

Laaqudaġ: The Northern Fur Seal

GRADES 7-12 PART III: LESSONS 7-8

2018



Artwork by
Thomas Stream

Northern fur seal art

TS

Thomas Stream 2018

<p>NOAA Fisheries Alaska Fisheries Science Center Alaska Regional Office</p>	<p>Pribilof School District</p>	<p>Thalassa</p>	<p>Central Bering Sea Fishermen's Association</p>	<p>Aleut Community of St. Paul Island Tribal Government</p>	<p>National Marine Sanctuaries Foundation</p>
					

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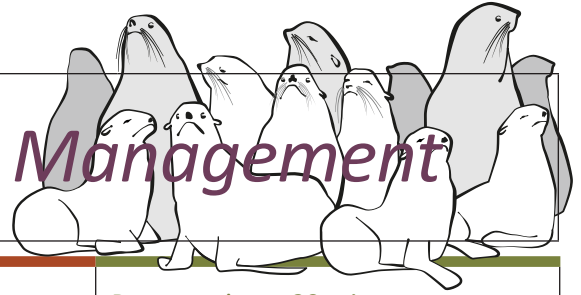
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LESSON SEVEN

Populations, Harvest, and Management



Subject Area(s): Life science	Grade Levels: 7-12	Presentation – 20 minutes Labs – variable
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Lab Topics:	Population estimation, harvest management, and historical timelines	Focus Questions	<ul style="list-style-type: none"> • How do scientists estimate fur seal populations? • What are the relationships between Pribilof Island historical events, fur seal population changes, and world history?
Learning Objectives:	Students will: <ul style="list-style-type: none"> • estimate populations • interpret historical events • analyze harvest and population data. 	Key words:	population estimation, population, harvest, population biology, population management, stakeholder, rate of decline

LESSONS		ALASKA STANDARDS					Minutes	Grades
		Math 7	Math 8	Math 7-12	Science	History		
Lab 7.1	Estimating a Population (math)	7.RP.1-3 7.SP1-2	8.SP.1	S-ID,S-IC A-CED.2	SA3,SE1,2 SF1,SG1-4		50	7-12
Lab 7.2	Mark-Recapture: How many pups? (math)	7.RP.1-3 7.SP1-2	8.SP.1	S-ID,S-IC A-CED.2			50	7-12
Lab 7.3	Analyze Pup Population Data: 1961-2016 (math)	7.RP.1-3 7.SP1-2	8.SP.1	A-CED.2 S-ID,S-IC			50	9-12
Lab 7.4	Compare Historical Timelines (history, writing, discussion)					PPE2,5,7 IGCP2,5,8,8 CC1-4,7	50	7-12
Lab 7.5	Interpret Historical Images (history, writing, discussion)					PPE2,5,7 IGCP2,5,8,8 CC1-4,7	50	7-12
Lab 7.6	Analyze Fur Seal Harvest Data: 1817-2016 (math)	7.RP.1-3 7.SP1-2	8.SP.1	A-CED.2 S-ID,S-IC	SA3,SE1,2 SF1,SG1-4		20	9-12

Targeted Alaska Grade Level Expectations (GLEs)

Math

- RP** Ratios and Proportional Relationships
- SP** Statistics and Probability
- A-CED** Algebra-Creating Equations that Describe
- S-IC** Statistics-Inferences and Conclusions
- S-ID** Statistics-Interpreting Data

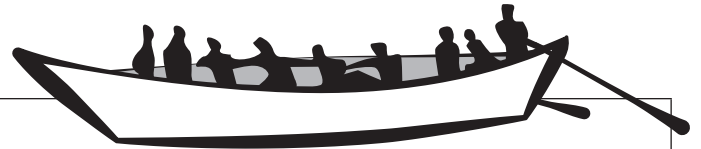
Science

- Science as Inquiry and Process**
SA3
- Science and Technology**
SE1; SE2
- Cultural, Social, Personal Perspectives, and Science**
SF1
- History and Nature of Science**
SG1; SG2; SG3; SG4

History

- People, Places, and Environment**
PPE2,5,7
- Consumption, Production, Distribution**
CC1-4,7
- Individual, Citizenship, Governance, Power**
IGCP2,5,8,8

LESSON EIGHT



Marine Mammal Protection Act

Subject Area(s): Life science,
history, cultural

Grade Levels: 7-12

Presentation – 20 minutes

Labs – variable

Lab Topics:	Marine Mammal Protection Act Subsistence hunting Treaty rights	Focus Questions	<ul style="list-style-type: none"> • What is the Marine Mammal Protection Act? • What were the unintended consequences of the MMPA? • How were the Makah and the Pribilof Islanders affected by the MMPA?
Learning Objectives:	Students will: <ul style="list-style-type: none"> • summarize the Marine Mammal Protection Act • compare and contrast the rights of Native American tribes in states other than Alaska and Alaska Natives. 	Key words:	Marine Mammal Protection Act, permit, waiver, treaty, subsistence

LABS		ALASKA STANDARDS			
		Science	History	Minutes	Grades
Lab 8.1	Marine Mammal Protection Act Summary (research, writing, interpretation)		CC1-4,7	50	9–12
Lab 8.2	MMPA: Unintended Consequences of a law (research, writing, interpretation)		CC1-4,7	50	9–12
Lab 8.3	MMPA Case Study: Gray Whales (research, writing, interpretation)		CC1-4,7	50	9–12
Lab 8.4	MMPA Case Study: Northern Fur Seals (research, writing, interpretation)		CC1-4,7	50	9-12
Lab 8.5	MMPA Comparative Analysis: Makah and Pribilof Islanders (research, writing, interpretation)		CC1-4,7	50	9-12

Targeted Alaska Grade Level Expectations (GLEs)

American History

Individual, Citizenship, Governance, Power Continuity and Change (CC)

The student demonstrates an understanding of the chronology of Alaska history by:

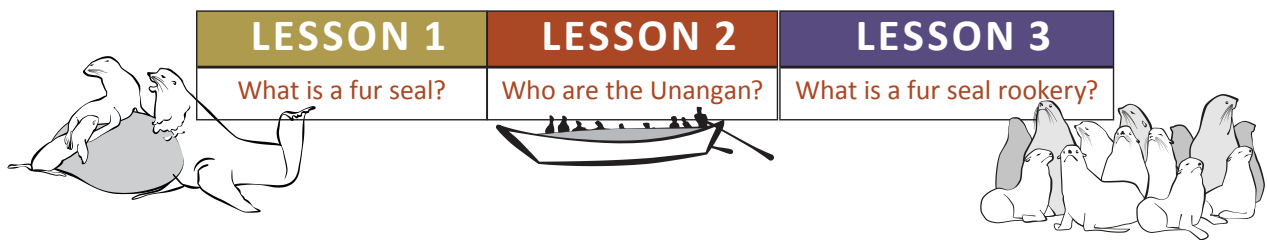
CC 1; CC 2; CC 3; CC 4; CC 7

Introduction

Northern fur seals have played an important economic and biological role in the history of Alaska and the United States that is often overlooked. Historically, Alaska was home to over 90% of the world's population of northern fur seals with the majority found on the Pribilof Islands in the Bering Sea. The Unangan (Aleut people) have inhabited Alaska's Aleutian Islands for thousands of years, and their history is intertwined with that of the commercial fur harvest, as forced labor first for Russians and later for Americans. It is a little-known fact that in the twenty years following the United States' 1867 acquisition of the Alaska territory, revenues to the United States Government from the Pribilof Island fur seal harvest paid off the 7.2 million dollar purchase price.

The term **Aleut** is the Russian word used historically for the people of the Aleutian Islands. Today, people of this region use the words **Unangan** (Eastern dialect) and **Unangas** (Western dialect) to refer to the Aleut people. In this curriculum, we use the term **Unangan** when appropriate.

Part I: Marine Mammal Review



Part II: More In-Depth Biological Information



Part III: Population Estimation, Management, and Policy



Goal

The goal of this integrated curriculum is to increase knowledge of northern fur seals and the Unangan through lessons and activities designed for varying grade levels and teachers with little or no background knowledge. Science, math, language arts, culture, and art have been integrated into lessons that can be adjusted for grades 7-12. Teachers with multi-grade classes have the choice to teach the same material at many levels and provide opportunities for older students to work with younger students, encouraging community teaching. The curriculum is designed as a spiral curriculum, where the same content can be revisited over several grades, each time at a higher level of difficulty and in greater depth.

Parts I, II, and III of this curriculum accomplish the following objectives:

- Review the story of the annual cycle of northern fur seals,
- Review the core concepts in fur seal biology,
- Review the relationship between northern fur seals and Unangan culture,
- Introduce methods behind population estimation,
- Understand the reasons for and consequences of the Marine Mammal Protection Act,
- Develop awareness of the science and research techniques used to study northern fur seals.

CURRICULUM FRAMEWORK

The curriculum is divided into Part I (Lessons 1-3), Part II (Lessons 4-6), and Part III (Lessons 7-8), each with a PowerPoint presentation and accompanying activities for different grade levels. A complementary curriculum is available for grades K-6. The labs are designed to reinforce and expand the lesson themes, and to provide hands-on opportunities for students to investigate and integrate the information they have learned.

Part I Lessons

1 What is a fur seal?

2 Who are the Unangan?

3 What is a fur seal rookery?

Part II Lessons

4 What do fur seals eat?

5 How do fur seals dive?

6 Where do fur seals go in the winter?

Part III Lessons

7 Populations, Harvest, and Management

8 Marine Mammal Protection Act

Lessons 1, 2, and 3 provide the foundation for the curriculum. It is strongly suggested that teachers at least review the information in these lessons before proceeding. Lesson 4-6 can be taught in any order. Lessons 7 and 8 are the most advanced. They introduce population dynamics, management techniques, and the Marine Mammal Protection Act. Lessons 7 and 8 can be taught independently of the other lessons but some background information is recommended. Labs are structured to take one class period of 45-55 minutes. Some shorter labs take half a class period (30) minutes.

See Appendix III for a complete curriculum overview and Appendix IV for lesson overviews from Parts II and III.

The curriculum is designed to be flexible enough that teachers can pick and choose the order of lessons and activities within a lesson based on their students' grade level and prior knowledge.

HOW DOES THIS MATERIAL FIT THE ALASKA STATE EDUCATIONAL STANDARDS?

This curriculum has been specifically designed to meet Alaska State Standards for science, math, reading, writing, history, and cultural standards.

WHAT ARE ASSESSMENT METHODS?

Assessment methods vary with each lesson and lab; any of these methods can be given a point value and entered into a grade book. Methods include:

- Pre and Post test
- Visual representations
- Data analysis
- Geographical display (maps)
- Summary of observations using technical writing
- Verbal presentations
- Creative writing
- Visual arts

HOW MUCH TIME DO I NEED?

Each lesson can be completed in 40-60 minutes if at least one lab is selected. Labs range from 10-50 minutes with most being 50 minutes.

CULMINATING PROJECT IDEAS:

Consider choosing a culminating project that summarizes the knowledge gained from the unit, and making it a project that the class works on each week, individually or as a whole. Examples of culminating projects include:

- Teach what you have learned to someone else (family, another class).
- Create a school display.
- Create an all-school mural using the stamps created in Lab 3.4. This is a great opportunity for older students to work with younger students or earn community service hours.
- Write a song, skit or a play about a northern fur seal rookery or migration and act it out for students at your school.
- Make an educational video about something you learned.
- Record an elder telling a story. Ask for permission to share it with your class or school.
- Hold a debate on the Marine Mammal Protection Act.
- Visit the Pribilof Islands for summer camp.
- Write a letter to your Congressional representative.

Northern Fur Seal Curriculum Overview Part III

Lesson	Topic	Components	Grade Level	Time
<i>Labs vary by grade level allowing educators to select age appropriate activities for their class.</i>				
	Part III Pre- and Post-assessment		7-12	15 min
7	Populations, Harvest, Management	PowerPoint Overview (13 slides) Lab 7.1: Estimating a Population (math) Lab 7.2: Mark-Recapture: How Many Pups? (math) Lab 7.3: Analyzing Pup Population Data: 1961-2016 (math) Lab 7.4: Compare Historical Timelines (history, writing, discussion) Lab 7.5: Interpret Historical Images (history, writing, discussion) Lab 7.6: Analyzing Fur Seal Harvest Data: 1817-2016 (math)	7-12 7-12 9-12 7-12 7-12 9-12	50 min 50 min 50 min 50 min 50 min 50 min
8	Marine Mammal Protection Act	PowerPoint Overview (22 slides) Lab 8.1 Marine Mammal Protection Act Summary (research, writing, interpretation) Lab 8.2 MMPA: Unintended Consequences of a Law (research, writing, interpretation) Lab 8.3 MMPA Case Study: Gray Whales (research, writing, interpretation) Lab 8.4 MMPA Case Study: Northern Fur Seals (research, writing, interpretation) Lab 8.5 MMPA Comparative Analysis: Makah/Pribilof Islanders (research, writing, interpretation)	9-12 9-12 9-12 9-12 9-12	50 min 50 min 50 min 50 min 50 min

PART-III: PRE/POST-ASSESSMENT

Student Name: _____ Date: _____

1. Why are northern fur seals still harvested today?

2. How do scientists estimate the size of the northern fur seal population?

3. What was the effect of pelagic sealing (harvesting fur seals at sea) on the northern fur seal population?

4. Why is it important to manage wild animal populations?

6. The Marine Mammal Protection Act was passed in 1972. Name two reasons why it was groundbreaking legislation.

7. How are the subsistence hunting rights of the Makah and the Pribilof Island Unangan affected by the MMPA? Compare and contrast the results.

TEACHER KEY PART-III: PRE/POST-ASSESSMENT

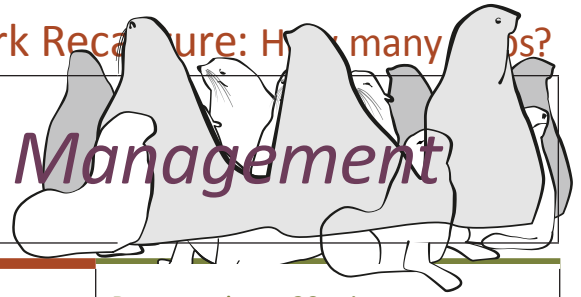
Lesson Student Name: _____ Date: _____

7	<p>1. Why are northern fur seals still harvested today?</p> <p>Northern fur seals are harvested for subsistence - they are an important component of the diet for Unangan living on the Pribilof Islands.</p>
7	<p>2. How do scientists estimate the size of the northern fur seal population?</p> <p>Count the adult breeding males on the rookery. Estimate the number of pups using mark-recapture technique Estimate the number of females based on the number of pups, assume one female per pup. Add them all up.</p>
7	<p>3. What was the effect of pelagic sealing (harvesting fur seals at sea) on the northern fur seal population?</p> <p>Pelagic sealing caused a decline in the northern fur seal population because:</p> <p>females were more likely to be harvested since they spend more time at sea during the breeding season, thus reducing the breeding population; for every female killed, two pups died (the pup she is currently nursing and the pup developing in her uterus) and all future pups of the female were lost to the population, further reducing the breeding stock; and many seals shot at sea sank before they could be retrieved.</p>
7	<p>4. Why is it important to manage wild animal populations?</p> <p>To prevent the population from going extinct. To sustainably manage the population and prevent overharvesting.</p>
	<p>5. What is the Marine Mammal Protection Act?</p> <p>A law to protect marine mammals and their environment, passed by Congress and signed by President Richard Nixon in 1972. Animals protected under this Act include whales, dolphins, porpoises, seals, sea lions, walruses, as well as other marine mammals.</p>
8	<p>6. The Marine Mammal Protection Act was passed in 1972. Name two or more reasons why it was groundbreaking legislation.</p> <p>It was the first ecosystem-based approach to legislation It addressed man's impact on populations. It protected harvested and non-harvested species.</p>
8	<p>7. How are the subsistence hunting rights of the Makah and the Pribilof Islands Unangan affected by the MMPA? Compare and contrast the results.</p> <p>In the 1920s the Makah voluntarily stopped hunting gray whales after commercial hunting greatly reduced the population. In 1994 the gray whale was removed from the Federal List of Endangered Wildlife. The Makah notified the U.S. Government of their intent to resume their treaty right and ancestral right to subsistence harvest gray whales. The U.S. Government allocated a harvest quota to the Makah and in 1999 one whale was harvested. In the meantime, a lawsuit was filed in 1997 to stop the subsistence harvest. A legal ruling was made in 1998 upholding the right of the Makah to subsistence harvest gray whales. The ruling was appealed and in 2000 the decision was reversed. Currently, NOAA is working with the Makah tribe to meet the requirements for harvest under set by the new legal decision.</p> <p>The Unangan of the Pribilof Islands have never been prevented from harvesting northern fur seals for subsistence use even when the population was depleted after the pelagic harvest. Currently, NOAA works with the Unangan tribal governments on St. Paul and St. George to co-manage the fur seal population and subsistence harvest.</p>

LESSON SEVEN

Mark Recapture: How many pups?

Populations, Harvest, and Management



Subject Area(s): Life science	Grade Levels: 7-12	Presentation – 20 minutes Labs – variable
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Lab Topics:	Population estimation, harvest management, and historical timelines	Focus Questions	<ul style="list-style-type: none"> • How do scientists estimate fur seal populations? • What are the relationships between Pribilof Island historical events, fur seal population changes, and world history?
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- RP** Ratios and Proportional Relationships
- SP** Statistics and Probability
- A-CED** Algebra-Creating Equations that Describe
- S-IC** Statistics-Inferences and Conclusions
- S-ID** Statistics-Interpreting Data

Science

- Science as Inquiry and Process**
SA3
- Science and Technology**
SE1; SE2
- Cultural, Social, Personal Perspectives, and Science**
SF1
- History and Nature of Science**
SG1; SG2; SG3; SG4

History

- People, Places, and Environment**
PPE2,5,7
- Consumption, Production, Distribution**
CC1-4,7
- Individual, Citizenship, Governance, Power**
IGCP2,5,8,8

Laaqudāx: The Northern Fur Seal

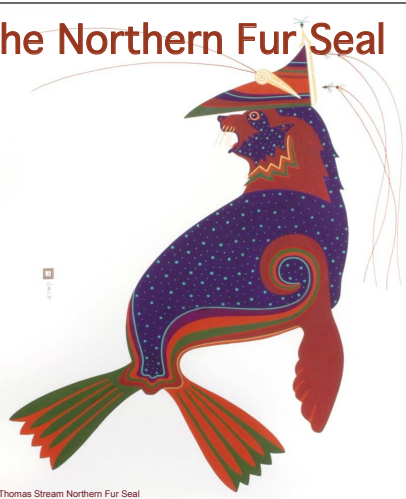
Laaqudāx: The Northern Fur Seal

Lesson 7:

*Populations,
harvest, and
management*



© Thomas Stream Northern Fur Seal



Lesson 7 PowerPoint gives a general overview of the history of the northern fur seal population and harvest, and how the population is managed.

Lesson topics



- What is population biology & management?
- Why is the fur seal population managed?
- How is the fur seal population managed?
- What is the history of the fur seal harvest on the Pribilof Islands?



Lesson 7: Populations, management, and harvest

1

Image by Henry Wood Elliott, 1896: Ketavie (now Kitovi) Rookery, St. Paul Island, July 17, 1872.

Pribilof Islands Preserving the Legacy; Image Gallery; Collection of Henry Wood Elliot Maps and Drawings, #93

ftp://ftp.library.noaa.gov/noaa_documents.lib/NOS/ORR/TM_NOS_ORR/TM_NOS-ORR_17/HTML/Pribilof_html/Pages/pribilof_image_gallery.htm

Populations



- **Population:** a group of organisms that live in the same place at the same time
- The northern fur seals that live on the Pribilof Islands make up a population
- The people who live on the Pribilof Islands make up a population



Lesson 7: Populations, management, and harvest

2

Individuals within a population share the same space, rely on the same resources, and are influenced by the same environmental conditions.

Populations can be studied at different scales. The population of the world is different than the population of St. Paul Island, but both are populations.

Scientists monitor the changes in populations over time to learn more about what influences that population. Having many data points or several years of data allows scientists to see trends (e.g., increasing, decreasing, or stable) and helps them make more informed decisions when managing a population.

Photo: NOAA Preserving the Legacy Gallery: Collection of Charles Howard Baltzo (U.S. Fish & Wildlife Service, 1960-1968)

ftp://ftp.library.noaa.gov/noaa_documents.lib/NOS/ORR/TM_NOS_ORR/TM_NOS-ORR_17/HTML/Pribilof_html/Pages/pribilof_image_gallery.htm

Population dynamics



- **Population Dynamics:** the study of long and short-term changes in the size and age composition of populations and the processes that influence the changes

- Scientists from around the world and members of the Pribilof communities study fur seals to learn about their population biology

Lesson 7: Populations, management, and harvest

3

The population dynamics of fur seals on the Pribilof Islands have been studied since the Russians arrived in 1787. In order to manage the harvest of a population you must first understand its biology or run the risk of exploiting the population to the point of extinction.

To fully understand a population you must have data on the following: death rate, birth rate, immigration, emigration, prey consumption and availability, habitat, and environmental influences.

Photo: NOAA Preserving the Legacy Gallery: Collection of Charles Howard Baltzo (U.S. Fish & Wildlife Service, 1960-1968)

Photo: NOAA Preserving the Legacy Gallery: Collection of Charles Howard Baltzo (U.S. Fish & Wildlife Service, 1960-1968)

ftp://ftp.library.noaa.gov/noaa_documents.lib/NOS/ORR/TM_NOS_ORR/TM_NOS-ORR_17/HTML/Pribilof_html/Pages/pribilof_image_gallery.htm

For hundreds of years humans have managed wild populations of animals (deer, elk, moose, bear, cougars, fish, ...). Populations are often managed through controlled hunting.

Two major reasons for managing a population:

1. Make sure the population is in balance with the ecosystem.
2. If a harvest occurs, make sure it is sustainable. Prevent the population from going extinct and prevent overpopulation.

The plots on this slide show the consistent decline in the pup population on the Pribilof Islands since the mid-1970s. Ideally, the first step in management is to estimate the size of the population. The fur seal population is calculated by estimating the number of pups and males and then extrapolating to calculate the number of females. Counting the number of pups born every two years is a critical part of management.

For most populations, it is virtually impossible to count every single member. Today, scientists estimate the population using a mark-recapture method. For northern fur seals, estimating the population is time consuming and expensive. The animals are constantly moving on the rookery, many of the juvenile males are not on the rookery, and females must leave every few days to feed.

The northern fur seal population is unique in that it was managed to maximize profits from the sale of seal pelts.

The Russians were the first to institute fur seal harvest management measures in 1806. The U.S. Government has been monitoring and managing the northern fur seal population on the Pribilof Islands since the purchase of Alaska in 1867. Until 1911, the harvest and population management was conducted by private companies under a leasing system with the U.S. Treasury Department. In 1911, the Secretary of Commerce and Labor assumed management of the fur seals. U.S. Government management continued until 1984. A subsistence only harvest was started in 1985 under a co-management agreement established between the U.S. Department of Commerce and the local Unangan leaders of St. Paul and St. George Island.

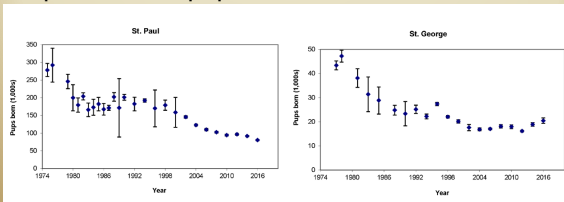
Source: <https://alaskafisheries.noaa.gov/pr/fur-seal>

Image Source: https://www.afsc.noaa.gov/nmml/PDF/NFurSealPupMem2016_Final.pdf

Why manage a population?



- To prevent extinction
- To prevent overpopulation



These plots show the number of fur seal pups born on St. Paul and St. George Islands since 1974. The bars around each dot are the error bars. The larger the error bars, the less accurate the number.

Lesson 7: Populations, management, and harvest

4

Why manage the fur seal population?



- Food: Unangan hunted seals for food and clothing
- Money: Russia and the U.S. managed the seal harvest to maximize profits from seal pelts
- Prevent Extinction: Today fur seals are co-managed to maintain a subsistence harvest and healthy population



Lesson 7: Populations, management, and harvest

5

The Unangan hunted marine mammals for subsistence purposes for thousands of years, but were forced to commercially harvest sea otters and fur seals for the Russians starting in the 1740s, and fur seals for the Americans after 1867. When subsistence hunting, the Unangan did not need to manage the fur seal population. They only took seals needed for food and clothing.

Subsistence hunting: hunting for the sake of survival rather than entertainment or monetary gain.

Commercial harvesting: to catch, shoot, trap, etc. (fish, or wild animals) usually in an intensive, systematic way as for commercial purposes.

The number of fur seals harvested was determined by Russian and American furriers and U.S. government employees. Harvests were conducted only for the furs. All meat was discarded. Only the Unangan ate the meat. It was not until the seals were commercially harvested for the fur trade that the population needed to be monitored and managed. The commercial harvest was managed to produce the maximum number of furs each year. Scheffer (1984) reports that by 1828 the Russians had harvested more than 3 million fur seals, approximately 71,000 per year or up to 5,000 per day. By the early 1900s the tax and lease revenue generated by the U.S. Government paid for the \$7.2 million purchase price of Alaska. Approximately 2.2 million seals were killed during the first 20 year lease alone. <https://alaskafisheries.noaa.gov/pr/fur-seal>

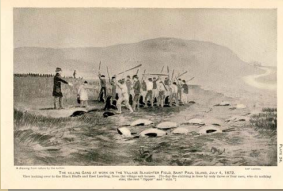
Preventing extinction is one of many reasons to manage harvested populations. Today almost all populations that are harvested or hunted are monitored by a local, state, or federal agency whether the take is for commercial purposes or for subsistence. The Unangan on St. Paul and St. George co-manage the annual subsistence take of juvenile males with the National Marine Fisheries Service. The Pribilof northern fur seal population was listed as depleted in June 1988 under the Marine Mammal Protection Act because the population had declined by more than 50% since the 1950s. The population is still listed as depleted in 2018. (NOAA Fisheries, Office of Protected Resources: <https://alaskafisheries.noaa.gov/pr/fur-seal>)

Image: Henry Wood Elliot, Report on the Seal Islands of Alaska, 1884.

History of U.S. harvest & management



- Commercial harvest of fur seals began in the 1780s
- Population estimate before harvest = several million
 - Exact numbers unknown
- Over the next 120 years, more than 7 million fur seals were harvested on the Pribilof Islands and at sea



Lesson 7: Populations, management, and harvest

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It is thought that the original population for northern fur seals, prior to 1786, was over 2-3 million animals.

Source: https://www.sararegistry.gc.ca/virtual_sara/files/cosewic/sr_northern_fur_seal_e.pdf

The 2016 population estimate for the Eastern Pacific stock is just over 530,000.

Source: NOAA-TM-AFSC-355, Muto, M. M., et al., http://www.nmfs.noaa.gov/pr/sars/pdf/stocks/alaska/2016/ak2016_northernfurseal-ep.pdf

Image: Henry Wood Elliott, 1884.

Consequences of Pelagic Harvest



- 1868-1910 pelagic sealing was allowed
- Pelagic harvest targeted females feeding at sea, with pups on the rookery
- Only 50% of seals killed at sea were retrieved whereas 100% of seals killed on land were retrieved and processed
- Harvesting females kills 3 seals
 - Female
 - Pup developing inside her
 - Nursing pup on the rookery



Lesson 7: Populations, management, and harvest

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Pelagic sealing = harvesting of seals at sea.

Pelagic sealing: In 43 years (1868-1911), 2 million seals were killed at sea; 50% were lost; 60-80% of the ones taken were females

Canada and Japan did most of the harvesting at sea, since only the U.S. and Russia could harvest seals on land

Source: Scheffer, 1984. History of Scientific Study and Management of the Alaska Fur Seal, 1786-1964.

Photo: NOAA Preserving the Legacy Gallery, Pelagic Sealing Vessels

History of Harvest & Management



- After just 43 years of U.S. harvest on land and at sea, the fur seal population declines to <200,000
- By 1910 the fur seal population was so low that the U.S. Government stepped in and took over management of the industry.



Lesson 7: Populations, management, and harvest

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The initial U.S. harvest of 1868 was between 240,000 and 300,000.

For the next 40 years of the northern fur seal harvest the U.S. Government leased the land based harvest rights to private companies with very little oversight or regulation.

The first 20 year lease (1870-1889) was awarded to the Alaska Commercial Company, a private fur trading company.

The second lease (1890-1910) went to The North American Commercial Company. From 1890-1911 the pelagic take exceeded the land take every year with the land take ranging from a high of 42,000 between 1890-1900 and declining to 20,000 between 1900-1910.

By 1910 the fur seal population had declined to just over 200,000.

Source: Scheffer, 1984. History of Scientific Study and Management of the Alaska Fur Seal, 1786-1964.

Photo: Fur seal pelt factory, St. George Island, Alaska. (ftp://ftp.library.noaa.gov/noaa_documents.lib/NOS/ORR/TM_NOS_ORR/TM_NOS-ORR_17/HTML/Pribilof_html/Pages/pribilof_image_gallery.htm)

History of Harvest & Management



- Fur Seal Treaty of 1911
 - Ended harvest at sea
 - First international agreement for the protection of wildlife
- 1911-1984 U.S. Government Managed Harvest
 - Sub-adult males harvested
 - Maximum harvest to sustain population
 - No pelagic harvest
- 1956-1963 Females harvested



Lesson 7: Populations, management, and harvest

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1911 Fur Seal Treaty ended the pelagic harvest. Takes harvest away from private companies. Harvest now managed by the U.S. Secretary of Commerce and Labor.

Countries signing the Fur Seal Treaty of 1911: US, Russia, Japan, Great Britain (signing for Canada).

Northern fur seal population slowly rebuilds from a low of 200,000 in 1911 to just under 3 millions in the 1940s.

The harvest of females from 1956-1963 and the lack of female pups being born is one of the reasons for the beginning of the decline in population from which the population has never recovered.

Source: York and Hartley, 1981. Pup Production Following Harvest of Female Northern Fur Seals.

Photo: (ftp://ftp.library.noaa.gov/noaa_documents.lib/NOS/ORR/TM_NOS_ORR/TM_NOS-ORR_17/HTML/Pribilof_html/Pages/pribilof_image_gallery.htm)

Commercial Harvest



- 1867-1984 5.6 million fur seals harvested
- 1970s Pressure from anti-fur groups forces the United States to end the commercial fur seal harvest
- 1972 last commercial harvest on St. George Island
- 1984 last commercial harvest on St. Paul Island



Lesson 7: Populations, management, and harvest

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China created the highest demands for furs in the 1800s. It is said that the Chinese perfected the technique used to remove the rough guard hairs from northern fur seal pelts. Very little is known about the process for removing the guard hairs.

Eventually, furs became very fashionable for European and American women as can be seen by the above advertisement from the Fouke Fur Company.

Image: Fouke Fur advertisement from Pribilof Islands: Preserving the legacy.

Subsistence Harvest: Then and Now



- Unangam subsistence harvest continues today



<http://aleutembroidery.blogspot.com/>



Kids learning how to butcher seal at Camp Quinayax in Unalaska. Photo courtesy of Gwinnangli. It be of Unalaska.



Lesson 7: Populations, management, and harvest

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Traditionally, the Unangan did not use northern fur seal fur for clothing. Due to the very moist environment of the Aleutian Islands, fur was not practical. Most of the waterproof clothing was created from the internal organs of marine mammals.

Before coming to the Pribilof Islands the Unangan ate a variety of marine mammals, birds, and fish. Once on the Pribilofs the Unangan had limited access to traditional foods. Northern fur seal became a staple in their diet.

Today the subsistence harvest is still conducted on both St. Paul and St. George Islands. Many members of the community depend on this source of protein to feed their families throughout the year.

Image Sources:

Two hunters in Kamleika (parkas): <http://aleutembroidery.blogspot.com/>

Fur seal harvest: V.B. Scheffer, NOAA Preserving the Legacy, Collection of Charles Howard Baltzo (U.S. Fish & Wildlife Service, 1960-1968), ftp://ftp.library.noaa.gov/noaa_documents.lib/NOS/ORR/TM_NOS_ORR/TM_NOS-ORR_17/HTML/Pribilof_html/Pages/pribilof_image_gallery.htm

Butchering seal: Aleut Pribilof Island Association Summer Camp: <http://americanindianinstitute.wordpress.com/2012/09/05/apia/>

Summary



Source – G. Dallas Hanna, The Alaska Fur-Seal Islands, and NFS Conservation Plan 2007

- Managing a population for optimal harvest is not easy
- Harvesting seals at sea (pelagic harvest) had a lasting impact on the population
 - Half of the seals killed at sea sank before being collected
 - Most of the seals taken at sea were females
- Harvesting females kills 3 seals
 - Female
 - Pup growing inside her
 - Nursing pup
- A small harvest of juvenile males does not harm the population



Image Source: NOAA/AFSC/MML

Estimating a Population

OBJECTIVE

Students will apply several methods of estimating a diverse population.

TIME REQUIRED

20 minutes

BACKGROUND

Estimating a population of animals is a difficult and challenging job. Animals are constantly moving, they blend in with their environment, many live at sea for long periods of time, and the population is constantly changing from births and deaths. Fur seals are no exception. There is never a time when all of the seals are on the rookery at the same time. Scientists do not calculate an exact population number. Instead, the population of fur seals is estimated every two years. Many different methods have been used over the years. Today, the northern fur seal population is estimated by counting pups and territorial adult males. From these numbers, an estimate of the whole population is calculated.

The exercise below will demonstrate how hard it is to estimate a population even when animals are not moving or blending in with their environment.

MATERIALS

- *Great Estimations* by Bruce Goldstone
- plastic sandwich bags
- 100 hazelnuts (male northern fur seals)
- 700 kidney beans (female northern fur seals)
- 1,000 adzuki beans (northern fur seal pups)
- 8 paper plates or trays
- Stop watch or watch with a second hand
- Worksheet 7.1.1

PREPARATION

This lab was designed for 4 groups of 4-6 students. If you have more than 16 students in your class we suggest that you make up more bags of beans.

Lab materials should be prepared by a teacher or assistant without students present. The numbers listed above are just a suggestion. You can make

up your own bags of beans using the ratio of 1:7:10 (males:females:pups). The higher number of pups represents the fact that some females are at sea feeding.

- Count out 24 hazel nuts (male fur seals) and place in plastic bag.
- Count out 163 kidney beans (female fur seals) and place in plastic bag with hazelnuts.
- Count out 236 adzuki beans (pups) and place in plastic bag with hazelnuts and kidney beans.
- Repeat until 4 bags are full of beans.

PROCEDURE

ROUND 1: Total Population Estimate

1. Divide the class into 4 groups of at least 3 students.
2. Empty the contents of each bag onto a separate paper plate or tray AND COVER WITH ANOTHER PLATE OR PAPER TOWEL
3. Give each student a copy of the Worksheet 7.1.1.
4. Uncover the plates and give the students 15 seconds to estimate and record the total number of beans on the plate
5. Cover the plates after the timer goes off.
6. Record the estimated number on the worksheet.
7. Repeat Step 4 but this time ask the students to estimate the number of males, females, and pups on the plate.
8. Cover the plates after the timer goes off.
9. Record the estimated number on the worksheet.
10. Discuss as a class the variation in estimates. Calculate the range and mean. Ask the students if they had enough time to make a good estimate. It should have been very difficult to estimate the total population or number of beans in that amount of time.
11. Read *Great Estimations* and discuss different techniques for counting populations or groups of items.

ROUND 2: Population Estimate by Sex or Age Group
Repeat Steps 7-9. Give students 30 seconds to estimate the populations of males, females, and pups.

Estimating a Population

Repeat the estimate and record the number of males, females, and pups.

12. Give each group 3 times to guess the number of males, then females, and pups.
13. Remember to cover the plate after the timer goes off.

DATA ANALYSIS

Calculate each groups' average population estimate for males, females, and pups.

14. Calculate the class' average population estimate for males, females, and pups.
15. Calculate the variance and standard deviation.

DISCUSSION

- Were some types of beans easier to count than others types? Why or why not?
- How accurate were the estimates?
- Talk about the different methods students used to count the beans.
- Why were some estimates more accurate?

EXPLORE AND EXTEND

- What happens if you increase your sample size and count 6 times instead of 3?

Increasing sample size should increase the accuracy to a certain point.

- Put different combinations of males, females, and pups in bags. Determine whether is it easier to count the animals when there are just a few females or just a few pups.
- Does this exercise simulate a real rookery?

No!

The animals would be moving all over the place. Shake the plate while the students are trying to count. This simulates the constant movement of animals on the rookery.

Pups might be hidden behind a rock or an adult.

Some of the females would be at sea foraging for food.

LAB 7.1

WORKSHEET 7.1.1

Estimating a Population

Group #: _____

Round 1 15 seconds	Estimate Total # of Beans	Estimate # of hazelnuts (breeding males)	Estimate # of kidney beans (adult females)	Estimate # of adzuki beans (pups)
Trial 1				

Round 2 30 seconds	Estimate Total # of Beans	Estimate # of hazelnuts (breeding males)	Estimate # of kidney beans (adult females)	Estimate # of adzuki beans (pups)
Trial 1				
Trial 2				
Trial 3				
Average				

Group #: _____ **Averages**

Round 2 30 seconds	Average # of Beans	Average # of hazelnuts (breeding males)	Average # of kidney beans (adult females)	Average # of adzuki beans (pups)
Student 1				
Student 2				
Student 3				
Student 4				
Student 5				
Student 6				
Class Average				

Class Averages

Round 2 30 seconds	Total # of Beans	# of hazelnuts (breeding males)	# of kidney beans (adult females)	# of adzuki beans (pups)
Group 1 Average				
Group 2 Average				
Group 3 Average				
Group 4 Average				
Group 5 Average				
Group 6 Average				
Class Average				

Mark-Recapture: How many pups?

OBJECTIVE

Students will use the mark-recapture method to make a population estimation.

TIME REQUIRED

30 minutes

BACKGROUND

Estimating the population of northern fur seals is very difficult. Ultimately, scientists want to know the number of females in the population because the growth of the population depends on the number of females. Females are constantly coming and going from the rookery on feeding trips, making it difficult to count them. Instead, scientists count the pups because they do not leave the rookery until late October or early November. Late in the summer, pups gather in "wads" (large groups), making it easier to count them.

Because each female gives birth to one pup, by counting the pups scientists can get a good estimate of the number of females in the population. However, pups are constantly moving and it is impossible to count each one. Scientists use a mark-recapture technique to estimate the pup population.

In this exercise, students will use colored beans to simulate marking and counting pups on a rookery.

MARK-RECAPTURE

The mark-recapture method involves removing a small group of animals from the population, marking them, returning the marked animals, and allowing the marked and unmarked animals to mix. After a predetermined period of time, the population is re-sampled and the ratio of marked to unmarked animals is used to calculate a population estimate.

For northern fur seals, scientists attempt to mark 10% of the northern fur seal pup population. The pups are marked by shearing (clipping) the fur on the top of their head so that the lighter underfur shows. The marked individuals are returned to the rookery. A few days later, scientists return to the rookery and count 3–4 groups of 20 pups each. Within each group of 20 pups, a scientist records the number of marked and unmarked pups. This procedure is repeated by another scientist to reduce the error in the estimate.

The ratio of marked to unmarked pups for each sample is calculated. An average of all the ratios is used for the final population estimate.

MATERIALS

- Container of small plastic pups or
- Small black or brown dried beans (16 ounce bag)
- Small white or light colored beans, similar in size to the brown or black beans
- Plastic bags - enough for each group of 2-3 students to have a bag
- Sampling device, e.g. soup spoon or tablespoon depending on the size of the bean

PREPARATION

- Fill each plastic bag with approximately 300 black or brown beans. You don't have to add the same number of beans to each bag.
- Label each bag and keep track of how many beans are in each one so the students will know how close their estimate is to the actual number.
- Determine your sampling device: take 10% of your population and figure out what size spoon you will need for the students to obtain a similar sized sample.

PROCEDURE

- Distribute the bags of beans to each pair or group of students. Inform the students that the beans represent pups on the [rookery](#).
- Give each group of students Worksheet 7.2.1
- Without looking at the beans, each group removes a spoonful of beans from their bag, counts the number of beans removed and records the number on the worksheet.
- Each bean that has been removed is now replaced with a white or lighter colored bean which represents a marked or sheared pup.
- If using small plastic figures, mark with a marker that can be easily wiped off.
- Put the lighter colored beans (marked pups) back in the plastic bag.
- Mix the beans by shaking the bags.

Mark-Recapture: How many pups?

- Have each group take a sample of 20 beans. Do not allow the students look at the beans while sampling. Just take a random sample. It helps if the students shut their eyes, take a small handful, and count them out onto their desk or a plate.
- This sample represents the marked and unmarked pups in the population.
- Separate out the black and white beans.
- Count the black and white beans. Record the number of black and white beans on the worksheet.
- Use the worksheet and the formula for calculating the ration of marked to unmarked pups to estimate the total number of beans in the bag.
- ♦ take more or less than 20 pups for your re-sample?
- ♦ increase the number of times you re-sample the population after marking the pups?
- Discuss the assumptions that must be accepted for this index to work.
 - ♦ Sampling is random. Every individual has an equal chance of being captured.
 - ♦ The marked animals distribute themselves equally; all animals have an equal chance of being captured the second time.
 - ♦ No new animals are added to the population either by birth or immigration between the marking and re-sampling.
 - ♦ No animals died or emigrated from the population between the marking and re-sampling.

DISCUSSION

- How accurate were the estimates?
- Discuss how labor intensive this would be in real life.
- NOAA partners with aquaria around the country to share information on marine mammals and offer field experience to trainers. Read the following blogs to discover what Aquarium trainers learned about estimating the pup population on St. Paul Island.
 - ♦ New England Aquarium Fur Seal Trainer, Patty, who visited the Pribilofs during 2010.
 - <http://trainers.neaq.org/2010/08/st-paul-log-5-shearing-part-2.html>
 - ♦ Seattle Aquarium Fur Seal Trainer, Julie, who sheared pups in 2012.
 - Day 2: <http://blog.seattleaquarium.org/conservation/northern-fur-seals-and-the-pribilofs-part-2/>
 - Day 3: <http://blog.seattleaquarium.org/conservation/northern-fur-seals-and-the-pribilofs-part-3/>

EXPLORE AND EXTEND

- What happens if you
 - ♦ increase or decrease the number of marked pups?

Student Name: _____

Date: _____

The mark-recapture equation is a model that biologists use to estimate the number of animals in a population at a given place and time. Mark-recapture involves removing a small group of animals from the population, marking them, returning the marked animals, and allowing the marked and unmarked animals to mix. After a predetermined period of time, the population is re-sampled and the ratio of marked to unmarked animals is used to calculate a population estimate. For fur seals, scientists mark the pups by shearing or shaving a small patch of fur on their head. After returning them to the rookery, scientists re-sample after several days by observing groups of pups from a distance and counting the number of marked pups in a group of 25 individuals.

Terms for mark-recapture:

N = estimated population (solve for this variable),

M = total captured and marked in the population (this is the number marked in the first sample)

m = total captured in the second sample that had marks from the first sample,

n = total number of animals captured during the second sample.

The equation used is:

$$\frac{M}{N} = \frac{m}{n}$$

Algebra is used to cross multiply and solve for N the estimated population.

$$N = \frac{M * n}{m}$$



LAB 7.2

WORKSHEET 7.2.1 Mark Recapture: How many pups?

How to calculate the estimated population of northern fur seal pups using the mark-recapture method.

1. Look at the bag of beans or plastic pups and try to predict the number of pups in the population.
2. Take a sample of pups from your population. Record the total Record the number. Mark all of the pups you sampled or exchange them for a darker color, and return them to the population.

$$M = \underline{\hspace{2cm}}$$

3. Take a second sample of pups from your population. Record the total number of pups that were captured during your second sample.

$$n = \underline{\hspace{2cm}}$$

4. Record the total number of seals that were captured in the second sample and had marks or were a different color.

$$m = \underline{\hspace{2cm}}$$

5. Calculate the number of pups/beans in your bag.

$$\frac{M}{N} = \frac{m}{n} \quad N = \frac{M * n}{m} \quad N =$$

6. Compare your answer to your guess in the beginning. How are they different?

7. Now calculate the population of all of the pups/beans in the class.

$$M(\text{class total}) = \underline{\hspace{2cm}} \quad n(\text{class total}) = \underline{\hspace{2cm}} \quad m(\text{class total}) = \underline{\hspace{2cm}}$$

$$N =$$

8. Can you think of other populations where you can use the mark-recapture method? How would you capture them? How would you mark them?

Analyzing Pup Population Data, 1961-2016

OBJECTIVE

Students will use historical pup count data to create graphs or pie charts. Compare the count data from St. Paul and St. George.

BACKGROUND

Scientists use the pup count data to help evaluate the overall population and the health of the northern fur seal population. If less pups are being produced and surviving then chances are the overall population is declining. Scientists are still trying to determine why the pup population is still declining even though the commercial harvest of fur seals ended on St. George in 1973 and on St. Paul in 1984.

MATERIALS

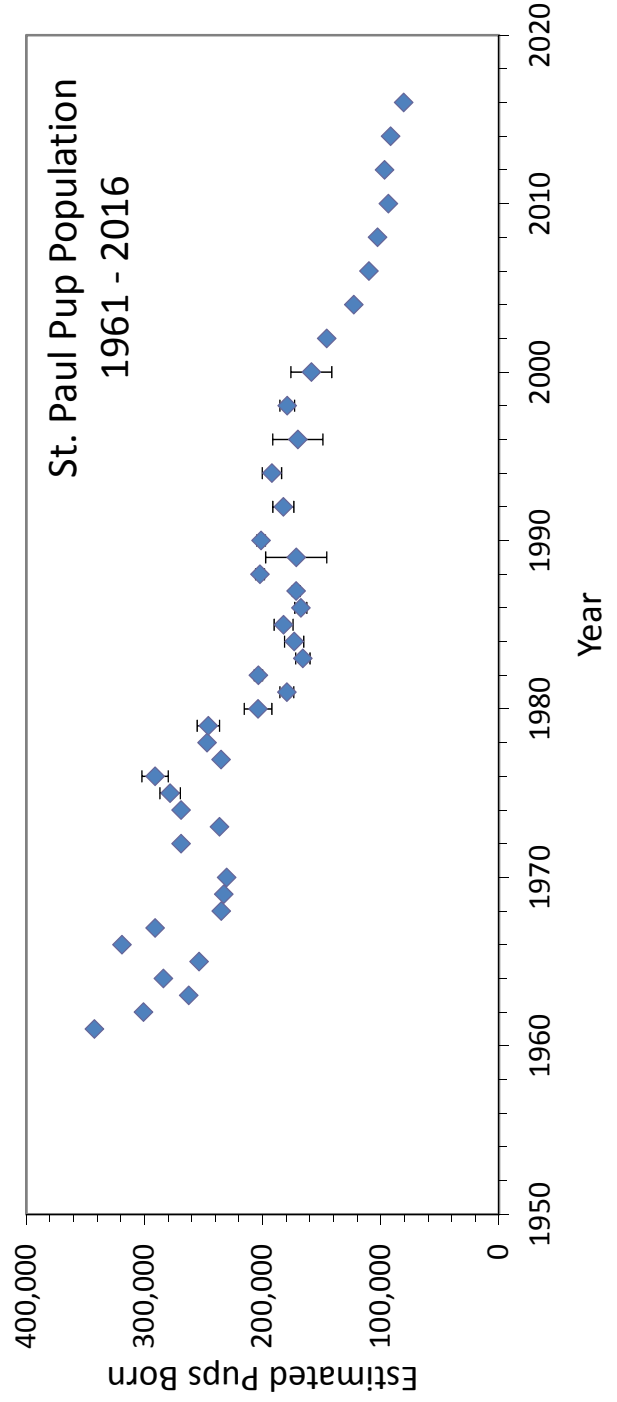
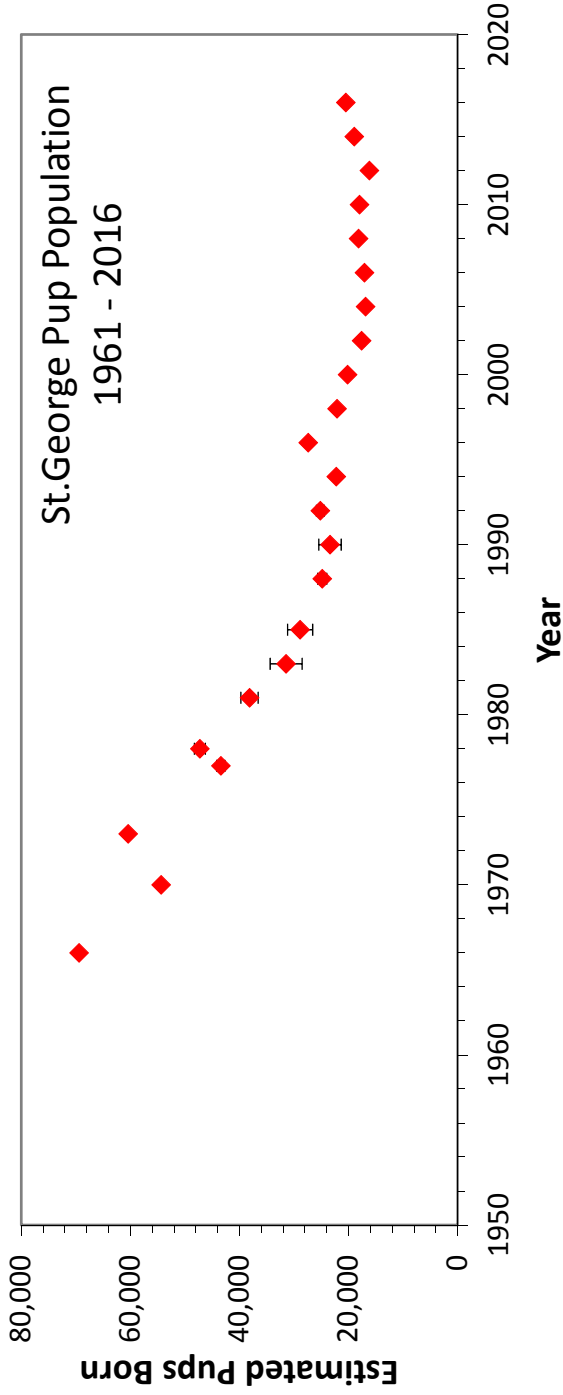
- Appendix IV or Excel file from NOAA/AFSC/ EDUCATION website <http://www.afsc.noaa.gov/Education/Activities/data.htm>
- Excel or spreadsheet software

PROCEDURES

Enter the data from Appendix IV or open the Excel file. Create individual graphs for the data from each island. Review pup count graphs.

LAB 7.3 TEACHER KEY 7.3.1

Analyzing pup population data, 1961-2016



Student Name: _____ Date: _____

Use these questions to help you analyze the northern fur seal pup population data.

1. Using Excel, compare and contrast the sample size, minimum, maximum, and mean of the pup population for each island.

St. Paul Data	St. George data
Minimum =	Minimum =
Maximum =	Maximum =
Mean =	Mean =
Sample size =	Sampe size =

2. Plot both the St. Paul and St. George data on the same graph. Describe what you see.

3. Calculate the rate of increase or decrease in the population on each island from 1961-2016. Calculate the rate of decline from year to year.

4. Compare with harvest timeline and link specific incidents to harvest numbers. What is the relationship between the number of pups born and the harvest numbers between 1961-2016.

Student Name: _____

Date: _____

Use these questions to help you analyze the northern fur seal pup population data.

1. Using Excel, compare and contrast the sample size, minimum, maximum, and mean of the pup population for each island.

St. Paul Data		St. George data	
Minimum =	80,641	Minimum =	16,184
Maximum =	342,335	Maximum =	69,406
Mean =	204,118	Mean =	29,645
Sample size =	42	Sampe size =	23

2. Plot both the St. Paul and St. George data on the same graph. Describe what you see.

Pup populations on St. George and St. Paul are declining. The population on St. George is very low compared to 1968 but it does seem to be leveling off. The population on St. Paul continues to decline especially since 1998.

3. Calculate the rate of increase or decrease in the population on each island from 1961-2016. Calculate the rate of decline from year to year.

St. Paul rate of decline since 1961 = 76%

St. George rate of decline since 1961 = 70%

St. Paul pup population is declining on average 3% per year since 1961.

St. George pup population is declining on average 4% per year since 1966.

4. Compare with harvest timeline and link specific incidents to harvest numbers. What is the relationship between the number of pups born and the harvest numbers between 1961-2016.

Although the commercial harvest ended in 1984 on St. Paul and 1973 on St. George the pup population continues to decline.

Female northern fur seals were commercially harvested from 1956 to 1968 and pelagic collections were taken from 1958 to 1974.

Comparing Historical Timelines

OBJECTIVE

Students will compare two historical timelines to interpret events that occurred on the Pribilof Islands in relation to world events.

BACKGROUND

Until 1786, the Pribilof Islands were uninhabited by humans. Russian fur traders enslaved Unangan from the Aleutian Islands and forced them to harvest fur seals until the United States purchased Alaska in 1867. Living conditions on the Islands were primitive. Every aspect of the workers' lives were controlled by the Russian fur traders or the United States government.

Using the historical timelines to investigate who the different "stakeholders" were over the years.

Define stakeholder (e.g. Unangan, Russians, Americans, fur seals). Discuss stakeholders' reasons for being on the Pribilofs.

MATERIALS

- Northern fur seal historical timeline from Islander's point of view
- Northern fur seal historical timeline and harvest numbers from outsider's point of view

PROCEDURES

- Start class by discussing a timeline and the fact that a timeline can cover different lengths of time (hour, day, month, year).
- Have the students create a timeline for their lives. Talk about what dates are important to some kids but not others (e.g., birthday, holidays, individual milestones like moving from one city to another).

GRADE LEVELS 7-8

Historical timelines

- Discuss with the students the different stakeholders in the Pribilofs and their reasons and motives for being on the Islands.
 - Unangan resident
 - Russian seal harvester (land or boat)
 - American seal harvest manager (land)
 - northern fur seals

- Government scientist
- Divide the students into groups. Assign each group a stakeholder to represent. Have each group of students present their stakeholder to the class. The students come come up with questions to answer or you can use the ones below.
- Read, highlight and discuss the parts of the timeline that were especially relevant to the group, and then craft a statement explaining their position related to the Pribilofs, explaining how that position changed over time
 - ♦ Why was your stakeholder interested in the fur seals? (money, food, conservation/ environmental, harvester, family or spouse of someone who was involved)
 - ♦ Who did your stakeholder work for? (U.S. government, Russian government, Alaska Commercial Company, commercial fur company)
 - ♦ Where did your stakeholder live? (house, government housing, boat, barabara)
 - ♦ Was your stakeholder free to leave the Pribilofs or their boat?

Allow time for students to present their work to the class.

GRADE LEVELS 9-12

Personal Timeline

- Ask each student to create a personal timeline. Share the timelines with the class.

Timeline Comparisons

The following exercise compares the northern fur seal's timeline on the Pribilof Islands to the timeline of historical events both on and off the islands.

- Divide the class into groups of 2-3 students.
- Divide the timeline from Worksheet 7.3.1 into the same number of student groups.
- Assign each student group a section of the timeline to study and present to the class.
- Create a large blank timeline from Pre-Russian contact to 2002. You can use butcher paper or a white board.
- Ask the students to fill in the events and harvest numbers from the timelines provided on worksheets 7.3.1 and 7.3.2.

- Starting with the oldest part of the timeline, have the students present section of the timeline to the class. Ask them to pick out 3-4 events that they think were the most significant.
- Post the timelines in your classroom. Add historical events that occurred off Island or events that were important to the local community.

Point of View Essay

- Ask each student to create a character (human or animal) from a chosen date on the timeline (post-Russian contact). Based on this character write a point of view essay about their life or a period in their life.
- Examples: seal in 1788, Gavriil Pribilof 1786, Tyga Ludinoff 1941
- Students on St. Paul and St. George could write an essay from the point of view of an ancestor.

EXPLORE & EXTEND

- Create and analyze a timeline of your own incorporating Pribilof events, national and international historical events, and harvest numbers.
- Discuss events that were happening on the Pribilof Islands and in the Lower 48 States when harvests were low or high.

RESOURCES

Pribilof Islands Historic Preservation and Environmental Restoration (NOAA): ftp://ftp.library.noaa.gov/noaa_documents.lib/NOS/ORR/TM_NOS_ORR/TM_NOS-ORR_17/HTML/Pribilof_html/Pages/pribilof_image_gallery_restoration.htm

Alaska Fisheries Science Center Historical Corner: The Pribilof Islands: <http://www.afsc.noaa.gov/History/facilities/pribilofs.htm>

NOAA. "Island History". Pribilof Islands: a Historical Perspective. [NOAA website](#).

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LAB 7.4

WORKSHEET 7.4.1

Comparing Historical Timelines

YEAR	Historical Events: St. Paul Islander Point Of View *
Pre-Russian Contact	Island were uninhabited by humans
1741-42	Captain Vitus Bering aboard the <i>St. Peter</i> explores the Aleutian chain. Ship's physician and naturalist Georg Steller describes many plants and animals including the northern fur seal.
1787	St. Paul "discovered" by Russians (Aleut legend notwithstanding). Russian "promyshlennikis", using Aleut slave labor, plunder the island's fur riches indiscriminately until 1830, when a ban on killing female seals is imposed.
1799	The activity of all the rival sealing settlements which were practically on fur seal rookeries drove out and nearly eliminated the seals in 1796. Three years later (1799) the whole territory of Alaska passed into the hands of the absolute power vested in the Russian-American Company. These islands were in the bill of sale and early in 1799 the competing traders were turned off neck and heels from the islands and the Pribilof group passed under the control of a single man, the iron-willed Baranov. The people on St. Paul were then all drawn together for economy and warmth, into the single settlement-Stoshnoe at Polovina.
1825	Along toward the beginning or end of 1825 in order that they might reap the advantage of being located best to load and unload ships, the Polavina settlement, Stoshnoe was removed to the present village site-Gavanskoe (Harbor). Gavanskoe was already established before 1825. It had a wooden chapel dedicated to the Apostles Peter and Paul built in 1821. Thus began a single village site on island.
1834	Zapooska...Saving the seals. Takes decrease for conservation purposes.
1835	For the first time in the history of the "fur" industry on the islands the vital principle of not killing females seals was recognized.
1867	Alaska was purchased from Russia by the United States of America for 7.2 million dollars.
1870	On May 1st the federal government enters into a 20-year agreement bringing the Alaska Commercial Company (ACC) [Northern Commercial Company] to the islands for the first time to work the fur industry.
1890	Daniel Webster expresses to Elliot concern regarding the fur seal population... "There is no use trying to build these rookeries up again so as to seal here, as has been done since 1868, unless these animals are protected in the North Pacific Ocean as well as in the Bering Sea." On this point the old man was very emphatic, states Elliot.
1904	Began building present (2000) Ss. Peter & Paul Orthodox Church.
1910	Seal population declined to 200,000 from 3.5-4 million, largely due to pelagic (oceanic) shooting of seals.
1930	Fur seal population back up to 1.8 million. Fredricka Martin first comes to St. Paul.
1942	Aleuts evacuated to Funter Bay.
1943	Aleut seal hunters brought back to the island to continue the fur-seal harvest, leaving behind women and children. Smallpox, measles and malnutrition are rampant at the abandoned fish cannery in Funter Bay.
1944	Families brought back from Funter Bay. 35 Aleuts had died from disease, starvation, and confinement during the interment. Population on St. Paul, 254; on St. George 126.
1945	Despite tragedy of Funter Bay, Aleuts had gained insight into the modern world and no longer would be politically disenfranchised. Begin meeting secretly to plan for the future. Use of Aleut language forbidden by government.

*Source: Foggy Island Cookbook, St. Paul Island School, 2002-2003

YEAR	Historical Events: St. Paul Islander Point Of View *
1948	Indian Reorganization Act. Beginning of organizing as the Aleut Community of St. Paul. Fur Seal population at Approximately 4 million. On November 1st U.S. Post Office established and biweekly airmail service inaugurated. The first airmail flight to St. Paul on November 1st contained considerable 2nd class and parcel post, in addition to airmail. Included were letters postmarked October 28th from Minneapolis, and October 27th from St. Louis.
1950	St. Paul Island launched Fair and Honorable Dealing lawsuit (Corned Beef Case). Sued the U.S. Government saying Aleuts grossly underpaid and undernourished. A few small businesses start up: Ice Cream Shop (owned by Elary Gromoff, Sr.), Star's Café (owned by Gabriel Stepetin), Victor's Coffee Shop (owned by Victor Misikin, Sr.), Grace Ann's Cafe (owned by Mamant Emanoff). Reeve Aleutian Airways is the first commercial airplane to land and begin service to St. Paul Island...or was this sooner in 1948 or 1949.
1953	Reindeer brought by <i>M/V Penguin</i> from Nunivak Island. Previous herd killed by military during "the wartime".
1955	Old school wall blows down.
1956	First movie theatre-Irish's Theatre owned by Auxenty "Irish" Stepentin. Present store built.
1958	Fredricka Martin speaks to the U.N. about treatment of Aleuts. The U.S. Government is reprimanded by the United Nations.
1963	The "Stomp Room" and the "Juke Box Room" were the teenage dancing hangouts in the Rec. Hall. Father Michael Lestenkof becomes priest of Ss. Peter & Paul Orthodox Church.
1965	St. Paul students for the first time "as a group" are sent to Chemawa High School (which was a vocational school transitioning to high school) in Oregon.
1966	Fur Seal Act reestablishes the Pribilof Islands as a Federal Reservation. For the first time Aleuts are permitted freedom of movement on and off the islands and entitled to fair wages and civil-service benefits.
1969 or 1970	Tribal Government of St. Paul wins "Corned Beef Case". It takes over 10 years to get the money.
1971	Alaska Native Claims Settlement Act passed. Alaskan natives awarded \$962 million to be divided up among 200 native villages. Tanadgusix Corporation established and City of St. Paul incorporated.
1973	St. Paul harassed by animal-rights groups. Bomb threats on Pribilofs. St. George seal harvest stopped. Present (2000) St. Paul School built and use began.
1974	Local school begins "Aleut classes" in the school. Television comes to St. Paul via the Rural Alaska Television network (RAT Net)
1975	First telephone.
1976	St. Paul Island Tour begins on a small scale. 200 travelers come to the island. TDX Corp. sells seal "sticks" to the Japanese and Koreans. Bicentennial of the United States of America.
1978	In December, a fire destroys St. Paul School.
1979	St. Paul hosts International Fisheries Conference and makes comprehensive fisheries-management plan. Japanese Factory Trawler Ryuyo Maur runs aground below Ayagiinax (Tolstoi). Attempts made to protect lagoon from fuel spill from wreckage.
1980	Tanadgusix Corporation buys Anchorage International Inn.
1983	St. Paul awarded \$8.5 million for 1950's "Corned Beef" lawsuit based on unfair labor practices. "U.S. Government Commercial" fur seal harvests ends. U.S. Government administration leaves the island marking the first Aleut Independence Day. Eight Aleut men buy boats. Small local fishery established. Local halibut fishery begins through a joint venture between Tanadgusix Corporation and Tribal Government of St. Paul; a result of the Halibut Act of 1981.

LAB 7.4

WORKSHEET 7.4.1

Marking Historical Time Lines?

YEAR	Historical Events: St. Paul Islander Point Of View *
1984	1st breakwater built and washes away in autumn storm. Father Michael retires as priest of Ss. Peter & Paul Orthodox Church.
1986	The first subsistence fur seal harvest takes place.
1987	July-St. Paul Island Bicentennial
1989	Tourism industry increasingly sophisticated. First crab-processing plant set up.
1990	New breakwater finished and dedicated (Harbor Dedication) to the future of St. Paul Island. Docks built. Tanadgusix Corporation builds first private dock.
1993	Per capita income \$34,000. Many low-end jobs are available, but unemployment is still a problem. There are 2 floating processors, 1 onshore plant and a refueling depot for the Bering Sea Fishery. Aleut dance revived. The Unisea barge anchors in the harbor to process. Central Bering Sea Fishermen's Association and CDQ (Community Development Quota) Program established. St. Paul establishes a K-12 grade school program. The Pribilof Islands Stewardship Program begins. In April a Pribilof School District team represents our islands in NYO. Trident fish processing plant built on Tanadgusix Corporation dock.
1995	There are 30 boats in the local fishing fleet. Airport runway extended to accept jets. St. Paul is a modern American community with grocery store, FM radio, satellite TV, clinic, hotel, school, car rental and plane service 6 days a week. Population is 775, with 230 vehicles and 211 houses and apartments; 10 new homes and apartments to be built in 1996. There are over 600 processor workers.
1996	On January 6, President Clinton signed Public Law 104-91...Section 3 (c), "Resolution of Federal Responsibilities" was to begin to resolve all claims with respect to and permit the final implementation, fulfillment and completion of- Title II Fur Seal Amendments of 1983; the land conveyance entitlement of local entities and residents of the Pribilof Islands under ANCSA; the provisions of this section of the law and any other matters deemed appropriate. In February, the F/V Citress spilled bunker-C oil killing thousands of birds. In March the Pribilof Islands Restoration Advisory Board began in connection to the cleanup activities inspired by PL 104-91.
1998	The Alaska Commercial Company (ACC) returns to St. Paul Island to run a grocery business. St. Paul Road Project takes place. In September, the Pribilof Islands Marine Mammal Commission (PIMMC) is formed. In December, wind generation begins with a single unit at the POSS camp.
1999	In April, the doors of a new St. Paul Island Post Office opened for business. In March, Pribilof Alaska Seagood Company (PASCO) is formed. In September, ADF&G (Alaska Department of Fish and Game) announces drastically reduced opilio (crab) quota for 2000 fisheries. The Pastor's wife and four children died when the parsonage was destroyed by fire in December.
2000	The January, opilio (crab) fishery is delayed to April. In June, the renovation of Ss. Peter & Paul Orthodox Church begins. In July, Unisea barge leaves St. Paul harbor. In September, a barge hauls off the last of the debris left by the U.S. Government from its period of administration of the Pribilof Islands which ended in 1983. New fire truck arrived on November 2, the Barreling Shop/Boxing Shed is brought down as part of the NOAA Clean up Project. Names from beams within are cut out and stored away. In the summer the final tenant moves out of the "Government House". On November 7, 1st groups of kids (Headstart) get bussed to school on Sunday, December 3, RAA services St. Paul Island for the last time. On December 5, Reeve Aleutian Airways discontinues air transport services.
2001	In July, renovation of Ss. Peter & Paul Orthodox Church is completed. In June, renovation of the old "Government House" begins. September 24-ribbon cutting of road connecting uptown to Polovina Turnpike-extension of Venia Minor. Residential refuse containers change from 55 gallon metal drums to wooden bins completed.
2002	In January, the Tribal Government complex is placed below the Senior Citizen Center.

LAB 7.4

WORKSHEET 7.4.2

Comparing Historical Timelines

YEAR	Land Harvest	Historical and Fur Seal Population Events (Sources in parentheses)
Pre-Russian Contact		Aleut/Unangan people living in the Aleutian Islands, but Pribilof Islands are uninhabited by humans. (Scheffer) Estimated Aleut/Unangan population more than 15,000. (Veniaminov) Estimated fur seal population 3-4 million.
1741		Georg Steller (Russian naturalist) first recorded northern fur seals on the Commander Islands. (Scheffer)
1786	estimated 3,000,000 seals harvested	St. George Island and fur seal rookeries discovered by Gerasim (Gavriil) Pribylov. (Hanna)
1787		St. Paul Island discovered by Pribylov's men who were left on St. George. (Hanna)
1788		Aleuts taken to Pribilof Islands to harvest fur seals. (Elliot)
1799		Russian-American Company established as the only company allowed to trade, hunt, and mine the coast of Alaska. (Scheffer)
1806		Pribilof residents are moved to Unalaska in the Aleutians when harvest is stopped for two years. (Hanna, Scheffer)
1828		1786 - 1828 Russian fur companies harvest over 3 million fur seals. (Scheffer)
1847		Russians end female harvest realizing killing females is not good for the herd. (Baker)
1848	14,650	Unangan population reduced to 1,400 due to disease and fighting with Russians. (Lantis)
1867	48,000	U.S. purchases Alaska for \$7.2 million. (Hanna, Scheffer) Last Russian harvest. Aleuts now considered wards of U. S. Government. U. S. Government controlled wages, political structure, and language. (Corbett)
1868	140,000	First U.S. harvest of northern fur seals.
1869	85,901	Pribilof Islands set aside as a special reservation for government purposes and for protection of the fur seals from reckless slaughter. (A Resolution more efficiently to protect the Fur Seal in Alaska)
1868 - 1922		U.S. earns over \$16 million in revenue from Pribilof Island fur seal skins. (Hanna)
1870	23,733	Act of Congress authorizes the U.S. Secretary of Treasury to lease fur seal harvest rights but no females are to be taken. (An Act to Prevent the Extermination of Fur-Bearing Animals in Alaska)
1870-1889	1,977,237	Alaska Commercial Company awarded 20-year exclusive lease to harvest fur seals on the Pribilofs. (Scheffer)
1886	104,521	U.S. begins seizing pelagic sealing vessels considered to be within the waters adjacent to Alaska territory.
1890	28,059	North American Commercial Company awarded 20-year exclusive lease to harvest fur seals on the Pribilofs Islands. (Scheffer)
1893	7,396	Fur Seal Arbitration: International Tribunal rules in favor of Britain for pelagic sealing in territorial waters off Alaska. United States does not have the right to prohibit pelagic sealing in waters off Alaska.
1909	14,371	1879-1909 approximately 1 million skins taken at sea. Many of the seals killed at sea were never recovered. 60-80% of animals killed at sea were females. (Baker)
1910	13,723	Fur seal population declines to 200,000. (Scheffer) U. S. Government takes over management of fur seal population and harvest. (Scheffer)

LAB 7.4

WORKSHEET 7.4.2

Comparing Historical Timelines

YEAR	Land Harvest	Historical and Fur Seal Population Events (Sources in parentheses)
1911	11,899	The Fur-Seal Treaty of 1911 signed by U.S., Britain (for Canada), Japan, and Russia ends pelagic sealing. (Scheffer)
1922	31,152	1868-1922 U.S. earns > \$16 million in revenue from Pribilof Island fur seal skins. (Hanna)
1939	60,473	World War II begins.
1941		December 7th, Japan bombs Pearl Harbor. December 8th, U.S. declares war on Japan. December 11th, U.S. declares war on Germany.
1942	150	No commercial fur seal harvest. June 3-4, Japan bombs Dutch Harbor, June 6-7 Japan occupies Kiska and Attu Islands in the western Aleutians
1942 -44		Pribilof Island inhabitants forced to relocate to Funter Bay in Southeast Alaska to prevent capture by the Japanese during World War II. Many community members died due to poor living conditions, disease, starvation, and exposure to the cold. (Torrey)
1943	117,164	U.S. government brings male Unangan internees back to the Islands to harvest seals. June - U.S. military takes back control of Attu Island, August - U.S. military takes back Kiska Island.
1945	76,964	World War II ends.
1953	66,068	Female harvest begins. Government biologists decide to harvest female fur seals. (Scheffer, York)
1966	52,888	"Fur Seal Act of 1966 (16 U.S.C. 1151-1187, P.L. 89-702, November 2, 1966, 80 Stat. 1091). This 1966 statute prohibited, except under specified conditions, the taking, including transportation, importing or possession, of fur seals and sea otters. Exceptions are authorized for Indians, Aleuts, and Eskimos who dwell on the coasts of the North Pacific Ocean, who are permitted to take fur seals and dispose of their skins. The statute also authorized the Secretary of Interior to conduct scientific research on the fur seal resources of the North Pacific Ocean. Title II of this statute provided for the Secretary of Interior to continue to administer the Pribilof Islands as a special reservation for the purpose of conserving, managing, and protecting the North Pacific fur seal and other wildlife, and to provide the Pribilof Island natives with facilities, services, and equipment."
1968	58,960	Female harvest ends upon realization that the population is declining and not recovering. (Scheffer, York)
1920 -1970		NET profit for U. S. Government from fur seal skins is \$25 million. (Baker)
1971	31,849	Alaska Native Claims Settlement Act: "It authorized Alaska Natives to select and receive title to forty-four million acres of land and to receive \$962,000,000 in cash as settlement of their aboriginal claim to land in the state." (Lindsay)
1972	37,393	Marine Mammal Protection Act authorized.
1973	28,482	Commercial harvest ends on St. George Island. (York) Northern Fur Seal Commission designates St. George as an area of intensive research and no Commercial harvest. (MMPA Annual Report 1972-1973) Endangered Species Act is authorized.
1977	28,974	20th Annual Meeting of the North Pacific Fur Seal Commission - uphold ban on pelagic sealing but allow pelagic take for scientific research. (MMPA Annual Report 1977-1978)

LAB 7.3

WORKSHEET 7.4.2

Comparing Historical Timelines

YEAR	Land Harvest	Historical and Fur Seal Population Events (Sources in parentheses)
1978	25,183	"On June 9, 1978, the Aleut Tribe and the Aleut Community of St. Paul Island filed a lawsuit known as the "Corned Beef Case" against the United States. The Indian Claims Commission determined that the U.S. Government was obligated to provide fair compensation and sufficient goods and services to the Pribilof Aleuts for the years 1870–1946. The plaintiffs won a judgment in the amount of \$11,239,604, less allowable gratuitous offsets." (Lindsay)
1983	26,268	"Fur Seal Act amended - P.L. 98-129, October 14, 1983, (97 Stat. 835) The Fur Seal Act Amendments of 1983 (P.L. 98-129) authorized the continued taking of fur seals and disposal of their skins by Indians, Aleuts and Eskimos , provided that the seals are taken for subsistence purposes as defined by the 1972 Marine Mammal Protection Act . Title II of the amendments provided for continued administration of the islands' fur seal rookeries to protect fur seals and for the maintenance of the Pribilof Islands Trust. Title III amended related enforcement provisions. "
1984	22,416	Commercial harvest ends on St. Paul Island. (York)
1987	1,802	Subsistence harvest only.
1988	1,258	Aleutian and Pribilof Islands Restitution Act offered additional recognition of, and compensation for, unfair treatment of the Pribilof Aleuts. (Public Law No. 100–383)
1989	1,521	
1990	1,241	Over 500 restitution payments issued to eligible Aleuts. (APIA)
1991	1,926	
1992	1,676	
1993	1,837	
1994	1,777	
1995	1,525	
1996	1,823	
1997	1,380	
1998	1,558	
1999	1,193	
2000	876	
2001	781	
2002	851	
2003	654	
2004	616	
2005	618	
2006	604	
2006	477	
2008	499	
2009	454	
2010	435	
2011	442	
2012	446	

LAB 7.4

WORKSHEET 7.4.2

Comparing Historical Timelines
 Comparing the fur seal population

YEAR	Land Harvest	Historical and Fur Seal Population Events (Sources in parentheses)
2013	378	
2014	365	Annual male pup harvest of 150 allowed on St. George from September 6 - November 4
2015	373	
2016	345	
2017		
2018		

Interpreting Historical Photographs

OBJECTIVE

Students will use a historical photo as a prompt to write a letter or journal entry from a historical perspective.

BACKGROUND

Many images from the Pribilof Islands exist today. Over the past 200 hundred years the Pribilof Islands have been inhabited by Russians, Unangan, and Americans. In addition to the humans there have been seals, sea lions, otters, caribou, fox, birds, dogs, and cats living on the islands. Each inhabitant has a story to tell. Through historical photographs, students are asked to create an image with words of what life was like for an inhabitant of the Pribilof Islands.

MATERIALS

- NOAA Pribilof Islands, A Historical Perspective website or DVD
- Worksheet 7.4.1

PROCEDURES

1. Select an image from the photo gallery.
2. Use the information from Worksheet 7.4.1. to write a letter or journal entry describing the events in the photograph. The letter must be written to someone who is not on the Island.
3. To organize your ideas for a letter, create a concept map or outline.

DISCUSSION

- As a class discuss the different cultures and stakeholders represented in the photographs.
- Are they performing the same tasks?

ACKNOWLEDGEMENT

Activities in this lab were adapted with permission by Catherine Adams, Billings Middle School, Seattle, WA.

RESOURCES

Pribilof IslandsHistoric Preservation and Environmental Restoration (NOAA): ftp://ftp.library.noaa.gov/noaa_documents.lib/NOS/ORR/TM_NOS_ORR/TM_NOS-ORR_17/HTML/Pribilof_html/Pages/pribilof_image_gallery_restoration.htm

Alaska Fisheries Science Center Historical Corner: The Pribilof Islands: <http://www.afsc.noaa.gov/History/facilities/pribilofs.htm>

NOAA. "Island History". Pribilof Islands: a Historical Perspective. [NOAA website](#).

Student Name: _____ Date: _____

Use these questions to help you analyze your photograph. Write a letter or journal entry describing the events in the photograph. The letter must be written to someone who is not on the Island.

What is your first impression?

Are there any people in the photo? If yes, describe them.

What do you think is happening in the photograph?

Describe any activities you see in the photograph.

Describe any objects you see in the photograph.

List any animals in the photograph.

Analyzing Fur Seal Harvest Data, 1817-2016

OBJECTIVE

Students will use historical harvest data to create graphs or pie charts. Students will use Excel to compare and contrast the harvests data from 1817 to 2016.

BACKGROUND

Northern fur seals were harvested in great numbers because their fur was a valuable commodity. The U.S. Government kept detailed records from each harvest. From these records scientists have studied the changes in the fur seal population. Trends in the population are directly related to the number and sex of fur seals harvested.

- ◆ Why do you think the harvest numbers spiked right after the U.S. purchase of Alaska in 1968.
- Compare with harvest timeline, Worksheet 7.3.1, and link specific incidents to harvest numbers.
 - ◆ Do any of the events on the timeline coincide with harvest numbers?
- Investigate pelagic sealing and its consequences. Use the historical maps of seized pelagic sealing vessels on the AFSC Education website as a reference.
- Watch the video Henry Wood Elliot by Paul Hillman (<http://www.youtube.com/watch?v=lkOgch3LAUY>)

MATERIALS

- Microsoft Excel or spreadsheet and graphing software
- Fur seal harvest data
 - ◆ Appendix IV or
 - ◆ Data file from the Alaska Fisheries Science Center Education and Outreach website: <https://www.afsc.noaa.gov/education/>

PROCEDURES

1. Using the data provided in the Appendix V, create a graph to illustrate the changes in harvest numbers over the years.
2. Add in the pelagic harvest data and discuss why pelagic harvesting was so harmful to the population.

DISCUSSION

The U.S. Government charged the Alaska Commercial Company \$55,000 for the annual lease and \$2.62 for every skin. How much did the government make for the fur seal industry during the first lease, 1870-1890?

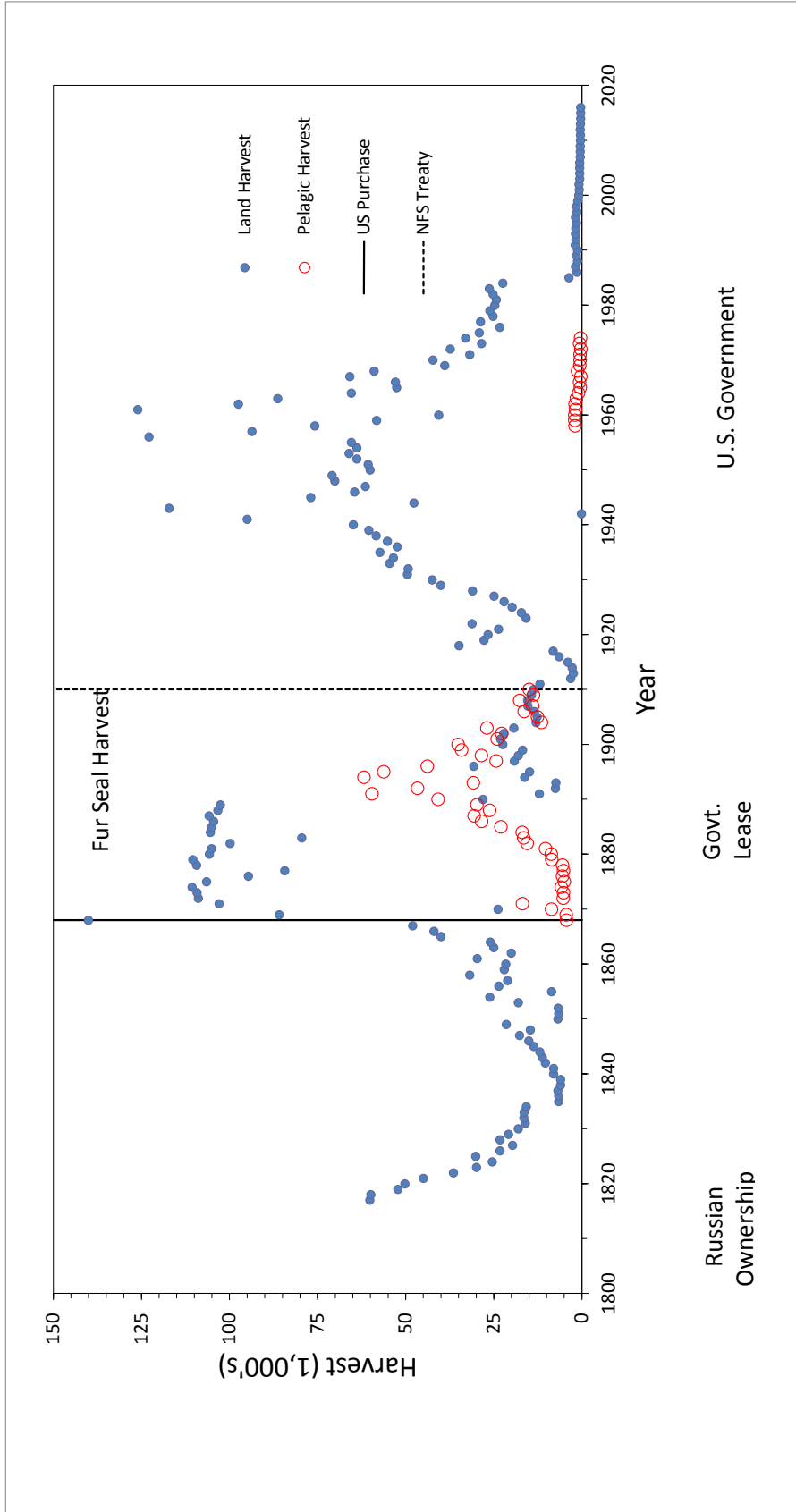
EXPLORE & EXTEND

- Compare and contrast the Russian harvest data to the United States harvest data.
 - ◆ Were the harvest numbers different?

LAB 7.6

TEACHER KEY 7.6.1

Analyzing Fur Seal Harvest Data
1817-2016



Harvest Data 1817 - present

Summary of Data

of Fur Seals Killed on Islands 1786-1909 6,193,468

of fur seals killed at sea 1868 - 1909 1,125,365

Total # of fur seals killed on Islands & at sea 1786-1909 7,318,833.00

Student Name: _____

Date: _____

1. The last Russian harvest was in 1867, the year the U.S. purchased Alaska. What was the harvest number in 1867?

2. How did the harvest change after the United States purchases Alaska in 1867?

3. Why do you think the harvest numbers spiked right after the U.S. purchase of Alaska in 1868?

4. What is the difference between the land harvest and the pelagic harvest?

5. Compare the land and pelagic harvests between 1867 and 1910?

6. What are the results of the U.S. purchase of Alaska and the pelagic harvest of fur seals?

7. The Fur Seal Treaty was signed in 1912. What result did the Treaty have on the land and pelagic harvests?

8. What historical event happened in 1984? Describe the harvests after 1984. What do they represent?

9. A female harvest occurred between 1956 and 1968 as well as a scientific pelagic harvest from 1958-1974? How did this effect the commercial fur seal harvest?

10. Using Excel calculate the following:

1. Russian mean harvest rate _____
2. U.S. mean harvest rate between 1867-1910 _____
3. U.S. mean harvest rate from 1911-2016 _____

Why do you think the harvest numbers change as much as they do? Why is there so much variability?

12. Compare the historical timeline the harvest date. What historical events coincided with changes in the harvest data? Explain.

Student Name: _____

Date: _____

1. The last Russian fur seal harvest was in 1867, the year the U.S. purchased Alaska. What was the harvest number in 1867?

42,000

2. How did the harvest change after the United States purchased Alaska in 1867?

The first U.S. harvest in 1868 was 140,000 animals. Three times the number of fur seals harvested in the previous year by the Russians.

3. Why do you think the harvest numbers spiked right after the U.S. purchase of Alaska in 1868?

The U.S. Government leased the harvest rights to the Alaska Commercial Company, a private fur trading company. Very little harvest restrictions were put on the ACC. For years the Russians had watched and researched the fur seal population. They knew how many seals to harvest without causing the population to decline. The Americans were not as knowledgeable.

4. What is the difference between the land harvest and the pelagic harvest?

The land harvest was conducted on the rookeries, allowing harvesters to be more selective (e.g., choosing only males or choosing certain age groups) about the animals they killed. The pelagic harvest took place at sea where harvesters could not tell the difference between males and females. During the summer months, the only seals at sea were the females who were on feeding trips. When female seals were killed, her fetus or developing pup died as well as the pup she left at the rookery. By killing one female seal at sea, three seals died. Also, seals sink when killed at sea. Over 50% of the seals killed at sea were never retrieved, resulting in far less revenue for the number of seals killed.

During the winter months, pelagic sealers would harvest seals as they migrated up the west coast of North America. According to seal migration data, female seals and young adult seals migrate up the coast of North America.

5. Compare the land and pelagic harvests between 1868 and 1910?

From 1868 to 1889 the land harvest was close to 100,000 (mean=100,143) per year. The pelagic harvests started off around 4,000 in 1868 and increased to 30,000 by 1886. In 1891 the pelagic harvests jumped to 59,000. It peaked in 1894 at 61,000 and then slowly decreased to 15,000 by 1910 when pelagic harvesting was banned as a result of the North Pacific Fur Seal Convention of 1911. The land harvest plummeted to 7,000 in 1892 and reached its lowest harvest of 2,400 seals in 1913.

6. What are the results of the U.S. purchase of Alaska and the pelagic harvest of fur seals?

Both events cause a dramatic increase in the numbers of animals harvested.

7. The Fur Seal Treaty of 1911 was signed in 1912. What result did the Treaty have on the land and pelagic harvests?

The Fur Seal Treaty ended the practice of pelagic harvesting and reduced and regulated the land harvest. The Treaty also stated that the harvest would be managed by the U.S. Government and not a private company.

8. What historical event happened in 1984? Describe the harvests after 1984. What do they represent?

Due to pressure from the anti-fur activists and a declining fur seal herd, the commercial fur seal harvest ended in 1984. After 1984 the harvest is for subsistence only. The number of animals killed each year is reduced to 3,000.

9. A female harvest occurred between 1956 and 1968 as well as a scientific pelagic harvest from 1958-1974? How did this effect the commercial fur seal harvest?

The female and pelagic harvest reduced the commercial land harvest. By the time the government finally ended the female harvest in 1968 and the pelagic harvest in 1974 the commercial land harvest was reduced to 33,000. The commercial land harvest continued to decline until it ended in 1984.

10. Using Excel calculate the following:

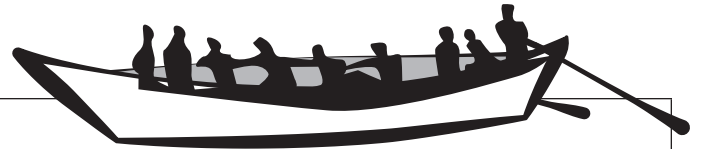
- 1. Russian mean harvest rate 22,482
- 2. U.S. mean harvest rate between 1868-1910 59,512
- 3. U.S. mean harvest rate from 1911-2016 3,403

11. Why do you think the harvest numbers change as much as they do? Why is there so much variability?

The U.S. government needed to recoup the money used to purchase Alaska. Furs were a great source of revenue. In the beginning the harvest was managed by private companies.

12. Compare the historical timeline and the harvest data. What historical events coincided with changes in the harvest data? Explain.

LESSON EIGHT



Marine Mammal Protection Act

Subject Area(s): Life science,
history, cultural

Grade Levels: 7-12

Presentation – 20 minutes

Labs – variable

Lab Topics:	Marine Mammal Protection Act Subsistence hunting Treaty rights	Focus Questions	<ul style="list-style-type: none"> • What is the Marine Mammal Protection Act? • What were the unintended consequences of the MMPA? • How were the Makah and the Pribilof Islanders affected by the MMPA?
Learning Objectives:	Students will: <ul style="list-style-type: none"> • summarize the Marine Mammal Protection Act • compare and contrast the rights of Native American tribes in states other than Alaska and Alaska Natives. 	Key words:	Marine Mammal Protection Act, permit, waiver, treaty, subsistence

LABS		ALASKA STANDARDS			
		Science	History	Minutes	Grades
Lab 8.1	Marine Mammal Protection Act Summary (research, writing, interpretation)		CC1-4,7	50	9–12
Lab 8.2	MMPA: Unintended Consequences of a law (research, writing, interpretation)		CC1-4,7	50	9–12
Lab 8.3	MMPA Case Study: Gray Whales (research, writing, interpretation)		CC1-4,7	50	9–12
Lab 8.4	MMPA Case Study: Northern Fur Seals (research, writing, interpretation)		CC1-4,7	50	9-12
Lab 8.5	MMPA Comparative Analysis: Makah and Pribilof Islanders (research, writing, interpretation)		CC1-4,7	50	9-12

Targeted Alaska Grade Level Expectations (GLEs)

American History

Individual, Citizenship, Governance, Power Continuity and Change (CC)

The student demonstrates an understanding of the chronology of Alaska history by:

CC 1; CC 2; CC 3; CC 4; CC 7

Laaqudaꞥ: The Northern Fur Seal

Lesson : 8

Marine Mammal Protection Act



Lab 8 PowerPoint gives a summary of the Marine Mammal Protection Act. Students will explore history leading up to the MMPA, review the MMPA, and compare case studies of Native American right pertaining to subsistence harvests of gray whales and northern fur seals.

Topics

- What was happening in the 1960s and 1970s?
 - Environmental movement
 - Legislative history
- What is the Marine Mammal Protection Act?
- MMPA case studies
 - Gray whales
 - Northern fur seals



Lesson 8: Marine Mammal Protection Act

1

Environmental Movement 1960s

- **1962** *Silent Spring* by Rachel Carson
 - Highlighted dangers of chemicals in the environment, particularly DDT
- **Mid-1960s** Canadian harp seal hunt
 - Prompted public reaction against fur industry
- **1969** Cuyahoga River fire
 - Photos raised awareness of industrial waste, pollution

This slide lists just three of the many issues that started the environmental movement in the 1960s. Many historians believe the publication of *Silent Spring* was the catalyst that started the movement.

Rachel Carson wrote *Silent Spring* based on 13 years of research on DDT (Dichlorodiphenyl-Trichloroacetic Acid), a commonly used insecticide, and came under attack from the chemical industry for her views. President John F. Kennedy assigned the President's Science Advisory Committee to investigate Carson's claims, resulting in a report that agreed with Carson's assessment and caused Americans to take a closer look at the environmental damage caused by DDT and other pesticides. www.rachelcarson.org

- Awakened the American public to the dangers of chemicals in the environment, particularly DDT

The Canadian harp seal hunt became very controversial after images of white seal pups being clubbed were televised in the mid-1960s. Harp seal pups (age 10-14 days) were hunted for their white fur. Information about the harp seal hunt: <http://www.dfo-mpo.gc.ca/fm-gp/seal-phoque/index-eng.htm>

The images of the Cuyahoga River fire in *Time Magazine* in 1969 helped to inspire Congress to pass the National Environmental Protection Act in 1970. *Time Magazine* article and photos of Cleveland's Cuyahoga River on fire brought the public's attention to industrial waste and pollution. <http://www.ohiohistorycentral.org/entry.php?rec=1642>

Lesson 8: Marine Mammal Protection Act

2

Environmental Movement 1970s



- TV shows *Flipper*, *Sea Hunt*, and *The Undersea World of Jacques Cousteau* changed people's view of marine mammals
- President Richard Nixon signs the following acts
 - National Environmental Protection Act (1970)
 - Clean Water Act (1972)
 - Coastal Zone Management Act (1972)
 - Ocean Dumping Act (1972)
 - Marine Mammal Protection Act (1972)
 - Endangered Species Act (1973)
 - Safe Drinking Water Act (1974)

Lesson 8: Marine Mammal Protection Act

3

Too many significant environmental conservation events occurred in the 1970s to list on this slide. The 1970s produced environmental activism and legislation. Below are just a few more examples.

Anti-Fur movement begins

1970 first Earth Day

1970 Natural Resources Defense Council founded

1970 Environmental Protection Agency formed

1971 Greenpeace founded in Canada

The Daily Green

<http://www.thedailygreen.com/environmental-news/latest/greenest-presidents-460808#ixzz2KM4oSoD>

Nixon's Presidency: 1969-1974

The 1960s began the environmental movement in the United States.

Events leading up to the Marine Mammal Protection Act



- Tuna-dolphin issue
 - Thousands of dolphins killed in purse-seine nets targeting tuna
- Canadian harp seal hunt
 - Harp seal pups killed for their white fur
- Continued commercial whaling despite declines in whale populations

Lesson 8: Marine Mammal Protection Act

4

It is generally believed that the mortality of dolphins in the tuna purse-seine fishery, Canadian harp seal harvest, and International Whaling Commission's inability to reduce commercial whaling led to the creation of the MMPA.

In the 1950s and 1960s, hundreds of thousands of dolphins were being killed in yellowfin tuna (*Thunnus albacares*) purse-seines, large nets that encircled pods of dolphins to catch the schools of tuna swimming underneath. As the nets were hauled in, the dolphins often became entangled in the netting and suffocated.

NOAA Southwest Fisheries Science Center website: <http://swfsc.noaa.gov/textblock.aspx?Division=PRD&ParentMenuId=228&id=1408>

The Canadian harp seal hunt became controversial after images of the hunt were shown on television in the mid-1960s. Pups with white coats, less than 14 days old, were the focus of the harp seal hunt. <http://www.cbc.ca/archives/entry/seal-hunt-barbaric-and-cruel>

The International Whaling Commission (IWC) was founded in 1946 to provide for proper conservation of worldwide whale populations and to regulate whaling. Despite its mandate to regulate whaling and conserve populations, large whale populations continued to decline in the 1960s. World Wildlife Fund, formed in 1961, began "Save the Whales" campaigns around the world.

International Whaling Commission: <http://iwc.int/iwcmain>

World Wildlife Fund: http://wwf.panda.org/what_we_do/ endangered_species/cetaceans/cetaceans/iwc/history/

Marine Mammal Protection Act Summary



- **MMPA:** Marine Mammal Protection Act of 1972
 - Nation-wide program to conserve marine mammals
- Makes it illegal to "harass, hunt, capture, or kill" any marine mammal within 200 miles of the US coast
 - Specific exceptions (e.g., scientific research, incidental catch during fishing)
 - Exemptions for "Indians, Aleut, and Eskimos (who dwell on the coast of the North Pacific Ocean)" for subsistence purposes

Lesson 8: Marine Mammal Protection Act

5

The initial Marine Mammal Protection Act (MMPA) was passed by Congress in 1972 and signed by President Nixon based on findings that certain species and populations of marine mammals were or had the potential to be in danger of extinction or depletion as a result of man's activities.

The MMPA established a national policy to prevent marine mammal species and populations from declining beyond the point where they are a significant part of their ecosystems. It was the first legislation that protected all marine mammal species in their ecosystems and took an ecosystem-based approach to managing wild populations. The legislation addressed all populations, not just harvested populations.

For a list of Representative who voted for or against the MMPA go to Govtrack.us: <http://www.govtrack.us/congress/votes/92-1972/h362>

Subsistence Rights & MMPA

- With respect to Indian treaty rights and Alaska Native subsistence, the MMPA states the following: (Sect. 14 of Public Law 103-238, the MMPA Amendments of 1994)

The MMPA, including any amendments—

- Does not alter any treaty between the United States and one or more Indian tribes;
- Does not affect the provisions of section 101(b) of the Marine Mammal Protection Act of 1972, which says that Alaska Natives can hunt marine mammals for subsistence and can use marine mammal parts for articles of handicraft and clothing, and can sell edible parts in Alaska Native communities, provided that the marine mammal is not used in a wasteful manner

Lesson 8: Marine Mammal Protection Act

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Public Law 103-238 is the “Marine Mammal Protection Act Amendments of 1994” and was passed to authorize funding for the Act, reduce the incidental catch of marine mammals in commercial fisheries, and provide grants to Alaska Native organizations to develop co-management structures for marine mammal populations taken for subsistence purposes. <https://www.gpo.gov/fdsys/pkg/STATUTE-108/pdf/STATUTE-108-Pg532.pdf>

Original text of MMPA Amendments of 1994:

Indian Treaty Rights and Alaska Native Subsistence:

“Nothing in this Act including any amendments to the Marine Mammal Protection Act of 1972 made by this Act—

- alters or is intended to alter any treaty between the United States and one or more Indian tribes; or
- affects or otherwise modifies the provisions of section 101(b) of the Marine Mammal Protection Act of 1972...

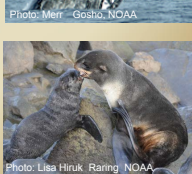
In other words, the MMPA:

- Doesn't alter any treaty between the US and a Native American tribe
- Doesn't affect section 101(b) – which says that the MMPA does not apply with respect to Alaska Native subsistence hunting of marine mammals, or the use of marine mammal parts for Alaska Native articles of handicraft and clothing (e.g. weaving, carving, stitching, etc.) and that edible portion of marine mammals can be sold within Alaska Native communities for Native consumption, provided that the marine mammal is not used in a wasteful manner.

The legal language is in the slide – class can discuss why the language has to be so formal for legal documents, and can look up section 101(b) of the MMPA of 1972 (listed in Appendix X, page 101, about halfway down the page, starting with the text “The provisions of this Act shall not apply with respect to the taking of any marine mammal by any Indian, Aleut, or Eskimo who dwells on the coast of the North Pacific Ocean or the Arctic Ocean...”).

MMPA Case Studies

- Makah Nation and gray whales
 - Washington
- Unangam communities of St. Paul Island and St. George Island (Pribilof Islanders) and northern fur seals
 - Alaska



Lesson 8: Marine Mammal Protection Act

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We will consider two case studies with respect to the Marine Mammal Protection Act –

- Makah Nation and gray whales in Washington state
 - Unangam communities of St. Paul Island and St. George Island in the Pribilof Islands and northern fur seals in Alaska
- Labs 8.3 and 8.4 compare and contrast these cases.

MMPA Case Study: Makah and Gray Whales

- Makah Nation – northwest Washington state
- Whales and whaling are central to Makah culture
- Makah tradition of hunting whales dates back over 2000 years



Lesson 8: Marine Mammal Protection Act

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Background information –Makah Whaling and Whale hunt – Makah Tribe website

<http://makah.com/makah-tribal-info/whaling/>

“For the Makah Tribe, whale hunting provides a purpose and a discipline which benefits their entire community. It is so important to the Makah, that in 1855 when the Makah ceded thousands of acres of land to the government of the United States, they explicitly reserved their right to whale within the Treaty of Neah Bay.

Makah whaling tradition provides oil, meat, bone, sinew and gut for storage containers: useful products, though gained at a high cost in time and goods.

The relationship between Makah and whales is very old. Ozette deposits dating from 2,000 years ago hold humpback and gray whale bones and barbs from harpoons.”

MMPA Case Study: Makah and gray whales



Makah Treaty of 1855 states: "The right of taking fish and of whaling or sealing at usual and accustomed grounds and stations is further secured to said Indians..." It was the only treaty in the U.S. to protect whaling.

- Gray whale population declined through the 1800s due to commercial whaling
- 1920s - Makah voluntarily stopped hunting gray whales



Lesson 8: Marine Mammal Protection Act

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"The only treaty in the United States that protects whaling was secured with Makah Indians in 1855."

"On the beaches of Neah Bay ca. 1910, Makah capture a giant of the sea. The prized gray whale symbolizes the heart of Makah culture and a long history. In 1970, archeologists began an 11-year dig at the tribe's ancient whaling village of Ozette. They uncovered 56,000 artifacts, including hunting equipment and whale bones dating back 2,000 years."

https://www.sos.wa.gov/_assets/legacy/ExhibitPanelOutlineforMuseums.pdf

NOAA West Coast Regional Office Chronology of Makah Tribal Gray Whale Hunt webpage - http://www.westcoast.fisheries.noaa.gov/protected_species/marine_mammals/cetaceans/chronology.html

"Ozette had been occupied by the Makah, probably continuously for at least two thousand years, until the 1920s. Makah oral history recalls centuries of a rich whale-hunting culture centered at the village. They had no choice but to abandon their ancient home when the federal government insisted that children at the site must enroll in school."

<https://magazine.wsu.edu/2015/11/06/ozette-excavating-a-makah-whaling-village/>

MMPA Case Study: Makah and gray whales



- Gray whales
 - Listed as endangered in 1970
 - Population recovered in the 1980s-90s
 - Removed from the Endangered Species List in 1994
- 1995 - Makah sought permission to resume treaty rights to hunt gray whales
- 1997 - NOAA reviewed data, found the gray whale hunt would not significantly impact the population
- 1997 - IWC set a catch limit of 20 gray whales over 5 years for the Makah

Lesson 8: Marine Mammal Protection Act

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NOAA = National Oceanic and Atmospheric Administration; NOAA Fisheries = National Marine Fisheries Service (the agency within NOAA who reviewed data)

IWC = International Whaling Commission

MMPA Case Study: Makah and gray whales



- 1998 - District court: Makah can resume whaling
- 1999 - Makah hunted, struck, and landed their first gray whale in over 70 years
- Animal rights organizations strongly opposed the Makah hunt, filed a suit in court to stop it
- 2000 - Ninth Circuit Court of Appeals reverses 1998 court decision; halts whaling until NOAA Fisheries can do an Environmental Assessment (EA) under the National Environmental Protection Act (NEPA)

Lesson 8: Marine Mammal Protection Act

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In 2000, the Ninth Circuit Court of Appeals ruled that NOAA fisheries failed to take a "hard look" under the National Environmental Protection Act at the proposed whaling.

MMPA Case Study: Makah and gray whales



- 2001 - NOAA Fisheries completes EA
- 2002 - District Court: summary judgment in favor of Makah
- 2002 Ninth Circuit Court of Appeals overturned District Court ruling:
 1. Makah must comply with process prescribed in MMPA for authorizing a take of marine mammals otherwise prohibited by a moratorium
 2. NOAA must complete an Environmental Impact Statement (EIS) under National Environmental Protection Act

Lesson 8: Marine Mammal Protection Act

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1. 16 U.S. Code 1371 – Moratorium on taking and importing marine mammals and marine mammal products <https://www.law.cornell.edu/uscode/text/16/1371>
2. What is an EIS? <https://www.epa.gov/nepa/national-environmental-policy-act-review-process>

MMPA Case Study: Makah and gray whales



- 2005 – Makah requests a waiver of the MMPA's take moratorium
- 2005 – NOAA Fisheries begins preparation of an Environmental Impact Statement (EIS) with public meetings
- 2008 – NOAA Fisheries terminates their 2005 draft EIS and begins a new draft EIS in light of new information on gray whale population
- 2015 – NOAA Fisheries releases a new draft EIS

Lesson 8: Marine Mammal Protection Act

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NOAA 2005 Draft EIS for Makah gray whale harvest

http://www.westcoast.fisheries.noaa.gov/protected_species/marine_mammals/cetaceans/whale_hunt.html

One event that is not covered on this timeline:

Sept. 8, 2007: Five members of the Makah Tribe hunt and kill a gray whale in the Strait of Juan de Fuca in a hunt that was not authorized by the tribe or NOAA. This unauthorized hunt did not comply with numerous provisions and restrictions defined in the tribe's application, and both the tribe and NOAA make statements condemning the unlawful hunt.

October & November 2007: The five tribal members involved in the September 2007 killing of a gray whale are indicted in federal court on Oct. 5, 2007, for unauthorized whaling, unauthorized take of a marine mammal, and conspiracy to engage in unlawful whaling. On Nov. 16, 2007, the five are charged in tribal court for violating the tribe's gray whale management plan, violating state and federal laws, and reckless endangerment.

March & April 2008: Three of the tribal members enter guilty pleas on March 27, 2008, to unlawful taking of a marine mammal in violation of the MMPA. On April 7, 2008, after a bench trial on stipulated facts, the court finds the remaining two tribal members guilty of conspiracy and unlawful taking of a marine mammal in violation of the MMPA.

MMPA Case Study: Makah and gray whales



- What do you think are the issues?
- What are the perspectives of the different groups involved?
 - Makah
 - U.S. Government (NOAA)
 - U.S. Government (Courts)
 - Animal rights groups
 - Others?
- What are possible courses of action?



Lesson 8: Marine Mammal Protection Act

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NOAA – National Oceanic and Atmospheric Administration

Image Source: Photo: Chris Johnson, NOAA, Southwest Fisheries Science Center

http://www.westcoast.fisheries.noaa.gov/stories/2016/17_02182016_gray_whale_migration.html

MMPA Case Study: Pribilof Islanders and Northern fur seals



- Pribilof Islands – in the central Bering Sea, Alaska
- Unangan have hunted northern fur seals and other marine mammals in the Aleutian Islands for thousands of years
- Russian fur traders forcibly relocated Unangan in mid-1700s to the Pribilof Islands to harvest fur seals on land

Lesson 8: Marine Mammal Protection Act

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Background information - For over two-hundred years the Unangan of the Pribilof Islands were forced to harvest northern fur seals first for the Russians fur trading companies and then for the private U.S. companies and finally for the U.S. Government. During this time northern fur seal became a staple in the Unangan diet. Life on the Pribilofs was fur seal centric. Both the economy and the diet were dependent upon the harvest of fur seals.

Map: NOAA/AFSC/MML

MMPA Case Study: Pribilof Islanders and Northern fur seals



- Land-based subsistence harvests by the Unangan on the Pribilof Islands provided food necessary for survival through the Bering Sea winters
- Late 1800s - Numbers of fur seals declined dramatically due to pelagic sealing after the U.S. purchased Alaska from Russia
- 1891 - Unangan voluntarily ended pup harvests on the Pribilof Islands to help recover the fur seal herd

Lesson 8: Marine Mammal Protection Act

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Unangan harvested northern fur seals at sea for thousands of years as they migrated through the Aleutian Islands. This harvest included fur seal juveniles and pups, whose bones were found in middens.

Subsistence harvests on the Pribilof Island took place on land during the summer and fall. Subsistence harvests provided the main staple for survival from when the Russians forcibly brought the first Unangan harvesters to the Islands in 1767.

The summer subsistence harvest consisted of young male fur seals that were killed during the commercial fur harvest. Of the thousands of fur seals killed for their fur, only a fraction were kept for food consumption.

In October and November, just before the pups began their winter migration, a pup-only harvest occurred. The fall pup harvest provided an important staple of the Unangan winter diet on the Pribilof Islands.

After the U.S. purchased Alaska from Russia, pelagic sealing increased dramatically, resulting in steep declines in numbers of fur seals, since seals taken in pelagic sealing were primarily females and resulted in a loss of the breeding stock of the population. Pelagic sealing was also very inefficient in that only one seal was recovered for every three shot (see lesson 7).

Residents of both Islands agreed to forego the pup harvests in 1891 if it would aid the government to protect the fur seal herds. Although they agreed to the conservation method, they felt it was extremely harsh. Islanders depended on the fall pup harvest to stock their cupboards for the winter.

MMPA Case Study: Pribilof Islanders and Northern fur seals



- Fur Seal Treaty of 1911 ends pelagic sealing and fur seal population begins to recover
- Treasury Agents permanently end the pup harvest despite the fact that the stock is recovering
- Fur Seal Act of 1966 grants "Indians, Aleuts, and Eskimos, who dwell on the coast of the North Pacific Ocean" the right to take fur seals and dispose of their skins

Lesson 8: Marine Mammal Protection Act

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Even though the fur seal stocks recovered after the end of pelagic sealing and the Fur Seal Treaty of 1911, Treasury Agents permanently terminated the pup harvest.

Source: Williams, Michael and Juan Leon Guerrero, 2010. History of Northern Fur Seal Subsistence Harvests on the Pribilof Islands.

MMPA Case Study: Pribilof Islands and Northern fur seals



- After the commercial harvests ended in 1973 and 1984, Pribilof Islanders were allowed to continue a subsistence harvest under an emergency rule of the 1966 Fur Seal Act
- 1988 Pribilof Island fur seals listed as depleted under the MMPA giving NOAA the authority to regulate the harvest
- Pribilof Islanders and NOAA enter into a co-management agreement for the harvest

Lesson 8: Marine Mammal Protection Act

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MMPA Case Study: Pribilof Islands and Northern fur seals



- The Unangam communities of St. George (2006) and St. Paul (2007) submit a petition to NOAA asking to revise the regulations and allow a fall fur seal pups harvest
- 2014 – NMFS created a second harvest season on St. George Island (from September 16-November 30), authorizing the harvest of up to 150 male pups
- St. Paul petition still being negotiated

Lesson 8: Marine Mammal Protection Act

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St. Paul's petition asks for up to 1,500 male young of the year (<1 year) fur seals.

Source: NMFS, Alaska Regional Office: <https://alaskafisheries.noaa.gov/pr/fur-seal>

MMPA Case Study: Pribilof Islanders and Fur Seals



- What do you think are the issues?
- What are the perspectives of the different groups involved?
 - Pribilof Islanders
 - U.S. Government (NOAA)
 - Animal rights groups
 - Others?
- What are possible courses of action?

Lesson 8: Marine Mammal Protection Act

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Summary



- MMPA created to protect marine mammal stocks in US waters
- Created an ecosystem approach to managing populations
- Created permitting process for exceptions
- Many stocks such as the gray whale have recovered under the MMPA
- Northern fur seal population is still declining
- Not all decisions are made based on biological data
- Killing marine mammals is a very emotional issue

Marine Mammal Protection Act

OBJECTIVE

Students will research the events that led up to the Marine Mammal Protection Act becoming a law in 1972.

TIME REQUIREMENT

50 minutes plus time for independent research.

BACKGROUND

The MMPA was passed by Congress on October 21, 1972. The origins of the MMPA can be traced back to the Northern Fur Seal Treaty of 1910. This Treaty was the first international agreement to protect an animal from human induced extinction. The idea of creating a law to protect marine mammals started with the environmental movement in the 1960s. Many people believe the publication of *Silent Spring* by Rachel Carson in 1961 was the catalyst for the environmental movement. The book struck a chord with the public and led the way for the banning of the chemical DDT and tighter scrutiny of pesticide use. In addition to *Silent Spring*, events around the country were alerting the general public, animals rights organizations and the government to the conditions of marine mammals populations in U.S. waters. Dolphins were being killed by the thousands in tuna nets. Images of the Canadian harp seal pup hunt were televised for the first time in 1965. And finally, the continued decline of whale populations, in spite of the International Whaling Commission's mission to curb commercial whaling, was of great concern to scientists and the general public. TV show like *Flipper* and *The Undersea World of Jacques Cousteau* were influencing the public's view of marine mammals.

REVIEW

Before proceeding with this lab and the ones to follow, it would be very useful to review the process for how a bill becomes a law. At the end of the lab under Resources, you will find a list of Internet websites or videos that describe the process of how a bill becomes a law.

MATERIAL

Current Marine Mammal Protection Act: <http://www.nmfs.noaa.gov/pr/laws/mmpa/text.htm>

Original Marine Mammal Protection Act of 1972: [Appendix VIII](#)

Summary of Marine Mammal Protection Act by G. Carleton Ray and Frank M. Potter, Jr. (October 2011) *The Making of the Marine Mammal Protection Act of 1972*. Aquatic Mammals. [Appendix IX](#)

Two page summary of MMPA: [Appendix X](#)

Hearings Before The Subcommittee on Fisheries and Wildlife Conservation of the Committee on Merchant Marine and Fisheries, House of Representatives, Ninety-Second Congress: Serial No. 92-10. page 13 and page 20: <http://archive.org/details/marinemammalshea00unit>

PROCEDURE

Review the synopsis of the MMPA below.

Divide the class into 4 or 5 groups. Assign groups one of the following topics or organizations. The list below is just a fraction of the witnesses who presented testimony for the Marine Mammal Protection Act of 1972. Feel free to add more.

- Anderson-Pelly Bill: Marine Mammal Protection Act (H.R. 10420). Ninety-Second Congress, Serial No. 92-10, pp. 13-19
- Harris-Pryor Bill: Ocean Mammal Protection Act (H.R. 6554), pp. 4-7
- Representative from the tuna fishery
- Representative from the International Whaling Commission
- Representative from the Fouke Fur Company
- Representative from an environmental group: Green Peace, Friends of the Animals, World Wildlife Fund, Center for Marine Conservation

Hold a mock Congressional hearing. Have students research their topic or organization and present an argument for or against protecting marine mammals.

Who were the key interest groups who pushed congress to pass the MMPA? What were their motives?

Greenpeace, World Wildlife Fund, Center for Marine Conservation, Friends of the Animals

Marine Mammal Protection Act

What were the key species that brought these environmental groups together to push for marine mammal protection laws?

Dolphins

The tuna fleet was killing thousands of dolphins in their purse seine nets. The nets were actually set on pods of dolphins because schools of tuna were almost always found under the pods.

Seals

The Canadian harp seal pups that were killed for their white fur were a key species. Northern fur seals of the Pribilof Islands were also highlighted. It was the beginning of the anti-fur movement.

Whales

For centuries, whale populations had been hunted to very low levels. The International Whaling Commission (IWC) was founded in 1946 to regulate commercial whaling but stocks were still declining.

INTERNET RESOURCES

How a bill becomes a law

The Bill of Rights Institute

- www.billofrightsinstitute.org/constitutionday

Kids in the House (middle school)

- <http://kids.clerk.house.gov/middle-school/lesson.html?intID=17>

Kids in the House (high school)

- <http://kids.clerk.house.gov/high-school/lesson.html?intID=17>

iCivics Lawcraft

- <http://www.icivics.org/games/lawcraft>

Marine Mammal Protection Act

NOAA Fisheries

- <https://www.fisheries.noaa.gov/topic/marine-mammal-protection>

U.S. Fish and Wildlife Service

- <http://www.fws.gov/laws/lawsdigest/MARMAM.HTML>

Marine Mammal Commission

- <http://www.mmc.gov>

Michigan State University, College of Law

- <https://www.animallaw.info/statute/us-marine-mammal-protection-act-annotated-guide>

Cornell University Law School

- <http://www.law.cornell.edu/uscode/text/16/chapter-31>

Government Printing Office

- <http://www.gpo.gov/fdsys/pkg/USCODE-2011-title16/html/USCODE-2011-title16-chap31-subchapl-sec1361.htm>

VIDEO RESOURCES

How a bill becomes a law

Many videos exist on YouTube that present the process for a bill becoming a law. Find one that best fits your classroom environment. Below are a few.

Schoolhouse Rock: "How a Bill Becomes a Law"

- <http://www.schooltube.com/video/fcde4d15a9276c9a09d3/>

C-Span Video Library: How a bill becomes a law

- <http://www.c-spanvideo.org/program/Beco>

Mindbites: American Government: How a bill becomes a law

- <http://www.youtube.com/watch?v=fvNz7Uv4Kcw>

Marine Mammal Protection Act

U.S. Fish and Wildlife Service: Marine Mammal Protection Act, Celebrating the 40th Anniversary

- <http://www.youtube.com/watch?v=YHy8D-4I52w>

Barbara Taylor: Monitoring Marine Mammal Populations

- <http://vimeo.com/40650108>

Summary of Marine Mammal Protection Act

The initial Marine Mammal Protection Act (MMPA) was passed by Congress in 1972 based on findings that certain species and populations of marine mammals were or had the potential to be in danger of extinction or depletion as a result of man's activities. The Act established a national policy to prevent marine mammal species and populations from declining beyond the point where they are a significant part of their ecosystems. It was the first legislation that protected all marine mammal species in their ecosystems.

Key definitions for the Act (Note: these are informal definitions for the purposes of this summary; for legal definitions, please refer to the MMPA, Section 3):

- Take – to “hunt, harass, capture or kill” a marine mammal or attempt to do so
- Harassment – causing a marine mammal to change its behavior in any way
- Moratorium – a complete ban on taking or importing marine mammals/marine mammal products
- Optimum Sustainable Population (OSP) – the number of animals that will maintain a healthy population in their ecosystem
- Population stock – a group of marine mammals of the same species that interbreed
- Depletion – a population below its optimum sustainable population
- Secretary – the Secretary of the U.S. Department of Commerce or the Secretary of the Interior

Summary

The 1972 Marine Mammal Protection Act (MMPA) established a nation-wide program to conserve marine mammals, rather than relying on individual states. The Department of Commerce is responsible for cetaceans (whales, dolphins, porpoises) and pinnipeds other than the walrus (seals and sea lions). The Department of Interior is responsible for sea otters, walrus, polar bears, dugongs, and manatees. The MMPA established a moratorium on the taking and importation of marine mammals as well as products taken from them (with specific exemptions), and establishes procedures for waiving the moratorium. The law authorized the establishment of a Marine Mammal Commission with specific advisory and research duties. The 1972 law exempted “Indians, Aleut, and Eskimos who dwell on the coast of the North Pacific Ocean” from the moratorium on taking marine mammals as long as the taking was conducted for the sake of subsistence or for the purpose of creating and selling authentic native articles of handicraft and clothing.

Below is a selection of key amendments from 1976-88. The MMPA was extensively amended and reauthorized in 1994.

- 1976 – clarified the MMPA was applicable in the waters of the 200-mile U.S. Exclusive Economic Zone
- 1981 – allowed permits to take marine mammals "incidentally" in the course of commercial fishing and provided additional conditions for transferring management authority to the States
- 1986 – allowed the incidental take of depleted marine mammals in activities other than commercial fishing, provided it does not impact subsistence harvest
- 1988 – gave commercial fishermen a 5-year exemption from the moratorium on incidental take of marine mammals. The Department of Commerce is authorized to grant of exemptions, provide for observer coverage, and collect data on incidental take. The California sea otter (southern sea otter) is explicitly excluded from the exemption process.
- 1994 – Amended with input from commercial fishers, conservation groups, public display institutions, scientific researchers, government agencies, animal protection groups and the Alaska Native community. Established a new regime to govern the taking of marine mammals incidental to commercial fishing, including: stock assessments for all marine mammals, creating take reduction plans for populations affected by interactions with commercial fishers, and studies of pinniped/fishery interactions. Among the other changes, the revised MMPA authorized providing grants to Alaska Native organizations to develop co-management structures for stocks of marine mammals taken for subsistence purposes.

Sources:

US Fish and Wildlife Service: <http://www.fws.gov/laws/lawsdigest/marmam.html>

Congressional Research Service Report for Congress <http://www.netpets.org/fish/legislation/marinemam.html>

Unintended Consequences

OBJECTIVE

The students will explore the unintended consequences of enacting and enforcing new legislation and the procedures for amending an act.

TIME REQUIREMENT

2 class periods. Time for independent research.

BACKGROUND

When the Marine Mammal Protection Act was authorized in 1972 many people celebrated, some people feared for their livelihood, while others tried to figure out how to monitor and enforce a new set of laws that covered many species of marine mammals in remote areas, often only accessible by boat or plane.

Natural resources managers are people who protect and manage wildlife, trees, plants, soil, and water. Many natural resource managers work for state or federal government agencies that monitor and enforce laws that guide natural resource use and regulation. These managers often spend their time working to translate a law (like the MMPA) into everyday terms and to enforce the intent of the law.

In 1972, the gray whales of along the west coast of the U.S. and the northern fur seals of the Pribilof Islands were of great importance to the supporters of the original Marine Mammal Protection Act. At the time, gray whale stocks were depleted, due to overharvesting. Northern fur seals were legally commercially harvested, and managed by the U.S. Government for the fur market. Animal rights groups were lobbying hard to end the fur harvests around the world. As result of the MMPA, gray whale stocks were protected and the northern fur seal harvest ended on St. George Island in 1976 and on St. Paul Island in 1984. After more than 30 years, gray whale stocks have recovered. The International Whaling Commission has approved a subsistence harvest of whales in northeast Russia. The Makah Tribe would like to resume its ancestral harvest of gray whales. The northern fur seals on the Pribilof Islands have not been commercially harvested for decades, but the stocks are declining.

MATERIALS

MMPA, computer, library

PROCEDURE

Research the MMPA. Try to find instances where the MMPA conflicted with a state law, Tribal law, or local jurisdiction or when the protection of one species is to the detriment of another species.

Working in groups of 3-4 students, pick an unintended consequence of the MMPA or another law and present the following to your class.

1. When the original law enacted, what was the intent of the law?
2. What is an unintended consequence?
3. Has a resolution been proposed?
4. What would you propose as a resolution?

Examples:

- California sea lions are eating endangered salmon at the mouths of rivers and entrance to fish ladders. The MMPA prevents lethal removal of California sea lions but the Endangered Species Act requires that the salmon be saved.
- For decades, scientists asked subsistence hunters in Alaska to collect organs and tissue samples from freshly killed animals. This type of cooperation saved the government thousands of dollars and provided a steady supply high quality data for researchers. Recent interpretation of the MMPA forbids the collection of animal parts unless the principal scientist is present at the harvest or hunt. This interpretation means that subsistence hunters can no longer collect tissue for scientists. It is virtually impossible for scientists to be present at all harvests or hunts due to lack of manpower and expense.
- Researchers at Woods Hole Oceanographic Institute were unable to complete research on how gray whales would respond to a high frequency whale tracking device.. <https://www.whoi.edu/oceanus/feature/caught-in-the-middle-of-the-marine-mammal-protection-act>
- Inuit Puppets Seized by U.S. Customs: The Fur Commission: <http://www.furcommission.com/the-strange-politics-of-the-marine-mammal-protection-act/>
- Of little fish, Cute Mammals, and the Law of Unintended Consequences: https://www.huffingtonpost.com/glen-martin/pacific-herring-shortage_b_1987810.html

Case Study: Gray Whales

OBJECTIVE

Students will research the Makah Treaty of 1855 and the Makah Tribes's unsuccessful attempts to resume whaling since 1995.

TIME REQUIREMENT

50 minutes or 1 class period

BACKGROUND

For thousands of years the Makah Tribe harvested marine mammals from the north Pacific Ocean. Communities thrived due to the abundance of seals and whales populating the waters off the Washington coast.

The Makah Treaty of 1855 grants the Makah Tribe "the right of taking fish and of whaling or sealing at usual and accustomed grounds and stations...". Due to a decline in the gray whale population the Makah Tribe decided to voluntarily stop hunting gray whales in the 1920s. By the 1970s the gray was listed as "endangered" under the Endangered Species Act (ESA). The eastern north Pacific gray whale was not removed from the ESA until June 1994. During that same year, Congress amended the MMPA to "reaffirm that the MMPA does not in any way diminish or abrogate protected Indian treaty fishing or hunting rights."

Since May 5, 1995, the Makah Tribe has attempted to resume their treaty rights to hunt gray whales. The right to hunt was granted in 1998 and then revoked in 2002.

NOAA Gray Whale Population and Distribution Information (September 2012)

Whales (cetaceans) are divided into two groups: Odontocetes and Mysticetes, based on feeding methods. Odontocetes are toothed whales and feed on large prey like giant octopus, fish and mammals. Mysticetes have baleen and are filter feeders of small prey like krill and zooplankton. Gray whales are baleen whales (mysticetes). In all baleen whales, females are larger than males of the same age. Gray whales are bottom feeders; individuals feed primarily on one side (either right or left) and consequently have differential wear on the baleen on one side.

There are two stocks of Gray Whales in the North Pacific. The western or 'Korean' stock is a very small population of approximately 100 animals which lives along the coast of eastern Asia. The eastern stock, which lives along the west coast of North America is

estimated at 20,990 (2010/2011 estimate). The eastern stock ranges widely from California to Hawaii to Alaska to Mexico. In the eastern stock, calves are born from early January to late February in the shallow lagoons of Baja California, in Mexico. They migrate northward from mid-February to May, and most gray whales summer in feeding areas in the Bering Sea. Females with newborn calves migrate primarily between March and June. There is a group called the Pacific Coast Feeding Aggregation (PCFA) that remains in the waters off Washington and British Columbia. Photo identification of this group over many years indicates that the PCFA is a loose group of whales composed of animals that move widely along the Pacific coast. Although some whales show fidelity to the group, many whales have long gaps (up to 8 years) in resightings. Genetic information indicates the PCFA is part of the Eastern North Pacific stock and is not a separate population unit.

The Eastern North Pacific stock experienced an Unusual Mortality Event (UME) in 1999-2000 when a high number of gray whales were stranded along the west coast of North America. Most of the stranded whales were emaciated and aerial photogrammetry indicating that migrating whales were skinnier than in previous years. In addition, calf production in 1999 and 2000 was 1/3 of what it was in previous years. Analysis estimated that non-calf mortality in those years was 15.3% compared to about 2% in a normal year. The UME appears to be related to food availability. More open water provides greater feeding opportunities for gray whales. Unusual oceanic conditions in 1997 may have decreased productivity in feeding areas. Most recent abundance estimates indicate the population numbers are back to nearly 1990's levels so the UME was just an aberration in food availability causing increased adult mortality and decreased calf production.

**Information used with permission by NOAA Fisheries*

MATERIALS

- Makah Treaty of 1855 (Appendix VII)
- Makah whaling timeline
- Gray Whale Timeline (produced by the Neah Bay High School, 2012)
- Gray Whale Fact Sheet (Appendix VIII)

Case Study: Gray Whales

PROCEDURE

- Review the MMPA and Makah Treaty of 1855
- Review the Gray Whale Timeline
- Review the Gray Whale Fact Sheet
- Hold a class debate on the Ninth Circuit Court of Appeals decision to require the Makah to obtain a waiver of the MMPA's take moratorium before it can resume its Treaty whaling right.

<http://www.seashepherd.org/commentary-and-editorials/2015/03/11/makah-whaling-whales-must-be-protected-in-us-waters-692>

EXTEND AND EXPLORE

Reserch the killing of a gray whale by members of the Makah Tribe on September 8th, 2008. Present the views of the tribal members who killed the whale, tribal members who supported the event, tribal members who did not support the event, and NOAA's reaction.

DISCUSSION

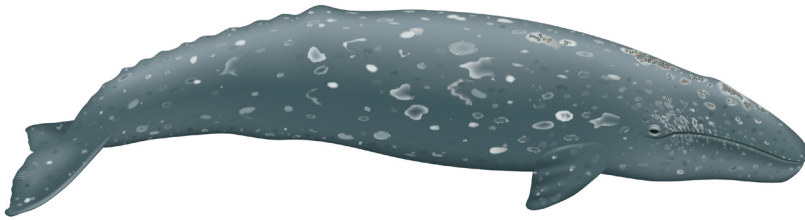
- Is there a biological reason for denying the Makah Tribe the right to hunt 20 gray whales per year?
- Why do you think the Chukotkan people are allowed a take of 600 whales?
- Do you think the Makah will eventually win the right to resume whaling? Why or why not?
- Are whales legally harvested for subsistence and cultural reasons in other parts of the U.S.?
- Update the Gray Whale Timeline to include events since 2012.

RESOURCES

- Usual & Accustomed Places (video) by Upstream Productions:
<http://upstreamvideos.com/wp/dvds/usual-accustomed-places/>
- Makah Tribe Whaling Tradition
<http://makah.com/makah-tribal-info/whaling/>
- Makah whaling rights srping from 1855 treaty, The Seattle Times, Linda V. Mapes:
<http://www.seattletimes.com/seattle-news/northwest/qa-makah-whaling-rights-spring-from-1855-treaty/>
- Federal Government Reaffirms Makah Indian Whaling Rights
<http://www.publicaffairs.noaa.gov/releases2001/jul01/noaa01r121.html>
- Humboldt University, Makah Whaling Chronology
<http://users.humboldt.edu/ogayle/sed741/MakahWhalingChronology.html>
- Sea Shepherd

LESSON EIGHT

LAB 8.3 GRAY WHALE FACT SHEET

Eastern North Pacific Gray Whale (*Eschrichtius robustus*):

The gray whale (*Eschrichtius robustus*) is the only large whale that spends most of its life in coastal waters. Because they stay relatively close to shore during migration, gray whales are one of the most watched whales by humans. The whales can be seen spy-hopping, and even breaching while they migrate.

Distribution - Baja California and Mexico to the coasts of Siberia and Alaska

Migration - Eastern North Pacific gray whales have one of the longest annual mammal migrations, travelling 15,000-20,000 km (9,300-15,000 miles) round trip. The whales spend their winters in the warm waters off Baja California, Mexico, and the southeastern Gulf of California. In mid-February the whales have start their annual migration to the summer feeding grounds in the Chukchi, Beaufort, and northwestern Bering Seas. The return migration begins in late November after mating season.

Diet - benthic molluscs, crustaceans, squid, and worms

Feeding Behavior - Feeding gray whales are usually alone or in small groups. Gray whales are bottom feeders, and suck sediment and the "benthic" amphipods that are their prey from the sea floor. To do this, they roll on their sides and swim slowly along, filtering their food through coarse baleen plates, of which they have 130-180 on each side of the upper jaw. In doing so, they often leave long trails of mud behind them, and "feeding pits" in the sea floor.

Length - 11-15 m (30-50 ft), females are slightly smaller than males

Weight - 35,000 kg (80,000 lb)

Behavior - Migrating gray whales move steadily in one direction, breathing and diving in predictable patterns. They commonly travel alone or in small unstable groups, although large aggregations can occur on both the feeding and breeding grounds. Except for mother-calf pairs, associations between individuals are relatively fluid. Breaching and other surface behaviors are common.

Reproduction/Life History - Mating occurs in late November and early December. Gestation last 12 to 13 months. Females give birth every two years to one calf in mid-January.

Offspring - calves are 4.6 - 4.9 m (15-16 feet) long, 680-920 kg (1500-2000 lbs), and wean at 7-9 months

Age at Sexual Maturity - 8 years of age

Lifespan: unknown, estimated 40-80 years

Population: Eastern North Pacific numbers range from 18,000-30,000.



Threats: collisions with vessels, entanglements in fishing gear, habitat degradation, disturbance from ecotourism, low frequency noise, impacts from development, local catastrophic events, and climate change.

MMPA: All gray whales are protected under the MMPA.

ESA: Eastern North Pacific gray whales were delisted in 1994.

Interesting Fact: Atlantic gray whales disappeared 300 years ago due to over hunting. In 2010 a lone gray whale was sighted in the Mediterranean Sea. Scientists believe the whale became lost in the Arctic trying to migrate south.

Gray Whale Timeline (Neah Bay High School, 2012)

NOAA – Sheet #2

Gray Whale timeline (produced by Neah Bay High School students and staff)

July 3, 2012: IWC extends gray whale catch limit for 6 years. (<https://fas.org/sgp/crs/row/R40571.pdf>)

May 21, 2012: NOAA announces that it is **terminating the 2008 DEIS and beginning a process to develop a new DEIS**. (77FR29967, PDF 203KB)

Aug. 15, 2008: **Comment period closes on DEIS.**

May 9, 2008: NOAA announces **release of a draft EIS** (73FR26375, PDF 51KB) on Makah request to continue treaty right subsistence hunting of eastern north Pacific gray whales. The DEIS considers various alternatives to the tribes proposed action and is available for a 60-day public comment period.

March & April 2008: Three of the tribal members enter guilty pleas on March 27, 2008, to unlawful taking of a marine mammal in violation of the MMPA. On April 7, 2008, after a bench trial on stipulated facts, the court finds the remaining two tribal members guilty of conspiracy and unlawful taking of a marine mammal in violation of the MMPA.

October & November 2007: The five tribal members involved in the September 2007 killing of a gray whale are indicted in federal court on Oct. 5, 2007, for unauthorized whaling, unauthorized take of a marine mammal, and conspiracy to engage in unlawful whaling. On Nov. 16, 2007, the five are charged in tribal court for violating the tribe's gray whale management plan, violating state and federal laws, and reckless endangerment.

Sept. 8, 2007: Five members of the Makah Tribe hunt and kill a gray whale in the Strait of Juan de Fuca in a hunt that was not authorized by the tribe or NOAA. This unauthorized hunt did not comply with numerous provisions and restrictions defined in the tribe's application, and both the tribe and NOAA make statements condemning the unlawful hunt.

May 30, 2007: IWC extends gray whale catch limit for 5 years. **See Renker, IWC59/ASW9**

Feb. 27, 2006: NOAA announces its **decision to expand scope of the EIS** (71FR9781, PDF 55KB) to include issuance of IWC quotas under the Whaling Convention Act.

Oct. 2005: NOAA conducts public scoping meetings in Neah Bay, Port Angeles and Seattle, Wash., and Washington, D.C., to receive public input on the resources to be analyzed and possible alternatives to include in the EIS.

Aug. 25, 2005: NOAA publishes a **notice of intent to conduct public scoping meetings and to prepare an EIS** (70FR49911, PDF 28KB) related to the Makah Tribe's request to continue treaty right subsistence hunting of eastern north Pacific gray whales.

March 3, 2005: NOAA publishes a **notice of availability of the Makah MMPA waiver request**. (70FR10359, PDF 45KB)

Feb. 14, 2005: NOAA receives the **Makah Tribe's request for a waiver of the MMPA's take moratorium**. (PDF 428KB)

Nov. 26, 2003, & June 7, 2004: Ninth Circuit Court of Appeals twice denies en banc rehearings on *Anderson v. Evans*, and issues the first amended opinion (350 F.3d 815) and second amended opinion (371 F.3d 475). The amended opinions clarify the legal reasoning of the decision but do not change it.

Dec. 20, 2002: *Anderson v. Evans* (314 F.3d 1006), Ninth Circuit Court of Appeals reverses the District Court's August 2002 opinion, ruling that 1) an EIS (rather than an EA) should have been prepared under NEPA, and 2) the Makah, to pursue any treaty rights for whaling, must comply with the process prescribed in the MMPA for authorizing take of marine mammals otherwise prohibited by a moratorium. The Ninth Circuit Court of Appeals decided that the Tribe must obtain a waiver of the MMPA's take moratorium before it may exercise its Treaty whaling rights. However, the Court emphasized that it was not holding that the Treaty had been abrogated.

August 2002: District Court for the Western District of Washington grants summary judgment for us on a lawsuit filed in January 2002 alleging violations of the MMPA and NEPA.

May 2002: IWC sets a catch limit of 620 eastern north Pacific gray whales for 2003 through 2007. The Russian Federation (acting on behalf of the Chukotkan people for a total of 600 whales) and the United States (acting

Gray Whales Timeline (Neah Bay High School, 2012)

on behalf of the Makah Tribe for a total of 20 whales) submit needs statements to the IWC. See [Renker, IWC54/ASW5](#)

July 12, 2001: NOAA issues a final EA with a preferred alternative granting the Makah the IWC quota of five whales a year for ceremonial and subsistence purposes with restrictions that allow a limited hunt on the Pacific Coast feeding aggregation, a portion of the eastern north Pacific stock that occurs along the Pacific Coast south of the Bering Sea during the feeding season.

Jan. 14, 2001: NOAA distributes a draft EA on issuing a quota to the Makah for a subsistence hunt on gray whales for 2001 and 2002 for public comment, with a preferred alternative of allowing a hunt on migrating whales.

June 9, 2000: *Metcalf v. Daley* (214 F.3d 1135), Ninth Circuit Court of Appeals reverses and remands the District Court's September 1998 opinion, holding that NOAA failed to take a "hard look" under NEPA at the proposed whale hunt.

August 1999: NOAA publishes [Technical Memorandum We-AFSC-103, Status Review of the \[ENP\] Stock of Gray Whales](#), (PDF 870KB) concluding the five-year monitoring and assessment following delisting, and recommending the continuation of the stock's classification as non-threatened.

May 17, 1999: Makah hunt, strike, and land eastern north Pacific gray whale.

Sept. 21, 1998: District Court for the Western District of Washington grants summary judgment on a lawsuit filed in October of 1997, ruling that the Makah can resume whaling.

April 6, 1998: NOAA [allocates the quota to the Makah for limited hunts in 1999 under the WCA](#). (63FR16701, PDF 157KB)

Oct. 18, 1997: IWC sets a catch limit of 620 eastern north Pacific gray whales for 1998 through 2002. The Russian Federation (acting on behalf of the Chukotkan people for a total of 600 whales) and the U.S. (acting on behalf of the Makah Tribe for a total of 20 whales) submit needs statement to the IWC. See [Renker, IWC49/ASW5](#)

Oct. 17, 1997: NOAA issues a final environmental assessment (EA) and finding of no significant impact after conducting an environmental review under the National Environmental Policy Act.

Oct. 13, 1997: NOAA and the Makah enter into an agreement to pursue a quota at the IWC meeting, adding time and area restrictions on the hunts to a prior, similar agreement signed in March of 1996.

June 23, 1996: The United States withdraws its request for a gray whale quota at the 48th International Whaling Commission meeting in Aberdeen, Scotland.

May 5, 1995: Makah formally notify the U.S. Government of their interest in resuming treaty right ceremonial and subsistence harvest of eastern north Pacific gray whales, asking the Department of Commerce to represent it in seeking approval from the IWC for an annual quota.

June 16, 1994: Eastern north Pacific gray whales are [removed from the Federal List of Endangered Wildlife](#) (59FR31094, PDF 471KB) after a determination that the population has "recovered to near its estimated original population size and is neither in danger of extinction throughout all or a significant portion of its range, nor likely to again become endangered within the foreseeable future throughout all or a significant portion of its range." NOAA begins a five-year monitoring program.

1994: Congress amends the [MMPA](#). The 1994 Amendments expressly preserved Makah treaty rights. Section 14 of the 1994 Amendments provides: "Nothing in this Act including any amendments to the Marine Mammal Protection Act of 1972 made by this Act alters or is intended to alter any treaty between the United States and one or more Indian Tribes." Pub. L. 103-238, § 14 (Apr. 30, 1994); see Historical and Statutory Notes to 16 U.S.C. § 1361. Congress's stated intent in enacting this disclaimer was to "reaffirm that the [MMPA](#) does not in any way diminish or abrogate protected Indian treaty fishing or hunting rights." S. Rep. No. 220, 103rd Cong., 2nd Sess, 1994 USCCAN 514, 534. The language and legislative history of the [MMPA](#) thus evince absolutely no Congressional intent to abrogate the Tribe's Treaty right to take marine mammals.

Gray Whales Timeline (Neah Bay High School, 2012)

1979: The Makah Cultural and Research Center opens to the public. The museum and cultural resource management entity for the Makah Tribe exhibits whaling artifacts and educates the non-Makah public about this important cultural practice.

1972: The Marine Mammal Protection Act (MMPA) is enacted. Under the MMPA, NOAA is responsible for the conservation of 147 stocks of whales, dolphins, and porpoises as well as seals, sea lions, and fur seals, including the eastern north Pacific gray whale (16USC1316 et seq.). There is no evidence that Congress was even aware of our unique treaty right to take marine mammals when it enacted the MMPA, much less that it chose to abrogate those rights. On the contrary, neither the MMPA nor its legislative history even mention Indian treaty rights until Congress amended the MMPA in 1994. Far from abrogating those rights, the 1994 Amendments expressly preserved them. Section 14 of the 1994 Amendments provides: “Nothing in this Act including any amendments to the Marine Mammal Protection Act of 1972 made by this Act alters or is intended to alter any treaty between the United States and one or more Indian Tribes.” Pub. L. 103-238, § 14 (Apr. 30, 1994); see Historical and Statutory Notes to 16 U.S.C. § 1361. Congress’s stated intent in enacting this disclaimer was to “reaffirm that the MMPA does not in any way diminish or abrogate protected Indian treaty fishing or hunting rights.” S. Rep. No. 220, 103rd Cong., 2nd Sess, 1994 USCCAN 514, 534. The language and legislative history of the MMPA thus evince absolutely no Congressional intent to abrogate the Tribe’s Treaty right to take marine mammals.

1970-1981: The Makah Tribe experienced a period of intensified interest in their own history and culture as a result of the archeological dig at Ozette village. The excavation, which operated from 1970-1981, uncovered hundreds of thousands of artifacts and faunal remains which verify the whaling tradition which existed prior to contact with non-Indians.

June 2, 1970: Gray whales are among the baleen whales listed as “endangered” under the U.S. Endangered Species Conservation Act, precursor to the 1973 Endangered Species Act (ESA).

1949: The Whaling Convention Act (WCA) is enacted to domestically implement the ICRW, prohibiting whaling in violation of the ICRW, the schedule, or any regulation adopted by the Secretary of Commerce (16USC916 et seq.).

1946: U.S. signs the International Convention for the Regulation of Whaling (ICRW), established in order “to provide for the proper conservation of whale stocks and thus make possible the orderly development of the whaling industry....” The ICRW creates the International Whaling Commission (IWC) to implement the schedule. The IWC amends the schedule to impose a complete ban on the taking or killing of gray whales, but includes an aboriginal subsistence exception “when the meat and products of such are to be used exclusively for local consumption by the aborigines.”

1920s: Makah cease whaling after the eastern North Pacific (ENP) gray whale population is significantly reduced by commercial hunting.

1855: U.S. Government and Makah Tribe enter into the [Treaty of Neah Bay](#), securing “[t]he right of taking fish and of whaling and sealing at usual and accustomed grounds and stations...” Under this treaty the Tribe agreed to give up its rights to hundreds of thousands of acres of land on the Olympic Peninsula. In return, the United States promised to secure to the Makah the right to engage in whaling. This is the only treaty ever made by the United States which contains such a guarantee.

The Makah Indian Tribe’s (Makah) tradition of whaling dates back at least 1,500 years.

Case Study: Northern Fur Seals

OBJECTIVE

Students will research the rights of Alaska natives under the Marine Mammal Protection Act using the Pribilof Islanders as an example.

TIME REQUIREMENT

50 minutes

BACKGROUND

For over two hundred years, the Unangan of the Pribilof Islands were forced to harvest northern fur seals, first for the Russians fur trading companies then for the private U.S. companies, and finally for the U.S. Government. During this time the northern fur seal became a staple in the Unangam diet. Life on the Pribilofs was fur seal centric. Both the economy and the diet were dependent upon the harvest of fur seals.

Northern fur seals have been commercially harvested for their fur on the Pribilof Islands since the Russians arrived in 1787. There was no legislation to protect the fur seals from over harvesting until the Fur Seal Treaty in 1911 followed by the Interim Convention on Conservation of North Pacific Fur Seals in 1957. Both treaties were created to protect the U.S. economic interests in the commercial harvest of northern fur seals for their fur. The government managed harvest of northern fur seal ended in 1973 on St. George Island and 1984 on St. Paul Island. Currently the only harvest that takes place is a subsistence harvest on both islands.

MATERIALS

- Northern fur seal population data, Lab 7.4
- MMPA language that refers to the northern fur seal.

PROCEDURE

- Review the MMPA, Northern Fur Seal Treaty of 1911 and the Fur Seal Act of 1976
- Review the pup population and harvest numbers Worksheet 7.4.2 from Lab 7.3 (Excel file)
- Review the timelines from Worksheet 7.4.2

DISCUSSION

- What was the harvest level in 1973 when the MMPA was passed?
- What other legislation affected the MMPA?
- Why were Alaska Natives treated differently than Native American Tribes in the lower 48 states?
- Under the MMPA, northern fur seals were treated differently than other marine mammals. What was the reasoning for this exception?

RESOURCES

- Lab 7 Historical Timeline
- Lab 7 Harvest Data
- Lab 7 Pup Population Data
- Northern Fur Seal Treaty of 1911: <https://celebrating200years.noaa.gov/events/fursealtreaty/welcome.html#treaty>
- Interim Convention on Conservation of North Pacific Fur Seals, 1957: <https://treaties.un.org/doc/Publication/UNTS/Volume%20314/volume-314-I-4546-English.pdf>

Case Study Comparison: Makah and Pribilof Islanders

OBJECTIVE

Compare the effects of the MMPA on the Makah and the Pribilof Islanders.

TIME REQUIREMENT

1-2 class periods plus time for Internet research.

BACKGROUND

The 1972 MMPA exempted "Indians, Aleut, and Eskimos who dwell on the coast of the North Pacific Ocean" from the moratorium on taking marine mammals provided that taking was conducted for the sake of subsistence or for the purpose of creating and selling authentic native articles of handicraft and clothing. The MMPA allows for a subsistence take as long as it is not wasteful, the hunt is humane, no raw products are sold and the species is not depleted. The Makah tribe of Washington is the only tribe in the lower forty-eight states with treaty rights to harvest marine mammals.

Today, the Pribilof Islanders continue to harvest northern fur seals through a co-management agreement with the National Marine Fisheries Service (NOAA Fisheries). The Makah have been seeking permission to hunt gray whales since the species was removed from the Endangered Species List in 1994.

MATERIALS

- Makah Treaty of 1855
- MMPA Section 101 Exception 7. Alaska Natives

PROCEDURE

- Read Section 101 of the MMPA that states the rights of Alaska natives to subsistence hunt.
- Read the Makah Treaty.
- Discuss the difference in rights.
- Divide the class in four or more groups.
 - ◆ Native Alaskans
 - ◆ Makah Tribe
 - ◆ Non-Government Organizations (NGOs) - for example, Greenpeace
 - ◆ Scientific researchers/biologist

- ◆ NOAA Regional Council (lawyers)
- ◆ Circuit Court Judges
- Determine what the views of each group would be on the difference in the rights of each group to hunt marine mammals. What is important to each group?
- Conduct a student-led round table discussion or debate on whether all native groups should be given the same rights to subsistence hunt/harvest marine mammals if the stocks are considered healthy enough to withstand a harvest.

RESOURCES

- <http://nativecases.evergreen.edu/collection/cases/its-our-treaty-whaling>
- In 1997 Metcalf and other animal rights organizations sued NOAA Fisheries for failing to follow proper procedures in preparing its Environmental Assessment (EA) for the Makah whale hunt *Metcalf v. Daley*, 214 F.3d 1135 (9th Cir.2000): *Metcalf, et. al.*, argued that NOAA/NFMS violated the National Environmental Policy Act (NEPA) by making an agreement with the Makah to resume whaling before it had considered its environmental consequences, i.e., prepared the EA.

EXTEND AND EXPLORE

- Research other marine mammal subsistence harvests
 - ◆ Cook Inlet beluga
 - ◆ Bowhead whales
 - ◆ Narwals
 - ◆ Harp seals

adaptation Any change in the structure or functioning of an organism that makes it better suited to its environment. (Oxford Dictionary of Science)

Aleut Name used by Russian fur traders in the 1700s when referring to people who inhabited the islands now known as the Aleutian Islands.

Antarctic Circle The line of latitude 66.5° south of the equator. Along this line in the southern hemisphere the sun does not set on the day of the summer solstice (usually 21 December) and does not rise on the winter solstice usually 21 June).

archipelago An extensive group of islands.

Arctic Circle The line of latitude 66.5° north of the equator. Along this line in the northern hemisphere the sun does not set on the summer solstice (usually 21 June) and does not rise the winter solstice (usually 21 December).

baleen A fibrous structure made of keratin found in the mouths of filter-feeding whales such as humpback and gray whales. In humans, keratin can be found in fingernails and toenails.

baleen whale A whale with baleen in its mouth instead of teeth. There are 11 species of baleen whales; three examples are blue whale, humpback whale, and gray whale. Also called a mysticete.

blind A shelter used for observing or hunting animals.

blubber A thick layer of fat underneath the skin of marine mammals that provides insulation from the cold and a source of energy when food supplies are low.

breeding philopatry or breeding-site fidelity returning to the same location to breed, year after year.

cetacean A marine mammal of the order Cetacea, which includes whales, dolphins, and porpoises.

chromosome A threadlike strands found in the nucleus of most living cells consisting of a single DNA molecule bonded to proteins and that carries genetic information in the form of genes.

cold-blooded Having a body temperature that is dependent on the surrounding environment. A cold-blooded animal is hot when its environment is hot and cold when its environment is cold.

conservation The act of protecting or preserving natural resources in order to prevent depletion or loss.

countercurrent heat exchange A process that occurs in nature preventing large amounts of heat from being lost to the environment by causing the transfer of heat from warm blood to cool blood reentering the core of the body.

DNA (deoxyribonucleic acid) is the material present in all living organisms that carries all the information about how a living thing will look and function.

eared seal A pinniped of the family Otariidae, which includes sea lions and fur seals. Unique characteristics include an external ear flap and flexible hindflippers that can be rotated forward under the body allowing the animal to walk on all four when on land.

ecosystem A community of living organisms and their environment, and the interactions between the two.

equator The line of latitude that is an equal distance from the North Pole and the South Pole, designated as 0° latitude.

Eskimo A name commonly used in Alaska to refer to Inuit and Yupik people.

eye lens A transparent structure in the eye used to focus light.

feces Bodily waste discharged from animals; also called stool or scat.

fecundity Fecundity is derived from the word fecund which means 'fruitful'. In biology, fecundity refers to fertility or the rate of reproduction of an individual or population.

fissiped Carnivores with toes that are separated from each other. Fissiped is Latin for "split-foot." Weasels (sea otters, mink, badgers), bears (polar, brown, black), dogs and cats are fissipeds.

food chain A food pathway that links different plants and animals within a community or ecosystem. Nutrients and energy are passed from creature to creature through the food chain.

food web A network of food chains in an ecosystem

foraging The act of searching and hunting for food.

gene Genes are made of DNA and are the basic physical unit of heredity.

harbor seal A true seal with spotted coat, commonly found in coastal waters of the northern hemisphere. See true seal definition for characteristics.

haulout Areas on land or ice where pinnipeds (seals, sea lions and walruses) can temporarily leave the water to rest.

hemoglobin The protein in red blood cells that carries oxygen. Similar to myoglobin in muscles.

insulate To prevent the transfer of heat.

Laaqudaâ Unangam word for northern fur seal.

Laaqudaâx Unangam word for northern fur seal pup. Note that the last syllable is longer than the word for northern fur seal.

latitude or line of latitude Imaginary line that runs east to west around the globe parallel to the equator. A latitude line measures the distance north or south of the equator.

locus the location of a gene on a chromosome.

longitude or line of latitude Imaginary line that runs from the North Pole to the South Pole. It measures distances east and west from a base longitude line or prime meridian.

mammal Warm-blooded vertebrate that has hair or fur, gives birth to live offspring, and produces milk to nurse its offspring.

Marine Mammal Protection Act of 1972 An Act to protect marine mammals and their environment, passed by Congress and signed by President Richard Nixon in 1972. Animals protected under this Act include whales, dolphins, seals, sea lions, and walruses.

MMPA: Depletion a population below its optimum sustainable population.

MMAP: Harassment causing a marine mammal to change its behavior in any way.

MMPA: Moratorium a complete ban on taking or importing marine mammal/marine mammal products.

MMPA: Optimum Sustainable Population (OSP) the number of animals that will maintain a healthy population in their ecosystem.

MMPA: Population stock a group of marine mammals of the same species that interbreed.

MMAP: Take the "hunt, harass, capture, or kill" a marine mammal or attempt to do so.

MMPA: Secretary the Secretary of Commerce of the Secretary of the Interior, or both.

midden A mound or deposit containing shells, animal bones and other trash that indicates the presence of humans.

migration The long distance movement of animals on a seasonal basis.

molt To shed old fur and grow new fur.

mortality Death.

myoglobin The protein in muscle that carries oxygen. Similar to hemoglobin in blood.

natal philopatry When an animal returns to the site where it was born, to breed or give birth.

NOAA An abbreviation for the National Oceanic and Atmospheric Administration, a federal government agency in the Department of Commerce, created in 1970. NOAA scientists conduct research on the world's oceans and atmosphere.

northern fur seal A pinniped with ear flaps (an "eared seal"), long front flippers, the ability to walk on all four flippers on land, and with dense underfur. Northern fur seals are found in the North Pacific Ocean, the Bering Sea and the Sea of Okhotsk.

northern fur seal: adult female A female northern fur seal that is old enough to have pups. Usually three years or older.

northern fur seal: adult male A male northern fur seal that is old enough to mate. Usually 7 years or older.

northern fur seal: breeding male An adult male who defends a territory on the rookery containing females. Usually 9 years or older.

northern fur seal: idle male An adult male who may hold a territory on the rookery but does not hold females on the territory.

northern fur seal: juvenile A northern fur seal from December of its birth year until it is old enough to mate.

northern fur seal: pup A northern fur seal from birth to December of its birth year.

odobenid Scientific name for walrus.

otariid (Otariidae) Scientific name for an eared seal such as a northern fur seal or Steller's sea lion.

otolith Otoliths or “earstones” are found in the heads of all fishes except sharks, rays, and lampreys. The otolith of each fish species has a distinctive shape. Scientists use otolith shape to identify the species of fish eaten by seals and sea lions.

pelage Fur, hair, or wool of a mammal.

pelagic Relating to, or living in, the open ocean or seas.

phocid (Phocidae) Scientific name for a true seal such as a harbor seal.

phytoplankton Tiny plants that form the beginning of the food chain for aquatic animals.

pinniped Semi-aquatic marine mammals; pinnipeds leave the water to rest, molt, and reproduce. Pinniped is Latin for “fin-foot.” Seals, sea lions and walruses are all pinnipeds.

plankton Tiny plants and animals that live in the water and float with currents. Most plankton can only be seen with a magnifying glass or microscope.

population A group of organisms that live in the same place at the same time.

prey An animal hunted and eaten for food.

Pribilof Islands A group of four volcanic islands in the Bering Sea. The Pribilof Islands are home to the largest population of northern fur seals in the world, as well as large seabird rookeries.

prime meridian A line of longitude defined to be 0°.

pup wad A group of northern fur seal pups on a rookery.

rookery A colony of breeding animals. A rookery can be a nesting place for birds (especially birds that nest in large groups), or breeding grounds for pinnipeds (seals, sea lions and walruses).

satellite tag Scientific instrument used to track the location of an animal in real time. The instrument sends location data through a satellite to a personal computer.

scat Bodily waste discharged from animals; also called stool, feces, or poop.

sea lion A pinniped with external ear flaps, long front flippers, the ability to walk on all four flippers on land, and with no dense underfur. Sea lions and fur seals make up the “eared seal” group of pinnipeds.

seal see definition for true seal

sirenian Manatees and dugongs. Marine mammals found in warm water that only eat seagrass and aquatic vegetation.

site fidelity Returning to the same area each year.

snout The part of an animal’s face that projects forward and includes nose, mouth and jaws.

subsistence hunt Harvesting of wildlife by indigenous people for consumption and traditional or cultural requirements.

thermoregulate regulate temperature, especially one's own body temperature

toothed whale A whale with teeth, instead of baleen. Also called odontocete.

topography The physical or natural features of an area.

Tropic of Cancer An imaginary latitude line that lies approximately 23.5° north of the equator. It is the circle of latitude on the earth that marks the most northerly position at which the sun may appear directly overhead.

Tropic of Capricorn An imaginary line that lies approximately 23.5° south of the equator. It marks the most southerly latitude on the earth at which the sun can be directly overhead.

true seal A pinniped of the family Phocidae, which includes harbor seals and spotted seals. Unique characteristics include no external ear flaps and a sleek, streamlined, sausage-shaped body. A true seal cannot walk on all four flippers, but moves on its stomach when on land or ice. Other names include seal, hair seal or phocid seal.

Unangam (adjective) Proper adjective, for example “the Unangam People” or “Unangam culture.” http://alaska.si.edu/culture_unangan.asp?continue=1

Unangan (noun) Name the people of the Aleutian and Commander Islands use for themselves. Eastern dialect. http://alaska.si.edu/culture_unangan.asp?continue=1

Unangas Name the people of the Aleutian and Commander Islands use for themselves in the western Aleutian dialect.

vertebra (plural: vertebrae) An individual bone in the backbone or vertebral column. If you run your finger down your backbone, you will feel bumps. Each of these bumps is from one vertebra

vocalizations The sounds that an animal makes fur seals use calls to communicate with other fur seals.

walrus (*Odobenus rosemarus*) A pinniped of the family Odobenidae. Unique characteristics include no external ear flaps, large tusks, thick leathery hide, and hindflippers that rotate forward underneath the body allowing the animal to walk on all fours when on land. Its scientific name translates to “tooth-walking sea horse.”

warm-blooded Having a high constant body temperature independent of the surrounding temperature.

zooplankton Animal plankton (tiny animals) that live in the water. Zooplankton are microscopic animals that eat other plankton (both plant and animal plankton).

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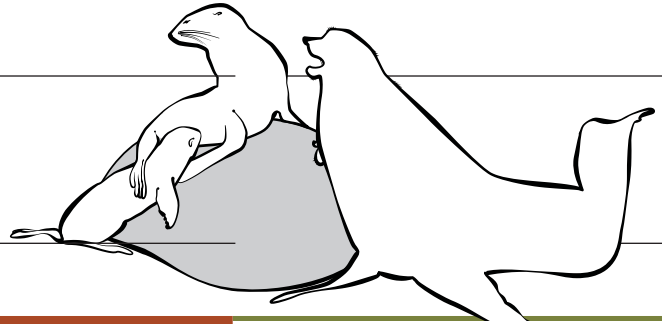
APPENDIX III

CURRICULUM OVERVIEW

Lesson	Topic	Components	Grade Level	Time
<i>Labs vary by grade level allowing educators to select age appropriate activities for their class.</i>				
	Curriculum Pre and Post Assessment		7-12	15 min
1	What is a fur seal?	PowerPoint Overview (7 slides) Lab 1.1: Review: Mammals, Marine Mammals, and Pinniped	7-12	30 min
2	Who are the Unangan?	PowerPoint Overview (10 slides) Lab 2.1: Where are the Aleutian and Pribilof Islands? (mapping) Lab 2.2: Who are the Unangan? (read and discuss) Lab 2.3: <i>People of the Seal</i> (watch and discuss) Lab 2.4: <i>Aleut Story</i> (watch and discuss) Lab 2.5: <i>Aleutian Sparrow, The White Seal, and Libby</i> (read and discuss)	7-12 7-12 7-12 7-12 7-12	50 min 50 min 2x50 min 3x50 min 30-50 min
3	What is a fur seal rookery?	PowerPoint Overview (13 slides) Lab 3.1: What is a Rookery? (review, assess, worksheet, discussion) Lab 3.2: Fecundity: The Next Generation (hands-on) Lab 3.2: Rookery Timeline (hands-on) Lab 3.4: Paternity and Maternity on the Rookery (hands-on) Lab 3.5: Create a Rookery – Rubber Stamp Making (hands on, art)	7-12 7-12 7-12 9-12 7-12	50 min 50 min 50 min 50 min 2x50 min
4	What do fur seals eat?	PowerPoint Overview (8 slides) Lab 4.1: Bering Sea Food Web (hands on) Lab 4.2: Microworlds: What do Marine Mammals Eat? (video) Lab 4.3: Scat Detective (hands on) Lab 4.4: Scat Detective and Frequency of Occurrence (hands on) Lab 4.5: Advanced Scat Detective (graphing and data analysis)	7-12 7-12 7-8 9-12 9-12	50 min 30 min 50 min 50 min 50 min
5	How do fur seals dive?	PowerPoint Overview (10 slides) Lab 5.1: Blubber vs. Air (hands-on) Lab 5.2: Thermoregulation: Countercurrent Heat Exchange (hands-on) Lab 5.3: Waiting to Inhale! (hands-on) Lab 5.4: Interpreting Fur Seal Dive Data (data analysis)	7-12 9-12 7-12 9-12	30 min 50 min 50 min 50 min
6	Where do fur seals go in the winter?	PowerPoint Overview (10 slides) Lab 6.1: Where are Fur Seal Rookeries? (mapping) Lab 6.2: <i>Fur Seal Migrations</i> (video) Lab 6.3: Fur Seal Migrations (mapping)	7-12 7-12 7-12	30 min 30 min 50 min
7	Populations, Harvest, Managements	PowerPoint Overview (13 slides) Lab 7.1: Estimating a Population (math) Lab 7.2: Mark-Recapture: How Many Pups? (math) Lab 7.3: Analyzing Pup Population Data: 1961-2016 (math) Lab 7.4: Compare Historical Timelines (history, writing, discussion) Lab 7.5: Interpret Historical Images (history, writing, discussion) Lab 7.6: Analyzing Fur Seal Harvest Data: 1817-2016 (math)	7-12 7-12 9-12 7-12 7-12 9-12	50 min 50 min 50 min 50 min 50 min 50 min
8	Marine Mammal Protection Act	PowerPoint Overview (22 slides) Lab 8.1 Marine Mammal Protection Act Summary (research, writing, interpretation) Lab 8.2 MMPA: Unintended Consequences of a Law (research, writing, interpretation) Lab 8.3 MMPA Case Study: Gray Whales (research, writing, interpretation) Lab 8.4 MMPA Case Study: Northern Fur Seals (research, writing, interpretation) Lab 8.5 MMPA Comparative Analysis: Makah/Pribilof Islanders (research, writing, interpretation)	9-12 9-12 9-12 9-12 9-12	50 min 50 min 50 min 50 min 50 min

LESSON ONE

What is a fur seal?



Subject Area(s): Life Science	Grade Levels: 7-12	Presentation – 10 minutes Labs – variable
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Lesson Topics:	Review characteristics of mammals, marine mammals, and pinnipeds.	Focus Questions	<ul style="list-style-type: none"> • What is a mammal? • What is a marine mammal? • What is a pinniped?
Learning Objectives:	Students will: <ul style="list-style-type: none"> • review the characteristics of mammals, marine mammals, and pinnipeds. 	Key words:	mammal, pinniped, true seal, eared seal, walrus, phocid, otariid, odobenid, northern fur seal, harbor seal, sea lion, pelage

LABS		ALASKA STANDARDS		
		Science	Minutes	Grades
Lab 1.1	Review Mammals, Marine Mammals, and Pinnipeds (worksheets)	SC2	30	7-12

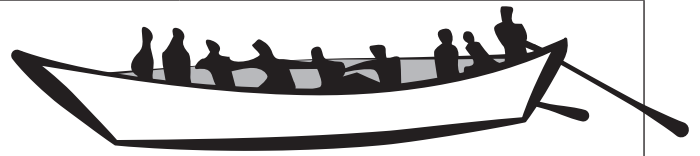
Targeted Alaska Grade Level Expectations (GLEs)

Science

Concepts of Life Science

SC2 Students develop an understanding of the structure, function, behavior, development, life cycles, and diversity of living organisms.

LESSON TWO

Who Are The Unangan?

Subject Area(s): Life science, history, cultural

Grade Levels: 7-12

Presentation – 15 minutes

Labs – variable

Lesson Topics:	Geography, Unangam culture and history, Unangan relationship to northern fur seals	Focus Questions	<ul style="list-style-type: none"> • Where are the Aleutian and Pribilof Islands? • Who are the Unangan? • How have historical events affected Unangam history?
Learning Objectives:	Students will: <ul style="list-style-type: none"> • investigate the geography of the Aleutian and Pribilof Islands • interpret the Unangam culture through film and literature 	Key words:	Unangan (noun), Unangam (adjective), Aleutian Islands, Pribilof Islands, culture, history, internment

LABS		ALASKA STANDARDS			
		Science	History	Minutes	Grades
Lab 2.1	Where are the Aleutian Islands and the Pribilof Islands? (mapping)	SF1-3	PPE1	50	7–12
Lab 2.2	Who Are the Unangan? (read and discuss)		IGCP2	50	7–12
Lab 2.3	<i>People of the Seal</i> (watch and discuss)		ICGP2,9, CC1-4	2x50	7-12
Lab 2.4	<i>Aleut Story</i> (watch and discuss)		ICGP2,5,9, CC1-4	3x50	7-12
Lab 2.5	<i>Aleutian Sparrow, The White Seal, Libby</i> (read and discuss)		ICGP2,5,9, CC1-4	30-50	7-12

Targeted Alaska Grade Level Expectations (GLEs)**Cultural, Social, Personal Perspectives, and Science**

SF1 Students develop an understanding of the interrelationships among individuals, cultures, societies, science, and technology.

SF2 Students develop an understanding that some individuals, cultures, and societies use other beliefs and methods in addition to scientific methods to describe and understand the world.

SF3 Students develop an understanding of the importance of recording and validating cultural knowledge.

American History-People, Places, Environment (PPE)

The student demonstrates an understanding of the interaction between people and their physical environment by:

PPE 1 comparing and contrasting geographic regions of Alaska.

Individual, Citizenship, Governance, Power (ICGP)

The student demonstrates an understanding of the historical rights and responsibilities of Alaskans by:

ICGP 2 using texts/sources to analyze the impacts of the relationships between Alaska Natives and Russians (i.e., Russian Orthodox Church, early fur traders, Russian American Companies, enslavement, and Creoles).

ICGP 5 explaining the impacts of military actions relative to Native communities (e.g., Naval bombardment of Angoon, Aleut internment, military expeditions.)

ICGP 9 exploring the federal government's influence on settlements in Alaska (e.g., Matanuska Colony, Anchorage, Adak, Tok, Hydaburg) by establishment of post offices, military facilities, schools, courts, and railroads.

Continuity and Change (CC)

The student demonstrates an understanding of the chronology of Alaska history by:

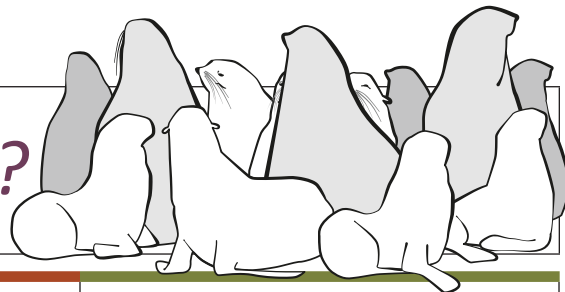
CC 1 using texts/sources to recognize and explain the interrelationships among Alaska, national, and international events and developments (e.g., international interest, trade, commerce).

CC 2 describing how policies and practices of non-natives (e.g., missionaries, miners, Alaska Commercial Company merchants) influenced Alaska Natives.

CC 3 describing how the roles and responsibilities in Alaska Native societies have been continuously influenced by changes in technology, economic practices, and social interactions.

CC 4 giving correct and incorrect examples to explain subsistence as a way of life.

LESSON THREE

What is a fur seal rookery?

Subject Area(s): Life science,
genetics, reading

Grade Levels: 7-12

Presentation – 15 minutes

Labs – variable

Lesson Topics:	Fur seal rookery structure, location, and seasonal changes	Focus Questions	<ul style="list-style-type: none"> • What is a fur seal rookery? • What information can scientist gather from a rookery? • How does the structure of the fur seal population change on the rookery?
Learning Objectives:	Students will: <ul style="list-style-type: none"> • describe the seasonal structure of a fur seal rookery • investigate fecundity • examine genetic relationships • summarize their knowledge with art 	Key words:	rookery, haulout, fecundity, paternity, maternity, seasonal, age class, genetics

LABS		ALASKA STANDARDS		
		Science	Minutes	Grades
Lab 3.1	What is a Rookery? (review, worksheet, discussion)	SC2	30	7–12
Lab 3.2	Fecundity: The Next Generation (worksheet, hands-on)	SC2	50	7-12
Lab 3.3	Rookery Timeline (hands-on)	SC2	50	7–12
Lab 3.4	Paternity and Maternity on the Rookery (worksheet)	SC2	50	9–12
Lab 3.5	Create a Rookery – Rubber Stamp Making (hands-on, art)	SC2	2x50	7-12

Targeted Alaska Grade Level Expectations (GLEs)

Science

Concepts of Life Science

SC2 Students develop an understanding of the structure, function, behavior, development, life cycles, and diversity of living organisms.

APPENDIX IV

LESSON OVERVIEWS

LESSON FOUR

What do fur seals eat?



Subject Area(s): Life science

Grade Levels: 7-12

Presentation – 15 minutes

Labs – variable

Lesson Topics:	Food chain, food web, scat analysis, food habits/diet	Focus Questions	<ul style="list-style-type: none"> • How do scientists study the fur seal's diet? • What is learned from studying food habits? • Why do scientists study food habits?
Learning Objectives:	Student will: <ul style="list-style-type: none"> • create a Bering Sea food web • analyze scat contents • graph and analyze scat contents 	Key words:	diet, prey, ecosystem, scat, food habits, forage, food web, frequency of occurrence

LABS		ALASKA STANDARDS					
		Math 7	Math 8	MATH 9-12	Science	Minutes	Grades
Lab 4.1	Bering Sea Food Web (hands on)				SC2,3	30	7-12
Lab 4.2	Microworlds: What do Marine Mammals Eat? (video)				SC2,3	30	7-12
Lab 4.3*	Scat Detective (hands on)	7.SP1-4	8.SP1	S-ID, S-IC	SA1,2, SC 2,3 SE1,2, SG2	50	7-8
Lab 4.4*	Scat Detective and Frequency of Occurrence (hands on)	7.SP1-4	8.SP1	S-ID, S-IC	SA1,2, SC 2,3 SE1,2, SG2	50	9-12
Lab 4.5*	Advanced Scat Detective (graphing and data analysis)	7.SP1-4	8.SP1	S-ID, S-IC	SA1,2, SC 2,3 SE1,2, SG2	50	9-12

Targeted Alaska Grade Level Expectations (GLEs)

Math

- MD** Measurement and Data
- SP** Statistics and Probability

Science

Science as Inquiry and Process

- SA1** Students develop an understanding of the processes of science used to investigate problems, design and conduct repeatable scientific investigations, and defend scientific arguments.
- SA2** Students develop an understanding that the processes of science require integrity, logical reasoning, skepticism, openness, communication, and peer review.

Concepts of Life Science

- SC2** Students develop an understanding of the structure, function, behavior, development, life cycles, and diversity of living organisms.
- SC3** Students develop an understanding that all organisms are linked to each other and their physical environments through the transfer and transformation of matter and energy.

Science and Technology

- SE1** Students develop an understanding of how scientific knowledge and technology are used in making decisions about issues, innovations, and responses to problems and everyday events.

- SE2** Students develop an understanding that solving problems involves different ways of thinking, perspectives, and curiosity that lead to the exploration of multiple paths that are analyzed using scientific, technological, and social merits.

History and Nature of Science

- SG2** Students develop an understanding that the advancement of scientific knowledge embraces innovation and requires empirical evidence, repeatable investigations, logical arguments, and critical review in striving for the best possible explanations of the natural world.

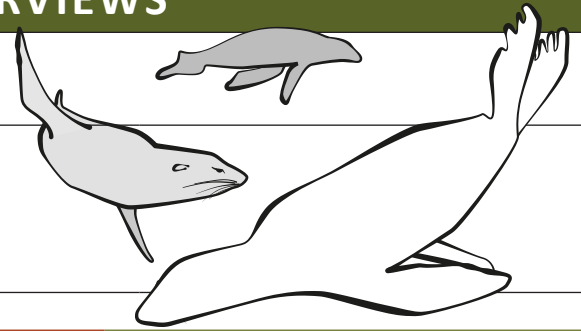
*Labs 4.3, 4.4, and 4.5 involve investigating the diets of northern fur seals through scat analysis.
 *Lab 4.3 is the most basic and involves plotting the frequency of items found in scats prepared by the instructor.
 *Lab 4.4 takes the process one step further by calculating the Frequency of Occurrence of prey items found in scats created by the instructor. The data provided for this lab are very similar to real data collected in the field.
 *Lab 4.5 uses a set of actual data collected from the Pribilof Islands for the students to manipulate, graph, and analyze.

APPENDIX IV

LESSON OVERVIEWS

LESSON FIVE

How do fur seals dive?



Subject Area(s): Life science	Grade Levels: 7-12	Presentation – 15 minutes Labs– variable
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Lab Topics:	Fur seal diving and adaptations to cold environments.	Focus Questions	<ul style="list-style-type: none"> • How are pinnipeds adapted to the cold water? • Why do fur seals dive? • What can be learned from studying diving behavior?
Learning Objectives:	Students will: <ul style="list-style-type: none"> • investigate adaptations of seals to water • collect and summarize data • interpret fur seal dive data 	Key words:	blubber, body shape, forage, adaptation, counter-current heat exchange, thermoregulation

LABS		ALASKA STANDARDS					
		Math 7	Math 8	Math 9-12	Science	Minutes	Grades
Lab 5.1	How do Marine Mammals Stay Warm? Blubber vs. Air (hands-on)	7.SP.1-4	8.SP.1-4		SA1,2 SC1,2	30	7–12
Lab 5.2	Thermoregulation: Counter Current Heat Exchange (hands-on)	7.SP.1-4	8.SP.1-4		SA1,2 SC1,2 SG2	50	9-12
Lab 5.3	Waiting to Inhale! (hands-on)	7.SP.1-4	8.SP.1-4		SA1,2 SC1,2 SG2	50	7–12
Lab 5.4	Interpreting fur seal dive data (data analysis)	7.SP.1-4	8.SP.1-4	S-IC.	SA1,2 SC1,2 SG2	50	9-12

Targeted Alaska Grade Level Expectations (GLEs)

Math

MD Measurement and Data
SP Statistics and Probability

Statistics: IC.1

Science

Science as Inquiry and Process
SA1; SA2

Concepts of Life Science
SC2

History and Nature of Science
SG2

APPENDIX IV

LESSON OVERVIEWS

LESSON SIX

Where do fur seals go in the winter?



Subject Area(s): Life science, geography, reading	Grade Levels: 7-12	Presentation – 15 minutes Labs– variable
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Lab Topics:	Fur seal migration, traditional knowledge of migration, and current research.	Focus Questions	<ul style="list-style-type: none"> • Why do fur seals leave the rookery? • Where do they go? • How do we know? • Why do we want to know where they go?
Learning Objectives:	Students will: <ul style="list-style-type: none"> • describe where northern fur seals go in the winter • plot fur seal migration tracks on a map • describe three methods scientists use to track fur seal migration routes. 	Key words:	migrate, satellite tags, tracking instruments, latitude, longitude

LABS		ALASKA STANDARDS			
		Science	Minutes	Grades	
Lab 6.1	Where are Fur Seal Rookeries? (mapping)	SA3; SC2,3; SF1,2,3	30	7-12	
Lab 6.2	<i>Fur Seal Migrations</i> (video, discussion)	SA3; SC2; SF1,2,3	30	7–12	
Lab 6.3	Fur Seal Migrations (mapping).	SA3; SC2,3; SF1,2,3; SG1,3,4.	50	7–12	

Targeted Alaska Grade Level Expectations (GLEs)

Science

Science as Inquiry and Process

SA3

Concepts of Life Science

SC2; SC3

Cultural, Social, Personal Perspectives, and Science

SF1; SF2; SF3

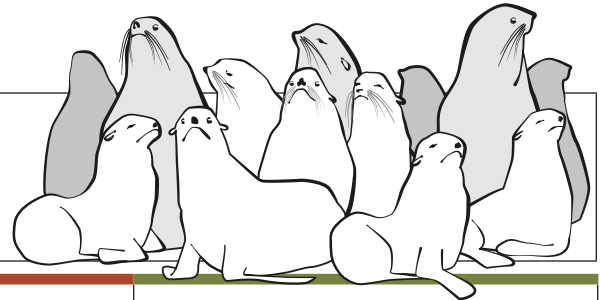
History

History and Nature of Science

SG1; SG3; SG4

LESSON SEVEN

Populations, Harvest, and Management



Subject Area(s): Life science

Grade Levels: 7-12

Presentation – 20 minutes

Labs – variable

Lab Topics:	Population estimation, harvest, and management, historical timelines
Learning Objectives:	Students will: <ul style="list-style-type: none"> estimate populations interpret historical events analyze harvest and population data.

Focus Questions	<ul style="list-style-type: none"> How do scientists estimate fur seal populations? What are the relationships between Pribilof Island historical events, fur seal population, and world history?
Key words:	population estimation, population, harvest, stakeholder, rate of decline

LABS		ALASKA STANDARDS						
		Math 7	Math 8	Math 7-12	Science	History	Minutes	Grades
Lab 7.1	Estimating a Population (math)	7.RP.1-3 7.SP1-2	8.SP.1	S-ID,S-IC A-CED.2	SA3,SE1,2 SF1,SG1-4		50	7-12
Lab 7.2	Mark-Recapture: How many pups? (math)	7.RP.1-3 7.SP1-2	8.SP.1	S-ID,S-IC A-CED.2			50	7-12
Lab 7.3	Analyze Pup Population Data: 1961-2016 (math)	7.RP.1-3 7.SP1-2	8.SP.1	A-CED.2 S-ID,S-IC			50	9-12
Lab 7.4	Compare Historical Timelines (history, writing, discussion)					PPE2,5,7 IGCP2,5,8,8 CC1-4,7	50	7-12
Lab 7.5	Interpret Historical Images (history, writing, discussion)					PPE2,5,7 IGCP2,5,8,8 CC1-4,7	50	7-12
Lab 7.6	Analyze Fur Seal Harvest Data: 1817-2016 (math)	7.RP.1-3 7.SP1-2	8.SP.1	A-CED.2 S-ID,S-IC	SA3,SE1,2 SF1,SG1-4		20	9-12

Targeted Alaska Grade Level Expectations (GLEs)

Math

- RP** Ratios and Proportional Relationships
- SP** Statistics and Probability
- A-CED** Algebra-Creating Equations that Describe
- S-IC** Statistics-Inferences and Conclusions
- S-ID** Statistics-Interpreting Data

Science

- Science as Inquiry and Process**
SA3
- Science and Technology**
SE1; SE2
- Cultural, Social, Personal Perspectives, and Science**
SF1
- History and Nature of Science**
SG1; SG2; SG3; SG4

History

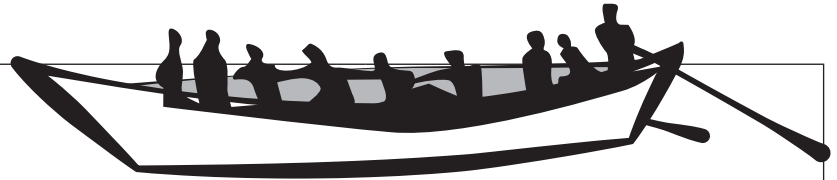
- People, Places, and Environment**
PPE2,5,7
- Consumption, Production, Distribution**
CC1-4,7
- Individual, Citizenship, Governance, Power**
IGCP2,5,8,8

APPENDIX IV

LESSON OVERVIEWS

LESSON EIGHT

Marine Mammal Protection Act



Subject Area(s): Life science, history, cultural	Grade Levels: 7-12	Presentation – 20 minutes Labs – variable
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Lab Topics:	Marine Mammal Protection Act, subsistence hunting, treaty rights	Focus Questions	<ul style="list-style-type: none"> • What is the Marine Mammal Protection Act? • What were the unintended consequences of the MMPA? • How were the Makah and the Pribilof Islanders affected by the MMPA?
Learning Objectives:	Students will: <ul style="list-style-type: none"> • summarize the Marine Mammal Protection Act • compare and contrast the rights of Native American tribes in states other than Alaska and Alaska Natives. 	Key words:	Marine Mammal Protection Act, permit, waiver, treaty, subsistence

LABS		ALASKA STANDARDS			
		Science	History	Minutes	Grades
Lab 8.1	Marine Mammal Protection Act, Summary (research, writing, interpretation)		CC1-4,7	50	9–12
Lab 8.2	MMPA: Unintended Consequences (research, writing, interpretation)		CC1-4,7	50	9–12
Lab 8.3	MMPA Case Study: Gray Whales (research, writing, interpretation)		CC1-4,7	50	9–12
Lab 8.4	MMPA Case Study Northern Fur Seals (research, writing, interpretation)		CC1-4,7	50	9-12
Lab 8.5	MMPA Comparative Analysis: Makah and Pribilof Islanders (research, writing, interpretation)		CC1-4,7	50	9-12

Targeted Alaska Grade Level Expectations (GLEs)

American History

Individual, Citizenship, Governance, Power Continuity and Change (CC)

The student demonstrates an understanding of the chronology of Alaska history by:

CC 1; CC 2; CC 3; CC 4; CC 7

APPENDIX V

CURRICULUM PRE/POST-ASSESSMENTS

Lesson	Student Name: _____ Date: _____
1	Name four characteristics of a mammal. List up to four mammals.
1	How is a marine mammal different from a mammal? List up to four marine mammals. (Hint: A penguin is not a marine mammal.)
3	What is a rookery? Name two animals that use rookeries.
4	Describe an ocean food web. Where do northern fur seals fit into the ocean food web?
5	What is blubber? Why do some animals need it?
6	Where are northern fur seal rookeries? Where do northern fur seals go when they are at sea?
7	How do scientists estimate the population of northern fur seals?
2	Who are the Unangan?
8	What is the Marine Mammal Protection Act?

APPENDIX VI

LAB 7.5 HARVEST DATA

Year	Pelagic Harvest	Land Harvest
1817		60,188
1818		59,856
1819		52,224
1820		50,220
1821		44,995
1822		36,469
1823		29,873
1824		25,400
1825		30,100
1826		23,250
1827		19,700
1828		23,228
1829		20,811
1830		18,034
1831		16,034
1832		16,446
1833		16,412
1834		15,751
1835		6,580
1836		6,590
1837		6,802
1838		6,000
1839		6,000
1840		8,000
1841		8,000
1842		10,370
1843		11,240
1844		11,924
1845		13,637
1846		15,070
1847		17,703
1848		14,650
1849		21,450
1850		6,770
1851		6,564
1852		6,725
1853		18,035
1854		26,146

Year	Pelagic Harvest	Land Harvest
1855		8,585
1856		23,550
1857		21,082
1858		31,810
1859		22,000
1860		21,590
1861		29,699
1862		20,000
1863		25,000
1864		26,000
1865		40,000
1866		42,000
1867		48,000
1868	4,367	140,000
1869	4,430	85,901
1870	8,686	23,773
1871	16,911	102,960
1872	5,336	108,819
1873	5,229	109,177
1874	5,873	110,585
1875	5,033	106,460
1876	5,515	94,657
1877	5,210	84,310
1878	5,544	109,323
1879	8,557	110,411
1880	8,718	105,718
1881	10,382	105,063
1882	15,551	99,812
1883	16,557	79,509
1884	16,971	105,434
1885	23,040	105,024
1886	28,494	104,521
1887	30,628	105,760
1888	26,189	103,304
1889	29,858	102,617
1890	40,814	28,059
1891	59,568	12,040
1892	46,642	7,511

APPENDIX VI

LAB 7.5 HARVEST DATA

Year	Pelagic Harvest	Land Harvest
1893	30,812	7,396
1894	61,838	16,270
1895	56,291	14,846
1896	43,917	30,654
1897	24,321	19,200
1898	28,552	18,048
1899	34,168	16,812
1900	35,191	22,470
1901	24,050	23,066
1902	22,812	22,182
1903	27,000	19,292
1904	11,523	12,960
1905	12,660	12,723
1906	16,386	13,484
1907	13,949	15,358
1908	17,649	15,430
1909	13,742	14,371
1910	15,000	13,723
1911		11,899
1912		3,169
1913		2,406
1914		2,735
1915		3,947
1916		6,466
1917		8,169
1918		34,890
1919		27,790
1920		26,648
1921		23,656
1922		31,152
1923		15,854
1924		17,189
1925		19,839
1926		22,088
1927		24,916
1928		31,061
1929		40,068

Year	Pelagic Harvest	Land Harvest
1930		42,497
1931		49,516
1932		49,329
1933		54,550
1934		53,468
1935		57,296
1936		52,446
1937		55,180
1938		58,364
1939		60,473
1940		64,856
1941		95,013
1942		150
1943		117,164
1944		47,652
1945		76,964
1946		64,523
1947		61,447
1948		70,142
1949		70,890
1950		60,090
1951		60,689
1952		63,870
1953		66,068
1954		63,882
1955		65,453
1956		122,826
1957		93,661
1958	2,005	75,797
1959	2,040	58,257
1960	2,013	40,635
1961	1,849	126,046
1962	1,987	97,440
1963	1,615	86,338
1964	999	65,432
1965	461	52,554
1966	694	52,888

APPENDIX VI

LAB 7.5 HARVEST DATA

Year	Pelagic Harvest	Land Harvest
1967	317	65,816
1968	1,245	58,960
1969	625	38,908
1970	521	42,241
1971	584	31,849
1972	336	37,393
1973	723	28,482
1974	435	33,027
1975		29,148
1976		23,296
1977		28,794
1978		25,183
1979		26,113
1980		24,677
1981		24,276
1982		25,177
1983		26,268
1984		22,416
1985		3,713
1986		1,439
1987		1,802
1988		1,258
1989		1,521
1990		1,241
1991		1,926
1992		1,676
1993		1,837
1994		1,777
1995		1,525
1996		1,823
1997		1,380
1998		1,558
1999		1,193
2000		876
2001		781
2002		851
2003		654

Year	Pelagic Harvest	Land Harvest
2004		616
2005		618
2006		604
2007		477
2008		499
2009		454
2010		435

APPENDIX VII

LAB 7.6 PUP POPULATION DATA

YEAR	PupsBORN_StP	PupsBORN_StG
1961	342,335	
1962	300,828	
1963	262,498	
1964	283,922	
1965	253,768	
1966	319,045	69,406
1967	291,000	
1968	235,000	
1969	232,870	
1970	230,485	54,366
1971		
1972	269,000	
1973	236,500	60,385
1974	269,000	
1975	278,261	
1976	291,000	
1977	235,200	43,407
1978	247,100	47,248
1979	245,932	
1980	203,825	
1981	179,444	38,152
1982	203,581	
1983	165,941	31,440
1984	173,274	
1985	182,258	28,869
1986	167,656	
1987	171,610	
1988	202,229	24,819
1989	171,534	
1990	201,305	23,397
1991		
1992	182,437	25,160
1993		
1994	192,104	22,244
1995		
1996	170,125	27,385
1997		
1998	179,149	22,090
1999		
2000	158,736	20,176
2001		

YEAR	PupsBORN_StP	PupsBORN_StG
2002	145,716	17,593
2003		
2004	122,825	16,876
2005		
2006	109,961	17,072
2007		
2008	102,674	18,160
2009		
2010	93,627	17,973

Summary of Marine Mammal Protection Act

The initial Marine Mammal Protection Act (MMPA) was passed by Congress in 1972 based on findings that certain species and populations of marine mammals were or had the potential to be in danger of extinction or depletion as a result of man's activities. The Act established a national policy to prevent marine mammal species and populations from declining beyond the point where they are a significant part of their ecosystems. It was the first legislation that protected all marine mammal species in their ecosystems.

Key definitions for the Act (Note: these are informal definitions for the purposes of this summary; for legal definitions, please refer to the MMPA, Section 3):

- Take – to “hunt, harass, capture or kill” a marine mammal or attempt to do so
- Harassment – causing a marine mammal to change its behavior in any way
- Moratorium – a complete ban on taking or importing marine mammals/marine mammal products
- Optimum Sustainable Population (OSP) – the number of animals that will maintain a healthy population in their ecosystem
- Population stock – a group of marine mammals of the same species that interbreed
- Depletion – a population below its optimum sustainable population
- Secretary – the Secretary of the U.S. Department of Commerce or the Secretary of the Interior

Summary

The 1972 Marine Mammal Protection Act (MMPA) established a nation-wide program to conserve marine mammals, rather than relying on individual states. The Department of Commerce is responsible for cetaceans (whales, dolphins, porpoises) and pinnipeds other than the walrus (seals and sea lions). The Department of Interior is responsible for sea otters, walrus, polar bears, dugongs, and manatees. The MMPA established a moratorium on the taking and importation of marine mammals as well as products taken from them (with specific exemptions), and establishes procedures for waiving the moratorium. The law authorized the establishment of a Marine Mammal Commission with specific advisory and research duties. The 1972 law exempted “Indians, Aleut, and Eskimos who dwell on the coast of the North Pacific Ocean” from the moratorium on taking marine mammals as long as the taking was conducted for the sake of subsistence or for the purpose of creating and selling authentic native articles of handicraft and clothing.

Below is a selection of key amendments from 1976-88. The MMPA was extensively amended and reauthorized in 1994.

- 1976 – clarified the MMPA was applicable in the waters of the 200-mile U.S. Exclusive Economic Zone
- 1981 – allowed permits to take marine mammals "incidentally" in the course of commercial fishing and provided additional conditions for transferring management authority to the States
- 1986 – allowed the incidental take of depleted marine mammals in activities other than commercial fishing, provided it does not impact subsistence harvest
- 1988 – gave commercial fishermen a 5-year exemption from the moratorium on incidental take of marine mammals. The Department of Commerce is authorized to grant of exemptions, provide for observer coverage, and collect data on incidental take. The California sea otter (southern sea otter) is explicitly excluded from the exemption process.
- 1994 – Amended with input from commercial fishers, conservation groups, public display institutions, scientific researchers, government agencies, animal protection groups and the Alaska Native community. Established a new regime to govern the taking of marine mammals incidental to commercial fishing, including: stock assessments for all marine mammals, creating take reduction plans for populations affected by interactions with commercial fishers, and studies of pinniped/fishery interactions. Among the other changes, the revised MMPA authorized providing grants to Alaska Native organizations to develop co-management structures for stocks of marine mammals taken for subsistence purposes.

Sources:

US Fish and Wildlife Service: <http://www.fws.gov/laws/lawsdigest/marmam.html>

Congressional Research Service Report for Congress <http://www.netpets.org/fish/legislation/marinemam.html>

**Marine Mammal Protection Act
Summary by section**

Section 1	Table of Contents
Section 2	Findings and Declaration of Policy – general statement of the justification behind the MMPA
Section 3	Definitions – key terms of the MMPA
Section 4	Effective Date – date that the MMPA became effective (December 21, 1972)

Title I – Conservation and Protection of Marine Mammals

Sec. 101. Moratorium and exceptions

No taking or importing marine mammals or marine mammal products except by permit based on the exceptions below.

(a) EXCEPTIONS

1. Scientific research, public display, photography for educational or commercial purposes, enhancing the survival or recovery, polar bear parts (except internal organs) from hunting in Canada
2. Incidental catch during commercial fishing
3. Allow take or importing of marine mammal or marine mammal products IF the take agrees with conservation/resource protection principles
4. To deter animal from damaging fishing gear or catch, damaging private property, endangering personal safety ONLY IF measures do not result in death or serious injury of animal
5. Military training, commercial fishing bycatch
6. Importing marine mammal products made by Native inhabitants of Canada, Russia and Greenland

(b) Exemptions for Alaska Natives - taking of any marine mammal by Indians, Aleuts, or Eskimos residing in Alaska and on the coast of the North Pacific Ocean or the Arctic Ocean, if such taking is for subsistence, to create and sell authentic native articles of handicrafts and clothing, and is not wasteful

(c) Defense of Self or Others

(d) Good Samaritan Exemption - to avoid injury or death of entangled marine mammals

(e) Incidental take by U.S. citizens on foreign vessels outside U.S. waters

(f) Exemption for national defense

Sec. 102. Prohibitions

No take of marine mammals on the high seas or within U.S. waters or lands unless provided for in an international agreement with the U.S. before the MMPA was enacted. Cannot possess or import marine mammals or marine mammal products unless the marine mammals were taken before the effective date of the MMPA. Cannot transport, purchase, sell, or export a marine mammal or products from a marine mammal except for public display or scientific research, or to enhance the survival of the species.

Sec. 103. Regulations on taking of marine mammals - Marine mammal take quotas are set by calendar year depending on age, sex, size, season, manner of take, and location, based on level of population. Includes description of process of how a waiver is set up.

Sec. 104. Permits - Permits may be issued to take or import marine mammals.

Sec. 105. Penalties - \$10,000 per violation of unlawful take or importation (can give up imported item at port of entry in lieu of fine). \$20,000 and 1 year in prison if prosecuted and convicted.

Sec. 106. Vessel fine, cargo forfeiture, and rewards - Any vessel involved with the illegal take of a marine mammal will be seized and the cargo will be condemned; can be fined up to \$25,000.

Sec. 107. Enforcement - All provisions of the MMPA will be enforced.

Sec. 108. International program - The federal government will work with other nations to protect and conserve all marine mammals covered by the MMPA.

Sec. 109. Federal cooperation with States - States have the right to manage marine mammal stocks that are already at optimum sustainable population, provided the states have acceptable plans for monitoring incidental take and stock assessment.

Sec. 110. Marine mammal research grants – Grants are provided for protection and conservation of marine mammals with emphasis on: 1) methods of locating and catching yellowfin tuna, 2) the Gulf of Maine ecosystem, and 3) the Bering Sea ecosystem.

Sec. 111. Commercial fisheries gear development - Research and develop fishing gear to reduce the incidental take of marine mammals.

Sec. 112. Regulations and administration- Regulations will be created by the federal government to carry out MMPA Title 1.

Sec. 113. Application to other treaties and conventions - MMPA Title 1 is in addition to any existing international treaty or agreement that applies to taking marine mammals

Sec. 114. Interim exemption for commercial fisheries – Goal is to reduce the incidental kill or serious injury of marine mammals related to commercial fishing operations to levels approaching a zero mortality and serious injury rate. Commercial fishers must have a permit to incidentally take marine mammals and must report any take. Fisheries that have frequent incidental take of marine mammals must have observers on board vessels to monitor 20-35% of the fishing operations. This interim

exemption was in effect from 1988-1994.

Sec. 115. Status review; conservation plans – The Secretary will designate a species or population stock as depleted on the basis of the best scientific information available. Conservation plans, with the goal of restoring a species or stock to its optimum sustainable population, will be prepared for any species or stock designated as depleted. There is a timeline (210 days) for the status review, with 90 days to make a final decision on designation of depleted status after the review is complete.

Sec. 116. Authorization of appropriations – Distribution of funding to carry out responsibilities for MMPA Title 1 during 1995-99.

Sec. 117. Stock assessments – Draft stock assessments for each marine mammal stock within U.S. waters will be prepared annually in consultation with regional scientific review groups in Alaska, Pacific Coast/Hawaii, Atlantic Coast. The scientific review groups are created in consultation with the Secretary, Marine Mammal Commission, Governors of coastal states, regional fishery and wildlife management authorities, Alaska Native organizations and Indian tribes, and environmental and fishery groups.

Sec. 118. Taking of marine mammals incidental to commercial fishing – This section, enacted in 1994, governs the incidental take of marine mammals in the course of commercial fishing operations. Goal is zero mortality; intentional lethal take during commercial fishing is prohibited; observers may be required on vessels; does not include yellowfin tuna fishing or California sea otters.

Sec. 119. Marine mammal cooperative agreements in Alaska - The Secretary may enter into cooperative agreements with Alaska Native organizations to conserve marine mammals and provide co-management of subsistence use by Alaska Natives.

Sec. 120. Pacific Coast Task Force; Gulf of Maine – Lethal take of individually identified pinnipeds that are having a negative impact on the decline or recovery of salmonid stocks that are threatened or endangered under the Endangered Species Act of 1973. Creates a Pinniped-Fishery Task Force consisting of Department of Commerce employees, scientists, Indian Treaty tribes, states, and other organizations, to review proposed takes and approve or deny proposals. Research on pinniped-fishery interactions on the Pacific Coast will be conducted. Gulf of Maine task force reviews pinniped-aquaculture interactions.

Title II – Marine Mammal Commission - The MMPA authorized the establishment of a three-member Marine Mammal Commission with specific advisory and research duties.

Title III – International Dolphin Conservation Program – Establishes a program to reduce the marine mammal mortality resulting from the intentional encirclement of dolphins and other marine mammals in tuna purse-seine activities.

Title IV – Marine Mammal Health and Stranding Response – Establishes a program to facilitate the collection and dissemination of reference data on the health of marine mammals and marine mammal populations and coordinate responses to unusual mortality events of marine mammals.

Title V – Polar Bears – Establishes protection of polar bears; bans takes, possession, import, export, transport, purchase of polar bears or polar bear parts and products.

Notes

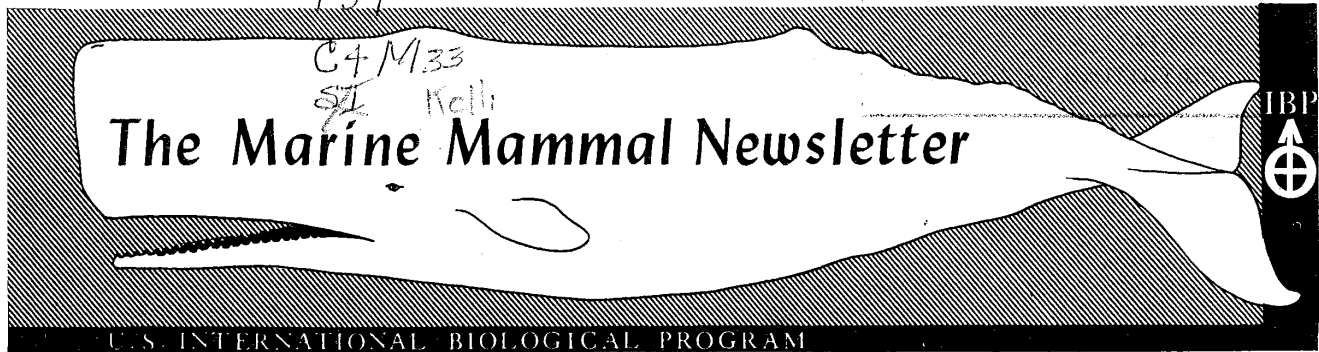
Indian Treaty Rights; Alaska Native Subsistence.

Sec. 14. Nothing in this Act [the Marine Mammal Protection Act Amendments of 1994], including any amendments to the Marine Mammal Protection Act of 1972 made by this Act—

(1) alters or is intended to alter any treaty between the United States and one or more Indian tribes;

or

(2) affects or otherwise modifies the provisions of section 101(b) of the Marine Mammal Protection Act of 1972 (16 U.S.C. 1371(b)), except as specifically provided in the amendment made by section 4(b) of this Act [see section 101(b)].



Number 4

February 1972

MARINE MAMMAL RESEARCH PROPOSAL SUBMITTED TO NSF

The proposal for the Marine Mammal Program was submitted in December to the National Science Foundation. If approved, the program will provide the first research funding for marine mammals under the U.S. International Biological Program. As an Integrated Research Program of the U.S./IBP, the program incorporates both new projects, requiring new support, and on-going research projects that are now funded, wholly or in part, from other sources. Final design of the program proposal was set down at a meeting of the Marine Mammal Council in Seattle, Wash., 19-20 November 1971.

* * * * *

OCEAN MAMMAL HEARINGS CONTINUE IN CONGRESS

The Senate Commerce Committee will take its turn to hold hearings on proposed legislation to conserve and manage marine mammals later this month. Hearings are now scheduled for 15-16 February before Sen. Ernest F. Hollings' Subcommittee on Oceans and Atmosphere on a number of bills, including S. 2639, almost identical to H.R. 10420 (known as the Anderson-Pelly bill), reported out by the House Merchant Marine and Fisheries Committee late last fall.

Witnesses at the Senate hearings will include representatives of many of the same organizations and Federal agencies that appeared before the House Subcommittee on Fisheries and Wildlife Conservation hearings last September. They include the Departments of State, Commerce, and the Interior, Friends of the Earth, Friends of Animals, the Sierra Club, the Society for Animal Protective Legislation, and the Wildlife Management Institute. Plans also call for testimony from a panel of marine mammal scientists, Senators Bob Packwood and Fred Harris, both of whom have introduced marine mammal bills, and representatives of the fur sealing, whaling, and tuna fishing industries.

(continued on next page)

THE MARINE MAMMAL NEWSLETTER is published under the Marine Mammal Program of the U.S. International Biological Program. Please send all information and requests for copies to: Suzanne M. Contos, Marine Mammal Program, Department of Vertebrate Zoology, National Museum of Natural History, Washington, D.C. 20560. Telephone: (202) 381-5363.

In the House, the Merchant Marine Committee's Subcommittee on Fisheries and Wildlife Conservation, chaired by Rep. John Dingell, has not yet decided how to proceed with its bill, H.R. 10420, which was defeated on the House floor on 6 December. The question is whether to hold additional hearings on the bill, entitled "The Marine Mammal Protection Act," or to send it as it stands to the House Rules Committee for scheduling on the legislative calendar. The bill was defeated in the last session when it was brought up on the House floor under a suspension of rules procedure, but failed to get the required two-thirds majority vote. The tally was 199 in favor and 150 opposed.

Under a suspension of rules, a bill is read on the floor and, after limited debate, is voted either up or down, with no opportunity for amendment. An advantage to this tactic is that sponsors of the proposed legislation can bypass the Rules Committee, where other priorities or opposition from that committee may prevent the bill from being scheduled on the legislative calendar. The disadvantage is the requirement for a two-thirds majority vote. As an attempt to get the marine mammal bill through the House quickly and intact, this procedure may have backfired in the face of its supporters. Some of the bill's opponents indicated that they resented the introduction of H.R. 10420 under a parliamentary maneuver generally reserved as a vehicle for non-controversial legislation. This reluctance to be pushed on an important and complex issue, coupled with an effective last-minute newspaper and letter campaign by protectionist conservation groups which labeled the bill as a "sell-out of marine mammals," helped to insure its defeat.

Two Kinds of Bills

While some 38 bills and resolutions on marine mammals were introduced in the House alone during the first session of the 92nd Congress, and many similar bills in the Senate, the proposed legislation basically falls into two types of bills. One is represented by the Harris-Pryor bill (H.R. 6558), a protectionist approach to ocean mammals which would call for a complete ban on all "taking" or harassment of these animals, with little thought given to the species' place in the ecosystem. A second approach is typified by the Anderson-Pelly bill, H.R. 10420, which presents a complex program of management and conservation of species within the confines of "ecosystem health." While all bills were considered in the House subcommittee hearings, it was the Anderson-Pelly bill which was reported out by the parent committee, and it was the supporters of the Harris-Pryor bill who helped to defeat H.R. 10420 on the House floor.

The Anderson-Pelly Bill

As a result of the four days of hearings, the version of H.R. 10420 reported out by the committee was considerably stronger than the version upon which testimony was based. It outlines a management/conservation program with built-in provisions for international cooperation and a glass-house method of operation that provides for constant public scrutiny of its administration.

Findings -- The Anderson-Pelly bill concludes that certain species and population stocks are in danger as a result of man's activities and that they should "not be permitted to diminish beyond the point at which they contribute effectively to the health and stability of the ecosystem of which they are a part." Secondly, they may be managed by the yardstick of "optimum sustainable yield" and all depleted stocks should be replenished to that point.

The bill also maintains that marine mammals are "resources of great international significance, esthetic and recreational, as well as economic" and that

they should be managed as such, but consistently within the ecosystem concept. Additionally, the bill finds that both our state of knowledge of these species and the international treaty arrangements designed to protect them are inadequate.

Procedure -- H.R. 10420 would forbid the taking of any marine mammals by vessels or by persons under U.S. jurisdiction anywhere in the world and the taking of these animals by anyone in waters or lands under U.S. jurisdiction except in accordance with a permit or international agreement. The burden of proof (or justification for the granting of such a permit) would rest on the exploiter or whoever wishes to take an animal. Applications for permits would be subject to public review. Stiff fines would be established for violation of this act, including possible seizure of vessels.

Responsibility for setting limits and quotas within which permits would be granted would be vested in the Department of Commerce (cetaceans and all pinnipeds except walruses) and the Department of the Interior (all other marine mammals), with the assumption that such responsibility would be transferred to the Department of Natural Resources, when and if such an agency is established.

To oversee the entire program, the bill would set up a three-member Marine Mammal Commission, comprised of "individuals knowledgeable in the fields of marine ecology and resource management and who are not in a position to profit from the taking of marine mammals." Members would be appointed for three years. Aiding them would be a nine-member Committee of Scientific Advisors, similarly qualified. These bodies would be served by an Executive Secretary and a small staff. The Commission's recommendations would be transmitted to the Departments of Commerce, Interior, and State, and all reports and recommendations would be a matter of public record. An annual report would also be submitted to Congress. Further, all recommendations made by the Scientific Committee and not followed by the Commission would be transmitted both to the appropriate agencies and to Congress.

The bill would make an exception for the taking of marine mammals under "native rights," but states that this must be for subsistence purposes and in accordance with traditional customs and shall not be done in a wasteful manner. This exception does not include species protected under the Endangered Species Conservation Act of 1969.

The bill calls for additional international agreements covering marine mammals and charges the State Department to "seek the convening of an international ministerial meeting on marine mammals before July 1, 1973," for this purpose. It also sets up research programs under the Commerce and Interior Departments. Exclusive State control of any species of marine mammals is pre-empted, but Federal and State organizations may enter into cooperative arrangements and States are permitted to enact stricter regulations than existing Federal law.

The Harris-Pryor Bill

Basically identical bills have been submitted in various forms and assigned many legislative numbers, including H.R. 6558, the Ocean Mammal Protection Act. These bills were considered by the Committee and discussed during the hearings, but were not reported out. The Harris-Pryor bill represents the protectionist approach to marine mammal conservation, which gives little consideration to the ecosystem. Supporters include the Fund for Animals, the World Federation for the Protection of Animals, Friends of Animals, and the Committee for Humane Legislation.

Findings -- "The Congress finds that ocean mammals are being ruthlessly pursued, harassed, or killed, both at sea and on land by hunters of many nations

of the world. The Congress further finds that many ocean mammals will become rare, if not extinct, unless steps are taken to stop their slaughter." The bill further states that it should be the public policy of the United States to "protect all ocean mammals from harassment or slaughter" and that the U.S. should negotiate to obtain "a worldwide ban on the further slaughter of ocean mammals."

Procedures -- The bill would prohibit the taking or possession of any marine mammal except by native tribes for their own uses and, under a permit system, for medical and scientific research and for certain zoos. Enforcement and penalties are similar to those of H.R. 10420. Under the bill, the North Pacific Fur Seal Convention, signed in 1957, would be terminated in 1976 and the State Department would be instructed to begin negotiations with all parties to the Convention to work out an international agreement to ban all killing of North Pacific fur seals, both at sea and on land. The Pribilof Islands would then be designated a National Seal Rookery Preserve and Bird Sanctuary under the Interior Department.

Omitted from the Harris-Pryor bill is any provision for support of scientific research, the enjoiner for the State Department to seek an international ministerial meeting on marine mammals, any provision for using existing scientific expertise, such as would be inherent in a publicly administered Marine Mammal Commission, or any mention of the ecosystem.

The Protagonists

Those opposing the Anderson-Pelly bill are best identified as the "protectionists." Led by such organizations as the Committee on Humane Legislation and Friends of Animals, the protectionists are to be credited with directing public and Congressional attention to the problems facing many marine mammal populations. These groups are firm in their belief that man can only help by leaving marine mammals completely alone, and the role of natural populations in their ecosystems is generally ignored. Spokesmen have expressed their groups as against "kill, harassment, or management." Testifying in support of the Harris-Pryor bill, or similar bills, were the groups mentioned above, along with several Congressmen, including Rep. David R. Obey (Wis.), Rep. Walter S. Baring (Nev.), Rep. Clarence D. Long (Md.), Rep. John J. Rhodes (Ariz.), Rep. Silvio O. Conte (Mass.), Rep. John H. Buchanan (Ala.), and Rep. William F. Ryan (N.Y.).

Testimony in support of the Anderson-Pelly bill was broadly based and included most conservationist groups, representing a wider purview and including wildlife managers, sportsmen, environmentalists, and others. Organizations were the National Wildlife Federation, the Audubon Society, the Sierra Club, Friends of the Earth, the National Rifle Association, the International Association of Game, Fish, and Conservation Commissioners, the Wildlife Management Institute, the Izaak Walton League, the Society for Animal Protective Legislation, and the International Society for the Protection of Animals. Almost without exception, this group endorsed the findings of H.R. 10420, but suggested certain changes to strengthen the bill.

Also in support of the Anderson-Pelly bill, but recommending changes, were representatives of the Administration, including the Interior, State and Commerce Departments and the Council on Environmental Quality. Since the conclusion of the House hearings, however, this group has shown an inclination to press for an enlargement of the bill's proposed Marine Mammal Commission, while eliminating the Committee of Scientific Advisors.

The group of "users" or "exploiters" of marine mammals, including the Fur Conservation Institute and American Tunaboat Association, testified in support of the Anderson-Pelly bill, but had little choice but to do so. While they might have preferred a continuation of the present "laissez-faire" situation, these are the obvious villains in the eyes of those who protest the "slaughter" of marine mammals.

While marine mammal scientists could have contributed a great deal to the hearings, it was remarkable and unfortunate that so few made themselves available to the subcommittee or spoke on behalf of either bill. Of the six non-Government marine mammalogists appearing at the hearings, three took no stand; three others supported H.R. 10420.

Invitation to Marine Mammalogists -- In both the House and the Senate, the concerned committees are still most anxious to receive the opinions of working scientists in the field on the proposed marine mammal legislation. Individuals are encouraged to transmit their comments to Rep. John Dingell, Chairman, Subcommittee on Fisheries and Wildlife Conservation, Committee on Merchant Marine and Fisheries, U.S. House of Representatives, Washington, D.C. 20515, and to Sen. Ernest F. Hollings, Chairman, Subcommittee on Oceans and Atmosphere, Committee on Commerce, U.S. Senate, Washington, D.C. 20510.

For copies of Senate bills and House bills, printed hearings (Serial No. 92-10), and report (No. 92-707), contact the committees involved.

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IMPLEMENTATION OF INTERNATIONAL OBSERVER SCHEME STILL IN QUESTION

The actions of Japan and the Soviet Union involving pelagic whaling in the North Pacific may be the key to implementation of an International Observer Scheme there and elsewhere in the world during the 1972 season. While these two nations have apparently reached a draft agreement to exchange observers on whaling fleets in the North Pacific, the question remains whether this agreement will take effect when the season begins early this summer. If not, it appears doubtful whether other nations, which have agreements for both pelagic and land-based whaling operations in various stages of approval, will proceed to implement these agreements.

The agreement to agree on the initiation of the observer scheme, which was considered as one of the major accomplishments of the International Whaling Commission at its annual meetings in Washington, D.C., last June, suffered a major setback last autumn when the Soviet whaling fleet sailed, without observers, to the Antarctic in the midst of negotiations between the U.S.S.R., Japan, and Norway to approve a pact for pelagic whaling in that area. The one-year reciprocal agreement, which had been initialed by the countries involved, will have to be re-negotiated for next year's Antarctic season.

Meanwhile, agreements on various land-based whaling operations are now being worked out. Australia and South Africa have announced an agreement to exchange observers for their activities in the Southern Hemisphere, but this pact is contingent on the implementation of all other agreements elsewhere. It

appears "unlikely that the exchange will take place this year," the announcement said. In the North Pacific, the U.S. and Japan are hammering out an agreement for land stations, but with the United States' withdrawal from all whaling operations, it is not clear what the Japanese observers will observe. In the North Atlantic, Canada is expected to call a meeting soon with Norway and Iceland to complete an agreement, but this one is expected to include the same contingency clause as in the Australian-South African pact.

* * * * *

PORPOISE MORTALITIES REDUCED IN EXPERIMENTAL TESTS

Experimental tests of a modified purse-seine net, combined with playback of recorded killer whale sounds, promise a significant reduction in porpoise mortalities as a result of tuna fishing operations. In the U.S. Pacific tuna fishery alone, it is estimated that from 100,000 to 900,000 porpoises (mostly *Stenella*) have been accidentally drowned each year when trapped in tuna nets. Porpoises, which often travel with tuna schools, are used by the fishery to locate schools and thus are captured with the fish when a set is made with a purse-seine net.

Preliminary results of a Naval Undersea Research and Development Center/National Marine Fisheries Service investigation aboard a tunaboat last December indicate a porpoise mean mortality of about 6-8% using the combination of the modified net and killer whale playback, compared to a mean of approximately 30% for the tuna fleet as a whole. The new net, developed by two tunaboat captains, Joe and Harold Medina, uses a two-inch mesh in the pocket in place of the standard four-inch mesh, making it more difficult for porpoises to become entangled when they are taken up in a tuna catch. At the same time, the fishermen use the method of "backing down," in which tension on the pocket is released so that the porpoises may more easily escape. The use of killer whale sounds serves to frighten the animals out of the nets.

In concurrent tests on the recent cruise, Navy scientists, led by William E. Evans of the Naval Undersea Research and Development Center, succeeded in attaching radio transmitters to four animals. Three porpoises were tracked for three weeks and 400 miles of track, longer and farther than had been accomplished to date.

* * * * *

UNDERWATER SOUNDS OF RIGHT WHALE RECORDED DURING HERO CRUISE

Scientists participating in the R/V HERO cruise off Argentina last summer successfully recorded the underwater sounds of the southern right whale in Golfo San Jose. Researchers on the 35-day cruise were William C. Cummings, James F. Fish, and Paul O. Thompson of the Naval Undersea Research and Development Center (all studying bioacoustics and related behavior of marine mammals), and Joseph R. Jehl, Jr., San Diego Natural History Museum (studying marine birds).

Using a calibrated hydrophone system, the scientists were able to record more than 200 low-frequency underwater sounds. Most numerous were belch-like noises with an average duration of 1.4 secs. and a pitch extending from about 30 to 2200 Hz. Source levels ranged from 172 to 187 dB re 1 $\mu\text{N}/\text{m}^2$ at 1 m. The whales also produced a variety of moaning sounds which lasted 0.6 to 4.1 secs. and extended up to 1250 Hz. Most of the sound energy was in the frequency region below 500 Hz. Associated with the two types of sounds, the scientists reported,

were occasional pulses that lasted 0.06 sec. in the spectrum from 30 to 2100 Hz. Other miscellaneous sounds varied in length from 0.3 to 1.3 secs. and were confined to the region below 1950 Hz. Trained observers were unable to associate a particular type of sound with a corresponding pattern of behavior.

Additional information on the research has been published in the Antarctic Journal of the United States, November-December 1971.

* * * * *

PM SECTION MEETING WORKS TO UNIFY THEMES

The IBP/PM Section, under the chairmanship of Dr. Max J. Dunbar, McGill University, is particularly concerned with the evolution and continuation of the IBP "process," namely its ability to attract personnel of many disciplines into integrated research programs and/or conferences for the exchange of ideas. This was well illustrated at the PM Section meetings, held 4-8 October 1971, in Rome. Representing the U.S. Marine Mammal Program was Dr. G. Carleton Ray, the Program Director.

Nine sessions were addressed to the four themes and the features which unite them within the PM Section. Underlying the meeting was the effort to bring together the PM Section in the language of ecology. The concepts of stability and predictability are central to the IBP (and to man's relationship with the natural world) and their consideration requires establishment of relationships, not only in areas of marine science, but among marine, freshwater, and terrestrial ecology as well. For these purposes, considerable emphasis was given to ecosystem description, leading to models, the purpose of which would be prediction. It was widely realized, however, that predictability is years away and that this places marine mammal affairs in a precarious position; there are problems which require solution now, with little time for elaborate study.

A planned meeting of the International Marine Mammal Working Group, to be held at the time of the PM Section meetings, was cancelled due to lack of funds. This meeting has now been rescheduled for September 1972 in Seattle, Wash., in conjunction with the IBP Fifth General Assembly.

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RESEARCH FACILITIES AVAILABLE -- The Sea Mammal Motivational Institute (SEAMAMM), Key Largo, Fla., is offering facilities for researchers to work with pinnipeds in the open ocean. The institute now has two California sea lions and one harbor seal trained in simple retrieval and messenger tasks and paddle/trigger activation. Acquisition of six more seals and an additional sea lion is planned for this summer. SEAMAMM also offers the use of a 68-ft. steel-hull ship, two outboard reef boats, and underwater photographic equipment. Short-term housing for scientists is sometimes available. For more information, contact Bob or Nina Horstman, SEAMAMM, Ocean Reef Club, Key Largo, Fla. 33037; telephone: 305-367-2345.

* * * * *

NEW PUBLICATIONS AVAILABLE -- (Compiled by the Staff, Kellogg Library of Marine Mammalogy, National Museum of Natural History, Washington, D.C. 20560.)

Antarctic Pinnipedia, edited by William Henry Burt. Volume 18, Antarctic Research Series, 1971, American Geophysical Union, 2100 Pennsylvania Avenue, N.W., Washington, D.C. 20037. Price: \$25.00.

(NEW PUBLICATIONS, continued)

Sea Mammal Institute Magazine, edited by Amanda Mathews. Includes general accounts of current research, articles on legislation, books reviews, photographs. For more information, contact editor, Sea Mammal Motivational Institute, P.O. Box 867, Key Colony Beach, Fla. 33051.

The sperm whale, a bibliography, Beth Fodor, comp. Dept. of the Interior, Office of Library Services, Biblio. Series No. 25, June, 1971, 100 pp. Available from National Technical Information Service, Springfield, Va. 22151. No charge.

The fin whale, a bibliography, Patricia Skaptason, comp. Series No. 26. (See preceding item.)

An annotated bibliography of dolphin and porpoise families Delphinidae and Platanistidae, by William K. Whitfield, Jr. Special Scientific Rept. No. 26, Marine Research Laboratory, Florida Dept. of Natural Resources, Div. of Marine Resources, St. Petersburg, Fla. (No price information available.)

Investigations on Cetacea, Vol. III (Parts 1 and 2), edited by G. Pilleri, Brain Anatomy Institute, University of Berne, Untere Zollgasse 71, (Waldau), 3072 Ostermundigen Be, Switzerland. Price: 119.30 Swiss francs (approximately U.S.\$30.00).

Cetology. A series of technical papers on the biology of cetaceans, David K. Caldwell, managing editor, P.O. Box 26, St. Augustine, Fla. 32084. Published by Biological Systems, Inc. Price: \$15.00.

Mammals of the Sea: Biology and Medicine, editor, Samuel H. Ridgway. Published by Charles C. Thomas, 301 East Lawrence Avenue, Springfield, Ill. 62703. (No price information available.)

Marine Mammal Program
U.S. International Biological Program
Department of Vertebrate Zoology
National Museum of Natural History
Washington, D.C. 20560

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86 STAT.] PUBLIC LAW 92-522—OCT. 21, 1972

1027

Public Law 92-522

AN ACT

October 21, 1972
[H. R. 10420]

To protect marine mammals; to establish a Marine Mammal Commission; and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act, with the following table of contents, may be cited as the “Marine Mammal Protection Act of 1972”.

Marine Mammal
Protection Act of
1972.

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FINDINGS AND DECLARATION OF POLICY

SEC. 2. The Congress finds that—

(1) certain species and population stocks of marine mammals are, or may be, in danger of extinction or depletion as a result of man's activities;

(2) such species and population stocks should not be permitted to diminish beyond the point at which they cease to be a significant functioning element in the ecosystem of which they are a part, and, consistent with this major objective, they should not be permitted to diminish below their optimum sustainable population. Further measures should be immediately taken to replenish any species or population stock which has already diminished below that population. In particular, efforts should be made to protect the rookeries, mating grounds, and areas of similar significance for each species of marine mammal from the adverse effect of man's actions;

(3) there is inadequate knowledge of the ecology and population dynamics of such marine mammals and of the factors which bear upon their ability to reproduce themselves successfully;

(4) negotiations should be undertaken immediately to encourage the development of international arrangements for research on, and conservation of, all marine mammals;

(5) marine mammals and marine mammal products either—
(A) move in interstate commerce, or

(B) affect the balance of marine ecosystems in a manner which is important to other animals and animal products which move in interstate commerce, and that the protection and conservation of marine mammals is therefore necessary to insure the continuing availability of those products which move in interstate commerce; and

(6) marine mammals have proven themselves to be resources of great international significance, esthetic and recreational as well as economic, and it is the sense of the Congress that they should be protected and encouraged to develop to the greatest extent feasible commensurate with sound policies of resource management and that the primary objective of their management should be to maintain the health and stability of the marine ecosystem. Whenever consistent with this primary objective, it should be the goal to obtain an optimum sustainable population keeping in mind the optimum carrying capacity of the habitat.

DEFINITIONS

SEC. 3. For the purposes of this Act—

(1) The term “depletion” or “depleted” means any case in which the Secretary, after consultation with the Marine Mammal Commission and the Committee of Scientific Advisors on Marine Mammals established under title II of this Act, determines that the number of individuals within a species or population stock—

(A) has declined to a significant degree over a period of years;

(B) has otherwise declined and that if such decline continues, or is likely to resume, such species would be subject to the provisions of the Endangered Species Conservation Act of 1969; or

(C) is below the optimum carrying capacity for the species or stock within its environment.

(2) The terms “conservation” and “management” mean the collection and application of biological information for the purposes of increasing and maintaining the number of animals within species and populations of marine mammals at the optimum carrying capacity of their habitat. Such terms include the entire scope of activities that constitute a modern scientific resource program, including, but not limited to, research, census, law enforcement, and habitat acquisition and improvement. Also included within these terms, when and where appropriate, is the periodic or total protection of species or populations as well as regulated taking.

(3) The term “district court of the United States” includes the District Court of Guam, District Court of the Virgin Islands, District Court of Puerto Rico, District Court of the Canal Zone, and, in the case of American Samoa and the Trust Territory of the Pacific Islands, the District Court of the United States for the District of Hawaii.

(4) The term “humane” in the context of the taking of a marine mammal means that method of taking which involves the least possible degree of pain and suffering practicable to the mammal involved.

(5) The term “marine mammal” means any mammal which (A) is morphologically adapted to the marine environment (including sea otters and members of the orders Sirenia, Pinnipedia and Cetacea), or (B) primarily inhabits the marine environment (such as the polar bear); and, for the purposes of this Act, includes any part of any such marine mammal, including its raw, dressed, or dyed fur or skin.

(6) The term “marine mammal product” means any item of merchandise which consists, or is composed in whole or in part, of any marine mammal.

80 Stat. 926;
83 Stat. 283.
16 USC 668aa
note.

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(7) The term “moratorium” means a complete cessation of the taking of marine mammals and a complete ban on the importation into the United States of marine mammals and marine mammal products, except as provided in this Act.

(8) The term “optimum carrying capacity” means the ability of a given habitat to support the optimum sustainable population of a species or population stock in a healthy state without diminishing the ability of the habitat to continue that function.

(9) The term “optimum sustainable population” means, with respect to any population stock, the number of animals which will result in the maximum productivity of the population or the species, keeping in mind the optimum carrying capacity of the habitat and the health of the ecosystem of which they form a constituent element.

(10) The term “person” includes (A) any private person or entity, and (B) any officer, employee, agent, department, or instrumentality of the Federal Government, of any State or political subdivision thereof, or of any foreign government.

(11) The term “population stock” or “stock” means a group of marine mammals of the same species or smaller taxa in a common spatial arrangement, that interbreed when mature.

(12) The term “Secretary” means—

(A) the Secretary of the department in which the National Oceanic and Atmospheric Administration is operating, as to all responsibility, authority, funding, and duties under this Act with respect to members of the order Cetacea and members, other than walrus, of the order Pinnipedia, and

(B) the Secretary of the Interior as to all responsibility, authority, funding, and duties under this Act with respect to all other marine mammals covered by this Act.

(13) The term “take” means to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal.

(14) The term “United States” includes the several States, the District of Columbia, the Commonwealth of Puerto Rico, the Canal Zone, the possessions of the United States, and the Trust Territory of the Pacific Islands.

(15) The term “waters under the jurisdiction of the United States” means—

(A) the territorial sea of the United States, and

(B) the fisheries zone established pursuant to the Act of October 14, 1966 (80 Stat. 908; 16 U.S.C. 1091–1094).

EFFECTIVE DATE

SEC. 4. The provisions of this Act shall take effect upon the expiration of the sixty-day period following the date of its enactment.

TITLE I—CONSERVATION AND PROTECTION OF MARINE MAMMALS

MORATORIUM AND EXCEPTIONS

SEC. 101. (a) There shall be a moratorium on the taking and importation of marine mammals and marine mammal products, commencing on the effective date of this Act, during which time no permit may be issued for the taking of any marine mammal and no marine mammal or marine mammal product may be imported into the United States except in the following cases:

(1) Permits may be issued by the Secretary for taking and importation for purposes of scientific research and for public display if—

Commercial
fishing opera-
tions.

Incidental
killing or injury,
restriction.

Waiver.

Regulations;
permit require-
ment.

(A) the taking proposed in the application for any such permit, or

(B) the importation proposed to be made, is first reviewed by the Marine Mammal Commission and the Committee of Scientific Advisors on Marine Mammals established under title II of this Act. The Commission and Committee shall recommend any proposed taking or importation which is consistent with the purposes and policies of section 2 of this Act. The Secretary shall, if he grants approval for importation, issue to the importer concerned a certificate to that effect which shall be in such form as the Secretary of the Treasury prescribes and such importation may be made upon presentation of the certificate to the customs officer concerned.

(2) During the twenty-four calendar months initially following the date of the enactment of this Act, the taking of marine mammals incidental to the course of commercial fishing operations shall be permitted, and shall not be subject to the provisions of sections 103 and 104 of this title: *Provided*, That such taking conforms to such conditions and regulations as the Secretary is authorized and directed to impose pursuant to section 111 hereof to insure that those techniques and equipment are used which will produce the least practicable hazard to marine mammals in such commercial fishing operations. Subsequent to such twenty-four months, marine mammals may be taken incidentally in the course of commercial fishing operations and permits may be issued thereof pursuant to section 104 of this title, subject to regulations prescribed by the Secretary in accordance with section 103 hereof. In any event it shall be the immediate goal that the incidental kill or incidental serious injury of marine mammals permitted in the course of commercial fishing operations be reduced to insignificant levels approaching a zero mortality and serious injury rate. The Secretary shall request the Committee on Scientific Advisors on Marine Mammals to prepare for public dissemination detailed estimates of the numbers of mammals killed or seriously injured under existing commercial fishing technology and under the technology which shall be required subsequent to such twenty-four-month period. The Secretary of the Treasury shall ban the importation of commercial fish or products from fish which have been caught with commercial fishing technology which results in the incidental kill or incidental serious injury of ocean mammals in excess of United States standards. The Secretary shall insist on reasonable proof from the government of any nation from which fish or fish products will be exported to the United States of the effects on ocean mammals of the commercial fishing technology in use for such fish or fish products exported from such nation to the United States.

(3) (A) The Secretary, on the basis of the best scientific evidence available and in consultation with the Marine Mammal Commission, is authorized and directed, from time to time, having due regard to the distribution, abundance, breeding habits, and times and lines of migratory movements of such marine mammals, to determine when, to what extent, if at all, and by what means, it is compatible with this Act to waive the requirements of this section so as to allow taking, or importing of any marine mammal, or any marine mammal product, and to adopt suitable regulations, issue permits, and make determinations in accordance with sections 102, 103, 104, and 111 of this title permitting and governing such taking and importing, in accordance with such determinations: *Provided, however*, That the Secretary, in making such determinations, must be assured that the taking of such marine

mammal is in accord with sound principles of resource protection and conservation as provided in the purposes and policies of this Act: *Provided further, however*, That no marine mammal or no marine mammal product may be imported into the United States unless the Secretary certifies that the program for taking marine mammals in the country of origin is consistent with the provisions and policies of this Act. Products of nations not so certified may not be imported into the United States for any purpose, including processing for exportation.

(B) Except for scientific research purposes as provided for in paragraph (1) of this subsection, during the moratorium no permit may be issued for the taking of any marine mammal which is classified as belonging to an endangered species pursuant to the Endangered Species Conservation Act of 1969 or has been designated by the Secretary as depleted, and no importation may be made of any such mammal.

Endangered species.

80 Stat. 926;
83 Stat. 283.
16 USC 668aa
note.

(b) The provisions of this Act shall not apply with respect to the taking of any marine mammal by any Indian, Aleut, or Eskimo who dwells on the coast of the North Pacific Ocean or the Arctic Ocean if such taking—

Alaskan natives, exemptions.

(1) is for subsistence purposes by Alaskan natives who reside in Alaska, or

(2) is done for purposes of creating and selling authentic native articles of handicrafts and clothing: *Provided*, That only authentic native articles of handicrafts and clothing may be sold in interstate commerce: *And provided further*, That any edible portion of marine mammals may be sold in native villages and towns in Alaska or for native consumption. For the purposes of this subsection, the term “authentic native articles of handicrafts and clothing” means items composed wholly or in some significant respect of natural materials, and which are produced, decorated, or fashioned in the exercise of traditional native handicrafts without the use of pantographs, multiple carvers, or other mass copying devices. Traditional native handicrafts include, but are not limited to weaving, carving, stitching, sewing, lacing, beading, drawing, and painting; and

“Authentic native articles of handicrafts and clothing.”

(3) in each case, is not accomplished in a wasteful manner.

Notwithstanding the preceding provisions of this subsection, when, under this Act, the Secretary determines any species or stock of marine mammal subject to taking by Indians, Aleuts, or Eskimos to be depleted, he may prescribe regulations upon the taking of such marine mammals by any Indian, Aleut, or Eskimo described in this subsection. Such regulations may be established with reference to species or stocks, geographical description of the area included, the season for taking, or any other factors related to the reason for establishing such regulations and consistent with the purposes of this Act. Such regulations shall be prescribed after notice and hearing required by section 103 of this title and shall be removed as soon as the Secretary determines that the need for their imposition has disappeared.

Depleted species or stocks, regulations.

(c) In order to minimize undue economic hardship to persons subject to this Act, other than those engaged in commercial fishing operations referred to in subsection (a) (2) of this section, the Secretary, upon any such person filing an application with him and upon filing such information as the Secretary may require showing, to his satisfaction, such hardship, may exempt such person or class of persons from provisions of this Act for no more than one year from the date of the enactment of this Act, as he determines to be appropriate.

PROHIBITIONS

SEC. 102. (a) Except as provided in sections 101, 103, 104, 111, and 113 of this title, it is unlawful—

(1) for any person subject to the jurisdiction of the United States or any vessel or other conveyance subject to the jurisdiction of the United States to take any marine mammal on the high seas;

(2) except as expressly provided for by an international treaty, convention, or agreement to which the United States is a party and which was entered into before the effective date of this title or by any statute implementing any such treaty, convention, or agreement—

(A) for any person or vessel or other conveyance to take any marine mammal in waters or on lands under the jurisdiction of the United States; or

(B) for any person to use any port, harbor, or other place under the jurisdiction of the United States for any purpose in any way connected with the taking or importation of marine mammals or marine mammal products; and

(3) for any person, with respect to any marine mammal taken in violation of this title—

(A) to possess any such mammal; or

(B) to transport, sell, or offer for sale any such mammal or any marine mammal product made from any such mammal; and

(4) for any person to use, in a commercial fishery, any means or methods of fishing in contravention of any regulations or limitations, issued by the Secretary for that fishery to achieve the purposes of this Act.

(b) Except pursuant to a permit for scientific research issued under section 104(c) of this title, it is unlawful to import into the United States any marine mammal if such mammal was—

(1) pregnant at the time of taking;

(2) nursing at the time of taking, or less than eight months old, whichever occurs later;

(3) taken from a species or population stock which the Secretary has, by regulation published in the Federal Register, designated as a depleted species or stock or which has been listed as endangered under the Endangered Species Conservation Act of 1969; or

(4) taken in a manner deemed inhumane by the Secretary.

(c) It is unlawful to import into the United States any of the following:

(1) Any marine mammal which was—

(A) taken in violation of this title; or

(B) taken in another country in violation of the law of that country.

(2) Any marine mammal product if—

(A) the importation into the United States of the marine mammal from which such product is made is unlawful under paragraph (1) of this subsection; or

(B) the sale in commerce of such product in the country of origin of the product is illegal;

(3) Any fish, whether fresh, frozen, or otherwise prepared, if such fish was caught in a manner which the Secretary has prescribed for persons subject to the jurisdiction of the United States, whether or not any marine mammals were in fact taken incident to the catching of the fish.

(d) Subsections (b) and (c) of this section shall not apply—

(1) in the case of marine mammals or marine mammal prod-

80 Stat. 926;
83 Stat. 283.
16 USC 688aa
note.

Nonapplica-
bility.

ucts, as the case may be, to which subsection (b) (3) of this section applies, to such items imported into the United States before the date on which the Secretary publishes notice in the Federal Register of his proposed rulemaking with respect to the designation of the species or stock concerned as depleted or endangered; or

(2) in the case of marine mammals or marine mammal products to which subsection (c) (1) (B) or (c) (2) (B) of this section applies, to articles imported into the United States before the effective date of the foreign law making the taking or sale, as the case may be, of such marine mammals or marine mammal products unlawful.

(e) This Act shall not apply with respect to any marine mammal taken before the effective date of this Act, or to any marine mammal product consisting of, or composed in whole or in part of, any marine mammal taken before such date.

REGULATIONS ON TAKING OF MARINE MAMMALS

SEC. 103. (a) The Secretary, on the basis of the best scientific evidence available and in consultation with the Marine Mammal Commission, shall prescribe such regulations with respect to the taking and importing of animals from each species of marine mammal (including regulations on the taking and importing of individuals within population stocks) as he deems necessary and appropriate to insure that such taking will not be to the disadvantage of those species and population stocks and will be consistent with the purposes and policies set forth in section 2 of this Act.

(b) In prescribing such regulations, the Secretary shall give full consideration to all factors which may affect the extent to which such animals may be taken or imported, including but not limited to the effect of such regulations on—

- (1) existing and future levels of marine mammal species and population stocks;
- (2) existing international treaty and agreement obligations of the United States;
- (3) the marine ecosystem and related environmental considerations;
- (4) the conservation, development, and utilization of fishery resources; and
- (5) the economic and technological feasibility of implementation.

(c) The regulations prescribed under subsection (a) of this section for any species or population stock of marine mammal may include, but are not limited to, restrictions with respect to—

- (1) the number of animals which may be taken or imported in any calendar year pursuant to permits issued under section 104 of this title;
- (2) the age, size, or sex (or any combination of the foregoing) of animals which may be taken or imported, whether or not a quota prescribed under paragraph (1) of this subsection applies with respect to such animals;
- (3) the season or other period of time within which animals may be taken or imported;
- (4) the manner and locations in which animals may be taken or imported; and
- (5) fishing techniques which have been found to cause undue fatalities to any species of marine mammal in a fishery.

(d) Regulations prescribed to carry out this section with respect to any species or stock of marine mammals must be made on the record after opportunity for an agency hearing on both the Secretary's deter-

Moratorium
waiver, hearing.

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Regulatory statements and studies, publication.

mination to waive the moratorium pursuant to section 101(a)(3)(A) of this title and on such regulations, except that, in addition to any other requirements imposed by law with respect to agency rulemaking, the Secretary shall publish and make available to the public either before or concurrent with the publication of notice in the Federal Register of his intention to prescribe regulations under this section—

- (1) a statement of the estimated existing levels of the species and population stocks of the marine mammal concerned;
- (2) a statement of the expected impact of the proposed regulations on the optimum sustainable population of such species or population stock;
- (3) a statement describing the evidence before the Secretary upon which he proposes to base such regulations; and
- (4) any studies made by or for the Secretary or any recommendations made by or for the Secretary or the Marine Mammal

Review.

Commission which relate to the establishment of such regulations. (e) Any regulation prescribed pursuant to this section shall be periodically reviewed, and may be modified from time to time in such manner as the Secretary deems consistent with and necessary to carry out the purposes of this Act.

Report to Congress; publication in Federal Register.

(f) Within six months after the effective date of this Act and every twelve months thereafter, the Secretary shall report to the public through publication in the Federal Register and to the Congress on the current status of all marine mammal species and population stocks subject to the provisions of this Act. His report shall describe those actions taken and those measures believed necessary, including where appropriate, the issuance of permits pursuant to this title to assure the well-being of such marine mammals.

PERMITS

SEC. 104. (a) The Secretary may issue permits which authorize the taking or importation of any marine mammal.

(b) Any permit issued under this section shall—

- (1) be consistent with any applicable regulation established by the Secretary under section 103 of this title, and
- (2) specify—
 - (A) the number and kind of animals which are authorized to be taken or imported,
 - (B) the location and manner (which manner must be determined by the Secretary to be humane) in which they may be taken, or from which they may be imported,
 - (C) the period during which the permit is valid, and
 - (D) any other terms or conditions which the Secretary deems appropriate.

In any case in which an application for a permit cites as a reason for the proposed taking the overpopulation of a particular species or population stock, the Secretary shall first consider whether or not it would be more desirable to transplant a number of animals (but not to exceed the number requested for taking in the application) of that species or stock to a location not then inhabited by such species or stock but previously inhabited by such species or stock.

Importation for display or research.

(c) Any permit issued by the Secretary which authorizes the taking or importation of a marine mammal for purposes of display or scientific research shall specify, in addition to the conditions required by subsection (b) of this section, the methods of capture, supervision,

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care, and transportation which must be observed pursuant to and after such taking or importation. Any person authorized to take or import a marine mammal for purposes of display or scientific research shall furnish to the Secretary a report on all activities carried out by him pursuant to that authority.

Report.

(d) (1) The Secretary shall prescribe such procedures as are necessary to carry out this section, including the form and manner in which application for permits may be made.

Application procedures.

(2) The Secretary shall publish notice in the Federal Register of each application made for a permit under this section. Such notice shall invite the submission from interested parties, within thirty days after the date of the notice, of written data or views, with respect to the taking or importation proposed in such application.

Notice, publication in Federal Register.

(3) The applicant for any permit under this section must demonstrate to the Secretary that the taking or importation of any marine mammal under such permit will be consistent with the purposes of this Act and the applicable regulations established under section 103 of this title.

(4) If within thirty days after the date of publication of notice pursuant to paragraph (2) of this subsection with respect to any application for a permit any interested party or parties request a hearing in connection therewith, the Secretary may, within sixty days following such date of publication, afford to such party or parties an opportunity for such a hearing.

Hearing.

(5) As soon as practicable (but not later than thirty days) after the close of the hearing or, if no hearing is held, after the last day on which data, or views, may be submitted pursuant to paragraph (2) of this subsection, the Secretary shall (A) issue a permit containing such terms and conditions as he deems appropriate, or (B) shall deny issuance of a permit. Notice of the decision of the Secretary to issue or to deny any permit under this paragraph must be published in the Federal Register within ten days after the date of issuance or denial.

Publication in Federal Register.

(6) Any applicant for a permit, or any party opposed to such permit, may obtain judicial review of the terms and conditions of any permit issued by the Secretary under this section or of his refusal to issue such a permit. Such review, which shall be pursuant to chapter 7 of title 5, United States Code, may be initiated by filing a petition for review in the United States district court for the district wherein the applicant for a permit resides, or has his principal place of business, or in the United States District Court for the District of Columbia, within sixty days after the date on which such permit is issued or denied.

Judicial review.

80 Stat. 392.
5 USC 701.

(e) (1) The Secretary may modify, suspend, or revoke in whole or part any permit issued by him under this section—

Modification authority.

(A) in order to make any such permit consistent with any change made after the date of issuance of such permit with respect to any applicable regulation prescribed under section 103 of this title, or

(B) in any case in which a violation of the terms and conditions of the permit is found.

(2) Whenever the Secretary shall propose any modification, suspension, or revocation of a permit under this subsection, the permittee shall be afforded opportunity, after due notice, for a hearing by the Secretary with respect to such proposed modification, suspension, or revocation. Such proposed action by the Secretary shall not take effect until a decision is issued by him after such hearing. Any action taken by the Secretary after such a hearing is subject to judicial review on the same basis as is any action taken by him with respect to a permit

Hearing.

Judicial review.

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Publication in
Federal Register.

application under paragraph (5) of subsection (d) of this section.

(3) Notice of the modification, suspension, or revocation of any permit by the Secretary shall be published in the Federal Register within ten days from the date of the Secretary's decision.

(f) Any permit issued under this section must be in the possession of the person to whom it is issued (or an agent of such person) during—

(1) the time of the authorized or taking importation;

(2) the period of any transit of such person or agent which is incident to such taking or importation; and

(3) any other time while any marine mammal taken or imported under such permit is in the possession of such person or agent.

A duplicate copy of the issued permit must be physically attached to the container, package, enclosure, or other means of containment, in which the marine mammal is placed for purposes of storage, transit, supervision, or care.

Fee.

(g) The Secretary shall establish and charge a reasonable fee for permits issued under this section.

General
permits.

(h) Consistent with the regulations prescribed pursuant to section 103 of this title and to the requirements of section 101 of this title, the Secretary may issue general permits for the taking of such marine mammals, together with regulations to cover the use of such general permits.

PENALTIES

Notice; hearing.

SEC. 105. (a) Any person who violates any provision of this title or of any permit or regulation issued thereunder may be assessed a civil penalty by the Secretary of not more than \$10,000 for each such violation. No penalty shall be assessed unless such person is given notice and opportunity for a hearing with respect to such violation. Each unlawful taking or importation shall be a separate offense. Any such civil penalty may be remitted or mitigated by the Secretary for good cause shown. Upon any failure to pay a penalty assessed under this subsection, the Secretary may request the Attorney General to institute a civil action in a district court of the United States for any district in which such person is found, resides, or transacts business to collect the penalty and such court shall have jurisdiction to hear and decide any such action.

(b) Any person who knowingly violates any provision of this title or of any permit or regulation issued thereunder shall, upon conviction, be fined not more than \$20,000 for each such violation, or imprisoned for not more than one year, or both.

VESSEL FINE, CARGO FORFEITURE, AND REWARDS

SEC. 106. (a) Any vessel or other conveyance subject to the jurisdiction of the United States that is employed in any manner in the unlawful taking of any marine mammal shall have its entire cargo or the monetary value thereof subject to seizure and forfeiture. All provisions of law relating to the seizure, judicial forfeiture, and condemnation of cargo for violation of the customs laws, the disposition of such cargo, and the proceeds from the sale thereof, and the remission or mitigation of any such forfeiture, shall apply with respect to the cargo of any vessel or other conveyance seized in connection with the unlawful taking of a marine mammal insofar as such provisions of law are applicable and not inconsistent with the provisions of this title.

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(b) Any vessel subject to the jurisdiction of the United States that is employed in any manner in the unlawful taking of any marine mammal shall be liable for a civil penalty of not more than \$25,000. Such penalty shall be assessed by the district court of the United States having jurisdiction over the vessel. Clearance of a vessel against which a penalty has been assessed, from a port of the United States, may be withheld until such penalty is paid, or until a bond or otherwise satisfactory surety is posted. Such penalty shall constitute a maritime lien on such vessel which may be recovered by action in rem in the district court of the United States having jurisdiction over the vessel.

Penalty.

(c) Upon the recommendation of the Secretary, the Secretary of the Treasury is authorized to pay an amount equal to one-half of the fine incurred but not to exceed \$2,500 to any person who furnishes information which leads to a conviction for a violation of this title. Any officer or employee of the United States or of any State or local government who furnishes information or renders service in the performance of his official duties shall not be eligible for payment under this section.

Information leading to conviction, reward.

ENFORCEMENT

SEC. 107. (a) Except as otherwise provided in this title, the Secretary shall enforce the provisions of this title. The Secretary may utilize, by agreement, the personnel, services, and facilities of any other Federal agency for purposes of enforcing this title.

Federal personnel, utilization.

(b) The Secretary may also designate officers and employees of any State or of any possession of the United States to enforce the provisions of this title. When so designated, such officers and employees are authorized to function as Federal law enforcement agents for these purposes, but they shall not be held and considered as employees of the United States for the purposes of any laws administered by the Civil Service Commission.

State officers and employees.

(c) The judges of the district courts of the United States and the United States magistrates may, within their respective jurisdictions, upon proper oath or affirmation showing probable cause, issue such warrants or other process, including warrants or other process issued in admiralty proceedings in United States district courts, as may be required for enforcement of this title and any regulations issued thereunder.

Warrants.

(d) Any person authorized by the Secretary to enforce this title may execute any warrant or process issued by any officer or court of competent jurisdiction for the enforcement of this title. Such person so authorized may, in addition to any other authority conferred by law—

Arrest and seizure, authority.

(1) with or without warrant or other process, arrest any person committing in his presence or view a violation of this title or the regulations issued thereunder;

(2) with a warrant or other process, or without a warrant if he has reasonable cause to believe that a vessel or other conveyance subject to the jurisdiction of the United States or any person on board is in violation of any provision of this title or the regulations issued thereunder, search such vessel or conveyance and arrest such person;

(3) seize the cargo of any vessel or other conveyance subject to the jurisdiction of the United States used or employed contrary to the provisions of this title or the regulations issued hereunder or which reasonably appears to have been so used or employed; and

(4) seize, whenever and wherever found, all marine mammals and marine mammal products taken or retained in violation of

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- this title or the regulations issued thereunder and shall dispose of them in accordance with regulations prescribed by the Secretary.
- Seizure.** (e) (1) Whenever any cargo or marine mammal or marine mammal product is seized pursuant to this section, the Secretary shall expedite any proceedings commenced under section 105 (a) or (b) of this title. All marine mammals or marine mammal products or other cargo so seized shall be held by any person authorized by the Secretary pending disposition of such proceedings. The owner or consignee of any such marine mammal or marine mammal product or other cargo so seized shall, as soon as practicable following such seizure, be notified of that fact in accordance with regulations established by the Secretary.
- Notification.**
- Bond posting.** (2) The Secretary may, with respect to any proceeding under section 105 (a) or (b) of this title, in lieu of holding any marine mammal or marine mammal product or other cargo, permit the person concerned to post bond or other surety satisfactory to the Secretary pending the disposition of such proceeding.
- Forfeiture.** (3) (A) Upon the assessment of a penalty pursuant to section 105 (a) of this title, all marine mammals and marine mammal products or other cargo seized in connection therewith may be proceeded against in any court of competent jurisdiction and forfeited to the Secretary for disposition by him in such manner as he deems appropriate.
- (B) Upon conviction for violation of section 105(b) of this title, all marine mammals and marine mammal products seized in connection therewith shall be forfeited to the Secretary for disposition by him in such manner as he deems appropriate. Any other property or item so seized may, at the discretion of the court, be forfeited to the United States or otherwise disposed of.
- (4) If with respect to any marine mammal or marine mammal product or other cargo so seized—
- (A) a civil penalty is assessed under section 105(a) of this title and no judicial action is commenced to obtain the forfeiture of such mammal or product within thirty days after such assessment, such marine mammal or marine mammal product or other cargo shall be immediately returned to the owner or the consignee; or
- (B) no conviction results from an alleged violation of section 105(b) of this title, such marine mammal or marine mammal product or other cargo shall immediately be returned to the owner or consignee if the Secretary does not, within thirty days after the final disposition of the case involving such alleged violation, commence proceedings for the assessment of a civil penalty under section 105(a) of this title.

INTERNATIONAL PROGRAM

SEC. 108. (a) The Secretary, through the Secretary of State, shall—

- (1) initiate negotiations as soon as possible for the development of bilateral or multilateral agreements with other nations for the protection and conservation of all marine mammals covered by this Act;
- (2) initiate negotiations as soon as possible with all foreign governments which are engaged in, or which have persons or companies engaged in, commercial fishing operations which are found by the Secretary to be unduly harmful to any species of marine mammal, for the purpose of entering into bilateral and multilat-

eral treaties with such countries to protect marine mammals. The Secretary of State shall prepare a draft agenda relating to this matter for discussion at appropriate international meetings and forums;

(3) encourage such other agreements to promote the purposes of this Act with other nations for the protection of specific ocean and land regions which are of special significance to the health and stability of marine mammals;

(4) initiate the amendment of any existing international treaty for the protection and conservation of any species of marine mammal to which the United States is a party in order to make such treaty consistent with the purposes and policies of this Act;

(5) seek the convening of an international ministerial meeting on marine mammals before July 1, 1973, for the purposes of (A) the negotiation of a binding international convention for the protection and conservation of all marine mammals, and (B) the implementation of paragraph (3) of this section; and

(6) provide to the Congress by not later than one year after the date of the enactment of this Act a full report on the results of his efforts under this section.

(b) (1) In addition to the foregoing, the Secretary shall—

(A) in consultation with the Marine Mammal Commission established by section 201 of this Act, undertake a study of the North Pacific fur seals to determine whether herds of such seals subject to the jurisdiction of the United States are presently at their optimum sustainable population and what population trends are evident; and

(B) in consultation with the Secretary of State, promptly undertake a comprehensive study of the provisions of this Act, as they relate to North Pacific fur seals, and the provisions of the North Pacific Fur Seal Convention signed on February 9, 1957, as extended (hereafter referred to in this subsection as the "Convention"), to determine what modifications, if any, should be made to the provisions of the Convention, or of this Act, or both, to make the Convention and this Act consistent with each other.

The Secretary shall complete the studies required under this paragraph not later than one year after the date of enactment of this Act and shall immediately provide copies thereof to Congress.

(2) If the Secretary finds—

(A) as a result of the study required under paragraph (1) (A) of this subsection, that the North Pacific fur seal herds are below their optimum sustainable population and are not trending upward toward such level, or have reached their optimum sustainable population but are commencing a downward trend, and believes the herds to be in danger of depletion; or

(B) as a result of the study required under paragraph (1) (B) of this subsection, that modifications of the Convention are desirable to make it and this Act consistent;

he shall, through the Secretary of State, immediately initiate negotiations to modify the Convention so as to (i) reduce or halt the taking of seals to the extent required to assure that such herds attain and remain at their optimum sustainable population, or (ii) make the Convention and this Act consistent; or both, as the case may be. If negotiations to so modify the Convention are unsuccessful, the Secretary shall, through the Secretary of State, take such steps as may be necessary to continue the existing Convention beyond its present termination date so as to continue to protect and conserve the North Pacific fur seals and to prevent a return to pelagic sealing.

International ministerial meeting on marine animals.

Report to Congress.

North Pacific fur seals, study.

8 UST 2283;
15 UST 316;
20 UST 2992.

Study copies, transmittal to Congress.

Convention, modification negotiations.

8 UST 2283;
15 UST 316;
20 UST 2292.

Time extension.

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FEDERAL COOPERATION WITH STATES

SEC. 109. (a) (1) Except as otherwise provided in this section, no State may adopt any law or regulation relating to the taking of marine mammals within its jurisdiction or attempt to enforce any State law or regulation relating to such taking.

Law enforcement.

(2) Any State may adopt and enforce any laws or regulations relating to the protection and taking, within its jurisdiction, of any species or population stock of marine mammals if the Secretary determines, after review thereof, that such laws and regulations will be consistent with (A) the regulations promulgated under section 103 of this title with respect to such species or population stock, and (B) such other provisions of this Act, and any rule or regulation promulgated pursuant to this title, which apply with respect to such species or population stock. If the Secretary determines that any such State laws and regulations are so consistent, the provisions of this Act, except this section and sections 101 (except to the extent that the Secretary waives the application of section 101 to permit such State laws and regulations to take effect) and 110 of this title, and title II of this Act, shall not apply with respect to the species or population stock concerned within the jurisdiction of the State.

State laws and regulations, review.

(3) Notwithstanding the preceding provisions of this subsection and the provisions of subsection (c) of this section, the Secretary shall continuously monitor and review the laws and regulations of any State which has assumed responsibility for marine mammals as provided for in paragraph (2) of this subsection. Whenever the Secretary finds that the laws and regulations of any such State are not in substantial compliance with either paragraph (1) or (2), or both, he shall resume responsibilities under this Act for the marine mammals concerned within the jurisdiction of that State, superseding such State laws and regulations to the extent which, after notice and opportunity for hearing, he deems necessary.

Mammals, taking for humane purposes.

(4) Nothing in this Act shall prevent a State or local government official or employee, in the course of his duties as an official or employee, from taking a marine mammal in a humane manner if such taking (A) is for the protection or welfare of such mammal or for the protection of the public health and welfare, and (B) includes steps designed to assure the return of such mammal to its natural habitat.

Grants to States.

(b) The Secretary is authorized to make grants to each State whose laws and regulations relating to protection and management of marine mammals which primarily inhabit waters or lands within the boundaries of that State are found to be consistent with the purposes and policies of this Act. The purpose of such grants shall be to assist such States in developing and implementing State programs for the protection and management of such marine mammals. Such grants shall not exceed 50 per centum of the costs of a particular program's development and implementation. To be eligible for such grants, State programs shall include planning and such specific activities, including, but not limited, to research, censusing, habitat acquisition and improvement, or law enforcement as the Secretary finds contribute to the purposes and policies of this Act. The Secretary may also, as a condition of any such grant, provide that State agencies report at regular intervals on the status of species and populations which are the subject of such grants.

Limitation.

Eligibility.

Report.

(c) The Secretary is authorized and directed to enter into cooperative arrangements with the appropriate officials of any State for the delegation to such State of the administration and enforcement of this title: *Provided*, That any such arrangement shall contain such provisions as the Secretary deems appropriate to insure that the purposes and policies of this Act will be carried out.

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MARINE MAMMAL RESEARCH GRANTS

SEC. 110. (a) The Secretary is authorized to make grants, or to provide financial assistance in such other form as he deems appropriate, to any Federal or State agency, public or private institution, or other person for the purpose of assisting such agency, institution, or person to undertake research in subjects which are relevant to the protection and conservation of marine mammals.

(b) Any grant or other financial assistance provided by the Secretary pursuant to this section shall be subject to such terms and conditions as the Secretary deems necessary to protect the interests of the United States and shall be made after review by the Marine Mammal Commission.

(c) There are authorized to be appropriated for the fiscal year in which this section takes effect and for the next four fiscal years thereafter such sums as may be necessary to carry out this section, but the sums appropriated for any such year shall not exceed \$2,500,000, one-third of such sum to be available to the Secretary of the Interior and two-thirds of such sum to be made available to the Secretary of the department in which the National Oceanic and Atmospheric Administration is operating.

Appropriation.

Limitation.

COMMERCIAL FISHERIES GEAR DEVELOPMENT

SEC. 111. (a) The Secretary of the department in which the National Oceanic and Atmospheric Administration is operating (hereafter referred to in this section as the "Secretary") is hereby authorized and directed to immediately undertake a program of research and development for the purpose of devising improved fishing methods and gear so as to reduce to the maximum extent practicable the incidental taking of marine mammals in connection with commercial fishing. At the end of the full twenty-four calendar month period following the date of the enactment of this Act, the Secretary shall deliver his report in writing to the Congress with respect to the results of such research and development. For the purposes of this section, there is hereby authorized to be appropriated the sum of \$1,000,000 for the fiscal year ending June 30, 1973, and the same amount for the next fiscal year. Funds appropriated for this section shall remain available until expended.

Research and development.

Report to Congress.

Appropriation.

(b) The Secretary, after consultation with the Marine Mammal Commission, is authorized and directed to issue, as soon as practicable, such regulations, covering the twenty-four-month period referred to in section 101(a)(2) of this title, as he deems necessary or advisable, to reduce to the lowest practicable level the taking of marine mammals incidental to commercial fishing operations. Such regulations shall be adopted pursuant to section 553 of title 5, United States Code. In issuing such regulations, the Secretary shall take into account the results of any scientific research under subsection (a) of this section and, in each case, shall provide a reasonable time not exceeding four months for the persons affected to implement such regulations.

Regulations.

80 Stat. 383.

(c) Additionally, the Secretary and Secretary of State are directed to commence negotiations within the Inter-American Tropical Tuna Commission in order to effect essential compliance with the regulatory provisions of this Act so as to reduce to the maximum extent feasible the incidental taking of marine mammals by vessels involved in the tuna fishery. The Secretary and Secretary of State are further directed to request the Director of Investigations of the Inter-American Tropical Tuna Commission to make recommendations to all member nations

Inter-American Tropical Tuna Commission, compliance.

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Research and
observation.

of the Commission as soon as is practicable as to the utilization of methods and gear devised under subsection (a) of this section.

(d) Furthermore, after timely notice and during the period of research provided in this section, duly authorized agents of the Secretary are hereby empowered to board and to accompany any commercial fishing vessel documented under the laws of the United States, there being space available, on a regular fishing trip for the purpose of conducting research or observing operations in regard to the development of improved fishing methods and gear as authorized by this section. Such research and observation shall be carried out in such manner as to minimize interference with fishing operations. The Secretary shall provide for the cost of quartering and maintaining such agents. No master, operator, or owner of such a vessel shall impair or in any way interfere with the research or observation being carried out by agents of the Secretary pursuant to this section.

REGULATIONS AND ADMINISTRATION

SEC. 112. (a) The Secretary, in consultation with any other Federal agency to the extent that such agency may be affected, shall prescribe such regulations as are necessary and appropriate to carry out the purposes of this title.

Federal agen-
cies, cooperation.

(b) Each Federal agency is authorized and directed to cooperate with the Secretary, in such manner as may be mutually agreeable, in carrying out the purposes of this title.

Contract
authority.

(c) The Secretary may enter into such contracts, leases, cooperative agreements, or other transactions as may be necessary to carry out the purposes of this title and on such terms as he deems appropriate with any Federal or State agency, public or private institution, or other person.

Annual review.

(d) The Secretary shall review annually the operation of each program in which the United States participates involving the taking of marine mammals on land. If at any time the Secretary finds that any such program cannot be administered on lands owned by the United States or in which the United States has an interest in a manner consistent with the purposes of policies of this Act, he shall suspend the operation of that program and shall forthwith submit to Congress his reasons for such suspension, together with recommendations for such legislation as he deems necessary and appropriate to resolve the problem.

Report to
Congress.

APPLICATION TO OTHER TREATIES AND CONVENTIONS; REPEAL

SEC. 113. (a) The provisions of this title shall be deemed to be in addition to and not in contravention of the provisions of any existing international treaty, convention, or agreement, or any statute implementing the same, which may otherwise apply to the taking of marine mammals. Upon a finding by the Secretary that the provisions of any international treaty, convention, or agreement, or any statute implementing the same has been made applicable to persons subject to the provisions of this title in order to effect essential compliance with the regulatory provisions of this Act so as to reduce to the lowest practicable level the taking of marine mammals incidental to commercial fishing operations, section 105 of this title may not apply to such persons.

Repeal.

(b) The proviso to the Act entitled "An Act to repeal certain laws providing for the protection of sea lions in Alaska water", approved June 16, 1934 (16 U.S.C. 659), is repealed.

48 Stat. 976.

AUTHORIZATION OF APPROPRIATIONS

SEC. 114. (a) There are authorized to be appropriated not to exceed \$2,000,000 for the fiscal year ending June 30, 1973, and the four next following fiscal years to enable the department in which the National Oceanic and Atmospheric Administration is operating to carry out such functions and responsibilities as it may have been given under this title.

(b) There are authorized to be appropriated not to exceed \$700,000 for the fiscal year ending June 30, 1973, and not to exceed \$525,000 for each of the next four fiscal years thereafter to enable the Department of the Interior to carry out such functions and responsibilities as it may have been given under this title.

TITLE II—MARINE MAMMAL COMMISSION

ESTABLISHMENT OF COMMISSION

SEC. 201. (a) There is hereby established the Marine Mammal Commission (hereafter referred to in this title as the "Commission").

(b) (1) The Commission shall be composed of three members who shall be appointed by the President. The President shall make his selection from a list, submitted to him by the Chairman of the Council on Environmental Quality, the Secretary of the Smithsonian Institution, the Director of the National Science Foundation, and the Chairman of the National Academy of Sciences, of individuals knowledgeable in the fields of marine ecology and resource management, and who are not in a position to profit from the taking of marine mammals. No member of the Commission may, during his period of service on the Commission, hold any other position as an officer or employee of the United States except as a retired officer or retired civilian employee of the United States.

(2) The term of office for each member shall be three years; except that of the members initially appointed to the Commission, the term of one member shall be for one year, the term of one member shall be for two years, and the term of one member shall be for three years. No member is eligible for reappointment; except that any member appointed to fill a vacancy occurring before the expiration of the term for which his predecessor was appointed (A) shall be appointed for the remainder of such term, and (B) is eligible for reappointment for one full term. A member may serve after the expiration of his term until his successor has taken office.

(c) The President shall designate a Chairman of the Commission (hereafter referred to in this title as the "Chairman") from among its members.

(d) Members of the Commission shall each be compensated at a rate equal to the daily equivalent of the rate for GS-18 of the General Schedule under section 5332 of title 5, United States Code, for each day such member is engaged in the actual performance of duties vested in the Commission. Each member shall be reimbursed for travel expenses, including per diem in lieu of subsistence, as authorized by section 5703 of title 5, United States Code, for persons in Government service employed intermittently.

(e) The Commission shall have an Executive Director, who shall be appointed (without regard to the provisions of title 5, United States Code, governing appointments in the competitive service) by the Chairman with the approval of the Commission and shall be paid at a rate not in excess of the rate for GS-18 of the General Schedule under section 5332 of title 5, United States Code. The Executive Director shall have such duties as the Chairman may assign.

5100-1000-01
 5100-1000-02
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 5100-1000-04
 5100-1000-05
 5100-1000-06
 5100-1000-07
 5100-1000-08
 5100-1000-09
 5100-1000-10

Membership.

Term.

Chairman.

Compensation.

5 USC 5332
 note.

80 Stat. 499;
 83 Stat. 190.

Executive Di-
 rector.

5 USC 101
 et seq.

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DUTIES OF COMMISSION

Sec. 202. (a) The Commission shall—

49 Stat. 3079.
64 Stat. 421.
16 USC 916
note.
8 UST 2283;
15 UST 316;
20 UST 2992.
80 Stat. 1091.
16 USC 1151
note.

(1) undertake a review and study of the activities of the United States pursuant to existing laws and international conventions relating to marine mammals, including, but not limited to, the International Convention for the Regulation of Whaling, the Whaling Convention Act of 1949, the Interim Convention on the Conservation of North Pacific Fur Seals, and the Fur Seal Act of 1966;

(2) conduct a continuing review of the condition of the stocks of marine mammals, of methods for their protection and conservation, of humane means of taking marine mammals, of research programs conducted or proposed to be conducted under the authority of this Act, and of all applications for permits for scientific research;

(3) undertake or cause to be undertaken such other studies as it deems necessary or desirable in connection with its assigned duties as to the protection and conservation of marine mammals;

(4) recommend to the Secretary and to other Federal officials such steps as it deems necessary or desirable for the protection and conservation of marine mammals;

(5) recommend to the Secretary of State appropriate policies regarding existing international arrangements for the protection and conservation of marine mammals, and suggest appropriate international arrangements for the protection and conservation of marine mammals;

80 Stat. 926;
83 Stat. 283.
16 USC 668aa
note.

(6) recommend to the Secretary of the Interior such revisions of the Endangered Species List, authorized by the Endangered Species Conservation Act of 1969, as may be appropriate with regard to marine mammals; and

(7) recommend to the Secretary, other appropriate Federal officials, and Congress such additional measures as it deems necessary or desirable to further the policies of this Act, including provisions for the protection of the Indians, Eskimos, and Aleuts whose livelihood may be adversely affected by actions taken pursuant to this Act.

Reports and recommendations.

(b) The Commission shall consult with the Secretary at such intervals as it or he may deem desirable, and shall furnish its reports and recommendations to him, before publication, for his comment.

Public information.

(c) The reports and recommendations which the Commission makes shall be matters of public record and shall be available to the public at all reasonable times. All other activities of the Commission shall be matters of public record and available to the public in accordance with the provisions of section 552 of title 5, United States Code.

81 Stat. 54.

(d) Any recommendations made by the Commission to the Secretary and other Federal officials shall be responded to by those individuals within one hundred and twenty days after receipt thereof. Any recommendations which are not followed or adopted shall be referred to the Commission together with a detailed explanation of the reasons why those recommendations were not followed or adopted.

COMMITTEE OF SCIENTIFIC ADVISORS ON MARINE MAMMALS

Establishment.

SEC. 203. (a) The Commission shall establish, within ninety days after its establishment, a Committee of Scientific Advisors on Marine Mammals (hereafter referred to in this title as the "Committee"). Such Committee shall consist of nine scientists knowledgeable in marine ecology and marine mammal affairs appointed by the Chair-

Membership.

man after consultation with the Chairman of the Council on Environmental Quality, the Secretary of the Smithsonian Institution, the Director of the National Science Foundation, and the Chairman of the National Academy of Sciences.

(b) Except for United States Government employees, members of the Committee shall each be compensated at a rate equal to the daily equivalent of the rate for GS-18 of the General Schedule under section 5332 of title 5, United States Code, for each day such member is engaged in the actual performance of duties vested in the Committee. Each member shall be reimbursed for travel expenses, including per diem in lieu of subsistence, as authorized by section 5703 of title 5, United States Code, for persons in Government service employed intermittently.

Compensation.

5 USC 5332
note.

80 Stat. 499;
83 Stat. 190.

(c) The Commission shall consult with the Committee on all studies and recommendations which it may propose to make or has made, on research programs conducted or proposed to be conducted under the authority of this Act, and on all applications for permits for scientific research. Any recommendations made by the Committee or any of its members which are not adopted by the Commission shall be transmitted by the Commission to the appropriate Federal agency and to the appropriate committees of Congress with a detailed explanation of the Commission's reasons for not accepting such recommendations.

Recommendations.

Transmittal to
Federal agency
and congressional
committees.

COMMISSION REPORTS

SEC. 204. The Commission shall transmit to Congress, by January 31 of each year, a report which shall include—

Report to
Congress.

- (1) a description of the activities and accomplishments of the Commission during the immediately preceding year; and
- (2) all the findings and recommendations made by and to the Commission pursuant to section 202 of this Act together with the responses made to these recommendations.

COORDINATION WITH OTHER FEDERAL AGENCIES

SEC. 205. The Commission shall have access to all studies and data compiled by Federal agencies regarding marine mammals. With the consent of the appropriate Secretary or Agency head, the Commission may also utilize the facilities or services of any Federal agency and shall take every feasible step to avoid duplication of research and to carry out the purposes of this Act.

ADMINISTRATION OF COMMISSION

SEC. 206. The Commission, in carrying out its responsibilities under this title, may—

- (1) employ and fix the compensation of such personnel;
- (2) acquire, furnish, and equip such office space;
- (3) enter into such contracts or agreements with other organizations, both public and private;
- (4) procure the services of such experts or consultants or an organization thereof as is authorized under section 3109 of title 5, United States Code (but at rates for individuals not to exceed \$100 per diem); and
- (5) incur such necessary expenses and exercise such other powers, as are consistent with and reasonably required to perform its functions under this title. Financial and administrative services (including those related to budgeting, accounting, financial reporting, personnel, and procurement) shall be provided the Commission by the General Serv-

80 Stat. 416.

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[86 STAT.]

ices Administration, for which payment shall be made in advance, or by reimbursement from funds of the Commission in such amounts as may be agreed upon by the Chairman and the Administrator of General Services.

AUTHORIZATION OF APPROPRIATIONS

SEC. 207. There are authorized to be appropriated for the fiscal year in which this title is enacted and for the next four fiscal years thereafter such sums as may be necessary to carry out this title, but the sums appropriated for any such year shall not exceed \$1,000,000. Not less than two-thirds of the total amount of the sums appropriated pursuant to this section for any such year shall be expended on research and studies conducted under the authority of section 202(a) (2) and (3) of this title.

Approved October 21, 1972.

Public Law 92-523

AN ACT

October 21, 1972
[H.R. 16987]

To amend the Act to authorize appropriations for the fiscal year 1973 for certain maritime programs of the Department of Commerce.

Commerce Department maritime programs.
Appropriation increase.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section 1 of the Act of August 22, 1972 (86 Stat. 617; Public Law 92-402) is amended by striking out of paragraph (a) thereof the figure \$280,000,000 and inserting in lieu thereof the figure \$455,000,000.

Approved October 21, 1972.

Public Law 92-524

AN ACT

October 21, 1972
[S. 1973]

To provide for the establishment of the Thaddeus Kosciuszko Home National Historic Site in the State of Pennsylvania, and for other purposes.

Thaddeus Kosciuszko Home National Historic Site, Pa.
Establishment.
Land acquisition.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That, in order to provide for the development of a suitable memorial to General Thaddeus Kosciuszko, great Polish patriot and hero of the American Revolution, the Secretary of the Interior is authorized to acquire by donation or purchase with donated funds the property at the northwest corner of Third and Pine Streets specifically designated as 301 Pine Street and/or 342 South Third Street, Philadelphia, Pennsylvania, including improvements thereon, together with such adjacent land and interests therein as the Secretary may deem necessary for the establishment and administration of the property as a national memorial.

Administration.

SEC. 2. The property acquired pursuant to the first section of this Act shall be known as the Thaddeus Kosciuszko National Memorial and it shall be administered by the Secretary of the Interior in accordance with the Act of August 25, 1916 (39 Stat. 535), as amended and supplemented (16 U.S.C. 1, 2-4), and the Act of August 21, 1935 (49 Stat. 666; 16 U.S.C. 461-467).

Appropriation.

SEC. 3. There are hereby authorized to be appropriated not more than \$592,000 for the development of the national memorial.

Approved October 21, 1972.

TREATY WITH THE MAKAH, 1855.

Jan. 31, 1855. | 12 Stat., 939. | Ratified Mar. 8, 1859. | Proclaimed Apr. 18, 1859.

Articles of agreement and convention, made and concluded at Neah Bay, in the Territory of Washington, this thirty-first day of January, in the year eighteen hundred and fifty-five, by Isaac I. Stevens, governor and superintendent of Indian affairs for the said Territory, on the part of the United States, and the undersigned chiefs, head-men, and delegates of the several villages of the Makah tribe of Indians, viz: Neah Waatch, Tsoo-Yess, and Osett, occupying the country around Cape Classett or Flattery, on behalf of the said tribe and duly authorized by the same.

ARTICLE 1.

The said tribe hereby cedes, relinquishes, and conveys to the United States all their right, title, and interest in and to the lands and country occupied by it, bounded and described as follows, viz: Commencing at the mouth of the Oke-ho River, on the Straits of Fuca; thence running westwardly with said straits to Cape Classett or Flattery; thence southwardly along the coast to Osett, or the Lower Cape Flattery; thence eastwardly along the line of lands occupied by the Kwe-dééAh-tut or Kwill-eh-yute tribe of Indians, to the summit of the coast-range of mountains, and thence northwardly along the line of lands lately ceded to the United States by the S'Klallam tribe to the place of beginning, including all the islands lying off the same on the straits and coast.

ARTICLE 2.

There is, however, reserved for the present use and occupation of the said tribe the following tract of land, viz: Commencing on the beach at the mouth of a small brook running into Neah Bay next to the site of the old Spanish fort; thence along the shore round Cape Classett or Flattery, to the mouth of another small stream running into the bay on the south side of said cape, a little above the Waatch village; thence following said brook to its source; thence in a straight line to the source of the first-mentioned brook, and thence following the same down to the place of beginning; which said tract shall be set apart, and so far as necessary surveyed and marked out for their exclusive use; nor shall any white man be permitted to reside upon the same without permission of the said tribe and of the superintendent or agent; but if necessary for the public convenience, roads may be run through the said reservation, the Indians being compensated for any damage thereby done them. It is, however, understood that should the President of the United States hereafter see fit to place upon the said reservation any other friendly tribe or band to occupy the same in common with those above mentioned, he shall be at liberty to do so.

ARTICLE 3.

The said tribe agrees to remove to and settle upon the said reservation, if required so to do, within one year after the ratification of this treaty, or sooner, if the means are furnished them. In the mean time it shall be lawful for them to reside upon any land not in the actual claim and occupation of citizens of the United States, and upon any land claimed or occupied, if with the permission of the owner.

ARTICLE 4.

The right of taking fish and of whaling or sealing at usual and accustomed grounds and stations is

further secured to said Indians in common with all citizens of the United States, and of erecting temporary houses for the purpose of curing, together with the privilege of hunting and gathering roots and berries on open and unclaimed lands: *Provided, however*, That they shall not take shell-fish from any beds staked or cultivated by citizens.

ARTICLE 5.

In consideration of the above cession the United States agree to pay to the said tribe the sum of thirty thousand dollars, in the following manner, that is to say: During the first year after the ratification hereof, three thousand dollars; for the next two years, twenty-five

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hundred dollars each year; for the next three years, two thousand dollars each year; for the next four years, one thousand five hundred dollars each year; and for the next ten years, one thousand dollars each year; all which said sums of money shall be applied to the use and benefit of the said Indians, under the direction of the President of the United States, who may from time to time determine at his discretion upon what beneficial objects to expend the same. And the superintendent of Indian affairs, or other proper officer, shall each year inform the President of the wishes of said Indians in respect thereto.

ARTICLE 6.

To enable the said Indians to remove to and settle upon their aforesaid reservation, and to clear, fence, and break up a sufficient quantity of land for cultivation, the United States further agree to pay the sum of three thousand dollars, to be laid out and expended under the direction of the President, and in such manner as he shall approve. And any substantial improvements heretofore made by any individual Indian, and which he may be compelled to abandon in consequence of this treaty, shall be valued under the direction of the President and payment made therefor accordingly.

ARTICLE 7.

The President may hereafter, when in his opinion the interests of the Territory shall require, and the welfare of said Indians be promoted thereby, remove them from said reservation to such suitable place or places within said Territory as he may deem fit, on remunerating them for their improvements and the expenses of their removal, or may consolidate them with other friendly tribes or bands; and he may further, at his discretion, cause the whole, or any portion of the lands hereby reserved, or such other land as may be selected in lieu thereof, to be surveyed into lots, and assign the same to such individuals or families as are willing to avail themselves of the privilege, and will locate thereon as a permanent home, on the same terms and subject to the same regulations as are provided in the sixth article of the treaty with the Omahas, so far as the same may be practicable.

ARTICLE 8.

The annuities of the aforesaid tribe shall not be taken to pay the debts of individuals.

ARTICLE 9.

The said Indians acknowledge their dependence on the Government of the United States, and promise to be friendly with all citizens thereof, and they pledge themselves to commit no depredations on the property of such citizens. And should any one or more of them violate this pledge, and the fact be satisfactorily proven before the agent, the property taken shall be returned, or in default thereof, or if injured or destroyed, compensation may be made by the Government out of their annuities. Nor will they make war on any other tribe except in self-defence, but will submit all matters of difference between them and other Indians to the Government of the United States or its agent for decision and abide thereby. And if any of the said Indians commit any depredations on any other Indians within the Territory, the same rule shall prevail as that prescribed in this article in case of depredations against citizens. And the said tribe agrees not to shelter or conceal offenders against the United States, but to deliver up the same for trial by the authorities.

ARTICLE 10.

The above tribe is desirous to exclude from its reservation the use of ardent spirits, and to prevent its people from drinking the same, and therefore it is provided that any Indian belonging thereto who shall be guilty of bringing liquor into said reservation, or who drinks liquor, may have his or her proportion of the annuities withheld from him or her for such time as the President may determine.

ARTICLE 11.

The United States further agree to establish at the general agency for the district of Puget's Sound, within one year from the ratification hereof, and to support for the period of twenty years, an agricultural and industrial school, to be free to children of the said tribe in common with those of the other tribes of said district and to

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provide a smithy and carpenter's shop, and furnish them with the necessary tools and employ a blacksmith, carpenter and farmer for the like term to instruct the Indians in their respective occupations. *Provided, however,* That should it be deemed expedient a separate school may be established for the benefit of said tribe and such others as may be associated with it, and the like persons employed for the same purposes at some other suitable place. And the United States further agree to employ a physician to reside at the said central agency, or at such other school should one be established, who shall furnish medicine and advice to the sick, and shall vaccinate them; the expenses of the said school, shops, persons employed, and medical attendance to be defrayed by the United States and not deducted from the annuities.

ARTICLE 12.

The said tribe agrees to free all slaves now held by its people, and not to purchase or acquire others hereafter.

ARTICLE 13.

The said tribe finally agrees not to trade at Vancouver's Island or elsewhere out of the dominions

of the United States, nor shall foreign Indians be permitted to reside in its reservation without consent of the superintendent or agent.

ARTICLE 14.

This treaty shall be obligatory on the contracting parties as soon as the same shall be ratified by the President of the United States.

In testimony whereof, the said Isaac I. Stevens, governor and superintendent of Indian affairs, and the undersigned, chiefs, headmen and delegates of the tribe aforesaid have here unto set their hands and seals at the place and on the day and year herein before written.

Isaac I. Stevens, governor and superintendent. [L. S.]
 Tse-kawwtl, head chief of the Makah tribe, his x mark. [L. S.]
 Kal-chote, subchief of the Makahs, his x mark. [L. S.]
 Tah-a-howtl, subchief of the Makahs, his x mark. [L. S.]
 Kah-bach-sat, subchief of the Makahs, his x mark. [L. S.]
 Kets-kus-sum, subchief of the Makahs, his x mark. [L. S.]
 Haatse, subchief of the Makahs, his x mark. [L. S.]
 Keh-chook, subchief of the Makahs, his x mark. [L. S.]
 It-an-da-ha, subchief of the Makahs, his x mark. [L. S.]
 Klah-pe-an-hie, or Andrew Jackson, subchief of the Makahs, his x mark. [L. S.]
 Tsah-ab-oos, or Peter, Neah village, his x mark. [L. S.]
 Tahola, Neah village, his x mark. [L. S.]
 Kleht-li-quat-stl, Waatch village, his x mark. [L. S.]
 Too-whaii-tan, Waatch village, his x mark. [L. S.]
 Tahts-kin, Neah village, his x mark. [L. S.]
 Nenchoop, Neah village, his x mark. [L. S.]
 Ah-de-ak-too-ah, Osett village, his x mark. [L. S.]
 William, Neah village, his x mark. [L. S.]
 Wak-kep-tup, Waatch village, his x mark. [L. S.]
 Klah-t-te-di-yuke, Waatch village, his x mark. [L. S.]
 Oobick, Waatch village, his x mark. [L. S.]
 Bich-took, Waatch village, his x mark. [L. S.]
 Baht-se-ditl, Neah village, his x mark. [L. S.]
 Wack-shie, Neah village, his x mark. [L. S.]
 Hah-yo-hwa, Waatch village, his x mark. [L. S.]
 Daht-leek, or Mines, Osett village, his x mark. [L. S.]
 Pah-hat, Neah village, his x mark. [L. S.]
 Pai-yeh, Osett village, his x mark. [L. S.]
 Tsah-weh-sup, Neah village, his x mark. [L. S.]
 Al-is-kah, Osett village, his x mark. [L. S.]
 Kwe-tow''tl, Neah village, his x mark. [L. S.]
 Kaht-saht-wha, Neah village, his x mark. [L. S.]
 Tchoo-quat-lah, or Yes Sir, Neah village, his x mark. [L. S.]
 Klatts-ow-sehp, Neah village, his x mark. [L. S.]
 Kai-kl-chis-sum, Neah village, his mark. [L. S.]
 Kah-kwt-lit-ha, Waatch village, his x mark. [L. S.]
 He-dah-titl, Neah village, his x mark. [L. S.]
 Sah-dit-le-uad, Waatch village, his x mark. [L. S.]
 Klah-ku-pihl, Tsoo-yess village, his x mark. [L. S.]
 Billuk-whtl, Tsoo-yess village, his x mark. [L. S.]
 Kwah-too-qualh, Tsoo-yess village, his x mark. [L. S.]
 Yooch-boott, Tsoo-yess village, his x mark. [L. S.]

Swell, or Jeff. Davis. Neah village, his x mark. [L. S.]u

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Executed in the presence of us. The words ““five hundred”” being first interlined in the 5th article, and erasures made in the 8th and 9th articles.

M. T. Simmons, Indian agent.

George Gibbs, secretary.

B. F. Shaw, interpreter.

C. M. Hitchcock, M. D.

E. S. Fowler.

Orrington Cushman.

Robt. Davis.