25 August 2008

Mr. Mike Williams
NMFS/Alaska Region/Protected Resources
Anchorage, Alaska

Dear Mike

Please find enclosed the Humane Observer Report for the 2008 Northern fur seal subsistence harvest on St. Paul Island, Alaska.

I was on St. Paul Island from 12 July through 10 August 2008. I missed the first two harvests, however arrangements were made with the Tribal Government of St. Paul Island to collect similar data for incorporation into this report. The harvest started on 5 July and ended on 8 August. Seven harvests were conducted. A total of 332 seals including 329 subadult males and three females were taken this year. Of the three females that were taken in the subsistence harvest, one was from Big Zapandi on 6 August, one from Polovina on 7 August and one from Gorbatch on 8 August. Two of these females were young and this would have been their first breeding and the other was middle aged and did have a pup this year. One subadult male died from hyperthermia this season (Zapadni Sands Reef).

The harvests started earlier this year than in previous years. This year all but one harvest stated between 8:57AM to noon, but one started at 2:21PM. Rest periods varied from 10 to 19 minutes with an average of 12 minutes.

Animals were killed in a humane fashion at all harvests.

Wastage was not observed this summer.

Pelts were not found this season that had been contaminated with oil from beaches. From 1998 to 2008 pelts of seals were not found with oil contamination.

The 2008 northern fur seal harvest went well this year. For the most part the harvests were slower; this was considered to be better for the seals and resulted in better quality of the meat.

Thank you for allowing me to be the humane observer this season.

Sincerely

Terry R. Spraker, DVM, PhD, DACV

HUMANE OBSERVER REPORT
Northern Fur Seal Subsistence Harvest
St. Paul Island, Alaska
July-August, 2006
Terry R. Spraker

INTRODUCTION

Northern fur seals (*Callorhinus ursinus*) have been harvested for their pelts for the last 250 years on the Pribilof Islands. During this time period, the native Privilovians could freely take the meat of the harvested animals for food. On St. Paul Island, the commercial harvest for pelts ceased in 1984; therefore, a subsistence harvest began with only immature males taken for food. This subsistence harvest has continued for the last twenty-five years (1984-2008). The harvest is a well-planned and orderly procedure. Young male northern fur seals are gathered by driving them from their haul-out areas to a specific killing field where they are held in a large pod. Five to ten seals are then cut from this large pod and driven to a group of three to four men who stun the animals by hitting them on the skull or upper neck with a solid wooden club. The animals are dragged a short distance away from the killing area where the chest and heart are cut open. The animals are then skinned and butchered for human consumption. For a more detailed description of the procedures of the harvest, see Humane Observer Report: Stoskopf 1984; Letcher, 1985; Dorsey, 1986; Zimmerman et. al., 1986, Spraker 1987-2007. This report will be limited to my observations of the humane activities of the northern fur seal harvest from 12 July to 10 August 2008.

Multiple factors were evaluated during this harvest. These factors included environmental conditions, methods of gathering and driving the animals and the harvesting of animals. These three areas will be discussed separately.

Northern fur seals were gathered and harvested 7 times this year (5, 8, 14 and 15 July and 6, 7 and 8 August) from four haul-out areas (Polovina-twice, Big Zapadni-thrice, Gorbatch-once and Zapadni Sands–once). A total of 332 seals were killed during 2008 in 7 harvests. Of these of 329 were subadult male animals and three were females. One was killed on 6 August at Polovina, one on 7 August on Big Zapadni and the other on 8 August at Gorbatch (Table 1).

ENVIRONMENTAL CONDITION

The environmental conditions of the harvest were monitored and specific measurements were obtained from the National Weather Service forecast office on St. Paul Island for the harvest days including the average air temperature, degree of precipitation,

wind and cloud cover. The air temperature was taken when the drive began and ranged from 42°F to 46°F, with an overall average of 44.3°F. The air was relative dry three times and misty once and rainy three times. A breeze was present at six of the seven harvests. The wind speed varied from 5 to 12 miles per hour with an overall average of 8 miles per hour. Cloud cover was complete and high four times; and complete and low three (Table 2).

GATHERING OF ANIMALS

Ten to fifteen men would go to a specific haul-out area and run through and around resting seals to quickly form a line along the shore thus preventing the seals access to the ocean. The round-up crew would then gather the seals into several pods and drive them to the killing field. Gathering of the seals started between 8:23AM to 2:21PM this summer. Median start time was approximately 11:30AM. The early starting times in 2008 was likely reflected in the lower environmental temperatures during the harvest as shown in the previous section. Starting harvests earlier results in a lower risk of hyperthermia and inhumane treatment of the seals.

Estimated distance of the drives ranged from 150 to 200 yards. Animals were driven from 12 to 30 yards/minute with an average of 20 yards/minute. The animals were usually rested during the drive. Rest periods varied from 10 to 19 minutes with an average of 12 minutes. The distances for the drives were similar this year as compared to previous years (Table 3).

An estimated difficulty of the drive was graded on a scale of 1+ to 3+, with 1+ being the easiest, and 3+ being the most difficult. These same paths have been used for driving seals to the killing field for at least a hundred years and were all fairly easy drives (Table 3). The degree of wetness to the grass and terrain was monitored and estimated as this is believed to be an important cooling factor for the animals. The grass was wet five times and moist twice (Table 3).

HARVESTING PERIOD

The harvesting activity was characterized by holding the animals in a large pod approximately 10 to 20 yards from the stunning area. While a few younger children held the seals, three to four young men would cut out a small pod of seals and drive them to the stunners. The pod size usually was 8 to 15 animals. Animals were killed by hitting them on the skull at the level of the ears or over the 1st/2nd cervical vertebra. The majority of times, the animals were hit just once. These animals would immediately drop and were hit again on the skull. However, sometimes the first hit missed its mark and one or two more hits were required. The number of double and triple-hits were not counted this year.

One 5 year old bull was accidentally hit in the nose during a harvest. This knocked the seal unconscious and gave the bull a severe nose bleed. In several minutes this animal recovered and then walked off. The long term affect of this blunt trauma to the nose is not known. If this blow had caused much subdural hemorrhage the seal probably upon recovery could not have walked back to the water. He would have shown disorientation behavior.

Deep body core temperatures of approximately 30-75% of the animals were taken throughout each harvest. The temperatures were then divided into three equal time periods during the harvest for each day. The average body temperatures are presented in Table 4. Temperatures ranged in individual animals from 98.1 to 106.0^{o}F. One subadult male died from hyperthermia during the harvest on Zapadni Sands on 15 July 2008. When the seals were released this seal walked off about 100 yards and laid down. This seal was showing clinical signs of early hyperthermia including open mouth breathing and waving the rear flippers. When left alone many of these seals recover. Routinely I come back and check these animals, in this case this seal was found dead. On necropsy this seal was in good condition and had congestion and edema of the lungs. These are the classical gross lesions of hyperthermia. The temperature of the hyperthermic seal was not taken.

Hyperthermia is due to overheating caused by over activity of the animals. Predisposing factors include warm environmental temperatures, lack of cloud cover and/or mist, dry grass, lack of wind, animals being driven too fast (especially uphill), long drives, animals being held too tight in the large holding pods and having too much activity or moving around in the large holding pods. Another predisposing factor is the amount of rest an animal has had before the drive. For example, an animal that has just arrived on the haul-out from a feeding trip may not be "fully rested" and, if they are subjected to a harvest/drive, become exhausted quicker than a rested animal. The above paragraph is a hypothesis and I have no data to substantiate this hypothesis.

To avoid hyperthermia seals should be driven slowly; rested at least 15-20 minutes after the drive and the holding pods should be kept loose. A loosely held group is one where adjacent seals are not covering each other’s flippers and seals are able to move around not over one another. If an animal lags behind during the gathering period they should be allowed to drop out of the pod. If the environment temperature is 55^{o}F, great care has to be taken during the drive and the harvest and if the temperature is $\geq$60^{o}F, no cloud cover, wind or mist, the harvest should not be done that day. When over 50% of the seals in the holding pod show early signs of hyperthermia (including, flipper fanning, open mouth breathing and lying down) or deep core body temperature in excess of 104^{o}F the harvest should be slowed down, and the pod allowed to spread and seals allowed to rest. The harvest should be stopped and seals released if they (1) continue

to move within the pod; (2) continue to show early signs of hyperthermia after 30 minutes of rest; (3) environmental conditions change to the extent that the risk of hyperthermia increases (e.g., temperature increases or wind decreases).

HEALTH STATUS

The health status of the animals was evaluated by examining viscera and carcasses throughout the harvest. No evidence of any infectious, degenerative disease or neoplastic disease was found.

OIL CONTAMINATION OF ANIMALS

This year (as last year) animals were not found with oil on their pelts. The number of animals found with oil on their pelts has decreased since 1994 when 23 contaminated animals were found. In 1994:23 seals, in 1995:3 seals, in 1996:4 seals and in 1997:1 seal were found with oil contamination. From 1998 to 2008 pelts of seals were not found with oil contamination.

SUMMARY

This summer the harvests were done earlier in the day than previous years. As a result seals were at a reduced risk of hyperthermia and were treated more humanely then during harvests in the warmer afternoon hours.

Seven harvests were done this year from 5 July to 8 August taking 329 subadult males and 3 females. One seal died from hyperthermia this season. All harvest were considered to have been carried out in an humane fashion.

Points to be remembered during the harvest:

1. Drive the animals slowly to the killing field.

2. Do not unnecessarily harass the seals during the gathering drive or while holding the resting pod.

3. If an animal lacks behind during the drive, leave it alone, because this animal is already exhausted because it has probably just returned from a feeding trip. These are the animals that will develop hyperthermia first and most likely die.

4. Rest the animals 10 to 15 minutes prior to the harvest and in between rounds.

5. Harvest in the morning; thus avoiding warmer afternoon environmental temperatures.

6. Drive small pods to the stunners. Five to seven animals are good, but not 10 to 15 animals at a time.

7. Take a little more time to isolate the selected animals to be killed. This will reduce the number of 5 year old seals killed.

8. If environmental temperatures are 50^{o}F to 55^{o}F, give the seals frequent rests during the drive and hold the resting pods loose. If environmental temperature is 55^{o}F or above, do not have a harvest. If the temperature is 50^{o}F with no wind a harvest should not take place.

9. Try to "weed out" (release) older animals and females during the gathering and drive or between harvest rounds if practical. If too many large seals, bulls or females are gathered into the drive then efforts should be taken to release as many of the unwanted seals from the drive prior to arrival at the killing field. If an adequate number of unwanted bulls or females are not released then the entire round-up pod should be released in a safe area.

10. Round-ups and release of seals should not be done near cliffs. I am not sure what to do if animals are running towards a cliff. My impression is that they should be left alone and not disturbed. I think the animals if not pushed will avoid cliffs, but if scared will go over the cliff.

11. When the seals in the resting pod show early signs of hyperthermia (flipper fanning, open mouth breathing, and lying down) the seals should be loosened or rested or the harvest should be stopped and the seals released at their own speed.

12. Discuss the number of seals to be harvested and driving plans with all members of the round-up crew before drive starts. If drive plans change during the drive because not enough animals are gathered the harvest should continue at a reduced level consistent with the available seals in the round-up.

13. If there is any dangerous situation such as a cliff near the animals during a round-up or during releasing seals from a harvest, this situation should be discussed before animals are moved.

14. Do not allow intoxicated persons to work in any of the positions at the harvest or even to be on the killing field because of the danger to themselves, others, and the seals in addition to the disruption that they cause to the harvest process.

REFERENCES

1. Dorsey, A.S., 1986. Humane Observer Report, Pribilof Island Fur Seal Harvest. National Marine Fisheries Service, Juneau, Alaska.

2. Letcher, J.D., 1985. Humane Observer Report, Pribilof Fur Seal Harvest, National Marine Fisheries Service, Juneau, Alaska.

3. Spraker, T.R., 1987. Humane Observer Report, Pribilof Fur Seal Harvest. National Marine Fisheries Service, Juneau, Alaska.

4. Spraker, T.R., 1988. Humane Observer Report, Pribilof Fur Seal Harvest. National Marine Fisheries Service, Juneau, Alaska.

5. Spraker, T.R., 1989. Humane Observer Report, Pribilof Fur Seal Harvest. National Marine Fisheries Service, Juneau, Alaska.

6. Spraker, T.R., 1990. Humane Observer Report, Pribilof Fur Seal Harvest. National Marine Fisheries Service, Juneau, Alaska.

7. Spraker, T.R., 1991. Humane Observer Report, Pribilof Fur Seal Harvest. National Marine Fisheries Service, Juneau, Alaska.

8. Spraker, T.R., 1992. Humane Observer Report, Pribilof Fur Seal Harvest. National Marine Fisheries Service, Juneau, Alaska.

9. Spraker, T.R., 1993. Humane Observer Report, Pribilof Fur Seal Harvest. National Marine Fisheries Service, Juneau, Alaska.

10. Spraker, T.R., 1994. Humane Observer Report, Pribilof Fur Seal Harvest. National Marine Fisheries Service, Juneau, Alaska.

11. Spraker, T.R., 1995. Humane Observer Report, Pribilof Fur Seal Harvest. National Marine Fisheries Service, Juneau, Alaska.

12. Spraker, T.R., 1996. Humane Observer Report, Pribilof Fur Seal Harvest. National Marine Fisheries Services, Juneau, Alaska.

13. Spraker, T.R., 1997. Humane Observer Report, Pribilof Fur Seal Harvest. National Marine Fisheries Service, Juneau, Alaska.

14. Spraker, T.R., 1998. Humane Observer Report, Pribilof Fur Seal Harvest. National Marine Fisheries Services, Juneau, Alaska.

15. Spraker, T.R., 1999. Humane Observer Report, Pribilof Fur Seal Harvest. National Marine Fisheries Service, Juneau, Alaska.

16. Spraker, T.R., 2000. Humane Observer Report, Pribilof Fur Seal Harvest. National Marine Fisheries Services, Juneau, Alaska.

17. Spraker, T.R., 2001. Humane Observer Report, Pribilof Fur Seal Harvest. National Marine Fisheries Service, Juneau, Alaska.

18. Spraker, T.R., 2002. Humane Observer Report, Pribilof Fur Seal Harvest. National Marine Fisheries Service, Juneau, Alaska.

19. Spraker, T.R., 2003. Humane Observer Report, Pribilof Fur Seal Harvest. National Marine Fisheries Service, Juneau, Alaska.

20. Spraker, T.R., 2004. Humane Observer Report, Pribilof Fur Seal Harvest. National Marine Fisheries Service, Juneau, Alaska.

21. Spraker, T.R., 2005. Humane Observer Report, Pribilof Fur Seal Harvest. National Marine Fisheries Service, Juneau, Alaska.

22. Spraker, T.R., 2006. Humane Observer Report, Pribilof Fur Seal Harvest. National Marine Fisheries Service, Juneau, Alaska.

23. Spraker, T.R., 2007. Humane Observer Report, Pribilof Fur Seal Harvest. National Marine Fisheries Service, Juneau, Alaska.

24. Stoskopf, M.K., 1984. Humane Observer Report, Pribilof Fur Seal Harvest. National Marine Fisheries Service, Juneau, Alaska.

25. Zimmerman, S.T., and J.D. Letcher, 1986. The 1985 Subsistence Harvest of Northern Fur Seals, Callorhinus ursinus, in St. Paul Island, Alaska. National Marine Fisheries Service, Juneau, Alaska.

Table 1. Table of dates, locations, and number of northern fur seals killed during the 2008 subsistence harvest on St. Paul Island, Alaska.

DATE	LOCATION	SEALS KILLED MALES	SEALS KILLED FEMALE	RUNNING TOTAL KILLED
5 July	Big Zapadni	26	0	26
8 July	Polovina	47	0	73
14 July	Big Zapadni	36	0	109
15 July	Zapadni Sands	48(1-Hyp)	0	158
6 August	Polovina	29	1	188
7 August	Big Zapadni	63	1	252
8 August	Gorbatch	79	1	332
Total		329	3	332

Table 2. Summary of environmental conditions during the 2008 northern fur seal subsistence harvest on St. Paul Island, Alaska.

DATE	LOCATION	AIR TEMP (F°)	PRECIPITATION	WIND: MPH/DIRECT	CLOUD COVER
5 July	Big Zapadni	42	rainy	8-12 NNE	Complete/low
8 July	Polovina	43	rainy	8-12ESE	Complete/low
14 July	Big Zapadni	44	rainy	16 S	Complete/low
15 July	Zapadni Sands Reef	45	misty	7 N	Complete/high
6 Aug	Polovina	46	none	5 S	Complete/high
7 Aug	Big Zapadni	44	none	0 (calm)	Complete/high
8 Aug	Gorbatch	46	none	8 NE	Complete/high

Table 3: Summary of activity during the drive of northern fur seals to the killing field during the 2008 subsistence harvest St. Paul Island, Alaska.

DATE	LOCATION	DURATION OF DRIVE (min)	ESTIMATED DISTANCE OF DRIVE (yards)	ESTIMATED SPEED OF DRIVE – yards/min	TERRAIN TYPE AND WETTNESS OF GRASS, (OVERALL DIFFICULTY OF DRIVE)
5 July	Big Zapadni	10	200	20	Flat sandy, flat grass, up hill, grass, flat grass, moist (++)
8 July	Polovina	9?	150	17?	Slightly uphill dirt, flat dirt/grass (+)
14 July	Big Zapadni	15	200	27	Flat sandy, flat grass, up hill, grass, flat grass, moist (++)
15 July	Zapadni Reef Sands	10	150	15	Sandy, slightly uphill; yards flat grass (+)
6 Aug	Polovina	10	175	18	Slightly uphill dirt, flat dirt/grass (+)
7 Aug	Big Zapadni	17	200	12	Flat sandy, flat grass, up hill, grass, flat grass, moist (++)
8 Aug	Gorbatch	5	150	30	Dirt uphill, downhill grass, wet (+)

Times for Polovina (8 July) were not taken, these times were estimated from previous harvests.

Table 4: Summary of the deep body core temperatures and number of seals dying from hyperthermia during the 2008 northern fur seal subsistence harvest on St. Paul Island, Alaska.

DATE	LOCATION	REST TIME (min)	AVERAGE DEEP BODY CORE TEMP F° (First 1/3)	AVERAGE DEEP BODY CORE TEMP F° (Middle 1/3)	AVERAGE DEEP BODY CORE TEMP F° (Last 1/3)	HYPER-THERMIC ANIMALS
5 July	Big Zapadni	19	101.4	102.7	102.2	0
8 July	Polovina	10	102.9	103.1	103.3	0
14 July	Big Zapadni	15	99.5	101.3	100.4	0
15 July	Zapadni Reef Sands	10	101.4	101.5	101.4	1
6 Aug	Polovina	10	102.7	102.6	101.9	0
7 Aug	Big Zapadni	11	102.5	101.7	102.2	0
8 Aug	Gorbatch	11	102.6	103.1	103.5	0

Table 5: Summary of the rate of kill of northern fur seals during the 2008 subsistence harvest on St. Paul Island.

DATE	LOCATION	NUMBER OF ANIMALS KILLED	LENGTH OF TIME OF HARVEST (minutes)	AVERAGE NO. OF ANIMALS KILLED PER MINUTE OF HARVEST
5 July	Big Zapadni	26	126	0.2
8 July	Polovina	47	43	1.0
14 July	Big Zapadni	36	29	1.2
15 July	Zapadni Reef Sands	48	53	0.9
6 Aug	Polovina	30	60	0.5
7 Aug	Big Zapadni	64	113	0.6
8 Aug	Gorbatch	80	114	0.7