14 fixed-wing aircraft were flown at 100-200 m above the sea level at a cruising speed 220-250 km/h. However, these high-speed aircraft provided little maneuvreability and proved unsuitable for surveying large whales, which have long intervals between surfacing. Beginning in 1979, twin-engine MI-8 helicopters became the standard survey aircraft and proved to be almost ideally suited for this type of work. The search for whales was done at a speed of 100-150 km/h at an altitude of 150-200 m above the sea surface. Once detected, the whales were

observed from a lower altitude at the speed of 60-70 km/h. If longer periods of observation were needed, such as during studies of whale behavior, the helicopter hovered for extended periods near the whales.

Aboard the ships, near-continuous surveys and observations were carried out from a high point, e.g., the bridge or the flying bridge. Observations were conducted if visibility was at least 5 mi (8 km) and the sea states were less than 5 on the Beaufort Scale. The total width of the survey line was 8 miles (13 km) at a speed of 11 knots (20 km/hr). Once whales were detected, the ship slowly approached them for identification and counting.

Additional important marine mammal sighting data was provided by local fishermen, lighthouse-keepers, pilots, residents of coastal settlements, and sailors.

Results and Discussion

Pinnipeds

In the entire Pacific region of Russia, the Okhotsk Sea supports the most abundant and diverse population of seals. Four species of true seals (Phocidae) - Ringed Seal (Pusa hispida), Bearded Seal (Erignatus barbatus), Ribbon Seal (Histriophoca fasciata), and Spotted or Largha Seal (Phoca largha), and two species of "eared" seals (Otariidae) - Steller's Sea Lion (Eumetopias jubata) and Northern Fur Seal (Callorhinus ursinus) - occur in this region. At rookeries in the Kurile Islands, Sea Otter (Enhydra lustris) and Pacific Harbor Seal (Phoca vitulina kurilensis) are also abundant (Table 1).

Until the 1930's, sealing in the Okhotsk Sea was carried out on a limited scale by the local population. No more than 25,000 animals were killed annually; 50% of the harvest was Ringed Seals, 35% was Bearded Seals, 15% was Largha Seals, and a few were Ribbon Seals (Fedoseev 1984). On Sakhalin Island as a whole, only 300-500 animals, mostly Largha Seals, were killed annually (Dorofeev 1936; Gakichko and Surzhin 1936). Sealing from ships on an industrial scale began in 1937, when the Soviet ship "Nazhim" took more than 2,000 seals around Ion Island and Yamskiye Islands, north of Sakhalin Island (Berzin and Perlov 1986). World War II interrupted the emerging sealing industry, but since the early 1950's there was an explosive growth in the

sealing industry in the Pacific. About a dozen ships annually harvested 66,000-102,000 animals, with an average of 83,000. The sealing season usually started in Terpeniie Bay and continued along the eastern and northern coasts of Sakhalin Island north to Shantarskiie Islands. The commercial harvest was conducted with no limitations or understanding of temporal or spacial distribution patterns of seals in the area. Not surprisingly, the commercial harvest had an immediate negative impact on the status of seal populations in the Okhotsk Sea: e.g., the estimated population of Ringed Seals declined from 1,125,000 in 1955 to 780,000 in 1966 (Fedoseev 1966), and went further down in 1967-1968. The decline was so dramatic that since 1969 sealing has been restricted and subject to compliance monitoring and scrutiny by scientific review committees. Because the new practice required detailed monitoring of the status of seal populations, large scale research efforts were undertaken. Scientists from TINRO-Vladivostok and TINRO-Magadan regularly worked on sealing ships gathering data on the morphology, anatomy, physiology, systematics and ecological preferences of seals. High priority research issues included individual growth and maturation, breeding, factors and patterns of population growth, dynamics and resources, seasonal distribution, and migrations. Methods to evaluate the numbers and ages of seals from ships and aircraft were developed. This stage of the studies of seals has been summarized by Fedoseev (1974). High densities of seals in the Okhotsk Sea were found in four regions:

1. The northern region (Shelikhov Bay and near the Yamskie Islands, up to 150^0 E);
2. The north-western region (from Tauiskaya Inlet to Cape Elizabeth on Sakhalin Island, including Sakhalin Bay);
3. The central north-western region (north of 54^0 30' N);
4. The south-eastern region (the eastern coast of Sakhalin Island).

Concentrations of seals at rookeries during the pupping season are easily observed and mapped from an aircraft. Such observations have provided the basis for population studies (Fedoseev 1972). In the Okhotsk Sea, there are reliable data on three populations of Ringed Seal (the Tauisko-Shantarskaya or northwestern population, the Shelikhovskaya population, and the East Sakhalin population), two populations of Bearded Seal (the North Okhotsk and the East Sakhalin populations), two populations of Spotted or Largha Seal (the North Okhotsk and the South Sakhalin populations), and two populations of Ribbon Seal (the South Sakhalin population which resides mainly in the Terpeniie Bay, and the Northwestern population which occurs off Ion

Island) (Fedoseev 1984). Sakhalin Island has emerged as quite an important area for most seals: every species of the Phocid or true seal has a distinct breeding population on or near the island. Each species selects a different type of ice for pupping: Ringed Seals select large fields of thick white ice extending 5-40 km out to sea (Fig. 1), Bearded Seals select coarse thick ice with consolidation grades of 8-9 and ranging 15-30 km out to sea (Fig. 2), Ribbon Seals prefer coarse high ice (near pressure ridges) with consolidation grades of 6-8 and ranging 50-100 km out to sea (Fig. 3), and Spotted or Largha Seals select fields of coarse white ice ranging 20-40 km out to sea (Fig. 4). During the pupping season, the density of seals at rookeries is 0.2-3.2 individuals/km^2. Molting occurs later, starting in May, when ice-fields break up and melt intensively, and when the density of the animals on the breeding grounds increases up to thousands of individuals/ha, *i.e.* ,by five to six orders of magnitude. Patterns or ice breakup and melting may force molting seals to wander towards northern Sakhalin Island and even into Sakhalin Bay. Phocid Seals spend 5-7 months a year (December to June) near the coast of Sakhalin Island.

After the ice breaks up and melts, Spotted or Largha Seals gather at about 50 rookeries along the coast of Sakhalin Island, where 4,000 to 8,500 animals occur (Fig. 5), depending on the year (Lagerev 1988; Perlov and Vladimirov *pers. observ.*). Besides the 50 rookeries of Largha Seals mentioned above, four more rookeries with a total population of 650 animals occur along the eastern coast of Aniva Bay (Fig. 5), and several rookeries of Steller's Sea Lions occur on Kamen' Opasnosti Rock (Fig. 5).

Two surveys of Phocid Seals along the eastern coast of Sakhalin Island in 1968 and 1969 showed that the fluctuations in numbers might be significant for some species (Fedoseev 1971). A survey in 1968 revealed an estimated population of about 28,500 Ringed Seals on northeastern Sakhalin Island. A later count (1969) of these animals in the same area gave the number of about 138,000, *i.e,*. almost a 5-fold increase over the previous year. In southeastern Sakhalin Island, the stock of Ringed Seals was estimated to be 15,000 animals in 1968, and 40,000 animals in 1969. Similar fluctuations were recorded for Ribbon Seals: in 1968, an estimate of 77,000 Ribbon Seals was recorded (47,000 animals along the northeastern Sakhalin Island and 30,000 animals along the southeastern part of Sakhalin Island). The 1969 survey showed a reduction in numbers by 20,000 animals. The numbers of Bearded Seals (35,000-40,000 animals) and Largha Seals were fairly stable during the same period: 12,000-13,000 animals, of which 4,000 individuals occur in Terpeniie Bay.

The total population of seals at the whole eastern Sakhalin Island is estimated to be 218,000-360,000 animals. This figure includes all Phocid or true seals and 50,000 Northern Fur Seals on Terpeniie Island (in Terpeniie Bay) on the east coast of Sakhalin Island, and 700 Steller's Sea Lions. Every year brings different ice conditions, which can slightly affect the numbers of seals at the rookeries, but their overall numbers near Sakhalin Island remain fairly stable. However, the last three years (1994-1996) were mild for the entire Okhotsk Sea and eastern Sakhalin Island. Satellite data show that in 1996, intensive breakup of ice began in April, a month earlier than usual. If an early breakup does occur, it may negatively affect the population of seals through increased mortality of pups and redistribution of all seals.

The range of the Kurilean race of the Harbor Seal does not include the Sakhalin Island area, but its status as an endangered species warrants some mention here. Rookeries of Pacific Harbor Seals are found on the majority of the Kurile Islands; the largest rookeries are on Iturup, Paramushir, and Urup islands, and also on islands in the Minor Kurile Islands (southwesternmost islands in the Kurile Archipelago). The average size of the Harbor Seal population for the period 1973 to 1982 was 2,150 animals (Kuzin et al. 1984), and most probably has not changed significantly since then due to the institution of protective measures prohibiting hunting or disturbance throughout their range.

Sea Otter

Although Sea Otters (Enhydra lutris) are not members of the pinnipedia, but rather are in the family Mustelidae in the order Carnivora, they are marine mammals and thus are also considered in this review. Sea Otters are not present near Sakhalin Island, but do occur on the Kurile Islands. The main concentrations of Sea Otters are near Shumshu and Paramushir islands in the eastern part of the Kurile archipelago, near Onekotan, Simushir, and Urup islands in the middle part of the archipelago, and Iturup Island, the southernmost island of the major Kurile archipelago. As many as 6,454 Sea Otters of a total of 6,804 animals counted within the entire Kurile archipelago occur on these six islands.

In just 15 years, starting in 1873, Sea Otters were extirpated from the Kurile Islands (Belkin 1966) through commercial overharvest. However, captain Snow (1902) reported the

presence of this species offshore of the Kurile archipelago in the mid-1880's. S.A. Tikhenko (1914) reported that, according to Japanese sources, in 1910 the total estimated numbers of Sea Otters on the Kurile Islands were 200-750 individuals.

Later, Sea Otters slowly increased in numbers to 600-800 animals in 1925. The next available data for this species was in 1955-1958 when surveys carried out by S.K. Klumov, S.M. Uspenski, S.D. Perelishin, and A.M. Nikolaev revealed a population of 1,500-1,586 individuals on the Kurile Islands. By 1963, the population occupying the area from Demin Island north up to Antsiferov Island had rapidly increased to 4,239 animals on the 19 islands of the Kurile archipelago (Belkin, 1966).

Later surveys indicated that by 1984 Sea Otters inhabited the coasts of virtually all of the Kurile Islands, and their numbers had reached 6,000-7,000 individuals.

In the 1960's, Sea Otters were reported from southern Sakhalin Island and Hokkaido Island in Japan (Barabash-Nikiforov et al. 1968), which data were included in the Red Data Book of USSR (1984). However, this species has not been seen near Sakhalin Island in recent years. We hypothesize that in cold years, when the islands south of Urup are blocked with ice, Sea Otters are forced to stay out of the water, e.g., on the ice, which increases mortality. It has also been speculated that when ice floes drift southwards, through the Strait of La Perouse, Sea Otters may appear in the coastal waters of Hokkaido and Sakhalin Island.

Sea Otters are protected against hunting throughout their range, including the Kurile Islands, where a twelve-mile zone is established where no ships can enter without special permission from the local branch of the Russian Federation Committee for Fisheries.

Pinnipeds of Tatarskii Strait and the De Kastri Area

The vicinity of Tatarskii Strait was never important for commercial sealing, so only a limited amount of research has been conducted in this area. A large stock of Spotted or Largha Seals, totalling 8,500 animals (1,500 were pups), was found in this region on 10 April 1970 during an aerial survey in Nevel'skoi Strait and the waters off Cape De Kastri. Pups were distributed in groups of 4-5 on some ice floes 100-150 m^2 in area. Hence, this area of

concentration was classified a pupping area for Largha Seals (Fedoseev, Gol'tsev and Kosygin 1970). In early April 1981, an aerial survey from Cape Krestovozdvizhenskii to Cape Sivuchii in Tatarskii Strait revealed a total of 700 Largha Seals, which also included some pups. The average density of seals in this area was 3 individuals/km^2. North of Cape De Kastri, however, where ice consolidation reached grade 9-10, seals were not found. In the middle of April 1981, when Tatarskii Strait became ice-free, seals were found only between Cape Sivuchii and Sovetskaya Gavan', with the average density of 8 individuals/km^2. About 400 animals were counted in this area, of which 8% were pups. On 10 September 1982, a 1-day aerial survey in the northern part of Tatarskii Strait, north up to Cape De Kastri, showed no seals in this area (Berzin, Vladimirov and Maminov 1984). However, later surveys (August-September 1985-1986) of the seals at rookeries along the western coast of Tatarskii Strait (from Cape Krestovozdvizhenski to Cape Uspenie) found more than 400 Largha Seals, and the surveys at the breeding grounds along the western coast of Sakhalin Island showed more than 200 Steller's Sea Lions, about 150 Largha Seals, and several Bearded Seals.

In March-April, solitary Ribbon Seals occur on ice in the southern part of Tatarskii Strait, and a few Ringed Seals may come to the northern part of the strait.

Hence, the Largha Seal is the most abundant of all species of seals in Tatarskii Strait. They are most abundant in ice-covered areas considered to be pupping grounds. Other species of pinnipeds do not pup in this area, and their numbers in this area are low.

Cetaceans

Ten species of cetaceans are known to occur in the waters adjacent to Sakhalin Island, Okhotsk Sea, Russia (Table 2, Fig. 6). Populations of four of these species, the Bowhead Whale (Balaena mysticetus), Northern Right Whale (Eubalaena glacialis), Fin Whale (Balaenoptera physalus) and Gray Whale (Eschrichtius robustus), have been greatly reduced through decades of mechanized and unregulated commercial whaling. These four species are currently listed in the Red Data Books of the I.U.C. N. and the Russian Federation.

Bowhead Whales (Balaena mysticetus) of the Okhotsk Sea stock are listed in Category 1 of the Red Data Books of IUCN, USSR, and Russia, i.e., it is a rare species under the threat of

extinction. The Okhotsk Sea is inhabited by a distinct population of Bowheads. Prior to commercial whaling, which began in the 19th century, the Okhotsk Sea population of Bowheads probably consisted of about 6,000 animals. During the 19th and early 20th centuries it was heavily 'harvested', especially in the western, central and northern parts of the Okhotsk Sea. By the early 20th century, the population was on the verge of extinction. After a complete ban on whaling of this species, its numbers seem to have been slowly increasing. Today, Bowheads occur only in two areas of the Okhotsk Sea: in the northeastern part of its former range (Gizhiginskaya and Penzhinskaya bays) and in the western part, near the Shantarskie Island in Konstantin, Ulbanskii, and Tugurskii bays. The total size of the Okhotsk Sea population currently is about 300-400 animals. During winter, 50-100 Bowheads stay near the ice edge along the north and east coasts of Sakhalin Island. Their diet consists mainly of Calanoid copepods.

Gray Whales (Eschrichtius robustus) of the Korean-Okhotsk Stock, or Western Stock, occur along the northeast coast of Sakhalin Island in summer and autumn. Early information about Gray Whales near the Pil'tun-Astokhskoye license area is reported in "The Description of Kamchatka" (Krasheninnikov 1755): "whales are tremendously abundant in the Penzhinsk [Okhotsk - J. I.-Z.] Sea". Based on Krasheninnikov, the historical centers of distribution of Gray Whales in the Okhotsk Sea were Sakhalin Bay, Ulbanskii, Shelikhov, Akademiia, and Tugurskii bays, the coastal waters of Sakhalin Island, Penzhinskaya and Gizhiginskaya bays in the northern Okhotsk Sea, and the waters west of Kamchatka. Krasheninnikov does not mention whaling activities in the Okhotsk Sea. Probably, some Gray Whales were taken in the Okhotsk Sea during the last century incidental to the killing of other baleen whales. However, intensive unregulated commercial whaling was carried out along the Korean Peninsula, which was a principal calving grounds of the Korean-Okhotsk Stock of Gray Whales.

Prior to commercial whaling, the size of the Korean-Okhotsk Stock of Gray Whales was about 1,500 animals (Berzin and Yablokov 1978). By the 1930's, the population had declined catastrophically, and in the 1970's the majority of investigators tended to believe that this population became extinct or was on the verge of extinction (Rice and Wolmann 1971).

Aerial observations carried out by TINRO scientists in the northwestern and northern areas of the Okhotsk Sea failed to document any Gray Whales there.

In 1979, a single Gray Whale was found at the southern tip of Kamchatka Peninsula, in the Cape Lopatka area, and in 1983, a group of 8 Gray Whales was seen at the same place. In 1984, two Gray Whales were observed near the west coast of Kamchatka, at the mouth of Opala River (Blokhin 1985). It is difficult to conclude which stock these Gray Whales belonged to. Theoretically, a penetration of the California-Chukotsk stock into this area is possible, especially given the dramatic increase in their numbers. We tend to believe, however, that these whales belonged to the Korean-Okhotsk stock, which is indirectly supported by the fact that Gray Whales, though singly, occur along the entire Kurile Islands.

In September 1983, G.M. Kosygin found a group of about 20 Gray Whales of various ages in the coastal waters of north-eastern Sakhalin Island, just south of Okha City. Since 1984, we have regularly carried out aerial observations of this group during the summer-autumn period. The northern and north-eastern areas of Sakhalin Island were surveyed many times. However, Gray Whales remained in the restricted offshore area between the central and the southern parts of Pil'tun Bay. They stay within 4 km of the coast, but usually at a distance of 100 m to 2 km from the coast, and sometimes they can even be seen in the surf zone. Solitary individuals can move northward as far as the latitude of the Okha City.

Usually, 18-20 Gray Whales were observed in this area, but in August 1986 their numbers had increased to 24 animals (Berzin et al. 1988). In 1989, 34 Gray Whales were found in offshore waters between the latitude of the town of Sabo (south from Okha City) and the mouth of Pil'tun Bay (Berzin et al. 1990). Thus, there might be an increasing trend in the numbers of Gray Whales present in this area.

In 1995, S.A. Blokhin (in press) observed 42 Gray Whales from the tower of the lighthouse located on the coast in the southern part of Pil'tun Bay; this was the largest group of Gray Whales ever observed in the area. The earliest date when Gray Whales appear off Pil'tun Bay was May 13. According to earlier reports of lighthouse-keepers in Pil'tun, Gray Whales were first observed in the area in 1981 and since that year have appeared regularly in June, as the ice along the coast breaks up and melts. Observations by S.A. Blokhin in 1995 revealed a part of the spring migration route of Gray Whale to summering grounds. The same year, local hunters reported that on 16 May they had observed a large group of Gray Whales near Chayvo Bay,

about 30 miles (50 km) south of Pil'tun Bay. Also in 1995, a group of 5-7 Gray Whales was seen near the town of Nogliki, about 60 miles (95 km) south from Pil'tun Bay.

In Autumn, Gray Whales leave the Pil'tun Bay area in about mid-October. A group of 4 Gray Whales was seen near the mouth of Pil'tun Bay on 25 October 1986. Apparently, they were the last individuals to have left their summering grounds. The early December aerial surveys indicated an absence of Gray Whales in the coastal waters from northeastern Sakhalin Island south to Cape Terpeniie.

Gray whales are found singly or in groups of 2-5 individuals on their summer grounds. Olive-gray spots of disturbed sediments can be easily seen from the air in the places where the animals come to the surface. They indicate that the whales fed on benthic organisms in shallow waters. Surveys of the benthos during our observations of Gray Whales in the western part of the Okhotsk Sea indicated that the whales were feeding in the areas of highest benthic biomass: more than 1,000,000 kg/km^2 (V. N. Koblikov unpub. data). Most likely, Gray Whales feed exclusively on benthic organisms in this area.

The current estimated size of the Okhotsk Sea stock of Gray Whales is 250 animals. Some of these individuals remain year-round on the breeding grounds in waters off the Korean Peninsula. It is estimated that 50-100 animals regularly occur along the northeast coast of Sakhalin Island and may occur in the license area. Specific ecological preferences of the Korean-Okhotsk stock of Gray Whale, i.e., its apparent preference for shallow coastal waters, where increased shipping, fishing, oil and gas exploration and extraction, and other human activities occur, may be an important limiting factor in the continued recorvery of this whale stock.

Northern Right Whales (Eubalaena glacialis) were once abundant in the Okhotsk Sea. Prior to industrial whaling, the number of individuals was 10,000 animals in this region. However, over-exploitation from the middle of last century to the 1920's drastically reduced the numbers of this species. At one time it was thought that Northern Right Whales had become extinct. In 1946, the International Whaling Commission declared the Northern Right Whale completely protected. These measures resulted in a slow increase of the total numbers of the species, so by 1970's there were perhaps 200-400 individuals throughout the world.

The first recent evidence of the species' existence in the Okhotsk Sea was reported by A. A. Rovnin from aboard the scientific vessel "Vityaz' " in 1967. Single Northern Right Whales were seen in the Okhotsk Sea off Urup Island, and a group of 10 animals was observed in the waters of Shelikhov Bay. In 1974, a group of 40-45 Northern Right Whales was observed from the ship "Tamango" northeast of the Kashevarov Land (Kuzmin and Berzin 1975).

Later, observations and research in the Okhotsk Sea were conducted during joint Russo-Japanese field expeditions. In 1989, a single Northern Right Whale was found about 160 km east of the north coast of Sakhalin Island. In 1990, a single animal was found off Alaid Island, and a group of six individuals was recorded in the central part of the Okhotsk Sea. In 1992, 34 animals were found in various parts of the Sea, the largest number ever observed in the area.

In the region of eastern Sakhalin Island, Northern Right Whales have been reported regularly, and they may occasionally move through the license area. They feed mostly on various species of Calanoid copepods. In 1967, about 70 Northern Right Whales were observed in the area of Terpeniie Bay, and solitary animals were seen along Sakhalin Island up to its northern tip. In 1992, nine Northern Right Whales were observed near Nyiski Bay, but far from the coast. The same year, seven Northern Right Whales were observed in the area between the northern end of Sakhalin Island and Cape Terpeniie. In 1993, two individuals of this species were reported in the area east of Cape Terpeniie (Shuntov 1994). During recent years, the population of Northern Right Whales in the Okhotsk Sea has increased up to 800 individuals, 150-200 of which stay in the waters of eastern Sakhalin Island during the summer-autumn period. It is likely that the size of the population will continue to increase.

Fin Whale (Balaenoptera physalus) used to be one of the most numerous species among great whales until they supplanted the Blue Whale as the prime target of whaling when populations of the later were decimated. During the post-whaling period, the population of Fin Whale gradually increased in numbers and at present is estimated to be 2,700 individuals, 400-600 of which inhabit the waters of eastern Sakhalin Island during the summer-autumn period. Fin Whales feed on fish, cephalopods, and planktonic crustaceans.

Fin Whales are present permanently in the Okhotsk Sea where they come both from the Pacific Ocean through the straits in the Kurile Islands and from the Sea of Japan through La Perouse Strait. Fin Whales often occur in shallow water, both along the coast and offshore.

During recent years, Fin Whales have been encountered in all surveys throughout the entire Okhotsk Sea. During reconnaissance surveys in 1989, 1990, and 1992, as many as 28, 53, and 79 individuals were observed, respectively. Fin Whales are frequently found along the eastern coast of Sakhalin Island. In 1975, two groups of ten and five individuals were observed in the area northeast of Cape Aniva. In 1992, seven animals were observed in the area between the northern end of Sakhalin Island and Cape Terpeniie. In 1993, two Fin Whales were reported from the area east of Cape Terpeniie (Shuntov, 1994). In the end of August 1993, groups of Fin Whales (2, 3, and 2 individuals) were observed east of Cape Terpeniie.

The presence of Fin Whale family groups suggests an increase in numbers of this species in the Okhotsk Sea.

Minke Whales (Balaenoptera acutorostrata) are the most numerous of the Baleen Whales remaining in the Okhotsk Sea. They are widely distributed, though tend to stay in large bays, feeding mainly on crustaceans and fish (their diet varies greatly with the season). Because these whales usually surface and dive in an asynchronous manner and often do not remain at the surface for a long time, it is difficult to estimate the size of groups of these whales, particularly in rough seas. Moreover, it is often difficult to resight a whale that has already been detected because of long intervals between surfacings. Nevertheless, Minke Whales were observed in every scientific expedition. The highest numbers of Minke Whales were reported during Russian-American studies, as follows: 123 in 1989, 70 in 1990-91 and 1992.

Minke Whales are found along the entire eastern coast of Sakhalin Island. About 19,000 individuals occur in the Okhotsk Sea, and from 3,000 to 3,500 inhabit the area east of Sakhalin Island. The highest numbers of Minke Whales were recorded in the regions of Terpeniie Bay and Cape Aniva, and east of northern Sakhalin Island. This species has never been of significant importance for whaling, which is why even during the years of active whaling, its numbers were relatively stable.

Sperm Whales (Physeter macrocephalus) occur throughout the eastern and southern regions of the Okhotsk Sea, but the waters offshore the Kurile Islands appear to be the center of distribution of this species in the Okhotsk Sea. In the entire Okhotsk Sea, during the summer-autumn period, the total population of Sperm Whales is estimated at 1,000 individuals. The northern limit of its distribution is the 300 m isobath. Sperm Whales mainly feed on cephalopods, but also eat some fish. In eastern Sakhalin Island, Sperm Whales are most frequent around Cape Terpeniie and Cape Aniva and adjacent waters, where 200-300 animals wander. Due to the absence of focused research, most observations are occasional and often unreliable.

In 1987, a group of Sperm Whales containing at least 25 individuals was observed in the region of Terpeniie Bay, and ten animals were seen east of Aniva Bay. In June 1987, M.K. Maminov (*pers. comm.*) reported a group of eight Sperm Whales in Terpeniie Bay between Poronaisk City and Tiulenii Island. In 1995, V.P. Shuntov observed three Sperm Whales in the eastern part of Terpeniie Bay (Shuntov, *in press*).

During the whaling period, Sperm Whales were among the most important species, mainly in the region of Kurile Islands, and were over-exploited.

Baird's Beaked Whale (Berardius bairdii) is an endemic species of the North Pacific. About 1,000-1,500 animals occur in the Okhotsk Sea, 250-300 of which are in the southern part of Sakhalin Island, mainly in Aniva Bay and east of Cape Aniva. These whales mainly feed on cephalopods and to a lesser extent on fish. Within the Okhotsk Sea, Baird's Beaked Whales occur along the islands of the Kurile archipelago, the coast of Kamchatka, east Sakhalin Island, in Sakhalin Bay, near Shantarskie and Ion Islands, and in the southern part of the Okhotsk Sea. Recent observations of this species are scarce and all of them have been made in the southern part of the Okhotsk Sea. In 1990, five groups ranging from 5 to 20 individuals and totalling 69 individuals were encountered near the coast of the southern Sakhalin Island and in La Perouse Strait. A group of 10 Sperm Whales was seen east of Terpeniie Cape on 30 August 1993, and two groups of 10 and six whales were observed east of Cape Aniva on 2 September 1993.

Japanese scientists believe that three populations of Baird's Beaked Whales are present along the coasts of southern Sakhalin Island and in the waters of northern and western Hokkaido

Island, Japan: two are in the southern part of the Okhotsk Sea and one is west of Hokkaido Island, Japan.

Killer Whale or Orca (Orcinus orca) is found almost anywhere in the Okhotsk Sea, more frequently along the coasts. This species is more frequently encountered off the Kurile Islands, off western Kamchatka, and in the northern and southern parts of the Okhotsk Sea. The 1990 survey documented 57 animals throughout the Okhotsk Sea, and 103 animals were recorded in 1992. In 1993, only the central and southern parts of the Okhotsk Sea were surveyed, where a mere 7 Killer Whales were seen. In 1995, 42 animals were observed (Shuntov, 1992, 1995). In total, 1,500-2,000 animals inhabit the Okhotsk Sea, but they do not form large groups. Killer Whales occur almost anywhere along the eastern coast of Sakhalin Island except its northern part, and the total number estimated to occupy waters near Sakhalin Island may be as high as 300-400 animals. Most often Killer Whales are encountered in and around Terpeniie Bay. In 1988, M.K. Maminov observed 14 Killer Whales (*pers. comm.*), and during the surveys in 1992 and 1995, 13 and 11 individuals were observed (Shuntov, 1995). In 1995, 40 Killer Whales were observed in the area between Cape Terpeniie and Nyiski Bay. Because these animals were never the object of commercial whaling, the population has not suffered losses comparable to those of other large whales.

White Whales (Delphinapterus leucas) are abundant throughout the Okhotsk Sea, although their distribution is patchy. There are three populations of White Whales in the Okhotsk Sea, as follows: the Sakhalin-Amur population (7,000-10,000 individuals), the Shantar population (3,000-5,000), and the North-Okhotsk population (about 10,000). The total number of White Whales inhabiting the Okhotsk Sea during the summer-autumn period is estimated to be 20,000-25,000 individuals. White Whales do not permanently inhabit the waters off eastern Sakhalin Island, but are present in fairly small numbers (400-500 individuals) in the northeastern and northern parts of the island only during spring migration. Adult animals mostly feed on fish, whereas young animals also feed on invertebrates. Areas where White Whales are known to form massive and stable concentrations are as follows: Sakhalin Bay, bays on the Shantarskie Islands, and Gizhiginskaya and Penzhinskaya bays. These areas are well away from the eastern coast of Sakhalin Island, but observations made more than a century ago indicated the existence of White Whales in Terpeniie Bay and in the Poronai River. In 1883 and 1884, I.S. Polyakov (in: Arsen'ev, 1939) discovered that White Whales showed up in the mouth of the river in "enormous numbers"

at the begining of spring, when the ice in Terpeniie Bay had receded. Animals went into the river mouth to feed on fish and are reported to have "filled the ocean up to horizon". In May, White Whales left the river.

Local fishermen in Poronaisk City have never seen White Whales in the Poronai River or at its mouth (*pers. comm.*). We carried out two spring aerial surveys over Terpeniie Bay and the mouth of the Poronai River in various years and did not encounter a single White Whales. Arsen'ev (1939) reported that in the 1930's, White Whales were very rare along the eastern coast of Sakhalin Island and were seen in small groups only twice over three years.

We have conducted numerous surveys of the eastern coast of Sakhalin Island and found White Whales only once on 29 May 1989: about 100 animals were observed among large ice floes near and southeast of Cape Elizabeth, at the northern tip of Sakhalin Island. On 2 June 1989, up to 30 individuals were found in Nyiskii Bay, and about 50 animals moving northwards were seen north of the bay (between the Chayvo and Pil'tun bays). Judging by the results of all observations, Nyiskii Bay is likely to be the southern limit of the distribution of this species in the Okhotsk Sea.

In 1990, aerial surveys were stopped, which negatively affected the studies of all species of whales in the Okhotsk Sea.

Dall's Porpoise (Phocoenoides dalli) is an endemic species of the northern Pacific and one of the most numerous species of cetaceans in the Okhotsk Sea (20,000-25,000 individuals). However, the distribution of this species in the Okhotsk Sea is not ubiquitous. About 3,500-4,000 individuals occur in waters along the entire eastern side of Sakhalin Island. It rarely forms large concentrations and is more common south of Cape Terpeniie. Dall's Porpoises feed on schooling fishes and cephalopods. There are two forms of Dall's Porpoises in the Okhotsk Sea which differ in the proportion and pattern of dark and light color.

Surveys in September 1990 revealed the presence of several groups of Dall's Porpoises north and northeast of Cape Elizabeth (the northern tip of Sakhalin Island). Twenty one groups totalling 80 animals were recorded on 11 September, and 13 groups of 70 individuals were recorded on 12 September. V.P. Shuntov (1993, 1994, 1995; in press) provided the most complete data on the current distribution of Dall's Porpoises in the Okhotsk Sea and defined the

regions of maximum concentration; all of them lie in waters off the eastern coast of Sakhalin Island.

In 1965-1971, A.E. Kuzin and A.S. Perlov regularly observed Dall's Porpoises southeast of Terpeniie Bay in spring through summer and east of Aniva Bay in autumn through winter. V.P. Shuntov (1995) observed them in and around Terpeniie Bay, and east of Aniva Bay. In 1993, Dall's Porpoises were seen singly and in small groups (3-5 animals) between Terpeniie Bay and Aniva Bay. North of Terpeniie Bay, Dall's Porpoises are scarce.

Cetaceans Of Unknown Status Near Sakhalin Island

Humpback Whale (Megaptera novaeanglia) is included in the Red Data Books of the IUCN, USSR, and Russia.
Status: Category 1, under threat of disappearance.
Distribution and Current Status: In 1967, five Humpback Whales were encountered in the northern part of the Okhotsk Sea, three of them were in waters near the Lisanskii Peninsula, and two were seen south of Tauiskaya Bay. In 1987, one Humpback Whale remained in the southern part of the Okhotsk Sea, and in 1992, two animals were recorded along the northwestern coast of Kamchatka. The number of individuals currently inhabiting the Okhotsk Sea does not exceed 15 individuals. At present, the western population of Humpback Whales is severely depressed.

Blue Whale (Balaenoptera musculus) is included in the Red Data Books of IUCN, USSR., and Russia.
Status: Category 1, under the threat of disappearance.
Distribution and Current Status: In the past, Blue Whales were a very important species for the commmercial whaling industry, however, it was mostly taken in the Antarctic. The Blue Whale population was reduced drastically in the North Pacific during the period of intensive whaling in the late 19th century and early 20th century. Prior to whaling, the global population may have been as high as 215,000 individuals; by 1974 it was reduced to 13,000 individuals.

Blue Whales remain near the Kurile Islands and rarely come into the Okhotsk Sea. They may infrequently move up along the western coast of Kamchatka. In the past, the number of Blue

Whales coming into the Okhotsk Sea may have been in the 10's of animals. Blue Whales have not recently been reported in the Okhotsk Sea; at present only single animals have been reported in coastal waters of the Kurile Islands on the southern margins of the Okhotsk Sea. In 1991, V.P. Shuntov observed three Blue Whales east of the southern tip of Kamchatka (Shuntov, *pers. comm.*).

Sei Whale (Balaenoptera borealis) is included in the Red Data Books of IUCN, U.SSR, and Russia.

Status: Category 3, may come under the threat of disappearance because their numbers are declining.

Distribution and Current Status: Pre-whaling estimates of the size of the entire Pacific Ocean population of Sei Whales were 210,000-214,000 individuals; by 1972 it had been reduced to about 117,000-121,000 individuals, and by 1974 only 76,000 individuals were left. In the northern Pacific, the numbers of this species declined from 42,000-50,000 to 21,000-23,000 individuals during this same period. Sei Whales penetrate the Okhotsk Sea through the various straits of the Kurile Islands, however, they do not move far into the open sea. Research expeditions in the late 1960's and early 1970's determined that this species was distributed only in the southern and southeastern parts of the Okhotsk Sea. Observations made in recent years documented single animals in the region near Iturup, Shumshy, and Alaid islands in the Kurile Islands in August-October. Sei Whales have never been found in the waters of Sakhalin Island, however, we can not eliminate the possibility of their rare penetration into the open waters east of the island. The estimated population of Sei Whales in the Okhotsk Sea is 200-400 individuals.

Risso's Dolphin (Grampus griseus) is included in the Red Data Books of USSR. and Russia.

Status: Category 4, a species at the northern limit of its range in the Pacific waters of Russia, where a small and poorly studied population exists.

Distribution and Current Status: In the Okhotsk Sea, Risso's Dolphin inhabits the waters of the Kurile Islands, mainly its southern part (Iturup and Shpanberga islands). Aside from the Okhotsk Sea, in waters of Russia it occurs only off the Kommander Islands.

Cuvier's Beaked Whale (Ziphius cavirostris) is included in the Red Data Books of USSR and Russia.

Status: Category 3, a rare species.
Distribution and Current Status: According to the Red Data Book of Russia (1985), the area of distribution of Cuvier's Beaked Whales covers almost the entire Okhotsk Sea, including Sakhalin Island (Geptner, 1976; Tomilin, 1971). In "Mammals of the Soviet Union" (v. 2, part 3, 1976) we read that "based on somewhat unreliable sources, Cuvier's Beaked Whales have been encountered off the Kurile Islands and off the southern coast of Sakhalin Island (Sleptsov, 1961)". We have never observed Cuvier's Beaked Whales in the Okhotsk Sea, but they do occur near southeastern Kamchatka and the Kommander Islands, where strandings occur almost every year.

False Killer Whale (Pseudorca crassidens) is included in the Red Data Books of USSR and Russia.
Status: Category 4.
Distribution and Current Status: the Pacific waters of Russia are the limit of its range, its population there is small, and the numbers are difficult to estimate. In the Okhotsk Sea, it may be encountered in the southern Kurile Islands.

Stejneger's Beaked Whale (Mesoplodon stejnegeri) is included in the Red Data Books of USSR and Russia.
Status: Category 4, an extremely rare and poorly studied species.
Distribution and Current Status: Stejneger's Beaked Whales occupy waters around the Kommander Islands, where carcasses cast ashore are sometimes discovered. There are virtually no observations of these animals at sea, but they may be encountered in the waters of Kamchatka and around the Kurile Islands. In 1989, five Stejneger's Beaked Whales were seen in the southern part of the Okhotsk Sea and three individuals were seen in the northern part of the Okhotsk Sea, at the mouth of Gizhiginskaya Bay. These were the first reliable observations of this species in the Okhotsk Sea.

Pacific White-sided Dolphins (Lagenorhynchus obliquidens) are among the most numerous species inhabiting the northwestern part of the Pacific Ocean. Sometimes they concentrate in groups of thousands of individuals. They appear to be most common in the southern part of the Okhotsk Sea, i.e., along the Kurile Islands, at Cape Aniva, and in the La Perouse Strait.

Common Dolphins (Delphinus delphis) occur in the southern part of the Okhotsk Sea, i.e., along the Kurile Islands and in waters along the west coast of Kamchatka. This species also inhabits the waters east of Sakhalin Island and north of the Shantarskie Islands.

Bottlenose Dolphin (Tursiops truncatus) is a fairly uncommon species in the Okhotsk Sea. It occupies the southern half of the Okhotsk Sea and may be found up to the central Kurile Islands, from the Cape Terpeniie south to Cape Aniva and Aniva Bay.

Striped Dolpin (Stenella coeruleoalba) in the Okhotsk Sea is only found along the Kurile Islands. The distribution of this species is poorly studied, and few observatiosn of this species at sea have ever been made.

Long-finned Pilot Whale (Globicephala melaena) is a fairly numerous species and often forms groups of a thousand or more individuals. In the Okhotsk Sea, it is found near the Kurile Islands, north of Hokkaido Island, at Cape Aniva, and in La Perouse Strait.

Northern Right Whale Dolphins (Lissodelphis borealis) are found in the southern part of the Okhotsk Sea, near the Kurile Islands, the southwest coast of Kamchatka, north of Hokkaido Island, east of Terpeniie Bay, at Cape Aniva, and in La Perouse Strait.

Harbor Porpoise (Phocoena phocoena) is a fairly numerous species. In the Okhotsk Sea, it inhabits waters near the Kurile Islands, along the west coast of Kamchatka, along the east coast of Sakhalin Island, in Sakhalin Bay, and north of the Shantarskie Islands.

Cetaceans of Tatarskii Strait and the De Kastri Area

Compared to other North Pacific seas, such as the Okhotsk Sea and the Bering Sea, cetaceans are less abundant in the Sea of Japan and Tatarskii Strait, which is considered a northern extension of the Sea of Japan. Aerial surveys carried out in Tatarskii Strait during the past decade have led to the conclusion that only small numbers of whales use this area. The most common cetaceans of Tatarskii Strait are probably Dall's Porpoises and Pacific White-sided

Dolphins: these species may form concentrations up to 2,000 individuals (Sleptsov 1961 quoted from Sobolevskij 1984).

Gray Whales which belong to the Korean-Okhotsk stock were encountered in small numbers fairly regularly in Tatarskii Strait (Berzin & Blokhin, 1986). Our later observations supported this data: in 1989, a group of 18 Gray Whales was found in the Tatarskii Strait 2 km out to sea, between the towns of Sovetskaya Gavan' and Ternei (Berzin et al. 1990).

Tatarskii Strait is sometimes considered a major route for Gray Whales on their migration to the Okhotsk Sea (Kellog 1928; Mizue 1951). Our recent data (Vladimirov 1993) suggests that during the migration period, Gray Whales can reach the northern part of Tatarskii Strait and may be encountered in the region of De Kastri, though we have never observed this. However, the whales cannot go through Nevelskoi Strait and reach the Okhotsk Sea because of the shallowness of Amurskii Bay ("Amurskii Liman") which lies north from Tatarskii Strait and forms a natural barrier.

Amurskii Bay is likely to impede the migration of Minke Whales as well. Japanese scientists have assumed that a portion of Minke Whale population wintering in the Sea of Japan may pass into the Okhotsk Sea through Tatarskii Strait, Amurskii Bay, and Sakhalin Bay. Again, our observations do not support this suggestion. Gray Whales and Minke Whales migrate into the Okhotsk Sea and back to the wintering regions along the Korean and Chinese coasts mainly through La Perouse Strait. The southern coast of Sakhalin and the northern coast of Hokkaido are excellent locations where observation stations may be set up to survey all whales passing through La Perouse Strait.

Both Killer Whales and Minke Whales occur in Tatarskii Strait, including the De Kastri region. The number of Killer Whales occupying this region is about 250-300 individuals, while the numbers of Minke Whales are very small (insignificant). There are no areas where Killer Whales could stay permanently, though they wander near the mouths of rivers during the salmon spawning season.

V.A. Arsen'ev (1939) reported that White Whales appeared in Tatarskii Strait in spring during their migration from the Okhotsk Sea through La Perouse Strait. He reported that these

whales moved north toward Amurskii Bay. Other data also indicate that White Whales may sometimes occur in the northern part of Tatarskii Strait: in 1983, a survey of SakhRybVod (Sakhalin Branch of the Ministry of Fisheries) found 202 individuals there (Anonymous 1988), and family groups of White Whales were reported between 56^0 N and 58^0 N (Kosygin et al. 1984). However, our investigations and information collected from local people do not support these data and we can only speculate that this species may occasionally penetrate the northern part of the Tatarskii Strait from Amurskii Bay during the summer period. However, the biology of this species is still poorly studied, and any conclusions on its behavior and distribution are preliminary.

Besides the above-mentioned species of whales, there are several other species of cetaceans observed in the Tatarskii Strait and De Kastri region. These include: Common Dolphin (Delphinus delphis), Bottlenose Dolphin (Tursiops truncatus), and Harbor Porpoise (Phocoena phocoena). We are unaware of any data or even rough estimates of the numbers of these species present in this region.

Conclusions

Pinnipeds

Six species of seals occur in the waters of eastern Sakhalin Island. Their numbers are fairly high - 218,000-360,000 animals. Five of the six species remain in the area for up to nine months of the year, and Largha or Spotted Seals are present almost the entire year. All the species concentrate in this region for mating, pupping, and molting.

For all the species except Steller's Sea Lion, coastal waters of eastern Sakhalin Island form one of the main breeding centers. Tatarskii Strait is one of four breeding centers of Largha Seal in the Okhotsk Sea, and Terpeniie and Aniva bays form the only breeding center of Ribbon Seal in the Okhotsk Sea. The total numbers of all six species have not changed significantly since the 1980's. However, mild winters and early ice breakup in recent years may cause declines in the numbers of seals due to possible increased mortality among pups and redistribution of seals between the areas inside and outside the Okhotsk Sea.

Whales

Bowheads, Northern Right Whales, and the Korean-Okhotsk stock of Gray Whales were decimated as a result of unregulated whaling in earlier years. For a long time, these species were considered extinct or verging on extinction. Although their populations are slowly recovering, there is increasing concern that anthropogenic (development-related) pressures on their habitat may have negative impacts. The status of the Okhotsk Sea population of Fin Whales is healthier; the size of this population is now about half of what was estimated during the pre-whaling period. The Humpback Whale population, in contrast, has been extremely depressed for about three decades, and shows no signs of recovery. In the Okhotsk Sea this species is very rare and is likely to become extirpated, as it did in the Sea of Japan, where it was abundant before commercial whaling began. White Whales, Minke Whales, Killer Whales, and most other dolphins have never been important objects of whaling and did not suffer significant losses during commercial whaling in the Okhotsk Sea.

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TABLES

Table 1. Seals and sea lions in the Pil'tun-Astokhskoye License area and adjacent regions of the Sea of Okhotsk near Sakhalin Island, Russia.

Taxon (Family, Species)	**Region of Maximum Abundance**	**Season of Maximum Abundance**	**Abundance**	**Activity**	**Total No. in Sea of Okhotsk**	**Red Book Status**
Phocidae Pusa hispida Ringed Seal	Entire east coast of Sakhalin I., peaks in Lun'skii Bay to Cape Elizabeth	April - June	45,000-180,000	Pupping, Molting	540,000	
Erignathus barbatus Bearded Seal	Entire east coast of Sakhalin I., peaks in Terpeniie Bay	March - May	35,000-40,000	Pupping, Molting	180,000	
Histriophoca fasciata Ribbon Seal	Entire east coast of Sakhalin I., peaks in Terpeniie Bay and north up to Lun'skii Bay and Levenshtein Point	April - May	60,000-80,000	Pupping, Molting	350,000	
Phoca largha Spotted Seal	Entire east coast of Sakhalin I., peaks between Terpeniie Bay and Lun'skii/Chayvo bays	January, June - on ice; July-Oct. on the coast	12,000-13,000	Pupping, Molting, Feeding	180,000	
Otariidae Eumetopias jubata Northern Sea Lion	Kamen' Opasnosti Rock and Tiulenii Island	March - November	700-900	Pupping, Molting, Feeding	8,500-9,500	(1) *
Callorinus ursinus Northern Fur Seal	Tiulenii Island	June - August	50,000	Pupping, Molting	100,000-120,000	

* (1) Included in the forthcoming release of the Red Book of Russia (verbal announcement by I.V. Mikhno, Head of the Department of Natural Resources, Ministry of Environment and Natural Resources, Russian Federation).

Table 2. Whales in the Pil'tun-Astokhskoye License area and adjacent regions of the Sea of Okhotsk near Sakhalin Island, Russia.

Taxon (Order, Family)	Taxon (Species)	Region of Maximum Abundance	Season of Maximum Abundance	Abundance	Activity	Total Numbers in Sea of Okhotsk	Red Book Status
Mysticeti Balaenidae	Balaena mysticetus Bowhead Whale	Nabil' Bay, near the ice edge	February - March	50 - 100	Feeding	300 - 400	Category 1
	Eubalaena glacialis Northern Right Whale	Sea around Terpeniie Point	July - September	150 - 200	Feeding	Up to 800	Category 1
Balaenopteridae	Balaenoptera physalus Blue Whale	Sea around Terpeniie Point	June - September	400 - 600	Feeding	ca. 270	Category 2
	Balaenoptera acutorostrata Minke Whale	Sea along the entire east coast of Sakhalin Island	June - September	3,000 - 3,500	Feeding	Up to 19,000	
Eschrichtidae	Eschrichtius robustus Gray Whale	Sea east of Pil'tun Bay	June - September	50 - 100	Feeding	ca. 250	Category 1
Odontoceti Phyceteridae	Phyceter macrocephalus Sperm Whale	Sea around Terpeniie Point	June - September	200 - 300	Feeding	ca. 1,000	
	Orcinus orca Killer Whale	Terpeniie Bay	June - October	300 - 400	Feeding	1,500 - 2,000	
	Phoconoides dalli Dall's Porpoise	Terpeniie Bay	June - September	3,500 - 4 ,000	Feeding	20,000 - 25,000	
Ziphiidae	Berardius bairdii Baird's Beaked Whale	Aniva Bay	June - October	250 - 300	Feeding	1000 - 1500	
Monodontidae	Delphinapterus leucas White Whale	Sea along the northeast coast of Sakhalin Island	May - June	400 - 500	Feeding	20,000 - 25,000	

FIGURES

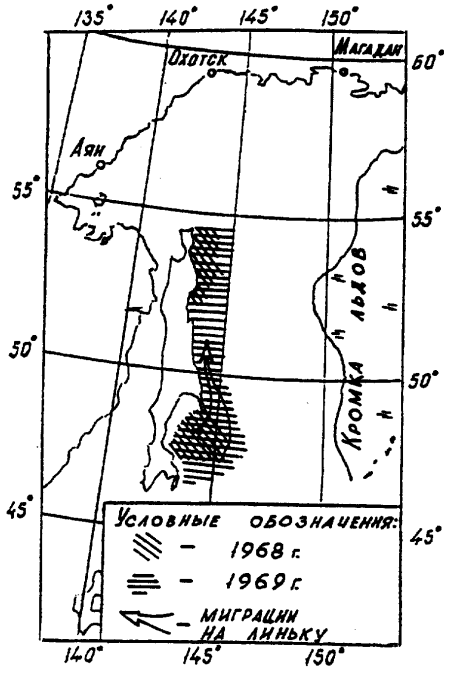

Рис.1.Схема распределения акибы в щенный период / Рис.1-4 по Федосееву,1971г./

Fig. 1. The distribution of Ringed Seal during pupping (after Fedoseev 1971).

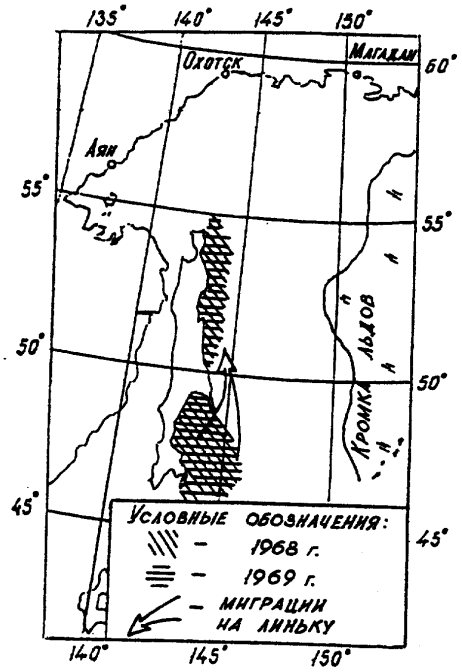

Рис.2 Схема распределения лахтака в щенный период

Fig. 2. The distribution of Bearded Seal during pupping (after Fedoseev 1971).

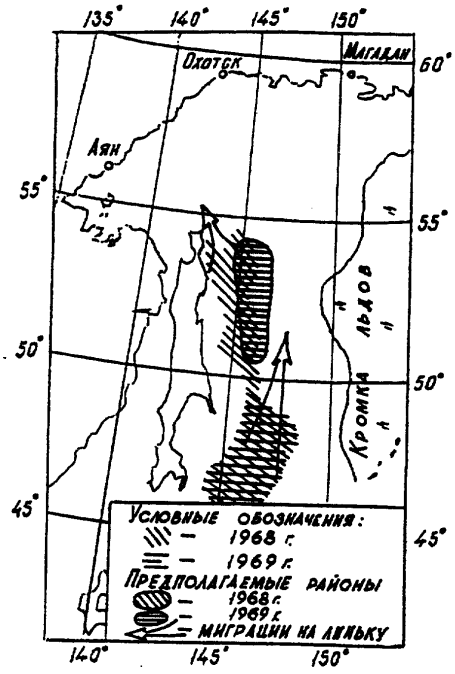

Рис.3 Схема распределения крылатки в щенный период / апрель /

Fig. 3. The distribution of Ribbon Seal during pupping in April (after Fedoseev 1971).

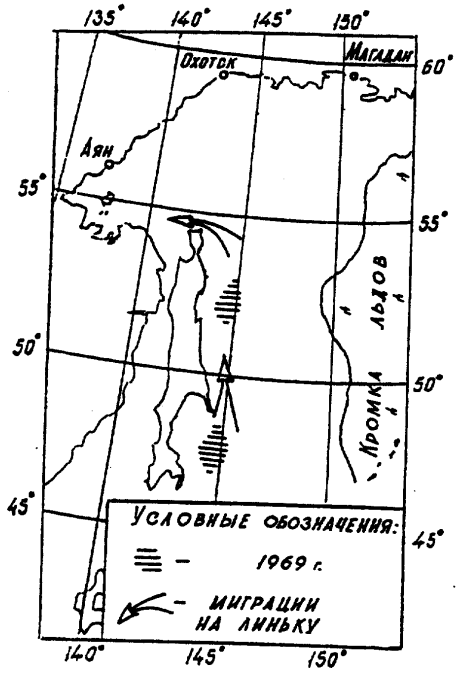

Рис.4 Схема распределения ларги в щенный период

Fig. 4. The distribution of Largha Seal during pupping (after Fedoseev 1971).

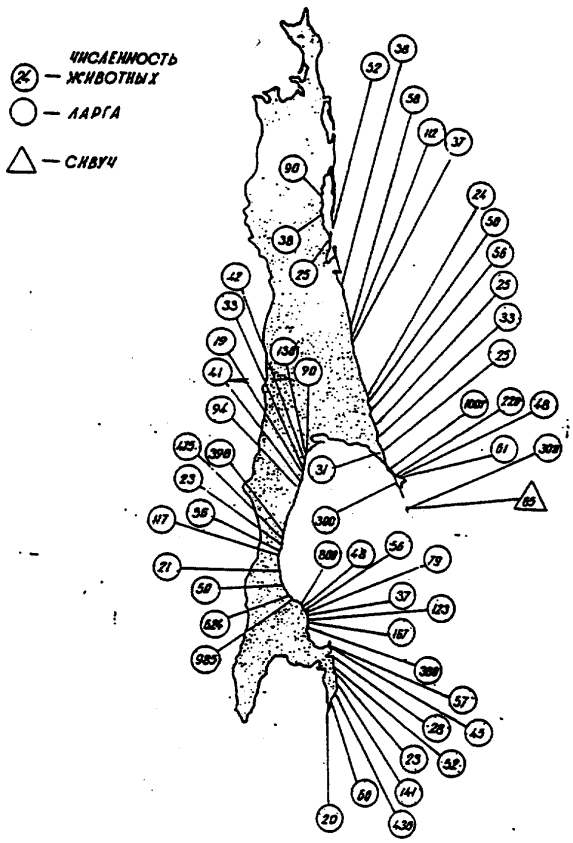

Рис.5 Береговые лежбища ларги и сивуча по восточному побережью Сахалина

Fig. 5. Rookeries of Largha Seals (circles) and Steller's Sea Lions (triangle) along the east coast of Sakhalin Island. (Numbers within the circles or triangles indicate the number of animals present).

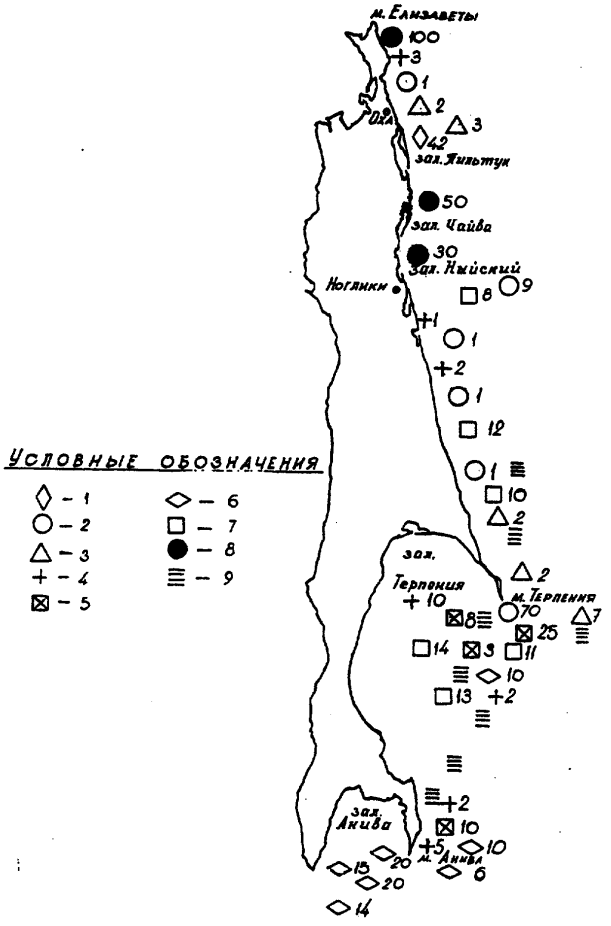

Рис.6. Распределение китообразных у восточного побережья о.Сахалин

1 - серый кит, 2 - южный японский кит,
3 - финвал, 4 - малый полосатик, 5 - кашалот,
6 - северный плавун, 7 - косатка, 8 - белуха,
9 - белокрылая морская свинья.

Fig. 6. The distribution of cetaceans along the east coast of Sakhalin Island (the numbers adjacent to symbols represent the observed numbers of individuals):

1 - Gray Whale; 2 - Northern Right Whale; 3 - Fin Whale; 4 - Minke Whale; 5 - Sperm Whale; 6 - Baird's Beaked Whale; 7 - Killer Whale; 8 - Beluga (White Whale); 9 - Dall's Porpoise.