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# REPORT

ON THE

# ALASKAN FUR-SEAL FISHERIES

BY

EDWIN W. SIMS

Solicitor of the Department of Commerce and Labor

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August 31, 1906



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## LETTER OF TRANSMITTAL

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DEPARTMENT OF COMMERCE AND LABOR,  
OFFICE OF THE SECRETARY,  
*Washington, December 10, 1906.*

SIR: I have the honor to transmit herewith the report of Mr. Edwin W. Sims, late solicitor of the Department of Commerce and Labor, on the Alaskan Fur-Seal Fisheries.

On June 21, 1906, I directed Mr. Sims, at that time solicitor of the Department, to proceed to Alaska and investigate the conditions of the Alaskan fur-seal fisheries. Mr. Sims visited St. Paul, St. George, and Otter Islands of the Pribilof group in Bering Sea, Unalaska and Kodiak islands, Sitka, and other places during the months of July and August and collected the information upon which this report is based.

In addition to a historical résumé of the industry and a discussion of recent raids by Japanese poachers, the report contains two appendices, the first giving statistical information regarding the Pribilof fur-seal herd from the discovery of the islands in 1786 to 1906, inclusive, and the second showing the probable increase of the herd in case there be a total cessation of pelagic sealing and a rational land killing.

Respectfully,

V. H. METCALE,  
*Secretary.*

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

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# REPORT ON THE ALASKAN FUR-SEAL FISHERIES.

DEPARTMENT OF JUSTICE,  
OFFICE OF THE SOLICITOR OF THE  
DEPARTMENT OF COMMERCE AND LABOR.

*Washington, August 31, 1906.*

SIR: I have the honor to advise you that in accordance with the terms of your letter of June 21, 1906, directing me to investigate the conditions of the Alaskan Fur-Seal Fisheries, I visited St. Paul, St. George, and Otter islands of the Pribilof group in Bering Sea, Unalaska, Kodiak, Sitka, and other places in Alaska during the months of July and August, and collected information bearing upon the subject to be investigated. I spent an entire week on the island of St. Paul, during which time I personally visited all of the seal rookeries and witnessed several drives.

As the result of my observation and investigation I have the honor to submit the following report:

## DESTRUCTION OF THE SEAL HERD BY PELAGIC SEALERS.

The Pribilof fur-seal herd is being rapidly wiped out of existence as the result of pelagic sealing—the killing of seals in the water. The destructive effect of this method of taking seals has not been fully realized, and unless prompt measures are taken to stop it the entire herd will soon be annihilated.

Estimates as to the number of seals in the Pribilof herd at the time this Government purchased Alaska vary from 2,000,000 to 7,000,000. The best estimate, in my judgment, is that it consisted of about 4,000,000 seals. To-day the herd numbers less than 180,000 seals; in other words, there are fewer seals in the Pribilof herd to-day than there were in 1835, when the Russian Government felt impelled to adopt drastic measures to prevent its destruction.

During the first twenty years of American ownership it was at all times possible to secure 100,000 skins annually on the Pribilof Islands. From 1890 down to the present time the number of skins which could be obtained has steadily decreased. This season the lessee of the sealing privilege was unable to secure even the 15,000 skins which it was authorized to take.

## HERD IS IN A MOST CRITICAL CONDITION.

While it is true that the size of the herd has been steadily decreasing for a number of years, I believe that its existence is more seriously threatened at this time than ever before in its history. The herd is in a most critical condition.

The high price paid for sealskins in the London market last year has not only led to renewed activity on the part of the Canadian sealing fleet, but is unquestionably responsible for the appearance in Bering Sea this year of the largest fleet of Japanese vessels which has ever directed its operations against the Pribilof herd. Authentic reports are to the effect that the Canadian fleet engaged in pelagic sealing the past season numbered upward of thirty vessels. Reports vary as to the size of the Japanese fleet, some placing it at thirteen and others at thirty vessels. Fleets of this size can not long prey on the already diminished herd without soon annihilating it.

## IMPORTANCE OF THE ALASKAN FUR-SEAL FISHERIES.

Since the purchase of Alaska in 1867 the United States has received a revenue from the lease of the sealing privilege on the Pribilof Islands of about \$9,000,000—almost \$2,000,000 more than it paid for all Alaska. In addition to this the Government annually collects a large sum in customs revenue on manufactured sealskins which are reimported from London, where they are sent in their raw state for treatment. The trade in skins taken on these islands by citizens of the United States since the purchase of Alaska aggregates more than \$50,000,000.

## TREATIES AND LAWS VIOLATED BY PELAGIC SEALERS.

From information furnished me during the course of my investigation, I believe that a part—at least five or six—of the vessels of the Canadian fleet this year continued their pelagic sealing operations in the vicinity of Sitka and at other points in Alaska during the months of May and June, in violation of Article II of the Articles of Award of the Paris Tribunal of Arbitration, establishing a yearly closed season from May 1 to July 31.

The vessels of the Japanese fleet not only took thousands of seals within the territorial waters of the United States surrounding the Pribilof Islands during the past summer, but during a period of two days—July 16 and 17—the crews of four of the schooners committed a series of unlawful acts which terrorized the native inhabitants and injuriously disturbed the seal life on the rookeries of St. Paul Island. Raiding parties from three of these schooners actually landed on the island. One of the parties which landed killed 185 seals and got away with 120 skins before it was discovered.

As a result of the raids, five of the poachers were killed while attempting to escape arrest, and twelve, including two wounded, were captured. Three small boats and some arms and paraphernalia for killing seals on land were also captured. The force protecting the islands suffered no casualties, although it was subject to a rifle fire from the decks of a schooner anchored close inshore while making arrests on the second day.

Before going into the details of the operations of the Japanese sealing fleet during the past season I shall at this point refer briefly to some general facts in connection with the Pribilof Islands and the seal herd, in order that you may more fully appreciate existing conditions.

#### THE PRIBILOF ISLANDS.

The Pribilof Islands, which are the home of the fur-seal herd which takes their name, were discovered in 1786 by Gerassim Pribilof, a navigator in the employ of one of the Russian trading companies. They are situated in Bering Sea, about 2,000 miles from Seattle by the most direct route. The group consists of St. Paul, St. George, Walrus, and Otter islands, and Sea Lion Rock. They are completely isolated from other land, the nearest port being Unalaska, which is 214 miles to the southward. The islands are of volcanic origin, and are desert islands to the extent that they produce nothing capable of sustaining man. The island of St. Paul, which is the largest of the group, is  $13\frac{1}{2}$  miles long and  $7\frac{2}{3}$  miles wide and has a shore line of  $45\frac{1}{2}$  miles. It has a population of 168.

St. George Island, which lies at a distance of about 40 miles southeast of St. Paul, is 12 miles long and  $4\frac{1}{2}$  miles wide, with a shore line of 30 miles. It has a population of 91. Otter Island, Walrus Island, and Sea Lion Rock are much smaller and are uninhabited. During a large part of the year the islands and the surrounding sea are enveloped in a dense fog. There are no vessels on the islands capable of being navigated to the mainland or the nearest port, and the only time the residents come in touch with the outside world is when the North American Commercial Company's steamer calls there twice each year, and at irregular intervals when a revenue cutter chances to stop for a few hours.

#### THE PRIBILOF FUR-SEAL HERD.

The islands which I have just described are the natural retreat and the only breeding ground of the Pribilof or American fur-seal herd, which, even in its depleted condition, is the largest fur-seal herd in the world.

The seals of this herd breed upon the islands of St. Paul and St. George during the summer, and annually, in the fall, leave them and proceed through Bering Sea and the passes between the Aleutian

Islands into the Pacific Ocean. Some of them go as far south as the Santa Barbara channel, off southern California. Generally speaking, this annual migration of the fur-seal herd may be said to commence in November, and by the latter part of December there are few, if any animals left on the islands. They remain away until the following spring, the first arrivals usually appearing about the first of May and the last the latter part of June or first of July. In the interval between their arrival in the spring and their departure in the fall the offices of reproduction are accomplished.

Within a few hours after she arrives on the island the cow gives birth to her pup. Five or six days later she comes in heat and is served by the bull. As the females do not leave the island from the time they first land until after impregnation, it follows that all adult cows whenever found at sea are pregnant. During the period of about six months which the seals annually spend on the islands the females make frequent and regular trips to the feeding grounds about 150 miles to the southward in Bering Sea. After feeding they go to sleep on the surface of the water, while the food they have taken digests. When rested, they return to the islands, where they nurse the pups. The female seal gives birth to one pup each year for probably ten years, commencing the third year of her existence.

#### VARIATIONS IN THE SIZE OF THE HERD.

At the time of the discovery of the islands by the Russians, fur seal, sea otter, walrus, sea lions, and foxes were found in almost unlimited numbers. The killing of all these species of animals proceeded with wanton prodigality from the year 1786 until the year 1835, when the fur-seal herd was reduced to less than 200,000. This shrinkage was caused by the indiscriminate killing of both males and females. A closed season was established on the islands from 1835 to 1845-1850, during which period only such seals were killed as were necessary to furnish food and clothing for the natives. The killing of females on land was also discontinued after 1835 and was never again legally resumed.

This resulted in a gradual rehabilitation of the herd, allowing an increasing number of young male seals to be taken each year from 1850 until 1870, the date of the commencement of the first lease of the sealing rights to the Alaska Commercial Company. From that year and during the twenty years of this first lease 100,000 young male seals were killed annually for commercial purposes, and the skins marketed, with the exception of the years 1877 and 1883, when, owing to a glut in the market for skins, only 75,000 seals were killed. This reduction, however, was voluntary on the part of the lessee and was not the result of a lack of seals.

## METHODS OF SECURING SEALSKINS.

The skins of seals for commercial purposes are secured in two ways: (1) By killing the seal on land; (2) by killing the seal in the water—i. e., pelagic sealing.

1. The killing of seals on land is confined to the Pribilof Islands, is engaged in only by those who lease that right from the Government, and is limited to those surplus immature bachelors which may be taken without affecting the herd. The prohibition against the killing of females established by the Russians in 1835 has been embodied in our laws and is always strictly observed. The character and number of the seals to be taken is determined by law and by the regulations of the Secretary of Commerce and Labor, and the operations of the lessee on the islands are subject to the direct surveillance of Government agents appointed for that purpose. The history of the herd conclusively demonstrates that a rational and carefully regulated land killing is beneficial rather than detrimental to the herd.

2. The killing of seals in the water—pelagic sealing—is engaged in by vessels owned and manned by the citizens of other nations and by Indians dwelling on certain of the coasts of the United States and Canada.<sup>a</sup> It is a wantonly destructive method of securing furs. The Indians are allowed to take seals in canoes or undecked boats propelled wholly by paddles, oars, or sails and not transported by or used in connection with other vessels or manned by more than five persons. The vessels of other nations which engage in pelagic sealing are schooners ranging in size from 25 to 125 tons burden. Each vessel carries a crew of from 10 to 50 men, usually about 30, and carries from 5 to 20 boats or canoes.

The schooner cruises about until she comes into sealing territory, when the small boats, which are usually manned by three men, are lowered. These boats scatter out in search of seals. Seals in motion are shot; seals asleep or resting on the water are usually speared. In the spring the pelagic sealers pick up the herd off northern California and follow it northward. In the summer they cruise around the feeding grounds in Bering Sea. The catch at this point is chiefly females which have come to feed and which, if unmolested, would return to the Pribilof Islands to nourish their young. One of the Japanese sealers of a party which landed on St. Paul Island during the summer stated under oath that seven or eight out of every ten seals taken in Bering Sea by the schooner on which he belonged were females.

Pelagic sealing was nominal from the year 1868 to 1880. From 1881, however, when 10,000 skins were taken by pelagic sealers from the Pribilof herd this catch increased annually until 1894, when 61,838

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<sup>a</sup> See act of April 6, 1894, 28 Stat., 52, art. 8.



skins were taken. The pelagic catch for 1905 was 25,320 skins. The decrease in the pelagic catch from 1894 down to the present time is due to a steady decrease in the size of the herd. The increase of the pelagic sealing has had direct relation to the diminution of the number of seals on the rookeries, and the present low condition of the herd is, in my judgment, due solely to the killing of female seals at sea. The rational land killing of surplus, immature bachelors, which has been carried on under lease from this Government, has had nothing to do with the decrease in the size of the herd.

#### THE KILLING OF FEMALES A WANTON DESTRUCTION OF SEAL LIFE.

The killing of female seals at any time or any place results in wanton destruction of seal life. Those females killed while the herd is on its way northward in the spring are pregnant, and each death results in the loss of two lives to the herd. Those females killed on the feeding grounds in Bering Sea in the summer and early fall are not only pregnant, but they have nursing pups on shore which die of starvation when the mothers fail to return. Each death thus results in the loss of three lives to the herd. In addition to this the skins secured by the pelagic sealer represents only about 50 per cent of those he has actually killed. The others sink and are not recoverable, or, when only wounded, escape and die later from their wounds. These facts, coupled with the knowledge that the pelagic sealer has since 1890 secured almost twice as many skins as have been secured on the islands, fixes beyond question the cause of the depletion of the herd.

#### TERMS OF THE LEASE FROM THE GOVERNMENT.

Since 1870 the exclusive right to engage in the business of taking fur seals on the Pribilof Islands has been exercised by American companies operating under lease from the Government. From 1870 to 1890 the right was exercised by the Alaska Commercial Company. At the present time the North American Commercial Company is the lessee under a contract which expires in 1910. Under the terms of this contract as construed by the United States Supreme Court (*U. S. v. North American Commercial Co.*, 171 U. S., 110), the company pays at the rate of \$10.22½ for each skin taken. The Secretary of Commerce and Labor determines by regulation the kind and number of seals to be taken each year and the method of killing.

In addition to the sum paid the Government for each skin, the company furnishes free to the natives on the islands dried salmon and salt and salt barrels for preserving a supply of meat, 80 tons of coal annually, comfortable dwellings and necessary schoolhouses which it keeps in repair, competent teachers and a free school for the education of the children eight months of the year, competent physicians, medicines and medical supplies, and the necessaries of life for the widows and orphans and aged and infirm inhabitants of the islands unable to

provide for themselves. The company also employs the natives to perform such work on the islands as they are fitted to perform at a compensation fixed from time to time by the Secretary of Commerce and Labor.

#### THE TRIBUNAL OF ARBITRATION.

As the result of certain differences which had arisen between Great Britain and the United States over the seizures of Canadian vessels and the efforts of this Government to protect the seal herd, these two nations, on February 29, 1892, concluded a treaty whereby they agreed to submit the questions in dispute to a tribunal of arbitration. This tribunal, which concluded its labors in Paris in 1893, is usually spoken of as "The Paris Tribunal of Arbitration," and its findings and award as "The Award of the Paris Tribunal."

Generally speaking, the chief contentions of the United States before this tribunal were: (1) That Bering Sea was a closed sea, and (2) that it had a property right in the seal herd which justified it in protecting the seals on the high seas. The treaty also provided that in case the determination of the questions submitted as to the exclusive jurisdiction of the United States left the subject in such position that the concurrence of Great Britain was necessary to the establishment of regulations for the proper protection of the fur-seal herd, the arbitrators were to determine what concurrent regulations outside of the jurisdictional limit of the respective Governments were necessary and over what waters such regulations should extend.<sup>a</sup>

The tribunal found that Bering Sea was not a closed sea, and also decided adversely to the United States on the question of its right to protect the seal herd outside of territorial waters. Accordingly, a set of regulations was adopted, the essential features of which were the establishment of a closed zone of 60 miles in Bering Sea about the Pribilof Islands and a closed season from May 1 to August 1, within which all sealing was prohibited.

While the treaty of 1892 provides that "the high contracting parties engage to consider the result of the proceedings of the tribunal of arbitration as a full, perfect, and final settlement of all the questions referred to the arbitrators" (Art. XIV), it is in this connection worthy of note that the regulations, which were part of the award, provide in terms that they "shall be submitted every five years to a new examination, so as to enable both interested Governments to consider whether, in the light of past experience, there is occasion for any modification thereof" (Art. IX).

#### THE MODUS VIVENDI.

For the purpose of avoiding the irritating differences, and with a view to promoting the friendly settlement of the questions pending between

<sup>a</sup> Article VII.

the two Governments, an agreement was entered into on June 15, 1891, for a *modus vivendi* in relation to the fur-seal fisheries in Bering Sea. By the terms of the *modus vivendi*, which remained effective until the award of the Paris tribunal, the killing of all seals, with the exception of a limited number for the sustenance of the native inhabitants of the Pribilof Islands, was suspended.

EXISTING LAWS AND TREATIES.<sup>a</sup>

The substance of existing laws and treaties is as follows: The laws of the United States prohibit American citizens and subjects from killing any seals at any time in the waters of the North Pacific Ocean and Bering Sea or on any land or in any of the waters of Alaska subject to the jurisdiction of the United States. Indians dwelling on the coast of the United States may, however, kill seals in the water under certain restrictions, and those persons or corporations operating under lease from the Government may kill seals on the Pribilof Islands. These are the only exceptions to an absolute and universal prohibition running against citizens and subjects of the United States.

Now while that feature of these laws which prohibits Americans from killing seals in the open ocean—the waters of the north Pacific Ocean and Bering Sea—is not effective as against the citizens and subjects of other nations, those provisions which absolutely prohibit the killing of seals on any land or in any water subject to the jurisdiction of the United States in Alaska is effective as against all the world, aliens as well as citizens. It follows, therefore, that with the exception of the Indians and those operating under lease from the Government no person may lawfully kill seals in Alaska or in Alaskan waters.

Citizens and subjects of Great Britain and of the United States, in addition to being bound, in common with other people who come within the jurisdiction of the United States, to yield obedience to its laws, are subject to the award of the Paris tribunal. The articles of this award provide for a closed zone of 60 miles around the Pribilof Islands, within which the citizens of both countries are forbidden to kill seals at any time; provide a closed season from May 1 to August 1 each year, during which the citizens of both nations are prohibited from killing seals in the waters of the north Pacific Ocean, including Bering Sea, north of the thirty-fifth degree of north latitude and east of the one hundred and eightieth meridian of longitude, till it strikes the water boundary between the United States and Russia; forbid the use of firearms in Bering Sea, and include other minor regulations. Subsequent to the award American citizens were by the act of December 29, 1897, denied the privilege accorded by the Paris award, and are now, as I have before indicated, absolutely forbidden to kill any

<sup>a</sup> See vol. 3, Comp. Stat., p. 3003.



seals at any time in the waters of the north Pacific Ocean or Bering Sea north of the thirty-fifth degree of north latitude. This prohibition does not, however, run against Indians dwelling on the coast of the north Pacific Ocean.

So far as I am aware Great Britain is the only nation with which we have any treaty regulating the killing of seals from the Pribilof herd.<sup>a</sup> The legal situation may therefore be summarized as follows:

American citizens, with the exceptions noted, and all others, are prohibited from killing seals in the waters of the north Pacific Ocean, or on any land, or in any of the waters of Alaska subject to the jurisdiction of the United States.

The subjects of Great Britain are prohibited from killing seals at any time within a zone of 60 miles surrounding the Pribilof Islands, and, during the closed season, from the 1st of May to the 1st of August, in those waters of the north Pacific Ocean above described.

Citizens of all other nations may, therefore, kill seals at any time and at any place, excepting the land and water areas of Alaska subject to the jurisdiction of the United States.

#### ST. PAUL AND ST. GEORGE A GOVERNMENT RESERVATION.

The laws of the United States, for the purpose of protecting the seals on their breeding rookeries, declare the islands of St. Paul and St. George to be a special reservation for Government purposes,<sup>b</sup> on which no one, not even a citizen of the United States, may land or remain except by the authority of the Secretary of Commerce and Labor. Any person found on either of the islands in violation of these laws is directed to be summarily removed, and it is made the duty of the Secretary of War to carry the direction into effect.

For some years after they were made a Government reservation, the seal rookeries, which are located at widely separated points on the shores of St. George and St. Paul islands, were guarded by a detachment of United States soldiers. Since the withdrawal of this military guard the rookeries have been guarded by armed natives designated for that duty by the agent in charge. This guard is maintained each year during the period when the seals are present on the rookeries, and was being maintained at the time of the raids in July.

The laws also prohibit the killing of any seals within the limits of Alaska or the waters thereof, and make it a separate offense to kill any seals in the waters adjacent to St. Paul or St. George, or on the beach, cliffs, or rocks of those islands, where they haul up from the sea to remain. Other provisions expressly prohibit the killing of female seals, and make it an offense to kill any seals at any time by

<sup>a</sup> For terms of a *modus vivendi* with Russia respecting killing on the Asiatic side of the Pacific, see 28 Stat., 1202.

<sup>b</sup> R. S., 1959. Also sec. 176, act of March 3, 1899, 30 Stat., 1280.

the use of firearms or by other means tending to drive them away from the islands. The penalties for violations of these laws include fines ranging from \$200 to \$1,000 or imprisonment, or both fine and imprisonment, for each offense. Provision is also made for the forfeiture of vessels whose crews are found violating the laws.

#### SUPERVISION AND CONTROL OF THE FUR-SEAL FISHERIES.

The law vests the supervision and control of the fur-seal fisheries in the Secretary of Commerce and Labor, and authorizes him to make all needful regulations to carry into full effect all of its provisions. The management and supervision of the seal fisheries on the islands are exercised through agents which he is authorized to appoint, and who are charged with the performance of such duties as may be assigned to them by him.

Existing regulations promulgated by the Secretary of Commerce and Labor advise the agents that the only persons entitled to land on the islands are Government officers, representatives and employees of the North American Commercial Company, and duly accredited representatives of the Russian Church, and authorize the agents to remove persons who endanger the peace and good government of the inhabitants of the islands. The regulations also authorize the employment of the natives in guarding the rookeries, and instruct the agents to take such action as sound judgment directs, in case of emergency.

At the time of the raids on St. Paul during the past summer the affairs of the island were in charge of Mr. W. I. Lembkey, chief agent, and Mr. James Judge, assistant agent.

#### OPERATIONS OF THE JAPANESE FLEET.

##### SEALS KILLED CLOSE TO THE PRIBILOF ISLANDS.

The Japanese pelagic sealing fleet which operated in Bering Sea during the summer consisted of at least 16 vessels, each of which carried a crew of about 30 men, and from 5 to 7 small boats for sealing. It is evident from the number of vessels sighted from the islands that the entire fleet operated exclusively in the waters surrounding the islands, and on many occasions killed seals within the 3-mile limit. The seals which breed on these islands have been undisturbed in the waters surrounding them for many years, and they undoubtedly fell an easy prey to this unexpected onslaught. In view of this fact, and in view of the further fact that large numbers of breeding females are continually passing from the islands to the feeding grounds about 150 miles southwest, and from there back to the islands, the seal herd has without doubt suffered a heavier blow as the result of the operations of this fleet during the past season than has been administered to it for many years past.

Wholly aside from the fact that this fleet of vessels engaged in pelagic sealing at the very doors of a reservation which has been set aside by this Government for breeding purposes, the crews of some of the vessels engaged in a series of high-handed and outrageous depredations within the land and water territory of the United States which included repeated violations of express provisions of its laws. They used shotguns to kill seals in the water, and used cannon, probably for signaling. The reports of shotgun firing and the boom of cannon, which were continually heard on the shore nearly all of two days, were so close as to disturb injuriously the rookeries. The crews killed seals in the water close to the shore, easily within the 3-mile limit, and landed on St. Paul Island. They killed seals on land, 95 per cent of which were females. At the time of these depredations the entire armament of the 38 men over 21 years of age on St. Paul Island consisted of 12 rifles. On the other hand, each schooner probably carried a crew of more than 30 men. If the 4 schooners which were seen hovering around the islands on these days, and which were undoubtedly acting in concert, had united their crews in a raid, they could have mustered a force of upward of 120 men.

#### AGENTS POWERLESS UNTIL POACHERS LANDED.

Without water craft the Government agents were unable to do anything to stop the poachers from killing seals in the water, using fire-arms, and engaging in other unlawful operations within the 3-mile limit. It was only when the crews of the schooners landed, or attempted to land, on the islands that they were able to make arrests, and those of the Japanese who were killed belonged to parties which were caught red-handed and were attempting to escape arrest.

I have made the foregoing general statements at this point in order that you may appreciate the excitement and apprehension under which the residents of the island were laboring, and the courage they displayed when the crews of the schooners actually landed and attempted to transfer the scene of their depredations from the waters surrounding the island to the island itself. A more detailed account of the raids on the rookeries on St. Paul Island, July 16 and 17, is as follows:

#### LANDING OF JAPANESE POACHERS ON ST. PAUL ISLAND, JULY 16.

About 9 o'clock on the morning of July 16 the native watchmen at Northeast Point, St. Paul Island, reported a schooner, about 2 miles out, sailing toward the shore. Upon the receipt of this information Chief Agent W. I. Lembkey and Assistant Agent James Judge, each accompanied by three or four natives, proceeded to a point on the shore from which the schooner could be seen. These agents and their parties then separated and concealed themselves at points where landings were feasible close to two of the principal breeding areas, and

about half a mile from each other. The schooner, which was easily seen by these parties, continued to cruise parallel with the shore at a distance of about 2 miles out until 10.30 a. m., when a small boat put off and approached within a half mile of the shore.

This movement was evidently for the purpose of locating the seal rookery, for upon discovering that there were no seals at that particular place the boat returned to the schooner and was taken about a mile farther on to a point opposite the breeding areas under Hutchinson Hill, where it again put off from the schooner and headed for the shore. The boat shortly afterwards made a landing about 200 yards east of the largest breeding area on the island—that located under Hutchinson Hill—and a crew of six Japanese disembarked, pulled up the boat, and proceeded to cross the beach to the grassy plateau beyond.

A few yards from the water's edge they were surprised by Chief Agent Lembkey and the native guard under his command, and in compliance with his order threw up their hands without resistance. In reply to an inquiry, one of the landing party, who spoke some English, stated to Mr. Lembkey that they had come ashore for water. It was obvious, however, after investigating the contents of the boat, that this statement was untrue. The only receptacle capable of containing water carried by the boat was a 5-gallon cask, which was full of fresh water. On the other hand, it was manifest from the presence of sealing clubs, skinning knives, and other paraphernalia for taking seals on land that the purpose of their visit was to raid the rookery. The men were accordingly placed in charge of a native guard and later in the day were taken to the village 12 miles distant on the other end of the island. The party effecting this capture consisted of Chief Agent Lembkey and three or four natives. The only arms of the Government agent's force were two rifles carried by the natives.

The boat in which the raiders landed was taken charge of by the Government agents and is now in their keeping. It is of the Otter boat type, about 18 feet long, and, in addition to carrying six oars, was equipped with a mainsail and jib. The boat and its equipment is typical of the small boats usually carried by the schooners engaged in pelagic sealing. The oars were muffled and the rowlocks wound with rope which was greased with tallow, so that the boat might be propelled through the water without noise. The oars were fastened to the boat so that when suddenly dropped they would not float away, and in front of each seat on both sides of the boat and within easy reach of the oarsmen was a canvas knife shield. The boat was also provided with a gun rack. When captured, it contained six sealing clubs, two skinning knives, a compass, a cask full of fresh water, some ship's biscuits, a short sealing club for killing seals in the water, and bamboo poles with iron hooks for hauling them aboard.



The seal rookeries at Northeast Point, where the raid was attempted, are the largest and most extensive on the island. A conservative estimate, based upon an actual count of seals on certain portions, places the total number of seals on these particular rookeries at the time of the attempted raid at 30,000. Of these 15,000 were females.

During the remainder of the day the schooner from which the boat put off continued to cruise around Northeast Point, sometimes close in shore and at other times farther out, but easily within the 3-mile limit many times.

Upon my arrival at St. Paul Island, July 20, I examined, through an interpreter, the men captured as above described. They at that time stated that the name of the schooner from which they came was the *Dai Ni Toyai Maru*, i. e., *Toyai Maru No. 2*; that she carried a crew of 32 men, and had sailed from Hakodate, Japan, May 20, 1906. They stated that she was not a pelagic sealer, and denied that she was one of a regular Japanese sealing fleet, but admitted that since entering Bering Sea she had spoken two or three other Japanese schooners, among which they named the *Boso Maru*.

#### OTHER SCHOONERS SIGHTED JULY 16.

At about the same time the *Toyai Maru No. 2* was discovered off Northeast Point on the morning of July 16, another schooner was sighted at the south end of the island. She cruised off the southwest part of the island within the territorial waters of the United States for about two hours. Reef rookery, the second largest breeding rookery on the island, is located at this point. No attempt was made to land, however, and the vessel finally disappeared in a fog to the southward.

About 3 o'clock in the afternoon of the same day still another schooner was sighted cruising off Halfway Point, which is on the south side of the island and about midway between the points where the other schooners were seen. A native guard was placed at this point for the night, but the vessel, which was about 1 mile from shore, was soon obscured by the fog. Lukanin and Polovina rookeries are situated a short distance from where the schooner was seen. The reports of small arms and the boom of cannon fired a short distance from shore were heard on different parts of the island during the day.

#### JAPANESE POACHERS KILLED BY NATIVE GUARD JULY 17.

About 8 o'clock on the morning of July 17 the native guard at Northeast Point heard the report of shotguns, which were evidently being fired at seals in the water a short distance from shore. The guards could not see more than a few yards owing to a dense fog, and at that time were unable to make out any boats. One of the guards went inland to report to Agent Lembkey at the watchhouse, and the

two remaining, Michael Kozloff and John Fratis, proceeded to a point on the shore opposite the firing and, concealing themselves, awaited developments. About half an hour later, during which time the shotgun firing on the water continued at irregular intervals, the guards discovered three boats a short distance out headed for the shore. The one closest in contained three Japanese, one of whom occupied a position in the bow with a shotgun in his hands.

After the occupants of the foremost boat had lowered the sails, and just as they were about to land on the beach, the two watchmen, who had remained concealed, appeared on the scene and shouted, "Hands up!" The men in the boat instead of complying with this command hurriedly turned about and commenced to row the boat away from the shore. Guard Kozloff, who was in charge, motioned with his hands and called to them to come ashore, and when the boat continued on her way three rifle shots were fired in the water close to her. She did not stop, however, and the guards a few seconds later fired six shots in rapid succession directly at the boat. Following this shooting the men ceased to row and dropped into the bottom of the boat, and the boat slowly drifted in toward shore. The two other boats had in the meantime disappeared in the fog.

Chief Agent Lembkey, who arrived on the scene shortly after the shooting, recovered the boat and it was hauled up on the beach. Two of its occupants were dead and the other was suffering from a wound in the shoulder.

The boat was of the same type and equipment as the one captured the day before. Among other things it contained a quantity of food, fresh water, 2 loaded shotguns, and 146 loaded and 9 empty shells. Most of the loaded shells were charged with buckshot, although on subsequent examination some were found to contain a heavy lead slug like a rifle bullet. The shotguns showed evidence of having been recently fired. The boat also contained a seal which apparently had been killed with a charge of buckshot a short time before.

I learned from the wounded prisoner, whom I interviewed upon my arrival at the island, that the boat was not from the schooner whose boat had been captured the day previous, but was from another schooner—the *Mei Maru*. The prisoner further stated that the schooner carried a crew of 30 men, and had sailed from Hakodate, Japan, May 23, 1906. At the time the Japanese attempted to land, and when the shooting occurred as above described, the entire force on guard at that point consisted of two natives, each armed with a rifle.

#### POACHERS OFF ZAPADNI ROOKERY FIRED ON.

At Zapadni rookery, which is about 12 miles from Northeast Point, where the events just described took place, shotgun firing close inshore was heard at frequent intervals during the day, and undoubtedly a

large number of seals were killed in the water. These operations were carried on under the protection of a dense fog, and it was not until 3 o'clock in the afternoon, when it lifted, that the native guard discovered three boats a short distance from shore. The boats contained about 18 men and were headed for land. The guards, two in number, who were evidently excited over the shooting which had been going on around them and who believed that the force, which greatly outnumbered them, was about to land and raid the rookery, opened fire without delay. The boats immediately pulled out of sight, and it is not known whether any of the marauders were injured.

#### POACHERS LAND AND KILL SEALS.

Notwithstanding the capture of the boat on the morning of Tuesday July 17, the reports of shotguns evidently fired at seals in the water, were heard off different parts of Northeast Point almost incessantly during the day. The boom of cannon, probably used for the purpose of signaling in the fog, was also heard at frequent intervals. The widely separated points at which these shots were heard indicates that several boats were thus engaged. A dense fog which hung over the island partially lifted about 8 o'clock p. m., and disclosed a schooner riding at anchor less than 300 yards from the breeding rookery on the west side of Northeast Point. Although the watchmen failed to discover it, owing to the fog, 18 or 20 men had landed and were at that time killing seals on the rookery close to the water at a point where their operations could not be seen farther inland.

The presence of the schooner was immediately reported to the watch-house, and Chief Agent Lembkey and Assistant Agent Judge, at the head of a force of about fifteen natives, hurried to the scene. In the meantime the raiders, who had evidently been warned of the approach of the native guard by an outpost, hurriedly collected the sealskins already taken and embarked in their boats, and when the guard arrived at the shore they were already a few yards off and rowing for the schooner. Upon their refusing to come ashore, in compliance with an order given by the Government agents, the native guard was directed to fire. This fire was returned from the deck of the schooner, but no one of the island guard was injured. The boats soon came to a stop and the order was given to cease firing.

The raiding force consisted of a flotilla of five small boats containing about 20 men. It appears that two of the boats were being used to carry away skins. The force under the Government agents consisted of 15 natives, only 6 of whom were armed.

As the boats drew in shore and it became apparent that the raiders outnumbered the native force, Agent Judge concluded that it would be dangerous to attempt to capture the entire party with a force armed with only six rifles. In consequence of this the crew of only one of

the small boats were allowed to land, and the remaining boats were motioned off and returned to the schooner, which still remained at anchor a short distance from shore. Had the devastation which the raiders had wrought on the rookery been known at this time, none of the boats would have been permitted to return to the schooner.

The boat which was compelled to return to shore contained six men, one of whom was dead and one wounded. The body of one man, who had evidently fallen overboard when he was shot, floated off and was not picked up by the boats. It is believed that the body of a third was thrown overboard when the boats reached the schooner. The boats of the raiding flotilla were of the same general character as those previously captured and which I have heretofore described in detail.

#### METHODS OF RAIDERS OUTRAGEOUS AND CRUEL.

Upon making an examination of the rookeries at the point where the small boats were first seen, the Government agents discovered that the raiders had practically wiped out of existence one section of a breeding rookery. More than 183 seals had been killed. Of this number, 120 had been skinned and the skins loaded into the boats, which had unwittingly been permitted to return to the schooner. It was apparent that the raiders had been frightened away in the midst of their raid, because 63 dead and wounded seals, some partially skinned and others untouched, were found. That part of the rookery which was raided was what is known as a breeding rookery and was occupied by several hundred female seals, new-born seal pups, and a few breeding bulls. Bachelor or young male seals do not frequent these breeding grounds.

All of the seals killed, with the exception of two, were females. When it is remembered that the killing of female seals is universally condemned, was prohibited by the Russians as early as 1835, and has never been permitted by this Government, the fact that over 95 per cent of the seals killed on the island by the marauders were females stands out as especially malevolent.

The raid was not only in violation of law, but the method of killing proceeded along the most cruel and inhuman lines. At this season of the year female seals have nursing pups and are also pregnant. Thus the killing of a female results in the loss of three lives to the herd. While an actual count had not been made before I left the island, it is estimated that at least 180 pups died of starvation as a result of the raid.

Some of the seals were only stunned and not killed before being skinned. Upon their arrival at the scene shortly after the raid, the Government agents found that some of the 63 seals which had been clubbed by the raiders, and which had been partially skinned, were not yet dead.



It also appears that the raiders had been unable to drive away or kill with their clubs some of the large breeding bulls, which stood their ground in an effort to protect the rookery, and in order to render them harmless the raiders had pounded out their eyes with sealing clubs. When the Government agents and natives reached the scene these sightless old fellows still maintained their guard of the rookery. These, as well as the other seals which had been maimed beyond hope of recovery, were soon put out of misery by the natives. About 20 sealing clubs and 4 sealing knives were found on the rookery after the raid.

It appears, therefore, that so far as is definitely known on the islands the occurrences above described resulted in the death of 5 of the raiders, the wounding of 2, and the capture of a total of 12 prisoners, including those wounded. The prisoners, in compliance with an order of the Government agent, buried their dead on Hutchinson Hill on the afternoon of July 18. The wounded were early given medical attention by Dr. F. B. Smith, the physician on the island.

On the evening of July 18 a schooner was sighted off Northeast Point, but the Japanese prisoners, who were given an opportunity to examine her through the glasses, seemed to be unable to identify her.

#### DISPOSITION OF THE CAPTURED RAIDERS.

I arrived at St. Paul Island in company with Hon. George M. Bowers, Commissioner of Fisheries, on the afternoon of July 20, 1906, on the revenue cutter *McCulloch*, Capt. J. C. Cantwell commanding. The Government agents and the natives were very anxious to get rid of the prisoners, and they were at once turned over to the *McCulloch*, which proceeded to Unalaska. At that place the 10 uninjured men were turned over to the deputy United States marshal, and the wounded men, who had been placed under the care of Dr. T. B. McClintic, were retained on the cutter.

The prisoners were again taken on board the cutter on July 31 and carried from Unalaska to Kodiak, where a preliminary hearing was had before United States Commissioner Fred D. Kelsey. As a result of this hearing they were held to the grand jury and were turned over to the custody of United States Marshal L. L. Bowers, at Kodiak, for delivery at Valdez. Chief Agent W. I. Lembkey and the native witnesses then proceeded to Valdez.

I have since been advised that all of the prisoners were indicted by the grand jury at Valdez and, as a result of subsequent proceedings, each of them was sentenced to imprisonment for three months in the Valdez jail. While the punishment meted out to the raiders is hardly commensurate with the outrageous character of their acts, still it must not be forgotten that they were merely seamen who, according to their own statements, went ashore in compliance with the orders of their superior officers.

## MANY SCHOONERS SIGHTED NEAR ST. PAUL ISLAND.

During the week I spent on St. Paul Island schooners were frequently seen. On July 23 one was sighted cruising about 5 miles to the southeast; on July 24, at 2 p. m., one was seen about the same point, and at 7 o'clock in the evening another was sighted sailing less than 2 miles from shore off the salt house at Northeast Point, which at that time contained 3,700 skins. She was standing in toward shore when sighted, and the regular guard of four natives was doubled. On this day a guard of armed natives was also placed at Zapadni rookery. On July 26 a schooner was seen off Zapadni Point in the morning and another off Northeast Point in the evening.

As the *McCulloch* was leaving the island on the morning of July 27, the fog lifted and disclosed a schooner lying to about 2 miles from Walrus Island. The cutter at once gave chase, but the schooner put on all sail and headed for a fog bank, in which she was soon lost to sight and escaped. On the afternoon of the same day the cutter overhauled another schooner, the *Tokiwa Maru*. She was outside the 3-mile limit, however, and as there was nothing to indicate that she had participated in the recent raids, she was not even spoken by the cutter.

Since my return I have been advised that schooners were frequently seen in the vicinity of the islands during August, and that on the 8th of August a watchman on St. Paul Island saw a schooner make a landing on Otter Island. At the time I visited Otter Island, in the latter part of July, there were only a few seals there. I am informed, however, that later in the season the number of seals on this island increases and that more than 1,000 seals have been found there on occasions.

## RAIDS EVIDENTLY PLANNED IN ADVANCE.

It is evident that the four schooners seen around St. Paul Island on the days of the raids were acting in concert in pursuance of plans carefully laid previous to their departure from a Japanese port. At least three of these schooners sailed from the same port in Japan about the same time. They spoke each other after arriving in Bering Sea, and appeared off widely separated points of the island about the same time. It is improbable that these coincidences were accidental.

## GOVERNMENT AGENTS ENTITLED TO CREDIT.

Chief Agent W. I. Lembkey and Assistant Agent James Judge are entitled to great credit for the intelligent and courageous way they handled what in my judgment was a dangerous and difficult situation. The native guards also demonstrated that they could be relied on in case of emergency, and are entitled to credit for the splendid support they gave the Government agents.

The Russian as well as the American islands have always been looked upon with envious eyes by the pelagic sealers. The Government agents knew that the year previous the crews of schooners, acting in concert, had effected a landing on the Russian seal islands and had held off the armed guard at least two weeks, during which time both sides suffered many casualties and many seals were killed.

At the time of the raids the entire male population of St. Paul Island, including the two Government agents, the company's representatives, and all the natives over 21 years of age, was 38. The combined crews of the schooners which appeared off the island greatly outnumbered this force, and had they once gained a foothold there was nothing to prevent their killing an unlimited number of seals, robbing the salt houses, committing other depredations, and sailing away.

Knowledge of these facts, coupled with an appreciation of their helplessness and inability to stop the unlawful killing of seals in the water a short distance from shore, undoubtedly prompted the Government agents to take summary action when the marauders landed and attempted to transfer their operations from the water to the land. Manifestly the situation was one which called for such action.

While neither the law nor the regulations in terms direct the agents to use force in protecting the rookeries, their duty and authority so to do is beyond question. They are sent to the islands for the purpose, among other things, of enforcing the laws; are supplied with arms and ammunition, and are authorized to employ the natives in guarding the rookeries. They were familiar with the fact that poaching vessels had been seized by the agents and revenue cutters on previous occasions, and that on at least one occasion the native guard had fired on the crew of a vessel which attempted to raid the rookeries.

The unlawful killing of seals within the territorial waters surrounding the islands, the landing on St. Paul, and the commission of other depredations, such as those of the past summer, can undoubtedly be prevented by the establishment of an active revenue-cutter patrol. It is imperative, however, if the seals are to be protected on their rookeries, that a closer and more continuous surveillance of the waters surrounding the islands be maintained permanently in the future.

## CONCLUSIONS AND RECOMMENDATIONS.

### RECOMMENDATIONS AS TO REVENUE-CUTTER PATROL.

The patrol maintained by the vessels of the Revenue-Cutter Service has for a number of years past consisted largely of cruises around the 60-mile zone in Bering Sea. The vessel detailed on this duty does not, under ordinary circumstances, reach the sea until about the 1st of August, that being the time vessels of the Canadian fleet are permitted, by the terms of the award of the Paris tribunal, to enter those

waters. The nominal purpose of the patrol is to prevent the vessels of the Canadian fleet from sealing inside the 60-mile zone. I recommend that this patrol be reorganized along the following lines.

One of the important provisions of the award is that which forbids the citizens and subjects of Great Britain and the United States to kill, capture, or pursue in any manner whatever, during the season extending each year from the 1st of May to the 31st of July, both inclusive, fur seals on the high seas in the North Pacific Ocean or Bering Sea.<sup>a</sup> At that time the females are heavy with young and the herd is proceeding northward along the Pacific coast and through the Aleutian passes to Bering Sea and the Pribilof Islands. It is a most humane provision and should be strictly enforced. I am convinced, however, from the reports I received while in Alaska, that at least five or six Canadian schooners failed to bring their operations to a close on the 1st of May last.

In view of these facts I recommend that a revenue cutter be required to cruise along the coast of Alaska, from the 1st of May until the middle or latter part of June, along the route known to be taken by the seal herd. It is possible to ascertain with a reasonable degree of certainty the general location of the herd at that time of the year. The pelagic sealers know where to find the seals and how to follow them up. The cutter detailed on this patrol should also secure that information and pursue the same course as that pursued by the pelagic sealers—that is, in a general way to follow up the herd.

It also developed during the course of my investigation that it is the practice of the vessels of the Canadian fleet to cruise in the waters of the North Pacific Ocean and Bering Sea before the closed season comes to an end, in order that they may be on the ground at the time it opens. It has been persistently reported that some of these vessels do not wait until the season opens before commencing operations. I therefore recommend that the vessel which has been engaged in following the herd northward along the coast from the 1st of May, cruise around the Aleutian Islands, both outside and inside of Bering Sea, during the month of July.

This vessel should then be required to maintain the usual patrol around the confines of the 60-mile zone from the 1st of August until such a time as the vessels of the Canadian fleet cease their operations and leave the sea.

From my knowledge of the situation I believe it to be entirely possible for one vessel to maintain the patrol as above outlined.

#### AN ADDITIONAL PATROL SHOULD BE ESTABLISHED.

In addition to the foregoing I recommend that a vessel of the Revenue-Cutter Service be directed to patrol the waters of Bering Sea in

<sup>a</sup> 3 Comp. Stat., p. 3005, art. 2.



the vicinity of the Pribilof Islands continually from the 1st of June to as late in October as the weather permits, or as the pelagic sealing fleet of any nation other than Great Britain is in those waters. This vessel should cruise close to the islands, and should be required to call at each island not less than once every two weeks for the purpose of securing from the agent in charge information as to the number and character of vessels sighted from the islands during the time it has been cruising elsewhere.

The vessels engaged on the patrol should be required not only to cooperate with the chief agent of the seal fisheries, but to transport him to points in Alaska, to the various islands of the Pribilof group, and to comply with such other requests as he may find it necessary to make in connection with the discharge of his duties.

#### OFFICERS SHOULD MAKE DETAILED REPORTS.

The officers of these vessels should also make a detailed annual report to the Secretary of Commerce and Labor. This report should contain information as to the date the patrol is commenced; the course or route of the vessel; the number of days, exclusive of those spent in port, that the vessel was on the patrol; the number of times it called at the seal islands, and the time the patrol came to a close.

In view of the fact that one or more vessels of the Revenue-Cutter Service have for years been engaged on the seal patrol, the carrying out of the foregoing recommendations will not entail any considerable additional expense on the Government.

#### RECOMMENDATIONS AS TO STRENGTHENING THE LAWS.

The laws for the protection of the seal fisheries are in a very unsatisfactory condition, and in my judgment are insufficient to meet existing conditions. As they now stand they consist of disconnected and wholly unrelated provisions which have been enacted at different times to meet emergencies, and, as some of the later provisions modify or constructively repeal some of the earlier provisions, there is considerable room for confusion and doubt. It is highly desirable that all of the laws with reference to the seal fisheries be embodied in one comprehensive act, and that existing provisions be strengthened and supplemented in the following important particulars:

The law should expressly set aside all of the islands of the Pribilof group as a special reservation for Government purposes. As it now stands, it in terms includes only the islands of St. Paul and St. George, in consequence of which there is grave doubt as to the status of Otter Island, Walrus Island, and Sea Lion Rock. Thousands of seals frequent Sea Lion Rock, and some seasons a considerable number resort to Otter Island. The islands referred to are only a few miles from the island of St. Paul, the largest of the Pribilof group, and it is

essential that they be included in all laws enacted for the protection and preservation of the seal herd.

It should in terms be declared unlawful for aliens, as well as citizens, either to enter the territorial waters surrounding the islands or to land on the islands themselves without permits so to do from the Secretary of Commerce and Labor, except in cases of stress of weather or for water. Vessels entering the waters for these excepted purposes should, however, be required to approach the islands at the villages and not attempt to land at isolated portions of St. Paul or St. George islands where are located the principal breeding rookeries. Landings on the uninhabited islands of the group should also be prohibited.

Those provisions which make it unlawful for any person to kill seals in the water or kill seals by the use of firearms or by any means tending to drive the seals away from the islands, or to kill female seals, should be strengthened and continued in force. No person, of course, except those operating under lease from the Government, should be permitted to kill seals on land.

#### AUTHORITY OF GOVERNMENT AGENTS SHOULD BE EXTENDED.

The Government agents on the islands should, under the direction of the Secretary of Commerce and Labor, be charged with the enforcement of the law and expressly authorized to use force in carrying its provisions into effect and in protecting the rookeries, including the right to make arrests. They should also be expressly authorized to designate, arm, and maintain a native guard to assist them in preserving order, enforcing the law, and in making arrests.

The chief agent on the island should be empowered to take action in case of violations of the seal laws similar to that taken by United States commissioners in case of violations of laws of the United States; that is to say, he should be authorized to conduct hearings and bind over to the grand jury, or commit, pending investigation, persons arrested for the violation of those laws.

Owing to the isolated situation of the islands it is highly desirable that some person have authority to conduct an official investigation on the ground where witnesses are available in cases of arrest similar to those which were made during the past summer.

The act should also contain a provision making it an offense to attempt to do any of the things declared to be unlawful. The penalties for violations of the laws should be more severe, and it should be made the duty of the officers of vessels of the Revenue-Cutter Service and of the Navy to search any vessel found within the territorial waters surrounding the islands.

Authority should also be given to seize and forfeit any trespassing vessel found within these waters with seals or sealskins and the paraphernalia for taking or capturing the same.

## LACK OF PROPER ARMS AND AMMUNITION.

I also recommend that the Department give early consideration to the matter of placing at the disposal of the agents on the islands a proper supply of arms and ammunition. Aside from a small brass cannon used for signaling and a few rifles owned by the natives, the entire equipment available for use in protecting the seal rookeries and the villages and salt houses on the islands, consists at the present time of 12 rifles on St. Paul and 6 on St. George.

It is obvious that under existing circumstances it would be entirely possible for the combined crews of four or five schooners, such as cruised around the islands during the past summer, or for a crew of pirates, such as that on the *Carmencita*, which hovered around the islands last year, to land and not only raid the rookeries but plunder the village and salt houses, where are stored valuable skins.

Unless they are furnished with the proper arms, the handful of people on these islands can not reasonably be expected to successfully guard seal rookeries worth millions of dollars, which the lawless crews of a score of poaching schooners are ever ready to raid. All the world knows that the United States owns the Pribilof Islands, and that in the exercise of its sovereign power and for the purpose of preserving the seal herd which frequents those islands it has enacted laws making it unlawful for any person to land or remain thereon, and all the world should be given to understand in unmistakable terms that vessels which approach within the 3-mile limit do so at their peril.

## RECOMMENDATIONS AS TO ARMS AND OTHER EQUIPMENT.

In view of the foregoing, I urgently recommend that the islands of St. Paul and St. George be equipped with a sufficient number of small cannon to permit the placing of one or more at the various points of landing and in the vicinity of the principal seal rookeries. To avoid all danger of international complications, the cannon supplied may very properly be limited to guns firing a solid shot and having a maximum range of 3 miles or less. Each island should also be equipped with one or more rapid-fire guns for use in case of an attempt by a landing party to plunder the salt houses or the villages. The supply of rifles and ammunition should also be increased.

I found on investigation that those interested in pelagic sealing keep themselves well posted on the measures taken by this Government to enforce its laws and regulations and the provisions of treaties with other nations. They are, for instance, not slow, as has been demonstrated by the events of the past summer, to take advantage of the unprotected condition of the seal islands. In view of this fact, I believe that if it became known that vessels coming within 3 miles of the Pribilof Islands were liable to be fired upon, pelagic sealers would on all occasions

give those islands a wide berth. Further than this, it must be remembered that the vessels which frequent these waters are engaged at our very doors in a practice forbidden to our own citizens and frowned upon by our laws—that of pelagic sealing. I can see no reason why any special consideration should be shown them. Vessels engaged in legitimate business do not frequent these waters. No one goes there for pleasure, and commercial steamers never call, as the islands are more than 50 miles out of their course.

It is also highly desirable that the Government agent in charge be furnished with a gasoline launch of sufficient size to permit of the mounting of a light gun. A vessel of this kind would be of material assistance in preventing the crews of poaching schooners from using firearms and killing seals in the water within the 3-mile limit.

The agents on St. Paul Island should also be supplied with a team of horses and a light wagon, and the necessary equipment for maintaining the same. The native village is located on the southern extremity of the island at distances ranging from 3 to 14 miles from the various rookeries. Without means for rapidly transporting the agents and native guard from the village to these distant rookeries, it is entirely possible for a boat's crew to land and raid a rookery before the Government agents can reach the spot and stop their operations.

#### MILITARY GUARD NOT NECESSARY.

I do not believe it is either necessary or desirable to station a marine or military guard on the islands. If the Government agents and native guards are supplied with the necessary arms and ammunition, they will without doubt be able to meet any emergency which may arise. This was conclusively demonstrated by the events of the past summer.

#### DUTIES OF CHIEF AGENT SHOULD BE EXTENDED.

I also recommend that the chief agent, at least once each season, visit all of the seal islands, examine into the conditions, and make full report thereof in person to the Secretary of Commerce and Labor at the close of the season. He should also annually investigate and report on the catch of seals by the coast Indians of Alaska. Under existing conditions it is impossible for the chief agent to do any of these things, and, in the regular course of events, he comes to Washington only every other winter. This is due to the fact that the present force consists of but one chief agent and three assistant agents. At least one assistant agent should be added to the force.

The nature of the duties of these agents is such that at least two agents should be present on each island during the summer, and at least one agent during the remainder of the time. It is imperative that at least one agent be present continually on St. Paul and one on



St. George. Under these circumstances the chief agent, in addition to supervising and managing the fisheries, must discharge the duties of one of the assistant agents. It is therefore impossible for him to properly supervise the work on any island other than the one on which he is located. It is also impossible for him to report to and confer with the Department at Washington each year, which, in my judgment, is essential. I recommend, therefore, that an additional assistant agent be appointed, and that the duties of the chief agent be enlarged as above indicated.

#### KILLING OF SEALS BY COAST INDIANS SHOULD BE REGULATED.

Notwithstanding the fact that a large number of seals are killed annually by the coast Indians of Alaska, that branch of the sealing industry has received little attention at the hands of the Government. I recommend that it be investigated with a view to its regulation and supervision. The Department should be advised of the methods of killing and the disposition of the skins. In this connection I also suggest that the collectors and deputy collectors of customs in Alaska be directed to report annually in the fall to the Department such information with reference to the taking of seals as may come into their possession during the year. They should also furnish detailed information as to all shipments of skins.

#### IMPORTANCE OF PREVIOUS RECOMMENDATIONS AS TO PELAGIC SEALING.

In your last annual report you made the following statement and recommendation: "The decrease in seal life on the Pribilof Islands is directly attributable to pelagic sealing, and a strong effort should be made to secure international regulations which will stop it." The existing condition of the seal herd conclusively demonstrates the correctness of your statement and the wisdom of your recommendation. I am convinced, as a result of the study I have given the subject and the investigation made during the past summer, that the total cessation of pelagic sealing is imperative in order to preserve the herd.

#### DECREASE IN SEAL LIFE DUE SOLELY TO PELAGIC SEALING.

That the decrease in seal life on the Pribilof Islands is due solely to pelagic sealing can not seriously be questioned. "Owing to the polygamous habit of fur seals," states the report of the Jordan Commission, "the greater part of the male life born is superfluous for breeding purposes. For the 130,000 breeding cows found on the rookeries of St. Paul and St. George islands in the season of 1897, 4,418 bulls were adequate, or at least out of fully 10,000 bulls ready and willing to serve harems only this number were able to obtain them. Therefore, only 1 bull in 30 is absolutely necessary under present conditions.

That this limit could be materially lowered without positive danger to the herd is conclusively shown by the history of the Russian herd on Bering Island, where the observations of the past three years, as detailed by Doctor Stejneger, show that a male fur seal is capable of attending to the wants of between 100 and 200 cows." <sup>a</sup>

There never has been a time since this Government came into control of the herd when there were no idle bulls on the islands. It is manifest, therefore, that the decrease in the herd is due to the killing of females, which are taken only by pelagic sealers. The number of idle bulls present on the island is a matter which has always been carefully watched. Three years ago, when it became apparent that there was a decrease in idle bulls, the Department established regulations whereby 2,000 choice 2 and 3 year old males were selected, branded, and dismissed from the herd for breeding purposes before the company commenced taking its quota for commercial purposes. This action was not due to an entire absence of idle bulls, but was taken solely because they were decreasing in numbers. Furthermore, the result of the regulation is already apparent, and as soon as the seals thus reserved reach the breeding age the number of idle bulls on the island will have again reached a safe margin.

#### UNNECESSARY AND INEXPEDIENT TO STOP LAND KILLING.

Regardless of whether the Government concludes to again lease the sealing privilege or to itself conduct the sealing industry, it is manifest that the land killing of seals should not be stopped. It is neither necessary nor expedient. It is unnecessary for the reason that there is no abnormal shortage in male seals which are killed on land, and it is not expedient for the reason that if no Alaskan fur-seal skins are secured it will result in the substitution of something else. The two companies which have operated on the islands under lease from the Government have spent thousands of dollars in building up the seal-fur trade. The first company which secured this right was for some years unable to profitably dispose of its annual catch because there was no demand for fur-seal skins. Fur-seal skins are now, and have been for a number of years past, in demand because it is now and has been the fashion to wear them. The fashion controls the demand.

With a view to determining the effect of a rational land killing in the event of a total cessation of pelagic sealing, Mr. W. I. Lembkey, agent in charge and an expert in these matters, at my request prepared a table <sup>b</sup> which I believe is a very conservative estimate of the probable increase in the size of the herd. It is manifest from this table that if

<sup>a</sup> Report of Fur-Seal Investigations, 1896-97, pt. 1, p. 119.

<sup>b</sup> Submitted herewith as Appendix B.

pelagic sealing is stopped, a limited number of male seals may be killed on the islands each year in increasing numbers without impeding the natural increase of the herd. It is my judgment, therefore, in view of the foregoing, that the killing on land should not be stopped, but should be permitted to proceed on a rational basis.

#### REDUCTION OF HERD TO A BREEDING NUCLEUS UNDESIRABLE.

The suggestion not infrequently made in recent years that this Government authorize the killing of all save a breeding nucleus of a few hundred seals as a means of stopping pelagic sealing is neither sensible nor humane. In the first place, if left alone the pelagic sealers will accomplish this result in a very short time; and, in the second place, it would not settle the question. Just as soon as the herd increased to a size sufficient to make land killing permissible and profitable, pelagic sealing would be profitable, and the question would again be an open one.

#### EXPERIMENTS WITH BRANDS AND TAGS SUGGESTED.

In this connection permit me to suggest that in my judgment it would be practicable to brand or tag all of the seals born on the islands in the same way that the great herds of cattle which roam the western prairies are branded, and that action of this kind on the part of this Government would reduce the seals to its possession and justify it in protecting them on the high seas.

The experience of recent years in annually branding 2,000 young male seals demonstrates: First, that a brand of a permanent nature can be placed on the seal without injury to the animal; and, second, that the branded animals return to the islands from year to year. In view of the foregoing, I recommend that the Department conduct experiments with brands and metal tags. I believe it would be entirely possible to attach to the young seals before they leave the islands metal tags, on which might be stamped the words "Property of the United States." If this tag was uniformly fastened by means of a wire on the same part of the body of the seal, it would leave a mark on the inner side of the skin which would be sufficient to identify it in case the seal was killed, even if the tag had, in the meantime, been removed.

#### STATISTICAL INFORMATION.

For your further information I attach hereto, as Appendix A, certain statistical information with reference to the Pribilof fur-seal herd, from the time of the discovery of the Pribilof Islands to date, as follows:

TABLE 1.—Number of seals killed on the Pribilof Islands, Alaska, from 1786 to 1906, inclusive.

TABLE 2.—Pelagic and land catches from the Pribilof herd from 1868, when the Pribilof Islands came into the possession of the United States, to 1906; the revenue derived by the Government, and the average prices obtained for the skins.

TABLE 3.—Size of the Pribilof herd since its discovery in 1786.

TABLE 4.—Annual quotas allowed lessees of the seal islands and the skins shipped thereunder from 1870 to 1905.

TABLE 5.—Receipts and expenditures in connection with the administration of the fur-seal fisheries.

Very respectfully,

EDWIN W. SIMS,

*Solicitor of the Department of Commerce and Labor.*

HON. VICTOR H. METCALF,

*Secretary of Commerce and Labor.*

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APPENDIX A.

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STATISTICS OF THE PRIBILOF FUR-SEAL HERD FROM  
THE DISCOVERY OF THE PRIBILOF ISLANDS,  
1786, TO 1906, INCLUSIVE.

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# STATISTICS OF THE PRIBILOF FUR-SEAL HERD, 1786-1906.

TABLE I.—SEALS KILLED ON PRIBILOF ISLANDS, ALASKA, 1786-1906.

[Compiled from the most trustworthy sources obtainable.]

Year.	St. Paul.			St. George.			Total killed for both islands.	Reserved for breeding.
	Gray pups.	Bachelors.	Total.	Gray pups.	Bachelors.	Total.		
1786-1796							a 417,758	
1797-1816							b 844,890	
1817			c 47,860			c 12,328	c 60,188	
1818			c 45,932			c 13,924	c 59,856	
1819			c 40,300			c 11,924	c 52,224	
1820			c 39,700			c 10,520	c 50,220	
1821			c 35,750			c 9,245	c 44,995	
1822			c 28,150			c 8,319	c 36,469	c 2,700
1823			c 24,100			c 5,773	c 29,873	c 6,000
1824			c 19,850			c 5,550	c 25,400	c 2,500
1825			c 24,600			c 5,500	c 30,100	
1826			c 23,250			(d)	c 23,250	
1827			c 19,700			(d)	c 19,700	
1828			c 18,450			c 4,778	c 23,228	
1829			c 17,150			c 3,661	c 20,811	
1830			c 15,200			c 2,834	c 18,034	
1831			c 12,950			c 3,084	c 16,034	
1832			c 13,159			c 3,296	c 16,446	
1833			c 13,200			c 3,212	c 16,412	
1834			c 12,700			c 3,051	c 15,751	
1835	e 3,952	e 100	e 4,052			c 2,528	c 6,580	c 8,000
1836	e 2,840	e 1,200	e 4,040			c 2,550	c 6,590	c 7,750
1837	e 2,020	e 2,200	e 4,220			c 2,580	c 6,802	c 7,000
1838	e 1,380	e 2,670	e 4,030				f 6,009	
1839	e 230	e 5,000	e 5,230				f 6,000	
1840	e 650	e 5,350	e 6,000				f 8,000	
1841	e 90	c 7,100	e 8,000				f 8,000	
1842	e 1,260	e 8,800	e 10,060				f 10,370	
1843	e 1,294	e 10,050	e 11,344				f 11,240	
1844	e 2,632	e 10,150	e 12,782				f 11,924	
1845	e 3,428	e 9,550	e 12,978				f 13,637	
1846	e 3,503	e 12,000	e 15,503				f 15,070	
1847	e 3,258	e 13,750	e 17,008				f 17,703	
1848	e 3,370	e 13,600	e 16,970				f 14,650	
1849	e 3,350	e 10,000	e 13,350				f 21,450	
1850	e 538	e 5,330	e 6,068				f 6,770	
1851	e 930	e 5,295	e 6,225				f 6,564	
1852	e 1,250	e 9,380	c 10,630				f 6,725	
1853	e 1,700	e 13,996	e 15,690				f 18,035	
1854	e 1,400	e 33,861	e 35,261				f 26,146	

a Berg's Chronological History, 1820, cited in Vol. 1, Appendix to Case of United States, Paris Tribunal of Arbitration, reprint 1895, page 125. See also H. H. Bancroft, Vol. XXVIII, page 193, stating that 40 000 skins were secured in 1786.

b Elliott's Monograph, reprint "Seal and Salmon Fisheries," part 3, page 115, gives the number killed from 1797 to 1821 as 1,112,374, after deducting 5,000 annually for skins shipped from the Commander Islands. This number of 844,890 is obtained by deducting from the above number the number stated by Veniaminof to have been killed during the years 1817 to 1821. The result probably represents not more than one-half the seals killed during this period, because of the great loss through wastefulness and crude methods of curing skins.

c Veniaminof, "Notes on Islands of Unalaska District," part 2, Table 6, cited in Case of United States, Tribunal of Arbitration at Paris, reprint 1895, page 126. (A photographic copy of this table, taken from original publication, on file in Division of Seal Fisheries, year 1894.)

d Closed season.

e Manuscript record of Shisenkoff. (Photographic copy in Division of Seal Fisheries, year 1894.)

f Report of H. H. McFutryre, 1869. (House Ex. Doc. No. 36, 41st Cong., 2d sess.) The same figures also occur in Report of British Bering Sea Commissioners, par. 771, reprint 1895, vol. 6. "Proceedings of Paris Tribunal," page 194. McFutryre's figures evidently exclude pups killed, and relate apparently only to skins shipped. The figures for the years 1838 to 1841, inclusive, are approximate.



TABLE I.—SEALS KILLED ON PRIBILOF ISLANDS, ALASKA, 1786-1906—Continued.

Year.	St. Paul.			St. George.			Total killed for both islands.	Reserved for breeding.
	Gray pups.	Bachelors.	Total.	Gray pups.	Bachelors.	Total.		
1855							a 8,585	
1856							a 23,550	
1857							a 21,082	
1858							a 31,810	
1859							a 22,000	
1860							a 21,590	
1861							b 29,639	
1862							b 34,294	
1863							b 25,000	
1864							b 26,000	
1865							b 40,000	
1866							b 42,000	
1867							b 75,000	
1868							b 242,000	
1869							b 87,000	
1870	c 2,800	c 12,514	c 15,314	c 1,200	c 7,259	c 8,459	23,773	
1871	c 2,877	c 77,926	c 81,803	c 2,090	c 19,067	c 21,157	102,960	
1872	c 5,121	c 76,698	c 81,819	c 2,000	c 25,000	c 27,000	108,819	
1873	c 5,489	c 76,498	c 81,987	c 2,190	c 25,000	c 27,190	109,177	
1874	c 1,897	c 93,242	c 98,139	c 2,416	c 10,000	c 12,416	110,585	
1875	c 3,715	c 91,215	c 94,960	c 1,500	c 10,000	c 11,500	106,460	
1876	c 3,958	c 79,199	c 83,157	c 1,500	c 10,000	c 11,500	94,657	
1877	c 5,007	c 62,803	c 67,810	c 1,500	c 15,000	c 16,500	81,310	
1878	c 5,206	c 83,313	c 88,519	c 1,500	c 19,304	c 20,804	109,323	
1879	c 5,071	c 83,250	c 88,321	c 1,506	c 20,684	c 22,190	110,511	
1880	c 4,413	c 80,366	c 84,779	c 1,330	c 12,609	c 20,939	105,718	
1881		c 83,774	c 83,774	c 1,031	c 20,258	c 21,289	105,063	
1882		c 79,834	c 79,834		c 19,978	c 19,978	99,812	
1883	c 2,982	c 60,313	c 63,295	c 1,000	c 15,214	c 16,214	79,509	
1884	c 2,741	c 86,110	c 88,861	c 1,500	c 15,073	c 16,573	105,434	
1885	c 2,788	c 86,120	c 88,880	c 1,080	c 15,064	c 16,144	105,024	
1886	c 2,824	c 85,261	c 88,085	c 1,286	c 15,150	c 16,436	104,521	
1887	c 2,177	c 86,915	c 89,092	c 1,356	c 15,312	c 16,668	105,760	
1888	c 2,178	c 84,092	c 86,270	h 978	c 16,056	c 17,034	103,304	
1889	c 2,280	c 85,112	c 87,392	c 1,071	c 14,154	c 15,225	102,617	
1890	d 2,364	c 19,556	e 21,920	d 1,104	c 5,035	e 6,139	e 28,039	
1891		9,579	e 9,579		2,461	e 2,461	e 12,040	
1892		5,009	e 5,009		2,502	e 2,502	e 7,511	
1893		5,500	e 5,500		1,896	e 1,896	e 7,396	
1894		13,298	e 13,298		2,972	e 2,972	e 16,270	
1895		12,324	e 12,324		2,522	e 2,522	e 14,846	
1896		24,517	e 24,517		6,137	e 6,137	e 30,654	
1897		16,993	e 16,993		2,207	e 2,207	e 19,200	
1898							f 18,032	
1899							g 17,189	
1900		h 17,033	h 17,033		h 5,081	h 5,081	h 22,114	
1901		h 17,960	h 17,960		h 5,331	h 5,331	h 23,291	
1902		h 18,872	h 18,872		h 3,476	h 3,476	h 22,348	
1903		h 17,025	h 17,025		h 3,101	h 3,101	h 20,126	
1904		h 9,988	h 9,988		h 1,736	h 1,736	h 11,724	i 2,054
1905		j 13,706	j 13,706		j 1,432	j 1,432	j 15,138	k 2,174
1906		j 11,186	j 11,186		j 1,700	j 1,700	j 12,886	2,238
Total.....	108,803	1,946,445	2,508,414	29,168	367,771	518,596	5,055,666	40,413

a See footnote f on page 34.

b Report of British Commissioners, Fur-Seal Arbitration, reprint 1895, vol. 6, page 194. These figures agree with those stated in Elliott's Monograph, "Seal and Salmon Fisheries," part 3, page 115, except for the years 1861 and 1862, for each of which Elliott gives 20,000, and the year 1867, for which Elliott gives 48,000. The authority of the British commissioners for the latter year is "Allen's North American Pinnipeds," page 398, which was based on a statement of Special Agent Bryant.

c "Seal and Salmon Fisheries," vol. 2, pages 273-274.

d "Seal and Salmon Fisheries," vol. 1, pages 272, 298.

e "Report Fur Seal Investigation Commission, 1896-97," part 1, page 207.

f Owing to the death of Agent Murray the seals actually killed this year were not reported. The number here given is the company's quota actually shipped. See manuscript report.

g The number actually killed this year can not be gathered from Agent Morton's report. The number here given was extracted from a table sent by this Department to the State Department in a letter dated January 14, 1905.

h Manuscript reports, Division of Seal Fisheries.

i Senate Document No. 98, Fifty-ninth Congress, first session, pages 8-9.

j Manuscript report. The number for 1905 is inclusive of food killings in the fall of 1905. The number for 1906 is exclusive of food killings in the fall of 1906, which can not be ascertained until the spring of 1907.

k Senate Document No. 98, Fifty-ninth Congress, first session, page 65.



TABLE 2.—PELAGIC AND LAND CATCHES FROM PRIBILOF HERD, REVENUE DERIVED BY GOVERNMENT, AND AVERAGE PRICES OBTAINED FOR SKINS, FROM 1868, WHEN THE PRIBILOF ISLANDS CAME INTO THE POSSESSION OF THE UNITED STATES, TO 1906.

Year.	Land catch.				Revenue to Government.	Average price obtained for skins.	Pelagic catch.	
	Skins shipped from Pribilof Islands. <sup>a</sup>			Total.			Catch Ber- ing Sea and Northwest Coast.	Average price of skins sold.
	St. Paul.	St. George.						
1868.....				212,000	\$212,000.00		<i>b</i> 4,367	
1869.....				87,000	87,000.00		<i>b</i> 4,430	
1870.....	<i>c</i> 6,017			6,017	<i>d</i> 101,080.00	<i>f</i> \$5.41	<i>b</i> 8,686	
1871.....	<i>c</i> 76,134	<i>e</i> 19,077		95,211	<i>e</i> 322,863.38	<i>f</i> 10.50	<i>b</i> 16,911	<i>f</i> \$2.40
1872.....	<i>c</i> 74,941	<i>e</i> 25,000		99,941	<i>e</i> 307,181.12	<i>f</i> 11.20	<i>b</i> 5,336	<i>f</i> 2.40
1873.....	<i>c</i> 74,485	<i>e</i> 25,000		99,485	<i>e</i> 356,610.42	<i>f</i> 13.00	<i>b</i> 5,239	
1874.....	<i>c</i> 89,924	<i>e</i> 10,000		99,924	<i>e</i> 317,494.75	<i>f</i> 13.10	<i>b</i> 5,873	<i>f</i> 8.50
1875.....	<i>c</i> 89,687	<i>e</i> 10,000		99,687	<i>e</i> 317,584.60	<i>f</i> 12.75	<i>b</i> 5,033	<i>f</i> 9.00
18. 6.....	<i>c</i> 81,000	<i>e</i> 10,000		90,000	<i>e</i> 291,155.50	<i>f</i> 8.75	<i>b</i> 5,515	<i>f</i> 5.25
1877.....	<i>c</i> 60,199	<i>e</i> 15,000		75,199	<i>e</i> 253,255.75	<i>f</i> 9.75	<i>b</i> 5,210	
1878.....	<i>c</i> 82,000	<i>e</i> 18,000		100,000	<i>e</i> 317,447.50	<i>f</i> 9.80	<i>b</i> 5,544	<i>f</i> 8.62
1879.....	<i>c</i> 80,000	<i>e</i> 20,000		100,000	<i>e</i> 317,400.25	<i>f</i> 21.20	<i>b</i> 8,557	<i>f</i> 13.00
1880.....	<i>c</i> 80,000	<i>e</i> 20,000		100,000	<i>e</i> 317,594.50	<i>f</i> 22.25	<i>b</i> 8,718	<i>f</i> 14.00
1881.....	<i>c</i> 79,905	<i>e</i> 20,000		99,905	<i>e</i> 316,885.75	<i>f</i> 19.75	<i>b</i> 10,382	<i>f</i> 7.80
1882.....	<i>c</i> 80,000	<i>e</i> 20,000		100,000	<i>e</i> 317,295.25	<i>f</i> 13.60	<i>b</i> 15,551	<i>f</i> 5.10
1883.....	<i>c</i> 60,000	<i>e</i> 15,000		75,000	<i>e</i> 251,875.00	<i>f</i> 20.20	<i>b</i> 16,557	<i>f</i> 6.30
1884.....	<i>c</i> 85,000	<i>e</i> 15,000		100,000	<i>e</i> 317,400.25	<i>f</i> 12.75	<i>b</i> 16,971	<i>f</i> 6.75
1885.....	<i>c</i> 81,995	<i>e</i> 15,000		99,995	<i>e</i> 317,489.50	<i>f</i> 14.20	<i>b</i> 23,040	<i>f</i> 6.50
1886.....	<i>c</i> 85,000	<i>e</i> 15,000		100,000	<i>e</i> 317,452.75	<i>f</i> 17.10	<i>b</i> 28,494	<i>f</i> 7.00
1887.....	<i>c</i> 85,000	<i>e</i> 15,000		100,000	<i>e</i> 317,500.00	<i>f</i> 14.00	<i>b</i> 30,628	<i>f</i> 7.70
1888.....	<i>c</i> 85,000	<i>e</i> 15,000		100,000	<i>e</i> 317,500.00	<i>f</i> 19.50	<i>b</i> 26,189	<i>f</i> 7.80
1889.....	<i>c</i> 85,000	<i>e</i> 15,000		100,000	<i>e</i> 317,500.00	<i>f</i> 17.00	<i>b</i> 29,858	<i>f</i> 9.75
1890.....	<i>g</i> 16,874	<i>g</i> 4,121		20,995	<i>e</i> 214,673.88	<i>f</i> 36.50	<i>b</i> 40,814	<i>f</i> 15.25
1891.....	<i>h</i> 10,780	<i>h</i> 2,702		13,482	<i>e</i> 45,749.23	<i>f</i> 30.00	<i>b</i> 59,568	<i>f</i> 15.75
1892.....	<i>j</i> 4,996	<i>j</i> 2,553		7,549	<i>e</i> 23,972.60	<i>f</i> 30.00	<i>b</i> 46,642	<i>f</i> 17.00
1893.....	<i>k</i> 5,418	<i>k</i> 2,007		7,425	<i>e</i> 96,159.82	<i>f</i> 27.00	<i>b</i> 30,812	<i>f</i> 12.50
1894.....	<i>l</i> 12,969	<i>l</i> 3,062		16,031	<i>e</i> 163,916.97	<i>f</i> 20.50	<i>b</i> 61,838	<i>f</i> 8.75
1895.....	<i>m</i> 12,500	<i>m</i> 2,500		15,000	<i>e</i> 153,375.00	<i>f</i> 20.25	<i>b</i> 56,291	<i>f</i> 10.25
1896.....	<i>n</i> 23,842	<i>n</i> 6,158		30,000	<i>e</i> 306,750.00	<i>f</i> 17.00	<i>b</i> 43,917	<i>f</i> 8.00
1897.....	<i>o</i> 18,400	<i>o</i> 2,366		20,766	<i>e</i> 212,332.35	<i>f</i> 15.50	<i>b</i> 24,321	<i>f</i> 6.50
1898.....	<i>p</i> 15,850	<i>p</i> 2,182		18,032	<i>e</i> 184,377.20	<i>f</i> 16.00	<i>b</i> 28,552	<i>f</i> 6.50
1899.....	<i>q</i> 14,252	<i>q</i> 2,520		16,812	<i>e</i> 224,476.47	<i>f</i> 26.00	<i>b</i> 34,168	<i>f</i> 10.25
1900.....	<i>q</i> 17,688	<i>q</i> 4,782		22,470	<i>e</i> 229,755.75	<i>f</i> 32.00	<i>f</i> 35,191	<i>f</i> 16.00
1901.....	<i>r</i> 17,100	<i>r</i> 5,572		22,672	<i>e</i> 231,821.20	<i>f</i> 34.00	<i>f</i> 24,050	<i>f</i> 15.25
1902.....	<i>r</i> 19,082	<i>r</i> 3,304		22,386	<i>e</i> 286,133.40	<i>f</i> 32.70	<i>f</i> 22,812	<i>f</i> 19.25
1903.....	<i>r</i> 16,200	<i>r</i> 3,092		19,292	<i>e</i> 197,260.70	<i>f</i> 29.50	<i>f</i> 27,000	<i>f</i> 18.50
1904.....	<i>s</i> 11,132	<i>s</i> 1,966		13,128	<i>e</i> 134,233.80	<i>t</i> 37.00	<i>u</i> 29,006	<i>t</i> 19.25
1905.....	<i>t</i> 13,000	<i>t</i> 1,358		14,368	<i>e</i> 146,912.80	<i>t</i> 37.00	<i>u</i> 25,320	<i>t</i> 27.35
1906.....	12,536	1,940		14,476	148,017.10			
Total.....	1,765,946	369,302	2,464,248	9,311,054.77			877,381	

<sup>a</sup> The stated number of skins shipped will not agree with the corresponding amount of revenue derived, for the reason that in former years the payments of revenue from seal skins were based upon the count of skins by the collector of customs at San Francisco, which count varied each year, slightly more or less, from the island count. In later years the island count has been accepted as the basis for payment.

<sup>b</sup> "Report Fur-Seal Investigation Commission, 1895-97," Pt. I, p. 222.

<sup>c</sup> "Seal and Salmon Fisheries," vol. 1, pp. 261-262. This shows the number of skins on which the annual divisions of natives' earnings were based.

<sup>d</sup> Probably includes skins taken before the date of the lease to the Alaska Commercial Company upon which a revenue of only \$1 per skin was paid.

<sup>e</sup> Official records, Treasury Department.

<sup>f</sup> Pamphlet, "Hearing before Ways and Means Committee, March 9 and 10, 1904," p. 76.

<sup>g</sup> "Seal and Salmon Fisheries," vol. 1, p. 258.

<sup>h</sup> "Seal and Salmon Fisheries," vol. 1, p. 286.

<sup>i</sup> Of these, 1,231 were "stagey," and were made the subject of a special settlement. ("Seal and Salmon Fisheries," vol. 1, p. 272.)

<sup>j</sup> "Seal and Salmon Fisheries," vol. 1, pp. 349-351.

<sup>k</sup> "Seal and Salmon Fisheries," vol. 1, p. 442.

<sup>l</sup> "Seal and Salmon Fisheries," vol. 1, p. 471.

<sup>m</sup> "Seal and Salmon Fisheries," vol. 1, p. 488.

<sup>n</sup> Crowley's manuscript report.

<sup>o</sup> Murray's manuscript report.

<sup>p</sup> Morton's manuscript report.

<sup>q</sup> Judge's manuscript report.

<sup>r</sup> Lembeck's manuscript report.

<sup>s</sup> Senate Document No. 98, Fifty-ninth Congress, first session, pp. 33-51.

<sup>t</sup> Computed from catalogue of London trade sales.

<sup>u</sup> Lampson & Co.'s catalogues, London sales of Northwest Coast seal skins for 1904 and 1905.

<sup>v</sup> Senate Document No. 98, Fifty-ninth Congress, first session, pp. 65-66.

## SIZE OF PRIBILOF ISLANDS HERD SINCE THEIR DISCOVERY IN 1786.

Precise data as to the size of the entire herd of seals on the Pribilof Islands during the years preceding the American occupation is wanting. No computation of the number in the whole herd is known to have been made. The only known factor of record during this period is the annual yield of skins as contained in the statements of the number of skins annually shipped.

The yield of skins from bachelors bears a direct relation to the number of breeding cows, since it is the breeding herd that furnishes the surplus males from which these skins are obtained. It can be understood readily that the 3-year-old bachelors of to-day were the pups of four summers ago, and that, from a knowledge of the number of 3-year-old skins in the present year's catch a fairly approximate idea can be obtained of the number of breeders four years ago—after proper deductions for natural mortality.

Precise information, however, as to the character of the skins taken by the Russians is not at hand. It is known that their catches of skins in certain years were composed of gray pups as well as bachelor seals. In years preceding 1835, at least, they took females also. It was the killing of the latter on land, together with other causes, such as an unusual quantity of drift ice on the shores, deterring the gravid females from landing, that is supposed to have reduced the herd to the low-water mark in 1835.

As no knowledge is had of the number of skins of any given class in the Russian catches it is necessary in attempting to compute the whole number of individuals in the herd in former years to proceed upon a somewhat different hypothesis. It may be accepted as an axiom that the Russians under ordinary circumstances took as many skins as the herd would afford. There were, of course, certain years in which killing was restricted, such as the few years succeeding 1835, and for those years the catch of bachelors would form no criterion of the whole number. But in the main, accepting the annual catches as indicative of the annual yield, this annual yield would offer a fair idea of the size of the herd, provided some basis of estimation can be established.

To determine a relation between the catch and the entire herd we would have to seek years in which counts of the whole herd have been made and compare these counts with the catches of bachelors in those years.

Complete censuses of the whole herd, based on anything like accurate counts, were made only during the years 1897, by Doctor Jordan, and in 1904 and 1905, by Agent Lembkey. We are obliged to disregard those based on acreage measurements made in 1872-1874 and in 1890 by Mr. H. W. Elliott, since this method, in the light of subsequent investigation, is proven unreliable. The catch of bachelors and the whole estimated number composing the herd in the years 1897, 1904, and 1905 follows:

Year.	Bachelors killed.	Whole census.	Bachelors released.	Ratio of catch to whole herd.
1897 .....	20,766	402,850	.....	1-20
1904 .....	13,128	243,103	2,054	1-16
1905 .....	14,368	223,009	2,174	1-14

In the census made by Doctor Jordan in 1897 the take of skins represents a ratio to the whole herd of about 1 to 20. In that made in 1904, by Agent Lembkey, the ratio of killables to the whole herd, including the 2,054 bachelors branded and released, is 1 to 16, and in 1905, with a similar addition of the bachelors released that year, 1 to 14. In this way a relation is established between the catch and the whole herd upon which a rough estimate may be made of the herd in former years in which only the catch is known. While it was not known until after this course of procedure had been adopted for the purpose in hand, proper acknowledgment must be made of the fact that this same method of estimation was used by Doctor Jordan in his criticism of Elliott's censuses of 1874 and 1890.

As can be seen, a variation exists between the ratios given above. It must be determined, therefore, whether killing in 1897 was as close as in the later years. Doctor Jordan states that in 1897 there were turned away 15,000 animals too small to kill. (Fur-Seal Investigation Commission, pt. 1, p. 98.) These added to the 20,766 killed would make a total of 35,766 animals driven. The number dismissed, therefore, was 41 per cent of the whole number driven.

In 1904, with 13,128 skins taken, there were 10,181 rejections of small seals, or 44 per cent of the whole number driven. (S. Doc. 98, 59th Cong., 1st. sess., p. 13.) In 1905, 9,520 small dismissals occurred (including 3,499 from St. George), with a take of 14,368 skins, or dismissals of 40 per cent of the whole number driven. (Idem, p. 67.)

The percentage of animals killed in those three years is demonstrated to have been practically the same, while the ratios of killed to the whole herd vary from 1 to 20 in 1897 to 1 to 16 in 1904 and 1 to 14 in 1905. This variation must be caused by the differing methods of approximation of the whole herd. Doctor Jordan's estimate of the herd for 1897 is frankly stated to be a mere approximation and is made in round numbers. Mr. Lembkey's estimates for 1904 and 1905 are stated also to be nothing more than careful approximations, but have the advantage of treating with a greatly diminished herd which could be more easily counted and, so far as relates to the bachelor seals, were based on counts of those appearing in the drives which Doctor Jordan did not make. Without any reflection on Doctor Jordan's work, therefore, it is believed that the adoption of the relation of the catch of skins to the whole herd of 1 to 15—a mean of the ratios of 1904 and 1905—more nearly represents the actual ratio than 1 to 20.

The application of this rule will, of course, give a mere idea of the size of the herd in former years and nothing more. Varying conditions of the climate and of the market, differing policies of the managers, and other now unknown factors all contribute to vitiate the accuracy of such a computation. It will, however, give an idea, more or less inexact, of the size of the herd, and this is all that is claimed for it.

TABLE 3.—TAKE OF SKINS AND APPROXIMATE SIZE OF SEAL HERDS, 1786-1906.

Year.	Take of skins.	Approximate size of herd.	Year.	Take of skins.	Approximate size of herd.	Year.	Take of skins.	Approximate size of herd.
1786.....	37,978	2,500,000	1828.....	23,228	348,420	1870.....	23,773	.....
1787.....	37,978	.....	1829.....	20,811	312,165	1871.....	102,960	.....
1788.....	37,978	.....	1830.....	18,034	270,510	1872.....	108,819	.....
1789.....	37,978	.....	1831.....	16,034	240,510	1873.....	109,177	.....
1790.....	37,978	.....	1832.....	16,446	246,690	1874.....	110,585	.....
1791.....	37,978	.....	1833.....	16,412	246,180	1875.....	106,460	.....
1792.....	37,978	.....	1834.....	15,751	236,265	1876.....	94,657	.....
1793.....	37,978	.....	1835.....	6,580	222,750	1877.....	84,310	.....
1794.....	37,978	.....	1836.....	6,590	215,100	1878.....	109,323	.....
1795.....	37,978	.....	1837.....	6,802	207,030	1879.....	110,511	.....
1796.....	37,978	2,000,000	1838.....	6,000	(b)	1880.....	105,718	.....
1797.....	42,244	(a)	1839.....	6,000	(b)	1881.....	105,063	.....
1798.....	42,244	(a)	1840.....	8,000	(b)	1882.....	99,812	2,000,000
1799.....	42,244	(a)	1841.....	8,000	(b)	1883.....	79,509	.....
1800.....	42,244	(a)	1842.....	10,370	(b)	1884.....	105,434	.....
1801.....	42,244	(a)	1843.....	11,240	(b)	1885.....	105,024	1,500,000
1802.....	42,244	(a)	1844.....	11,924	(b)	1886.....	104,521	.....
1803.....	42,244	(a)	1845.....	13,637	(b)	1887.....	105,760	.....
1804.....	42,244	(a)	1846.....	15,070	(b)	1888.....	103,304	.....
1805.....	42,244	(a)	1847.....	17,703	(b)	1889.....	102,617	.....
1806.....	42,244	(a)	1848.....	14,650	(b)	1890.....	28,059	900,000
1807.....	42,244	(a)	1849.....	21,450	(b)	1891.....	12,040	.....
1808.....	42,244	(a)	1850.....	6,770	(b)	1892.....	7,511	.....
1809.....	42,244	(a)	1851.....	6,564	(b)	1893.....	7,396	.....
1810.....	42,244	(a)	1852.....	6,725	(b)	1894.....	16,270	.....
1811.....	42,244	(a)	1853.....	18,035	(b)	1895.....	14,846	.....
1812.....	42,244	(a)	1854.....	26,146	(b)	1896.....	30,654	489,810
1813.....	42,244	(a)	1855.....	8,585	(b)	1897.....	19,200	402,850
1814.....	42,244	(a)	1856.....	23,550	(b)	1898.....	18,032	350,000
1815.....	42,244	(a)	1857.....	21,082	(b)	1899.....	17,189	350,000
1816.....	42,244	1,000,000	1858.....	31,810	(b)	1900.....	22,114	.....
1817.....	60,188	904,820	1859.....	22,000	(b)	1901.....	23,291	.....
1818.....	59,876	897,840	1860.....	21,590	(b)	1902.....	22,318	.....
1819.....	52,224	783,360	1861.....	29,699	(b)	1903.....	20,126	.....
1820.....	50,229	753,300	1862.....	34,294	(b)	1904.....	11,724	243,103
1821.....	14,995	674,925	1863.....	25,000	(b)	1905.....	15,138	223,009
1822.....	36,469	587,535	1864.....	26,000	(b)	1906.....	12,886	185,000
1823.....	29,873	598,095	1865.....	40,000	(b)			
1824.....	25,400	418,500	1866.....	42,000	(b)			
1825.....	30,100	451,500	1867.....	75,000				
1826.....	23,250	409,750	1868.....	242,000	} 2,000,000			
1827.....	19,700	355,500	1869.....	87,000				
						Total	5,055,666	.....

*a* Gradual decrease.*b* Gradual increase.

## ANALYSIS OF TABLE.

The figures of the yearly catches are taken from Table 1.

The catch of skins for 1786 to 1796 represents a yearly average of the total catch (417,758) given for that period. The application of the ratio of 1 to 15 for these years (1786 to 1796) gives a total herd of only 189,890. This, of course, is simply absurd. The ratio, at best, is merely an estimate, and the catch stated for these years represents but a fraction of the seals killed. From a knowledge of all the facts, it is believed that the herd, on the discovery of the islands, embraced at least 2,500,000 animals, and this number is adopted arbitrarily as its measure during the first years. It is also as arbitrarily reduced to 2,000,000 in the year 1796, as it is believed that at least that reduction occurred.

The total catch recorded for the twenty years from 1797 to 1816, both inclusive, is 844,890, an average yearly catch of 42,244. At 1 to 15 this would show the whole herd to have been 667,005. From the recognized incompleteness of the figures showing the catch, we may assume that the herd was reduced to approximately 1,000,000 animals.

In 1817 occurs the first exact figures of the catch for any one year, given by Veniaminof. The application of the ratio of 1 to 15 gives the total stated for this and the succeeding years to 1821.

In 1822, 2,700 young seals were "reserved for breeding." They have been added to the catch in computing the total yield.



In 1823, 6,000 young seals were "reserved for breeding," and have been added in computing the total yield.

In 1824, 2,500 young seals were "reserved for breeding," and have been added in computing the total yield.

An apparent increase is shown in 1825. This is undoubtedly due solely to the arbitrary method of computation. It means no increase in the herd, but increased activity in taking seals. They probably killed, in this year, some of the seals reserved the preceding three years. The killing in 1826 to 1828 probably represents the normal yield of the herd and reduces the whole number materially from 1825.

The period between 1829 and 1834 shows a steady decrease. The apparent fluctuation during this time is the result of more or less close killing.

We have in 1834 a measure of the herd previous to the year 1835, when the lowest number is said to have been reached, and when the famous "Zapowski" was put into effect. It is more probable that the preservative measures in 1835 were adopted as the result of the scarcity of seals observed in 1834. Our methods of computation can construct, at the best, only a series of systematic guesses, but enough of the elements of accuracy are involved to demonstrate that the herd was not any nearer (if as near) annihilation in 1834 than it is at present.

In 1835, while they took only 6,580 seals, of which, according to Veniaminof's table, the greater number were gray pups, they also "reserved for breeding" 8,000 seals. As stringent regulations were adopted this year against the killing of females (Veniaminof) to insure the increase in the herd it is not to be believed that these seals reserved for breeders were females, as they would be reserved in any event as a matter of course. They undoubtedly were young killable bachelors, and have been added to the catch to form a basis for computation.

In 1836, while 6,590 skins were secured, 7,750 seals were reserved for breeding.

In 1837, 6,802 skins were secured and 7,000 seals reserved for breeding. The catches for the years 1838 to 1841 are approximations taken from the table prepared by H. H. McIntyre. No attempt is made to compute therefrom the whole herd. From 1838 to 1867, owing to the restrictive measures exercised by the Russian managers, no correct idea of the actual yield can be had. We know from Veniaminof that the killing in each year after 1835 was of such moderate nature as to insure a surplus for breeding and an increase in the herd. A scrutiny of the catches during this period would show that the yearly quotas were arbitrarily increased or lowered without regard to the number that could be taken under normal conditions. For this reason an estimate of the herd at a ratio of 1 to 15, based on the annual yields, would be wholly misleading. We can see, however, by the gradually increasing catches, that the herd itself was undergoing a steady augmentation. This is shown by the fact that in the year 1864 the manager on St. Paul was instructed by the chief manager at Sitka to increase that island's annual catch to 70,000. (Appendix to Case of the United States Fur-Seal Arbitration, No. 31, p. 89.) No authentic record of the catch for that year exists, the estimate made by Elliott showing only 26,000 skins for both islands.

The year 1867 is the last year of the Russian management. The two succeeding years—1868 and 1869—cover the so-called "interregnum," or the period between the relinquishment of the territory by the Russians and the establishment of a lessee on the seal islands. In

the last year of their tenure the Russians took 75,000 skins. (Allen-North American Pinnipeds.) During the two years of the interregnum the Americans took 242,000 and 87,000 skins, respectively. By averaging the catch of these three years, a fair idea of the normal catch might be obtained. By this method the yearly catch would average 135,000, and, at 1 to 15, would represent 2,025,000 animals in the whole herd, which is a fair estimate of its volume at the time of the granting of the first lease to the Alaska Commercial Company, in 1870.

From 1870 to 1884 it is admitted generally that the herd suffered no apparent decrease, and it is claimed by some that an actual increase occurred. It is a well-known fact that prior to 1885 the herd would have yielded more skins than the 100,000 allowed annually by law. This can be seen by the early dates on which the annual quotas were secured during these years. An approximation based on a catch of 100,000 at 1 to 15 would show the herd to be only 1,500,000, but the increased number which could have been taken, had sealing been carried on to the end of the season, indicates that the herd was greater than this approximation of the catch would show. In 1885 the quota was not secured until July 27, whereas, on the previous year it was obtained on July 21. This would indicate, roughly, that a marked decrease had occurred in the breeding herd three summers previously, or in 1882, the year in which the 3-year-olds of 1885 were born. This is substantiated to a degree by the fact that in 1882 the pelagic catch increased from 10,000 to 15,000, and that by 1885 it had reached 23,000, mostly females. From a consideration of all the facts, it must be believed that the herd suffered its first marked reverse leading to its diminution in 1882. We feel safe in placing the number in the herd in 1882, before the diminution occurred, at 2,000,000.

In 1885, in addition to carrying on sealing for six days longer than usual, there is reason to believe that, on St. George at least, they lowered the size of skins taken. This is based on the fact that on that island three killings occurred in 1885 where the number taken in each killing was over 2,000 skins—a limit reached but twice previously in the history of that island (June 25, 1876, and July 6, 1877). The number of skins taken during this added week of sealing, on St. Paul alone, indicates an approximate loss in the breeding herd of over 250,000. We may safely say that by 1885 the herd had shrunk to 1,500,000.

During the years 1886 to 1889, both inclusive (the last four years of the Alaska Commercial Company's lease), the annual quotas of 100,000 were secured only by prolonging the killing and taking smaller skins than usual. In the last year (1889) killing on St. Paul was carried on until July 31 (Seal and Salmon Fisheries, vol. 2, p. 268), and included all classes of skins down to 4½ pounds. (Report British Bering Sea Commission, pars. 830-831, vol. 6; Report Paris Arbitration, p. 204.) The fact of this unusually close killing leaves us no ground on which to compute the actual size of the herd during those years. It is safe to infer, however, that this unwonted activity necessary to secure the annual quota of 100,000 indicates a large falling off in the herd.

In 1890, the first year of the new lease, killing was stopped on July 20 by order of the Government agent (Seal and Salmon Fisheries, vol. 1, p. 233) after the taking of 28,059 skins. While not officially of record, it is known that the lessee in 1890 confined killing to 3-year-olds. This is substantiated by the fact that the skins of 1890 sold for \$36.50 each (average), while in 1889, owing to the presence of small skins in the catch, they brought on an average only \$17 each.

Had killing in 1890 been continued until the end of the season, and had it been as rigorous as it had been during the preceding four years, it is more than probable that the quota of 60,000 would have been taken. Assuming that 60,000 could have been taken, the aggregate herd at 1 to 15 would have been 900,000. Mr. Elliott's estimate of the herd in 1890, on an acreage basis, was 959,393 "breeding seals and young, without any estimate of nonbreeders."

The restrictions imposed on killing by the *modus vivendi* in 1891 to 1893 and by the regulations of the Department in 1894 and 1895 reduced the catches of those years to a number considerably below the annual yield, and leave us no basis on which to form an estimate of the whole herd.

In 1896 the quota was increased by the Department to 30,000, and 30,654 skins were taken. This is probably a fair measure of the yield of the herd at that time. At the ratio of 1 to 15, the whole herd would have been 489,810.

In 1897 a complete census of the whole herd was made by Doctor Jordan, showing a total of 402,850 lives. The catch of that year was 19,200, which at 1 to 15 would show only 288,000 in the herd, but, in deference to Doctor Jordan, his figures are given.

In 1898 and 1899, although the quota allowed each year by the Department was 30,000, only 18,032 and 17,189 skins, respectively, of the grade then taken were secured. In those years they took nothing less than a 6-pound skin. At 1 to 15, this would show the whole herd to have been 270,480 and 257,835. The 1 to 15 ratio, however, was formed on the basis of a 5½-pound minimum weight of skin, and would hardly be applicable to the catches of years in which such small skins were not taken. A conservative estimate would fix the whole number of seals in those years at 350,000.

During the years 1900 to 1903 the lessee lowered the standard of skins taken so as to include all 2-year-old skins. Skins as low even as 4½ pounds were taken. Under these circumstances it is impossible to estimate the number in the herd by the method heretofore adopted.

In 1904, 1905, and 1906 the censuses made by Agent Lembkey are given.

TABLE 4.—ANNUAL QUOTAS ALLOWED LESSEE OF SEAL ISLANDS, AND SKINS SHIPPED THEREUNDER, 1870-1906.<sup>a</sup>

Year.	Quota allowed. <sup>b</sup>		Skins shipped.	Year.	Quota allowed. <sup>b</sup>		Skins shipped.
	Minimum.	Maximum.			Minimum.	Maximum.	
1870.....		100,000	6,017	1890.....		60,000	20,995
1871.....		100,000	95,211	1891.....		60,000	13,482
1872.....		100,000	99,941	1892.....		7,500	7,549
1873.....		100,000	99,485	1893.....		7,500	7,425
1874.....		100,000	99,924	1894.....		7,500	16,031
1875.....		100,000	99,687	1895.....		7,500	15,000
1876.....		100,000	90,000	1896.....			30,000
1877.....		100,000	75,199	1897.....		15,000	20,766
1878.....		100,000	100,000	1898.....		25,000	18,032
1879.....		100,000	100,000	1899.....		25,000	30,000
1880.....		100,000	100,000	1900.....		25,000	22,470
1881.....		100,000	99,905	1901.....		25,000	22,672
1882.....		100,000	100,000	1902.....		25,000	22,386
1883.....		100,000	75,000	1903.....		25,000	19,292
1884.....		100,000	100,000	1904.....			15,000
1885.....		100,000	99,995	1905.....			14,368
1886.....		100,000	100,000	1906.....			15,000
1887.....		100,000	100,000				
1888.....		100,000	100,000				
1889.....		100,000	100,000				
				Total.....			2,135,248

<sup>a</sup> The quotas have been obtained from the manuscript records of the Treasury Department and the Department of Commerce and Labor. The statement of skins shipped is taken from Table 2.

<sup>b</sup> From 1870 to 1889 the quota was fixed at 100,000 per annum by section 1962, Revised Statutes (amended by act March 24, 1874, 1 Supp. R. S., p. 6).



TABLE 5.—RECEIPTS AND EXPENDITURES IN CONNECTION WITH THE ADMINISTRATION OF THE FUR-SEAL FISHERIES OF ALASKA.

Year.	Receipts from royalties on sealskins.	Expenses.		
		Salaries and expenses of agents.	Supplies to natives.	Miscellaneous, <i>a</i>
1868.....	\$242,000.00			
1869.....	87,000.00			
1870.....	101,080.00			
1871.....	322,863.38			
1872.....	307,181.12			
1873.....	356,610.42			
1874.....	317,494.75			
1875.....	317,581.00			
1876.....	291,155.50	\$2,752.68		
1877.....	253,255.75	8,080.49		
1878.....	317,447.50	10,892.50		
1879.....	317,400.25	16,381.78		
1880.....	317,594.50	9,571.02		
1881.....	316,885.75	4,248.09		
1882.....	317,235.25	15,263.05		
1883.....	251,875.00	11,090.32		
1884.....	317,400.25	13,811.64		<i>b</i> \$1,336.50
1885.....	318,489.50	13,102.61		<i>c</i> 5,939.81
1886.....	317,452.75	7,937.49		<i>d</i> 641.04
1887.....	317,500.00	16,174.13		<i>e</i> 15,164.34
1888.....	317,500.00	10,181.52		<i>f</i> 41,000.31
1889.....	317,500.00	13,027.10		<i>g</i> 784.51
1890.....	214,673.88	10,747.71		<i>h</i> 483,842.65
1891.....	46,749.23	15,396.83		<i>i</i> 790.00
1892.....	23,972.60	16,071.33		
1893.....	96,159.82	11,168.27	\$11,237.32	
1894.....	163,916.97	10,953.09	18,319.44	
1895.....	153,375.00	10,308.38	25,563.21	
1896.....	306,750.00	11,288.77	14,903.92	
1897.....	212,332.35	9,591.50	15,005.00	
1898.....	184,377.20	14,115.92	26,372.56	
1899.....	224,476.47	14,841.58	17,930.94	
1900.....	229,755.75	11,473.41	19,100.38	
1901.....	231,821.20	5,336.26	14,950.47	
1902.....	286,133.40	15,719.95	22,446.20	
1903.....	197,260.70	10,502.45	19,586.20	
1904.....	134,233.80	10,063.26	15,384.45	
1905.....	146,912.80	7,418.75	13,651.40	
1906.....	148,017.10	<i>j</i> 11,950.00	<i>j</i> 19,500.00	
Total.....	9,311,054.77	349,464.88	254,051.49	549,499.16

*a* There were, in addition, \$183,808.62 expended in 1878 to 1888 for "Protection of sea otter and seal fisheries," and \$20,940.68 for "Protection of seal and salmon fisheries" in 1892 to 1901. As the latter was expended for salmon fisheries protection entirely, and as the former, while its purpose is now unknown, had little or nothing to do with the seal islands, they are not included in the column of miscellaneous expenses.

*b* Expense of inspectors of pelagic sealskins, 1895-96.

*c* Buildings, seal islands, 1872.

*d* Proposals, lease seal islands, 1891.

*e* Statistics relative to fur-seal industry, 1891-1894.

*f* Scientific investigations of fur-seal fisheries, 1898-99.

*g* Collecting information respecting fur trade, 1875.

*h* Bering Sea awards and commission, 1898-99.

*i* Coal houses, seal islands, 1896.

*j* Estimated.

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APPENDIX B.

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PROBABLE INCREASE OF THE PRIBILOF FUR-SEAL HERD IN  
CASE THERE BE A TOTAL CESSATION OF PELAGIC  
SEALING AND A RATIONAL LAND KILLING.

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COMPUTATION BY

WALTER I. LEMBKEY,

Chief Agent in Charge of the Seal Fisheries.

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PROBABLE INCREASE OF THE PRIBILOF FUR-SEAL HERD IN CASE  
THERE BE A TOTAL CESSATION OF PELAGIC SEALING AND A  
RATIONAL LAND KILLING.

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DEPARTMENT OF COMMERCE AND LABOR,  
ALASKAN FUR-SEAL FISHERIES,  
*Washington, April 23, 1906.*

SIR: I have respectfully to state that I have been requested orally to make a computation of the number of fur seals that would be present on the Pribilof Islands during the next few years, provided a total cessation of pelagic sealing were accomplished; also the number of skins that might, under safe management, be taken therefrom for commercial purposes after an ample provision of young males had been made for breeders.

In compliance with this request I have prepared a series of calculations designed to show the effect of a cessation of pelagic sealing on all classes of animals composing the herd from the present time to 1915, and the number of bulls required during that time at a normal ratio to serve the cows.

These calculations are in the form of tables, and consist of the following:

Table 1. Number of females present in 1905 and prospective number each year from 1906 to 1915.

Table 2. Number of cows to be supplied with bulls each year during this period.

Table 3. Number of bulls necessary each year to supply these cows, at an estimated normal ratio of 1 to 30.

Table 4. Number of bulls which would be present each year should no land killing be allowed.

Table 5. Number of bulls present each year, while allowing a rational land killing of bachelors.

ONLY AN ESTIMATE.

Before entering into details I desire to emphasize the fact that these tables are mere estimates, and are submitted as such and nothing more. Prognostications of future events are guesses at best, and are always subject to revision in the light of unforeseen conditions. In the case of the fur seals—animals absent in the vastness of the ocean for half the year, exposed to unknown enemies and unascertained conditions—it is next to impossible to gather enough knowledge of their surroundings during their period of migration to arrive at a correct estimate of their increase or diminution. It is possible only to take such facts as have been ascertained by experience to have application while these animals are on land, and from these to construct an estimate as to their increase, or the contrary.

## DEATH RATE.

What the death rate among seals really is, under normal conditions, is not known. We know what the decrease in seal life has been for years past under the combined influences of sea killing and natural mortality, but it is obviously not susceptible of ascertainment what the death rate would have been with no pelagic sealing and had the animals been exposed only to those influences which would prey upon them in an absolute state of nature.

By analogy we know that the death rate in large cities in the United States among human beings is in the neighborhood of 2 per cent. We know also that among seals the death rate must be greater, as their struggle for existence is much more severe, and as they are exposed to the full force of natural conditions not met with by civilized man. We know, further, by the recuperation of the seal herd on the Pribilofs after 1835, and by the history of seal life on Robben Island, the Galapagos Islands, the islands near Cape Horn, and in other localities, that if seals are left undisturbed by man they will increase rapidly until they reach the point of natural equilibrium. From all this we must conclude that the normal death rate is far below the rate of natural increase. The exact measure of that rate, however, remains undetermined.

For the purpose of compiling these tables, an arbitrary death rate of 10 per cent has been adopted for all seals above the class of new-born pups. While it is assured that the death rate among certain classes, notably adult bulls, must be greater than that among the young and vigorous bachelors and half bulls, yet it would be manifestly impossible, in an effort of this kind, to differentiate between the various rates of death in the several classes. An average annual death rate of 10 per cent among seals 1 year of age and over has therefore been adopted, in the belief that it represents a fair average and is yet conservative enough to relieve the following estimates of any charge that they are in error in allowing a greater increase than might rationally be expected.

## DEATH RATE AMONG PUPS.

As the result of observations on the islands during a number of years, it is believed that a much greater mortality occurs among new-born pups during their first migration from the islands than among all other classes of seals. This is due to their extreme youth, their immaturity and lack of previous experience, and their inability at first to seek food in the water. A death rate of 50 per cent among this class, from the time they leave the islands as gray pups until they return the following year as "yearlings," has been allowed by students of the question, and has, accordingly, been used in these computations.

## BREEDING FEMALES MEASURE THE INCREASE.

The number of breeding females in the herd measures its producing capacity. Their increase, therefore, is the most important factor in the replenishing of the rookeries. Heretofore they have been preyed upon by pelagic sealers as well as by their natural enemies, and their destruction, together with that of their young, by these agencies has resulted in the gradual lessening of the herd to its present attenuated



form. A complete stoppage of deep-sea killing will relieve the females of their most potent enemy, and an increase in the herd will of necessity occur. In view of their importance, the matter of the increase of the females has been dealt with first.

#### BASIS OF COMPUTATION.

The basis of computation is the number of females ascertained, by the best methods obtainable, to be present on the islands in 1905.

It must be observed that the female fur seal begins to breed in her second year, and annually thereafter brings forth one pup. As a barren female is a great rarity on the islands, it is conceded that practically all females above the age of 2 years bear young.

Table 1, therefore, is constructed on the hypotheses that a 10 per cent death rate per annum occurs among females 1 year old or over; that all females above 2 years old produce one young annually; that these young are evenly divided as regards sex, and that a mortality of 50 per cent among these young occurs during their first migration.

#### NUMBER OF FEMALES IN 1906.

In 1905 there were found to be on the islands approximately 78,000 adult breeding cows, 14,000 2-year-old (virgin) cows, 18,000 yearling cows, and 39,000 new-born female pups.

Should pelagic sealing be abolished these animals would appear in 1906 with a loss of 50 per cent among the pups and a 10 per cent loss among the other classes. The 2-year-old cows, having been impregnated in 1905 for the first time, would have their first pups in 1906 and be then classed among the breeders.

To determine the number of breeding females in 1906, therefore, the 78,000 adult cows and the 14,000 2-year-old cows of 1905 are added together and a 10 per cent reduction made for mortality from natural causes. This computation gives us 82,800 breeding females for 1906. The 18,000 yearling cows of 1905, after allowing a 10 per cent mortality, would return to the islands in 1906 as 2-year-olds to the number of 16,200. The 39,000 female pups of 1905, after suffering a 50 per cent mortality in their first migration, would furnish 19,500 yearling females in 1906. As there are 82,800 breeding females in 1906, there would also be the same number of pups, of which 41,400 would be females.

#### NUMBER OF FEMALES, 1907 TO 1915.

In 1907 the 82,800 adult females of 1906 added to the 16,200 2-year-old cows of that year would, with a 10 per cent mortality, give 89,100 adult cows in 1907. The 19,500 yearling cows of 1906, suffering a 10 per cent mortality, would give 17,550 2-year-old cows in 1907. The 41,400 female pups, after withstanding a mortality of 50 per cent, would give 20,700 yearling cows for 1907. In the year 1907 44,550 female pups would be born.

In 1908, by the same methods of computation, allowing the same deductions for mortality, there would exist 95,985 adult cows, 18,630 2-year-old cows, 22,275 yearling cows, and 47,992 female pups.

In 1909 there would be present 103,154 adult cows, 20,048 2-year-old cows, 23,996 yearling cows, and 51,577 female pups.

In 1910 there would be present 110,882 adult cows, 21,596 2-year-old cows, 25,788 yearling cows, and 55,441 female pups.

In 1911 there would be 119,231 adult cows, 23,210 2-year-old cows, 27,720 yearling cows, and 59,615 female pups.

In 1912 there would be 128,197 adult cows, 24,948 2-year-old cows, 29,807 yearling cows, and 64,098 female pups.

In 1913 there would be 137,831 adult cows, 26,827 2-year-old cows, 32,049 yearling cows, and 68,915 female pups.

In 1914 there would be 148,193 adult cows, 28,845 2-year-old cows, 34,457 yearling cows, and 74,096 female pups.

In 1915 there would be 159,335 adult cows, 31,012 2-year-old cows, 37,048 yearling cows, and 79,667 female pups.

By the use of this method it can be seen that the breeding females, when suffering only from mortality from natural causes, will increase in the ten years covered by the period from 1905 to 1915 from 78,000 to 159,335, a gain of over 100 per cent. Indeed, having in mind the experience of the seals on Robben Island, where, after practical extermination in 1853-54, they are stated to have repleted their breeding grounds by 1869, during a period of only fourteen years of complete rest (Stejneger, Report Fur-Seal Investigation Commission, pt. 4, p. 73), it is believed that the foregoing estimate is too conservative to show the actual increase that would occur on the cessation of pelagic sealing. By erring in this matter, however, on the ground of too great conservatism, we at least make sure of the increase here claimed.

The number of females to be supplied with bulls in any given year consists of the adult females, as well as the virgin or 2-year-old cows coming on the rookeries for their initial impregnation. Using the computations in Table I (p. 58) as a basis, the numbers of females requiring bulls each year during the period in question will be as follows:

1905.....	92,000	1909.....	123,202	1913.....	164,658
1906.....	99,000	1910.....	132,478	1914.....	177,038
1907.....	106,650	1911.....	142,441	1915.....	190,347
1908.....	114,615	1912.....	153,145		

#### NUMBER OF BULLS REQUIRED TO SERVE FEMALES.

In the investigations of the Jordan Commission in 1896-97 the number of bulls actually engaged with cows was found to bear the relation to the females of 1 to 30—that is to say, each bull with cows was found to have on the average 30 cows in his harem. At that time there were thousands of idle and vicious bulls hanging around the mass of breeding cows unable to obtain consorts, but watching every chance to oust a harem master and take possession of his harem. An average harem, therefore, of 1 bull to 30 cows is considered a rational and natural allotment.

Applying this ratio of 1 bull to 30 cows to the breeding cows which are shown by the foregoing estimate to be present on the islands during the next ten years the number of bulls to be required for service will be as follows:

1905.....	3,066	1909.....	4,106	1913.....	5,488
1906.....	3,300	1910.....	4,415	1914.....	5,901
1907.....	3,555	1911.....	4,748	1915.....	6,345
1908.....	3,820	1912.....	5,104		

## NUMBER OF BULLS THAT WILL BE PRESENT.

It will next be necessary to compute the number of bulls that will be present on the islands during the period in question in the case of an entire cessation of pelagic sealing. Should the latter object be accomplished it would result in a greatly increased number of cows on the islands, and measures would have to be taken to so regulate the killing of bachelors on land as to provide the necessary number of bulls for this additional number of females.

It can be shown, however, that these measures can be put into effect without an entire cessation of land killing during any one year. It must be remembered that the effect of a reservation of young males can not at once be realized in an increase in bulls. A bull must be at least 6 years old—and should be 7 years old—before he can establish a holding on a rookery and act as a fully equipped rookery male. Previous to that time, while it has the capacity to serve females, a male lacks the stamina and courage necessary to hold a position on a rookery against all comers. If, for example, a number of 3-year-old males should be reserved for breeding purposes in 1906, at least three years, and probably four years, must elapse before their presence would be noted on the rookeries. The full effect of a reservation of males for breeding, therefore, can not be fully felt until four years thereafter.

The reservation, in 1904, of 1,000 2-year-old bachelors and 1,000 3-year-old bachelors will not be apparent on the rookeries until 1907, when the 1,000 3-year-olds released in the year mentioned will appear on the flanks of the breeding herd as 6-year-old half bulls. In 1908 they will be full-grown bulls, and those of them that have escaped the effects of pelagic sealing and mortality from natural causes will in that year be active harem masters. The 2-year-olds, 1,000 in number, reserved in 1904, will be 6-year-olds in 1908, and in the following year (1909) will become full rookery bulls.

It is perfectly obvious that this increase can not be expedited by the immunizing from slaughter of a greater number of young males than would be required by the cows. If the herd's entire yield of young males were released in any given year, it would require from three to four years for them to mature, precisely as it would in the case of the reservation of a limited number. The entire yield of a year, if reserved, would result four years thereafter in flooding the rookeries with a great mass of bulls, only a few of which would be required. The residue would represent merely economic waste, as their presence would be useless to the breeding females and their skins valueless for commercial purposes. They would be a source of danger alike to the herd and to its observers. The same object could be accomplished by the releasing of such number only as would be estimated to be required (with a safe margin for contingencies) and by killing the residue for skins at a time when such skins are commercially valuable.

In order to ascertain what effect a total cessation of killing on land for a period of ten years would have on the bachelor herd, I have constructed a table showing the approximate number of male seals of all ages, from pups to full-grown bulls, that would frequent the islands from 1905 to 1915, with no land killing whatsoever.

It may as well be stated in advance that this table shows beyond doubt the folly of a total cessation of killing. While the increase in bulls from bachelors released in 1905 will not be felt until the year 1909, from that time on their numbers would increase so rapidly as to incumber the rookeries with thousands of belligerent bulls for which there would be no cows.

#### ESTIMATE OF BULLS WITH STOPPAGE OF LAND KILLING.

In 1905 there were 1,899 adult bulls on the rookeries, with 1,535 half bulls between the ages of 4 and 7 years. There were, in addition, approximately 1,980 3-year-olds, 7,200 2-year-olds, 18,896 yearling bachelors, and 39,000 male new-born pups. The tables of increase in male life are constructed upon this basis.

It has been mentioned that any reservation of young male life will not reach the rookeries until the expiration of the period necessary for them to grow into adult males. With this understanding, it can be seen that a reservation of 3-year-olds will not reach the rookeries until 1909.

During this interval between 1905 and 1909 the bulls already on the rookeries could look for recruits only from the 1,535 half bulls of 1905 and from the 2,000 bachelors released for breeding purposes in 1904 and 1905 in the proportion of 1,000 3-year-olds and 1,000 2-year-olds in each year. The 3-year-olds of 1904 would reach the full adult stage in 1908, although, as stated, many of them undoubtedly would serve cows in 1907. From these half bulls, and from the reservations of young males already mentioned, we might expect, in the contingency of a cessation of deep-sea killing, to have the supply of adult bulls maintained at its present status, but not increased during the interval between 1905 and 1909. While a slight increase in bulls might occur during this interval as the result of the reservations for breeding, it is not wise to hope for more than a maintenance of the herd of bulls in its present numbers until 1909.

With these preliminary statements it will be necessary to go back to the year 1905 and trace, step by step, the bachelors of that and the succeeding years to their arrival at the stage of breeding bulls.

Allowing a deduction for natural mortality, it can be readily seen that the 3-year-olds of 1905 will be the 4-year-olds of 1906, and so on in the cases of the 2-year-olds, yearlings, and nursing pups. That mortality, as already stated, has been estimated at 10 per cent in the cases of all classes of animals except new-born pups, which are believed to suffer a mortality of 50 per cent during the migration preceding their return to the islands as yearlings.

With the application of this death rate, the young males of 1905 would return in 1906 in the following numbers:

Bulls .....	1,899	4-year-old males...	1,782	1-year-old males...	19,500
6-year-old males...	0	3-year-old males...	6,480	Male pups .....	41,400
5-year-old males...	0	2-year-old males...	17,007		

The birth rate for 1906 was previously determined at 82,800 pups, of which half, or 41,400, would be males. The birth rate for each year is added in these tables as it was found to exist in the table of breeding cows.



The males of 1906 would appear in 1907 in the following numbers, with the application of the death rate mentioned:

Bulls .....	1, 899	4-year-old males...	5, 832	1-year-old males...	20, 700
6-year-old males...	0	3-year-old males...	15, 307	Male pups .....	44, 550
5-year-old males...	1, 604	2-year-old males...	17, 550		

In 1908 there would be the following:

Bulls .....	1, 899	4-year-old males...	13, 777	1-year-old males...	22, 275
6-year-old males...	1, 444	3-year-old males...	15, 795	Male pups .....	47, 992
5-year-old males...	5, 249	2-year-old males...	18, 630		

We can see that, up to this time, no accessions to the class of breeding bulls have been received from the young males released in 1905. The next year (1909) will show the first graduates into the adult male class.

Bulls, old.....	1, 899	5-year-old males...	12, 400	2-year-old males...	20, 048
Bulls, new.....	1, 300	4-year-old males...	14, 216	1-year-old males...	23, 996
6-year-old males...	4, 725	3-year-old males...	16, 767	Male pups .....	51, 577

In the "new bulls" of this year we see the 1,444 6-year-olds of 1908. This is the 3-year-old class of 1905. The 4,725 6-year-olds of this year were the 7,200 2-year-olds of 1905. From this point on the increase in bulls will be rapid, and so large as to make investigation of the rookeries a serious and difficult matter.

Following is shown the number of males that will be present in 1910:

Bulls, old.....	2, 790	5-year-old males...	12, 795	2-year-old males...	21, 597
Bulls, new.....	4, 253	4-year-old males...	15, 091	1-year-old males...	25, 788
6-year-old males...	11, 160	3-year-old males...	18, 044	Male pups .....	55, 441

In 1911 there will be a much greater increase in breeding bulls, as will be shown by the following:

Bulls, old.....	6, 339	5-year-old males...	13, 582	2-year-old males...	23, 210
Bulls, new.....	10, 044	4-year-old males...	16, 240	1-year-old males...	27, 720
6-year-old males...	11, 516	3-year-old males...	19, 438	Male pups .....	59, 615

In the new bulls of 1911, we find the new-born pups of 1905, which have come up through successive stages without suffering any loss from land killing. The influx of over 10,000 bulls on the rookeries in one year changes the status of affairs there in that limited time from a practically normal condition to one of a large surplus of adult male life. From now on the increase in males will be all out of proportion to the needs of the herd.

The number that will be present in 1912 follows:

Bulls, old.....	14, 734	5-year-old males...	14, 616	2-year-old males...	24, 948
Bulls, new.....	10, 365	4-year-old males...	17, 495	1-year-old males...	29, 807
6-year-old males...	12, 224	3-year-old males...	20, 889	Male pups .....	64, 098

As shown by the above figures we have in 1912 over 25,000 bulls. A reference to the table of the increase in cows (Table 1, p. 58) shows that of these only 5,104 would be required. The difference, 20,000, would be a surplus. As these bulls were killable 2-year-olds in 1907, this surplus represents a waste of male life which at once demonstrates the absurdity of a total cessation of killing in 1907.

This number of bulls is further increased in the following three years to a number so absolutely out of proportion to the size of the herd of cows as to need no special comment. The surplus in these



years represents the killable 2-year-olds of 1908, 1909, and 1910, respectively.

	1913	1914	1915		1913	1914	1915
Bulls, old .....	22,590	30,233	38,600	3-year-old males.....	22,454	24,145	25,961
Bulls, new .....	10,002	11,810	12,755	2-year-old males.....	26,827	28,845	31,012
6-year-old males .....	13,155	14,172	15,229	1-year-old males.....	32,049	34,457	37,048
5-year-old males .....	15,746	16,921	18,189	Male pups.....	68,915	74,096	79,667
4-year-old males .....	18,801	20,209	21,731				

The result of the suspension of killings on land during the years 1909, 1910, and 1911 is here seen by the presence on the rookeries in 1913, 1914, and 1915, respectively, of 32,592, 42,073, and 51,355 bulls, an estimated proportion of bulls to cows of from 1 to 5 to 1 to 3. In actuality but a small percentage of these bulls will have cows, and the remainder would constitute a dense fringe of savage, idle bulls around the breeding mass, destructive alike to each other and to the cows and an absolute bar to careful enumeration of the herd.

#### TRADE CONDITIONS AN ELEMENT.

Unlike gold and gems, there is no intrinsic value in sealskins. Their present value is the result solely of their arbitrary selection by the makers of the world's fashions as the popular and correct fur. The persons who fix these fashions find their livelihood in the sale of the garments which they make popular. It is obvious that no fur will be held popular if it is not produced in sufficient quantity to supply the demands of the trade and to insure an adequate return for the trouble and expense necessary to place it in general demand. It is also obvious that should the supply of sealskins fail another fur would at once be popularized and the sealskin would be relegated to the class of cheap furs to which at one time it belonged.

This contingency would have a direct bearing at once upon both the lessee and the lessor (the Government) of the sealing right. The lessee would be vitally affected by the great decrease in the market or selling price of its skins, in addition to suffering the loss incident to a total stoppage of its profits in the years during which it had no sealskins to sell. The amount which the lessee now stands obligated to pay the Government for each skin (\$10.22½) is predicated entirely upon a high market value and the maintenance of that value during the period of the lease. To destroy the supply of sealskins is to destroy the high market value which the sealskin now enjoys, and its destruction entails the inability of the lessee to pay the present royalty on each skin shipped when killing is resumed and when enough skins are again taken to supply the market. The lessee in this event could afford to ship no skins from the islands, and the Government would lose the amount of its royalties on the skins and be left with the skins on its hands.

To prove that sealskins have no intrinsic value and were to be bought in former years for little or nothing, it is only necessary to state that in 1870, the opening year of the first lease, the skins brought only about \$5 each. In the sixties they are stated to have brought in China only about \$2.50. Their present average market value is about \$37.

Previous to 1870 the world's supply of sealskins was precarious and irregular, and the fur occupied a minor position in fashionable use. After the lease in 1870 to the Alaska Commercial Company, by judicious manipulation and the assurance of a steady annual yield the fur was standardized as a fashionable article both in Europe and in this country, and has held that position since.

#### TOTAL CESSATION OF LAND KILLING UNNECESSARY.

Having shown the lack of wisdom in preserving all the males on the islands during any given period, and the injury which will be wrought, by a cessation of killing, to the market for sealskins, affecting alike the lessee and the Government, as well as to the herd itself, it can be demonstrated easily that more than an ample supply of breeding bulls can be allowed the herd with a contemporaneous judicious killing of a certain number of surplus young males. For this purpose another series of computations has been made, using, as heretofore, the number of male seals of all classes found present in 1905, and following then year by year to 1915, allowing, as in former computations, a 50 per cent death rate in new-born pups and a 10 per cent death rate in all other classes of seals.

#### NUMBER OF MALES IN 1905.

In 1905, as stated before, there were found 1,980 3-year-old bachelors, 7,200 2-year-old bachelors, 18,896 yearling bachelors, and 39,000 male pups, in addition to 1,899 bulls and 1,535 half bulls between the ages of 4 and 6 years. The problem is now to allow an ample supply of bulls without cutting off entirely the shipment of skins from the islands. It has been shown that any killable 3-year-olds released in 1905 would not mature into breeding bulls until 1909. This is inevitable. No amount of abstention from killing will hasten the maturity of these animals. When the males released in 1905, however, once reach the breeding grounds, they will come in such numbers as to almost at once overstock the herd with bulls. By anticipating the volume of this surplus, or, in other words, by ascertaining as near as possible how many more bulls than are necessary for the herd would mature from a given year should all be allowed to reach maturity, a safe idea may be obtained of the number that may be killed that year.

#### NUMBER OF MALES IN 1906.

The number of males in 1905, above stated, with no pelagic killing, will bring to the islands in 1906, by the methods of computation outlined, the following numbers:

Bulls.....	1,899	5-year-olds.....	0	2-year-olds.....	17,007
Half bulls.....	0	4-year-olds.....	1,782	1-year-olds.....	19,500
6-year-olds.....	0	3-year-olds.....	6,480	Male pups.....	41,400

The 1,980 3-year-olds of 1905 have passed into 1906 as 1,782 4-year-olds. The 7,200 2-year-olds of 1905 have passed into 1906 as 6,480 3-year-olds. In view of the deficiency in breeding bulls already existing, all of these 3-year-olds should go untouched by the club to act in future as breeders. The 18,896 yearlings of 1905 would produce 17,007

2-year-olds, however, and from these 10,000 safely could be killed for skins, leaving 7,007 surviving.

It must be said, however, that this killing must be conducted under strict regulation. To insure only 2-year-olds being taken, the killings should be under the personal direction of the Government agents, and a prohibition enforced against the shipment from the islands of skins weighing more than 7 pounds or less than 5 pounds.

#### NUMBER OF MALES IN 1907.

With this killing of 10,000 2-year-olds in 1906, and the application of the 10 per cent death rate to the remainder, there would be in 1907 the following:

Bulls .....	1, 889	4-year-olds.....	5, 832	1-year-olds.....	20, 000
6-year-olds.....	0	3-year-olds.....	6, 300	Male pups .....	44, 450
5-year-olds.....	1, 604	2-year-olds.....	17, 550		

Having allowed 6,480 3-year-old males to escape in 1906 for breeders, which is more than a sufficient number to be released each year, it is practicable to kill, in 1907, from the 6,300 3-year-olds of that year, 2,500, leaving 3,800 to serve as breeders. This can be accomplished by the adoption of a regulation prohibiting the shipment from the islands of skins weighing over 8½ pounds.

From the 17,550 2-year-olds, 10,000 can safely be killed, leaving 7,550 to represent the 3-year-old class the following year.

#### NUMBER OF MALES IN 1908.

With the killing of 10,000 2-year-olds and 2,500 3-year-olds in 1907, the number that would appear in 1908 would be as follows:

Bulls .....	1, 889	4-year-olds .....	3, 420	1-year-olds .....	22, 225
6-year-olds .....	1, 444	3-year-olds .....	6, 750	Male pups .....	47, 992
5-year-olds .....	5, 249	2-year-olds .....	18, 630		

From the 3-year-olds of this year 2,500 could be killed, leaving 4,250 to mature. From the 2-year-olds 10,000 could be taken, leaving 8,630, a total killing of 12,500 skins.

#### NUMBER OF MALES IN 1909.

There would appear in 1909 the following males:

Bulls, old.....	1, 889	5-year-olds .....	3, 078	2-year-olds .....	20, 003
Bulls, new.....	1, 300	4-year-olds .....	3, 725	1-year-olds .....	23, 996
6-year-olds .....	4, 725	3-year-olds .....	7, 767	Male pups .....	51, 577

We see here the first accession of bulls from the 3-year-olds remaining at the close of the season of 1905. The seals released under the first year of the so-called "new regulations," together with the stoppage of sea killing, are looked upon to at least preserve the herd of bulls without decrease. We have also in this year a splendid class of over 4,000 6-year-olds that will serve cows wherever they can obtain them.

From the 3-year-olds of this year 2,500 can safely be killed, leaving 5,267 to pass this stage for breeders. From the 20,000 2-year-olds 11,000 may be killed, leaving 9,000 for the 3-year-old class of the year following. This makes a total killing for this year of 13,500, an increase over the preceding year of 1,000.

## NUMBER OF MALES IN 1910.

In 1910 we would have the following:

Bulls, old	2,790	5-year-olds	3,353	2-year-olds	21,597
Bulls, new	4,253	4-year-olds	4,741	1-year-olds	25,788
6-year-olds	2,771	3-year-olds	8,103	Male pups	55,441

We have here an accession of over 4,000 bulls in one year. These are the 3-year-olds of 1906. In this one year the number of bulls received are sufficient to place the rookeries at once in a stable and normal condition as regards the proportion of bulls to cows. From this time on, with rational management of the killing on land and the continued abstention from sea killing, no scarcity of bulls will be encountered.

From the 8,100 3-year-olds present this year 3,500 may safely be killed, an increase of 1,000 in this class of skins over the preceding year. From the 21,500 2-year-olds 12,500 may be killed, an increase over the preceding year of 1,500. This would allow a total killing of 16,000.

## NUMBER OF MALES IN 1911.

In 1911 the number of male seals present on the islands would be as follows:

Bulls, old	6,339	5-year-olds	4,267	2-year-olds	23,210
Bulls, new	2,494	4-year-olds	4,143	1-year-olds	27,720
6-year-olds	3,018	3-year-olds	8,188	Male pups	59,615

In this year we would have a surplus of 4,000 adult bulls above the number necessary to fertilize the cows at a normal ratio of 1 to 30. From the 8,000 3-year-olds we could kill 3,500, the same as in the preceding year. From the 23,210 2-year-olds we could kill 13,000, an increase of 500 over the previous year. The quota of skins for this year would be 16,500.

## NUMBER OF MALES IN 1912.

In 1912 the following number of seals would appear:

Bulls, old	7,950	5-year-olds	3,729	2-year-olds	24,948
Bulls, new	2,717	4-year-olds	4,220	1-year-olds	29,807
6-year-olds	3,841	3-year-olds	9,189	Male pups	64,098

From the 9,189 3-year-olds of this year we could afford to kill 4,000, an increase in this class of skins of 500 over the preceding year, while from the 24,948 2-year-olds we would be justified in killing 14,000, an increase of 1,000 skins of this class over 1911, and a total quota of skins of 18,000.

## NUMBER OF MALES IN 1913.

The number of seals which would appear in 1913 under this arrangement of killing would be as follows:

Bulls, old	9,601	5-year-olds	3,798	2-year-olds	26,827
Bulls, new	3,457	4-year-olds	4,671	1-year-olds	32,049
6-year-olds	3,357	3-year-olds	8,854	Male pups	68,915

From these 3-year-olds 4,000 could be killed, as in the preceding year. From the 26,827 2-year-olds, however, 15,000 skins may be taken, an increase of 1,000 over the preceding year, and a total quota of skins of 19,000.



## NUMBER OF MALES IN 1914.

There would appear in 1914 the following number of male seals:

Bulls, old.....	11,753	5-year-olds.....	4,204	2-year-olds.....	28,845
Bulls, new.....	3,022	4-year-olds.....	3,369	1-year-olds.....	34,457
6-year-olds.....	3,419	3-year-olds.....	10,645	Male pups.....	74,096

The killing of 3-year-olds in this year can be increased from 4,000 to 4,500, while that of the 2-year-olds can be raised to 16,500, an increase of 1,500, giving a total quota of skins of 21,000.

## NUMBER OF MALES IN 1915.

In 1915, the last year covered by this computation, there would appear on the islands the following number of male seals:

Bulls, old.....	13,568	5-year-olds.....	3,033	2-year-olds.....	31,012
Bulls, new.....	3,078	4-year-olds.....	5,531	1-year-olds.....	37,048
6-year-olds.....	3,784	3-year-olds.....	11,111	Male pups.....	79,667

These final figures show that, with a gradually increasing annual catch of bachelors in the last ten years, during which a total of 162,000 skins would have been taken, the number of active bulls on the islands would be raised to 16,646, of which only 6,300 would be required at the ratio of 1 to 30. This would demonstrate the futility of any absolute suspension of killing, and shows that with proper management enough skins can be taken to net a profit both to the Government and the lessee, while the herd at the same time can be supplied with thousands of bulls more than are necessary. The management of killing along the lines indicated and the selection of the various classes of seals for killing are mere matters of detail and can be accomplished without difficulty or friction.

## RATE OF INCREASE CONSERVATIVE.

While the rate of increase shown by these computations insures a steady gain in the herd in the ten years in question, it is conservative enough to lead to the belief that, with pelagic sealing done away with, an even greater increase will be found. The history of Robben Island, in the Okhotsk Sea, shows that in the fourteen years from 1855 to 1869 that rookery, after practically having been wiped out by raiders, had reestablished itself in its original numbers. (Stejneger, Report Fur-Seal Investigation Commission, pt. 4, p. 73.) During this period it was disturbed neither by land killing of any description nor by pelagic hunters.

Our own Pribilof Islands furnish an instance of recuperation of their own, which, though lacking in actual details, is striking enough when one considers the net results. Owing to promiscuous and wanton killing on land in the years following the discovery of the islands, during which females as well as males are said to have been killed, the herd on the Pribilofs was reduced in 1835 to a number which analogy fixes very closely as the number apparent there at the present day. After that year (1835), however, closed seasons were enforced, reservations were made of males for breeders, and females were exempted from slaughter—at least by regulation, if not, in all cases, in actual practice. The result of these corrective measures, as shown by the incomplete records left by the Russians, was a gradual



increase in the number of skins taken until 1868. In the latter year alone, the first of the American occupation, over 248,000 skins were secured.

The Pribilof Island rookeries, therefore, practically increased their numbers to the point of greatest expansion in thirty-three years under the uncertain management of the Russians. What it will be under rational management, in the light of the knowledge gained since the American occupation, remains to be shown.

To sum up, it may be stated that the following main points are not susceptible of controversy:

First. That seals will not increase until pelagic sealing is abolished.

Second. That on the elimination of pelagic sealing they will increase at a comparatively rapid rate.

Third. That during this period of increase, judicious killing of surplus bachelors on the islands not only will work no injury to the herd, but will be a positive benefit in restraining the increase of the non-productive class, the surplus of which will constitute only a detriment and a menace to the breeding females and will add no additional lives to the herd.

Respectfully submitted.

WALTER I. LEMBKEY,  
*Agent in Charge of the Seal Fisheries.*

Hon. EDWIN W. SIMS,  
*Solicitor of the Department of Commerce and Labor.*

## ESTIMATED INCREASE IN SEALS ON PRIBILOF ISLANDS UPON CESSATION OF PELAGIC SEALING.

[Prepared by Walter I. Lembcke, agent in charge of the Alaskan Fur-Seal Fisheries, May 1, 1906.]

TABLE 1.—NUMBER OF FEMALES PRESENT IN 1905 AND PROSPECTIVE NUMBER EACH YEAR, 1906-1915.

Class.	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915
Adult cows.....	78,000	82,800	89,100	95,985	103,154	110,882	119,231	128,197	137,831	148,193	159,335
2-year-old (virgin) cows.....	14,000	16,200	17,550	18,680	20,045	21,506	23,210	24,918	26,827	28,845	31,012
Yearling cows.....	18,000	19,500	20,710	22,275	23,996	25,788	27,720	29,807	32,049	34,457	37,048
Female pups.....	39,000	41,400	44,550	47,992	51,577	55,441	59,615	64,098	68,915	74,096	79,667

TABLE 2.—NUMBER OF ADULT AND VIRGIN COWS TO BE SUPPLIED WITH BULLS, 1905-1915.

Cows.....	92,000	99,000	106,650	114,615	123,202	132,478	142,441	153,145	164,658	177,088	190,347
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TABLE 3.—NUMBER OF BULLS REQUIRED TO SERVE COWS, 1905-1915, AT ESTIMATED NORMAL RATIO OF 1 TO 30.

Bulls.....	3,066	3,300	3,555	3,820	4,106	4,415	4,748	5,104	5,488	5,901	6,345
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TABLE 4.—INCREASE IN MALES, WITH TOTAL CESSATION OF KILLING ON LAND AND SEA.

Bulls, old.....	1,889	(a)	(a)	(a)	{ 1,899	2,790	6,339	14,731	22,590	30,233	38,600
Bulls, new.....	1,535	(a)	(a)	(a)	{ 1,300	4,253	10,044	10,365	11,002	11,840	12,755
Half bulls.....											
6-year-old males.....		1,604	1,444	1,444	4,715	11,160	11,516	12,224	13,155	14,172	15,229
5-year-old males.....		5,852	5,219	5,219	12,400	12,795	13,382	14,616	15,716	16,921	18,189
4-year-old males.....		1,782	1,777	1,777	14,216	15,091	16,240	17,436	18,871	20,209	21,731
3-year-old males.....	1,980	6,489	15,307	15,753	16,767	18,014	19,438	20,889	22,451	24,145	25,961
2-year-old males.....	7,200	17,007	17,570	18,680	20,048	21,597	23,210	24,948	26,827	28,845	31,012
1-year-old males.....	18,896	19,500	20,700	22,275	23,996	25,788	27,720	29,807	32,049	34,457	37,048
Male pups.....	39,000	41,400	44,550	47,992	51,577	55,441	59,615	64,098	68,915	74,096	79,667

TABLE 5.—INCREASE IN MALES, WITH TOTAL CESSATION OF SEA KILLING, BUT WITH RATIONAL KILLING ON LAND.

Bulls, old.....	1,899	.....	.....	1,899	2,790	6,389	7,950	9,601	11,753	13,868
Bulls, new.....	.....	.....	.....	1,800	4,263	2,494	2,717	3,457	3,022	3,078
Half-bulls.....	1,535	.....	.....	.....	.....	.....	.....	.....	.....	.....
6-year-old males.....	.....	.....	1,444	4,725	2,771	3,018	3,811	3,357	3,419	3,784
5-year-old males.....	.....	1,604	5,249	3,078	3,353	4,267	3,729	3,798	4,201	3,033
4-year-old males.....	.....	5,852	3,420	3,725	4,741	4,143	4,250	4,671	3,369	5,531
3-year-old males.....	1,980	1,782	6,750	7,767	8,103	8,188	9,189	8,854	10,045	11,111
2-year-old males.....	7,200	6,400	17,550	20,003	21,597	23,210	24,948	26,827	28,845	31,012
1-year-old males.....	18,896	19,500	20,700	22,255	23,996	25,788	27,720	29,807	32,049	34,457
Male pups.....	39,000	41,400	44,450	47,992	51,577	59,615	64,098	68,915	74,096	79,667
Yield of skins:	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3-year-old males.....	.....	2,500	2,500	2,500	3,500	3,500	4,000	4,000	4,500	5,000
2-year-old males.....	.....	10,000	10,000	10,000	12,500	13,000	14,000	15,000	16,500	18,000
Total.....	.....	10,000	12,500	13,500	16,000	16,500	18,000	19,000	21,000	23,000

*a* During these years the rejections from the drives in the years 1904 and 1905, together with the saving in these two years of 4,000 choice male seals for breeders, and the 1,535 half bulls in existence, are expected to maintain the herd of breeding bulls at practically the same status as it was in 1905. No benefit from a reservation of 3-year-old batches in 1906 can be expected until 1910, as it takes four years for these animals to arrive at the 7-year or "active-bull" stage. Many of them at the age of 6 years, or in 1909, will serve the virgin cows.

























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