

RECORD #	Year	Bears	Behavior recorded in incident documents	General location	Cause category	Cause of disturbance	Closest Distance to facility or person (source of disturbance; meters)		Emergence date	Encounter date	Details	
											Departure date	
1	1972	female +cub(s)	quickly returned to den	Wrangel	surface activity	"observers"	belikov 1976	unk	unk	unk	4/14/72	Observations of one female were made when she denned in the fall, and continued after she opened the den in the spring. Despite disturbance caused by observers, she did not abandon her refuge. She sometimg came out in the snow to exercise and to clean her hair of grease and dirt, but she quickly re-entered the den when disturbed. The denning period of this bear was 183 daysfrom 14 October 1971 to 14 April 1972.
2	1974	female 2 cubs	abandon	Wrangel	capture	capture	belikov 1976	0		3/23/74	3/31/74	We marked a female and two cubs from one den on 23 March 1974. The female was immobilized for about 5 hours and had several convulsions similar to those observed in a few other females. During the following week we repeatedly saw this bear looking from the den. On 31 March, 8 days later, the female abandoned the den and cubs and headed toward the sea. One den, located by its ventilating opening, was used in 1974 to obtain temperature measurements by telemetry. During 13- 16 March, observations were takenround-the-clock. Between 18 March, when the bear enlarged the ventilation opening into an exit, until 2 April, when the occupants were marked, temperature readings were obtained several times a day. Our visits disturbed the bear, since sounds of steps carried a hundred meters through the compacted snow crust, and the temperature recorder stood only 40 meters from the den. The female still did not abandon the den. After immobilizing her, we discovered that the den was new, nearly equal in size to the maternal den. The den was abandoned 2-3 days later. This particular female and cub had spent 16-17 days (mid-March to early April) in the partially opened den, from which the cub peered out several times daily. We did not once see the female at the exit during the time the den was under observation.
3	1974	female 1 cub	enlarged the opening, cub peered out	Wrangel	surface activity	"observers"	belikov 1976	40	3/18/74	3/16-4/2/1974	4/4-5/74	The second bear was observed at the entrance of her den on four separate occasions during close approaches (from 50 to 300 m, 164 to 984.25 ft) to the den by helicopter in late fall. Evidence suggests the bear denned successfully and emerged in spring with two cubs.
4	1982	female 2 cubs	emerged from den during repeated close approaches	1002 unk- amstrup had no dens near industry in '84	aircraft	aircraft- research aircraft	amstrup 1993/itr	50	unk	10/19/81	3/22/82	During a close approach (within 100 m, 328 ft) of a helicopter to her den, the third bear ran from the den. She was captured and released adjacent to her den, but wandered up to 120 km (74.56 mi) from the den before denning again 20 km (12.43 mi) from the original den. She denned successfully and emerged in the spring with two cubs.
5	1983	female 2 cubs	ran from den, captured	unk-amstrup had no dens near industry in 84	capture	aircraft research aircraft	amstrup 1993/itr	100	unk	11/5/83	unk	In 1984, B.P. Kelly observed a female bear and single cub depart a den afterclose approach by a large helicopter on 8 March. Kelly entered the den and made some measurements. On 11 March he returned to the den to make mote measurements butupon entering the den realized the bears were back. Even after this close encounterthese bears remained in the den at least until 13 March (Amstrup 1993).
6	1984	female 1 cub	emerge, depart, return	unk-amstrup had no dens near industry in 84	aircraft	research aircraft	amstrup 1993/Amstrup ltr	0	3/13/84	3/8/84	3/13/84	The sealed den of bear 6 was radio located on a Canadian northshoreland on 12 January and 9 March 1984. She left the denshortly thereafter, however, and was next observed withoutcubs in June 1984. A local hunter later reported seeing arunning polar bear in late March near the draw where theden of bear 6 was located. The hunter thought the bear hadjust come from ad en, but he did not investigate whether cubsmay have been left behind. h e bear he observed might havebeen number 6, and it is possible that the passing of his snowmachine induced her to abandon her den.
7	1984	female +cub(s)	running without cubs	Canada	traffic	snowmachine	amstrup 1993	unk	unk	unk	mid march	Of those four bears, the first was disturbed by aircraft while excavating a den in late fall. The bear was captured and released adjacent to the excavated den. She subsequently denned again in area 64 km from her original den. may have been disturbed from the site to which she relocated. She was in her second den on 2 and 27 December 1984, but on 11 February 1985 she was alone on the sea ice near Barrow. Examination of her den location revealed a single Rollagon tractor (Crowley All-Terrain Corp., Anchorage, AK) path within 250 m of the den site and a well-traveled Rollagon path parallel to the coast at a distance of 450-500 m from the den site. However, no information is provided regarding the success of the den or time of emergence.
8	1985	female	captured, redenned, abandoned	1002 17 km from flaxman	capture	capture and traffic rolligon (250 m), snow road (400 m), research aircraft + capture	amstrup 1993/itr	250	unk	10/30/1984 and Jan or FEB 1985	2/11/85	Two denning animals (bear 9) were exposed to three-dimensional seismic exploration (Yilmaz, 1987) and Rollagon traffic during the winter of 1988-89. A satellite radiocollared bear (number 9) denned on a northcoast barrier island on 20 October 1988, and an unmarked bear (number 10) was observed in a den just east of the den of bear 9 on 1 November 1988. The eastern-most receiver line of the seismic grid was 1000 m west of the den of bear 9 and 2000 m west of the den of bear 10. The parallel seismic lines were approximately 10 km long, spaced at intervals of 50 m, and extended 27 km east to west. The Rollagon traffic approached to within 2500 m and 3400 m of the dens of bears 10 and 9 respectively. Bear 9 and her 2 cubs remained in their sealed den as the Rollagon units passed and during the tttmhee seismic crews were nearest (1000 m). Temperature and activity data relayed from the satellite radiocollar of beaer s suggested she opened her den between 8 and 11 February, when seismic testing was done on source lines 1900-2500 m west of her den, and left her den on 12 March, when activity occurred 6300 m west of her. Bear 9 was captured with 2 cubs of the year on 9 April 1989, 29 days after leaving the den.
9	1989	female 2 cubs	emerged, returned to den	pt. thomson	surface activity	seismic	amstrup 1993	1000	unk	2/8-11/1989	3/12/89	Two denning animals (bear 10) were exposed to three-dimensional seismic exploration (Yilmaz, 1987) and Rollagon traffic during the winter of 1988-89. A satellite radiocollared bear (number 9) denned on a northcoast barrier island on 20 October 1988, and an unmarked bear (number 10) was observed in a djeuns t east of the den b oear r 9 on 1 November 1988. The eastern-most receiver line of the seismic grid was 1000 m west of the den of bear 9 and 2000 m west of the den of bear 10. The parallel seismic lines were approximately 10 km long, spaced at intervals of 50 m, and extended 27 km east to west. The Rollagon traffic approached to within 2500 m and 3400 m of the dens of bears 10 and 9 respectively. Footprints of a female and2 cubs at the den of bear 10 on 1 April may be evidence that she left the den with cubs, but her success was not substantiated by subsequent observations.
10	1989	female 2 cubs	no observation	pt. thomson	surface activity	seismic	amstrup 1993	2000	unk	2/8-11/1989	4/1/18	Two maternity dens (bears 7) were found on the south shore of a barrier island in spring 1991 within 2.8 km of an oil production plant employing 80-90 people. Vehicle traffic, human activity, and associated noises unk were constant throughout the denning period. . Tracks of 2 cubs. emerged from the den of bear 7, but their survival after leaving the den was not known.
11	1991	female 2 cubs	no observation	north slope	surface activity	oil and gas production facility	amtrupr 1993	2800	unk	unk	unk	Two maternity dens (bears 8) were found on the south shore of a barrier island in spring 1991 within 2.8 km of an oil production plant employing 80-90 people. Vehicle traffic, human activity, and associated noises unk were constant throughout the denning period. Bear 8 was followed from her den, captured, and radiocollared. Her cubs were known to survive at least 6 months thereafter.
12	1991	female 2 cubs	no observation	north slope pingok isl or kaktovik, not sure-probably kaktovik	surface activity	oil and gas production facility	amstrup 1993	2800	unk	unk	unk	The fourth bear experienced several close overflights (between 30 to 200 m, 98.42 to 656.17 ft) by a twin engine turboprop while in a closed den. After signs of initial emergence in spring by the adult female, snow machine tracks were found within 10 m (32.80 ft) of the den on 4-7-1991. However, the female did not leave the den with her single cub until several days later.
13	1991	female 1 cub	no emergence, no observation		aircraft and traffic	snowmachine, research aircraft, capture	amstrup 1993/itr	10	n/a	4/7/18	4/13/91	A heavily used ice road passed 400 m in front of the den of bear 11 when her open den was located 22 March 1992. Footprints around the den exit indicated bear 11 and cubs had been in and out of the den several times by 22 March. Road construction started 22 December 1991 and was concluded 28 January 1992. Drilling 6 km down the road from the den began on 7 February and was completed in April. At least six light vehicles and one large truck passed in front of the den every other day, and at least four runs each day were made by both a blade-type snowplow and a rotary snowblower. Traffic was heavier during and after snow or wind storms and during construction. The mean den entry date recorded for the Beaufort Sea area was 18 November, and all bears that produced cubs entered dens on land before 24 November (Amstrup and Gardner, 1994). Therefore, bear 11 must have been in her den when construction work began. Workers on the road and drilling project were unaware of the presence of the bear, and the bear apparently tolerated the relative nearness of the construction activitiesr aafnk. On 25 March, bear 11 took her 2 cubs north across the ice road and onto the sea ice.
14	1992	female 2 cubs	no observation	badami, 2 km from mikkelson??	traffic	ice rd	amtrupr 1993	400	unk	3/22/92	3/25/92	A survey crew consisting of one Nodwell 60 and 2 snowmachines encountered a polar bear sow at the entrance of a den. The bear was noticed at about 210 feet away from the snowmachine working in front of crew at 9:20 am. Approximate location of sight is 70 06.46N 147 11.54 W. Survey crew withdraws from area at 10:00 am. All personnel are instructed to stay 1 mile away from this location. Fixed wing overflight at 2 pm verifies den site. Steve Amstrup of FWS request on-site visual monitoring of den from distance. Observation spot was located .42mi. From approx GPS location during survey encounter. Den was clearly visible from this vantage point. No signs of bear at this time. 3/20 - 2:30 pm: Bear was observed outside of the den. From this distance, binoculars were insufficient to see whether any cubs were out of den. At approx 6 pm the fixed wing pilot reported from altitude 2 bears were seen outside the hole, he was unable to determine size.
15	1993	female 2 cubs	abandon	yukon gold flaxman	surface activity	seismic activity for BPX conducted on North Slope near Yukon Gold site.	LOAdb/Amstrup LTR loadb	65 unk	unk	3/19/93 10/11/01	3/21/93	3/21 - (No time given): Geco survey reports crossing PB tracks to the NW of the den location. Tracks show 2 cubs are accompanying the adult. It is believed that this is the bear who was in the den. At 9 am observer traveled to intersect and follow the bear tracks to the boundary of the survey area. The tracks were encountered 1/2 mile from the den and followed to the perimeter of the project area. Three coordinates taken on trail: 70 07.35N 147 13.13W, 70 08.10N 147 14.00W 70 08.35N 147 15.52W The general direction of travel from the den was 300 degrees true. At the perimeter of survey area, could barely make out a moving yellow blur that was the bear headed out to sea. At 11:00 am Michelle Gilders with BP was contacted. It was decided that we could now approach the den to make certain the den was vacated. Accurate coordinates were taken at den. Size and shape were estimated and sketch made.
16	2001	female only	walking		surface activity	remediation						Den location: 70 06.57N 147 10.59 W. (CS 10/26/11)Records verified that the same survey crew passed within 46 meters of the den on 9 March, and had surveyed the lines 270 meters and 135 meters from the den on 13 and 18 March without noticing that the den was open. (Amstrup 1993) reported : Unmarked bear 12 emerged from and reentered her open den as a survey party traveling in a 7000 kg tracked vehicle and two light snow machines approachedto within 65 m on the morning of 19 March 1993. The survey party, which was.staking seismic shot lines, withdrew and ceased operations. Subsequent observations from a 400-500 m high Cessna 185 aircraft and a knoll6 80 m from the den verified that bear 12 and her 2 cubs used the area around the den and the den itself until the morning of 21 March, when they walked north to the sea ice. Records verified that the same survey crew passed within4mi6 m of the den, which was closed then, on 9 March 1993. They also surveyed the lines 270 m and 135 m from the den on 13 and 18 March respectively. Thus, bear 12 tolerated several close approaches to her den and left later, in the absence of human activity.
17	2001	female +cub(s)	running away from/back to den in response to helicopter	flaxman island, 0.25 from first year of remediation work	aircraft	remediation work	ITR/loadb	402.336	unk	3/28-30/2001	unk	Sighted 1 adult bear walking from 'possible' den into water. 10/14/01 A/C HSE Manager, while onsite, observed that 'possible' den location referred to in 10/11/01 daily report was not visible 3-28: One adult female polar bear was observed leaving den in reaction to USGS helicopter. Event was observed for 1/2 hour. The bear came within 1/4 of F2 (G-2) camp. Bear out of her den, ran to the north turned and ran to south, crew watched from G-2 site with field glasses. Called A-1 site for bear hazer. Bear returned to den after USGS helicopter left. 3-29: One female polar bear was outside of den: at 13:30 for 30 minutes; at 15:45 sow outside den for 45 minutes; at 17:00 sow was outside den for 30 minutes. Closest approach to camp and personnel was 1/4 mile. 3-30 One adult sow moved from den area north east on pack ice, and returned to den area. Bear is about 1/4 mile from camp. The crew at G-2 location observed sow move northeast to icepack. USGS helicopter landing and watched bear movement.
18	2001	female +cub(s)	emerged from den	unk	surface activity	researcher in den	Amstrup ltr	0	4/6/01	4/6/01	unk	C. Amstrup fell through the roof of an occupied maternal den. His research team hadbeen monitoring the den for some time and assumed it was abandoned. The previouslyvisible exit had blown full of snow and Amstrup was probing the snow and digging testholes to locate the den in anticipation of entering and measuring it. Suddenly Amstrupfell through the den roof and realized the den was still occupied. Fortunately, no onewas hurt, but this beat demonstrated great tolerance of activities near and right aboveher den. It was not until the roof of the den collapsed and a researcher fell into the denthat she emerged.
19	2002	female 2 cubs	no observation	flaxman	surface activity	remediation	loadb/itr	805	none	none	3/5/02	During the denning seasons of 2000 to 2002, two dens known to be active were located within approximately 0.4 and 0.8 km (0.25 and 0.5 mi) of remediation activities on Flaxman Island in the Beaufort Sea with no observed impact to the polar bears. researchers documented tracks departing the den on 3-5
20	2002	female +cub(s)	abandon	unk	surface activity	research capm	ITR	unk	unk	unk	unk	In spring 2002, noise associated with a polar bear research camp in close proximity to a den is thought to have caused a female bear and her cubs to abandon their den and move to the ice prematurely.
21	2002	female +cub(s)	moved: changed location near, but outside den in response to activities in one occasion	flaxman island	surface activity	remediation work	ITR	402.5	unk	3/5/02	3/20/02	During the denning seasons of 2000 to 2002, two dens known to be active were located within approximately 0.4 and 0.8 km (0.25 and 0.5 mi) of remediation activities on Flaxman Island in the Beaufort Sea with no observed impact to the polar bears.
22	2002	female 2 cubs	increased vigilance	flaxman within 1 mi of ice rd.	traffic	ice rd	smith 2007	1609.344	unk	3/19-20/2002	2-3 days after emergence	successful den near ice road
23	2003	female 2 cubs	quickly returned to den	flaxman	surface activity	unknown sound, researchers	loadb	965.6064	unk	3/8/2003, 3-19-2003	unk	3-8: Sightd 1 Female bear and 2 cubs. Bears looked from den several times during day and came out at approx. 5:35 for about 5 minutes. They appeared to be disturbed by a sound from the east and quickly re-entered den, not to emerge again for the observation 3-19:Sighted 1 female and cub. Observed from .6 mile snow mound with Kristen Simac and Tom Smith. Bears seen repeatedly looking out of den
24	2003	female +cub(s)	increased vigilance	bulien pt	traffic	ice rd	smith 2007	1609		3-20-25/2003	5-6 days after emergence	successful den near ice road
25	2006	female 2 cubs	abandon	alpine	surface activity	traffic ice rd/ CPAI's Alpine cd3 river crossing construction site	loadb/itr	402.336	unk	3/24/06	3/27/06	In spring 2006, a female with two cubs emerged from a den 0.4 km (0.25 mi) from an active river crossing construction site. The den site was abandoned within hours of cub emergence, and 3 days after the female had emerged. Reported by construction crew. Not located by security. Aircraft unable to locate. Note: This escalated into an unauthorized level B and possibly Level A harassment and a NOV was issued. Sow with 2 cubs at den. In 2009, a bear den was found located along an active ice road. The den site was discovered after ice road construction commenced. A female with two cubs emerged from a den within 0.1 km (0.06 mi) of an active ice road with heavy traffic and quickly abandoned the site. This site was exposed to ice road activity, also at a distance of 100 m (328 ft), for approximately 1 month prior to emergence. (Data entry from Master AOGA db: Occupied polar bear den detected; mitigating and monitoring measures implemented in cooperation and coordination with USFWS. Sow and 2 cubs departed area for sea ice on 4/1/2009; location was 100 yards South of Mile 14.7 (ice Road). Amstrup :2018): "B. J. Kirschhoffer and R. Robinson attempted to measure a den on 29 March 2009, only to find it still occupied. Because they intended to measure the interior of the den and didn't want to alter the natural dimensions, they began digging an access hole in the snow at a different location than the entrance constructed by the bear. When they broke through into the lair, they immediately saw the mother bear and withdrew. They had approached the den on snow-mobiles, and later realized they had parked on top of the den. Despite probing with a metal rod to locate and outline the structure and despite considerable walking around and digging, and despite coming face to face with an intruding researcher, the family remained in the den. "
26	2009	female +cub(s)	abandon	badami ice rd mi 15 >5 km from mikkelson	surface activity	researcher in den & ice road traffic	amstrup 2018, ITR, loadb	0	3/26/09	3/29/09	4/1/09	Text from ITR: "Likewise, in 2009, two bear dens were located along an active ice road. The bear at one den site appeared to establish her site prior to ice road activity and was exposed to approximately 3 months of unk activity at a distance of 100 m (328 ft) and emerged at the appropriate time. "
27	2009	female +cub(s)	unk	unk	traffic	ice rd	ITR	100	unk	unk	unk	in the spring of 2010, an active den site was observed approximately 60 m (197 ft) from a heavily used ice road. A 1.6-km (1-mi) exclusion zone was established around the den, closing a 3.2 km (2 mi) section of the road. Monitors were assigned to observe bear activity and monitor human activity to minimize any other impacts to the bear group. These mitigation measures minimized disturbance to the bears and allowed them to abandon the den site when they chose to do so. Female emerged from a den approximately 65m from Exxon iceroad at MP 36.5 on 18 April. Stayed at least until 20 April. Active throughout day of April 20, but no activity that evening. Heavy mitigation - road closure until 23 April. Master AoGA dataset indicates Apr 18-23, not sure if this means departure on 23rd. I don t think so.
30	2010	female +cub(s)	unk	pt. thomson	traffic	ice rd	ITR	60	unk	4/18/10	4/20/10	drillsite was minimally active in fall, ramped up activities in winter, bear popped out. Was observed, drillsite went to minimal ops, bear left with cub(s?) several days later
31	2011	female +cub(s)	look out from den, went back in	spy island	surface activity	drillsite	loadb	50	unk	3/18/11	several days later	Initial Behavior: Bear observed on tailings pile at freshly excavated den. 70.4679, -149.985, reported by Justin Blank during AIR surveys. Surveys were flown between 700 and 1,500 feet above ground level depending on weather conditions. The surveys were conducted using the Tulugaq II DA-42 airplane equipped with a Wes Cam MX15 gimbal with IR camera installed.
												Contact Behavior: Bear was not seen on subsequent flyby. Presumed the bear was in the den.
												Description of Encounter: Observation only. Bear did not react to plane.
32	2014	female only	sitting	Kuparuk	aircraft	aircraft flyover	loadb, FLIR report: caelus flir 2015.1	761	unk	12/3/14	unk	Attract
33	2014	female 2 cubs	walking	south of nuiqsut	surface activity	seismic	loadb	275	unk	3/22/14	unk	Sub/rep and ice checker were sent to confirm a possible bear den. At 11:40, den was confirmed, heading to line to fet near other co-workers, they reported bear sighting, per sub-rep William Leavitt, Adult female unk with one alive and one dead cub. No confirmation whether the den disturbance was due to the activities or not.
34	2015	female	retreat from vehicle	oxbow landfill	surface activity	active landfill/ restricted use road	ITR	75	2/26/15	2/26/15	3/7/15	January 2015, a freshly dug polar den was discovered in an active gravel pit adjacent to an active landfill and busy road. The bear abandoned the den after 56 days. During the time the bear occupied the den, Industry activity in the area was restricted, and the den was constantly monitored. A subsequent investigation of the den found no evidence that the bear gave birth. It is unknown if or to what extent Industry activity contributed to the bear leaving the den. bear had a den, but no cubs were seen. Bear den was monitored closely, but the bear was not seen again until 2-26-15. After that date, she was observed near the den entrance regularly until 3-7-2015, when she was last observed traveling NE from the east dock and DS1 area.
35	2016	female only	exited den, ran, returned	nuna	traffic	traffic vehicle at inactive drillsite	loadb	30	unk	11/7/16	unk	Driving along the edge of Nuna Pad. Bear emerged from a den on the edge of the pad and departed to the north. Bear was very large for a sow, and in very good condition. Observers left the area imediately and unk access to the pad has been blocked. Observer v
36	2017	female 1 cub	investigated camera, etc.	endicott	traffic	rd traffic	ITR	0	3/22/17	12/26/2017 continuing until emergence	4/5/17	In 2017, a female successfully denned immediately adjacent to the Endicott causeway, and on at least one occasion got up from nursing to check out a vehicle
37	2018	female 2 cubs	approached snowblowing/road clearing activities one time. Other times female emerged, sat, looked, rolled in snow, cubs played.	niakuk IS drillpad	traffic	niakuk rd	ITR	365.76	3/22/18	3/22/18	3/27/18	Den discovered when female was seen near road by operators in transit to active drill pad. Mitigation measures: restricted traffic, reduced speed, continuous observation.