

FWCB:
0799

Title: Polar Bear Den Survey, Arctic National Wildlife Range

Area Covered: North Slope of the Arctic National Wildlife Range

Dates: March 26 through April 9, 1973
March 25 through April 9, 1974

Library
U.S. Fish & Wildlife Service
1011 E. Tudor Road
Anchorage, Alaska 99503

Participants - 1973:

Averill Thayer, BSF&W, Arctic National Wildlife Range
Donald Frickie, BSF&W, Arctic National Wildlife Range
Willard Troyer, BSF&W, Wilderness Studies
Richard Hensel, BSF&W, Wilderness Studies

ANCHORAGE, ALASKA
Est. 1997

Participants - 1974:

Donald Frickie, BSF&W, Arctic National Wildlife Range
William Schmidt, BSF&W, Arctic National Wildlife Range
Terry Hall, BSF&W, Polar Bear Project
Chuck Evans, Arctic Environmental & Data Center, Anchorage
Roland Quimby, Renewable Resources Consulting Services, Fairbanks
Walt Audi, Audi Air Taxi Service, Kaktovik, AK

Abstract:

In conjunction with the Polar Bear Research Project being supervised by Mr. Jack Lentfer of the Bureau of Sport Fisheries and Wildlife two Polar Bear den surveys have been conducted on the Arctic National Wildlife Range. During the 1973 survey no dens were located. During the 1974 survey three dens were located. Two of these dens may have been made by the same bear.

Narrative - 1973:

From March 26 through April 9, 1973 fifty hours were flown in a de Havilland Beaver searching for Polar Bear dens on the Arctic National Wildlife Range. The crew consisted of Averill Thayer, Willard Troyer, Richard Hensel and Don Frickie. Operations were based at the Barter Island DEW-Line facilities. The survey area extended from the Canning River east to the border of Canada and from the barrier reefs of the Beaufort Sea south to and including portions of the Brooks Mountain Range.

No dens were located during the 1973 survey on the Arctic National Wildlife Range. Tracks of an adult bear with two cubs were back-tracked from the coast near the Kongakut River to the foothills immediately east of the Kongakut River. Tracks and excavations in the snow indicated that the bears had wandered around considerably in this area. Evidence indicated that a den was located in the general area and that two cubs had been born. The risk involved in landing the aircraft was too great and a ground search was not carried out.



Several sets of bear tracks were seen along the coast between Beaufort Lagoon and the border of Canada. Most of these tracks were on the shore-fast ice but some were on the mainland. Tracks became more numerous offshore and at ten miles offshore they were quite common.

Tracks of an adult bear were observed inland from Camden Bay near the Sadlerochit Mountains. This trail was lost because of the poor tracking conditions.

Tracking conditions during the 1973 survey were poor to moderate. Areas of snow sufficient for tracking would blend into areas of scant snow or windblown and hardpack snow areas where the trails were often lost.

The survey crew was grounded on March 30 and April 2nd, 3rd, and 4th because of poor weather.

Narrative - 1974:

From March 25 through April 9, 1974 forty-five hours were flown in a Cessna 185 looking for Polar bear dens on the Arctic National Wildlife Range. The crew consisted of Ted Schmidt and Don Frickie. Operations were based at the Barter Island DEW-Line facilities. The survey area extended from the Canning River east to the border of Canada and from the Barrier reefs of the Beaufort Sea south to and including portions of the foothills of the Brooks Mountain Range.

The 1974 survey started with the investigation of a den that had been located by Mr. Walt Audi. The bears and den were first observed by Mr. Audi on February 18th. On April 2 the den was visited by Walt Audi, Chuck Evans and Don Frickie. The den appeared to have been vacated for several days and was covered with windblown snow.

If the den location had not been known it would have been almost impossible to locate it from the air or even from the ground. The den was located on a west-facing bluff above a stream.

On April 3 the den was visited by Walt Audi, Chuck Evans, Terry Hall, Roland Quimby, Ted Schmidt and Don Frickie. The den entrance was opened, the den entered and measurements and pictures taken. The den roof was removed so that pictures could be taken of the entire den lay-out. Scats were collected and a search of the general area carried out. Tracks of an adult bear with cubs were found but the tracks were mostly blown-in with snow and difficult to see. There were several locations where the bears had dug or rooted into the tundra and nibbled at the vegetation. This den is referred to as Den #1 on the attached map, photographs and sketch.

While searching the general area a second den (#2) was located about seventy-five yards south on the same bluff. This den had only one main chamber and was much cleaner than den #1. A hole was cut through the roof, the den entered and measurements taken. It was not determined if this den had been made by the bear from Den #1 or by a second bear.

On the evening of April 3 Mr. Herman Aishanna a resident of Kaktovik reported that he had found a Polar Bear den. He stated that while traveling along the coast on a snowmachine he had crossed fresh bear tracks and had back-tracked the bear to the den. He said the tracks indicated only one cub.

This den (#3) was visited on April 4, measured and photographed. The entrance to the den was open, not blown in with snow and readily visible from the air. The den had a single roomy chamber with very little debris or dirt inside. It was located in a fairly flat area between two cutbanks in approximately seven feet of snow. South of the den approximately one-half to one mile there were several excavations in the snow. These were approximately two feet wide and two feet deep.

The bear was tracked to an overnight den or resting spot approximately ten miles north of the winter den. This overnight den was located in a south-facing snow drift and was four feet deep, thirty inches wide and had a small hollow at the bottom approximately ten to eleven inches deep. This small depression at the bottom may have been made by or for the cub. From this overnight den the tracks led north to the Beaufort Sea.

Fewer tracks were seen in 1974 as compared to 1973. A few scattered tracks were seen along the coast in the Kongakut-Demarcation Bay area. One set of tracks was observed between Camden Bay and the Sadlerochit Mountains. Tracks became numerous offshore and by ten miles offshore were very numerous.

Tracking conditions in 1974 were very poor. A rain during January melted much of the snow and then froze. This resulted in an ice cover over much of the survey area. This ice cover plus windy conditions resulted in extensive windblown areas where tracking was poor to impossible.

The survey crew was grounded on March 26 because of high winds. This was the only day lost because of weather. These high winds at the start of the survey period probably resulted in some bear tracks being blown in. Dens may also have been covered with snow.

On October 8th a crew for the Alaskan Arctic Gas Study Company conducting a soil study across the Arctic Coast within the Arctic National Wildlife Range observed a Polar Bear approximately two miles north of the study route in the Itkilgariak River drainage. On October 15th another bear was observed by the same group approximately one mile north of the study line on the east fork of Marsh Creek. (See map and bears A and B for approximate locations.)

Several bears have been observed by the residents of Kaktovik (Barter Island) along the coast of the Arctic National Wildlife Range. Some of these bears have wandered into the village and occasionally have been shot by the villagers.

Additional Polar Bear den surveys are planned for October of 1974 and the spring of 1975.

Submitted by:
Donald N. Frickie

Polar Bear Den Data Form

Den No. 74-1a Date 4/3/74 Examined by Hall, Evans, Erickie, Schmidt

Examined from air Examined from ground X How found Walt Audi; saw bears in den

Tracking conditions very poor

Days since last wind that would have covered tracks 9

Lat./Long. 69°56.4'N Lat. Specific location (drainage, island, etc.) 4 miles from
144°28.2'W Long.

Camden Bay (SE) between Carter Creek and the Sadlerochit River

Habitat type: Drifting ice ; Shore fast ice ;

Offshore island ; Ocean beach ; River bank X;

Other & comments High up in drift above small stream; not a cutbank or active
channel, rather a steep bluff above the stream.

For sea ice dens:

Age of ice: Multi-year ; First year ; Not known ;

Comments

Stability of ice: Inactive (pressure ridges few & old) ;

Active (pressure ridges more numerous & recent) ;

Comments

Average height of pressure ridges

Den location relative to pressure ridge

For land dens:

Surrounding terrain and vegetation Low foothills; bluff dipping down from edge
of plateau toward stream bottom. Tundra vegetation.

Den location relative to stream bed, cut bank, beach, etc. 300 yards from
stream channel.

For all dens:

Type: Maternity X; Non-maternity over-wintering ;

Temporary ; Comments

No., sex, & age of occupants 3 bears; female w/2 cubs (Walt Audi observation)
2/1 gnd.

Slope at site 3/1 snow Direction den faces West (T) Prevailing wind NE

Snow depth: Over den 4-6" (#1), 7-11" (#3); Under den 0-3" (#1), 8" (#2), 14" (#3)

Entrance: Height _____; Width _____

Tunnel: Height 17"; Width 60"; Length 110"; Slope _____

Chambers #1 Height 20"; Width 72"; Length 200"

#2 Height 12"; Width 72"; Length 105"

#3 ht. 18"

Size of air hole above main chamber hole not found

Ice thickness: Ceiling _____; Sides _____

Food remains in or near den (collect sample) none

Feces in or near den (collect): Adult specimen; Cub _____

Urine in or near den _____

Cub mortality (collect remains) none

Evidence of feeding outside den (vegetation or other) not found

Den use after break-out not known

Travel & activities after leaving den not known

(Sketch den on back and take pictures)

Comments: both black and white pictures and 35mm slides (color) taken of den
site, including inside of den before excavation; aerial photos also taken.

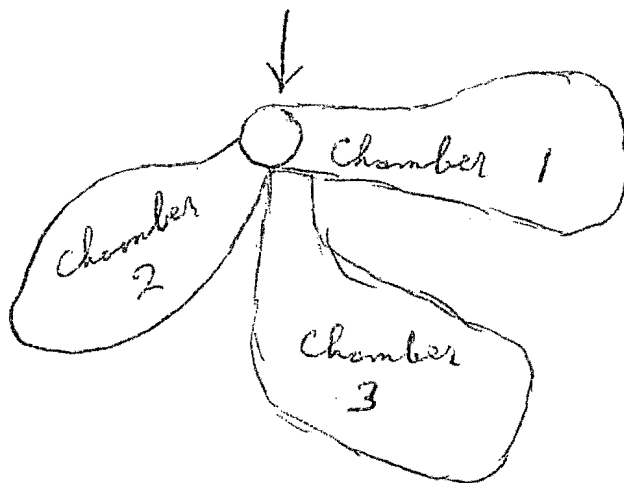
See attached original sheet for diagrams.

FIELD NOTES

Bank

PROBABLE ENTRANCE

← N.



Polar Bear Den Data Form

Den No. 74-1b Date 4/4/74 Examined by Hall, Evans, Frickie, Schmidt

Examined from air Examined from ground X How found same as 74-1a (Walt Audi)

Tracking conditions very poor

Days since last wind that would have covered tracks nine

Lat./Long. 69° 56.4' N Lat. Specific location (drainage, island, etc.) 4 Miles from
144° 28.2' W Long.

Camden Bay (SE) between Carter Cr. and the Sadlerochit River; 75 yds from den 74-1a

Habitat type: Drifting ice ; Shore fast ice ;

Offshore island ; Ocean beach ; River bank X;

Other & comments High up in drift above small stream; not a cutbank or active
channel, but rather a steep bluff above the stream.

For sea ice dens:

Age of ice: Multi-year ; First year ; Not known ;

Comments

Stability of ice: Inactive (pressure ridges few & old) ;

Active (pressure ridges more numerous & recent) ;

Comments

Average height of pressure ridges

Den location relative to pressure ridge

For land dens:

Surrounding terrain and vegetation Low foothills, bluff dipping down from edge
of plateau toward stream bottom. Tundra vegetation.

Den location relative to stream bed, cut bank, beach, etc. 300 yds. from
stream channel.

For all dens:

Type: Maternity X; Non-maternity over-wintering ;

Temporary ; Comments probably same bear as in 74-1a

No., sex, & age of occupants same female w/2 cubs as in 74-1a (Walt Audi)
2/1 gnd.

Slope at site 3/1 snow Direction den faces west (T) Prevailing wind NE

Snow depth: Over den 3-12"; Under den not measured

Entrance: Height _____; Width _____

Tunnel: Height _____; Width _____; Length _____; Slope _____

Chambers: Height 27"; Width 100"; Length 9 feet

Height _____; Width _____; Length _____

Size of air hole above main chamber 12" diameter; 3-5" thick snow in area above den.

Ice thickness: Ceiling not measurable; Sides not measurable

Food remains in or near den (collect sample) none

Feces in or near den (collect): Adult _____; Cub _____

Urine in or near den _____

Cub mortality (collect remains) _____

Evidence of feeding outside den (vegetation or other) vegetation in feces (specimen)
moss and grass disturbed 150' from den; old tracks in area.

Den use after break-out not known

Travel & activities after leaving den not known

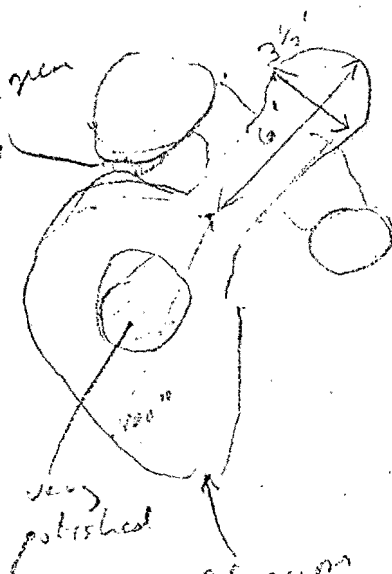
(Sketch den on back and take pictures)

Comments: 35mm slides and B&W photos taken of site on ground and from air.

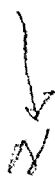
This den was probably made by the same bear in den 74-1a, and appeared to have been
occupied more recently than the other. See attached original sheets for
sketch.

Snow over
tunnel 2

but once you
scaled down
with



3" thick over top of bed



Polar Bear Den Data Form

Den No. 74-2 Date 4/4/74 Examined by Hall, Evans, Frickie, Schmidt

Examined from air _____ Examined from ground X How found Eskimos backtracked by snow-machine.

Tracking conditions poor

Days since last wind that would have covered tracks 10 days

69° 49.5' N Lat.

Lat./Long. 144° 35.0' W Long. Specific location (drainage, island, etc.) 10 miles

South of Camden Bay in the upper Carter Creek drainage from Sunset Pass area

Habitat type: Drifting ice _____; Shore fast ice _____;

Offshore island _____; Ocean beach _____; River bank X _____;

Other & comments Den on west side of Carter Creek

For sea ice dens:

Age of ice: Multi-year _____; First year _____; Not known _____;

Comments _____

Stability of ice: Inactive (pressure ridges few & old) _____;

Active (pressure ridges more numerous & recent) _____;

Comments _____

Average height of pressure ridges _____

Den location relative to pressure ridge _____

For land dens:

Surrounding terrain and vegetation Grassy tundra of gentle north slope of the Sadlerochit foothills.

Den location relative to stream bed, cut bank, beach, etc. West side of stream bed;
18 meters from grass edge; stream bed (snow area) 100 meters wide.

For all dens:

Type: Maternity X _____; Non-maternity over-wintering _____;

Temporary _____; Comments _____

No., sex, & age of occupants Tracks of adult and cub leaving den (1 female w/coy)

Slope at site 10/1 Direction den faces ESE Prevailing wind NE

Snow depth: Over den 20"; Under den 21"

Entrance: Height 24"; Width 39"

Tunnel: Height 13"; Width 34"; Length 52"; Slope level

Chambers: Height 38"; Width 50"; Length 54"

Height ; Width ; Length

Size of air hole above main chamber none found

Ice thickness: Ceiling ; Sides

Food remains in or near den (collect sample) none

Feces in or near den (collect): Adult none; Cub none

Urine in or near den not found

Cub mortality (collect remains) none

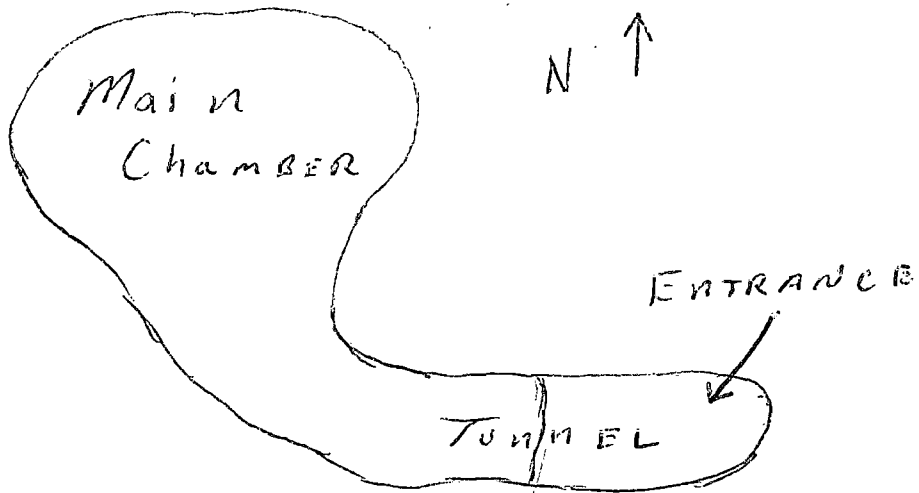
Evidence of feeding outside den (vegetation or other) none

Den use after break-out 2 depressions 20' and 50' from den; many tracks and evidence of "play" activity.

Travel & activities after leaving den headed down creek and overnighted near small lake 10-15 miles from den (overnite den found and photographed); wandered around den area and dug several more small holes up-creek from the den.

(Sketch den on back and take pictures) Slides, B&W photos both gnd and aerial. Note sketch on back of original data sheet attached.

Comments: Overnight den found in snow drift; faces south: 4' deep, 30" wide with small hollow on bottom approx. 10-11" deep (for cub?). Top opening 36" X 29". Hollowed out at 45° angle into drift. Tracks in area plus fox sign. No feces or urine noted.





DENS #1 & 2



DEN #1



DEN #1



DEN #3



DEN # 3