

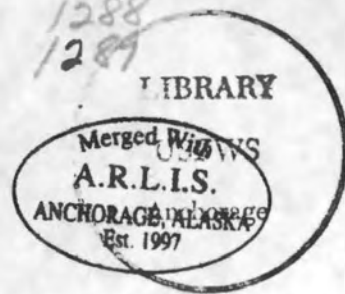
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WILDERNESS STUDY AREAS:  
BERING SEA  
BOGOSLOF  
TUXEDNI

US FISH & WILDLIFE SERVICE--ALASKA  
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**ARLIS**

Alaska Resources  
Library & Information Services  
Anchorage Alaska

U.S. DEPARTMENT OF THE INTERIOR  
Bureau of Sport Fisheries and Wildlife  
Portland, Oregon 97208

NOTICE OF PUBLIC HEARING REGARDING WILDERNESS STUDY

Pursuant to provisions of the Wilderness Act of September 3, 1964 (P.L. 88-577; 78 Stat. 890, 892; 16 U.S.C. 1131, 1132), a PUBLIC HEARING will be held in the Bureau of Land Management conference room, Cordova Building, Anchorage, Alaska, on April 25, 1967 beginning at 10:00 A.M. for the purpose of developing information with respect to the desirability of including the Bogoslof, Tuxedni and Bering Sea wilderness study areas in the National Wilderness Preservation System.

These wilderness study areas comprise approximately 390, 6,439 and 41,113 acres within the National Wildlife Refuges of the same names. Bogoslof and Tuxedni are located in the Third Judicial Division and Bering Sea in the Second Judicial Division, State of Alaska. Brochures containing maps of preliminary boundaries and additional information of the study areas may be obtained from the Associate Supervisor, Alaska Wildlife Refuges, Bureau of Sport Fisheries and Wildlife, P.O. Box 500, Kenai, Alaska 99611, or the Regional Director, Bureau of Sport Fisheries and Wildlife, P.O. Box 3737, Portland, Oregon 97208.

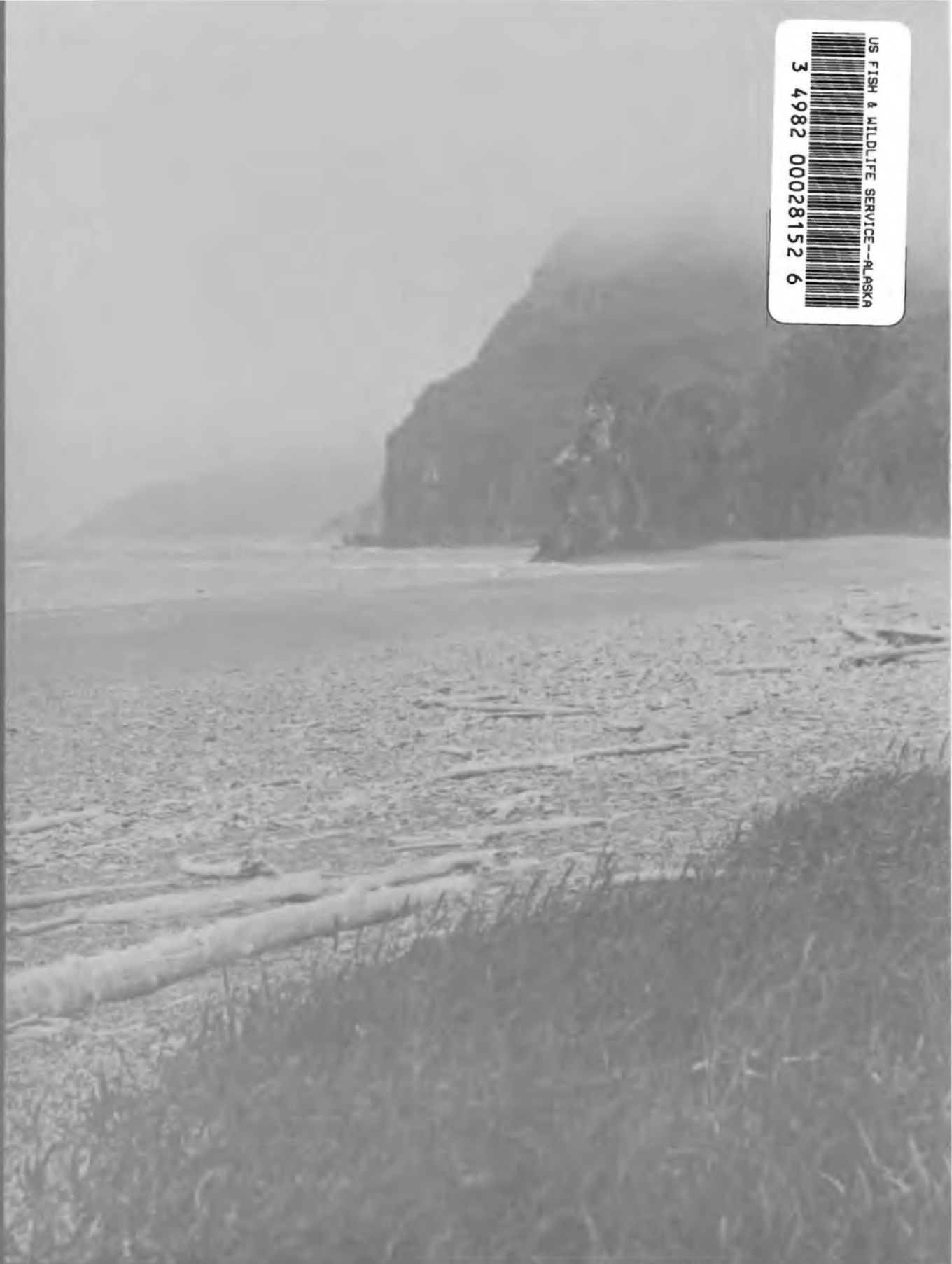
All interested parties, including Federal, State, County and municipal agencies, local interests and individual citizens, are invited to be present at the above time and place. Time permitting, they will be afforded full opportunity to express their views concerning the proposed wilderness.

Oral statements will be heard, but for accuracy of the record all important facts and arguments should be submitted in writing as the record of the hearing will be forwarded for consideration by the Secretary of the Interior. Written statements may either be mailed to the Regional Director, Bureau of Sport Fisheries and Wildlife, P.O. Box 3737, Portland, Oregon 97208 in advance of the hearing, or handed to the hearing officer at the hearing. The Department of the Interior encourages written expressions relative to the proposals at any time. All communications after April 25, 1967 should be directed to the Director, Bureau of Sport Fisheries and Wildlife, Department of the Interior, Washington, D.C. 20240.

Signed: 

Regional Director

# WILDERNESS STUDY



US FISH & WILDLIFE SERVICE--ALASKA  
3 4982 00028152 6

# AREA

BERING SEA  
NATIONAL WILDLIFE REFUGE  
ALASKA





## INTRODUCTION

Far out in the Bering Sea, with almost 200 miles of open ocean separating them from the rest of the world, are St. Matthew, Hall and Pinnacle Islands. Together they form the Bering Sea National Wildlife Refuge, undisturbed home of thousands of sea birds and other arctic wildlife. Although the islands have a relatively long history of human influence, there are few conspicuous signs of man's occupancy. All three are roadless and currently uninhabited.

The Wilderness Act of September 3, 1964 (Public Law 88-577) provided the authority and indicated the procedure by which National Wildlife Refuges, meeting the necessary requirements, are to be considered for inclusion in the National Wilderness Preservation System. This law directed the review of every roadless area of 5,000 contiguous acres or more and every roadless island within the National Wildlife Refuge System.

Sections 4(a) and 4(b) of the Wilderness Act provide that: (1) The Act is to be within and supplemental to the purposes for which National Wildlife Refuges are established; (2) Wilderness areas shall be administered so as to preserve their wilderness character and shall be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use, insofar as primary refuge objectives permit.

## LOCATION

The refuge is in the Bering Sea 165 miles west of Nunivak Island, Alaska. St. Lawrence Island is 200 miles north and the Pribilof Islands are 230 miles south.

# HISTORY

Russian explorers in 1767 are given credit for first seeing St. Matthew Island. In ensuing years a number of parties visited the area. Included were such distinguished personalities as Captain James Cook (1778); John Muir, John Burroughs and others of the Harriman Alaska Expedition (1889); A. C. Bent (1911); and Ira N. Gabrielson (1940 and 1946).

Some early visitors came to explore and study; others were prompted by different motives. Polar bear fur proved to be a great attraction, and by 1899 hide hunters had exterminated what twenty years earlier had been called one of the densest polar bear populations in the world. Refuge status was bestowed on the islands in 1909, too late to save the bears but in time to protect other priceless wildlife resources from a similar fate.

From 1942 to 1944 Army and Coast Guard personnel operated navigation and weather stations on St. Matthew. During this time twenty-nine reindeer were turned loose on the island as an emergency food supply. But military and naval personnel abandoned St. Matthew soon after the introduction, leaving the reindeer to their own fate. In the absence of predation and with excellent food supplies available, deer increased fantastically and soon stripped vegetation from all accessible portions of the island. Growth continued until 1964 when a sudden die-off reduced the herd from approximately 6000 to less than 100 animals.

Since the Army and Coast Guard left, no one has lived on the refuge. Most signs of former occupancy have been erased by time and the rigorous arctic weather.





## DESCRIPTION

St. Matthew Island is 32 miles long and 3.5 miles wide. It is hilly, with several prominent peaks and a series of ridges rising about 1000 feet above sea level. Low growing tundra vegetation covers much of the area and there are scattered lakes, ponds and short streams.

Hall Island is five miles long and two miles wide. It rises almost 2,000 feet as a single precipitous mountain mass.

Smallest of the group is Pinnacle Island, about one-quarter mile wide and 1.5 miles long. Numerous spires and pinnacles decorate its rocky summit.

Refuge climate is characterized by high winds, considerable fog and about 15 inches of precipitation annually. Temperatures are moderate for so northerly a latitude, with maximum readings near 50°F. and minimums near 0°F.



Cape Hall Elephant Rock

HALL ISLAND

SARICHEF STRAIT

Glory of Russia Cape

Bull Seal Point

ST. MATTHEW  
ISLAND

Split Rock °

Sugarloaf Mtn.

Cape Upright

Gull Rock •

PINNACLE ISLAND

BERING

SEA

U.S.S.R.

ALASKA

• Fairbanks

• Anchorage

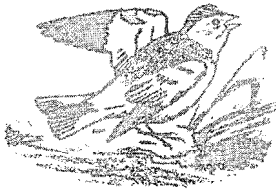
• Seward

BERING SEA  
N.W.R.

VICINITY MAP

SCALE 0 1 2 3 4 8 12 MILES

BERING SEA  
NATIONAL WILDLIFE REFUGE  
WILDERNESS STUDY AREA  
ALASKA



## RESOURCES

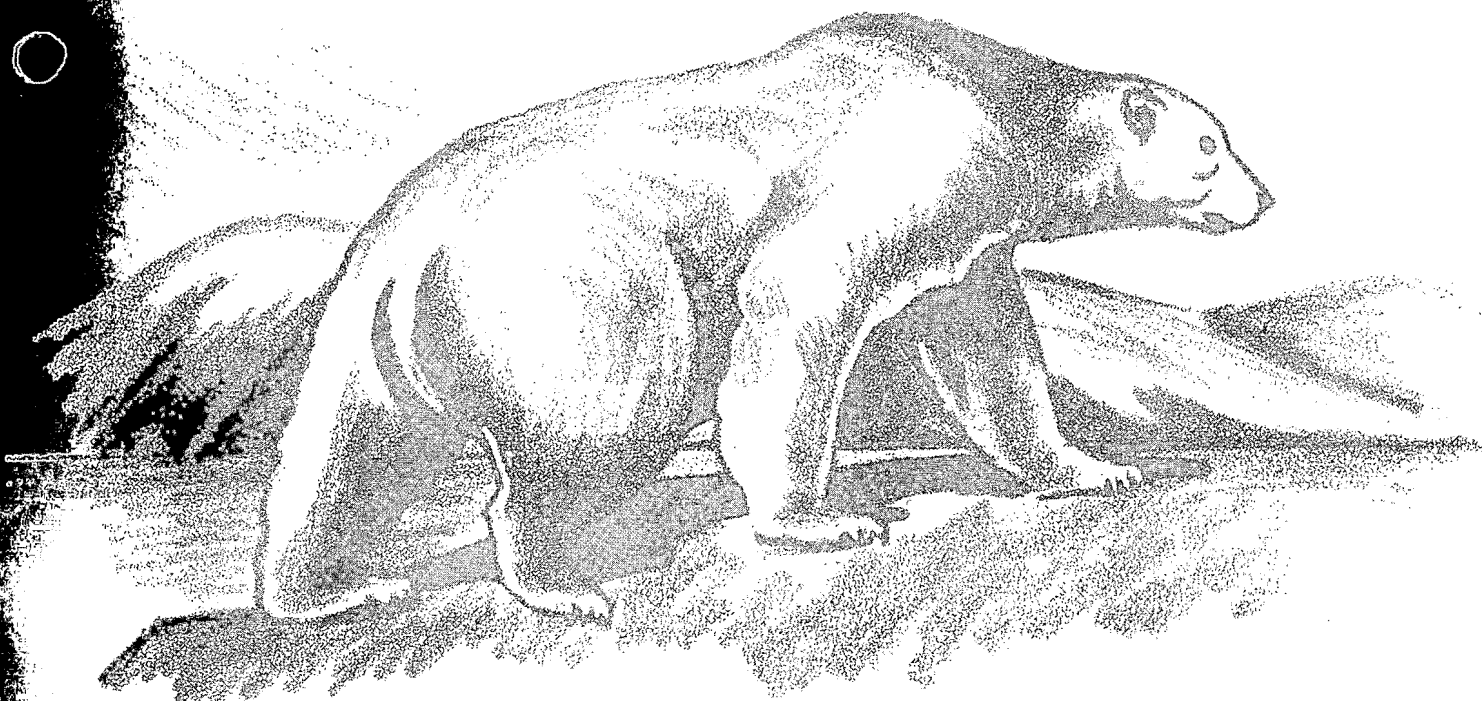
Bering Sea Refuge is a breeding area for thousands of sea birds including cormorants, murre, puffins, auklets, gulls and others. Common eiders and oldsquaws are among the nesting waterfowl. Numerous other birds use the islands either for breeding or as a migration stopover point. The McKay's snow bunting apparently nests nowhere else in the United States.

Meadow voles, arctic foxes and numerous pelagic mammals inhabit the refuge and vicinity. A small herd of reindeer survived the 1964 die-off. Dolly Varden trout are abundant in the larger streams.

## PUBLIC USE

No public use now occurs because of isolation and difficult access. Opportunities exist for camping, hiking and nature study, and a sojourn there would be a unique wilderness experience. Opportunities for solitude, meditation and inspiration are outstanding.





## DEVELOPMENT AND MANAGEMENT

If included in the Wilderness System, prime management consideration will continue to be protection of nesting birds by preventing access to the islands during nesting and brooding seasons.

Plans are to maintain Bering Sea Refuge as an undeveloped wildlife area. If reindeer appear to be increasing to the point of again damaging vegetation, they will be removed from the island.

Bering Sea National Wildlife Refuge is isolated, undeveloped and uninhabited. Wildlife is abundant. Although no public use occurs now, primitive recreation could be allowed without harming island ecology. A unique wilderness experience is offered anyone who would make the long and rigorous trip.

Additional information on the Bering Sea wilderness study area may be obtained by writing the Associate Supervisor, Alaska Wildlife Refuges, Bureau of Sport Fisheries and Wildlife, P. O. Box 500, Kenai, Alaska 99611; or the Regional Director, Bureau of Sport Fisheries and Wildlife, P. O. Box 3737, Portland, Oregon 97208.



*Created in 1849, the Department of the Interior—a department of conservation—is concerned with the management, conservation, and development of the nation's water, fish, wildlife, mineral, forest, and park and recreational resources. It also has major responsibilities for Indian and Territorial affairs.*

*As the nation's principal conservation agency, the Department works to assure that nonrenewable resources are developed and used wisely, that park and recreational resources are conserved for the future, and that renewable resources make their full contribution to the progress, prosperity, and security of the United States—now and in the future.*



March 1967





UNITED STATES DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE  
BUREAU OF SPORT FISHERIES AND WILDLIFE

U.S. DEPARTMENT OF THE INTERIOR  
BUREAU OF SPORT FISHERIES AND WILDLIFE  
(P.O. Box 3737, Portland, Oregon 97208)

MAILING LIST FOR NOTICE OF PUBLIC HEARING  
CONCERNING WILDERNESS WITHIN BERING SEA,  
BOGOSLOF, AND TUXEDNI NATIONAL WILDLIFE  
REFUGES. HEARING HELD IN ANCHORAGE,  
ALASKA, APRIL 25, 1967.

CONGRESSIONAL

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U.S. Senator E. L. Bartlett	2
U.S. Representative Howard J. Pollock	2
Chairman, Senate Committee on Interior and Insular Affairs	2
Chairman, House Committee on Interior and Insular Affairs	2

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Bureau of Sport Fisheries and Wildlife - Wash., D.C.	65
National Park Service - Wash, D.C.	5
Bureau of Land Management - Wash., D.C.	2
Bureau of Outdoor Recreation - Wash., D.C.	2
Geological Survey - Wash., D.C.	5
Bureau of Mines - Wash., D.C.	5
Bureau of Reclamation - Wash., D.C.	2
Regional Director, National Park Service, 450 Golden Gate Avenue, San Francisco, California 94102	2
Regional Director, Bureau of Outdoor Recreation, U.S. Court House, Seattle, Washington 98104	2
State Director, Bureau of Land Management, 555 Cordova Street, Anchorage, Alaska	2
Alaska District, Bureau of Reclamation, P.O. Box 2567, Juneau, Alaska	2
Area Director, Bureau of Mines, Box 2688, Juneau, Alaska	2
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Bureau of Sport Fisheries and Wildlife - Minneapolis, Minn.	2
Bureau of Sport Fisheries and Wildlife - Atlanta, Ga.	2
Bureau of Sport Fishers and Wildlife - Boston, Mass.	2
Field Coordinator, P.O. Box 711, Juneau, Alaska	2
Bureau of Sport Fisheries and Wildlife, Alaska Coop. Wildlife Research Unit, College, Alaska	2
Bureau of Commercial Fisheries, Marina Mammal Research Laboratory, San Point Naval Air Station, Seattle, Washington 98115	2
Bureau of Sport Fisheries and Wildlife, Division of Wildlife Research, San Point Naval Air Station, Seattle, Washington 98115	2
Wildlife Administrator, Hawaiian Islands National Wildlife Refuge, P.O. Box 157, Kailua, Oahu, Hawaii	1

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Northern Forest Experiment Station, U.S. Forest Service, Juneau, Alaska 99801	2
State Director, Soil Conservation Service, P.O. Box F, Palmer, Alaska 99645	2

STATE OFFICIALS AND AGENCIES

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State Senator Raymond C. Christiansen, Box 35, Bethel, Alaska 99559	2
State Senator Jay S. Hammond, Naknek, Alaska 99633	2
State Senator W. I. Palmer, Ninilchik, Alaska 99639	2
State Senator Bill M. Poland, Box 45, Kodiak, Alaska 99615	2
State Representative George H. Hohman, Jr. - Bethel, Alaska	2
State Representative Carl E. Moses - Unalaska, Alaska 99685	2
State Representative Clem Tillion - Halibut Cove, Alaska 99603	2
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Alaska Division of Lands, 344 Sixth Avenue, Anchorage, Alaska 99505	2
Alaska Department of Health and Welfare, Alaska Office Building, Juneau, Alaska 99801	2
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Alaska Department of Highways, P.O. Box 1841, Juneau, Alaska	2
Alaska State Library, State Capitol, Juneau, Alaska 99801	2
Alaska Outdoor Recreation Council, 344 Sixth Avenue, Anchorage, Alaska 99505	2
Alaska State Chamber of Commerce, Burford Building, 111 Fourth Street, Juneau, Alaska 99801	2



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Postmaster - Dutch Harbor, Alaska	1
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## OTHER ORGANIZATIONS

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National Wildlife Federation, 1412 Sixteenth Street N.W., Wash., D.C. 20036	2
Mr. William B. Reavley, National Wildlife Federation, 3462 S 3125 E, Salt Lake City, Utah 84109	2
Arctic Institute of America, 1619 New Hampshire Avenue N.W., Wash., D.C. 20009	2
National Audubon Society, 1130 Fifth Avenue, New York, New York 10028	2
Anchorage Chapter, Izaak Walton League of America, c/o Louise Juhnke, Box 751, Anchorage, Alaska 99501	2
Alaska Ornithological Society, Fairbanks Bird Club, Mr. George Newell, President, 1560 Tenth Avenue, Fairbanks, Alaska 99701	2
Alaska Ornithological Society, Anchorage Chapter, c/o Miss Margaret Heller, 1311 Eleventh Avenue, Anchorage, Alaska 99501	2
The Nature Conservancy, 2039 K Street N.W., Wash., D.C. 20006	2
The Wilderness Society, 729 Fifteenth Street N.W., Wash, D.C. 20005	50
Mrs. Olaus J. Murie, The Wilderness Society, 1000 Eighth Avenue, Apt. A904, Seattle, Washington 98104	2
The Wildlife Society, Suite S-176, 3900 Wisconsin Avenue N.W., Wash., D.C. 20016	2
Wildlife Management Institute, 709 Wire Building, Wash., D.C. 20005	2

OTHER ORGANIZATIONS (Cont'd)

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Mr. William N. Goodall, National Audubon Society, 1564 Meserve Street, Pomona, California 91733	2
National Parks Association, 1300 New Hampshire Avenue, N.W., Washington, D.C. 20036	2
Mr. Huey D. Johnson, Western Representative, The Nature Conservancy, 149 California Street, San Francisco, California 94111	2
Mrs. R. M. Noyes, Sierra Club, 2014 Elk Ave., Eugene, Oregon 97403	2
Miss Celia M. Hunter, Alaska Conservation Society, Box 192, College, Alaska 99735	200
Mr. Clifton R. Merritt, 2422 South Downey Street, Denver, Colorado	2
Mr. Robert Waldrop, Sierra Club, Room 705, Dupont Circle Building, Washington, D.C. 20036	2
Mr. A. W. Boddy, Executive Director, Alaska Sportsmen's Council, 1700 Glacier Avenue, Juneau, Alaska 99801	2
Mrs. Robert Reeve, Alaska Representative, Boone and Crockett Club, 209 East Eleventh Avenue, Anchorage, Alaska 99501	2
Homer Natural History Society, Homer, Alaska 99603	2
Mr. Oliver E. Burris, President, Tanana Valley Sportsmen's Association, 604 Barnett Street, Fairbanks, Alaska 99701	2
Steller Society, Mr. Joe Grunough, President, Box 191, Auk Bay, Alaska 99821	2
Society of American Foresters, Cook Inlet Chapter, c/o Mr. John Crupper, U.S. Forest Service, Cordova Building, Anchorage, Alaska 99501	2
Mr. John F. Hall, National Forest Products Association, 1619 Massachusetts Avenue, N.W., Washington, D.C. 20036	2
The Sierra Club, 1050 Mills Tower, San Francisco, Calif. 94104	6
Mr. Ivan H. Sims, Izaak Walton League, 7600 New Market Drive, Bethesda, Maryland 20034	5
Alaska Federation of Women's Clubs, Mrs. Amos Burg, Conservation Chairman - Juneau, Alaska	10
Mr. Burton W. Marston, Izaak Walton League, Laramie, Wyoming 82070	1
Dr. Calvin Fair, Alaska Conservation Society, Kenai Chapter, Soldotna, Alaska 99669	1

OTHER ORGANIZATIONS (Cont'd)

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Tanana Valley Sportsmen's Association, c/o John Vogt, 1902 Central Street, Fairbanks, Alaska 99701	1
Cordova Izaak Walton League - Cordova, Alaska 99574	1
Rhode Island League of Anglers, Inc., Flat River Road, No. 2-94, Coventry, Rhode Island 02816	1
Portland Zoological Society, S. W. Canyon Road, Portland, Oregon 97221	1
Pan American Petroleum Corporation, Security Life Building, Denver, Colorado 80202	1
Mr. Ward Smith, St. Regis Paper Company, Forest Products Division, Klickitat, Washington 98628	1
Forest Lake Audubon Society, Box 157, Maitland, Florida	1
Dr. Clarence Cottam, Welder Wildlife Foundation, Box 1396, Sinton, Texas 78387	1
The Conservation Library Center, Denver Public Library, 1357 Broadway, Denver, Colorado 80203	2
Gulf Oil Corporation, P.O. Box 1392, Bakersfield, California 93302	1
Shell Oil Company, 1008 West Sixth Street, Los Angeles, California 90054	1
Standard Oil Company of California, P.O. Box 7-839, Anchorage, Alaska	6
Atlantic Richfield Company, North American Producing Division, Box 360, Anchorage, Alaska	1
Placid Oil Company, 326 I Street, Anchorage, Alaska	1
Marathon Oil Company, 645 G Street, Anchorage, Alaska	1
Phillips Petroleum Co., Box 419, Anchorage, Alaska	1
Atlantic Refining Company - Anchorage, Alaska	1

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CRAIGHEAD, Dr. John, Moose, Wyoming 83012	1
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DOUGLAS, W.O., Supreme Court of the U.S., Wash, D.C.	1

# INDIVIDUALS (Cont'd)

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HARRIS, C.A., McKinley National Park, Alaska 99755	1
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KESSEL, Dr. Brina, College of Biological Sciences, University of Alaska, College, Alaska	1
LANDSBURG, Mrs. Robert E., 2622 S. W. Mitchell Court, Portland, Oregon 97201	1
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SCOTT, Douglas W., 1108 Hill Street, Apt. 4, Ann Arbor, Michigan 48104	1
SWANSON, John R., P.O. Box 922, Berkeley, California 97401	1
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VALE, Tom, 2802 Kinney Drive, Walnut Creek, California	1
WALCOTT, Francis J., 3500 Fulton Street, Apt. 14, San Francisco, California 94118	1



### NEWSPAPERS

Cordova Times	Cordova, Alaska	99574
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Wrangell Sentinel	Wrangell, Alaska	99929
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KHAR	Anchorage, Alaska	
KJNO	Juneau, Alaska	99801
KINY	Juneau, Alaska	99801



## ATTENDANCE LIST

Wilderness Hearing - Anchorage, Alaska

April 25, 1967

### I. Elected Officials

U. S. Senator Gruening

George Sundborg - for Senator Gruening

### II. Federal Agencies

Bureau of Land Management

Wayne A. Borden - Anchorage, Alaska

Howard L. Edwards - Anchorage, Alaska

Joan Hagans - Anchorage, Alaska

Bureau of Outdoor Recreation

Victor T. Ecklund - Seattle, Washington

### III. Organizations

\* Alaska Mines Association

Leo Mark Anthony - Anchorage, Alaska

Sinclair Oil and Gas Company

William A. Armstrong - Anchorage, Alaska

\* Standard Oil Company of California

LeRoy G. Post - Anchorage, Alaska

\* Western Oil and Gas Association

W. C. Bishop - Anchorage, Alaska

\* Wilderness Society; Federation of Western Outdoor Clubs

C. E. Lyons - Anchorage, Alaska

---

\* Presented statement at hearing

ATTENDANCE LIST  
Wilderness Hearing  
Anchorage, Alaska  
April 25, 1967

- 2 -

IV. Individuals

Jack C. Cremin	- Eagle River, Alaska
* Joseph R. Fribrock	- Seattle, Washington
* William J. Page	- Anchorage, Alaska
Leif D. Kvile	- Anchorage, Alaska
Callie B. Van Der Laan	- Anchorage, Alaska
Mrs. Helen D. Wolfe	- Anchorage, Alaska

---

\* Presented statement at hearing.

1 OFFICIAL REPORT OF PROCEEDINGS  
2 BEFORE THE

3  
4 UNITED STATES DEPARTMENT OF THE INTERIOR

5 BUREAU OF SPORT FISHERIES AND WILDLIFE

6  
7  
8 IN THE MATTER OF

9  
10 A PUBLIC HEARING REGARDING WILDERNESS STUDY

11  
12 PLACE Cordova Building

13 DATE April 25, 1967

14  
15 Pages 1 through 24 inclusive

16 Name B & I Court Reporting Service

17 Address 360 K Street, Anchorage, Alaska

18 Reporter Lonna Kaye Vachon

19  
20 Lonna Kaye Vachon  
21 (Official Stenographer)





1 P-R-O-C-E-E-D-I-N-G-S

2 MR. HEARING OFFICER: Well, the hearing will be in  
3 order. I am Burke Riley, Regional Coordinator for the Depart-  
4 ment of the Interior in Alaska and have been designated by the  
5 Secretary to conduct these public hearings.

6 I hope that each of you who will appear has been given  
7 an attendance card and has filled it out and submitted it to  
8 Mr. Spencer. If you have not done so would you please let us  
9 know so that we may get cards for the sake of a better record.

10 I should acknowledge appreciation at this time to the  
11 Bureau of Land Management for making this room available for  
12 this purpose this morning.

13 Now, as indicated in the notice published in the Federal  
14 Register on February 15th and in the press, this hearing is  
15 being held to obtain information as to the desirability of  
16 establishing three units of National Wilderness Preservation  
17 system consisting of some five islands in the Bering Sea and  
18 two in Cook Inlet. Notices also went to the Congressional  
19 Delegation and to the Governor of Alaska. Their comments, if  
20 made, will be read later into the record unless any of those  
21 officials should appear in person or by representative. Notices  
22 also were sent to Federal and State agencies, to organizations  
23 and to individuals known to be interested.

24 The Associate Director of the Bureau of Sport Fisheries  
25 and Wildlife is going to present background information as to the

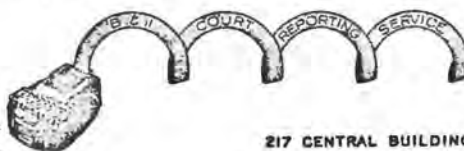


1 Wilderness Act and I will call on him shortly so shan't dwell  
2 on that feature myself.

3 After the public hearing, a thorough review will be  
4 made of these three wilderness proposals but this will not be the  
5 last opportunity for public expression. The record will remain  
6 open for 30 days. The record and all other information on  
7 the proposals will be transmitted to the Secretary of the  
8 Interior. After its study the Secretary will transmit his  
9 recommendations to the President and the President in turn will  
10 transmit his to the Congress. After the appropriate considera-  
11 tions, which will include Congressional hearings, the Congress  
12 will approve or reject the areas as units of the Wilderness  
13 System by legislation; and so declared by law the wilderness  
14 area will become a part of the National Wilderness Preservation  
15 System.

16 So you may see that a comprehensive review system -- a  
17 review process is established covering each of the study areas  
18 under consideration as to which your thoughts and views will be  
19 an important part.

20 At this time I would call on Mr. John Findlay, Associate  
21 Regional Director of the Bureau of Sport Fisheries and Wildlife  
22 to present background material and on its conclusion I will ask  
23 him in line with provisions of the Act to present a joint  
24 statement from the U. S. Geological Survey and the United States  
25 Bureau of Mines. Mr. Findlay.



1 MR. FINDLAY: Thank you, Mr. Riley.

2 Ladies and Gentlemen: I am John D. Findlay, Associate  
3 Regional Director of Region 1, Bureau of Sport Fisheries and  
4 Wildlife. Our regional office is located in Portland, Oregon.  
5 It is with a great deal of pleasure that I welcome you to this  
6 hearing on the Bering Sea, Bogoslof, and Tuxedni wilderness  
7 study areas.

8 Regulations of the Secretary of the Interior published  
9 on February 22, 1966, require this Bureau to review every road-  
10 less area of 5,000 acres or more and every roadless island  
11 within the National Wildlife Refuge System that, (a) is  
12 reasonably compact, (b) is undeveloped, (c) possesses the  
13 general characteristics of a wilderness, and (d) has no improved  
14 roads suitable for public travel by conventional automobile.  
15 The selection of each island and area for study must satisfy each  
16 of these elements.

17 Section 4 (a) of the Wilderness Act declares that the  
18 purposes of the Act are within and supplemental to the purposes  
19 for which units of the National Wildlife Refuge System are  
20 established and administered; and Section 4 (b) states that  
21 wilderness areas shall be devoted to the public purposes of  
22 recreational, scenic, scientific, educational, conservation and  
23 historical use.

24 You were given copies of brochures summarizing these  
25 studies. Copies of the complete study reports will be available



1 for scrutiny after the hearing. Please do not remove them from  
2 this hearing room, for the number of copies is limited.

3 Bering Sea, Bogoslof, and Tuxedni wilderness study areas  
4 include all parts of three National Wildlife Refuges of the  
5 same name. All three are Alaskan island areas: Bering Sea  
6 study area includes three islands totalling approximately 41,113  
7 acres; Bososlof is two islands, about 160 acres altogether;  
8 and Tuxedni has one large and one small island totalling approxi-  
9 mately 6,439 acres.

10 Bering Sea study area is far out in the Bering Sea, almost  
11 200 miles from the next nearest land. Bososlof is in the Bering  
12 Sea just north of the main Aleutian Island chain, and far from  
13 human population centers. Tuxedni is in Cook Inlet, close to  
14 the mainland and only 120 miles from Anchorage, Alaska's largest  
15 community.

16 Primary reason for these areas being units of the National  
17 Wildlife Refuge System is that they are extremely important  
18 sea bird nesting areas. Murres, cormorants, gulls, kittiwakes,  
19 puffins, and related species are abundant during the summer.  
20 Bering Sea study area supports such unique wildlife forms as  
21 the Pribilof rock sandpiper, McKay's snow bunting, and Pribilof  
22 gray-crowned rosy finch, as well as a wide variety of waterfowl  
23 and shore birds. Bogoslof has a large rookery of northern sea  
24 lions.

25 Surveys conducted by the U. S. Geological Survey failed to





1 show any important minerals on these islands. We will recommend  
2 to the Secretary of the Interior that all three be permanently  
3 closed to mineral leasing. No economic uses occur on any of  
4 the study areas except Tuxedni, where a cannery operates on  
5 private land. The cannery will not be included in the wilder-  
6 ness. We do not plan any economic uses in the future.

7 Recreational use on these areas has been very light, due  
8 mainly to their isolated locations. However, if demands were  
9 to increase, some recreational use could be permitted on Bering  
10 Sea and Tuxedni. This would include camping, hiking, and nature  
11 study. Opportunities for solitude and inspiration are outstand-  
12 ing.

13 Bogoslof is a very small area with concentrated use by  
14 sea lions and birds. Public use will not be permitted on this  
15 area.

16 No active management and no development are planned on any  
17 of these areas.

18 On behalf of the Bureau of Sport Fisheries and Wildlife and  
19 the Department of the Interior, I thank you for your interest  
20 in these wilderness studies and in the National Wildlife Refuge  
21 System. I assure you that your comments, both written and oral,  
22 will be given full consideration before final recommendations  
23 are made.

24 MR. HEARING OFFICER: Thank you, Mr. Findlay.  
25 I might now ask if you would present your request -- the request





1 of the Bureau of Mines and Geological Survey that you represent  
2 those two agencies this morning and state their findings.

3 MR. FINDLAY: We received by memorandum from the  
4 Geological Survey and the Bureau of Mines the following request  
5 which we would like in the hearing record.

6 "Enclosed are two copies of a Geological Survey-Bureau of  
7 Mines mineral appraisal report on eight national wildlife refuges  
8 in Alaska, including the Bogoslof, Tuxedni, and Bering Sea  
9 refuges. This same report was submitted to you previously for a  
10 public hearing on the St. Lazaria, Hazy Islands, and Forrester  
11 Island National Wildlife Refuges. Also enclosed is a statement  
12 that summarizes findings of the part of the report that concerns  
13 the Bogoslof, Tuxedni, and Bering Sea National Wildlife Refuges.

14 We request that a representative of the Bureau of Sport  
15 Fisheries and Wildlife read the statement at the public hearing  
16 scheduled for Anchorage, Alaska, April 25, 1967. We also  
17 request that a copy of the report be incorporated in the record  
18 of the hearing.

19 The other copy of the report is for your use."

20 And that was signed by Arthur Baker and Walter Hibbard  
21 representing those two agencies.

22 This then is the report by the Geological Survey and Mines.

23 "As directed by the Secretary of the Interior, the U. S.  
24 Geological Survey and the U. S. Bureau of Mines have made a  
25 mineral appraisal of the Bogoslof, Tuxedni, and Bering Sea



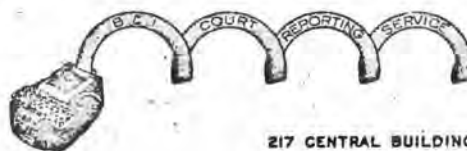
1 National Wildlife Refuges, Alaska, which are being considered  
2 for inclusion in the National Wilderness Preservation System.  
3 The report on the investigation has been placed on open file  
4 and is available for public inspection.

5 The two islands that constitute the Bogoslof National  
6 Wildlife Refuge, Bogoslof and Fire Islands, have been formed by  
7 volcanic eruptions within historic time. There are no known  
8 mineral deposits on the islands. Isolation of the islands  
9 precludes the possibility of utilizing the volcanic rock or  
10 beach deposits as construction materials.

11 Chisik Island, the site of the Tuxedni National Wildlife  
12 Refuge, is made up of sedimentary rock of Jurassic age. No test  
13 wells have been drilled on Chisik Island for oil and gas, and  
14 the absence of favorable structural traps and the fact that  
15 possible reservoir rocks are near the surface indicate that the  
16 potential for petroleum is poor. The possibility of coal on the  
17 island also is unlikely. No mineral deposits are known on the  
18 refuge.

19 The islands and offshore rocks that make up the Bering Sea  
20 National Wildlife Refuge consist of rocks of volcanic origin,  
21 that locally are overlain by sand and gravel. There are no  
22 known mineral deposits on the islands. Because of the nature  
23 of the host rocks, the possibility of finding mineral deposits on  
24 the islands is highly unlikely.

25 No mineral production is known from any of the three



1       refuges, and the mineral resource potential of them is  
2       considered poor.

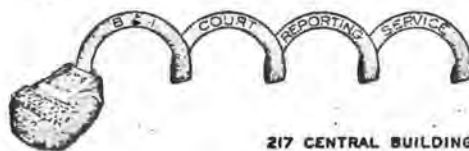
3               That concludes the statement.

4               MR. HEARING OFFICER: Thank you, Mr. Findlay.  
5       Mr. Spencer, if you would bring those cards forward we will  
6       have a brief recess while we assemble them.

7               Has everyone in the room filled out a card, attendance  
8       card?

9               Now, in opening this hearing to public participation, I  
10       will ask that all pertinent information be presented as  
11       completely as possible. And I will state that anyone present  
12       who wishes to make a statement may do so. These cards have  
13       been separated as to those that have expressed an interest in  
14       presenting a statement but certainly you are not committed if  
15       you should feel in the course of the hearing that instead of  
16       being a spectator you wish to participate.

17               In order to facilitate recording I would ask that all  
18       speakers come forward to make their statements. You will be  
19       asked your name and address and to make known the interest that  
20       you represent. Of course, you may represent yourself. If you  
21       have a written statement please hand it to me at the conclusion  
22       of your remarks or you may elect to read it for the record or  
23       leave it for the record. It would have equal effect whether or  
24       not read. The statements are not to be made under oath as this  
25       is not an adversary proceedings but speakers may be questioned



1 for clarification only by addressing questions through the  
2 chair. We would hope that all questions are pertinent to the  
3 presentations to which they relate.

4 Now, an order of appearance has been established and I  
5 will ask first if there is a representative of the Governor in  
6 the room, or the Congressional Delegation? (No response.)  
7 Or any State legislators. (No response.) Is there a  
8 representative of the Kenai Borough in the room? (No response.)

9 I have been advised that the chairman of the Kenai  
10 Borough yesterday stated that the Borough had no interest as  
11 such and did not expect to make a presentation.

12 Are there any State officials in the room? (No response.)

13 Is there a representative of the Department of Fish and  
14 Game, for example. (No response.)

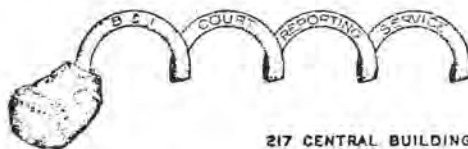
15 We have a sum of statements that were submitted by mail and  
16 I will try here to make sure that I have all of the organizations  
17 represented set apart for consideration at this time.

18 I see Mr. C. E. Lyons represents the Wilderness Society and the  
19 Federation of Western Outdoor Clubs and at this time I will call  
20 upon Mr. Lyons. Would you please step forward please?

21 MR. LYONS: I have a statement here that I have been  
22 asked to read so I suppose I should read it.

23 MR. HEARING OFFICER: Mr. Lyons, 6950 Crawford Drive,  
24 Anchorage.

25 MR. LYONS: Yes, sir.





1 MR. HEARING OFFICER: Proceed, Mr. Lyons.

2 MR. LYONS: Mr. Chairman: My name is C. E. Lyons.  
3 I reside at 6950 Crawford Drive, Anchorage. I am a member of  
4 the Wilderness Society, a citizen membership organization of  
5 about 36,000 members, whose headquarters is at 729 Fifteenth  
6 Street, N. W., Washington D.C. I have been asked to represent  
7 the Society here today and to present its statement for the  
8 record.

9 The Wilderness Society, with the Alaska Conservation  
10 Society and the National Audubon Society, applauds the action of  
11 the Bureau of Sport Fisheries and Wildlife in its proposal to  
12 include Bogoslof, Tuxedni, and Bering Sea National Wildlife  
13 Refuges in the National Wilderness Preservation System. Some  
14 might say of these islands that they are so remote from the  
15 activities or interests of civilization that they need no further  
16 protection beyond being wildlife refuges. We feel that they  
17 deserve the additional protection from possible future pressures  
18 of commerce, or military, or naval developments, or increasing  
19 human travel, which would be given them by the Wilderness Act.

20 We can be grateful that there are, within the limits of our  
21 great continent, such islands of pure wilderness, oceanic wilder-  
22 ness of a very special type, an untrammelled habitat for all the  
23 species of birds and mammals so well described in the brochures  
24 about these refuges which the Bureau of Sport Fisheries and  
25 Wildlife has published; and that they have been so far spared any





1 devastating kind of human influence.

2 Bogoslof Island is famous for its sea lion colonies, in  
3 addition to its great colonies of thick-billed and common  
4 murre, all on its 390 acres.

5 Bering Sea National Wildlife Refuge, with its 41,113 acres,  
6 and its varied terrain and beautiful Arctic-Alpine type plant  
7 life, may be furnishing to venturesome souls in the future a  
8 unique wilderness experience to be found in very few places.  
9 While its chief use must continue to be the protection of  
10 nesting oceanic and terrestrial birds, there are possibilities  
11 for a rare kind of human experience here also. All of us should  
12 be thankful that these refuges are under the management of a  
13 bureau of our government which considers it a significant and  
14 important fact that the rare McKay's bunting nests only on these  
15 islands of the Bering Sea Refuge.

16 Tuxedni Refuge, consisting of Chisik and some smaller  
17 islands, offers a variety of both terrain and vegetation, and  
18 aside from the twenty acre cannery site which will be excluded  
19 from wilderness designation, is still wild, scenic, with fine  
20 potential for wilderness recreation which would not damage the  
21 outstanding kittiwake and other bird colonies.

22 The Wilderness Society heartily endorses the proposal to  
23 place all three of these Wildlife Refuges in the National Wilder-  
24 ness Preservation System.

25 MR. HEARING OFFICER: Thank you, Mr. Lyons.



1           Next I will call on Mr. W. C. Bishop, 550 First National  
2 Bank Building in Anchorage representing the Western Oil and Gas  
3 Association. Mr. Bishop.

4           MR. BISHOP: Thank you, Mr. Riley. Our association  
5 represents the oil and gas industry in Alaska and in the Western  
6 states and we are appearing here today to respectfully request  
7 that the Bering Sea or the St. Matthew Island remain in a Wild-  
8 life Refuge status rather than in a wilderness -- be placed in  
9 a wilderness area.

10           This part of the Bering Sea is relatively shallow. It's  
11 a long way from the main land naturally and I wouldn't say  
12 specifically that it had some geological potention but certainly  
13 it would be an interesting area. It's an awfully large area  
14 and the island would provide an ideal shoran site or navigation  
15 site. A little bit of protection as a harbor refuge you might  
16 say. And perhaps a base camp for exploration in this area. And  
17 if the area is placed in the wilderness status why this would  
18 preclude multiple use of this land and we certainly have heartily  
19 enjoyed multiple use any time. And for that reason then we  
20 would favor preserving the present status of the Bering Sea  
21 Wildlife Refuge and would oppose its inclusion in a Wilderness  
22 System.

23           Thank you very much.

24           MR. HEARING OFFICER: Thank you, Mr. Bishop. May I  
25 have the statement?



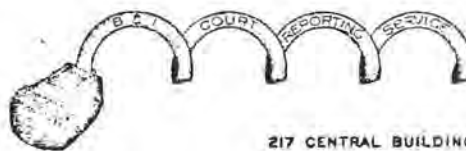
1 MR. BISHOP: That isn't exactly what I said.

2 MR. HEARING OFFICER: She may draw it together.

3 Thank you.

4 Next I will ask Mr. LeRoy G. Post to step forward. His  
5 address is 3,001 C. Street in Anchorage and he represents  
6 Standard Oil Company of California. Mr. Post.

7 MR. POST: LeRoy G. Post for Standard Oil Company  
8 of California. The following statement in essence is to be  
9 submitted as follows: "The area proposed for inclusion is  
10 currently enjoying equivalent protection from intrusion by man  
11 as part of the National Wildlife Refuge System. Under the now  
12 applicable laws and regulations the use of such a refuge for oil  
13 and gas purposes is permitted only upon approval by the U. S.  
14 Department of the Interior, Bureau of Sport Fisheries and Wild-  
15 life. In other words, the Bureau has within its authority the  
16 power to preserve this area without subjecting it to the provi-  
17 sions of the Wilderness Act of September 3, 1964. If these  
18 islands are, however, included in the National Wilderness  
19 Preservation System, Standard Oil Company of California suggests  
20 that the oil industry be granted certain rights and privileges to  
21 establish onshore oil and gas facilities should production be  
22 obtained from adjacent State and Federal Outer Continental Shelf  
23 areas. The offshore area between the islands proposed for  
24 inclusion in the Wilderness System and the mainland presents a  
25 more than remote possibility of exploratory activity because of



1 relative shallow waters. This is all that I have at the  
2 present time.

3 I would like to elaborate on this onshore oil and gas  
4 facilities. In case in the future there is a discovery there  
5 is definitely going to be a need for onshore facilities to handle  
6 such as collecting the tankage, the mooring for ships and et  
7 cetera. This is very much of an importance at the present  
8 time which we see for the future. That's all I have, Mr. Riley.

9 MR. HEARING OFFICER: Thank you, Mr. Post.

10 MR. POST: Here's my presentation. (Handing the  
11 document to Mr. Riley.)

12 MR. HEARING OFFICER: Next among representatives of  
13 the associations is Mr. Leo Mark Anthony, 2201 Alder Drive,  
14 Anchorage, appearing on behalf of the Alaska Miners Association.

15 MR. ANTHONY: I don't have a prepared statement  
16 but there is a few things I would like to state.

17 My name is Leo Mark Anthony. I live at 2201 Alder Drive  
18 at Anchorage and I am representing Alaska Miners Association.  
19 We are opposed to these withdrawals at this time mainly because  
20 we feel that the geological and mineralogical study are not  
21 complete enough, short of a rehash of data that was printed  
22 in the past and the fact that there were no existing mines used  
23 as a basis for there not becoming any mines in the area.

24 We feel that the natural ecology of the area would not be  
25 disturbed if proper geological studies be made. And by that I





1 mean at least a mineral and geological paper and proper  
2 geophysical and mineralogical study made and then develop the  
3 mineral value on that basis rather than the present basis.

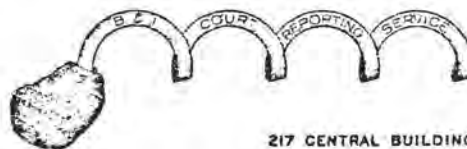
4 MR. HEARING OFFICER: Thank you, Mr. Anthony.

5 Next I will call on Mr. Joseph R. Fribrock of 3034, 38th  
6 Avenue West, Seattle, representing Snug Harbor Packing Company.  
7 Mr. Fribrock.

8 MR. FRIBROCK: That's spelled F-R-I-B-R-O-C-K.

9 My name is Joseph Fribrock. I am the owner of the Snug  
10 Harbor Packing Company who has the 20 acres within the Tuxedni  
11 Wildlife Refuge. It's with certain amount of mixed emotion that  
12 I speak about this subject. I think that at this moment the only  
13 thing I can state that we are quite sympathetic to the desires  
14 to keep Chisik Island or the Tuxedni Wildlife Refuge as it has  
15 been for a number of years, nineteen hundred and nine as a matter  
16 of fact, keeping it in the production of wildlife, especially  
17 the sea birds for which it was set aside. We have been granted  
18 clear title to 20 acres of this refuge are the people who feel  
19 are most directly affected by any change in the status of Chisik  
20 Island. We feel that we are not encroaching in any way now, nor  
21 would any of our future plans, trouble the refuge area.

22 If this is incorporated under the Wildlife, or Wilderness  
23 Act, we could come to some difficulty with a reservoir that we  
24 use on the land outside of our patented area. And we would like  
25 to just call the attention of this hearing to the fact that a





1 caterpillar road is necessary for the maintenance of this  
2 reservoir and if it be locked up in the Wilderness Act we might  
3 have some conflict with this caterpillar road, also with  
4 communications antennae, which in the future could be outside  
5 of the property that we own.

6 Further than that there are fishing camps situated on the  
7 shores of Chisik Island that are being occupied by citizens of  
8 the State of Alaska. We feel that the status of these people's  
9 fishing camps would have to be presently -- well, clearly under-  
10 stood before they were summarily removed from the refuge.  
11 These things are not quite clear to me as to how this would  
12 occur under the new Act.

13 A couple of gentlemen who do have fishing sites on Chisik  
14 Island are represented in the audience this morning and I think  
15 I will just let them speak for themselves, but I would like to  
16 bring it to the attention of the hearing that these things do  
17 exist. We don't think that they in any way harm the wildlife  
18 potential of the area but there might be instances where the  
19 language of the Wilderness Act might make it very inconvenient  
20 for them to continue in the manner in which they have been  
21 operating for several years.

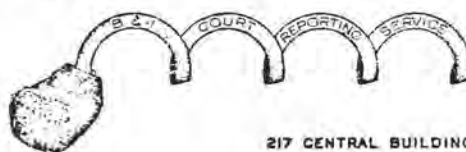
22 I would like to next address my remarks to something that  
23 Mr. Findlay said this morning. Stating that Chisik Island and  
24 the Tuxedni Wildlife Refuge would be a prime area for wilderness  
25 hiking and camping and soul-searching you might say. I agree with



1 him one hundred percent. However, there are a couple of dangers  
2 that I think the Department of Interior should be aware of.  
3 One being fire. There are only two or three places on Chisik  
4 Island where the upper parts of the island can be reached; and  
5 I think that if over the next few years there is a development  
6 of system of trails or what have you, as might be a visage under  
7 this Wilderness Act, a great vulnerability to the wildlife on  
8 the island might occur. If people are not careful with smoking.  
9 We have had prolonged dry seasons in this area, as much as 67  
10 days to my knowledge. If things get greatly tinder dry and as  
11 far as those who camp along the beach and our cannery is con-  
12 cerned, extreme care has to be taken for fire. And we wouldn't  
13 like to see people just flying down there and taking off through  
14 the primitive area and causing problems that could create a  
15 holocaust.

16 The area is extremely unique and the rookeries for  
17 kittiwakes and the other birds on there and certainly is an  
18 area that deserves as much protection as it can get. But I  
19 think that a great deal of care has got to be given to this  
20 whole project of whether it's best served as a wilderness area  
21 or as it is now as a wildlife refuge.

22 I would like to direct to the Department a letter within a  
23 30 day period being a little more specific about these items  
24 but I think for the record of this hearing that there are some  
25 problems that should be carefully considered. That's all I have



1 to say.

2 MR. HEARING OFFICER: Thank you, Mr. Fribrock.

3 Next we will call on Mr. William J. Page, is it?

4 MR. PAGE: Yes.

5 MR. HEARING OFFICER: Box 2,000, Anchorage, represent-  
6 ing himself. Please step forward, Mr. Page.

7 MR. PAGE: My name is Bill Page, William Page, from  
8 Sand Lake, Box 2,000, Anchorage, my mailing address.

9 The numerous people that were unable to attend here to  
10 this hearing, they live out below Tuxedni Bay, and they hear  
11 this news over the radio and all but they are unable to attend.

12 I fish in the Tuxedni Bay for Mr. Fribrock and the thing  
13 that hangs in my mind is what these people that live on the  
14 island -- what is to happen to them if this is to be a game  
15 reserve or a wildlife reserve? And may I ask this question, sir?

16 MR. HEARING OFFICER: I will address that to Mr.  
17 Findlay.

18 MR. FINDLAY: What do you mean living on the island?  
19 You mean on the area that is kept for the Snug Harbor Cannery?

20 MR. PAGE: No. They live on the north end of  
21 Chisik Island. They have their homes there. They fish out of  
22 there.

23 MR. FINDLAY: Do they own the property?

24 MR. PAGE: No, they can't own the property because  
25 it's already a reserve and if this were to be made into a bird



1 wildlife reserve are these people to be removed from their  
2 homes, taken out of there, or what is to happen to them?

3 MR. FINDLAY: We would have to study this whole  
4 matter. I can't just answer your question this morning. You  
5 raise several problems in connection with the question of that  
6 type. So that I think we should study it and give you the  
7 answer separately following an investigation of the circumstances.

8 MR. PAGE: If they were to be removed off of that  
9 island due to this I would certainly be opposed to it because  
10 it would work a terrible hardship on them. They build their  
11 homes on there and been there for years. Another thing that  
12 strikes my mind is they fasten to the shore line on the inside  
13 end of the nets and run out. What is to happen? Are you going  
14 to prohibit them from making their nets fast to that island or  
15 this would take in the refuge?

16 MR. HEARING OFFICER: I can say if I may, that both  
17 of these questions certainly put the question before the  
18 Department and before this hearing and while neither is  
19 susceptible to offhand replies that would serve any purpose or  
20 offhand purpose, that serves a very useful purpose in their being  
21 raised this morning.

22 MR. PAGE: That's the only objection I have to it is  
23 the fact there is a possibility that the people will all be  
24 thrown off of it and I think it would be a crime if they did.  
25 They have families and this is the way they make their living and





1 I think I would certainly be opposed to it.

2 MR. HEARING OFFICER: Well, I think your appearance  
3 has merit in featuring these questions, Mr. Page.

4 MR. PAGE: That's all I have to say.

5 MR. HEARING OFFICER: Thank you very much.

6 MR. FINDLAY: We would like to talk to you after the  
7 hearing further about this matter, Mr. Page.

8 MR. HEARING OFFICER: Now, I note that Mrs. Helen D.  
9 Wolfe of Anchorage has indicated an interest to send in a  
10 statement and I would say again that the record will remain open  
11 for 30 days for that purpose to accommodate any who wish to  
12 submit statements supplemental to what's been said this morning.

13 I earlier called on officials specifically representatives  
14 of the Governor or the Congressional Delegation, State legislators  
15 and so on. I note George Sundbrog came in a moment ago.

16 MR. SUNDBROG: Yes.

17 MR. HEARING OFFICER: George Sundbrog, do you care to  
18 make a statement?

19 MR. SUNDBROG: As you know, Burke, yesterday you  
20 asked me whether Senator Gruening intended to make a statement  
21 at the hearing and this morning I was able to ask him that  
22 question on the telephone and he said he would have no statement  
23 for this hearing. He asked me to observe. That's all.

24 MR. HEARING OFFICER: Mr. Sundborg is administrative  
25 assistant of the staff of Senator Gruening.



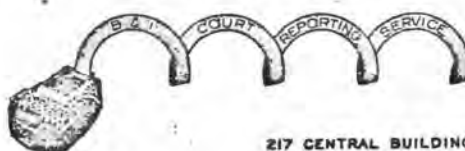
1 I believe that that concludes the roster of those who have  
2 expressed an interest to be heard this morning in the  
3 established procedure.

4 The next category is communications that have been submitted  
5 for the record. I shan't read these, there are a number of them,  
6 but they will all be available in the printed record. I will  
7 go through the several letters and indicate their sources.  
8 I might add that each appears to be favorable to the several  
9 proposals.

10 One is from a Dr. G. M. Johnson of Bismarck, North Dakota.  
11 One from Mrs. Mary Block from West Covina, California. One  
12 from Ralph D. Churchill of Dallas, Texas. James A. Allen, the  
13 3rd, also of West Covina, California. Mrs. Loretta Allen of  
14 West Covina, California. Mrs. Natalie A. Loen of Philadelphia.  
15 Mrs. Henry Hitchcock of Chesterfield, Missouri. Mrs. Myra  
16 McDonald of Cordova, Alaska. Mr. Tom Lowe of Ojai, California.  
17 O-Jay, perhaps.

18 MR. FRIBROCK: O-Hay.

19 MR. HEARING OFFICER: I beg your pardon. Donald  
20 D. Snow of Seattle. Leslie M. Cornforth of Colorado Springs.  
21 Dr. John Cairns of Gladwyne, Pennsylvania. Jean Stuart Campbell  
22 of Washington D. C. Lyle A. Taylor, West Covina, California.  
23 Ruth M. Taylor of West Covina. Emilie F. Martin of Port Angeles,  
24 Washington. Mrs. Allen Beach of Bainbridge Island, Washington.  
25 Gene S. Romsbey of Argos, Indiana. Dr. David B. Dolese, I believe,





1 of Anchorage. Oren V. Shaw of Colorado Springs. John R.  
2 Goellner of Coralville, Iowa. Hollis Day of Tacoma, Washington.  
3 Carl S. Metzger of San Jose. Ronald C. Simons, Dr. Simons, of  
4 the University of Washington. Pearl Hogrefe of Ames, Iowa.  
5 Lorraine F. Jones of St. Louis, Missouri. James A. Miller of  
6 Coldwater, Michigan. And Brock Evans representing the  
7 Federation of Western Outdoor Clubs and the Sierra Club.

8 That concludes the communications.

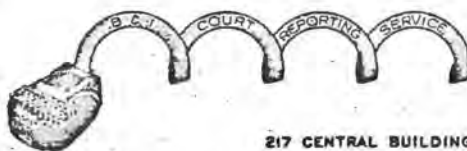
9 Are there others in the audience who wish to be heard?

10 (No response.)

11 The Department has stated earlier it does encourage  
12 written communications, writtem statements supplemental to what  
13 have been made. And I should say that in order that all  
14 expressions be included in the official record that they be  
15 submitted within 30 days from today and sent to the Director of  
16 the Bureau of Sport Fisheries and Wildlife, Washington D.C.  
17 Alternatively I believe it's possible they go to Portland to  
18 the Regional Office of that Bureau.

19 If there is nothing further that anyone wishes to say at  
20 this time we will declare the hearings closed. Thank you very  
21 much.

22 (Whereupon, the hearing was closed at 10:45 a.m., same day.)  
23  
24  
25

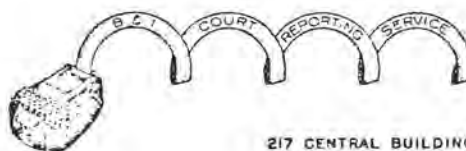


1           This is to certify that the attached proceedings  
2 held before the United States Department of the Interior, Bureau  
3 of Sport Fisheries and Wildlife, in the Matter of a Public  
4 Hearing Regarding Wilderness Study, commenced at the hour of  
5 10:00 a.m., on the 25th day of April, 1967, in Room 509 of the  
6 Cordova Building, Anchorage, Alaska, held as herein appears,  
7 and that this is the original transcript thereof for the file  
8 of the Department;

9           That I, Lonna Kaye Haugen (Vachon), Notary Public in  
10 and for the State of Alaska, and verbatim reporter of the  
11 B & I Court Reporting Service, personally reported the oral  
12 proceedings in stenograph machine shorthand and thereafter  
13 transcribed the foregoing pages number 1 through 24, which  
14 contain a full, true and accurate transcript of my original  
15 notes to the best of my knowledge and ability.

16           Dated at Anchorage, Alaska, this 3rd day of May, 1967.

17  
18  
19 *Lonna Kaye Haugen (Vachon)*  
20 Lonna Kaye Haugen (Vachon)  
21 Official Reporter  
22 My commission expires 8/5/67  
23  
24  
25





1287

BERING SEA WILDERNESS STUDY AREA

Bering Sea National Wildlife Refuge

Second Judicial Division, Alaska

WILDERNESS STUDY REPORT

U. S. DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

Bureau of Sport Fisheries & Wildlife

PRIVATE

Far out in the Bering Sea, almost 200 miles from the nearest land, is the Bering Sea National Wildlife Refuge. Established in 1909, this three-island refuge is a unique and important wildlife sanctuary.

Although the refuge has a long human history, few of man's effects are noticeable to the untrained eye. Time will effectively obliterate most remaining traces of human occupancy.

All three islands are roadless, and all three are currently inhabited only by wildlife. They, therefore, qualified for study under provisions of The Wilderness Act.



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## INTRODUCTION

The Bering Sea National Wildlife Refuge was established by Executive Order Number 1037 on February 27, 1909 as a preserve and breeding ground for native birds. The refuge consists of St. Matthew Island, Hall Island and Pinnacle Islet which are situated in the Bering Sea at approximately  $60^{\circ} 30'$  North Latitude and  $172^{\circ} 30'$  West Longitude.

The isolated situation of the Bering Sea Refuge has permitted the purpose of its reservation to be accomplished without management or physical changes in the island habitats. Visitors to the islands have been rare, although not without impact upon the island's fauna and flora.

Intrusions by man have resulted in extinction of a polar bear population that was the densest the world has known. Introduction of reindeer has resulted in profound changes in vegetative patterns. Although these changes in the primitive status of the Bering Sea Islands may be reversible, they illustrate the fragility of island environments, and the need for their thoughtful preservation.

## OBJECTIVES

The Wilderness Act of September 3, 1964 (Public Law ~~88~~-577) directed the study and review of every roadless area of 5,000 contiguous acres or more and every roadless island within the National Wildlife Refuges and Ranges for possible inclusion in the National Wilderness System. The objective of this study was to determine how well Pering Sea Refuge meets basic wilderness criteria outlined in the Act:

1. It must appear affected primarily by forces of nature, with man's imprint essentially unnoticeable.
2. It must afford outstanding opportunity for solitude or primitive recreation.
3. It must be of sufficient size to make practicable its preservation and use unimpaired.
4. It may contain features of ecological, geological, scenic, scientific, educational or historical value.

## HISTORY

St. Matthew Island was first sighted by a Russian expedition under Lt. Synd in 1767 but was first described by Captain James Cook who saw it on July 28, 1778. Sailing to within a league of the south-east extremity, he observed the tremendous marine escarpments there, and so named the location Point Upright. Here also he observed the "incredible number of birds, all of the awk kind". Several species which were collected provide the earliest record of the island's fauna. On September 23, Cook again sailed near St. Matthew, which he named Gore Island and noted that they then saw few birds. Pinnacle Island was observed and given its present name because of its spectacular formation.

Subsequent voyages by Russian exploring expeditions passed within sight of St. Matthew (Billings in 1790, Kotzebue in 1816, Lutkee in 1827, and others), and various prominent features were named; but these explorers contributed in no significant way to knowledge of the physical characteristics of the islands or of their flora and fauna.

Russian fur hunters apparently became familiar with these remote Bering Islands, as Elliot (1886) cites a report of a party consisting of five Russian and seven Aleut hunters who were left on St. Matthew the winter of 1810-11 to obtain skins of polar bears. Four of the Russians died of starvation or scurvy. The islands were familiar also to American whalers who penetrated every part of the Bering Sea and adjacent Arctic Ocean in the Nineteenth Century. However, no record of their visits to the islands is preserved.

The first significant account of St. Matthew or of the adjoining smaller islands was furnished by Henry W. Elliot (1881) who, accompanied by Lt. Washburn Maynard, U.S.N., spent nine days (August 5-13, 1874) on St. Matthew and surveyed the entire coast. Elliot was much impressed with the geological features and described his visit to the west end of St. Matthew as "geologically..., the most interesting experience I have ever had in Alaska". The number of polar bears observed by Elliot and Maynard far surpasses that reported for any other location. During their nine days on shore, they were never out of sight of bears, and Elliot estimated that they "could not have observed less than 250 or 300 of these animals". On one landing at Hall Island 16 polar bears were simultaneously in view.

Members of the Harriman Alaska Expedition, including William H. Brewer, John Burroughs, Frederick V. Coville, B. K. Emerson, A. K. Fisher, G. K. Gillbert, and John Muir, visited Hall and St. Matthew Islands on July 13 and 14, 1899. During this brief visit, considerable information was obtained on geology and the flora and fauna. Ornithologists, including C. H. Townsend in 1885, A. C. Bent in 1911, G. D. Hanna in 1917, and I. N. Gabrielson in 1940 and 1946, made brief visits to Hall and/or St. Matthew Islands and contributed significantly to knowledge of bird and animal life there. The most comprehensive ornithological records, however, are those of Frank Beals who stayed on St. Matthew from June 24 to August 15, 1944 and obtained many specimens of the island's fauna.

For several years prior to World War II, fox trappers visited St. Matthew but, as in the case of Russian hunters and American whalers, no



record of their visits was preserved.

The longest intrusion of man on the environment of these Bering Sea Islands was during the period from 1942 to 1944 when the Coast Guard maintained a Loran station and the Army a weather station there. Weather records obtained by the Army furnish the only climatological data available for the island.

In 1944 the Coast Guard introduced 24 female and five male reindeer to St. Matthew to provide an emergency food source for their personnel. However, the island was abandoned by both the Coast Guard and the Army before the herd was harvestable, and the reindeer were enabled to increase at a rate unchecked by either man or natural predators. R. Rausch, who collected mammals and birds on St. Matthew as a part of zoonotic disease investigations in August and September 1954, estimated that the reindeer had increased to at least 400 or 500. Aerial censuses by C. J. Rhode and D. L. Spencer in 1955 indicated a population of 700 to 800 animals.

The most recent and most comprehensive biological studies conducted on St. Matthew are those of D. R. Klein who spent several weeks on St. Matthew during the summers of 1957, 1963, and 1966. Klein's studies were concerned chiefly with the reindeer population and its range, and thus contributed most extensively to knowledge of the island's flora. However, much new information on birds, mammals, fish, and the physical environment was obtained.

### LOCATION

The Bering Sea National Wildlife Refuge is located in the north central Bering Sea on the broad, shallow shelf that formed the Bering Land Bridge of the Pleistocene. Cape Mohican on Nunivak Island is the nearest land and lies 165 miles to the eastward. St. Lawrence Island lies 200 miles to the north and the Pribilof Islands 230 miles to the south. The nearest point of the Alaska mainland is on Hooper Bay, 220 miles to the east. The nearest Asiatic shore is on the Chukotsk Peninsula 250 miles to the northwest.

During winter, broken pack ice forms a precarious bridge to land in all directions and may form a route of access or egress to foxes and polar bears but prevents all but aerial travel to the island by man. By June the Bering Sea is free of ice and permits access by vessels; but the islands are off normal routes of travel, have no satisfactory anchorage, and provide no economic incentive--so are seldom visited. In summer it is possible for seaplanes or amphibious aircraft to land in some of the larger lakes, but landings on the open sea are not considered advisable.

## PHYSICAL CHARACTERISTICS

St. Matthew Island, the largest of those comprising the Bering Sea Refuges, is about 32 miles long by  $3\frac{1}{2}$  miles wide, encompassing a total area of 128 square miles. The topography of the island is characterized by a series of north-south volcanic ridges with intervening low valleys. They average about one thousand feet high and, in most cases, are eroded to smooth contours. Extreme elevations are found near Cape Upright, where a volcanic cone reaches 1505 feet; Sugarloaf Mountain on the south central coast rises to 1380 feet; and an unnamed mountain near Glory of Russia Cape to 1475 feet. Precipitous basalt cliffs, formed by cutting action of the sea on the mountains, indicate that the basic relief of the island was formed by an extensive complex of lava flows.

The irregular character of the topography is broken in two places on the southern portion of the island where extensive dry flats, only a few feet above sea level, extend across the island. Earth disturbances adjacent to the cliffs are apparently the result of land slippage where concentrations of a mineral, similar to bentonite, occur in the soil and decomposing volcanic rock. This mineral has a marked affinity for water with which it forms a greasy gumbo-like texture, very conducive to mass slippage of the earth. Such features are sharply displayed on Sugarloaf Mountain.

There are several fresh and brackish water lakes on the island, many of which have been formed by gravel bars built by wave action. Storm tides bring salt water into some of the lakes. Residual snow

banks, ground water and precipitation feed the numerous small streams which drain the valleys and empty into the lakes.

Hall Island rises abruptly from the sea to the northwest of St. Matthew Island. The island is a single mountain mass with maximum dimensions of two by five miles and a height of 1,665 feet. As the island is very precipitous and without major valleys, the streams are short and ephemeral, and there are no lakes.

Pinnacle Island, with its spires and needle formations making a striking appearance, rises almost vertically from the sea with scarcely a place for a boat landing. It is only 1.4 miles long and less than a quarter mile wide. The spires at its summit tower to 1,250 feet.

Total area of the refuge is 41,113 acres.

The climate of these Bering Sea Islands is characterized by extreme wind velocities, a moderate temperature for such a high latitude, considerable summer fog and an annual precipitation of 15 inches. A weather summary kept by the U.S. Army from September 1943 through August 1944 on St. Matthew Island is presented in Table I.

## CLIMATOLOGICAL DATA FROM ST. MATTHEW ISLAND

September 1943 - August 1944  
(Recorded by U.S. Army)

Month	Temperature			Precipitation		Prevailing Direction	Wind		Fog
	Max.	Min.	Ave.	Total Precip.	Total Snow On Ground		Ave. Speed	Extreme Speed	Hours of
Sept. 43	45.6	37.2	41.4	2.08	0	NNE	14.6	40+	110
Oct. 43	39.2	32.4	35.8	1.81	0.2	NNE	13.7	48+	63
Nov. 43	32.7	26.5	29.7	1.40	2.8	NNE	17.0	42+	15
Dec. 43	20.5	12.1	16.1	0.82	11.0	N	17.9	60+	5
Jan. 44	12.4	0.7	6.6	0.84	16.7	NE	26.1	80+	148
Feb. 44	21.1	10.1	15.4	1.46	16.4	NNE	23.9	60+	143
Mar. 44	15.4	7.0	11.0	0.32	13.0	NNE	20.3	65+	141
Apr. 44	24.5	11.9	18.4	0.52	10.2	NNE	19.6	45	108
May 44	35.4	27.5	31.5	0.82	3.5	NNE	12.4	36	267
June 44	41.3	33.0	37.2	0.89	0.3	NNE	10.7	37	376
July 44	47.8	39.4	43.7	1.47	0	NNE	9.7	35	468
Aug. 44	49.0	42.9	45.9	2.89	0	W	10.2	32	401
TOTAL				15.32					



## RESOURCES

### Wildlife

Although the Bering Islands have been visited only briefly and at long intervals, the resident fauna of the refuge is quite well known. A total of 42 species have been recorded.

Extensive marine escarpments on both Hall and St. Matthew Islands, as well as on Pinnacle Islet and other offshore rocks, provide nesting habitat for countless numbers of sea birds, including pelagic and red-faced cormorants, fulmars, glaucous gulls, black-legged kittiwakes, common and thick-billed murres, pigeon guillemots, parakeet, crested and least auklets, and both horned and tufted puffins. Other sea birds occur as visitors during their non-nesting seasons.

Waterfowl observed on and near St. Matthew Island include whistling swan, mallard, pintail, green-winged teal, old squaw, harlequin, common and king eiders, and red-breasted merganser. Steller's and spectacled eiders have not been observed on the refuge but undoubtedly occur there during migration. The most abundant nesting waterfowl are common eiders and old squaws.

Lesser sandhill cranes occur sparingly on Hall and St. Matthew Island, and probably nest there more or less regularly.

Sandpipers and plovers include the American golden plover, European turnstones, wandering tattlers, rock, Baird's and least sandpipers and dunlins. Hall and St. Matthew Islands are the only locations outside of the Pribilof Islands where Pribilof rock sandpipers are known to breed.

Four passerine species (rosy finch, redpoll, Alaska longspur and snow bunting) are common residents of most or all the islands of the Bering Sea. However, insular populations have frequently evolved distinct races. Thus, the Pribilof gray-crowned rosy finch is known to nest only in the Pribilofs and on Hall and St. Matthew Islands, and the McKay's snow bunting nests only in the latter areas.

Because ornithologists have visited the Bering Islands only in summer, it is probable both rare and common species have not yet been recorded. Much more ornithological study will be required before the relationship of refuge avifauna to that of other Bering Sea islands-and to adjacent mainland areas-is clearly understood.

The mammalian fauna of the Bering Islands is, with one exception, related to the environment of the Arctic Seas. The meadow vole, Microtus abbreviatus, is the only rodent present and is probably a relict dating to the Bering Land Bridge. This species of vole is known only from St. Matthew and Hall Islands. The vole population is subject to extreme fluctuations. Low populations existed in 1916, 1940, 1946, and 1957, whereas high numbers were reported in 1944 and 1954.

Arctic foxes have fluctuated in abundance, probably as a result of fluctuations in the vole population, but lagging somewhat behind. Foxes were abundant in 1916, common (but not abundant) in 1944, uncommon in 1955, and abundant in 1957.

Polar bears were extremely abundant on Hall and St. Matthew Islands until at least 1874, when Elliot (1881) estimated he observed at least 250 to 300 of these animals. Hide hunting was common at this time, however, and

hunters quickly reduced the population (although 16 bears were taken as late as 1890). In 1899, when members of the Harriman Alaska Expedition landed on both Hall and St. Matthew Islands, there was no evidence of bears, and they have not been observed since. Even at the present time, however, old, well-worn polar bear trails are plainly visible on the tundra adjacent to the beaches, and a few weather-eroded skulls testify to the past abundance of the bears.

Seals, sea lions, and walruses abound in surrounding waters, but some species may be only seasonally abundant. Ringed, ribbon, and bearded seals occur but in summer are rare compared to the harbor seal, which may number several hundred.

In 1957 about 350 northern sea lions were observed two miles south of Elephant Rock on Hall Island. Such concentrations in the northern Bering Sea are seasonal and are usually composed primarily of males.

Walrus pass the Bering Islands on their annual migrations to and from the Arctic Ocean. Hanna (1920) reported that walrus were known to haul out on the northwest cape of Hall Island, and in 1955 several walrus were on the ice northeast of St. Matthew. Klein found four walrus carcasses on the beaches of St. Matthew in 1957.

Whale remains are common on the beaches of St. Matthew, and Hanna (1920) identified those of bowhead, humpback, blue, beaked, and killer whales. In 1957, Klein saw gray whales feeding northeast of St. Matthew.

Reindeer, which were introduced to St. Matthew by the U.S. Coast Guard in 1944, increased rapidly for several years but recently experienced a catastrophic die-off and may eventually disappear. Counts obtained at various

times since their introduction are listed below.

<u>Year</u>	<u>Number</u>
1944	29 (24 females and 5 males)
1954	400 - 500
1955	700 - 800
1957	1,350
1963	6,000
1966	42

The crash die-off (presumably occurring in February 1964) reduced the herd to a low level, probably to less than 100 animals and close to the level existing in the summer of 1966. There has been no subsequent increase and of ten specimens collected by Klein in 1966, none were less than  $4\frac{1}{4}$  years of age. All animals collected were in good condition with abundant fat reserves. The reasons for lack of reproduction since the die-off are unknown. The single male collected in 1966 was over eight years of age, and it is not certain that any bulls remain. No other animals with large male-type antlers were observed by Klein, nor was it possible to confirm the presence of males on the basis of external genitalia.

The future of the St. Matthew Island reindeer herd cannot be predicted with certainty. If there are now no bulls present, its fate is obvious. Even if bulls are present in the herd, its future may parallel the situation among reindeer first introduced to the Pribilof Islands, where die-off was followed by continued herd reduction and eventual extinction. On the other hand, the present low number of animals may permit a gradual recovery of the range, and reduced competition for the now quite limited winter forage may allow the herd to increase again.

Vegetation in areas used by reindeer in winter has been significantly changed by the excessive population of deer. Lichens of types used as winter forage have been completely eliminated in large areas. In some places, exposed soil exists where lichens previously were; in other areas, the fractured basal parts of lichens remain as a thin layer over the ground surface. Most of the fractured remains of lichens are non-living basal parts from which regrowth is not possible. However, there may be enough living material present to provide the nuclei for re-establishment. Any regrowth will be exceedingly slow.

Prostrate willows, which are used to some extent as a winter food under normal conditions, appeared to be not greatly affected by past heavy range use, although there were many sites where individual plants and groups of plants had been killed by feeding activity (pawing and trampling) of deer. Crowberry, Empetrum nigrum, was apparently the only vegetation available to reindeer in any volume at the time of the die-off. Some reduction of crowberry resulted from heavy use it received, but this is not significant in the overall distribution and abundance of crowberry on the island.

Sedges, and to a lesser extent grasses, have increased on sites previously occupied by lichens. These are on drier tundra types where some sedges and grasses were present in the past but not in as high a density as now occurs.

Much island vegetation has remained largely unaffected by reindeer, primarily because it is located in areas unsuitable for winter foraging.

## Fishes

Dolly Varden trout, Salvelinus malma, are abundant in most of the larger drainage systems of St. Matthew. Gravel beaches, through which lakes drain to the sea, prevent movement of fish to the sea except during storms. Sticklebacks, Gasterosteus sp., are present in brackish lagoons and pools. Blackfish, Dallia pectoralis, may be present in some of the lakes.

## Vegetation

Vegetation of Hall and St. Matthew Islands is of the arctic tundra type. All plants are low growing, and only the annual growth of a few forbs and grasses exceeds a foot in height. Willows, the only shrubs present, are decumbent forms. The major plant communities can be broken down into several groups, which are described briefly below.

Dry Flats. Extensive flats, with well-developed and well-drained rocky soils, are located northwest of Cape Upright and southwest of Big Lake. These flats support a dry tundra vegetation consisting mainly of lichens, willows and sedges. Soil wells have disclosed no permafrost, and its absence over the greater portion of the island is further indicated by good soil drainage. Frost boils of 10 to 30 inches in diameter do occur. The dry flats have supported a greater intensity of winter utilization by reindeer than any other vegetative type; consequently, lichens have been drastically reduced.

Dry, Low Ridge Tops and Benches. Vegetation on level elevated areas, where soil formation and drainage are good, is quite similar to that found on the low, dry flats. Density and frequency of occurrence of willow, Salix



crassijulis x ovalifolia, decreases with altitude and is usually replaced by Dryas octopetalla. Other more xeric plant forms are common on such sites. The lichen complex is similar to the dry flats but not as dense. Sedges, primarily Carex nesophila, decrease in density. Moss is present, but depauperate and the mineral soil may be exposed.

Moist, Well-drained Meadows. On these sites sedges are predominant, but ground cover is complete and a wide variety of arctic alpine forbs exists. Carex nesophila is the predominant sedge. Willow is primarily Salix rotundifolia, which forms dense mats, particularly when associated with snowflashes. Lichens are very scattered. Residual snow banks may often furnish abundant moisture throughout the summer.

Wet, Poorly-drained Meadows. Bog meadows are common in some sections of the flats, in broad valleys and low mountain passes where level ground is poorly drained. Cotton grasses, Eriophorum sp., are common but do not form true hummocks characteristic of the sub-arctic muskegs. Carex stans and C. bipartita occur as co-dominants and are grazed heavily by reindeer in summer. Evidence of former permafrost is indicated in some low bog meadows where "pingo" mounds have been pushed up by frost action.

Rock Rubble Fields and High Ridge Tops. Vegetation on high rock rubble fields and ridge tops of frost-sorted scree is mainly restricted to crustose lichens. Frost action is very apparent, forming stone polygons and stripes, and on the ridge tops, sorting the scree into a "pavement" of rocks of uniform size. Soil formation is limited, occurring only in pockets where fine material has been brought to the surface by frost boils. Where protection from the wind is afforded, these soil pockets support lush growths of lichens, but the total area occupied by vegetation is small.

Stabilized Beach Ridges. Immediately behind the gravel beaches, old raised beaches support almost pure stands of beach rye grass, Elymus mollis. Stabilization of the sand and gravel of these old beaches is taking place; however, "washouts" from recent storms are evident.

Minor Habitats. Immediately inland from the Elymus beach ridges, between Big Lake and the sea, is a flat expanse about 300 yards wide by four miles long which has grown almost exclusively to crowberry. Flood plains, which are inundated annually or every few years, occur adjacent to several of the large lakes. These flood plains, with rich alluvial soils, support lush growth of grasses and some forbs and willows. Other vegetative types occupying even more limited areas include lake shores with rushes, lakes and ponds where Hippuris vulgaris, Equisetum palustre and Potamogeton sp. are present; and cliff faces where Cochlearia officinalis, Arenaria peploides, Claytonia acutifolia and a few grasses grow luxuriantly in crevices fertilized by droppings from the sea birds.

#### Minerals

No minerals of commercial value have been found in the Bering Islands, nor has exploration of similar volcanic islands of the Bering Sea suggested minerals of value may occur.

#### Recreation

The isolation and extreme difficulty of travel to the Bering Sea Refuge, and the many possible alternative recreational sites in Alaska, reduce the recreational potential of the refuge. If demand were to develop, limited camping, hiking, nature study and related activities would be possible. A sojourn on the refuge would certainly be a unique and inspiring wilderness experience. Opportunities for solitude, meditation, and inspiration are outstanding.

## SOCIO-ECONOMIC CONSIDERATIONS

The refuge is too isolated to be influenced by most mainland developments.

### DEVELOPMENT AND MANAGEMENT

No development or active management appears probable. It is expected further studies will be initiated to learn more about refuge fauna and flora.

No control of the few surviving reindeer seems necessary. However, if reproduction occurs within the herd, all remaining deer should be removed to prevent additional destruction of island flora.

## SUMMARY

The 41,113-acre Bering Sea National Wildlife Refuge is located in the Bering Sea approximately 165 miles west of Nunivak Island, Alaska. It consists of St. Matthew Island, Hall Island and Pinnacle Islet.

The refuge provides breeding area for large numbers of sea birds. It is also home for two unusual land birds, the Pribilof gray-crowned rosy finch and McKay's snow bunting. Arctic foxes, meadow voles and pelagic mammals inhabit the area.

Introduced reindeer increased to such numbers they severely damaged St. Matthew Island's flora. Some plant recovery is likely now that deer numbers are reduced, but it will probably never return to its natural condition.

Bering Sea Refuge is a unique natural laboratory for studying island fauna and flora. It is too isolated to be of significant value for recreation; however, a unique wilderness experience is offered anyone who would make the long and rigorous trip there. It is not untouched by man, but most evidence of human occupancy is noticeable only to the trained eye. Future management aims to keep the refuge in undeveloped condition.

Some of the lakes, streams, plant areas, habitat of endemic bird populations, and geological formations may deserve designation as Natural Areas. Specific proposals cannot be made at this time.

November 1966

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Islands and Kotzebue Sound. in Cruise of the Corwin for 1885  
(1887), pp. 98-101.

## APPENDIX

### List of Mammals mentioned in Text:

Meadow vole	<u>Microtus abbreviatus</u>
Arctic fox	<u>Alopex lagopus</u>
Polar bear	<u>Thalarctos maritimus</u>
Ringed seal	<u>Phoca hispida</u>
Ribbon seal	<u>Phoca fasciata</u>
Harbor seal	<u>Phoca vitulina</u>
Bearded seal	<u>Erignathus barbatus</u>
Northern sea lion	<u>Eumetopias jubata</u>
Walrus	<u>Odobenus rosmarus</u>
Bowhead whale	<u>Balaena mysticetus</u>
Humpback whale	<u>Megaptera novaeangliae</u>
Blue whale	<u>Sibbaldus musculus</u>
Beaked whale	<u>Berardius bairdii</u>
Killer whale	<u>Grampus rectipinna</u>
Gray whale	<u>Eschrichtius glaucus</u>
Reindeer	<u>Rangifer arcticus</u>

Common names according to Burt and Grossenheider (1952);

Scientific names as given in Miller and Kellogg (1955).

Cape Hall  
Elephant Rock  
HALL ISLAND

SARICHEF STRAIT

Glory of Russia Cape

Bull Seal Point

ST. MATTHEW  
ISLAND

Split Rock °

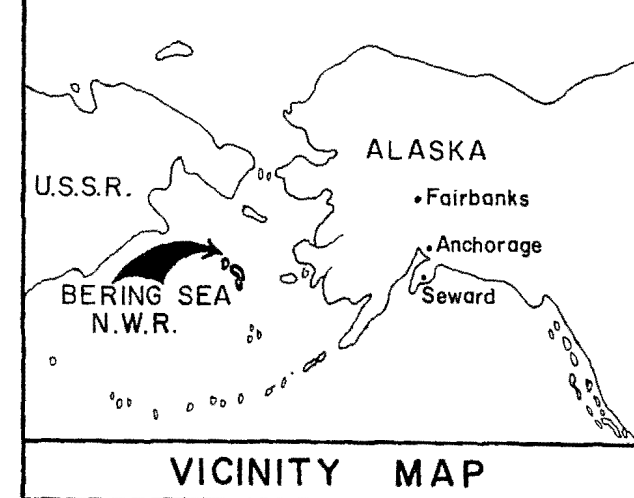
Sugarloaf Mtn.

Cape Upright

Gull Rock • PINNACLE ISLAND

BERING

SEA



SCALE 0 1 2 3 4 8 12 MILES

BERING SEA  
NATIONAL WILDLIFE REFUGE  
WILDERNESS STUDY AREA  
ALASKA



Figure 2. Fog shrouds ridges and mountaintops most of the summer, and it is a rare day when the sun shines. Almost pure stands of wild rye grow on old beach ridges like the one in the foreground.

Figure 1. The wave-cut cliffs of Cape Upright rise one thousand feet above the sea. Low flats in the foreground are important winter range for reindeer.



Figure 3. Earth slippage described by Hanna in 1917 is sharply outlined on Sugarloaf Mountain, St. Matthew Island.







Figure 4. Polar bear trails are still evident on the tundra after more than 60 years. Driftwood and whale bones litter lowlands near the beach.



Figure 6. Communications wire left on St. Matthew by the Coast Guard proved lethal to this reindeer. Both wire and deer are vivid reminders of man's intrusion on a fragile island environment.

Figure 5. Reindeer introduced to St. Matthew in 1944 became so numerous they overgrazed their winter range, destroying their food supply and eventually themselves. Nearly 6000 reindeer died in a single winter, leaving less than 100 animals.





Figure 8. Horned puffins are among numerous kinds of sea birds that find suitable nesting habitat within the Bering Sea National Wildlife Refuge.



Figure 7. This subspecies of rock sandpiper apparently does not breed anywhere except on the Pribilof Islands and on St. Matthew and Hall Islands.

