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# United States Department of the Interior

U.S. FISH AND WILDLIFE SERVICE  
1011 East Tudor Road  
Anchorage, Alaska 99503-6199



AFES/MMM

## Memorandum

To: Log

From: Kimberly Klein, Christopher Putnam, Biologists, Marine Mammals Management

Subject: Trip Report, Deadhorse, AK for the purpose of investigating an abandoned polar bear den

On March 11-12, 2015, Kimberly Klein and Christopher Putnam travelled to Deadhorse, AK (Purdhoe Bay) to follow up on den monitoring conducted at the North Slope Borough landfill. The den was located at approximately 70.28953° N, 148.51360° W (WGS84). It had been monitored by observers from BP following the bear's initial emergence on or about Feb. 28, 2015. The polar bear was reported to be active near the den site, returning regularly between about the time of emergence until March 7, 2015, at which time she was observed and reported heading northeast. The bear was last seen on the sea ice north east of Drill Site L5/Niakuk on the evening of the 7th. During this time, landfill activities were restricted and traffic along the nearby Oxbow Road was reduced. A 48-hour period was observed following her apparent departure, after which, when the bear did not return, normal activities at the landfill were resumed.

Christopher and Kimberly arrived in Deadhorse around noon on March 11<sup>th</sup>, and met with Chrissy May-Wildlife Compliance Advisor from BP Exploration Alaska (BP), Dave- Safety Officer from BP, and Jim- Security Officer from Purcell (contracted to BP). Chrissy, Christopher and Dave proceeded to the den site, observed the general area for tracks and scat, located the den entrance using an avalanche probe, and excavated the entrance. There were several piles of bear scat found approximately 50 meters downslope (north) of the den. Scat was collected and transported to Anchorage. Much of the feces was composed of compacted grass and was dense and dark in color. Craig Perham examined the collected scat and stated that the droppings were typical of a plug formed during hibernation. Some of the feces contained Styrofoam and small bits of blue plastic. No scat piles were found that were loose and watery, which could indicate recent protein intake.

Fox and polar bear tracks were found throughout the area. Bear tracks were several days old and had been blown over by recent high winds occurring on or around March 7. Fox tracks were fresh. One red fox (*Vulpes vulpes*) was seen in the gravel pit approximately 100 meters north of the den during the site visit. Ravens (*Corvus corax*) were also observed in the area. No fresh fox or raven tracks were observed immediately near the den, its opening, or inside the den, suggesting that the den was not disturbed by scavengers between the time the bear abandoned the den and the site visit.

The den's entrance was not visibly obvious prior to investigation with the avalanche probe, having been covered by drifted snow. The area that had been observed and reported as the den opening was probed until a deeper chamber was found. The den opening was found downslope from the chamber. It was about two feet in diameter and oriented northward. The den opening was located on an approximately 15° slope, about 1/3 of the distance from the top of the slope to the bottom. There were three "chambers" inside the den. The first, nearest the opening, widened from a short tunnel into an area about 5 feet round by 4 feet high. The sides and roof of this "main chamber" showed claw marks throughout from digging. The roof was covered in ice crystals with an occasional crystal-covered polar bear hair hanging down. Above the layer of ice crystals was a layer of dense icy snow about six inches thick that had presumably been compacted by melting and freezing due to the bear's body heat. Above that layer was the blown and drifted snow characteristic of the general area. At its thinnest spot, there was approximately one foot of snow above the den's ice layer. This thin spot was approximately 1½ foot round, centered over the main chamber, and was thin enough to let light through. The bottom of the main chamber was covered with claw marks in hardened snow that had been smoothed and evened out by contact with the bear's warm body. There was an orange plastic-coated cloth glove in the mouth of the main channel. This glove showed tooth marks and the thumb had been chewed off.

The second chamber was located to the left of the den's entrance. The bottom was elevated about one foot from the bottom of the main chamber. This chamber was approximately 4 feet deep, as measured from the main chamber to the rear of the side chamber, and shallow—only about 2 feet in height. The third chamber, was located to the south (upslope) of the main chamber. It was also elevated relative to the main chamber. The floor was perhaps two feet above that of the main chamber. There was approximately nine feet from the rear of the main chamber to the rear of this third chamber. It was about three feet tall at the maximum, and like the main chamber, had a translucent roof. The east wall and floor of this chamber was covered in soft, drifted snow, suggesting the bear may have had an alternate entrance to this chamber which was abandoned as the other chambers were excavated later in time. One faint, old fox track was clearly visible in the drifted snow inside the den, and a second mark may have been a second track. Several faint, shallow, parallel lines were noticeable in the snow next to the fox track. These were somewhat suggestive of something small or lightweight having been dragged or blown from the rear chamber toward the main chamber or vice versa, but there was no clear indication of what this could have been. No bear cubs were observed or carcasses found. No evidence suggesting scavenger removal of a carcass was found.

If you have questions or need additional information, please contact Christopher Putnam or Kimberly Klein at the 907-786-3844 or 907-786-3621 respectively. Thank you.



Figure 1. Wide angle image showing the vicinity of the den as seen from the northeast on January 15, 2015. The tailings pile from den excavation is indicated by the arrow; the den is immediately upslope. The landfill fence and equipment can be seen in the background.



Figure 2. The den site, as seen from the road at the bottom of the gravel pit, looking upslope toward the south on January 15, 2015. The tailings pile is indicated by the arrow.



Figure 3. The den entrance, as seen from inside.



Figure 4. The rear chamber of the den as seen from the opening of that chamber. Drifted snow can be seen on the left side of the photo.



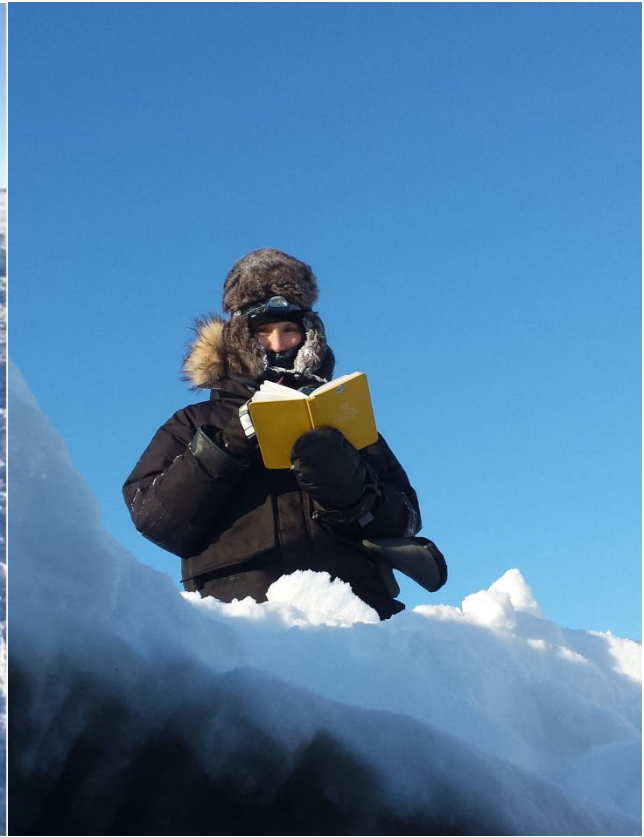


Figure 5. Christopher excavating the rear chamber (right); the bottom hole is the entrance, and the second is the main chamber. Kimberly sketching and taking notes (left)



Figure 6. The den site from the north, looking toward the south on March 11, 2015. Deep snow drifts are present. The tailings pile is still apparent, although much smaller, presumably due to recent high winds.

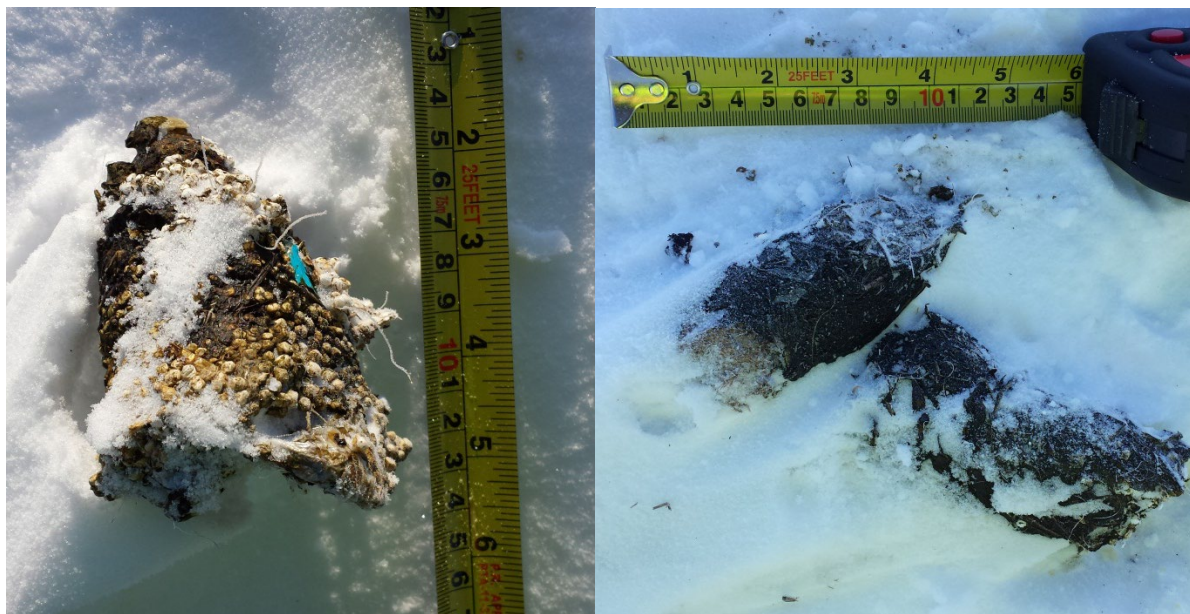


Figure 6. Fecal material with Styrofoam and blue plastic (left) with compacted grass (right).

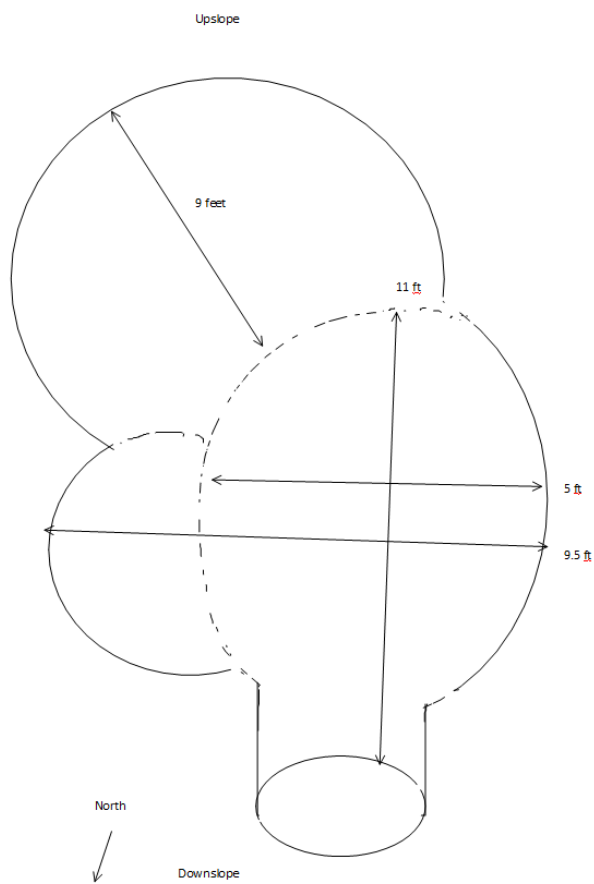


Figure 7. Diagram of bear den from above, not to scale.