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William A. Egan, Governor

DEPARTMENT OF FISH AND GAME  
Wallace H. Noerenberg, Commissioner

DIVISION OF GAME  
Frank Jones, Acting Director  
Donald McKnight, Research Chief

REPORT ON 1971  
BROWN BEAR STUDIES

By

Leland P. Glenn

Volume XIII  
Project Progress Report  
Federal Aid in Wildlife Restoration  
Project W-17-3, Jobs 4.2R and 4.4R (2nd half)  
and Project W-17-4, Jobs 4.2R and 4.4R (1st half)

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## JOB PROGRESS REPORT (RESEARCH)

State: Alaska

Cooperators: Leland P. Glenn

Project Nos.: W-17-3                      Project Title: Big Game Investigations  
W-17-4

Job No.: 4.2R                      Job Title: Brown Bear Life History Study

Job No.: 4.4R                      Job Title: Distribution and Movement of  
Alaska Peninsula Brown Bear

Period Covered: January 1, 1971 through December 31, 1971

### SUMMARY

One hundred and one brown bears were captured, marked and released on the Black-Chignik Lake study area. Tagging effort began on 11 June and continued for 26 consecutive days. Tagging was concentrated in the open valleys and on the coastal plain. Regions of dense vegetation cover were avoided. Brown bear observations indicate sex and age class segregation in the spring. Large boars (over 600 pounds) and sows with cubs-of-the-year were absent on the coastal plain. This segment of the bear population remained in the mountains until the arrival of salmon in early July.

Seventeen family groups containing 31 young were captured. No permanent separation of family group members was observed following capture and handling procedures.

Distribution and movement studies have been delayed for one year because a suitable collar has not been developed. A nylon-fiberglass identification collar was developed during the winter of 1970-71. Twelve of these collars were attached to adult bears on an experimental basis. The future of the brown bear movement study will depend on the results of additional collar testing.

The immobilizing drug, Etoprphine (M-99) and its antagonist, Diprenorphine (M50-50) were tested on 22 brown bears on the Black-Chignik Lake study area. Induction time for M-99 ranged from three to six minutes. No apparent mortality resulted from use of the drugs. The dosage range varied from .005 to .025 milligrams/pound. The mean respiration rate was 7 breaths/minute as opposed to 64 breaths/minute when immobilized with Sernylan. Bears appeared to be in their normal pre-M-99 state within 10-15 minutes after the antagonist was given.

Hyaluronidase and Wydase, an enzyme which promotes absorption of fluids into muscle tissue, were tested in combination with Sernylan and no difference was found in the latent period required to immobilize brown bears. Seven minutes was the mean time to immobilize with or without the enzymes added.

The sex composition of adult and subadult bears (three years old and older) was 20 males and 46 females and that of young (cubs, yearlings and two-year-olds), was 15 males and 23 females. Cubs-of-the-year consisted of six males and six females.

Cubs' weights ranged from 15 to 56 pounds. Six male cubs ranged from 15 to 50 pounds and six female cubs ranged from 24 to 56 pounds.

The minimum and maximum breeding ages of sows captured on the Black Lake study area were 3.5 and 14.5 years old, respectively.

Brown bear observations were continued at McNeil River. The late arrival of bears hampered tagging and life history observations. Seventy-nine individual bears were identified. These included 47 single bears and 12 sows accompanied by 20 young (cubs, yearlings and two-year-olds). Fifteen animals, including 10 previously marked, were immobilized.

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## BACKGROUND

The Alaska Department of Fish and Game is responsible under the State Constitution for management of the wildlife resource. Because knowledge of brown/grizzly bears is scanty research must be conducted to provide answers aiding the development of progressive game management and land classification programs vital to the welfare of the bear resource.

Alaska has widely distributed populations of brown/grizzly bears (*Ursus arctos*) which furnish recreation desired by many hunters. This species also has a strong attraction for tourists, naturalists and photographers, who reside in or come to Alaska and observe bears. In recent years the illegal use of the bear resource by the guide industry has attracted considerable attention. Solutions to regulation abuse are receiving much attention by the Department and the Board of Fish and Game. The brown/grizzly bear has also become the subject of nationwide public concern. A large part of this concern is associated with industrial development which may conflict with the well-being of the species. Intensive oil development on Alaska's North Slope, mineral exploration on the Alaska Peninsula, intensive logging in southeast Alaska, and the possible expansion of livestock ranching in southcentral Alaska forecast disruption of brown/grizzly bears' habitat.

During the past ten years Game Management Unit 8, the Kodiak Island group, has contributed 20 percent (130 bears) and Game Management Unit 9, the Alaska Peninsula, has contributed 25 percent (160 bears) of the average annual harvest for Alaska. Region II research activities are concentrated on the Alaska Peninsula to take advantage of high bear densities. Studies during the next four years will emphasize brown bear population dynamics, life history, distribution and movements. Additional brown/grizzly bear studies are being conducted in Alaska on the arctic North Slope (Region III) and in southeastern Alaska (Region I).

## OBJECTIVES

To utilize tagged bear observations as a source of information on breeding biology, growth, survival of young and time of family break-up.

To determine seasonal and daily movement patterns which influence bear densities.

To determine the extent of seasonal and annual reuse of dens, fishing and other areas by observation of tagged bears.

To investigate the possibility of applying population index methods to determine actual bear abundance in relation to observed abundance and to apply available population data to a population model.

To test new drugs which may improve capturing and handling capabilities. To test new marking equipment which will allow periodic observation of tagged bears.

## PROCEDURES

The Black-Chignik Lakes area was chosen in 1969 as the most suitable location to conduct brown bear research studies. This area, described by Erickson and Siniff (1963), is located approximately 475 miles southwest of Anchorage. The region is remote and can be reached only by aircraft or a combination of boat and aircraft. The study area (Fig. 1) is approximately 55 miles long by 40 miles wide.

At Black-Chignik Lakes brown bears were located and captured during 1971 with the aid of a Bell 206A Turbo helicopter (Trans Alaska Helicopter Service) on skids and a Piper PA-18 Supercub aircraft (Peninsula Airways) on large tires. Five persons, including the helicopter and supercub pilots, made up the tagging team and worked out of a camp located on the northwest side of Black Lake. The supercub was used as a "spotter plane". Radio communication between the two aircraft provided a means for directing the helicopter pilot to located bears. When a bear was sighted, its weight was estimated and either Etorphine (M-99) or Sernylan was injected into its ham muscles with Palmer "Cap-Chur" equipment. Darting was done from the helicopter shooting out of the opened right rear door window. When capturing bears, four men usually rode in the helicopter; the pilot, the "gunner", a man responsible for mixing the correct drug dosages, and a man to record specific information as outlined on the tagged brown bear record form. When a sow with young was encountered the sow always received the first drug injection. The helicopter then moved off a short distance but herded the family group to keep them together and away from thick vegetative cover. After the sow was immobilized, young, other than cubs-of-the-year, were captured using the same procedure. Capture of entire family

Figure 1



groups required considerable skill on the part of the helicopter pilot and "gunner". High capture success was dependent on hazing bears away from dense vegetative cover and keeping family groups from scattering during the capture attempt.

On the Black-Chignik Lake study area during June and early July various drugs and combinations of drugs were experimentally tested on brown bears. Sernylan (Park, Davis and Co., Detroit, Michigan) in concentration of 100 milligrams/milliliter was used to immobilize, Wydase (Wyeth Laboratories, Inc., Philadelphia, Pennsylvania) in concentration of 1,500 N.F. (TR) units was used in an attempt to speed induction time and Sparine (Wyeth Laboratories Inc., Philadelphia, Pennsylvania) in concentration of 50 milligrams/milliliter was used as a tranquilizer. Sernylan was administered in dosages of 0.75 milligrams/pound body weight. Adult bears were given a dosage of 2.0 cc. of Sparine while yearlings and subadults were given 1 to 1.5 cc. Synthetic morphine, Etorphine (M-99) (American Cyanamid Co., Princeton, New Jersey) in concentration of 1.0 milligram/milliliter and its antagonist, Diprenorphine (M50-50) (American Cyanamid Co., Princeton, New Jersey) in concentration of 2.0 milligrams/milliliter was tested on free roaming brown bear for the first time. Cubs-of-the-year were captured by hand and were also immobilized with M-99.

The procedure involved darting the sow with Sernylan and herding the family group in a manner that kept them together until the sow was immobilized. The pilot then landed the helicopter near each cub and one or two members of the tagging team jumped out, ran after and captured a cub. Etorphine (M-99) was then injected into the ham muscles. Sows with three or four cubs presented the greatest challenge. A man was usually exhausted by the time he ran down, caught and subdued one cub. In such instances, the helicopter was used to herd the third or third and fourth cubs to men kneeling motionless on the ground. The cubs could be driven within 25 feet of a man, who, after a sprint, overtook and caught the cub. A pair of heavy leather gloves protected the hands of those capturing cubs from injury by sharp claws and teeth. When work was completed on an entire family group, the helicopter engine was started and the pilot prepared to depart soon after the antagonist (M50-50) was administered. This procedure was necessary because the antagonist worked quickly. Any disturbance after recovery frightened the cubs, thereby increasing the possibility of family separation.

Cubs-of-the-year and small yearling bears were weighed with a hand held 100 pound capacity Chatillon spring scale. Heavier bears were weighed by slinging each beneath the helicopter in a cargo net attached to a Martin Decker Hydraulic Scale (Martin Decker Industrial Division, Long Beach, California). Prior to field use, scale modifications were made which eliminated weight errors caused by the method in which the scale was being used. Therefore, the column weight of hydraulic fluid in the line running between the hand held readout dial and the load cell (attached to the helicopter cargo hook) changed the scale reading whenever the helicopter hovered at a different altitude. Factory modifications eliminated this error by removing the 30 foot hydraulic line and mounting the 15-inch

diameter readout dial directly onto the load cell. The dial was attached at a 30-degree angle to allow ground observers a better view of the dial face. The face of the scale was read from the ground with the aid of binoculars. Weights were recorded to the nearest five pound increment.

A lower first premolar tooth was pulled for cementum age determination. Estimates of age were also made and the following measurements were recorded: girth, hind foot, height at shoulder, neck, total length, body length, length of upper and lower left canine as measured from the gum line, and head length and width (measured between the widest portion of the zygomatic arches and between the most anterior surface of the upper first incisors and the posterior protruberance of the parietal crest).

Photographs and complete descriptions of each cub and yearling bear's dentition were recorded. Photographs were taken of all bears to document pelt coloration, body size and other physical characteristics of interest.

The size, coloration and lactating condition of mammae, condition of the vulva, baculum size and position of testes were recorded for information on breeding biology. Vaginal smears were collected from most estrus females in an attempt to determine if sperm were present. Clear plastic vaginal extenders were used to open the vaginal orifice. A cotton swab was then inserted through the opening to collect a sample. The swab was rolled across the surface of a glass slide and the specimen was then protected by spraying with a water soluble fixative (Adams Spray-Cyte, Parsippany, New Jersey). Adequate milk samples were obtained from lactating females by injecting a mammary gland with one cc. of oxytocin (Wyeth Laboratories, Inc., Philadelphia, Pennsylvania) in concentration of 10 u.s.p. units/cc.

Blood samples were taken from the femoral artery using donor tubes in conjunction with 150 ml. heparinized vacuum bottles. Blood smears, both thick and thin, were also taken for studies of parasites and for differential white cell counts. Whole blood samples were centrifuged and the red blood cells and serum separated and frozen. Analyses will determine multiphasic profiles which may allow better interpretation of the population's seasonal physical status. Sequential blood samples from some animals will be collected during the summer and fall. Urine and stool samples were collected for chemical, vegetational and parasite analysis. Dr. U. S. Seal, Research Biochemist, Veterans Administration Hospital, Minneapolis, Minnesota has undertaken analysis of blood and urine.

Canvas identification collars attached to adult bears last year (Glenn, 1970) were not used during the 1971 field season. Studies revealed that these collars were unsatisfactory after six months of continuous use. A new collar was developed and is being tested. The new collar consists of three basic parts, a nylon belt three inches wide by 46 inches long (United Textile and Supply Co., Los Angeles, California), a 6" x 6" x 3/16" color coded and numbered fiberglass plate and a lead alloy buckle. The fiberglass identification plate is molded to the midsection of the nylon collar. The lead buckle is used to fasten the collar ends together and to keep the numbered identification plate in an upright position after the collar is attached. Delvo Plastics, Anchorage, Alaska developed the technique for constructing, numbering and attaching the fiberglass identification to the nylon collar. The identification plate is curved, allowing a better fit



around the bear's neck. Additionally the anterior and posterior edges of the plate are turned upward at a 45 degree angle, reducing the possibility of skin irritation. One pound alloy buckles were cast in a steel mold. The buckle is about 1/4 inch thick and has three 3-1/8 inch long rectangular slits in its flat surface. The collar is attached and adjusted to the bear's neck by passing the two ends of the collar through the middle buckle slit and returning separate ends through the two remaining rectangular holes. The buckle is then fastened in place by hog-ringing the overlapping ends of the nylon belt. The completed collar weighs approximately two pounds.

Numbered nylon Rototags (Oberach Patent, Ltd., London, England) were placed in each ear. These tags were factory ordered in standard and small sizes and one of each size was placed in each ear. The small Rototag was used on brown bears for the first time this year. Standard Rototags have been used on brown/grizzly bears for the past five years and found to be superior to other ear tagging equipment tested. One problem, however, has been the occasional breakage of the outer 1/2" to 3/4" portion of the tag. Since this portion of the tag contains the number, there is always the possibility that a recaptured or sport harvested tagged bear cannot be identified. Factory modifications were made this year which allow tag identification in the event of this type of breakage. The modification included stamping a small number across the center base of the outside male part, which is the strongest part of the tag.

Captured brown bears were tattooed on the inside upper lip. The tattoo number is the same as the bear's permanent accession number. Tattoo pliers, numbers and ink were purchased from Stone Manufacturing and Supply Co., Kansas City, Missouri.

The brown/grizzly bear sealing program, which has been in force since 1961, provides the means by which tag recovery data are collected from hunter harvested bears. By regulation, brown and grizzly bear hides and skulls must be presented to a member of the Department for examination and sealing within 30 days after the date of kill or upon demand. The regulation also allows Department personnel to obtain a premolar tooth for age determination. When tagged bears are sealed, a tooth is pulled and the date and location of kill and skull and hide size are recorded.

Brown bears were observed and marked at McNeil River on lower Cook Inlet during July and early August. No direct effort was made to hunt bears, instead they were captured when the opportunity presented itself. The drugs Sernylan, Sparine and Wydase were used in combination to immobilize and tranquilize all bears captured. Weights were estimated and an attempt was made to inject 0.75 milligrams/pound body weight of Sernylan into the bear's ham or shoulder muscles. The drugs were administered by a hypodermic dart shot from a Palmer "Cap-Chur" gun (Palmer Chemical and Equipment Co., Inc., Douglasville, Georgia).

Immobilized bears were handled much the same as in previous years (Glenn, 1970). A concentrated effort was made to remove all collars attached

to bears in previous years. The necks of collared bears were examined for signs of skin irritation and the collars were evaluated on the basis of durability and ease of field identification.

For the second year, Utah State University students under the direction of Dr. Allan Stokes in cooperation with the Alaska Department of Fish and Game conducted brown bear behavioral studies at McNeil River. Students contributed to the Alaska Department of Fish and Game program, assisting in capturing and tagging bears and by collecting requested data.

Lentfer, et al (1967) reported the development of a method to section brown/grizzly bear teeth and examine cementum. Since that time various Department laboratory and bear project personnel have worked on, and significantly improved, the cementum aging technique. Preparation of brown/grizzly bear teeth for aging by counts of cementum annuli follows:

Teeth are decalcified by placing them in a plastic screwcap vial containing 1.5 oz. of 4 percent aqueous hydrochloric acid solution. Premolars are decalcified in approximately 2 days whereas molars require up to 1 week. The decalcified tooth is flexible. Remaining calcified areas may be detected by piercing the tooth with a dissection probe. Teeth should not remain in acid after the decalcification because cementum annuli may be lost.

Each decalcified tooth and its label is placed in a separate compartment of a perforated, plastic, compartmented box. The box lid is secured by a rubber band. The plastic box is then immersed in continuously exchanging fresh water for at least 6 hours to rinse out all remaining acid.

Sectioning is done by Cryostat (International-Harris) at a temperature of  $-15^{\circ}$  C. Cutting angle of the blade is placed at  $5^{\circ}$  to  $10^{\circ}$ . Longitudinal sections of approximately 40 microns are recommended. The tooth sections are placed in a dish of water and six sagittal sections which most nearly pass through the center of the pulp cavity are transferred to a petri dish containing undiluted hematoxylyn (Harris Hematoxylyn modified for Papanicolaou staining, PS1291, Paragon C. & C. Co., Inc., Bronx, New York) for approximately 2 minutes. The sections are rinsed in water and transferred to a vial of water until they develop a blue coloration. They are then dehydrated in successive 2-minute baths of 70%, 95% and 99% aqueous ethanol and immersed in toluene for approximately 10 seconds. The sections are kept flat during their immersion in 70% ethanol by sandwiching them between perforated, stainless steel plates. They are blotted on disposable wipers (Kimwipes, type 900-S, Kimberly Clark Corp., Neehah, Wisconsin) after each immersion in alcohol to reduce contamination of the subsequent baths. They are mounted in Permout No. M7649-16 (Scientific Products, Evanston, Illinois) and covered with a coverslip. The slides are dried in a horizontal position for several days before storage in a slide box.

An alternate method is used for teeth which are difficult to read when stained with the standard staining technique. Six sections are selected as described above. Place these sections in full-strength Harris Hematoxylin

for 15 minutes. The excess stain is rinsed off by dipping the sections in water. The sections are decolorized in acid-alcohol solution (1 part commercial hydrochloric acid in 99 parts of 70% aqueous ethanol) until pale, dipped in water to rinse off excess acid-alcohol, and immersed in ammonia water (2 to 3 ml. of 28% ammonium hydroxide per 1000 ml. of water or lithium carbonate (1.0 g. lithium carbonate per 100 ml. of water) until they become blue, rinsed in water for at least 30 minutes and stained in eosin (Eosin Stain, PS1201D, Paragon C. & C. Co., Inc., Bronx, New York) for 2 minutes. Finally the sections are dehydrated in two changes each of 95% and 100% ethanol, and cleared with a 30-second immersion in toluene. Completed sections are mounted and dried as described for the primary technique.

If a tooth is decalcified but not sectioned, it may be stored in water at 35° to 40° for no longer than 1 week. If the tooth is decalcified and sectioned, the sections can be stored in a screwtop glass vial containing a preservative for an indefinite time limit; a 10% solution of Formaldehyde or 98 parts of 30% to 70% aqueous ethanol solution with 2 parts of glycerine added to retard evaporation are the preferred preservatives. If the tooth must be resectioned after storage in a preservative, rinse the tooth in running water for 6 hours before sectioning.

## FINDINGS

### Capture Success

One hundred and one brown bears were successfully immobilized, marked and released on the Black-Chignik Lake study area between 11 June and 8 July, 1971. Included were 37 bears which had been tagged the previous year.

Bear tagging activity was concentrated in the open valleys and on the coastal plain avoiding regions of dense, vegetative cover. High capture success was achieved and only four bears, one adult female and three sibling yearlings, escaped after an attempt to capture was made. No permanent separation of bears within family units was observed following helicopter tagging disturbance. Seventeen family groups containing 31 young were captured. Seventy-five hours each of helicopter and fixed-wing aircraft flying time were required to complete this work.

Between 5 July and 6 August and between 25 August and 30 August, 1971, Department personnel conducted brown bear studies at McNeil River. The late arrival of bears in the area seriously hampered efforts to gather life history data and recapture bears. A total of 15 brown bears were immobilized; 10 of which were recaptures from previous years.

### Movement and Composition

Brown bear distribution and movement studies have been delayed one year. Additional delays will depend on results derived from further collar testing. Recovery data which include location and distance traveled of captured, killed and observed tagged bears are summarized in Table 1.

Table 1. Movement Data Recorded from Captured, Observed or Killed Alaska Peninsula Tagged Brown Bears

DATA RECORDED

1. Captured (cap), Observed (obs), Killed (kil)
2. Direct Distance (Miles) From Location of First Capture
3. Direct Distance (Miles) From Previous Location
4. Number of Young Accompanying Each Adult Sow
5. Adult Bear Present

Bear No.	Sex	Cem. Age	Date	Location	1	2	3	4	5
1	M	2.5	7/3/71	157°56'W 56°47'N	cap	-	-		0
		2.8	10/15/71	Aniakchak River	kil	?	?		?
2	F	4.5	7/3/71	157°35'W 56°45'N	cap	-	-		0
3	F	6.5	7/3/71	158°54'W 56°28'N	cap	-	-	2 No. 4 & 5	0
4/3 <sup>1/</sup>	F	1.5	7/3/71	158°54'W 56°28'N	cap	-	-		No. 3
5/3	F	1.5	7/3/71	158°54'W 56°28'N	cap	-	-		No. 3
6	M	3.5	7/4/71	158°56'W 56°27'N	cap	-	-		No. 7 & 8
7	M	3.5	7/4/71	158°56'W 56°27'N	cap	-	-		No. 6 & 8
8	M	4.5	7/4/71	158°56'W 56°27'N	cap	-	-		No. 6 & 7
9	F	6.5	7/4/71	158°52'W 56°27'N	cap	-	-	1 No. 10	0
10/9	M	.5	7/4/71	158°52'W 56°21'N	cap	-	-		No. 9
11	F	10.5	7/5/71	158°55'W 56°27'N	cap <sub>3/</sub>	-	-	1	0
			10/4/71	159°04'W 56°16'N	obs <sub>3/</sub>	13	3	1	
			10/6/71	159°07'W 56°16'N	obs <sub>3/</sub>	14	14	1	0

<sup>1/</sup> Virgule between bear accession numbers indicate offspring first and sow last.

<sup>3/</sup> Observed by guide - J.S.

Table 1. (cont.) Movement Recorded from Captured, Observed or Killed Alaska Peninsula Tagged Brown Bear

Bear No.	Sex	Cem. Age	Date	Location	1	2	3	4	5
12/11	F	.5	7/5/71 10/6/71	158°55'W 56°27'N 159°07'W 56°16'N	cap obs <sup>3/</sup>	- 14	- 14		No. 11 No. 11
13/779	M	.5	7/5/71	158°37'W 56°48'N	cap	-	-		No. 779
14/779	M	.5	7/5/71	158°37'W 56°48'N	cap	-	-		No. 779
15/779	F	.5	7/5/71	158°37'W 56°48'N	cap	-	-		No. 779
16	F	7.5	7/6/71 7/7/71	158°55'W 56°24'N 158°56'W 56°27'N	cap obs	- 3	- 3	1 No. 17	0
17/16	F	1.5	7/6/71 7/7/71	158°55'W 56°24'N 158°56'W 56°27'N	cap obs	- 3	- 3		No. 16 No. 16
18	M	13.5	7/6/71	159°02'W 56°22'N	kil <sup>2/</sup>	-	-		0
19	F	5.5	7/6/71 7/7/71	159°02'W 56°23'N 159°02'W 56°22'N	cap obs	- 1	- 1	2 No. 20 & 21	0
20/19	M	.5	7/6/71 7/7/71	159°02'W 56°23'N 159°02'W 56°22'N	cap obs	- 1	- 1		No. 19 No. 19
21/19	M	.5	7/6/71 7/7/71	159°02'W 56°23'N 159°02'W 56°22'N	cap cap	- 1	- 1		No. 19 No. 19
22	M	3.5	7/7/71	159°12'W 56°40'N	cap	-	-		0
23	F	10+ <sup>5/</sup>	7/7/71	158°28'W 56°37'N	cap	-	-	3 No. 24, 25, 26	0
24/23	F	.5	7/7/71	158°28'W 56°37'N	cap	-	-		No. 23

<sup>2/</sup> Killed during capture.<sup>3/</sup> Observed by guide - J.S.<sup>5/</sup> Estimated age.

Table 1. (cont.) Movement Recorded from Captured, Observed or Killed Alaska Peninsula Tagged Brown Bears

Bear No.	Sex	Cem. Age	Date	Location	1	2	3	4	5
25/23	F	.5	7/7/71	158°28'W 56°37'N	cap	-	-		No. 23
26/23	M	.5	7/7/71	158°28'W 56°37'N	cap	-	-		No. 23
27	F	.5	7/8/71	158°58'W 56°28'N	cap	-	-		One Unk.
28	F	.5	7/8/71	158°58'W 56°28'N	cap	-	-		One Unk.
29	F	3.5	7/8/71	160°08'W 56°22'N	cap	-	-		0
		3.8	10/1/71	Chignik R. (2 mi. from mouth)	kil				?
701	F	3.5	6/16/70	159°20'W 56°30'N	cap	-	-		0
			7/3/70	159°10'W 56°38'N	cap	12	12		0
			4.5 6/16/71	159°08'W 56°38'N	cap	12	2		0
702	M	2.5	6/17/70	159°00'W 56°30'N	cap	-	-		0
			6/29/70	159°27'W 56°31'N	cap	17	17		0
			7/27/70	160°12'W 56°15'N	obs	49	34		0
		2.8	10/1/70	158°58'W 56°32'N	kil	4	51		0
703	F	7.5	6/18/70	159°45'W 56°33'N	cap	-	-	2	0
			7/26/70	159°37'W 56°27'N	obs	9	9	2	No. 785
			8/1/70	159°37'W 56°27'N	obs <sup>4/</sup>	9	0	2	0
			11/18/70	159°38'W 56°27'N	obs	8	1	2	0
		8.5	6/20/71	159°18'W 56°23'N	cap	21	14	No. 704 & 705 0	0
704/703	M	1.5	6/18/70	159°45'W 56°33'N	cap	-	-		No. 703
			7/26/70	159°37'W 56°27'N	obs	9	9		No. 703, 785
			8/1/70	159°37'W 56°27'N	obs <sup>4/</sup>	9	0	2	0
			11/18/70	159°38'W 56°27'N	obs	8	1		No. 703
		2.5	6/23/71	159°29'W 56°30'N	cap	12	7		No. 705
			8/15/71	159°38'W 56°28'N	cap	7	6		No. 705

<sup>4/</sup> Observed by Commercial Fish Division personnel.

Table 1. (cont.) Movement Recorded from Captured, Observed or Killed Alaska Peninsula Tagged Brown Bears

Bear No.	Sex	Cem. Age	Date	Location	1	2	3	4	5
705/703	F	1.5	6/18/70	159°45'W 56°33'N	cap	-	-		No. 703
			7/26/70	159°37'W 56°27'N	obs	9	9		No. 703
			8/1/70	159°37'W 56°27'N	obs <sup>4/</sup>	9	0		No. 703
			11/18/70	159°38'W 56°27'N	obs	8	1		No. 703
		2.5	6/23/71	159°29'W 56°30'N	cap	12	7		No. 704
			8/15/71	159°38'W 56°28'N	obs	7	6		No. 704
706	F	3.5	6/18/70	159°33'W 56°32'N	cap	-	-		0
		4.5	6/21/71	159°40'W 56°27'N	cap	7	7		0
707	F	6.5	6/19/70	159°20'W 56°32'N	cap	-	-	1	0
			6/29/70	159°03'W 56°23'N	obs	15	15	1	0
			10/12/70	159°05'W 56°34'N	obs	10	13	1	0
		7.5	6/22/71	159°08'W 56°33'N	cap	8	3	No. 708	0
			10/1/71	Chignik R. (2 mi. from mouth)	kil	21	16		?
		7.8							
708/707	F	1.5	6/19/70	159°20'W 56°32'N	cap	-	-		No. 707
			6/29/70	159°03'W 56°23'N	obs	15	15		No. 707
			10/12/70	159°05'W 56°34'N	obs	10	13		No. 707
		2.5	6/23/71	159°14'W 56°37'N	cap	8	7		0 <sup>7/</sup>
710/825	M	1.5	6/19/70	158°58'W 56°48'N	cap	-	-		No. 825
			6/28/70	159°00'W 56°45'N	obs	4	4		No. 825
			11/17/70	159°00'W 56°40'N	obs	9	6		No. 825
		2.5	6/14/71	159°00'W 56°33'N	cap	17	8		No. 825
712/851	F	1.5	6/19/70	158°50'W 56°28'N	cap	-	-		No. 851
713/851	M	1.5	6/19/70	158°50'W 56°28'N	cap	-	-		No. 851
714	M	6.5	6/19/70	159°02'W 56°34'N	cap	-	-		0
			6/22/70	158°42'W 56°43'N	obs	16	16		0
			7/26/70	159°48'W 56°28'N	cap	30	45		0
		7.5	6/25/71	158°58'W 56°33'N	cap	3	32		No. 761

<sup>4/</sup> Observed by Commercial Fish Division personnel.<sup>7/</sup> Young recently abandoned by sow.

Table 1. (cont.) Movement Recorded from Captured, Observed or Killed Alaska Peninsula Tagged Brown Bears

Bear No.	Sex	Cem. Age	Date	Location	1	2	3	4	5
715	M	3.5	6/20/70	159°00'W 56°37'N	cap	-	-		No. 717
		3.8	10/5/70	158°59'W 56°34'N	kil	4	4		0
716	F	2.5	6/20/70	159°00'W 56°30'N	cap	-	-		0
			6/26/70	159°57'W 56°29'N	obs	2	2		0
		2.8	10/30/71	159°00'W 56°38'N	kil	10	11		0
717	F	7.5	6/20/70	159°00'W 56°37'N	cap	-	-		No. 715
			6/30/70	159°00'W 56°37'N	obs	0	0		0
719	F	8.5	6/20/70	158°58'W 56°47'N	cap	-	-		0
			6/24/70	159°03'W 56°47'N	obs	3	3		0
720	F	2.5	6/20/70	160°04'W 56°15'N	cap	-	-		No. 721
721	M	4.5	6/20/70	160°04'W 56°15'N	cap	-	-		No. 720
722	F	14.5	6/20/70	158°56'W 56°47'N	cap	-	-	2	0
			6/23/70	158°53'W 56°47'N	obs	2	2	1	0
			6/24/70	158°53'W 56°47'N	obs	2	0	1	0
			9/18/70	159°30'W 56°23'N	obs	35	36	2	0
		15.5	6/23/71	158°58'W 57°47'N	cap	1	35	1	No. 724
									No. 723 & 724
723/722	F	1.5	6/20/70	158°56'W 56°47'N	cap	-	-		No. 722
			6/23/70	158°53'W 56°47'N	obs	2	2		No. 722
			6/24/70	158°53'W 56°47'N	obs	2	0		No. 722
			9/18/70	159°30'W 56°23'N	obs	35	36		No. 722
			6/23/71	No. 723 not present when sow (722) and sibling (724) captured					
724/722	F	1.5	6/20/70	158°56'W 56°47'N	cap	-	-		No. 722
			6/23/70	158°53'W 56°47'N	obs	2	2		No. 722
			6/24/70	158°53'W 56°47'N	obs	2	0		No. 722
			9/18/70	159°30'W 56°23'N	obs	35	36		No. 722
		2.5	6/23/71	158°58'W 56°47'N	cap	1	35		No. 722



Table 1. (cont.) Movement Recorded from Captured, Observed or Killed Alaska Peninsula Tagged Brown Bears

Bear No.	Sex	Cem. Age	Date	Location	1	2	3	4	5
725A	F	6.5	6/20/70	158°55'W 56°38'N	cap	-	-		0
			7/1/70	158°42'W 56°45'N	obs	11	11	0	
			9/18/70	158°49'W 56°37'N	obs	4	10	0	
		7.5	6/25/71	158°59'W 56°36'N	cap	4	6	No. 860	
725B	F	Unk	6/21/70	158°44'W 56°45'N	cap	-	-	2	0
			7/1/70	158°43'W 56°46'N	obs	1	1	2	0
			7/2/70	158°17'W 56°42'N	obs	18	17	2	0
No. 726 & 727									
726/725B	F	Cub	6/21/70	158°44'W 56°45'N	cap	-	-		No. 725B
			7/1/70	158°43'W 56°46'N	obs	1	1		No. 725B
			7/2/70	158°17'W 56°42'N	obs	18	17		No. 725B
727/725B	M	Cub	6/21/70	158°44'W 56°45'N	cap	-	-		No. 725B
			7/1/70	158°43'W 56°46'N	obs	1	1		No. 725B
			7/2/70	158°17'W 56°42'N	obs	18	17		No. 725B
728	F	10.5	6/21/70	159°00'W 56°30'N	cap	-	-	2	0
			7/3/70	158°58'W 56°31'N	obs	2	2	2	0
			7/6/70	158°58'W 56°29'N	obs	3	2	2	0
			9/7/70	158°56'W 56°27'N	obs	4	2	2	0
			10/15/70	158°56'W 56°40'N	obs	12	15	2	0
No. 729 & 730									
729/728	F	1.5	6/21/70	159°00'W 56°30'N	cap	-	-		No. 728
			7/3/70	158°58'W 56°31'N	obs	2	2		No. 728
			7/6/70	158°58'W 56°29'N	obs	3	2		No. 728
			9/7/70	158°56'W 56°27'N	obs	4	2		No. 728
			10/15/70	158°56'W 56°40'N	obs	12	15		No. 728
730/728	F	1.5	6/21/70	159°00'W 56°30'N	cap	-	-		No. 728
			7/3/70	158°58'W 56°31'N	obs	2	2		No. 728
			7/6/70	158°58'W 56°29'N	obs	3	2		No. 728
			9/7/70	158°56'W 56°27'N	obs	4	2		No. 728
			10/15/70	158°56'W 56°40'N	obs	12	15		No. 728

Table 1. (cont.) Movement Recorded from Captured, Observed or Killed Alaska Peninsula Tagged Brown Bears

Bear No.	Sex	Cem. Age	Date	Location	1	2	3	4	5
731	F	12.5	6/22/70	158°53'W 56°37'N	cap	-	-	2	0
			7/25/70	158°41'W 56°24'N	obs	17	17	2	0
			7/28/70	158°41'W 56°24'N	obs	17	0	2	0
			9/14/70	158°52'W 56°37'N	obs	1	16	2	0
			9/18/70	158°49'W 56°37'N	obs	3	2	2	0
		13.5	7/4/71	158°58'W 56°29'N	cap	10	2	2	0
			9/25/71	158°55'W 56°33'N	obs <sup>3/</sup>	4	5	2	0
			10/26/71	158°54'W 56°33'N	obs <sup>3/</sup>	4	0	2	0
No. 732 & 733									
732/731	M	1.5	6/22/70	158°53'W 56°37'N	cap	-	-		No. 731
			7/25/70	158°41'W 56°24'N	obs	17	17		No. 731
			7/28/70	158°41'W 56°24'N	obs	17	0		No. 731
			9/14/70	158°52'W 56°37'N	obs	1	16		No. 731
			9/18/70	158°49'W 56°37'N	obs	3	2		No. 731
		2.5	7/4/71	158°58'W 56°29'N	cap	10	2		No. 731
			9/25/71	158°55'W 56°33'N	obs <sup>3/</sup>	4	5		No. 731
			10/26/71	158°54'W 56°33'N	obs <sup>3/</sup>	4	0		No. 731
733/731	F	1.5	6/22/70	158°53'W 56°37'N	cap	-	-		No. 731
			7/25/70	158°41'W 56°24'N	obs	17	17		No. 731
			7/28/70	158°41'W 56°24'N	obs	17	0		No. 731
			9/14/70	158°52'W 56°37'N	obs	1	16		No. 731
			9/18/70	158°49'W 56°37'N	obs	3	2		No. 731
		2.5	7/4/71	158°58'W 56°29'N	cap	10	2		No. 731
			9/25/71	158°55'W 56°33'N	obs <sup>3/</sup>	4	5		No. 731
			10/26/71	158°54'W 56°33'N	obs <sup>3/</sup>	4	0		No. 731
734	F	6.5	6/22/70	158°53'W 56°32'N	cap	-	-	1	0
			7/6/70	158°57'W 56°27'N	obs	6	6	1	0
			7/25/70	158°42'W 56°24'N	obs	12	10	0	0
			9/18/70	158°49'W 56°24'N	obs	9	4	1	0
No. 735									
735/734	M	1.5	6/20/70	158°53'W 56°32'N	cap	-	-		No. 734
			7/6/70	158°57'W 56°27'N	obs	6	6		No. 734
			9/18/70	158°49'W 56°24'N	obs	9	6		No. 734
		2.5	7/3/71	158°54'W 56°28'N	cap	5	6		0

<sup>3/</sup> Observed by guide - J.S.

Table 1. (cont.) Movement Recorded from Captured, Observed or Killed Alaska Peninsula Tagged Brown Bears

Bear No.	Sex	Cem. Age	Date	Location	1	2	3	4	5
736	F	5.5	6/22/70	159°10'W 56°25'N	cap	-	-		0
		6.5	6/15/71	159°10'W 56°28'N	cap	4	4		0
737	M	1.5	6/23/70	158°58'W 56°47'N	cap	-	-		0
		1.8	10/13/70	158°35'W 56°43'N	kil	15	15		0
738	F	13.5	6/23/70	158°30'W 56°39'N	cap	-	-	4	0
			9/21/70	158°32'W 56°36'N	obs	4	4	4	0
No. 739 & 740									
739/738	F	2.5	6/23/70	158°30'W 56°39'N	cap	-	-		No. 738
			9/21/70	158°32'W 56°36'N	obs	4	4		No. 738
740/738	F	2.5	6/23/70	158°30'W 56°39'N	cap	-	-		No. 738
			9/21/70	158°32'W 56°36'N	obs	4	4		No. 738
741	F	3.5	6/23/70	158°40'W 56°38'N	cap	-	-		0
742	F	3.5	6/24/70	159°12'W 56°30'N	cap	-	-		0
			6/29/70	159°17'W 56°35'N	obs	7	7		0
			7/4/70	159°04'W 56°31'N	obs	5	9		0
			9/7/70	158°54'W 56°32'N	obs	12	7		0
		4.5	6/16/71	159°07'W 56°33'N	kil <sup>2/</sup>	5	8		0
743	F	3.5	6/24/70	159°12'W 56°38'N	cap	-	-		0
744	M	2.5	6/24/70	159°50'W 56°25'N	cap	-	-		0
			6/30/70	159°50'W 56°27'N	obs	2	2		No. 775
745	F	15.5	6/24/70	160°22'W 56°15'N	cap	-	-		No. 746
746	M	3.5	6/24/70	160°22'W 56°15'N	cap	-	-		No. 745
747	F	5.5	6/24/70	158°58'W 56°47'N	cap	-	-	1	0
			9/26/70	158°50'W 56°27'N	obs	24	24	1	0
		6.5	6/18/71	159°00'W 56°46'N	cap	2	22	1	0
No. 748									

<sup>2/</sup> Killed during capture.

Table 1 (c.) Movement Recorded from Captured, Observed or Killed Alaska Peninsula Tagged Brown Bears

Bear No.	Sex	Cem. Age	Date	Location	1	2	3	4	5
748/747	F	1.5	6/24/70	158°58'W 56°47'N	cap	-	-		No. 747
			9/26/70	158°50'W 56°27'N	obs	24	24		No. 747
		2.5	6/18/71	159°00'W 56°46'N	cap	2	22		No. 747
749	F	3.5	6/24/70	159°00'W 56°47'N	cap	-	-		0
			6/30/70	158°52'W 56°47'N	obs	5	5		0
			7/2/70	158°30'W 56°40'N	obs	21	16		0
750	F	9.5	6/25/70	160°02'W 56°12'N	cap	-	-	2 No. 751	0
751/750	M	1.5	6/25/70	160°02'W 56°12'N	cap	-	-		No. 750
752	M	3.5	6/25/70	160°02'W 56°12'N	cap	-	-		0
753	F	14.5	6/25/70	159°02'W 56°26'N	cap	-	-	2	0
			7/6/70	159°02'W 56°25'N	obs	1	1	2	0
		15.5	6/24/71	159°04'W 56°23'N	cap	4	3	No. 754 & 755 0	851 & 853
754/753	M	1.5	6/26/70	159°02'W 56°26'N	cap	-	-		No. 753
			7/6/70	159°02'W 56°25'N	obs	1	1		No. 753
		2.5	6/30/71	158°53'W 56°28'N	cap	6	7		0
		2.8	10/1/71	159°37'W 56°27'N	kil	22	27		?
755/753	F	1.5	6/26/70	159°02'W 56°26'N	cap	-	-		No. 753
			7/6/70	159°02'W 56°25'N	obs	1	1		No. 753
756	F	5.5	6/26/70	159°02'W 56°26'N	cap	-	-		0
757	F	13.5	6/26/70	159°02'W 56°26'N	cap	-	-	3	0
			9/27/70	159°04'W 56°33'N	obs	8	8	3	0
			5/20/71	158°44'W 56°28'N	obs <sup>3/</sup>	12	14	0	0
								No. 758, 759, 760	
758/757	F	1.5	6/26/70	159°02'W 56°26'N	cap	-	-		No. 757
			9/27/70	159°04'W 56°33'N	obs	8	8		No. 757

<sup>3/</sup> Observed by guide - J.S.

Table 1. (cont.) Movement Recorded from Captured, Observed or Killed Alaska Peninsula Tagged Brown Bears

Bear No.	Sex	Cem. Age	Date	Location	1	2	3	4	5
759/757	F	1.5	6/26/70	159°02'W 56°26'N	cap	-	-		No. 757
			9/27/70	159°04'W 56°33'N	obs	8	8		No. 757
760/757	F	1.5	6/28/70	159°10'W 56°40'N	cap	-	-		No. 757
			9/27/70	159°04'W 56°33'N	obs	8	8		No. 757
761	F	12.5	6/28/70	159°10'W 56°40'N	cap	-	-		0
			8/25/70	159°27'W 56°25'N	obs <sup>4/</sup>	20	20		No. 785
			6/25/71	158°58'W 56°33'N	cap	11	20		No. 714
		13.8	10/6/71	158°57'W 56°33'N	kil	12	2		
762	M	6.5	6/28/70	158°58'W 56°48'N	cap	-	-		0
			7/7/70	158°39'W 56°46'N	obs	12	12		0
763	F	3.5	6/27/70	159°45'W 56°33'N	cap	-	-		0
		3.8	10/5/70	159°32'W 56°23'N	kil	14	14		0
764A	M	3.5	6/28/70	159°45'W 56°27'N	cap	-	-		0
764B	F	5.5	6/28/70	159°45'W 56°27'N	cap	-	-	2	0
			11/18/70	159°43'W 56°29'N	obs	3	3	2	0
								No. 765 & 766	
765/764B	M	1.5	6/28/70	159°45'W 56°27'N	cap	-	-		No. 764B
			11/18/70	159°43'W 56°29'N	obs	3	3		No. 764B
766/764B	F	1.5	6/28/70	159°45'W 56°27'N	cap	-	-		No. 764B
			11/18/70	159°43'W 56°29'N	obs	3	3		No. 764B
767	M	3.5	6/29/70	159°17'W 56°35'N	cap	-	-		0
			7/26/70	159°15'W 56°39'N	obs	5	5		0
		4.5	6/29/71	159°25'W 56°33'N	cap	6	10		0
768	M	2.5	6/29/70	159°32'W 56°30'N	cap	-	-		0
		3.8	10/11/71	Chignik River	kil				

<sup>4/</sup> Observed by Commercial Fish Division personnel.

Table 1. (cont.) Movement Recorded from Captured, Observed or Killed Alaska Peninsula Tagged Brown Bears

Bear No.	Sex	Cem. Age	Date	Location	1	2	3	4	5
769	F	5.5	6/30/70	158°58'W 56°48'N	cap	-	-		0
			9/18/70	158°50'W 56°25'N	obs	27	27		0
		6.5	6/24/71	158°31'W 56°37'N	cap	21	18		One Unk.
770	F	10.5	6/30/70	158°58'W 56°48'N	cap	-	-	2	0
			7/1/70	158°58'W 56°48'N	obs	0	0	2	0
			10/4/71	158°54'W 56°52'N	obs	5	5	2	0
No. 771 & 772									
771/770	M	1.5	6/30/70	158°58'W 56°48'N	cap	-	-		No. 770
			7/1/70	158°58'W 56°48'N	obs	0	0		No. 770
772/770	M	1.5	6/30/70	158°58'W 56°48'N	cap	-	-		No. 770
			7/1/70	158°58'W 56°48'N	obs	0	0		No. 770
773	F	9.5	6/30/70	159°16'W 56°37'N	cap	-	-		0
774	M	2.5	6/30/70	159°42'W 56°27'N	cap	-	-		0
775	M	5.5	6/30/70	159°50'W 56°27'N	cap	-	-		0
		6.8	10/29/71	Sandy River	kil				
776	F	3.5	7/1/70	158°58'W 56°32'N	cap	-	-		0
		4.5	6/13/71	158°53'W 56°28'N	cap	5	5		0
778	F	3.5	7/1/70	159°58'W 56°27'N	cap	-	-		0
			7/29/70	160°12'W 56°22'N	obs	11	11		0
		4.5	7/7/71	159°49'W 56°30'N	cap	7	18		0
779	F	5.5	7/2/70	158°35'W 56°47'N	cap	-	-	0	0
			7/27/70	158°08'W 56°33'N	obs	23	23	0	0
		6.5	7/5/71	158°37'W 56°48'N	cap	1	25	3	0
			10/31/71	158°35'W 56°52'N	obs <sup>3/</sup>	6	5	1	No. 13, 14 & 15

<sup>3/</sup> Observed by guide - J.S.

Table 1. (cont.) Movement Recorded from Captured, Observed or Killed Alaska Peninsula Tagged Brown Bears

Bear No.	Sex	Cem. Age	Date	Location	1	2	3	4	5
780	M	10+ <sup>5/</sup>	7/2/70	158°35'W 56°47'N	cap	-	-		0
			7/14/70	158°30'W 56°54'N	obs	9	9		0
781	F	3.5	7/2/70	158°35'W 56°47'N	cap	-	-		0
		4.8	10/10/71	G.M. Unit 17 20 mi. NE Heiden	kil	-	-		?
782	F	5.5	7/2/70	158°28'W 56°47'N	cap	-	-		0
783	M	10+ <sup>5/</sup>	7/2/70	158°15'W 56°43'N	cap	-	-		0
784	M	13.5	7/3/70	158°55'W 56°23'N	cap	-	-		0
785	F	6.5	7/4/70	159°10'W 56°32'N	cap	-	-	2	0
			7/26/70	159°40'W 56°25'N	obs	21	21	2	0
			8/25/70	159°27'W 56°25'N	obs	13	8	2	No. 761
			11/18/70	159°40'W 56°25'N	obs	21	8	2	0
					No. 786 & 788				
786/785	M	1.5	7/4/70	159°10'W 56°32'N	cap	-	-		No. 785
			7/26/70	159°40'W 56°25'N	obs	21	21		No. 785
			8/25/70	159°27'W 56°25'N	obs	13	8		No. 785
			11/18/70	159°40'W 56°25'N	obs	21	8		No. 785
		2.5	6/29/71	159°26'W 56°26'N	cap	13	9		0
788/785	F	1.5	7/4/70	159°10'W 56°32'N	cap	-	-		No. 785
			7/26/70	159°40'W 56°25'N	obs	21	21		No. 785
			8/25/70	159°27'W 56°25'N	obs	13	8		No. 785
			11/18/70	159°40'W 56°25'N	obs	21	8		No. 785
		2.5	6/18/71	159°45'W 56°28'N	cap	23	5		0
789	M	2.5	7/4/70	160°12'W 56°22'N	cap	-	-		0
		3.0	5/15/71	West Fork River	kil	44	44		-
790	F	4.5	7/6/70	159°00'W 56°30'N	cap	-	-		0

<sup>5/</sup> Estimated age.

Table 1. nt.) Movement Recorded from Captured, Observed Killed Alaska Peninsula Tagged Brown Bears

Bear No.	Sex	Cem. Age	Date	Location	1	2	3	4	5
791	M	5.5 6.5	7/6/70 5/16/71	158°46'W 56°25'N Upper Kujulik Bay	cap kil	- -	- -		0 -
792	M	2.5	7/6/70	158°50'W 56°25'N	cap	-	-		0
794	F	12.5	7/6/70 7/28/70	159°02'W 56°22'N 159°05'W 56°20'N	cap obs	- 3	- 3	3 3	0 0
								No. 795 & 796	
795/794	M	2.5	7/6/70	159°02'W 56°22'N 159°05'W 56°20'N	cap obs	- 3	- 3		No. 794 No. 794
796/794	M	2.5 3.8	7/6/70 10/1/71	159°02'W 56°22'N 159°05'W 56°20'N Chignik River	cap obs kil	- 3 ?	- 3 ?		No. 794 No. 794 ?
798	F	3.5	7/7/70	158°50'W 56°27'N	cap	-	-		0
799	M	3.5	7/7/70	158°50'W 56°27'N	cap	-	-		0
801	M	4.5 <sup>5/</sup>	8/9/68 9/6/68 5/2/70	158°46'W 56°26'N 158°46'W 56°26'N 158°34'W 56°43'N	cap obs kil	- 0 21	- 0 21		0 0 0
802	F	7.5	8/10/68	158°42'W 56°27'N	cap	-	-	3 Unk.	0
805	F	2.5	8/10/68 9/24/68	158°56'W 56°20'N 158°52'W 56°18'N	cap kil	- 3	- 3		0 0
806	F	4.5	8/10/68 9/15/68	158°48'W 56°27'N 158°52'W 56°27'N	cap kil	- 3	- 3		0 0
809	F	10.5	8/11/68	158°42'W 56°27'N	cap	-	-	2 Unk.	0
810	M	3.5	8/12/68 8/17/68	158°47'W 56°26'N 158°42'W 56°24'N	cap obs <sup>4/</sup>	- 4	- 4		1 0

4/ Observed by Commercial Fish Division Personnel.

5/ Estimated age.



Table 1. (cont.) Movement Recorded from Captured, Observed or Killed Alaska Peninsula Tagged Brown Bears

Bear No.	Sex	Cem. Age	Date	Location	1	2	3	4	5
811	F	14.5	8/12/68	158°49'W 56°24'N	cap	-	-	3 Unk.	0
812	M	3.5	8/13/68	Boulevard Creek	cap	-	-		0
815	M	3.5	6/11/71	159°08'W 56°19'N	cap	-	-		816 & 2 Unk
816	F	3.5	6/11/71	159°08'W 56°19'N	cap	-	-		815 & 2 Unk
817	F	3.5	6/12/71	159°08'W 56°19'N	cap	-	-		May be siblings of 815 & 816
818	F	7.5	6/12/71	158°51'W 56°17'N	cap	-	-	2 No. 819 & 820	0
819/818	F	1.5	6/12/71	158°51'W 56°17'N	cap	-	-		No. 818
820/818	F	1.5	6/12/71	158°51'W 56°17'N	cap	-	-		No. 818
821	M	3.5	6/12/71	158°59'W 56°32'N	cap	-	-		0
822	F	5.5	6/13/71	158°43'W 56°26'N	cap	-	-		0
823	F	4.5	6/13/71	158°52'W 56°23'N	cap	-	-		0
824	M	8.5 <sup>5/</sup>	6/13/71	158°44'W 56°21'N	cap	-	-		One Unk.
825 <sup>8/</sup>	F	10.5	6/19/70	158°58'W 56°48'N	cap	-	-	1	0
			6/28/70	159°00'W 56°45'N	obs	4	4	1	0
			11/17/70	159°00'W 56°40'N	obs	9	6	1	0
		11.5	6/14/71	159°00'W 56°33'N	cap	17	8	1	0
								No. 710	
827	M	5.5	6/17/71	159°05'W 56°45'N	cap	-	-		0

<sup>5/</sup> Estimated age<sup>8/</sup> 1970 Tattooed No. 709, Retattooed 1971 No. 825.

Table 1. (cont.) Movement Recorded from Captured, Observed or Killed Alaska Peninsula Tagged Brown Bears

Bear No.	Sex	Cem. Age	Date	Location	1	2	3	4	5
828	F	3.5	6/17/71	159°05'W 56°45'N	cap	-	-		0
829	F	16.5	6/19/71	159°37'W 56°26'N	cap	-	-	3 Unk.	0
830	F	3.5	6/19/71	159°08'W 56°17'N	cap	-	-		0
			8/15/71	159°07'W 56°18'N	cap	-	-		0
831	F	4.5	6/19/71	159°03'W 56°20'W	cap	-	-		0
832 <sup>9/</sup>	M	1.5	8/11/68	158°50'W 56°22'N	cap	-	-		0
		4.5	6/20/71	159°18'W 56°23'N	cap	18	18		No. 703
833/867	F	2.5	6/20/71	159°15'W 56°23'N	cap	-			One Unk.*
			7/2/71	159°13'W 56°30'N	cap	8	8		No. 867
			7/7/71	158°57'W 56°32'N	cap	15	10		No. 867
			8/10/71	159°04'W 56°32'N	obs	12	10		No. 867
835	M	3.5	6/21/71	159°13'W 56°30'N	cap	-	-		0
836	F	5.5	6/21/71	158°45'W 56°37'N	cap	-	-		0
838	F	13.5	6/22/71	159°43'W 56°32'N	cap	-	-		0
839	F	12.5	6/22/71	159°29'W 56°37'N	cap	-	-	No. 840,841 & 842	0
			7/7/71	158°59'W 56°33'N	obs	21	21	Three yrlg. cubs	0
			8/11/71	159°09'W 56°19'N	obs	25	18	Three yrlg. cubs	0
840/839	F	1.5	6/22/71	159°29'W 56°37'N	cap	-	-		No. 839
					obs	21	21		No. 839
					obs	25	18		No. 839
841/839	F	1.5	6/22/71	159°29'W 56°37'N	cap	-	-		No. 839
					obs	21	21		No. 839
					obs	25	18		No. 839

<sup>9/</sup> 1968 Tattooed No. 808, Retattooed 1971 No. 832.

\* Sow (867) and two young (868 and 869) not captured but present.

Table 1. (cont.) Movement Recorded from Captured, Observed or Killed Alaska Peninsula Tagged Brown Bears

Bear No.	Sex	Cem. Age	Date	Location	1	2	3	4	5
842/839	F	1.5	6/22/71	159°29'W 56°37'N	cap obs obs	- 21 25	- 21 18		No. 839 No. 839 No. 839
843	F	4.5	6/22/71	159°10'W 56°32'N	cap	-	-		0
851 <sup>10/</sup>	F	6.5	8/10/68	158°47'W 56°23'N	cap	-	-	0	0
		8.5	6/19/70	158°50'W 56°28'N	cap	6	6	2	0
		9.5	6/24/71	159°04'W 56°23'N	cap	10	11	No. 712 & 713 0	No. 753 & No. 853
853	M	6.5	6/24/71	159°04'W 56°23'N	cap	-	-		851 & 753
854	F	11.5	6/24/71	158°52'W 56°23'N	cap	-	-	2 No. 855 & 856	0
24 855/854	F	2.5	6/24/71	158°52'W 56°23'N	cap	-	-		No. 854
856/854	M	2.5	6/24/71	158°52'W 56°23'N	cap	-	-		No. 854
860	M	5.5	6/25/71	158°59'W 56°36'N	cap	-	-		No. 725A
861	F	5.5	6/30/71	158°38'W 56°27'N	cap	-	-		0
862	M	4.5	6/30/71	158°43'W 56°29'N	cap	-	-		0
		4.8	10/28/71	159°00'W 56°38'N	kil	9	9		0
863	F	2.5	6/30/71	158°43'W 56°23'N	cap	-	-		With Unk. bear same size
864	F	9.5	7/1/71	158°28'W 56°42'N	cap	-	-	2 No. 865 & 866	0

<sup>10/</sup> 1968 Tattooed No. 804, Retattooed 1970 No. 711, 1971 Retattooed No. 851

Table 1. (cont.) Movement Recorded from Captured, Observed &amp; Killed Alaska Peninsula Tagged Brown Bears

Bear No.	Sex	Cem. Age	Date	Location	1	2	3	4	5
865/864	M	2.5	7/1/71	158°28'W 56°42'N	cap	-	-		No. 864
866/864	M	2.5	7/1/71	158°28'W 56°42'N	cap	-	-		No. 864
867	F	14.5	7/2/71	159°13'W 56°30'N	cap	-	-	No. 833,868 & 869	
			7/7/71	158°57'W 56°32'N	obs	10	10	No. 833,868 & 869	
			8/10/71	159°04'W 56°32'N	obs	12	11	No. 833,868 & 869	
868/867	M	2.5	7/2/71	159°13'W 56°30'N	cap	-	-		No. 867
			7/7/71	158°57'W 56°32'N	obs	10	10		No. 867
			8/10/71	159°04'W 56°32'N	obs	12	11		No. 867
		2.8	10/4/71	159°37'W 56°28'N	kil	17	26		No. 867
869/867	F	2.5	7/2/71	158°13'W 56°30'N	cap	-	-		No. 867
			7/7/71	158°57'W 56°32'N	obs	10	10		No. 867
			8/10/71	159°04'W 56°32'N	obs	12	11		No. 867
870 <sup>11/</sup>	M	3.5	6/20/70	158°58'W 56°46'N	cap	-	-		0
			6/24/70	159°12'W 56°30'N	obs	21	21		742/743
			7/27/70	158°07'W 56°36'N	obs	34	42		0
		4.5	7/2/71	159°27'W 56°37'N	cap	22	51		0
871/900 <sup>13/</sup>	F	2.5	7/7/70	158°50'W 56°27'N	cap	-	-		No. 900
			7/28/70	158°47'W 56°22'N	obs	6	6		No. 900
			9/18/70	158°50'W 56°25'N	obs	2	4		No. 900
		3.5	7/2/71	158°55'W 56°28'N	cap	3	5		0
900	F	10.5	7/7/70	158°50'W 56°27'N	cap	-	-	2	0
			7/28/70	158°47'W 56°22'N	obs	6	6	2	0
			9/18/70	158°50'W 56°25'N	obs	2	4	2	0
								No. 871 & 902	
902/900	M	2.5	7/7/70	158°50'W 56°27'N	cap	-	-		No. 900
			7/28/70	158°47'W 56°22'N	obs	6	6		No. 900
			9/18/70	158°50'W 56°25'N	obs	2	4		No. 900

<sup>11/</sup> 1970 Tattooed No. 718, Retattooed 1971 No. 870.<sup>13/</sup> 1970 Tattooed No. 901, Retattooed 1971 No. 871.

Fourteen tagged bears, nine males and five females, were killed by hunters (Nos. 1, 29, 707, 716, 754, 761, 768, 775, 781, 789, 791, 796, 862 and 868) on the Black-Chignik Lake study area. Two were killed in the spring and 12 during the fall hunting seasons.

The exchange of bears between the mountains, valleys and coastal plain continued again this spring. Bears were numerous on the coastal plain until the arrival of salmon in early July. From 15 July through mid-August, an unusually large escapement of red salmon (Onchorhynchus nerka) overcrowded most spawning tributaries of the Black-Chignik Lake system. Brown bears were first observed catching salmon on 3 July as salmon moved up shallow, braided channels of lower West Fork River. By 10 July, most bears were found on or near salmon spawning streams.

The first sow with cubs-of-the-year was sighted in West Fork River Valley on 30 June. After 1 July, many sows with cubs-of-the-year were observed and six sows with 12 cubs were captured, marked and released. No large male bears (600+ pounds) were seen on the coastal plain during spring field activities. On 5 July, two large boars were observed adjacent to salmon streams but in dense alder thickets. The following day, a 13 year old boar weighing 925 pounds was captured on lower West Fork River.

One trend count by fixed-wing aircraft was completed on the Black-Chignik Lake study area on 10 August. Due to adverse weather conditions, the count was conducted one week too late. Bears at this time were not concentrated on salmon streams but rather were going to and from streams feeding on salmon and berries. Only 33 bears were counted during the two hour and forty-five minute aerial survey. The composition of bears observed is presented here, however the sample size is small and probably is not comparable with past trend count data. Bears observed are as follows: females with young - 6, cubs - 7, young one and two years old - 8, single bears - 12.

The sex composition of captured bears three years old and older was 20 males and 46 females, and of young (cubs, yearlings and two year olds) was 15 males and 23 females. Again this year there was a low proportion of males in the seven year plus age classes. Ages obtained from reading annuli of sectioned PM<sub>1</sub> teeth show only three males as compared to 19 females were in these age classes. The average ages of these bears were males - 10 and females - 11 years old. In comparison, 39 of 57 bears killed on the study area during the 1971 bear hunting season were males. Of these 39 males, 15 were seven years of age or older (Range 7-18 mean age 12). The possibility that the June (captured bear) sample is biased precludes conclusions regarding true adult population sex and age ratios. Observations done this spring indicate that sex and age class segregation does occur in the study area. Large boars and sows with cubs-of-the-year remain in the mountains or in areas with thick vegetative cover. In early July some sows with cubs-of-the-year move to open valleys and onto the coastal plain. Older males seldom are seen until after the arrival of salmon and even then are found close to escape cover.

Table 2. Spring 1970 and 1971 composition of brown bears captured on the Black-Chignik Lake study area.

	1970 No.	1971 No.	1970 %	1971 %
Females w/young	19	18***	18.3	16.8
Cubs	2	12	1.9	11.2
Young 1 and 2 years old	32*	29**	34.6	27.1
Young combined	34	41	36.5	38.3
Single bear	47	48	45.2	44.9
Total bears	104	107		

\* Includes four yearlings that escaped in the capture attempt.

\*\* Includes three yearlings that escaped in the capture attempt.

\*\*\* Includes one sow that escaped in the capture attempt.

Table 3. Spring 1970-1971 sex and age composition of brown bears captured on the Black-Chignik Lakes study area.

	1970 No.	1971 No.
Cubs		
Male	1	6
Female	1	6
1.5 yrs. old		
Male	8	0
Female	15	8
2.5 yrs. old		
Male	13	9
Female	6	9
3.5 yrs. old		
Male	6	8
Female	11	7
4.5 yrs. old		
Male	2	6
Female	1	9
5.5 yrs. old		
Male	2	2
Female	7	4
6.5 yrs. old		
Male	2	1
Female	3	6
7+ yrs. old		
Male	3	3
Female	19	19

Next year bears will be captured in the fall (probably early November). At that time, bear observations as well as the sex and age composition of captured bears will be compared with those found in June, July and August. Tables 2 and 3 summarize the spring 1970 and 1971 composition of brown bears captured on the study area.

At McNeil River the summer did not fall into the pattern of normal years. Large snow banks and ice were present down to sea level in July because of a severe winter and late spring. This ice remained into mid-August in protected areas. Vegetation was late in emergence and the entire phenology of the area appeared delayed by about three weeks. The normal concentration of bears feeding upon vegetation on Mikfik Flats never materialized and bears tended to move through the area on a random basis. The Mikfik Creek red salmon (Onchorhynchus nerka) run was lightly utilized by bears. Both king salmon (Onchorhynchus tshawytscha) and dog salmon (Onchorhynchus keta) were present at McNeil River on 15 July but bears made no effort to fish for them. The first bears arrived at the Falls on 25 July. During the past two years (observations during the month of August have been made only during 1969 and 1970) bears abandoned the Falls by mid-August but this year bears were still present on 29 August when field observations terminated.

Between 24 July and 29 August, the research crew spent 257 man hours of observation at McNeil River Falls. During this period of observation, 57 bear groups and 79 individual bears were identified. Included were 12 sows accompanied by 20 young (cubs, yearlings and two year olds). The population compositions for the years 1969 through 1971 are presented in Tables 4 and 5.

On September 24, a marked sow (No. 53) and her two yearling cubs were captured at Kulik River. The sow was first captured at McNeil River in 1968 and was not recaptured again until this year. Sometime between August and early September, the family group moved to Kulik River, a straightline distance of 35 miles. Observed at Kulik River at the same time was bear (No. 124) which has a McNeil River marking history dating back to 1963. This bear wore the new nylon-fiberglass collar attached at McNeil River in August, 1971. The collar appeared to be in good condition with the identification plate in the upright position.

### Life History

#### Black-Chignik Lakes

The minimum and maximum breeding ages of sows captured on the Black-Chignik Lake study area were 3.5 (Bear No. 747) and 14.5 (Bear No. 829) years old. The oldest producing female bear handled by the Department was an 18 year old sow with two cubs (approximately 11 months old), killed within the city limits of Kodiak on 6 January, 1971. The sow and one cub were killed at the city dump during an attempt by Department personnel to relocate the



Table 4. Population Composition of Bears Observed at McNeil River, 1969-1971.

Class	<u>1969</u>		<u>1970</u>		<u>1971*</u>	
	No. Observed	Total Bears	No. Observed	Total Bears	No. Observed	Total Bears
Sow w/cubs of yr.						
Sow/1	--	--	1	2	5	10
Sow/2	--	--	1	3	3	9
Sow/3	1	4	--	--	1	4
Sow w/young 1 & 2 yrs. old						
Sow/1	4	8	1	2	1	2
Sow/2	5	15	3	9	1	3
Sow/3	4	16	3	12	1	4
Sow/4	1	5	1	5	--	--
Single Sows	6	6	9	9	15	15
Single Males	6	6	9	9	19	19
Sibling Group	--	--	1	3	1	3
Single Unk. Sex	12	12	11	11	10	10
Total		72		65		79

Means-litter size    1969, 2.2  
                           1970, 2.3  
                           1971, 1.7

\* Data provided by Derek Stonorov, Utah State University

Table 5. Composition of Brown Bears Observed at McNeil River. July-August, 1969 through 1971.

	<u>1969</u>		<u>1970</u>		<u>1971*</u>	
	No.	%	No.	%	No.	%
Females w/young	15	21	10	15	12	15
Cubs	3	4	3	5	14	18
Young 1 & 2 yrs. old	30	42	20	31	6	8
Young combined	33	46	23	35	20	26
Single bears	24	33	32	49	47	59
Adults & subadults	39	54	42	65	59	75
Total	72		65		79	

\* Data provided by Derek Stonorov, Utah State University

family group. Why the sow and cubs were out of hibernation in mid-winter is not known. However, the sow had no milk in her mammae and was in poor physical condition as was evidenced by autopsy. One female cub, weighing 35 pounds, was ear tagged and released. The second cub, a 33 pound male, was sent to the Arctic Health Research Laboratory (Fairbanks, Alaska) for post-mortem examination.

At Black Lake weights of juvenile bears of the same sex and age revealed considerable variation in size. Variations were especially apparent between cubs-of-the-year. The weights of six female and six male cubs ranged from 15 to 50 pounds for males and from 24 to 56 pounds for females. The 15 pound male cub was thin and had considerable difficulty keeping up with his litter mates when running from the pursuing aircraft. Variations of cub size within the same litter were demonstrated by a pair of captured male siblings weighing 34 and 50 pounds each.

The rate of growth demonstrated by a young male brown bear is of particular interest to the State's management program. A yearling bear (No. 832) was captured in 1968 and recaptured again this year. The bear grew 51 centimeters in length, 41 centimeters in height and gained approximately 240 pounds.

The ages and reproductive status of adult and subadult female brown bears captured on the study area are presented in Table 6. The weights and measurements taken from all captured bears are presented in Table 7.

Brown bear blood collections and analyses were continued by joint effort between the Department and the Veterans Administration Hospital in Minneapolis, Minnesota. Publications resulting from the biochemical studies will be on a co-authorship basis. Ninety-three whole blood and blood serum samples were collected from bears captured this spring. The blood collections include 22 sequential samples from recaptured bears. Analyses will determine 12 chemistry profiles plus serum electrophoresis, and a serological survey on fibrile antigens and trichinosis. Blood smears, both thick and thin, were collected and will be used for assessing presence of infections, nutritional status, and certain groups of parasites.

#### McNeil River

Table 8 summarizes brown bear fishing effort 1969 through 1971 at McNeil River. A total of 3,050 salmon were caught in 1,665 hours of effort. This averages 1.8 fish per bear hour which is lower than similar figures obtained in either 1969 or 1970. This figure does not represent poorer fishing success by the bears. The period of observation in 1971 extended through the entire salmon run and included the days of poorer fishing success at the end of the run; these were missed in both 1969 and 1970. A comparable figure for 1971 based upon fishing success during the first 20 days of fishing effort is 2.1 fish per bear hour.

Table 6. Reproductive Status, Age and Weights of Tagged Female Brown Bears Captured or Observed on the Black-Chignik Lakes Study Area.

Bear	Captured or Observed	Cementum Age	Number of Cubs	Number of Young 1.5 yrs.	Number of Young 2.5 yrs	Vulva Condition	Weight	Comments
No. 2 7/3/71	Captured	4.5	None	None	None	Turgid	380	
No. 3 7/3/71	Captured	6.5	None	2	None	Normal	400 <sup>1/</sup>	Lactating
No. 9 7/4/71	Captured	6.5	1	None	None	Normal	435	
No. 11 7/5/71	Captured	10.5	1	None	None	Normal	428	
10/4/71	Observed		1	None	None		---	
10/6/71	Observed		1	None	None		---	
No. 16 7/6/71	Captured	7.5	None	1	None	Normal	440	
7/7/71	Observed		None	1	None			
No. 19 7/6/71	Captured	5.5	2	None	None	Normal	435	
No. 23 7/7/71	Captured	10+ <sup>5/</sup>	3	None	None	Normal	350	
No. 29 7/8/71	Captured	3.5	None	None	None	Normal	300	
10/2/71	Killed by Hunter	3.8	—	—	—	—	---	
No. 701 6/16/70	Captured	3.5	None	None	None	Turgid	375	
6/16/71	Recaptured	4.5	None	None	None	Turgid	385	

<sup>1/</sup> Estimated Weight

<sup>5/</sup> Estimated Age

Table 6. (cont.) Reproductive Status, Age and Weights of Tagged Female Brown Bears Captured or Observed on the Black-Chignik Lakes Study Area.

Bear	Captured or Observed	Cementum Age	Number of Cubs	Number of Young 1.5 yrs.	Number of Young 2.5 yrs.	Vulva Condition	Weight	Comments
No. 703								
6/18/70	Captured	7.5	None	2	None	Normal	460	
11/18/70	Observed		None	2	None	-----		
6/20/71	Recaptured	8.5	None	None	None	Turgid	425	
No. 706								
6/18/70	Captured	3.5	None	None	None	Turgid	325 <sup>1/</sup>	
6/21/70	Recaptured	4.5	None	None	None	Turgid	425	
No. 707								
6/19/70	Captured	6.5	None	1	None	Normal	375 <sup>1/</sup>	
10/12/70	Observed		None	1	None			
6/22/71	Recaptured	7.5	None	None	None	Turgid	400	
10/1/71	Hunter Kill	7.8						
No. 717								
6/20/70	Captured	7.5	None	None	None	Turgid	450 <sup>1/</sup>	Mammae Large
No. 719								
6/20/70	Captured	8.5	None	None	None	Turgid	500 <sup>1/</sup>	Mammae Large
No. 722								
6/20/70	Captured	14.5	None	2	None	Normal	400 <sup>1/</sup>	
9/18/70	Observed		None	2	None			
6/23/71	Captured	15.5	None	None	1	Normal	430	Lactating
No. 725(A)								
6/20/70	Captured	6.5	None	None	None	Turgid	400 <sup>1/</sup>	Mammae small
6/25/71	Recaptured	7.5	None	None	None	Turgid	415	Mammae large
No. 725B								
6/21/70	Captured	Unknown	2	None	None	Normal	350 <sup>1/</sup>	Milk Obtained
7/2/70	Observed		2	None	None			

<sup>1/</sup> Estimated Weight

Table 6. (cont.) Reproductive Status, Age and Weights of Tagged Female Brown Bears Captured or Observed on the Black-Chignik Lakes Study Area.

Bear	Captured or Observed	Cementum Age	Number of Cubs	Number of Young 1.5 yrs.	Number of Young 2.5 yrs.	Vulva Condition	Weight	Comments
No. 728								
6/21/70	Captured	10.5	None	2	None	Normal	550 <sup>1/</sup>	
7/6/70	Observed		None	2	None			
9/7/70	Observed		None	2	None			
10/15/70	Observed		None	2	None			
No. 731								
6/22/70	Captured	12.5	None	2	None	Normal	435 <sup>1/</sup>	
7/25/70	Observed		None	2				
9/18/70	Observed		None	2				
7/4/71	Recaptured	13.5	None	None	2	Normal	415	Lactating
10/26/71	Observed		None	None	2			
No. 734								
6/22/70	Captured	6.5	None	1	None	Normal	Est'd.-450	
No. 736								
6/22/70	Captured	5.5	None	None	None	Turgid	325 <sup>1/</sup>	
6/15/71	Recaptured	6.5	None	None	None	Turgid	465	Mammae small
No. 738								
6/23/70	Captured	13.5	None	None	2 & 2 unk	-----	500 <sup>1/</sup>	Mammae large
9/21/70	Observed		None	None	4			
No. 741								
6/23/70	Captured	3.5	None	None	None	Normal	325 <sup>1/</sup>	
No. 742								
6/24/70	Captured	3.5	None	None	None	Turgid	350 <sup>1/</sup>	
6/16/71	Recaptured <sup>3/</sup>	4.5	None	None	None	Turgid	460	
No. 743								
6/24/70	Captured	3.5	None	None	None	Turgid	450 <sup>1/</sup>	

<sup>1/</sup> Estimated Weight  
<sup>3/</sup> d by Drugs

Table 6. (c ) Reproductive Status, Age and Weights of Tagged male Brown Bears Captured or Observed on the Black-Chignik Lakes Study Area.

Bear	Captured or Observed	Cementum Age	Number of Cubs	Number of Young 1.5 yrs	Number of Young 2.5 yrs	Vulva Condition	Weight	Comments
No. 745 6/24/70	Captured	15.5	None	None	None	Turgid	500 <sup>1/</sup>	Mammae swollen No milk obtained
No. 747 6/24/70	Captured	5.5	None	1	None	Normal	450 <sup>1/</sup>	Mammae large
6/18/71	Recaptured	6.5	None	None	1	Normal	410	
No. 749 6/24/70	Captured	3.5	None	None	None	Normal	---	
No. 750 6/25/70	Captured	9.5	None	1 & 1 unk	None	Normal	350 <sup>1/</sup>	
35 No. 753 6/26/70	Captured	14.5	None	None	2	Normal	500 <sup>1/</sup>	Large
	Observed		None	None	2	-----	---	
	6/24/71 Recaptured	15.5	None	None	None	Turgid	485	
No. 756 6/26/70	Captured	5.5	None	None	None	Turgid	525	
No. 757 6/26/70	Captured	13.5	None	3	None	Normal	380	Mammae large
5/20/71	Observed		None	None	None			
No. 761 6/28/70	Captured	12.5	None	None	None	Turgid	510	Mammae small
6/25/71	Recaptured		None	None	None	Turgid	480	
10/6/71	Hunter Kill							
No. 763 6/27/70	Captured	3.5	None	None	None	Turgid	410	
10/5/70	Hunter Kill							

<sup>1/</sup> Estimated Weight

Table 6. (cont.) Reproductive Status, Age and Weights of Tagged Female Brown Bears Captured or Observed on the Black-Chignik Lakes Study Area.

Bear	Captured or Observed	Cementum Age	Number of Cubs	Number of Young 1.5 yrs	Number of Young 2.5 yrs	Vulva Condition	Weight	Comments
No. 764(B)								
6/28/70	Captured	5.5	None	2	None	-----	425	
11/18/70	Observed	-	None	2	None	-----		
No. 769								
6/30/70	Captured	5.5	None	None	None	Turgid	485	Lactating
6/24/71	Recaptured	6.5	None	None	None	Turgid	475	
No. 770								
6/30/70	Captured	10.5	None	2	None	-	510	
7/1/70	Observed		None	2	None			
No. 773								
6/30/70	Captured	9.5	None	None	None	Turgid	400 <sup>1/</sup>	Lactating
No. 776								
7/1/70	Captured	3.5	None	None	None	Turgid	275 <sup>1/</sup>	
6/13/71	Recaptured	4.5	None	None	None	Turgid	305	
No. 778								
7/1/70	Captured	3.5	None	None	None	Normal	275 <sup>1/</sup>	
7/7/71	Recaptured		None	None	None	Normal	335	Mammae sma.
No. 779								
7/2/70	Captured	5.5	None	None	None	Turgid	425 <sup>1/</sup>	
7/5/71	Recaptured	6.5	3	None	None	Normal	475	Lactating
10/31/71	Observed		1	None	None			

<sup>1/</sup> Estimated Weight

Table 6. (cont.) Reproductive Status, Age and Weights of Tagged Female Brown Bears Captured or Observed on the Black-Chignik Lakes Study Area.

Bear	Captured or Observed	Cementum Age	Number of Cubs	Number of Young 1.5 yrs	Number of Young 2.5 yrs	Vulva Condition	Weight	Comments
No. 781								
7/2/70	Captured	3.5	None	None	None	Turgid	325	Mammae smal
10/10/71	Hunter Kill	4.8	<u>3</u> <sup>6/</sup>	None	None	-	-	Mammae very large
No. 782								
7/2/70	Captured	5.5	None	None	None	Turgid	400 <sup>1/</sup>	
No. 785								
7/4/70	Captured	6.5	None	2	None	Normal	410	No milk obtained
11/18/70	Observed		None	2	None			
No. 790								
7/6/70	Captured	4.5	None	None	None	Turgid	360	
No. 794								
7/6/70	Captured	12.5	None	None	2 & 1 unk	-	430	A few drops of milk obtained
No. 798								
7/7/70	Captured	3.5	None	None	None	Normal	255	No indication of ever having cubs
No. 802								
8/10/68	Captured	7.5	3	None	None	Normal	375 <sup>1/</sup>	
No. 809								
8/11/68	Captured	13.5	2	None	None	Normal	570	
No. 811								
8/12/68	Captured	15.5	3	None	None	Normal	700 <sup>1/</sup>	

<sup>1/</sup> Estimated Weight  
<sup>6/</sup> Reported to have had three cubs



Table 6. (cont.) Reproductive Status, Age and Weights of Tagged Female Brown Bears Captured or Observed on the Black-Chignik Lakes Study Area.

Bear	Captured or Observed	Cementum Age	Number of Cubs	Number of Young 1.5 yrs	Number of Young 2.5 yrs	Vulva Condition	Weight	Comments
No. 816 6/11/71	Captured	3.5	None	None	None	Normal	260	
No. 817 6/12/71	Captured	3.5	None	None	None	Normal	280	
No. 818 6/12/71	Captured	7.5	None	2	None	Normal	420	
No. 822 6/13/71	Captured	5.5	None	None	None	Normal	387	
No. 823 6/13/71	Captured	4.5	None	None	None	Normal	330	
No. 825 6/19/70	Captured	10.5	None	1	None	Normal	500 <sup>1/</sup>	
11/17/70	Observed		None	1	None			
6/14/71	Recaptured	11.5	None	None	1	Turgid	540	
No. 828 6/12/71	Captured	3.5	None	None	None	Turgid	365	
No. 829 6/19/71	Captured	16.5	None	3	None	Turgid	480	
No. 830 6/19/71	Captured	3.5	None	None	None	Normal	285	

<sup>1/</sup> Estimated Weight

Table 6. (cont.) Reproductive Status, Age and Weights of Tagged Female Brown Bears Captured or Observed on the Black-Chignik Lakes Study Area.

Bear	Captured or Observed	Cementum Age	Number of Cubs	Number of Young 1.5 yrs	Number of Young 2.5 yrs	Vulva Condition	Weight	Comments
No. 831 6/19/71	Captured	4.5	None	None	None	Turgid	335	
No. 836 6/21/71	Captured	5.5	None	None	None	Turgid	425	Lactating
No. 838 6/22/71	Captured	13.5	None	None	None	Turgid	445	
39 No. 839 6/22/71	Captured	12.5	None	3	None	Normal	400	
	Observed		None	3	None			
No. 843 6/22/71	Captured	4.5	None	None	None	Turgid	390	
No. 851 <sup>8/</sup> 8/10/68	Captured	6.5	None	None	None	Normal	640 <sup>1/</sup>	
	Recaptured	8.5	None	2	None	Normal	450 <sup>1/</sup>	
	Recaptured	9.5	None	None	None	Turgid	495	
No. 854 6/24/71	Captured	11.5	None	None	2	Turgid	400 <sup>1/</sup>	

<sup>1/</sup> Estimated Weight

<sup>8/</sup> 1968 tattooed No. 807, Retattooed 1970 No. 711, Retattooed 1971 No. 851

Table 6. (cont.) Reproductive Status, Age and Weights of Tagged Female Brown Bears Captured or Observed on the Black-Chignik Lakes Study Area.

Bear	Captured or Observed	Cementum Age	Number of Cubs	Number of Young 1.5 yrs	Number of Young 2.5 yrs	Vulva Condition	Weight	Comments
No. 861 6/30/71	Captured	5.5	None	None	None	Turgid	430	
No. 864 7/1/71	Captured	9.5	None	None	2	Turgid	420	
No. 867 7/7/71	Captured	13.5	None	None	3	Turgid	470	
8/10/71	Observed		None	None	3			
No. 871 7/2/71	Captured	3.5	None	None	None	Turgid	380	
No. 900 7/7/70	Captured	10.5	None	None	2	Normal	510	

Table 7. Data and Measurements Taken From Brown Bears Captured on the Black-Chignik Lake Study Area 1968 - 1

BODY MEASUREMENTS TAKEN (MEASUREMENTS GIVEN IN CENTIMETERS)													
				1. Total Length		4. Neck Circumference		8. Length of Skull					
				2. Height at Shoulder		5. Girth		9. Upper Left Canine					
				3. Hind Foot Length		6. Body Length		10. Lower Left Canine					
				7. Width of Skull									
Bear	Sex	Cem. Age	Weight Meas. Est.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
No. 1													
7/3/71	M	2.5	360 300	167.0	108.1	35.2	59.7	119.0	107.5	20.0	36.3	3.4	3.3
10/15/71		2.8	Killed by hunter - 19403 <sup>13/</sup>							20.2	37.8 <sup>14/</sup>		
No. 2													
7/3/71	F	4.5	380 300	190.0	110.3	33.7	64.0	112.0	105.5	20.6	38.0	1.6	1.5
No. 3													
7/3/71	F	6.5	- 400	193.5	119.5	35.5	61.0 <sup>4/</sup>	116.0	119.5	22.4	38.2	3.8	3.4
No. 4/3 <sup>6/</sup>													
7/3/71	F	1.5	104 150	119.5	77.0	24.5	42.0	78.0	72.0	14.3	25.9	0.7	0.7
No. 5/3													
7/3/71	F	1.5	82 100	115.2	70.7	23.4	38.4	61.9	65.9	13.3	24.2	0.5	0.5
No. 6													
7/4/71	M	3.5	350 450	162.5	103.0	32.6	60.0	104.0	103.5	18.4	35.2	3.5	3.3 <sup>14/</sup>
No. 7													
7/4/71	M	3.5	340 450	167.5	109.4	36.3	60.8	100.4	95.4	18.1	35.0	3.5	3.3
No. 8													
7/4/71	M	4.5	425 300	208.0	120.0	39.2	62.0	106.0	122.8	20.0	39.4	3.6	3.1

<sup>1/</sup> Skull measurements taken after the hide was removed.<sup>4/</sup> Measurement taken after hair was clipped.<sup>13/</sup> Skull seal number if bear was killed.<sup>14/</sup> Right canines measured.<sup>6/</sup> Virgule between bear accession numbers indicate offspring first and sow last.

Table 7. (contd.) Weights and Measurements Taken From Brown Bears Captured on the Black-Chignik Lake Study Area 1968 - 1971

## BODY MEASUREMENTS TAKEN (MEASUREMENTS GIVEN IN CENTIMETERS)

- |                       |                       |                       |
|-----------------------|-----------------------|-----------------------|
| 1. Total Length       | 4. Neck Circumference | 8. Length of Skull    |
| 2. Height at Shoulder | 5. Girth              | 9. Upper Left Canine  |
| 3. Hind Foot Length   | 6. Body Length        | 10. Lower Left Canine |
|                       | 7. Width of Skull     |                       |

Bear	Sex	Cem. Age	Weight Meas. Est.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
No. 9 7/4/71	F	6.5	435 400	206.0	120.2	33.2	62.0	121.0	109.0	21.1	38.3	3.3	3.0
No. 10/9 7/4/71	M	0.5	37 -	93.0	53.1	18.2	31.0	57.0	44.0	11.4	18.7	No Permanent	
No. 11 7/5/71	F	10.5	425 500	206.8	115.4	36.5	63.5	124.5	115.8	21.5	38.4	3.6	3.4
No. 12/11 7/5/71	F	0.5	56 -	93.0	58.9	19.2	31.5	56.0	55.2	12.3	20.3	No Permanent	
No. 13/779 7/5/71	M	0.5	15 -	74.5	43.1	14.0	21.5	33.0	34.5	9.5	16.0	No Permanent	
No. 14/779 7/5/71	M	0.5	24 -	81.0	47.5	15.6	23.9	40.0	40.0	10.3	17.2	No Permanent	
No. 15/779 7/5/71	F	0.5	24 -	79.0	46.6	15.2	23.0	42.5	42.2	10.8	16.9	No Permanent	
No. 16 7/6/71	F	7.5	440 500	198.3	119.0	35.5	67.0	122.0	117.7	21.6	38.8	3.6	3.3
No. 17/16 7/6/71	F	1.5	165 175	138.0	83.1	28.2	43.6	81.0	66.8	15.3	27.9	1.5	1.7
No. 18 7/6/71	M	13.5	975 800	259.0	146.0	46.8	100.0	-	150.0	28.0	46.3	4.3	3.7

Table 7. (contd.) Weights and Measurements Taken From Brown Bears Captured on the Black-Chignik Lake Study 1968-1971

## BODY MEASUREMENTS TAKEN (MEASUREMENTS GIVEN IN CENTIMETERS)

- |                       |                       |                       |
|-----------------------|-----------------------|-----------------------|
| 1. Total Length       | 4. Neck Circumference | 8. Length of Skull    |
| 2. Height at Shoulder | 5. Girth              | 9. Upper Left Canine  |
| 3. Hind Foot Length   | 6. Body Length        | 10. Lower Left Canine |
|                       | 7. Width of Skull     |                       |

Bear	Sex	Cem. Age	Weight		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
			Meas.	Est.										
No. 19 7/6/71	F	5.5	435	450	203.8	-	34.3	68.0	-	203.8	21.0	37.1	-	-
No. 20/19 7/6/71	M	0.5	50	-	101.0	57.0	18.3	32.0	55.0	55.5	11.6	20.6	No Permanent	
No. 21/19 7/6/71	M	0.5	34	-	91.2	52.8	17.5	27.8	49.5	50.0	11.4	19.2	No Permanent	
No. 22 7/7/71	M	3.5	275	250	53.1	98.6	31.1	34.0	90.0	99.1	16.8	31.6	3.1	2.9
No. 23 7/7/71	F	10+ <sup>5/</sup>	-	350	200.0	134.1	34.7	72.0	144.5	116.8	24.5	39.2	3.7	3.1 <sup>14/</sup>
No. 24/23 7/7/71	F	0.5	28	-	87.0	53.0	17.8	26.5	48.0	48.0	11.1	18.2	No Permanent	
No. 25/23 7/7/71	F	0.5	29	-	83.3	54.2	17.3	25.8	46.2	45.1	11.0	18.7	No Permanent	
No. 26/23 7/7/71	M	0.5	34	-	89.6	55.7	17.3	26.5	47.0	47.2	11.2	18.6	No Permanent	
No. 27/** 7/8/71	F	0.5	25	-	83.4	46.1	16.0	25.0	42.0	43.2	10.1	17.7	No Permanent	

<sup>5/</sup> Estimated age.<sup>14/</sup> Right canines measured.

\*\* Sow not captured.

Table 7. (contd.) Weights and Measurements Taken From Brown Bears Captured on the Black-Chignik Lake Study Area 1968 - 1971

## BODY MEASUREMENTS TAKEN (MEASUREMENTS GIVEN IN CENTIMETERS)

- |                       |                       |                       |
|-----------------------|-----------------------|-----------------------|
| 1. Total Length       | 4. Neck Circumference | 8. Length of Skull    |
| 2. Height at Shoulder | 5. Girth              | 9. Upper Left Canine  |
| 3. Hind Foot Length   | 6. Body Length        | 10. Lower Left Canine |
|                       | 7. Width of Skull     |                       |

Bear	Sex	Cem. Age	Weight Meas.	Est.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
No. 28/**														
7/8/71	F	0.5	29	-	80.0	47.7	17.0	25.0	29.5	44.0	10.2	17.8	No Permanent	
No. 29														
7/8/71	F	3.5	300	300	168.0	104.0	33.0	58.0	108.0	104.5	18.2	34.6	3.0	3.0
10/2/71		3.8	Killed by hunter - 17268 <sup>13/</sup>								18.4*			
No. 701														
6/16/70	F	3.5	375	300	194.3	116.8	34.3	66.0	120.6	116.8	20.6	35.9	-	-
6/16/71		4.5	385	400	208.9	122.5	34.3	68.6	120.7	124.5	21.6	38.1	-	-
No. 702														
6/17/70	M	2.5	290	-	161.9	99.0	31.1	55.9	97.1	100.3	17.5	31.9	-	-
10/1/70		2.8	Killed by hunter - 17345 <sup>13/</sup>								18.5 <sup>1/</sup>	34.2 <sup>1/</sup>	-	-
No. 703														
6/18/70	F	7.5	460	-	209.6	113.7	35.6	69.9	127.0	111.7	21.9	37.5	-	-
6/20/71		8.5	430	450	210.7	118.7	36.8	71.1	118.7	116.8	21.9	38.2	-	-
No. 704/703														
6/18/70	M	1.5	140	100	136.5	76.2	25.4	41.9	80.3	80.0	14.5	26.0	-	-
6/23/71		2.5	215	350	179.1	101.6	31.7	55.8	99.1	99.1	17.1	32.2	-	-
8/15/71		2.5	275	300	167.6	107.3	34.2	63.5	100.3	111.1	17.8	33.1	-	-
No. 705/703														
6/18/70	F	1.5	85	-	117.8	61.0	21.6	40.9	73.6	64.8	12.7	22.5	-	-
6/23/71		2.5	150	200	153.6	89.2	29.2	48.2	87.6	96.5	15.6	28.7	-	-

\* Skull collected.

\*\* Sow not captured

<sup>1/</sup> Skull measurements taken after the hide was removed.<sup>13/</sup> Skull seal number if bear was killed

Table 7. (Contd.) Weights and Measurements Taken From Brown Bears Captured on the Black-Chignik Lake Study Area 8-1971

BODY MEASUREMENTS TAKEN (MEASUREMENTS GIVEN IN CENTIMETERS)															
					1. Total Length	4. Neck Circumference					8. Length of Skull				
					2. Height at Shoulder	5. Girth					9. Upper Left Canine				
					3. Hind Foot Length	6. Body Length					10. Lower Left Canine				
					7. Width of Skull										
Bear	Sex	Cem. Age	Weight Meas.	Est.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
No. Unknown <sup>15/</sup>															
6/15/71	M	4.5	405	350	198.7	127.0	39.4	68.6	118.1	119.4	20.3	38.2	3.8	3.7	
No. 706															
6/18/70	F	3.5	425	325	203.8	109.8	35.9	69.6	138.4	106.7	21.1	36.1	-	-	
6/21/71		4.5	425	350	208.3	117.5	37.4	71.1	125.7	128.3	21.6	37.8	-	-	
No. 707															
6/19/70	F	7.5	-	375	189.2	113.0	33.7	69.8	141.0	104.1	21.1	34.8	-	-	
6/22/71		8.5	395	350	203.2	119.4	34.9	73.6	120.7	114.3	21.7	34.9	-	-	
10/1/71		8.8	Killed by hunter - 19270 <sup>13/</sup>								20.3 <sup>1/</sup>	34.6 <sup>1/</sup>	-	-	
No. 708/707															
6/19/70	F	1.5	140	100	147.3	86.4	28.6	49.5	96.5	73.6	15.9	27.5	-	-	
6/23/71		2.5	220	300	182.8	104.1	32.4	59.7	106.7	97.8	18.3	32.9	-	-	
No. 710/709															
6/19/70	M	1.5	200	250	174.6	97.8	34.3	58.4	106.7	96.5	18.2	31.3	-	-	
6/14/71		2.5	320	250	204.4	119.3	39.3	71.7	121.9	120.6	20.8	37.8	-	-	
No. 712/851															
6/19/70	F	1.5	-	200	151.1	90.2	29.2	49.5	96.5	78.7	16.2	26.7	-	-	
No. 713/851															
6/19/70	M	1.5	-	200	143.5	91.4	29.2	47.0	91.4	86.3	15.9	27.6	-	-	
No. 714															
6/19/70	M	6.5	-	550	224.8	136.5	39.4	97.1	154.9	135.9	20.3	41.2	-	-	
6/25/71		7.5	715	550	243.8	133.9	42.5	97.7	-	139.7	23.5	41.3	-	-	

<sup>1/</sup> Skull measurements taken after the hide was removed<sup>13/</sup> Skull seal number if bear was killed<sup>15/</sup> Recaptured from 1970, no ear tags, tattoo misread--still to be identified



Table. 7(contd.) Weights and Measurements Taken From Brown Bears Captured on the Black-Chignik Lake Study Area 1968 - 1971

## BODY MEASUREMENTS TAKEN (MEASUREMENTS GIVEN IN CENTIMETERS)

- |                       |                       |                       |
|-----------------------|-----------------------|-----------------------|
| 1. Total Length       | 4. Neck Circumference | 8. Length of Skull    |
| 2. Height at Shoulder | 5. Girth              | 9. Upper Left Canine  |
| 3. Hind Foot Length   | 6. Body Length        | 10. Lower Left Canine |
|                       | 7. Width of Skull     |                       |

Bear	Sex	Cem. Age	Weight		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
			Meas.	Est.										
No. 715														
6/20/70	M	4.5	400	300	186.7	107.3	34.3	68.6	143.5	108.6	20.3 <sub>1/</sub>	34.0 <sub>1/</sub>	-	-
10/5/70		4.8	Killed by hunter -		15744	137					19.1 <sub>1/</sub>	36.2 <sub>1/</sub>		
No. 716														
6/20/70	F	2.5	-	250	175.3	101.6	28.0	57.8	109.2	101.6	18.0 <sub>1/</sub>	31.4 <sub>1/</sub>	-	-
10/30/71		2.8	Killed by hunter -		19882	137					19.7 <sub>1/</sub>	35.2 <sub>1/</sub>		
No. 717														
6/20/70	F	7.5	-	450	203.2	111.1	31.1	76.2	142.9	111.5	23.2	37.2	-	-
No. 719														
6/20/70	F	8.5	-	500	209.6	119.4	35.5	86.3	141.0	118.1	23.5	39.7	-	-
No. 720														
6/20/70	F	2.5	-	300	191.8	104.8	33.7	59.1	104.1	93.3	18.7	33.8	-	-
No. 721														
6/20/70	M	4.5	-	350	191.8	118.1	38.8	71.1	130.2	119.4	19.1	37.6	-	-
No. 722														
6/20/70	F	14.5	-	400	207.0	114.3	36.2	72.4	139.7	120.6	23.8	38.9	-	-
6/23/71		15.5	425	400	221.6	121.9	37.5	67.3	-	135.8	24.1	39.0	-	-
No. 723/722														
6/20/70	F	1.5	150	150	149.9	89.5	26.7	45.7	86.4	80.0	15.2	27.9	-	-

1/ Skull measurements taken after the hide was removed13/ Skull seal number if bear was killed

Table 7. (contd.) Weights and Measurements Taken From Brown Bears Captured on the Black-Chignik Lake Study Area 1968 - 1971

## BODY MEASUREMENTS TAKEN (MEASUREMENTS GIVEN IN CENTIMETERS)

- |                       |                       |                       |
|-----------------------|-----------------------|-----------------------|
| 1. Total Length       | 4. Neck Circumference | 8. Length of Skull    |
| 2. Height at Shoulder | 5. Girth              | 9. Upper Left Canine  |
| 3. Hind Foot Length   | 6. Body Length        | 10. Lower Left Canine |
|                       | 7. Width of Skull     |                       |

Bear	Sex	Cem. Age	Weight		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
			Meas.	Est.										
No. 724/722														
6/20/70	F	1.5	192	150	160.0	92.1	30.5	57.8	95.2	88.9	15.7	29.4	-	-
6/23/71		2.5	275	250	195.6	108.6	36.2	71.1	117.5	114.3	18.2	33.9	-	-
No. 725A														
6/20/70	F	5.5	-	400	213.4	114.3	34.9	71.1	121.9	116.8	20.5	36.8	-	-
6/25/71		6.5	415	450	200.6	121.9	37.5	71.0	134.6	120.6	22.3	36.6	-	-
No. 725B														
6/21/70	F	-	-	350	201.9	109.2	34.3	69.2	137.2	116.8	20.6	35.6	-	-
No. 726/725B														
6/21/70	F	Cub	45	-	-	-	-	-	-	-	-	-	-	-
No. 727/725B														
6/21/70	M	Cub	49	-	-	-	-	-	-	-	-	-	-	-
No. 728														
6/21/70	F	10.5	-	550	203.2	121.9	34.9	71.8	125.7	113.0	23.8	36.7	-	-
No. 729/728														
6/21/70	F	1.5	120	150	148.6	82.6	26.7	41.3	73.7	77.5	13.5	25.9	-	-
No. 730/728														
6/21/70	F	1.5	147	150	156.2	85.7	28.6	45.7	86.4	75.6	16.2	28.0	-	-

Table 7. (contd.) Weights and Measurements Taken From Brown Bears Captured on the Black-Chignik Lake Study Area 1968 - 1971

## BODY MEASUREMENTS TAKEN (MEASUREMENTS GIVEN IN CENTIMETERS)

- |                       |                       |                       |
|-----------------------|-----------------------|-----------------------|
| 1. Total Length       | 4. Neck Circumference | 8. Length of Skull    |
| 2. Height at Shoulder | 5. Girth              | 9. Upper Left Canine  |
| 3. Hind Foot Length   | 6. Body Length        | 10. Lower Left Canine |
|                       | 7. Width of Skull     |                       |

Bear	Sex	Cem. Age	Weight Meas. Est.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
No. 731													
6/22/70	F	12.5	- 440	197.5	111.7	47.3	66.0	146.0	116.8	21.1	35.9	-	-
7/4/71		13.5	415 450	182.5	106.7	33.4	61.0	130.0	99.5	21.5	36.4	-	-
No. 732/731													
6/22/70	M	1.5	130 -	143.2	85.7	29.2	41.9	82.6	77.5	15.6	27.3	-	-
7/4/71		2.5	280 250	174.5	98.5	33.1	54.5	109.5	98.6	18.4	33.0	-	-
No. 733/731													
6/22/70	F	1.5	109 -	139.7	85.1	27.9	40.6	74.9	73.6	14.8	26.7	-	-
7/4/71		2.5	235 250	159.7	93.1	31.2	56.0	104.0	95.6	17.2	31.8	-	-
No. 734													
6/22/70	F	6.5	- 450	209.5	115.6	36.2	69.8	143.5	125.7	22.2	38.4	-	-
No. 735/734													
6/22/70	M	2.5	189 -	161.3	97.1	31.8	47.0	93.3	90.8	15.9	29.1	-	-
7/3/71		3.5	310 350	168.3	106.5	33.8	35.0	117.0	114.8	18.7	34.2	-	-
No. 736													
6/22/70	F	5.5	- 325	196.8	115.5	36.8	68.6	121.5	114.9	20.7	37.5	-	-
6/15/71		6.5	465 500	212.7	123.2	39.2	63.5	147.3	119.4	21.4	38.3	-	-
No. 737													
6/23/70	M	2.5	- 275	182.9	99.1	33.7	55.9	105.4	91.4	17.0	32.4	-	-
10/13/70		2.8	Killed by hunter - 13321 <sup>13/</sup>							17.8 <sup>1/</sup>	34.3 <sup>1/</sup> *	-	-

1/ Skull measurement taken after the hide was removed

<sup>13/</sup> Skull seal number if bear was killed

\* Skull collected

Table 7. (contd.) Weights and Measurements Taken From Brown Bears Captured on the Black-Chignik Lake Study Area 1968 - 1971

## BODY MEASUREMENTS TAKEN (MEASUREMENTS GIVEN IN CENTIMETERS)

- |                       |                       |                       |
|-----------------------|-----------------------|-----------------------|
| 1. Total Length       | 4. Neck Circumference | 8. Length of Skull    |
| 2. Height at Shoulder | 5. Girth              | 9. Upper Left Canine  |
| 3. Hind Foot Length   | 6. Body Length        | 10. Lower Left Canine |
|                       | 7. Width of Skull     |                       |

Bear	Sex	Cem. Age	Weight		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
			Meas.	Est.										
No. 738 6/23/70	F	13.5	-	500	193.4 <sup>3/</sup>	114.9	35.9	76.2	88.9	117.5	23.8	39.0	-	-
No. 739/738 6/23/70	F	2.5	-	200	157.5	94.0	30.5	54.0	101.6	81.3	16.5	29.9	-	-
No. 740/738 6/23/70	F	2.5	-	225	180.3	97.8	33.0	55.9	111.8	94.0	17.9	31.9	-	-
No. 741 6/23/70	F	3.5	-	325	166.4 <sup>3/</sup>	105.4	32.4	66.4	126.4	106.7	18.8	33.7	-	-
No. 742 6/24/70	F	3.5	-	350	178.4	107.9	35.6	69.8	111.7	102.2	20.0	34.3	-	-
6/16/71 <sup>7/</sup>		4.5	460	400	191.8	117.7	36.6	67.3	130.7	121.9	21.6	37.5	-	-
No. 743 6/24/70	F	3.5	-	450	198.1	114.9	37.5	68.6	120.6	115.6	20.5	36.7		
No. 744 6/24/70	M	2.5	-	275	163.2	88.9	26.7	50.8	92.7	85.4	16.2	29.5	-	-
No. 745 6/24/70	F	15.5	-	500	208.3	102.2	34.3	69.2	129.5	123.2	24.0	38.1	-	-
No. 746 6/24/70	M	3.5	-	350	200.7	120.0	39.7	76.9	123.2	128.3	-	-	-	-

<sup>3/</sup> Measured to base of tail<sup>7/</sup> Killed by drug

Table 7. (contd.) Weights and Measurements Taken From Brown Bears Captured on the Black-Chignik Lake Study Area 1968 - 1971

## BODY MEASUREMENTS TAKEN (MEASUREMENTS GIVEN IN CENTIMETERS)

- |                       |                       |                       |
|-----------------------|-----------------------|-----------------------|
| 1. Total Length       | 4. Neck Circumference | 8. Length of Skull    |
| 2. Height at Shoulder | 5. Girth              | 9. Upper Left Canine  |
| 3. Hind Foot Length   | 6. Body Length        | 10. Lower Left Canine |
|                       | 7. Width of Skull     |                       |

Bear	Sex	Cem. Age	Weight		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
			Meas.	Est.										
No. 747														
6/24/70	F	5.5	-	450	217.8	113.0	34.3	64.8 <sup>4/</sup>	123.2	103.5	20.3	38.4	-	-
6/18/71		6.5	410	450	203.8	111.7	34.8	68.6	132.1	128.2	20.5	39.1	-	-
No. 748/747														
6/24/70	F	1.5	135	-	146.1	80.7	26.7	47.3	83.8	74.9	15.1	26.4	-	-
6/18/71		2.5	200	255	144.8	97.1	33.0	66.8	116.8	94.5	17.8	32.0	-	-
No. 749														
6/24/70	F	3.5	-	-	195.6	94.0	33.7	69.2	-	114.3	21.1	35.9	-	-
No. 750														
6/25/70	F	9.5	-	350	208.9	110.5	29.2	69.2	118.7	102.9	21.9	34.9	-	-
No. 751/750														
6/25/70	M	1.5	-	240	161.3	84.4	31.8	-	100.3	81.9	16.5	28.6	-	-
No. 752														
6/25/70	M	3.5	-	300	193.1	116.2	35.6	61.0	121.9	119.4	19.4	34.8	-	-
No. 753														
6/26/70	F	14.5	-	500	205.8	121.9	35.6	72.4	154.9	119.4	23.7	37.8	-	-
6/24/71		15.5	485	350	228.6	-	38.1	85.1	138.4	124.4	24.2	38.2	-	-
No. 754/753														
6/26/70	M	1.5	-	150	161.6	86.4	27.9	49.5	91.4	81.3	-	-	-	-
6/30/71		2.5	285	250	170.2	111.1	33.0	55.8	101.6	108.0	18.6	34.1	-	-
10/1/71		2.8	Killed by hunter - 17258 <sup>13/</sup>								18.8 <sup>1/</sup>	35.8 <sup>1/</sup>	-	-

<sup>1/</sup> Skull measurement taken after the hide was removed<sup>4/</sup> Measurement taken after hair was clipped

Table 7. (contd.) Weights and Measurements Taken From Brown Bears Captured on the Black-Chignik Lake Study Area 1968 - 1971

BODY MEASUREMENTS TAKEN (MEASUREMENTS GIVEN IN CENTIMETERS)														
			1. Total Length		4. Neck Circumference		8. Length of Skull							
			2. Height at Shoulder		5. Girth		9. Upper Left Canine							
			3. Hind Foot Length		6. Body Length		10. Lower Left Canine							
			7. Width of Skull											
Bear	Sex	Cem. Age	Weight		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
			Meas.	Est.										
No. 755/753														
6/26/70	F	1.5	120	-	137.2	78.7	26.0	44.4	71.1	78.7	14.6	26.7	-	-
No. 756														
6/26/70	F	5.5	525	-	208.3	114.3	34.9	64.8	119.4	120.6	20.5	36.7	-	-
No. 757														
6/26/70	F	13.5	380	-	185.4	110.5	34.3	68.6	121.9	114.3	21.0	36.4	-	-
No. 758/757														
6/26/70	F	1.5	-	80	116.8	71.1	22.9	35.6	74.9	59.7	12.7	23.2	-	-
No. 759/757														
6/26/70	F	1.5	86	-	128.3	78.8	24.8	39.4	72.4	73.7	13.7	24.6	-	-
No. 760/757														
6/26/70	F	1.5	74	-	124.5	71.1	21.6	39.4	63.5	71.1	13.0	23.5	-	-
No. 761														
6/28/70	F	12.5	510	650	210.8	115.2	35.6	73.7	132.1	121.9	24.0	38.7	-	-
6/25/71		13.5	480	400	219.6	128.7	37.4	76.2	137.2	140.9	23.7	39.7	-	-
10/6/71		13.8	Killed by hunter - 9808										*	
No. 762														
6/28/70	M	6.5	620	650	238.8	120.0	39.4	73.7 <sup>4/</sup>	137.2	148.0	23.2	40.6	-	-
No. 763														
6/27/70	F	3.5	410	350	201.9	114.3	35.6	68.6	121.9	116.8	20.2	36.8	-	-
10/5/70		3.8	Killed by hunter - 15745										19.1	35.7

\* Skull collected

<sup>4/</sup> Measurement taken after hair was clipped

Table 7. (contd.) Weights and Measurements Taken From Brown Bears Captured on the Black-Chignik Lake Study Area 1968 - 1971

## BODY MEASUREMENTS TAKEN (MEASUREMENTS GIVEN IN CENTIMETERS)

- |                       |                       |                       |
|-----------------------|-----------------------|-----------------------|
| 1. Total Length       | 4. Neck Circumference | 8. Length of Skull    |
| 2. Height at Shoulder | 5. Girth              | 9. Upper Left Canine  |
| 3. Hind Foot Length   | 6. Body Length        | 10. Lower Left Canine |
|                       | 7. Width of Skull     |                       |

Bear	Sex	Cem. Age	Weight		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
			Meas.	Est.										
No. 764A 6/28/70	M	3.5	340	325	196.8	113.0	34.3	69.8	107.9	111.7	20.5	35.4	-	-
No. 764B 6/28/70	F	5.5	425	400	201.9	118.1	34.9	63.5 <sup>4/</sup>	121.9	124.5	21.7	37.8	-	-
No. 765/764B 6/28/70	M	1.5	185	-	128.2	97.2	32.4	50.8	86.4	88.9	16.5	30.1	-	-
No. 766/764B 6/28/70	F	1.5	158	-	144.8	89.5	30.5	48.3	83.8	94.0	15.7	28.4	-	-
No. 767 6/29/70	M	3.5	340	325	198.1	109.2	38.1	63.5	118.1	106.3	24.3	36.3	-	-
6/29/71		4.5	450	450	201.2	120.0	32.9	71.1	137.1	128.2	21.1	38.8	-	-
No. 768 <sup>12/</sup> 6/29/70	M	2.5	270	-	189.9	109.9	36.2	61.6	104.1	102.2	19.7	34.0	-	-
10/11/71		3.8	Killed by hunter - 19826 <sup>13/</sup>								21.3	39.9	-	-
No. 769 6/30/70	F	5.5	485 <sup>5/</sup>	350	206.4	110.5	36.5	72.4	134.6	109.9	22.6	38.1	-	-
6/24/71		6.5	470	450	229.2	124.4	38.1	69.8	132.1	138.4	22.4	39.4	-	-

<sup>4/</sup> Measurement taken after hair was clipped<sup>5/</sup> Bear soaked with water<sup>12/</sup> Tattoo misread as 706, bear believed to be No. 768<sup>13/</sup> Skull seal number if bear was killed

Table 7. (contd.) Weights and Measurements Taken From Brown Bears Captured on the Black-Chignik Lake Study Area 1968 - 1971

## BODY MEASUREMENTS TAKEN (MEASUREMENTS GIVEN IN CENTIMETERS)

- |                       |                       |                       |
|-----------------------|-----------------------|-----------------------|
| 1. Total Length       | 4. Neck Circumference | 8. Length of Skull    |
| 2. Height at Shoulder | 5. Girth              | 9. Upper Left Canine  |
| 3. Hind Foot Length   | 6. Body Length        | 10. Lower Left Canine |
|                       | 7. Width of Skull     |                       |

Bear	Sex	Cem. Age	Weight		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
			Meas.	Est.										
No. 770														
6/30/70	F	10.5	510	500	226.1	120.6	38.1	76.2	130.8	129.5	23.2	39.2	-	-
No. 771/770														
6/30/70	M	1.5	172	180	139.7	94.0	33.0	53.3	96.5	87.6	16.8	29.9	-	-
No. 772/770														
6/30/70	M	1.5	174	175	138.4	92.7	31.7	50.8	106.7	86.4	16.1	29.7	-	-
No. 773														
6/30/70	F	9.5	-	400	218.4	115.6	34.9	74.9	129.6	119.2	23.2	37.5	-	-
No. 774														
6/30/70	M	2.5	-	350	188.6	117.5	38.1	71.1 <sup>4/</sup>	121.9	116.8	22.4	37.8	-	-
No. 775														
6/30/70	M	5.5	-	650	223.5	125.7	39.1	73.7	132.1	127.0	21.9	40.5 <sup>1/</sup>	-	-
10/29/71		6.8	Killed by hunter - 19297 <sup>13/</sup>								21.6	42.2 <sup>1/</sup>		
No. 776														
7/1/70	F	3.5	-	275	173.3	102.9	31.1	56.5	-	90.8	18.7	34.3	-	-
6/13/71		4.5	305	350	197.5	113.0	35.6	63.5	110.5	120.6	19.5	36.0	-	-
No. 778														
7/1/70	F	3.5	-	275	182.9	108.6	34.9	66.0	106.7	99.1	18.6	33.0	-	-
7/7/71		4.5	335	350	181.9	108.0	34.0	60.5	114.0	109.0	19.2	35.0	-	-

<sup>4/</sup> Measurement taken after hair was clipped<sup>1/</sup> Skull measurement taken after hide was removed<sup>13/</sup> Skull seal number if bear was killed



Table 7. (contd.) Weights and Measurements Taken From Brown Bears Captured on the Black-Chienik Lake Study Area 1968 - 1971

## BODY MEASUREMENTS TAKEN (MEASUREMENTS GIVEN IN CENTIMETERS)

- |                       |                       |                       |
|-----------------------|-----------------------|-----------------------|
| 1. Total Length       | 4. Neck Circumference | 8. Length of Skull    |
| 2. Height at Shoulder | 5. Girth              | 9. Upper Left Canine  |
| 3. Hind Foot Length   | 6. Body Length        | 10. Lower Left Canine |
|                       | 7. Width of Skull     |                       |

Bear	Sex	Cem. Age	Weight		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
			Meas.	Est.										
No. 779														
7/2/70	F	6.5	-	425	186.7	110.5	36.8	73.6	120.0	120.6	24.4	35.6	-	-
7/5/71		7.5	475	500	193.0	113.6	34.6	63.5	105.0	111.8	21.5	36.3	-	-
No. 780														
7/2/70	M	10+ <sup>5/</sup>	-	800	228.6	117.5	41.3	83.8	145.0	134.6	24.8	41.9	-	-
No. 781														
7/2/70	F	3.5	-	325	188.0	99.7	31.7	62.2	114.3	113.6	19.7	34.9	-	-
10/10/71		4.8	Killed by hunter - 19421 <sup>13/</sup>								18.7 <sup>1/</sup>	35.6 <sup>1/</sup>	-	-
No. 782														
7/2/70	F	5.5	-	400	191.8	115.6	35.6	72.4	132.1	110.5	22.2	38.1	-	-
No. 783														
7/2/70	M	10+ <sup>5/</sup>	-	900	232.4	142.2	43.2	81.3	138.4	144.8	24.1	42.4	-	-
No. 784														
7/3/70	M	13.5	840-860	950	264.2	152.4	44.4	90.2	158.7	139.7	31.1	47.3	-	-
No. 785														
7/4/70	F	6.5	410	375	205.7	121.9	34.9	70.5	127.0	109.2	21.3	37.3	-	-

1/ Skull measurements taken after hide was removed

5/ Estimated age

13/ Skull seal number if bear was killed

Table 7. (contd.) Weights and Measurements Taken From Brown Bears Captured on the Black-Chignik Lake Study Area 1968 - 1971

## BODY MEASUREMENTS TAKEN (MEASUREMENTS GIVEN IN CENTIMETERS)

1. Total Length														
2. Height at Shoulder														
3. Hind Foot Length														
4. Neck Circumference														
5. Girth														
6. Body Length														
7. Width of Skull														
8. Length of Skull														
9. Upper Left Canine														
10. Lower Left Canine														
Bear	Sex	Cem. Age	Weight		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
			Meas.	Est.										
No. 786/785														
7/4/70	M	2.5	180	185	152.4	88.9	29.2	49.5	99.1	88.9	16.5	29.9	-	-
6/29/71		3.5	375	350	193.0	116.2	34.6	61.6	125.8	107.3	19.1	35.6	-	-
No. 788/785														
7/4/70	F	2.5	192	150	130.8	87.6	28.0	53.3	96.5	88.9	16.5	28.9	-	-
6/18/71		3.5	260	300	183.5	105.4	33.6	59.7	106.7	107.9	18.2	32.1	-	-
No. 789														
7/4/70	M	2.5	-	275	157.5	92.7	31.7	55.9	109.2	90.2	18.7	33.5	-	-
5/15/71		3.5	Killed by hunter - 17938 <sup>13/</sup>								19.1	35.7 <sup>1/</sup>	-	-
No. 790														
7/6/70	F	4.5	360	350	186.7	116.8	35.6	68.6	113.0	106.7	20.8	36.5	-	-
No. 791														
7/6/70	M	5.5	590	500	217.2	135.9	40.6	81.3 <sup>4/</sup>	135.9	134.6	24.1	44.4	-	-
5/16/71		6.5	Killed by hunter - 9870 <sup>13/</sup>								23.2	43.8*	-	-
No. 792														
7/6/70	M	2.5	220	325	190.5	104.1	34.3	56.5	99.1	97.8	18.1	34.3	-	-
No. 794														
7/6/70	F	12.5	430	400	-	-	-	70.5	120.6	-	21.6	38.9	-	-

<sup>1/</sup> Skull measurements taken after hide was removed<sup>4/</sup> Measurement taken after hair was clipped<sup>13/</sup> Skull seal number if bear was killed

\* Skull collected

Table 7. (contd.) Weights and Measurements Taken From Brown Bears Captured on the Black-Chignik Lake Study Area 1968 - 1971

## BODY MEASUREMENTS TAKEN (MEASUREMENTS GIVEN IN CENTIMETERS)

- |                       |                       |                       |
|-----------------------|-----------------------|-----------------------|
| 1. Total Length       | 4. Neck Circumference | 8. Length of Skull    |
| 2. Height at Shoulder | 5. Girth              | 9. Upper Left Canine  |
| 3. Hind Foot Length   | 6. Body Length        | 10. Lower Left Canine |
|                       | 7. Width of Skull     |                       |

Bear	Sex	Cem. Age	Weight		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
			Meas.	Est.										
No. 795/794														
7/6/70	M	2.5	280	275	181.6	102.9	35.6	56.8	113.0	102.9	17.9	33.6	-	-
No. 796/794														
7/6/70	M	2.5	300	-	195.6	111.8	34.3	58.4	100.3	102.9	18.6	35.1	-	-
10/1/71		3.8	Killed by hunter - 19828 <sup>13/</sup>								20.8 <sup>1/</sup>	41.3 <sup>1/</sup>	-	-
No. 798														
7/7/70	F	3.5	255	250	162.5	104.1	30.5	55.9	113.0	83.8	17.0	32.7	-	-
No. 799														
7/7/70	M	3.5	260	265	161.3	99.1	33.0	55.9	96.5	95.2	16.5	32.9	-	-
No. 801														
8/19/68	M	4.5 <sup>5/</sup>	-	450	180.3	113.0	39.3	68.6	142.2	-	-	-	-	-
5/2/70			Killed by hunter - 15706								20.6 <sup>1/</sup>	40.3 <sup>*1/</sup>	-	-
No. 802														
8/10/68	F	7.5	-	375	175.2	111.8	35.6	78.7	142.2	-	-	-	-	-
No. 805														
8/10/68	F	2.5	-	275	154.9	88.8	26.6	55.8	114.2	-	-	-	-	-
9/24/68			Killed by hunter - 13881 <sup>13/</sup>								16.8 <sup>1/</sup>	30.5 <sup>*1/</sup>	-	-

<sup>1/</sup> Skull measurements taken after hide was removed<sup>5/</sup> Estimated age<sup>13/</sup> Skull seal number if bear was killed

\* Skull collected

Table 7. (contd.) Weights and Measurements Taken From Brown Bears Captured on the Black-Chignik Lake Study Area 1968 - 1971

## BODY MEASUREMENTS TAKEN (MEASUREMENTS GIVEN IN CENTIMETERS)

- |                       |                       |                       |
|-----------------------|-----------------------|-----------------------|
| 1. Total Length       | 4. Neck Circumference | 8. Length of Skull    |
| 2. Height at Shoulder | 5. Girth              | 9. Upper Left Canine  |
| 3. Hind Foot Length   | 6. Body Length        | 10. Lower Left Canine |
|                       | 7. Width of Skull     |                       |

Bear	Sex	Cem. Age	Meas.	Weight Est.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
No. 806 8/10/68 9/15/68	F	4.5	-	200	177.8	101.6 <sup>13/</sup>	34.2	63.4	116.8	-	-	20.3 <sup>1/</sup>	31.7 <sup>1/</sup>	-
Killed by hunter - 14660														
No. 809 8/11/68	F	13.5	-	570	213.3	129.5	38.2	73.6	147.2	-	-	-	-	-
No. 810 8/12/68	M	2.5	-	350	162.6	106.7	36.8	63.5	114.2	-	-	-	-	-
No. 811 8/12/68	F	15.4	-	700	157.4	127.0	40.0	91.4	247.5	-	-	-	-	-
No. 812 8/13/70	M	2.5	-	360	172.1	106.7	34.3	63.4	119.3	-	-	-	-	-
No. 815 6/11/71	M	3.5	300	375	191.7	113.6	35.6	61.0	111.7	116.8	19.1	34.6	-	-
No. 816 6/11/71	F	3.5	260	300	188.0	114.3	-	57.2	108.0	109.8	21.3	34.6	-	-
No. 817 6/12/71	F	3.5	280	250	190.5	104.9	34.6	64.1	120.6	115.6	17.5	34.1	-	-
No. 818 6/12/71	F	7.5	420	450	219.1	120.7	38.1	68.0 <sup>4/</sup>	129.0	101.9	21.6	39.6	-	-

<sup>4/</sup> Measurement taken after hair was clipped<sup>1/</sup> Skull measurements taken after hide was removed<sup>13/</sup> Skull seal number if bear was killed

Table 7. (contd.) Weights and Measurements Taken From Brown Bears Captured on the Black-Chignik Lake Study Area 1968 - 1971

## BODY MEASUREMENTS TAKEN (MEASUREMENTS GIVEN IN CENTIMETERS)

- |                       |                       |                       |
|-----------------------|-----------------------|-----------------------|
| 1. Total Length       | 4. Neck Circumference | 8. Length of Skull    |
| 2. Height at Shoulder | 5. Girth              | 9. Upper Left Canine  |
| 3. Hind Foot Length   | 6. Body Length        | 10. Lower Left Canine |
|                       | 7. Width of Skull     |                       |

Bear	Sex	Cem. Age	Meas.	Weight Est.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
No. 819/818 6/12/71	F	1.5	120	80	149.8	92.1	29.2	43.8	77.4	87.6	14.9	28.9	1.3	1.4
No. 820/818 6/12/71	F	1.5	110	80	138.4	88.6	27.9	41.9	80.0	83.2	14.7	27.6	1.4	1.6
No. 821 6/12/71	M	3.5	435	450	216.6	125.7	39.3	73.6	129.5	116.8	22.6	38.4	3.8	3.6
No. 822 6/13/71	F	5.5	387	350	219.6	116.8	38.1	66.0	125.7	119.4	19.7	35.6	3.5	3.2
No. 823 6/13/71	F	4.5	330	350	198.1	114.3	35.4	63.5	116.8	124.4	18.6	35.2	3.2	3.0
No. 824 6/13/71	M	8 <sup>5/</sup>		650	-	-	39.4	-	-	-	-	-	-	-
No. 825 <sup>8/</sup> 6/19/70	F	10.5	-	500	213.4	113.3	38.1	80.0	141.0	116.8	24.8	36.2	-	-
6/14/71		11.5	540	400	210.8	127.6	40.0	78.7	132.1	138.4	24.9	40.1	3.8	3.5
No. 827 6/17/71	M	5.5	525	450	200.6	118.8	38.7	76.2	139.7	120.0	21.0	37.2	3.3	3.2
No. 828 6/17/71	F	3.5	365	350	199.4	-	34.3	67.3	124.4	-	17.6	37.3	3.3	3.2

<sup>5/</sup> Estimated age<sup>8/</sup> 1970 Tattooed No. 709, 1971 Retattooed No. 825

Table. 7(contd.) Weights and Measurements Taken From Brown Bears Captured on the Black-Chignik Lake Study Area 1968 - 1971

## BODY MEASUREMENTS TAKEN (MEASUREMENTS GIVEN IN CENTIMETERS)

- |                       |                       |                       |
|-----------------------|-----------------------|-----------------------|
| 1. Total Length       | 4. Neck Circumference | 8. Length of Skull    |
| 2. Height at Shoulder | 5. Girth              | 9. Upper Left Canine  |
| 3. Hind Foot Length   | 6. Body Length        | 10. Lower Left Canine |
|                       | 7. Width of Skull     |                       |

Bear	Sex	Cem. Age	Weight		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
			Meas.	Est.										
No. 829														
6/19/71	F	16.5	480	400	204.4	229.5	36.2	73.7	124.4	136.5	23.8	39.4	3.8	3.3
No. 830														
6/19/71	F	3.5	285	175	183.5	108.0	30.5	64.8	105.4	107.9	17.5	33.1	3.2	3.1
8/15/71		3.6	325	400	190.5	103.5	34.3	67.9	109.2	114.3	17.8	34.0	-	-
No. 831														
6/19/71	F	4.5	335	200	198.8	115.6	35.6	67.3	118.1	115.6	19.7	37.8	3.5	3.2
No. 832 <sup>11/</sup>														
8/11/68	M	1.5	-	175	160.0	85.1	31.2	50.8	95.2	-	-	-	-	-
6/20/71		4.5	415	350	210.8	126.4	37.5	73.6	127.0	119.4	20.1	37.8	4.1	4.0
No. 833/867														
6/20/71	F	2.5	240	300	180.8	105.4	33.0	49.5	100.3	111.1	17.5	32.7	3.5	3.5
7/2/71		2.5	240	270	156.6	102.5	32.5	50.5	107.0	108.0	17.2	32.3	3.4	3.0
No. 835														
6/21/71	M	3.5	495	450	209.5	123.8	39.4	78.7	143.5	146.0	22.2	38.1	3.8	3.7
No. 836														
6/21/71	F	5.5	425	400	226.1	121.8	-	71.1	127.0	125.7	23.2	39.4	3.8	3.3
No. 838														
6/22/71	F	13.5	445	350	212.1	118.1	36.8	73.7	141.0	119.4	22.6	37.2	3.5	3.2
No. 839														
6/22/71	F	12.5	-	400	226.1	118.1	33.0	72.4	127.0	133.3	27.2	37.5	4.0	2.9

<sup>11/</sup> 1968 Tattooed No. 808, Retattooed 1971 No. 832

Table 7. (contd.) Weights and Measurements Taken From Brown Bears Captured on the Black-Chignik Lake Study Area 1968 - 1971

## BODY MEASUREMENTS TAKEN (MEASUREMENTS GIVEN IN CENTIMETERS)

- |                       |                       |                       |
|-----------------------|-----------------------|-----------------------|
| 1. Total Length       | 4. Neck Circumference | 8. Length of Skull    |
| 2. Height at Shoulder | 5. Girth              | 9. Upper Left Canine  |
| 3. Hind Foot Length   | 6. Body Length        | 10. Lower Left Canine |
|                       | 7. Width of Skull     |                       |

Bear	Sex	Cem. Age	Weight		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
			Meas.	Est.										
No. 840/839														
6/22/71	F	1.5	140	100	172.7	90.8	27.9	49.5	86.3	83.8	17.5	28.4	1.3	2.2
No. 841/839														
6/22/71	F	1.5	110	100	153.7	86.3	27.3	45.1	82.5	82.5	14.4	26.6	1.4	2.4
No. 842/839														
6/22/71	F	1.5	105	100	142.8	78.7	25.4	40.6	75.4	82.6	14.7	27.2	1.9	2.2
No. 843														
6/22/71	F	4.5	390	400	208.9	125.7	36.8	69.2	132.1	119.4	22.2	38.2	3.3	3.0
No. 851 <sup>2/</sup>														
8/10/68	F	6.5	-	640	213.3	119.4	33.7	76.2	142.2	-			-	-
6/19/70		8.5	-	450	212.7	121.9	33.0	77.5	137.1	129.2	21.9	37.5	-	-
6/24/71		9.5	495	400	208.9	121.9	38.1	81.2	130.8	109.2	22.4	38.4	3.3	3.0
No. 853														
6/24/71	M	6.5	660	550	217.1	132.1	43.2	87.6	146.0	141.0	24.0	43.2	4.1	3.8
No. 854														
6/24/71	F	11.5	?	400	121.0	123.8	36.5	86.3	-	121.9	34.6	40.0	3.6	3.3
No. 855/854														
6/24/71	F	2.5	240	100	175.2	100.9	31.1	62.2	101.6	98.4	17.0	37.5	2.8	1.8

<sup>2/</sup> 1968 Tattooed No. 804, Retattooed 1970 No. 711, Retattooed 1971 No. 851

Table 7. (contd.) Weights and Measurements Taken From Brown Bears Captured on the Black-Chignik Lake Study Area 1968 - 1971

## BODY MEASUREMENTS TAKEN (MEASUREMENTS GIVEN IN CENTIMETERS)

- |                       |                       |                       |
|-----------------------|-----------------------|-----------------------|
| 1. Total Length       | 4. Neck Circumference | 8. Length of Skull    |
| 2. Height at Shoulder | 5. Girth              | 9. Upper Left Canine  |
| 3. Hind Foot Length   | 6. Body Length        | 10. Lower Left Canine |
|                       | 7. Width of Skull     |                       |

Bear	Sex	Cem. Age	Weight		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
			Meas.	Est.										
No. 856/854														
6/24/71	M	2.5	325	150	180.3	116.8	36.8	64.7	116.8	100.3	19.1	36.8	3.6	3.5
No. 860														
6/25/71	M	5.5	540	450	227.2	127.0	39.3	80.0	142.2	114.3	22.2	38.4	3.8	3.6
No. 861														
6/30/71	F	5.5	430	350	191.7	115.6	34.3	67.3	116.8	113.6	21.1	36.6	3.3	3.2
No. 862														
6/30/71	M	4.5	465	450	118.4	127.6 <sup>13/</sup>	41.6	74.9	126.3	123.8	24.0	38.6	4.0	3.2
10/28/71		4.8	Killed by hunter - 19874 <sup>13/</sup>								23.2 <sup>14/</sup>	41.9 <sup>14/</sup>		
No. 863														
6/30/71	F	2.5	295	250	177.8	106.6	34.9	52.7	90.8	115.6	17.3	33.2	3.3	3.3
No. 864														
7/1/71	F	9.5	420	450	185.4	110.8	33.6	68.6	119.2	118.6	21.8	36.5	-	-
No. 865/864														
7/1/71	M	2.5	265	300	162.6	95.9	34.0	54.0	99.7	91.1	17.6	31.7	2.9	3.2
No. 866/864														
7/1/71	M	2.5	290	200	171.4	104.1	35.9	56.2	106.7	97.1	18.6	34.6	3.3	3.5 <sup>14/</sup>
No. 867														
7/2/71	F	13.5	470	500	183.0	110.5	33.5	74.0	130.0	129.0	22.6	38.1	3.5	3.9

<sup>1/</sup> Skull measurements taken after hide removed<sup>13/</sup> Skull seal number if bear was killed<sup>14/</sup> Right canines measured



Table 7. (contd.) Weights and Measurements Taken From Brown Bears Captured on the Black-Chignik Lake Study Area 1968-1971

## BODY MEASUREMENTS TAKEN (MEASUREMENTS GIVEN IN CENTIMETERS)

- |                       |                       |                       |
|-----------------------|-----------------------|-----------------------|
| 1. Total Length       | 4. Neck Circumference | 8. Length of Skull    |
| 2. Height at Shoulder | 5. Girth              | 9. Upper Left Canine  |
| 3. Hind Foot Length   | 6. Body Length        | 10. Lower Left Canine |
|                       | 7. Width of Skull     |                       |

Bear	Sex	Cem. Age	Weight		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
			Meas.	Est.										
No. 868/867														
7/2/71	M	2.5	305	270	158.4	110.0	34.8	58.0	125.0	99.5	18.3	35.1	3.8	3.6 <sup>14/</sup>
10/4/71		2.8	Killed by hunter - 17262 <sup>13/</sup>								18.6	36.8	-	-
No. 869/867														
7/2/71	F	2.5	265	270	174.6	103.8	34.1	52.8	97.0	98.6	18.0	33.3	3.1	3.0
No. 870 <sup>10/</sup>														
6/20/70	M	3.5	-	300	192.4	108.0	34.3	67.3	144.1	116.8	21.1	35.9	-	-
7/2/71		4.5	460	600	198.8	123.8	37.7	62.0	123.0	117.5	21.5	39.8	3.3	3.1
No. 871/900 <sup>9/</sup>														
7/7/70	F	2.5	220	250	175.9	99.7	34.0	54.6	86.4	97.1	17.8	34.0	-	-
7/2/71		3.5	380	300	188.3	116.2	35.0	63.8	108.0	121.0	19.1	36.8	-	-
No. 900														
7/7/70	F	10.5	510	500	212.7	105.4	35.6	74.9	100.3	116.2	23.2	39.7	-	-
No. 902/900														
7/7/70	M	2.5	220	260	172.7	107.3	36.8	57.1	105.4	95.9	17.2	36.7	-	-

9/ Tattooed 1970 No. 901, Retattooed 1971 No. 871

10/ Tattooed 1970 No. 718, Retattooed 1971 No. 870

14/ Right canine measured

Table 8. McNeil River Brown Bear Fishing Effort, 1969-1971.

	<u>1969</u>	<u>1970</u>	<u>1971*</u>
Dates of Observation	14-30 July	13 July-4 August	24 July-29 August
Man Hours of Observation	107.6	124.3	257.3
Bear Groups**	39	40	59
Total Bears	72	65	79
Bear Fishing Hours	727.9	720.8	1,665.5
Number of Salmon Caught	1,599	1,685	3,050
Fish Caught per Bear Hour	2.2	2.3	1.8

\* Data provided by Derek Stonorov, Utah State University

\*\* Represents a single bear or a family unit.

The reproductive status, age and weights of female brown bears captured or observed more than one year at McNeil River are summarized in Table 9. Presented in Table 10 is the growth history of brown bears captured at McNeil River during the years 1963 through 1972.

#### Evaluation of Marking Equipment

Canvas identification collars attached to adult brown bears were evaluated and found unsuitable after six month's use. Reconnaissance flights to monitor movements of tagged bears were suspended in December, 1970. Difficulty was experienced in identification of individual canvas collars. Numerous collared bears were seen by Department personnel in the first six months of 1971 but no collars were positively identified. The canvas collars were removed from bears captured during June, 1971. Problems with the canvas collar included deterioration and fading of the nylon color code, loss or breakage of the numbered identification plate, rotting of the canvas material, loss of lead weights which held the collar in an upright position and in a few instances, skin irritation and lesions on the bear's neck caused by the collar. Seven collared bears were killed by hunters during the fall 1970 and spring 1971 bear hunting seasons. Only one hunter reported pelt damage from collar attachment. The life span of the collars, though shorter than expected, provided the means for obtaining much summer, fall and early winter brown bear movement data.

A new nylon-fiberglass identification collar was developed during the winter of 1970-71 and 12 of the new collars were attached to adult bears on an experimental basis. The durability, ease of collar identification by observers flying in fixed-wing aircraft and compatibility of collars in relation to the health of bears will be determined next year when collared bears are recaptured.

The loss of ear tags was noted on 47 brown bears recaptured or killed by hunters. Sixteen of 43 King Tuff-Tex (Agri-Industries, St. Paul, Minnesota) and five of 41 Rototags were lost. Only the Rototag was used to ear-mark bears captured this year.

Lip tattoos were unreadable on 7 of 37 recaptured bears. Tattoo condition was examined on bear hides presented to the Department for sealing and six of ten tattoo numbers were identified. Identification of the tattoo number was dependent upon method of skinning and degree of salting and hide dryness. Next year all captured bears will be tattooed in the groin as well as upper lip to improve marked bear identification. Summarized in Table 11 is the marking history of all bears captured and tagged.

During July, 1970, six McNeil River bears were collared with color-coded, four-inch wide canvas collars with a plastic identification plaque attached. Two of the bears so marked had lost their collars by the summer of 1971 but were positively identified by other means. The remaining four collars were removed. No sign of irritation to the skin on the neck of any of these bears was noted. However, on two of the bears, the neck hair had been rubbed shorter than surrounding hair giving the neck a banded appearance. All collars were in very poor condition. The identification plaques were gone

Table 9. Reproductive Status, Age and Weights of Female Brown Bears Captured or Observed More Than One Year at McNeil River.

Bear	Captured or Observed	Cementum Age	Number of Cubs	Number of 1.5 or 2.5 yr. Old Cubs	Vulva Condition	Estimated Weight	Alizarin Red S Injected
No. 03							
1963	Captured	3.5 <sup>4/</sup>	None	None	Turgid	280 <sup>5/</sup>	--
1965	Recaptured	--	Two	None	--	--	--
1967	Recaptured	7.5	None	None	Turgid	400	Yes
1968	Recaptured	9.5	Three <sup>1/</sup>	None	--	--	--
1969	Observed	--	None	Two	--	--	--
1970	Recaptured	10.5	None	None	Normal	350	--
1971	Recaptured	--	One	None	Normal	--	--
No. 5							
1965	Captured	--	Two <sup>2/</sup>	None	--	--	--
1966	Observed	--	None	None	--	--	--
1967	Recaptured <sup>3/</sup>	6.5	Two	None	--	302 <sup>5/</sup>	--
No. 13							
1963	Captured	2.5 <sup>4/</sup>	None	None	Not Turgid	275 <sup>5/</sup>	--
1966	Recaptured	--	None	None	Turgid	--	--
1967	Observed	--	None	None	--	--	--
1968	Recaptured	8.5	One	None	--	300	Yes
1969	Observed	--	None	One	--	--	--
1970	Recaptured	10.5	None	None	Normal	350	--
1971	Recaptured	11.5	One	None	Normal	400	--

<sup>1/</sup> Loss of one cub observed<sup>2/</sup> One cub of each sex<sup>3/</sup> Drug mortality<sup>4/</sup> Estimated age<sup>5/</sup> Measured weight

Table 9. Reproductive Status, Age and Weights of Female Brown Bears Captured or Observed More Than One Year at McNeil River.

Bear	Captured or Observed	Cementum Age	Number of Cubs	Number of 1.5 or 2.5 yr. Old Cubs	Vulva Condition	Estimated Weight	Alizarin Red S Injected
No. 14							
1963	Captured	7.5 <sup>4/</sup>	None	None	Turgid	420 <sup>5/</sup>	--
1966	Recaptured	--	None	None	Turgid	--	--
1968	Recaptured	10	None	None	Turgid	500	--
1969	Observed	--	Three	None	--	--	--
1970	Recaptured	13.5	None	Three	Normal	600	--
1971	Observed	--	None	None	--	--	--
No. 17							
1967	Captured	2.5 <sup>4/</sup>	None	None	Not Turgid	200	Yes
1968	Recaptured	--	None	None	Turgid	325	Yes
1971	Recaptured	6.5	None	One(1.5 yr.)	Normal	350	--
No. 19-A							
1967	Captured	4.5	None	None	Turgid	400	Yes
1968	Observed	--	Three	None	--	--	--
1969	Observed	--	None	One	--	--	--
1970	Recaptured	9.5	None	None	Normal	350	--
1971	Recaptured	10.5	None	None	Turgid	450	--
No. 22							
1967	Captured	17.5	None	None	Turgid	500	--
1968	Observed	--	None	None	--	--	--
1969	Observed	--	None	None	--	--	--
1970	Recaptured	20.5	None	None	Normal	600	--
1971	Recaptured	21.5	None	None	Normal	600	--

<sup>4/</sup> Estimated age<sup>5/</sup> Measured weight

Table 9. Reproductive Status, Age and Weights of Female Brown Bears Captured or Observed More Than One Year at McNeil River

Bear	Captured or Observed	Cementum Age	Number of Cubs	Number of 1.5 or 2.5 yr. Old Cubs	Vulva Condition	Estimated Weight	Alizarin Red S Injected
No. 53							
1968 <sup>6/</sup>	Captured	11+ <sup>4/</sup>	None	Three	Normal	300	Yes
1971 <sup>7/</sup>	Observed	---	---	---	---	---	---
1971 <sup>7/</sup>	Recaptured	---	---	Two	Normal	500	---
No. 57							
1968	Captured	3.5	None	None	Turgid	300	Yes
1969	Observed	---	None	None	---	---	---
1970	Recaptured	5.5	None	None	Normal	400	---
1971	Recaptured <sup>3/</sup>	6.5	Two	None	Normal	350	---
No. 124							
1963	Captured	3.5 <sup>4/</sup>	None	None	Turgid	325 <sup>5/</sup>	---
1967	Recaptured	7.5	None	None	Turgid	350	Yes
1968	Observed	---	Two	None	---	---	---
1969	Observed	---	None	Two	---	---	---
1970	Recaptured	10.5	None	None	Normal	375	---
1971 <sup>8/</sup>	Recaptured	11.5	One	None	Normal	400	---
1971 <sup>8/</sup>	Observed	---	One	None	---	400	---
No. 126							
1967	Captured	2.5	None	None	Turgid	250 <sup>5/</sup>	Yes
1970	Captured	6.5	None	None	Normal	400	---
1971	Recaptured	7.5	Two	None	Normal	350	---

<sup>3/</sup> Drug mortality<sup>4/</sup> Estimated age<sup>5/</sup> Measured weight<sup>6/</sup> Observed for short period at McNeil River<sup>7/</sup> Recaptured at Kulik River<sup>8/</sup> Captured or observed at Karlik River

Table 10. Growth History of Brown Bears Captured at McNeil River.

BODY MEASUREMENTS TAKEN (MEASUREMENTS GIVEN IN CENTIMETERS)													
		1. Total Length	2. Height at Shoulder	3. Hind Foot Length	4. Neck Circumference	5. Girth	6. Body Length	7. Upper Left Canine	8. Lower Left Canine	9. Width of Skull	10. Length of Skull		
Bear	Sex	Cem. Age	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	Est. Weight
No. 03	F												
1963		3.5 <sup>1/</sup>	173.5	94.7	31.5								280 <sup>5/</sup>
1965			170.2	109.2	28.7		111.8						
1967		7.5	184.9	120.1	33.3	73.7	124.5						400
1968		9.5	200.7	109.2	34.3	72.4	133.4						375
1970		10.5	193.0	101.5	33.0	73.6	147.7	111.8			20.3	32.1	350
1971			189.2	99.1	30.5		120.0	104.1	3.4	3.7	21.2	37.5	400
No. 05	F												
1965		4.5	177.8	101.6	29.2								
1967 <sup>2/</sup>		6.5	194.3	95.3	31.2	68.6	108.0						302 <sup>5/</sup>
No. 13	F												
1963		2.5 <sup>1/</sup>	162.6	96.5	31.2								275 <sup>5/</sup>
1968		8.5	181.6	108.0	27.9	66.0	116.8						300
1970		10.5	182.8	111.7	21.0	71.1	129.5	99.1					350
1971		11.5	177.1	111.7	34.3		133.3	114.3	2.7	3.2	21.2	34.9	400

<sup>1/</sup> Estimated age  
<sup>2/</sup> Drug mortality  
<sup>5/</sup> Measured weight

Table 10. (cont'd.) Growth History of Brown Bears Captured at McNeil River.

Bear	Sex	Cem. Age	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	Est. Weight
No. 14	F												
1963		<u>5</u> <sup>1/</sup>	179.1	106.2	33.8								420 <sup>5/</sup>
1968		10.5	213.3	121.9	38.1	85.1	138.4						500
1970		13.5	188.0	106.7	33.1	79.7	162.5						600
No. 17	F												
1967		<u>3</u> <sup>1/</sup>	176.5	104.1	33.8	63.0	102.9						200
1968		<u>4</u> <sup>1/</sup>	188.0	105.4	30.5	71.9	109.2						325
1971		6.5	180.3	99.1	35.6		130.8	99.1	2.7	3.0	22.2	36.5	350
No. 19-A	F												
1967		4.5	184.2	119.3	35.2	71.1	120.6						
1970		9.5	193.1	109.2	33.0	76.3	130.8	116.9			22.9	37.5	350
1971		10.5	203.2	109.2	34.3			111.8	2.5	3.0	24.1	38.1	450
No. 19-B	F												
1971		2.5	177.8	86.3	31.8		106.7	96.5	3.0	3.0	17.8	31.2	200
No. 21	M												
1967		3.5	180.3	104.2	34.8	61.0	110.4						275
1970		5.5	190.5	109.2	36.8	74.9	134.6						400
No. 22	F												
1967		17.5	210.7	121.2	36.2	78.6	142.2						300
1970		20.5	218.3	127.0	35.5	81.2	137.2	109.2			22.9	37.3	600
1971		21.5	200.6	104.2	38.1		165.1	107.9	1.7	3.8	23.5	38.7	600
No. 23	M												
1967		13.5	215.8	124.4	35.6	91.4	137.2						650
1970		16.5	226.2	124.4	35.6	90.1	137.2						750
No. 39	F												
1971		2.5	165.1	96.5	30.5		99.1	96.5	2.7	2.7	18.4	32.1	200

1/ Estimated age  
5/ Measured weight



Table 10. (cont'd.) Growth History of Brown Bears Captured at McNeil River.

Bear	Sex	Cem. Age	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	Est. Weight
No. 53	F												
1968		11+	216.0	109.2	29.2	66.1	132.1						300
1971*		--	208.4	114.2	34.3			121.8	3.8	3.2	23.8	30.8	500
No. 57	F												
1968		3.5	187.9	104.2	35.6	67.8	109.2						300 <sup>5/</sup>
1970		5.5	208.2	105.4	30.4	71.1	124.4	106.7			19.6	35.6	400
1971 <sup>2/</sup>		6.5	185.4	111.8	35.6		132.1	119.4	2.5	3.0	20.9	36.8	350
No. 91	F												
1971		2.5	165.1	97.8	30.5		109.2	96.5	3.0	3.0	18.4	31.1	200
No. 94/57	F												
1971		0.5	92.1	47.0	18.4		53.3	50.8			12.1	19.7	25
No. 95/57	F												
1971		0.5	83.8	74.0	17.2		50.8	44.4			11.7	18.4	30
No. 123	M												
1970		1.5	154.9	95.3	29.2		101.6	81.3			17.2	27.0	200
1971		2.5	165.1	101.6	31.8		104.1	106.7	3.3	3.6	18.1	32.8	200
No. 124	F												
1963			156.2	90.2	30.2								325 <sup>5/</sup>
1967		7.5	195.6	101.6	30.5	71.1	137.2						350
1970		10.5	205.8	101.6	33.0	69.2	129.5	124.4					375
1971		11.5	205.8	99.1	34.3		137.2	104.2	3.2	2.4	22.8	37.8	400
No. 125	M												
1970		1.5	157.5	94.0	27.8		88.9	94.0			15.7	26.7	150
1971		2.5	165.1	97.9	32.4		96.5	96.5	3.1	3.1	17.1	30.5	200

<sup>2/</sup> Drug mortality  
<sup>5/</sup> Measured weight  
\* Recaptured at Kulik River

Table 10. (cont'd.) Growth History of Brown Bears Captured at McNeil River.

Bear	Sex	Cem. Age	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	Est. Weight
No. 126	F												
1967		2.5	173.9	95.8	31.7	61.0	109.2						250
1970		6.5	177.8	101.6	30.5	72.4	—	106.7			21.6	32.1	400
1971		7.5	191.8	107.9	30.5		147.2	90.2	3.0	3.1	21.8	34.3	350
No. 843	F												
1971 <sup>3/</sup>		0.9	119.2	66.1	22.2		77.5	62.2			12.3	21.2 <sup>7/</sup>	85 <sup>5/</sup>
											11.8	20.9 <sup>7/</sup>	
No. 957/53 <sup>4/</sup>													
1971	M	1.5	147.3	86.3	28.6		106.7	88.9	1.9	0.8	16.5	28.6	200
No. 958/53 <sup>4/</sup>													
1971	F	1.5	127.0	68.6	24.1		86.3	63.5	0.6	0.6	14.0	23.5	125
No. 8585 <sup>6/</sup>													
1970	F		226.0	115.6	33.1	78.7	121.8	124.4			25.4 <sup>7/</sup>	39.4 <sup>7/</sup>	500
											23.8 <sup>7/</sup>	39.4 <sup>7/</sup>	
8586/8585 <sup>6/</sup>													
1970	M		137.2	73.7	22.8	45.7	86.4	76.2			17.2 <sup>7/</sup>	26.3 <sup>7/</sup>	90
											16.5 <sup>7/</sup>	25.7 <sup>7/</sup>	

<sup>3/</sup> Orphan cub collected at King Salmon Nov. 5, 1971<sup>4/</sup> Captured and measured Sept. 23, 1971 at Kulik River<sup>5/</sup> Measured weight<sup>6/</sup> Skull seal number of bear killed by the public in defense of life at McNeil River<sup>7/</sup> Skull measurements taken after hide removed

Table 11. Marking History of Brown Bears Captured or Harvested on the Black Lake Study Area.

Type, Location and Status of Ear Tag			Ear and Collar Marker Color Code				Collar Color Design	
M = Metal	F = Front		Blk = Black		Blu = Blue		St = Stripe	
K.T. = King Tuff-Tex	B = Back		Y = Yellow		O = Orange Glo		H.H. = Half and Half	
Roto = Rototag	Miss = Missing		P = Pink		Gr = Green		H.B. = Horizontal Bars	
Sm Roto = Small Rototag	Pres = Present		W = White		Pur = Purple			
Rt = Right	Unk = Unknown		R = Red					
L = Left								

  

Bear	Sex	Captured or Observed	Ear Tag Number		Ear Tag and/or Flag Color		Collar No. and Color	Tattoo Condition
			Right	Left	Right	Left		
1								
7/3/71	M	Captured	Roto-200	SmRoto-101	All W	All Y	None	1
			SmRoto-100	-	All Y	-	-	-
			-	-	R Flag	-	-	-
10/15/71		Hunter kill	All pres	Pres	-	-	-	Good
2								
7/3/71	F	Captured	Roto-201	SmRoto-103	All W	All Y	None	2
			SmRoto-102	-	All Y	-	-	-
			-	-	R Flag	-	-	-
3								
7/3/71	F	Captured	SmRoto-104	Roto-202	All Y	All W	None	3
			-	-	-	R Flag	-	-
4/3								
7/3/71	F	Captured	SmRoto-106	SmRoto-105	All Y	All Y	None	4
5/3								
7/3/71	F	Captured	SmRoto-107	SmRoto-109	All Y	All Y	None	5
6								
7/4/71	M	Captured	Roto-204	Roto-203	All W	All W	None	6
			-	-	-	R Flag	-	-
7								
7/4/71	M	Captured	Roto-208	Roto-207	All W	All W	None	7
			-	-	-	R Flag	-	-

Table 11. (cont'd.) Marking History of Brown Bears Captured or Harvested on the Black Lake Study Area.

Type, Location and Status of Ear Tag			Ear and Collar Marker Color Code				Collar Color Design	
M = Metal	F = Front		Blk = Black		Blu = Blue		St = Stripe	
K.T. = King Tuff-Tex	B = Back		Y = Yellow		O = Orange Glo		H.H. = Half and Half	
Roto = Rototag	Miss = Missing		P = Pink		Gr = Green		H.B. = Horizontal Bars	
Sm Roto = Small Rototag	Pres = Present		W = White		Pur = Purple			
Rt = Right	Unk = Unknown		R = Red					
L = Left								

  

Bear	Sex	Captured or Observed	Ear Tag Number		Ear Tag and/or Flag Color		Collar No. and Color	Tattoo Condition
			Right	Left	Right	Left		
8 7/4/71	M	Captured	Roto-206 SmRoto-111	Roto-205 -	All W All Y	All W R Flag	None -	8 -
9 7/4/71	F	Captured	Roto-211	Roto-210	All W	All W	Two W Dots on Red	9
10/9 7/4/71	M	Captured	SmRoto-113	SmRoto-112	All Y	All Y	None	10
11 7/5/71	F	Captured	SmRoto-114	Roto-209	All Y	All W	W No. 2 on Red	11
10/6/71		Observed	-	-	-	-	Pres	-
12/11 7/5/71	F	Captured	SmRoto-116	SmRoto-115	All Y	All Y	None	12
13/779 7/5/71	M	Captured	SmRoto-122	SmRoto-121	All Y	All Y	None	13
14/779 7/5/71	M	Captured	SmRoto-119	SmRoto-120	All Y	All Y	None	14
15/779 7/5/71	F	Captured	SmRoto-117	SmRoto-118	All Y	All Y	None	15

Table 11. (cont'd.) Marking History of Brown Bears Captured or Harvested on the Black Lake Study Area.

Type, Location and Status of Ear Tag			Ear and Collar Marker Color Code				Collar Color Design	
M = Metal	F = Front		Blk = Black		Blu = Blue		St = Stripe	
K.T. = King Tuff-Tex	B = Back		Y = Yellow		O = Orange Glo		H.H. = Half and Half	
Roto = Rototag	Miss = Missing		P = Pink		Gr = Green		H.B. = Horizontal Bars	
Sm Roto = Small Rototag	Pres = Present		W = White		Pur = Purple			
Rt = Right	Unk = Unknown		R = Red					
L = Left								

Bear	Sex	Captured or Observed	Ear Tag Number		Ear Tag and/or Flag Color		Collar No. and Color	Tattoo Condition
			Right	Left	Right	Left		
16 7/16/71	F	Captured	Roto-213	Roto-212	All W	All W	W No. 4 on Red	16
17/16 7/6/71	F	Captured	SmRoto-123	SmRoto-124	All Y	All Y	None	17
19 7/6/71	F	Captured	Roto-214	Roto-215	All W R Flag	All W R Flag	None	19
20/19 7/6/71	M	Captured	SmRoto-128	SmRoto-127	All Y	All Y	None	20
21/19 7/6/71	M	Captured	SmRoto-125	SmRoto-126	All Y	All Y	None	21
22 7/7/71	M	Captured	SmRoto-129	Roto-216	All Y	All W	None	22
23 7/7/71	F	Captured	Roto-217	Roto-218	All W	All W	W No. 3 on Red	23
24/23 7/7/71	F	Captured	SmRoto-131	SmRoto-130	All Y	All Y	None	24

Table 11. (cont'd.) Marking History of Brown Bears Captured and Harvested on the Black Lake Study Area.

Type, Location and Status of Ear Tag			Ear and Collar Marker Color Code				Collar Color Design	
M = Metal	F = Front	Blk = Black	Blu = Blue	St = Stripe				
K.T. = King Tuff-Tex	B = Back	Y = Yellow	O = Orange Glo	H.H. = Half and Half				
Roto = Rototag	Miss = Missing	P = Pink	Gr = Green	H.B. = Horizontal Bars				
Sm Roto = Small Rototag	Pres = Present	W = White	Pur = Purple					
Rt = Right	Unk = Unknown	R = Red						
L = Left								

Bear	Sex	Captured or Observed	Ear Tag Number		Ear Tag and/or Flag Color		Collar No. and Color	Tattoo Condition
			Right	Left	Right	Left		
25/23 7/7/71	F	Captured	SmRoto-132	SmRoto-133	All Y	All Y	None	25
26/23 7/7/71	M	Captured	SmRoto-134	SmRoto-135	All Y	All Y	None	26
27 7/8/71	F	Captured	SmRoto-137	SmRoto-136	All Y R Flag	All Y R Flag	None	27
28 7/8/71	F	Captured	SmRoto-138	SmRoto-139	All Y R Flag	All Y R Flag	None	28
29 7/8/71	F	Captured	SmRoto-140	Roto-219	All Y	All W R Flag	None	29
10/1/71		Killed by hunter	?	Pres		Pres		Good
701 6/16/70 6/16/71	F	Captured Recaptured	Roto-1900 Pres Roto-1941	K.T.-1	F(Y),B(P)  P and Y P Flag	Blk	None	701 Good
702 6/17/70 6/29/70 10/1/70	M	Captured Recaptured Hunter Kill	Roto-1899 Pres Pres	K.T.-2 Pres Miss	F(P),B(Y)	Blk	None	702  None

Table 11. (cont'd.) Marking History of Brown Bears Captured or Harvested on the Black Lake Study Area.

Type, Location and Status of Ear Tag			Ear and Collar Marker Color Code			Collar Color Design		
M = Metal	F = Front		Blk = Black	Blu = Blue	St = Stripe			
K.T. = King Tuff-Tex	B = Back		Y = Yellow	O = Orange Glo	H.H. = Half and Half			
Roto = Rototag	Miss = Missing		P = Pink	Gr = Green	H.B. = Horizontal Bars			
Sm Roto = Small Rototag	Pres = Present		W = White	Pur = Purple				
Rt = Right	Unk = Unknown		R = Red					
L = Left								

  

Bear	Sex	Captured or Observed	Ear Tag Number		Ear Tag and/or Flag Color		Collar No. and Color	Tattoo Condition
			Right	Left	Right	Left		
703								
6/18/70	F	Captured	Roto-1898	K.T.-1	F(P),B(Y)	W	No. 1, all Y	703
6/20/71		Recaptured	Pres	Pres			Pres-Rem.	Good
			Roto-1955	Roto-1956	P and Y	P and Y		
					Blu Flag			
704/703 <sup>1/</sup>								
6/18/70	M	Captured	Roto-1897	K.T.-9	F(P),B(Y)	Blk	None	704
6/23/71		Recaptured	Pres	Pres				Good <sup>2/</sup>
				Roto-1985		Y and Y		
						W Flag		
8/15/71		Recaptured	Pres	All Pres		Pres		Good
705/703								
6/18/70	F	Captured	Roto-1896	K.T.-7	F(P),B(Y)	Blk	None	705
6/23/71		Recaptured	Broken	Pres				Good
			Roto-1984	Roto-1983	Y and P	Y and P		
						W Flag		
706								
6/18/70	F	Captured	Roto-1802	K.T.-2	F(Y),B(Y)	W	No. 2, all W	706
6/21/71		Recaptured	Pres	Miss			Pres - Rem.	Good
				Roto-1960		P and Y		
						Blu Flag		

<sup>1/</sup> Virgule between bear accession numbers indicate offspring first and sow last.<sup>2/</sup> Tattooed on 6/23/71 with incorrect tattoo number 705.

Table 11. (cont'd.) Marking History of Brown Bears Captured or Harvested on the Black Lake Study Area.

Type, Location and Status of Ear Tag		Ear and Collar Marker Color Code				Collar Color Design		
M = Metal	F = Front	Blk = Black	Blu = Blue	St = Stripe				
K.T. = King Tuff-Tex	B = Back	Y = Yellow	O = Orange Glo	H.H. = Half and Half				
Roto = Rototag	Miss = Missing	P = Pink	Gr = Green	H.B. = Horizontal Bars				
Sm Roto = Small Rototag	Pres = Present	W = White	Pur = Purple					
Rt = Right	Unk = Unknown	R = Red						
L = Left								

  

Bear	Sex	Captured or Observed	Ear Tag Number		Ear Tag and/or Flag Color		Collar No. and Color	Tattoo Condition
			Right	Left	Right	Left		
707								
6/19/70	F	Captured	Roto-1803	K.T.-3	All Y	All Blk	No. 3, all Blu	707
6/22/71		Recaptured	Pres	Miss			Miss	Good
				Roto-1979		Y and Y W Flag	Temp W Collar	
10/1/71		Hunter Kill	Pres	Pres	-	-	Unknown	Good
708/707								
6/19/70	F	Captured	Roto-1895	K.T.-3	F(P),B(Y)	All W	None	708
6/23/71		Recaptured	Pres	Miss				Fair
				Roto-1980		Y and Y W Flag		
710/825 <sup>5/</sup>								
6/19/70	M	Captured	Roto-1893	K.T.-4	F(P),B(Y)	All Blk	None	710
6/14/71		Recaptured	Pres	Pres				Good
				Roto-1933		P and Y W Flag		
712/851 <sup>7/</sup>								
6/19/70	F	Captured	Roto-1894	K.T.-5	F(P),B(Y)	All Blk	None	712
713/851								
6/19/70	M	Captured	Roto-1892	K.T.-8	F(P),B(Y)	All Blk	None	713

<sup>5/</sup> 1970 Tattoo No. 709, 1971 Retattooed 825.<sup>7/</sup> 1968 Tattoo No. 807, Retattooed 1969 No. 711, Retattooed 1971 No. 851.



Table 11. (cont'd.) Marking History of Brown Bears Captured or Harvested on the Black Lake Study Area.

<u>Type, Location and Status of Ear Tag</u>			<u>Ear and Collar Marker Color Code</u>				<u>Collar Color Design</u>	
M = Metal	F = Front		Blk = Black	Blu = Blue			St = Stripe	
K.T. = King Tuff-Tex	B = Back		Y = Yellow	O = Orange Glo			H.H. = Half and Half	
Roto = Rototag	Miss = Missing		P = Pink	Gr = Green			H.B. = Horizontal Bars	
Sm Roto = Small Rototag	Pres = Present		W = White	Pur = Purple				
Rt = Right	Unk = Unknown		R = Red					
L = Left								

  

Bear	Sex	Captured or Observed	Ear Tag Number		Ear Tag and/or Flag Color		Collar No. and Color	Tattoo Condition
			Right	Left	Right	Left		
714 6/19/70	M	Captured	Roto-1806	K.T.-6	All Y	All W	No. 6 Blu(F)W(B)	714
7/26/70		Recaptured	Pres	Pres			No. broken off Collar twisted	Unk
6/25/71		Recaptured	Pres	Miss Roto-1998	P and P	W Flag	Miss	Good
715 6/20/70	M	Captured	Roto-1807	K.T.-7	All Y	All W	No. 7-H.H. W(L)O(Rt)	715
6/21/70		Observed	Unk	Unk			Miss	Unk
10/5/70		Hunter Kill	Pres	Pres			None	Read as 125
716 6/20/70 10/30/71	F	Captured Hunter Kill	Roto-1886 Miss	K.T.-10 Pres	F(P)B(Y)	All Blk	None	716 Unreadable
717 6/20/70	F	Captured	Roto-1808	K.T.-8	All Y	All W	No. 8-H.H. Y(L)O(Rt)	717
6/30/70		Observed					Pres	
719 6/20/70	F	Captured	Roto-1811	K.T.-11	All Y	All W	No. 11-H.H. Y(L)Blu(Rt)	719

Table 11. (Cont'd.) Marking History of Brown Bears Captured or Harvested on the Black Lake Study Area.

Type, Location and Status of Ear Tag			Ear and Collar Marker Color Code			Collar Color Design		
M = Metal	F = Front		Blk = Black		Blu = Blue	St = Stripe		
K.T. = King Tuff-Tag	B = Back		Y = Yellow		O = Orange Glo	H.H. = Half and Half		
Roto = Rototag	Miss = Missing		P = Pink		Gr = Green	H.B. = Horizontal Bars		
Sm Roto = Small Rototag	Pres = Present		W = White		Pur = Purple			
Rt = Right	Unk = Unknown		R = Red					
L = Left								
Bear	Sex	Captured or Observed	Ear Tag Number		Ear Tag and/or Flag Color		Collar No. and Color	Tattoo Condition
			Right	Left	Right	Left		
720 6/20/70	F	Captured	Roto-1820	K.T.-20	F(P)B(Y)	All Blk	None	720
721 6/20/70	M	Captured	Roto-1821	K.T.-21	F(P)B(Y)	All Blk	None	721
722 6/20/70	F	Captured	Roto-1812	K.T.-12	All Y	All W	No. 12 St O(F)W(B)	722
6/23/71		Recaptured	Pres	Roto-1981		Y and Y R Flag	Pres-Rem	Good
723/722 6/20/70	F	Captured	Roto-1887	K.T.-11	F(Y)B(P)	All Blk	None	723
724/722 6/20/70	F	Captured	Roto-1888	K.T.-12	F(P)B(Y)	All Blk	None	724
6/23/71		Recaptured	Pres	Pres Roto-1982 W Flag		Y and Y		Good
725A 6/20/70	F	Captured	Roto-1813	K.T.-13	All Y	All W	No. 13 St O(F)Y(B)	725
6/25/71		Recaptured	Miss Roto-1999	Pres	P and Y W Flag		Pres-Rem	Good

Table 11. (cont'd.) Marking History of Brown Bears Captured or Harvested on the Black Lake Study Area.

<u>Type, Location and Status of Ear Tag</u>		<u>Ear and Collar Marker Color Code</u>				<u>Collar Color Design</u>		
M = Metal	F = Front	Blk = Black	Blu = Blue	St = Stripe				
K.T. = King Tuff-Tex	B = Back	Y = Yellow	O = Orange Glo	H.H. = Half and Half				
Roto = Rototag	Miss = Missing	P = Pink	Gr = Green	H.B. = Horizontal Bars				
Sm Roto = Small Rototag	Pres = Present	W = White	Pur = Purple					
Rt = Right	Unk = Unknown	R = Red						
L = Left								

  

Bear	Sex	Captured or Observed	Ear Tag Number		Ear Tag and/or Flag Color		Collar No. and Color	Tattoo Condition
			Right	Left	Right	Left		
725B 6/21/70	F	Captured	Roto-1814	K.T.-14	All Y	All W	No. 14 W(L)P(R)	725
726/725B 6/21/70	F	Captured	Roto-1870	Roto-1871	F(P)B(Y)	F(P)B(Y)	None	726
727/725B 6/21/70	M	Captured	Roto-1873	Roto-1872	F(P)B(Y)	F(P)B(Y)	None	727
728 6/21/70	F	Captured	Roto-1815	K.T.-15	All Y	All W	No. 15-St Y(F)Blu(B)	728
729/728 6/21/70	F	Captured	Roto-1874	K.T.-14	F(Y)B(P)	All Blk	None	729
730/728 6/21/70	F	Captured	Roto-1875	K.T.-13	F(Y)B(P)	All Blk	None	730
731 6/22/70	F	Captured	Roto-1816	K.T.-16	All Y	All W	No. 16-H.H. Gr(R)O(L)	731
7/4/71		Recaptured	Pres	Pres			Pres-Rem Red & White	Poor
9/25/71		Observed	-	-	-	-	Pres	-
10/26/71		Observed	-	-	-	-	Pres	-

Table 11. (Cont'd.) Marking History of Brown Bears Captured and Harvested on the Black Lake Study Area.

Type, Location and Status of Ear Tag		Ear and Collar Marker Color Code		Collar Color Design	
M = Metal	F = Front	Blk = Black	Blu = Blue	St = Stripe	
K.T. = King Tuff-Tex	B = Back	Y = Yellow	O = Orange Glo	H.H. = Half and Half	
Roto = Rototag	Miss = Missing	P = Pink	Gr = Green	H.B. = Horizontal Bars	
Sm Roto = Small Rototag	Pres = Present	W = White	Pur = Purple		
Rt = Right	Unk = Unknown	R = Red			
L = Left					

  

Bear	Sex	Captured or Observed	Ear Tag Number		Ear Tag and/or Flag Color		Collar No. and Color	Tattoo Condition
			Right	Left	Right	Left		
732/731 6/22/70 7/4/71	M	Captured Recaptured	Roto-1878 Pres	K.T.-15 Miss SmRoto-110	F(P)B(Y)	All Blk  Y and Y	None	732 Poor
733/731 6/22/70 7/4/71	F	Captured Recaptured	Roto-1877 Pres	Roto-1876 Pres	F(P)B(Y)	All Blk	None	733 Unreadable
734 6/22/70	F	Captured	Roto-1817	K.T.-17	All Y	All W	No. 17-H.H. W(L)Gr(Rt)	734
735/734 6/22/70 7/3/71	M	Captured Recaptured	Roto-1879 Pres	K.T.-17 Pres	F(P)B(Y)	All Blk	None	735 Good
736 6/22/70 6/15/71	F	Captured  Recaptured	Roto-1809  Pres	K.T.-18  Pres Roto-1938	All Y	All W  P and Y R Flag	No. 18-H.H. P(L)Y(R)  Pres-Rem Temp R Collar	736  Good

Table 11. (cont'd.) Marking History of Brown Bears Captured or Harvested on the Black Lake Study Area.

Type, Location and Status of Ear Tag			Ear and Collar Marker Color Code			Collar Color Design		
M = Metal			Blk = Black			St = Stripe		
K.T. = King Tuff-Tex			Y = Yellow			H.H. = Half and Half		
Roto = Rototag			P = Pink			H.B. = Horizontal Bars		
Sm Roto = Small Rototag			W = White					
Rt = Right			R = Red					
L = Left								
Bear	Sex	Captured or Observed	Ear Tag Number Right	Ear Tag Number Left	Ear Tag and/or Flag Color Right	Ear Tag and/or Flag Color Left	Collar No. and Color	Tattoo Condition
737 6/23/70 10/13/70	M	Captured Killed by hunter	Roto-1880 Pres	K.T.-18 Miss	F(P)B(Y)	All Blk	None	737 Readable
738 6/23/70	F	Captured	Roto-1869	K.T.-20	F(P)B(Y)	All W	No. 20-H.H. O(L)Blu(Rt)	738
739/738 6/23/70	F	Captured	Roto-1891	K.T.-19	F(P)B(Y)	All Blk	None	739
740/738 6/23/70	F	Captured	Roto-1881	K.T.-22	F(P)B(Y)	All Blk	None	740
741/738 6/23/70	F	Captured	Roto-1882	K.T.-23	F(P)B(Y)	All Blk	None	741
742 6/24/70	F	Captured	Roto-1819	K.T.-19	All Y	All W	No. 19-St O(F)Gr(B)	742
6/16/71 <u>3/</u>		Recaptured	Pres	Pres			Pres-Rem	Good
743 6/24/70	F	Captured	Roto-1801	K.T.-21	All Y	All W	No. 21-St O(F)Blu(B)	743

3/ Killed by drug

Table 11. (cont'd.) Marking History of Brown Bears Captured or Harvested on the Black Lake Study Area.

Type, Location and Status of Ear Tag			Ear and Collar Marker Color Code				Collar Color Design	
M = Metal		F = Front	Blk = Black		Blu = Blue		St = Stripe	
K.T. = King Tuff-Tex		B = Back	Y = Yellow		O = Orange Glo		H.H. = Half and Half	
Roto = Rototag		Miss = Missing	P = Pink		Gr = Green		H.B. = Horizontal Bars	
Sm Roto = Small Rototag		Pres = Present	W = White		Pur = Purple			
Rt = Right		Unk = Unknown	R = Red					
L = Left								

Bear	Sex	Captured or Observed	Ear Tag Number Right	Ear Tag Number Left	Ear Tag and/or Flag Color Right	Ear Tag and/or Flag Color Left	Collar No. and Color	Tattoo Condition
744 6/24/70	M	Captured	Roto-1883	K.T.-100	F(P)B(Y)	All W	None	744
745 6/24/70	F	Captured	Roto-1822	K.T.-22	All Y	All W	No. 22-St W(F)Gr(B)	745
746 6/24/70	M	Captured	Roto-1884	K.T.-90	F(P)B(Y)	All W	None	746
747 6/24/70	F	Captured	Roto-1823	K.T.-23	All Y	All W	No. 23-H.H. Gr(L)P(R)	747
6/18/71		Recaptured	Pres	Miss Roto-1947		P and Y R Flag	Pres-Rem	Good
748 6/24/70 6/18/71	F	Captured Recaptured	Roto-1890 Miss Roto-1948	K.T.-92 Pres	F(Y)B(P)  P and Y W Flag	All W	None	748 Poor
749 6/24/70	F	Captured	Roto-1824	K.T.-24	F(P)B(Y)	All W	No. 24-H.H. Gr(L)Y(R)	749

Table 11. (cont'd.) Marking History of Brown Bears Captured or Harvested on the Black Lake Study Area.

Type, Location and Status of Ear Tag			Ear and Collar Marker Color Code			Collar Color Design		
M = Metal		F = Front	Blk = Black		Blu = Blue	St = Stripe		
K.T. = King Tuff-Tex		B = Back	Y = Yellow		O = Orange Glo	H.H. = Half and Half		
Roto = Rototag		Miss = Missing	P = Pink		Gr = Green	H.B. = Horizontal Bars		
Sm Roto = Small Rototag		Pres = Present	W = White		Pur = Purple			
Rt = Right		Unk = Unknown	R = Red					
L = Left								

  

Bear	Sex	Captured or Observed	Ear Tag Number		Ear Tag and/or Flag Color		Collar No. and Color	Tattoo Condition
			Right	Left	Right	Left		
750 6/25/70	F	Captured	Roto-1825	K.T.-25	All Y	All W	No. 25-St Y(F)W(B)	750
751/750 6/25/70	M	Captured	Roto-1861	K.T.-97	F(P)B(Y)	All W	None	751
752 6/25/70	M	Captured	Roto-1864	K.T.-84	F(Y)B(P)	All W	None	752
753 6/26/70	F	Captured	Roto-1826	K.T.-26	F(P)B(Y)	All W	No. 26-St O(F)P(B)	753
6/24/71		Recaptured	Pres	Pres Roto-1988		Y and Y W Flag	Miss	Poor
754/753 6/26/70 6/30/71	M	Captured Recaptured	Roto-1885 Pres	K.T.-98 Pres Roto-1509	F(P)B(Y)	All W	None	754 Good
10/1/71		Hunter Kill	Pres	All Pres		B and P R Flag Unknown		Fair
755/753 6/26/70	F	Captured	Roto-1889	K.T.-96	F(P)B(Y)	All W	None	755

Table 11. (cont'd.) Marking History of Brown Bears Captured or Harvested on the Black Lake Study Area.

Type, Location and Status of Ear Tag			Ear and Collar Marker Color Code				Collar Color Design	
M = Metal	F = Front		Blk = Black		Blu = Blue		St = Stripe	
K.T. = King Tuff-Tex	B = Back		Y = Yellow		O = Orange Glo		H.H. = Half and Half	
Roto = Rototag	Miss = Missing		P = Pink		Gr = Green		H.B. = Horizontal Bars	
Sm Roto = Small Rototag	Pres = Present		W = White		Pur = Purple			
Rt = Right	Unk = Unknown		R = Red					
L = Left								

  

Bear	Sex	Captured or Observed	Ear Tag Number		Ear Tag and/or Flag Color		Collar No. and Color	Tattoo Condition
			Right	Left	Right	Left		
756 6/26/70	F	Captured	K.T.-27	Roto-1827	All W	F(P)B(Y)	No. 27-St W(F)R(B)	756
757 6/26/70	F	Captured	Roto-1828	K.T.-28	F(P)B(Y)	All W	No. 28-H.H. Y(L)R(Rt)	757
5/20/71		Observed					Pres-Rem	
758/757 6/26/70	F	Captured	Roto-1866	K.T.-85	F(P)B(Y)	All W	None	758
759/757 6/26/70	F	Captured	Roto-1865	K.T.-88	F(P)B(Y)	All W	None	759
760/757 6/26/70	F	Captured	Roto-1862	K.T.-87	F(P)B(Y)	All W	None	760
761 6/28/70	F	Captured	Roto-1832	K.T.-32	F(P)B(Y)	All W	No. 32-H.H. W(L)R(Rt)	761
6/25/71		Recaptured	Pres	Pres Roto-1997		Y and P W Flag	Pres-Rem	Good
10/6/71		Hunter Kill	Pres	All Pres		Unknown		Good
762 6/28/70	M	Captured	Roto-1829	K.T.-29	F(P)B(Y)	All W	No. 29-St Y(F)R(B)	762



Table 11. (cont'd.) Marking History of Brown Bears Captured or Harvested on the Black Lake Study Area.

Type, Location and Status of Ear Tag		Ear and Collar Marker Color Code		Collar Color Design	
M = Metal	F = Front	Blk = Black	Blu = Blue	St = Stripe	
K.T. = King Tuff-Tex	B = Back	Y = Yellow	O = Orange Glo	H.H. = Half and Half	
Roto = Rototag	Miss = Missing	P = Pink	Gr = Green	H.B. = Horizontal Bars	
Sm Roto = Small Rototag	Pres = Present	W = White	Pur = Purple		
Rt = Right	Unk = Unknown	R = Red			
L = Left					

  

Bear	Sex	Captured or Observed	Ear Tag Number		Ear Tag and/or Flag Color		Collar No. and Color	Tattoo Condition
			Right	Left	Right	Left		
763								
6/27/70	F	Captured	Roto-1830	K.T.-30	F(Y)B(P)	All W	No. 30-H.H.	763
10/5/70		Killed by hunter	Pres	Miss			P(L)R(Rt) Pres-Rem	Readable
764A								
6/28/70	M	Captured	Roto-1867	K.T.-76	F(P)B(Y)	All W	None	764
764B								
6/28/70	F	Captured	Roto-1831	K.T.-31	F(P)B(Y)	All W	No. 31-H.H. Blu(L)R(Rt)	764
765/764B								
6/28/70	M	Captured	Roto-1858	K.T.-77	F(P)B(Y)	All W	None	765
766/764B								
6/28/70	F	Captured	Roto-1859	K.T.-76	F(P)B(Y)	All W	None	766
767								
6/29/70	M	Captured	Roto-1856	K.T.-82	F(P)B(Y)	All W	None	767
6/29/71		Recaptured	Pres	Pres Roto-1976		P and Y W Flag		Good
768 <sup>4/</sup>								
6/29/70	M	Captured	Roto-1853	K.T.-80	F(P)B(Y)	All W	None	768
10/11/71		Hunter Kill	Pres	Pres				Excellent

<sup>4/</sup> Tattoo misread as No. 706 bear, believed to be No. 768

Table 11. (cont'd.) Marking History of Brown Bears Captured or Harvested on the Black Lake Study Area.

Type, Location and Status of Ear Tag			Ear and Collar Marker Color Code				Collar Color Design	
M = Metal	F = Front		Blk = Black		Blu = Blue		St = Stripe	
K.T. = King Tuff-Tex	B = Back		Y = Yellow		O = Orange Glo		H.H. = Half and Half	
Roto = Rototag	Miss = Missing		P = Pink		Gr = Green		H.B. = Horizontal Bars	
Sm Roto = Small Rototag	Pres = Present		W = White		Pur = Purple			
Rt = Right	Unk = Unknown		R = Red					
L = Left								

  

Bear	Sex	Captured or Observed	Ear Tag Number		Ear Tag and/or Flag Color		Collar No. and Color	Tattoo Condition
			Right	Left	Right	Left		
769								
6/30/70	F	Captured	Roto-1833	K.T.-33	F(P)B(Y)	All W	No. 33-Solid gr	769
6/24/71		Recaptured	Pres	Pres 1986		Y and Y W Flag	Pres-Rem	Poor
770								
6/30/70	F	Captured	Roto-1834	K.T.-34	F(Y)B(P)	All W	No. 34-H.H. Gr(L)Blu(Rt)	770
771/770								
6/30/70	M	Captured	Roto-1855	K.T.-94	F(Y)B(P)	All W	None	771
772/770								
6/30/70	M	Captured	Roto-1857	K.T.-95	F(P)B(Y)	All W	None	772
773								
6/30/70	F	Captured	Roto-1835	K.T.-35	F(P)B(Y)	All W	No. 35-St Blu(F)Gr(B)	773
774								
6/30/70	M	Captured	Roto-1854	K.T.-79	F(P)B(Y)	All W	No. 122-Solid yellow-plastic	774
775								
6/30/70	M	Captured	Roto-1836	K.T.-36	F(P)B(Y)	All W	No. 36-St W(F)P(B)	775
10/29/71		Hunter Kill	Miss	Miss			Pres	Good

Table 11. (cont'd.) Marking History of Brown Bears Captured or Harvested on the Black Lake Study Area.

Type, Location and Status of Ear Tag			Ear and Collar Marker Color Code				Collar Color Design	
M = Metal		F = Front	Blk = Black		Blu = Blue		St = Stripe	
K.T. = King Tuff-Tex		B = Back	Y = Yellow		O = Orange Glo		H.H. = Half and Half	
Roto = Rototag		Miss = Missing	P = Pink		Gr = Green		H.B. = Horizontal Bars	
Sm Roto = Small Rototag		Pres = Present	W = White		Pur = Purple			
Rt = Right		Unk = Unknown	R = Red					
L = Left								

  

Bear	Sex	Captured or Observed	Ear Tag Number Right	Ear Tag Number Left	Ear Tag and/or Flag Color Right	Ear Tag and/or Flag Color Left	Collar No. and Color	Tattoo Condition
776 7/1/70 6/13/71	F	Captured Recaptured	Roto-1818 Pres	K.T.-93 Pres Roto-1926	F(P)B(Y)	All W P and Y R Flag	None R and W	776 Good
778 7/1/70 7/7/71	F	Captured Recaptured	Roto-1852 Pres	K.T.-83 Pres	F(P)B(Y)	All W	None	778 Good
779 7/2/70 7/5/71 10/31/71	F	Captured Recaptured Observed	Roto-1838 Pres -	K.T.-38 Pres -	F(P)B(Y)  -	All W  -	No. 38-St P(F)Gr(B) Pres-Rem Red & White Pres	779  -
780 7/2/70	M	Captured	Roto-1837	K.T.-37	F(P)B(Y)	All W	No. 37-H.H. P(L)Blu(Rt)	780
781 7/2/70 10/10/71	F	Captured Hunter Kill	Roto-1839 Miss	K.T.-39 Miss	F(P)B(Y)	All W	No. 39-H.H. O(L)P(Rt) Miss	781 Good
782 7/2/70	F	Captured	Roto-1840	K.T.-40	F(P)B(Y)	All W	No. 40-St Y(F)Gr(B)	782

Table 11. (cont'd.) Marking History of Brown Bears Captured or Harvested on the Black Lake Study Area.

Type, Location and Status of Ear Tag			Ear and Collar Marker Color Code				Collar Color Design	
M = Metal		F = Front	Blk = Black		Blu = Blue		St = Stripe	
K.T. = King Tuff-Tex		B = Back	Y = Yellow		O = Orange Glo		H.H. = Half and Half	
Roto = Rototag		Miss = Missing	P = Pink		Gr = Green		H.B. = Horizontal Bars	
Sm Roto = Small Rototag		Pres = Present	W = White		Pur = Purple			
Rt = Right		Unk = Unknown	R = Red					
L = Left								

  

Bear	Sex	Captured or Observed	Ear Tag Number		Ear Tag and/or Flag Color		Collar No. and Color	Tattoo Condition
			Right	Left	Right	Left		
783 7/2/70	M	Captured	Roto-1860	Roto-1841	F(P)B(Y)	F(P)B(Y)	No. 41-St P(F)Blu(B)	783
784 7/3/70	M	Captured	Roto-1863	Roto-1846	F(P)B(Y)	F(P)B(Y)	No. Number O with 1" W webbing	784
785 7/4/70	F	Captured	K.T.-41	Roto-1868	All W	F(P)B(Y)	No. Number W with 1" strips of O.D. webbing	785
786/785 7/4/70 6/29/71	M	Captured Recaptured	Roto-1844 Pres Roto-1501	Roto-1843 Pres	F(Y)B(P)  B and P W Flag	F(Y)B(P)	None	786 Good
788/785 7/4/70 6/18/71	F	Captured Recaptured	Roto-1845 Pres	Roto-1849 Pres	F(P)B(Y)	F(P)B(Y)	None	788 Good
789 7/4/70 5/15/71	M	Captured Hunter Kill	K.T.-42 Pres	Roto-1848 Pres	All W	F(P)B(Y)	None	789 Good

Table 11. (cont'd.) Marking History of Brown Bears Captured or Harvested on the Black Lake Study Area.

Type, Location and Status of Ear Tag			Ear and Collar Marker Color Code			Collar Color Design		
M = Metal			Blk = Black			St = Stripe		
K.T. = King Tuff-Tex		F = Front	Y = Yellow		Blu = Blue	H.H. = Half and Half		
Roto = Rototag		B = Back	P = Pink		O = Orange Glo	H.B. = Horizontal Bars		
Sm Roto = Small Rototag		Miss = Missing	Gr = Green					
Rt = Right		Pres = Present	W = White		Pur = Purple			
L = Left		Unk = Unknown	R = Red					

  

Bear	Sex	Captured or Observed	Ear Tag Number Right	Ear Tag Number Left	Ear Tag and/or Flag Color Right	Ear Tag and/or Flag Color Left	Collar No. and Color	Tattoo Condition
790 7/6/70	F	Captured	Roto-1842	K.T.-43	F(P)B(Y)	All W	No. Number 1-1/2" webbing with tan color	790
791 7/6/70	M	Captured	Roto-1847	K.T.-44	F(P)B(Y)	All W	No. Number Blu with 2" horizontal white bars	791
5/16/71		Hunter Kill	Pres	Pres				Unreadable
792 7/6/70	M	Captured	Roto-1850	K.T.-45	F(P)B(Y)	All W	None	792
794 7/6/70	F	Captured	K.T.-46	K.T.-47	All W	All W	All W 2" webbing	794
795/794 7/6/70	M	Captured	Roto-1851	K.T.-50	F(Y)B(P)	All W	None	795
796/794 7/6/70	M	Captured Hunter Kill	K.T.-48 Miss	K.T.-49 Miss	All W	All W	None	796 Excellent
798 7/7/70	F	Captured	K.T.-52	K.T.-51	All W	All W	None	798

Table 11. (cont'd.) Marking History of Brown Bears Captured or Harvested on the Black Lake Study Area.

Type, Location and Status of Ear Tag			Ear and Collar Marker Color Code				Collar Color Design	
M = Metal	F = Front	Blk = Black	Blu = Blue	St = Stripe				
K.T. = King Tuff-Tex	B = Back	Y = Yellow	O = Orange Glo	H.H. = Half and Half				
Roto = Rototag	Miss = Missing	P = Pink	Gr = Green	H.B. = Horizontal Bars				
Sm Roto = Small Rototag	Pres = Present	W = White	Pur = Purple					
Rt = Right	Unk = Unknown	R = Red						
L = Left								

Bear	Sex	Captured or Observed	Ear Tag Number Right	Ear Tag Number Left	Ear Tag and/or Flag Color Right	Ear Tag and/or Flag Color Left	Collar No. and Color	Tattoo Condition
799 7/7/70	M	Captured	K.T.-54	K.T.-53	All W	All W	None	799
801 8/9/68 5/2/70	M	Captured Hunter Kill	M-801 Unk	Roto-801 Pres	Metal	All P	None	801 Unk
802 9/10/68	F	Captured	M-802	Roto-852	Metal	Pink	Red	802
805 8/10/68 9/24/68	F	Captured Hunter Kill	M-805 Pres	Roto-805 Pres	Metal	Pink	None	805 Unk
806 8/10/68 9/15/68	F	Captured Hunter Kill	M-806 Pres	Roto-806 Pres	Metal	Pink	None	806 Readable
809 8/11/68	F	Captured	M-809	Roto-809	Metal	Pink	Red	809
810 8/12/68	M	Captured	M-810	Roto-810	Metal	Pink	None	810
811 8/12/68	F	Captured	M-811	Roto-811	Metal	Pink	Red	811
812 8/13/68	M	Captured	M-812	Roto-812	Metal	Pink	None	812

Table 11. (cont'd.) Marking History of Brown Bears Captured or Harvested on the Black Lake Study Area.

Type, Location and Status of Ear Tag			Ear and Collar Marker Color Code				Collar Color Design	
M = Metal		F = Front	Blk = Black		Blu = Blue		St = Stripe	
K.T. = King Tuff-Tex		B = Back	Y = Yellow		O = Orange Glo		H.H. = Half and Half	
Roto = Rototag		Miss = Missing	P = Pink		Gr = Green		H.B. = Horizontal Bars	
Sm Roto = Small Rototag		Pres = Present	W = White		Pur = Purple			
Rt = Right		Unk = Unknown	R = Red					
L = Left								

  

Bear	Sex	Captured or Observed	Ear Tag Number		Ear Tag and/or Flag Color		Collar No. and Color	Tattoo Condition
			Right	Left	Right	Left		
815 6/11/71	M	Captured	Roto-1913	Roto-1912	P and Y Blu Flag	P and Y Blu Flag	None	815
816 6/11/71	F	Captured	Roto-1915	Roto-1914	P and Y Blu Flag	P and Y Blu Flag	None	816
817 6/12/71	F	Captured	Roto-1916	Roto-1917	P and Y Blu Flag	P and Y Blu Flag	None	817
818 6/12/71	F	Captured	Roto-1919	Roto-1918	P and Y R Flag	P and Y R Flag	R and W St	818
819/818 6/12/71	F	Captured	Roto-1921	Roto-1920	P and Y W Flag	P and Y W Flag	None	819
820/818 6/12/71	F	Captured	Roto-1923	Roto-1922	P and Y W Flag	P and Y W Flag	None	820
821 6/12/71	M	Captured	Roto-1925	Roto-1924	P and Y Blu Flag	P and Y Blu Flag	None	821

Table 11. (cont'd.) Marking History of Brown Bears Captured or Harvested on the Black Lake Study Area.

Type, Location and Status of Ear Tag			Ear and Collar Marker Color Code			Collar Color Design		
M = Metal		F = Front	Blk = Black		Blu = Blue	St = Stripe		
K.T. = King Tuff-Tex		B = Back	Y = Yellow		O = Orange Glo	H.H. = Half and Half		
Roto = Rototag		Miss = Missing	P = Pink		Gr = Green	H.B. = Horizontal Bars		
Sm Roto = Small Rototag		Pres = Present	W = White		Pur = Purple			
Rt = Right		Unk = Unknown	R = Red					
L = Left								

  

Bear	Sex	Captured or Observed	Ear Tag Number Right	Ear Tag Number Left	Ear Tag and/or Flag Color Right	Ear Tag and/or Flag Color Left	Collar No. and Color	Tattoo Condition
822 6/13/71	F	Captured	Roto-1828	Roto-1927	P and Y R Flag	P and Y R Flag	Large W Disc on Red	822
823 6/13/71	F	Captured	Roto-1929	Roto-1930	P and Y Blu Flag	P and Y Blu Flag	None	823
824 6/13/71	M	Captured	Roto-1932	Roto-1931	P and Y Blu Flag	P and Y Blu Flag	Two W Bars on Red	824
825 <sup>5/</sup> 6/19/70 6/14/71	F	Captured Recaptured	Roto-1804 Pres Roto-1934	K.T.-4 Miss Roto-1935	All Y  P and Y	All W  P and Y	No. 4, all O Miss W Temp Collar	709 Unreadable 825
827 6/17/71	M	Captured	Roto-1942	Roto-1943	P and Y Pur Flag	P and Y Pur Flag	None	827
828 6/17/71	F	Captured	Roto-1945	Roto-1944	P and Y Pur Flag	P and Y Pur Flag	None	828

<sup>5/</sup> 1970 Tattoo No. 709, 1971 Retattooed 825.



Table 11. (cont'd.) Marking History of Brown Bears Captured or Harvested on the Black Lake Study Area.

Type, Location and Status of Ear Tag			Ear and Collar Marker Color Code			Collar Color Design		
M = Metal	F = Front		Blk = Black	Blu = Blue		St = Stripe		
K.T. = King Tuff-Tex	B = Back		Y = Yellow	O = Orange Glo		H.H. = Half and Half		
Roto = Rototag	Miss = Missing		P = Pink	Gr = Green		H.B. = Horizontal Bars		
Sm Roto = Small Rototag	Pres = Present		W = White	Pur = Purple				
Rt = Right	Unk = Unknown		R = Red					
L = Left								

  

Bear	Sex	Captured or Observed	Ear Tag Number		Ear Tag and/or Flag Color		Collar No. and Color	Tattoo Condition
			Right	Left	Right	Left		
829 6/19/71	F	Captured	Roto-1950	Roto-1946	P and Y Pur Flag	P and Y Pur Flag	None	829
830 6/19/71	F	Captured	Roto-1952	Roto-1951	P and Y Blu Flag	P and Y Blu Flag	None	830
8/15/71		Recaptured	Pres	Pres	Removed	Removed		Good
831 6/19/71	F	Recaptured	Roto-1954	Roto-1953	P and Y Blu Flag	P and Y Blu Flag	None	831
832 <sup>6/</sup> 8/11/68	M	Captured	M-808	Roto-808	Metal	Pink	None	808
6/20/71		Recaptured	Pres	Miss				Not Readab Retattooed 832
833/867 6/20/71	F	Captured	Roto-1959	Roto-1958	P and Y W Flag	P and Y W Flag	None	833
7/2/71		Recaptured	Pres	Pres	Pres	Removed		Good

<sup>6/</sup> 1968 Tattoo No. 808, 1971 Retattooed No. 832.

Table 11. (Cont'd.) Marking History of Brown Bears Captured and Harvested on the Black Lake Study Area.

Type, Location and Status of Ear Tag			Ear and Collar Marker Color Code			Collar Color Design		
M = Metal	F = Front		Blk = Black	Blu = Blue		St = Stripe		
K.T. = King Tuff-Tex	B = Back		Y = Yellow	O = Orange Glo		H.H. = Half and Half		
Roto = Rototag	Miss = Missing		P = Pink	Gr = Green		H.B. = Horizontal Bars		
Sm Roto = Small Rototag	Pres = Present		W = White	Pur = Purple				
Rt = Right	Unk = Unknown		R = Red					
L = Left								

  

Bear	Sex	Captured or Observed	Ear Tag Number		Ear Tag and/or Flag Color		Collar No. and Color	Tattoo Condition
			Right	Left	Right	Left		
835 6/21/71	M	Captured	Roto-1961	Roto-1962	P and Y Blu Flag	P and Y Blu Flag	None	835
836 6/21/71	F	Captured	Roto-1964	Roto-1963	P and Y Blu Flag	P and Y Blu Flag	O Temp	836
95 838 6/22/71	F	Captured	Roto-1967	Roto-1966	Y and Y W Flag	Y and Y W Flag	O Temp	838
839 6/22/71	F	Captured	Roto-1969	Roto-1968	Y and Y R Flag	Y and Y R Flag	O Temp	839
840/839 6/22/71	F	Captured	Roto-1971	Roto-1970	Y and Y W Flag	Y and Y W Flag	None	840
841/839 6/22/71	F	Captured	Roto-1972	Roto-1973	Y and Y W Flag	Y and Y W Flag	None	841
842/839 6/22/71	F	Captured	Roto-1974	Roto-1975	Y and Y W Flag	Y and Y W Flag	None	842

Table 11. (cont'd.) Marking History of Brown Bears Captured or Harvested on the Black Lake Study Area.

Type, Location and Status of Ear Tag			Ear and Collar Marker Color Code			Collar Color Design		
M = Metal			Blk = Black			St = Stripe		
K.T. = King Tuff-Tex			Y = Yellow			H.H. = Half and Half		
Roto = Rototag			P = Pink			H.B. = Horizontal Bars		
Sm Roto = Small Rototag			W = White					
Rt = Right			R = Red					
L = Left								
Bear	Sex	Captured or Observed	Ear Tag Number Right	Ear Tag Number Left	Ear Tag and/or Flag Color Right	Ear Tag and/or Flag Color Left	Collar No. and Color	Tattoo Condition
843 6/22/71	F	Captured	Roto-1977	Roto-1978	Y and Y W Flag	Y and Y W Flag	O Temp	843
851 <u>7/</u> 8/10/68	F	Captured	M-804	Roto-804	Metal	All P	No Number Red 2" Web	804
96 6/19/70		Recaptured	Miss	No. broken off			Pres-Rem	Unreadable
6/24/71			K.T.-5	Roto-1805	All W	All Y	No. 5-H.H. Blu(L)W(Rt)	711
		Recaptured	Miss Roto-1887	Pres	Y and Y W Flag		Miss	Unreadable 851
853 6/24/71	M	Captured	Roto-1990	Roto-1989	Y and Y W Flag	Y and Y W Flag	None	853
854 6/24/71	F	Captured	Roto-1991	Roto-1992	Y and Y R Flag	Y and Y R Flag	None	854
855/854 6/24/71	F	Captured	Roto-1993	Roto-1994	Y and Y W Flag	Y and Y W Flag	None	855

7/ 1968 Tattoo No. 807, Retattooed 1970 No. 711, Retattooed 1971 No. 851.

Table 11. (Cont'd.) Marking History of Brown Bears Captured Harvested on the Black Lake Study Area.

<u>Type, Location and Status of Ear Tag</u>			<u>Ear and Collar Marker Color Code</u>			<u>Collar Color Design</u>		
M = Metal	F = Front	Blk = Black	Blu = Blue	St = Stripe				
K.T. = King Tuff-Tex	B = Back	Y = Yellow	O = Orange Glo	H.H. = Half and Half				
Roto = Rototag	Miss = Missing	P = Pink	Gr = Green	H.B. = Horizontal Bars				
Sm Roto = Small Rototag	Pres = Present	W = White	Pur = Purple					
Rt = Right	Unk = Unknown	R = Red						
L = Left								

  

Bear	Sex	Captured or Observed	Ear Tag Number		Ear Tag and/or Flag Color		Collar No. and Color	Tattoo Condition
			Right	Left	Right	Left		
856/854 6/24/71	M	Captured	Roto-1996	Roto-1995	Y and P W Flag	Y and P W Flag	None	856
860 6/25/71	M	Captured	Roto-2000	Roto-1502	Y and P W Flag	Y and P W Flag	None	860
861 6/30/71	F	Captured	Roto-1503	Roto-1504	Blu and P W Flag	Blu and P W Flag	None	861
862 6/30/71	M	Captured	Roto-1505	Roto-1506	Blu and P R Flag	Blu and P R Flag	None	862
10/28/71		Hunter Kill	Pres	Pres				Unreadable
863 6/30/71	F	Captured	Roto-1508	Roto-1507	Blu and P W Flag	Blu and P W Flag	None	863
864 7/1/71	F	Captured	Roto-1600	Roto-1514	Blu and P R Flag	Blu and P R Flag	W letter F on Red	864
865/864 7/1/71	M	Captured	Roto-1513	Roto-1512	Blu and P No Flag	Blu and P R Flag	None	865

Table 11. (cont'd.) Marking History of Brown Bears Captured or Harvested on the Black Lake Study Area.

Type, Location and Status of Ear Tag			Ear and Collar Marker Color Code			Collar Color Design	
M = Metal	F = Front	Blk = Black	Blu = Blue	St = Stripe			
K.T. = King Tuff-Tex	B = Back	Y = Yellow	O = Orange Glo	H.H. = Half and Half			
Roto = Rototag	Miss = Missing	P = Pink	Gr = Green	H.B. = Horizontal Bars			
Sm Roto = Small Rototag	Pres = Present	W = White	Pur = Purple				
Rt = Right	Unk = Unknown	R = Red					
L = Left							

  

Bear	Sex	Captured or Observed	Ear Tag Number Right	Ear Tag Number Left	Ear Tag and/or Flag Color Right	Ear Tag and/or Flag Color Left	Collar No. and Color	Tattoo Condition
866/864 7/1/71	M	Captured	Roto-1510	Roto-1511	Blu and P R Flag	Blu and P None No Flag		866
867 7/2/71	F	Captured	Roto-1515	Roto-1516	Blu and P R Flag	Blu and P H(Y)H(Blk) R Flag		867
868/867 7/2/71	M	Captured	Roto-1517	Roto-1518	Blu and P W Flag	Blu and P None No Flag		868
10/4/71		Killed by hunter	Pres	Pres				Excellent
869/867 7/2/71	F	Captured	Roto-1519	Roto-1520	Blu and P W Flag	Blu and P None No Flag		869
870 <sup>8/</sup> 6/20/70	M	Captured	Roto-1810	K.T.-10	All Y	All W	No. 10-H.H. W(L)Y(Rt)	718
7/2/71		Recaptured	Pres	Pres Roto-1521		P and B R Flag	Pres-Rem	Unreadable Retattoo

<sup>8/</sup> Tattooed 1970 No. 718, Retattooed 1971 No. 870.

Table 11. (cont'd.) Marking History of Brown Bears Captured or Harvested on the Black Lake Study Area.

Type, Location and Status of Ear Tag			Ear and Collar Marker Color Code			Collar Color Design		
M = Metal	F = Front		Blk = Black	Blu = Blue	St = Stripe			
K.T. = King Tuff-Tex	B = Back		Y = Yellow	O = Orange Glo	H.H. = Half and Half			
Roto = Rototag	Miss = Missing		P = Pink	Gr = Green	H.B. = Horizontal Bars			
Sm Roto = Small Rototag	Pres = Present		W = White	Pur = Purple				
Rt = Right	Unk = Unknown		R = Red					
L = Left								

  

Bear	Sex	Captured or Observed	Ear Tag Number Right	Left	Ear Tag and/or Flag Color Right	Left	Collar No. and Color	Tattoo Condition
871/900 <sup>9/</sup> 7/7/70 7/2/71	F	Captured Recaptured	K.T.-59 Miss Roto-1525	None-Ear deformed	All W  B and P R Flag	None	None	Read as 801  Unreadable Retattooed 871
900 7/7/70	F	Captured	K.T.-56	K.T.-57	All W	All W	No. Number- Canvas Y with 1" W Stripes	900
902/900	M	Captured	K.T.-58	K.T.-57	All W	All W	None	902

<sup>9/</sup> Tattooed 1970, 901; Retattooed 1971, 871.

from all collars; three of the six plaques were gone within a month of placing them on the bears in 1970. The color coding was badly worn and becoming detached from the canvas. The canvas itself was nearly worn through at the points of attachment. It is doubtful that any of the collars would have remained attached throughout the remainder of the year.

A two-inch wide nylon web collar placed on a bear in 1968 showed no signs of irritating the bear's neck. Its color coding was worn and probably would not have remained identifiable for another year. This type of collar is generally poor because the longer neck hairs tend to lie over the collar obscuring the observers' view. The nylon web was in excellent condition and should have been usable for several more years.

A two-inch plastic belt type of collar placed on a bear in 1970 was in excellent condition and had caused no obvious irritation to the bear. However, because of its narrow width, it tended to be obscured by the neck hairs.

Two of the three string collars attached to bears in 1970 were removed. The third collar was still in place but the bear avoided recapture. These collars appeared to cause no irritation to the bears. The numbered pendant was easily read from the ground yet the overall appearance of the bear remained relatively unaffected. These collars may be useful as a research tool in areas where other, more conspicuous, means of marking may not be compatible with photography or observations by the public. The marking history of brown bears captured or observed more than one year at McNeil River is presented in Table 12.

#### Evaluation of Drugs

Sernylan was tested by itself, in combination with Hyaluronidase (150 FN units) and with Wydase (1,500 FN units), and no difference was found in the latent period required to immobilize brown bears. Seven minutes was the mean time to immobilize with or without the enzyme Hyaluronidase. The mean time to immobilize was derived from bears receiving only one drug injection. Sample size was 20 bears injected with Sernylan, 41 bears with Sernylan in combination with Wydase and 62 with Sernylan in combination with Hyaluronidase.

Etorphine (M-99) and its antagonist Diprenorphine (M50-50) was tested on 22 brown bears. The principal aim of the investigation was to determine a safe dosage of M-99 and to determine induction time and evaluate side effects of the drug on bears. Immobilization sufficient to allow safe handling of bears was achieved in all but one instance. The exception involved a 275 pound, three year old male, accession No. 22. The animal was immobilized five minutes after receiving an injection of 2.0 milligrams (.007 milligrams/pound body weight) of M-99 but became fully awake for several seconds fifteen minutes later. During this interval, the bear turned his head and snapped at me as I was about to insert the second ear tag. I pushed the bear's head away as I stepped back and he resumed his original

Table 12. Marking History of Captured or Observed McNeil River Brown Bears

Location and Status Code of Ear Tags and Collars										
Tag Color and Code										
Rt = Right Ear			Miss = Missing Tag			Blk = Black			G = Green	
L = Left Ear			Pres = Tag Present			Y = Yellow			Blu = Blue	
F = Front of Ear			Unk = Unknown			P = Pink			C = Chartreuse	
B = Back			Rem = Removed			W = White			O = Orange	
			Brok = Broken Tag			R = Red			HH = Color Half and Half	
									ST = Color Stripe	
Bear	Sex	Captured or Observed	Monel Ear Tag Right	Monel Ear Tag Left	Tuff-Tex or Rototag Number Right	Tuff-Tex or Rototag Number Left	Ear Tag Color	Colored Ear Marker	Collar	Tattoo Condition
No. 03	F									
1963		Captured	1806	1807	--	--	--	Rope(Y)Rt	--	--
1965		Recaptured	Pres	Pres	--	--	--	Rope Missing	--	No. 03
			1855					Rope(P)Rt		
1967		Recaptured	Pres	Pres	--	--	--	Present	Tan	Readable
1968		Recaptured	Pres	Pres	--	--	--	Present	Present	Readable
1969		Observed	Pres	Pres	--	--	--	Present	Present	Unk
1970		Recaptured	Miss	Miss	21	21	Rt-Y, L-R	Miss	Removed	Readable
									No. 91-HH	
									O(R)-R(L)	
1971		Recaptured	--	--	Pres	Pres	Present	--	Present	Readable
						199	L-W		Removed	
No. 05	F									
1965		Captured	1861	1859	--	--	--	Rope(W)Rt	--	No. 05
1966		Observed	Unk	Pres	--	--	--	Present	--	Unk
1967		Mortality	Miss	Pres	--	--	--	Missing	--	Readable



Table 12. (cont'd.) Marking History of Captured or Observed McNeil River Brown Bears

Bear	Sex	Captured or Observed	Monel Ear Tag		Tuff-Tex or Rototag Number		Ear Tag Color	Colored Ear Marker	Collar	Tattoo Condition
			Right	Left	Right	Left				
No. 13	F									
1963		Captured	1808	1809	---	---	---	Rope (Blk-W) Rt	---	---
1966		Recaptured	Pres	Miss	---	---	---	Rope Missing	---	No. 13
			1884	1883				Rope(Y) Rt		
1967		Observed	Unk	Unk	---	---	---	Present	---	Unk
1968		Recaptured	1808	Miss	---	51 <sup>2/</sup>	F&B-Yellow	Missing	Green	Readable
1969		Observed	Unk	---	---	51 <sup>2/</sup>	Present	---	Miss	Unk
1970		Recaptured	Pres	---	---	Pres	Present	---	No. 98-St	Readable
						13	L - Y		O and R	
1971		Recaptured	Pres	---	---	Pres	Present	---	Removed	Readable
No. 14	F									
1963		Captured	1824	1822	---	---	---	Rope(O)L	---	---
1966		Recaptured	Pres	Pres	---	---	---	Missing	---	No. 14
			1885	Unk	---	---	---	Flag(C)L	---	Unk
1968		Recaptured	Miss	Miss	---	---	---	Missing	---	Readable
			61	---	---	61	F&B-Yellow	Flag(W) Rt	---	Readable
1970		Recaptured	Miss	---	23	Pres	Rt-R,L-Y	Missing	No. 9-St	Readable
									Blu & R	
1971		Observed	---	---	Pres	Pres	Present	---	Missing	---
No. 17	F									
1967		Captured	4227	---	---	4	Red, Green	Flag(G) Rt	---	No. 17
1968		Recaptured	Miss	---	---	Pres	Present	Missing	---	Unreadab.
					62	Pres	F&B-Yellow	Flag(O) Rt	---	Retattooed
1971		Recaptured	---	---	Miss	Pres	Red, Green	Miss	---	Readable
					188	157	L-W&R			
							R-All W			

2/ Observer identified tag number

Table 12. (cont'd.) Marking History of Captured or Observed McNeil River Brown Bears

Bear	Sex	Captured or Observed	Monel Ear Tag Right	Tag Left	Tuff-Tex or Rototag Number Right	Left	Ear Tag Color	Colored Ear Marker	Collar	Tattoo Condition
No. 19-A	F									
1967		Captured	4236	--	--	8	F-Red, B-Green	--	Red	No. 19
1968		Observed	Pres	--	--	Pres	Present	--	Present	Unk
1969		Observed	Pres	--	--	Pres	Present	--	Present	Unk
1970		Recaptured	Pres	--	--	Miss	Missing	--	Removed	Unreadable
						19	L-R		No. 27-y <sup>1/</sup>	Not tattooed
1971		Recaptured	Pres	--	159	Pres	R-W	--	Pres	Unreadable Retattooed
No. 19-B	F									
1971		Captured	--	--	91	98	Rt-B(P)F(Blu) L-B(P)F(Blu)	None	None	19
No. 21	M									
1967		Captured	--	4212	34	--	F&B-Green	Flag(Blu)L	--	No. 21
1968		Observed	--	Unk	Pres	--	Present	Present	--	Unk
1970		Recaptured	--	Miss	Broken		Removed	Miss	No. 2-String	Readable
					20	20	Rt-R, L-Y			
1971		observed	--	--	Pres	Unk	--	--	Pres	Unk
No. 22	F									
1967		Captured	4214	--	--	32	F&B-Green	--	OD w/blue	No. 22
1968		Observed	Unk	--	--	Pres	Present	--	Present	Unk
1969		Observed	Unk	--	--	Pres	Present	--	Present	Unk
1970		Recaptured	Miss	--	22	Pres	Rt-Y, L-G	--	Removed	Readable
									No. 99-St	
1971		Recaptured	--	--	Miss	Miss		--	Present	Readable
					160	185	All W		Removed	

<sup>1/</sup> Plastic two inch belt.

Table 12. (cont'd.) Marking History of Captured or Observed McNeil River Brown Bears

Bear	Sex	Captured or Observed	Monel Ear Tag Right	Monel Ear Tag Left	Tuff-TEX or Rototag Number Right	Tuff-TEX or Rototag Number Left	Ear Tag Color	Colored Ear Marker	Collar	Tattoo Condition
No. 23	M									
1967		Captured	4237	--	--	10	F&B-Green	--	Blue	No. 23
1968		Observed	Unk	--	--	Pres	Present	--	Present	Unk
1970		Recaptured	Pres	--	--	Miss 23	Miss L-Y	--	Miss No. 61-St P & R	Unreadable Retattooed
1971		Observed	Pres	--	--	Pres	Present	--	Miss	Unk
No. 39	F									
1971		Captured	--	--	175	198	Both W	None	None	No. 39
No. 53	F									
1968		Captured	--	53	53	--	R-Y	Flag (Blu)	Red	No. 53
1971 <sup>3/</sup>		Observed	--	--	Pres	--	Pres	Miss	Pres	Unk
1971- <sup>3/</sup>		Recaptured	--	Pres	Pres	--	R-Y	Miss	Present Removed	Readable
No. 57	F									
1968		Captured	57	--	--	57	F&B-Yellow	Flag (O) Rt	--	No. 57
1969		Observed	Pres	--	--	57 <sup>2/</sup>	F&B-Yellow	Present	--	Unk
1970		Recaptured	Pres	--	10	Pres	Pres Rt-Y, L-Y	Missing	No. 4 String	Readable
1971		Mortality	Pres	--	Miss	Pres	--	--	Pres Rem	Readable
No. 91	F									
1971		Captured	--	--	88	93	F-R, B-P	None	None	No. 91

<sup>3/</sup> Captured or observed at Kulik River<sup>2/</sup> Observer identified tag number

Table 12. (cont'd.) Marking History of Captured or Observed McNeil River Brown Bears

Bear	Sex	Captured or Observed	Monel Ear Tag Right	Tag Left	Tuff-TEX or Rototag Number Right	Number Left	Ear Tag Color	Colored Ear Marker	Collar	Tattoo Condition
No. 94/57 1971	F	Captured	--	--	155	177	All W	None	None	No. 94
No. 95/57 1971	F	Captured	--	--	176	150	All W	None	None	No. 95
No. 123 1970	M	Captured	--	--	1	1	Rt-R,L-Y	None	None	No. 123
1971		Recaptured	--	--	Pres 171	Pres	Same All W	--	--	Readable
No. 124 1963	F	Captured	1818	1819	--	--	--	Rope(Blk-Y)Rt	--	--
1967		Recaptured	Miss	Pres	9	--	F-Red,B-Green	Rope missing	Olive Drab	--
1968		Observed	--	Unk	Pres	--	Present	--	Present	--
1969		Observed	--	Unk	Pres	--	Present	--	Present	--
1970		Recaptured	--	Miss	Miss	--	Missing	--	Removed	No. 124
					2	2	Rt-Y,L-R		No. 81R	
1971		Recaptured	--	--	Pres	Pres	Rt-Y,L-R	--	Pres-Rem	Readable
1971 <sup>3/</sup>		Observed	--	--	Pres	Pres	L-W	--	Fiberglass	
							Present	--	Present	Unk
No. 125 1970	M	Captured	--	--	3	3	Rt-R,L-Y	None	None	No. 125
1971		Recaptured	--	--	Pres	Pres	Same	--	--	Unreadable

<sup>3/</sup> Captured or observed at Kulik River

Table 12. (cont'd.) Marking History of Captured or Observed McNeil River Brown Bears

Bear	Sex	Captured or Observed	Monel Ear Tag Right	Monel Ear Tag Left	Tuff-Tex or Rototag Number Right	Tuff-Tex or Rototag Number Left	Ear Tag Color	Colored Ear Marker	Collar	Tattoo Condition
No. 126	F									
1967		Captured	4211	--	--	3	F&B Green	Flag(R)Blu	--	No. 20
1970		Recaptured	Miss		15KT	Brok	Roto Brok	Missing	No. 1 String	Readable
						15	Rt-Y,L-R	--	R&W	No. 126
1971		Recaptured	--	--	Pres	All Pres	Same	--	Present	Readable
No. 957/53	M									
1971 <sup>3/</sup>		Captured	--	--	167	168	All W	None	None	No. 957
No. 958/53	F									
1971 <sup>3/</sup>		Captured	--	--	189	194	All W	None	None	None
No. 4226	M									
1967		Captured	--	4226	3	--	Red,Green	Flag(G)L	--	--
1968		Observed	--	Unk	Pres	--	Unk	Present	--	--
No. 4231	M									
1967		Captured	4231	--	--	1	F-Green,B-Red	Flag(R)Rt	--	--
1968		Observed	Unk	--	--	Pres	Present	Present	--	--
1969		Observed	Unk	--	--	Pres	Present	Missing	--	--

<sup>3/</sup> Captured or observed at Kulik River

prone position. Immobilization and analgesia continued through the remainder of the tagging process which included drawing a blood sample, ear tagging and extracting a tooth. Data are insufficient for critical comparison of drug response by sex and age.

Induction time from administration of M-99 to immobilization (on bears receiving one drug injection) ranged from three to six minutes. The period of immobilization (to administration of antagonist) ranged from 23 to 120 minutes with an average of 44 minutes on single bears and an estimated average of 90 minutes on cubs-of-the-year.

With the exception of two bears, the species appears very sensitive to small amounts of M-99. In this investigation cubs-of-the-year received .007 milligrams/pound body weight and other age classes received .01 milligrams/pound body weight. Dosages varied when weights were incorrectly estimated or when bears failed to respond to the drug and were given a second or third injection. Successful single dosages ranged (cubs excluded) from .005 to .025 milligrams/pound.

Detailed observations of the drug effect were made during immobilization. Repression of respiratory response was the most noticeable effect of M-99 treatment. Table 13 summarizes the effect M-99 and Sernylan have on brown bear respiration and pulse rates. Slight differences in mean body temperature may reflect the small M-99 sample size.

Table 13. A Comparison of the effects of the immobilizing drugs M99 (Etorphine) and Sernylan on brown bear body temperature, respiration and pulse rate.

	M-99 Cubs	M-99 One Year Plus	Sernylan One Year Plus
Sample size	12	10	123
Mean temperature	Not recorded	104.6°	103.7
Temperature range		101.0° to 107.8°	99.0° to 107.0°
Mean respiration	5/minute	7/minute	64/minute
Range in respiration	5 to 6/minute	3 to 18*/minute	8 to 152/minute
Mean pulse rate	Not recorded	60/minute	98/minute
Range in pulse		44 to 74/minute	60 to 136/minute

\* Bear No. 22 which woke up during the tagging process.

The effect of Diprenorphine (M50-50) was judged principally on the length of time required to reverse the effects of Etorphine (M-99). Dosages were administered on a ratio of 1:2 (Etorphine to Diprenorphine). Diprenorphine was administered intermuscularly. Reversal of M-99 on cubs-of-the-year

occurred between one and five minutes. This investigator required an exploratory period to become familiar with the response of adult bears to the antagonist. Accordingly data on time to reversal is limited. Observations revealed that the best method to detect early signs of recovery was to lay the bear in a position where eye response and changes in respiration rate could be observed. After the antagonist was given observations were made with the aid of binoculars at a distance of 150 feet. Bears observed in this manner appeared normal within 10-15 minutes.

#### RECOMMENDATIONS

The spring brown bear season in Game Management Unit 9 is so short (16 days) that further season restrictions are not practical. Rather than closing the spring season, other methods to control the harvest should be considered. It is doubtful that additional emphasis on methods and means would be productive since enforcement of existing regulations under this section is questionable. Consideration should be given to limiting the number of nonresident hunters who, during the past three years, have taken 77 percent of the Unit 9 spring bear harvest. Since there are only nine Game Management Units open to spring brown/grizzly bear hunting, it may be more practical to restrict the number of nonresident hunters in each of these units. The Department should strive to maintain spring bear seasons. Spring brown/grizzly bear hunters are in the field strictly for the enjoyment of a bear hunt and are not taking bears incidental to other big game hunting.

Collecting of brown/grizzly bear teeth and processing and reading cementum ages should continue, especially in Game Management Units where a significant number of bears is taken. Persons sealing bears should be made aware of the importance of age composition data and instructed on proper procedures for tooth selection and extraction.

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PREPARED BY:

Leland P. Glenn  
Game Biologist

APPROVED BY:

Frank Jones  
Acting Director, Division of Game

Donald E McKnight  
Research Chief, Division of Game