

ALBERTA RECREATION, PARKS AND WILDLIFE
FISH AND WILDLIFE DIVISION

BIOLOGICAL OBSERVATIONS OF WOLVES FROM
THE 1974-75 WOLF CONTROL PROGRAM

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SUMMARY

This report summarizes biological observations from 112 wolves taken in the 1974-75 wolf control program in Alberta. This was the third winter of intensive wolf control at or near sites of proven or probable livestock losses to wolves, primarily during summer months. Techniques of carcass autopsy and biological preparation have been described in reports of the 1972-73 and 1973-74 biological investigations (1, 2). The purpose of this report is to present a broad range of biological observations in simplified form for reference and comparison to data from other years.

Between 116 and 122 wolves were removed in the 1974-75 program (3). Of the 112 wolves for which some data were collected 65, 39 and 8 were taken in Peace River, Edson and Calgary regions, respectively, mostly by strychnine poisoning (Table 1 and Figure 1).

Temporal distribution of kill ranged from October to April with most wolves taken in January and March (Table 2). Of 111 wolves sexed 49 were males or 44.1 percent (Table 3). Females predominated in the pup ($\frac{1}{2}$) age-group, but not in yearlings ($1\frac{1}{2}$) or adults ($2\frac{1}{2}+$) (Table 4).

Of 109 wolves sexed and aged 11.9 percent were pups, 15.6 percent were yearlings and 72.5 percent adults (Table 5). (This compares with 44.6% pups in 1972-73 and 37.1 percent in 1973-74). Age ranged from pups to $8\frac{1}{2}$ years (Figure 2).

Means of 6.7 corpora lutea, 5.8 placental scars and 7.0 embryos in early stage were observed in ovaries and uteri (Table 6). No obvious relationship between collection period and testis weight (with epididymus) was apparent (Figure 3).

Food content of most of 91 stomachs examined reflected type of bait employed at poison stations. However, cervid remains predominated in stomachs where bait was eliminated, in small intestines and in colons (Table 7). Of 98 dietary non-bait items identified in stomachs, small intestines and colons 52.0 percent were cervid (Table 8).

Of 110 pelts examined 30 or 27.3 percent were infected with varying degrees of mange (Table 9). Highest infection, 58.3 percent, was found in pups (Table 10). Two cases of oral papillomatosis were identified in wolves from the Peace River Region. One wolf from Edson Region had a broken fore-leg from gunshots and a trap injury on one foot. Most of the wolves examined appeared to be in excellent or good condition. Base line mean xiphoid fat globule weights are presented for future reference (Table 11).

Pelt color was classified into four groups; grey, black, white and blue. Grey represented 69.8 percent of 106 pelts examined (Table 12). Standard measurements, including whole weight are presented for future reference (Table 13).

References Cited

- GUNSON, J. R. 1973. The 1972-73 wolf control program. Alta. Fish and Wildl. Div. Unpubl. Prog. Rep. 25pp.
- SCHOWALTER, D. B. 1975. Biological investigation of the 1973-74 wolf control program. Alta. Fish and Wildl. Div. Unpubl. Prog. Rep. 18pp.
- SIGURDSON, B. V. 1976. Wolf control program; 1974-75. Alta. Fish and Wildl. Div. Unpubl. Prog. Rep. 9pp.

Table 1. Source of wolf carcasses for biological examination; by Region and method of collection.

Region	Poison	Shot	Snared	Total
Peace River	59	3	3	65
Edson	37	2	0	39
Calgary	8	0	0	8
Total	104	5	3	112

Table 2. Monthly distribution of 101¹⁾ wolves taken in the 1974-75 wolf control program.

Month	n
October	1
November	10
December	15
January	30
February	10
March	32
April	3

¹⁾Kill date was recorded on 101 of 112 carcasses.

Table 3. Numbers of wolves taken by Region, sex and age in the 1974-75 wolf control program.

Age	Peace River ¹⁾		Edson ²⁾		Calgary		Total	
	M	F	M	F	M	F	M	F
$\frac{1}{2}$	4	6	0	3	0	0	4	9
$1\frac{1}{2}$	1	2	7	7	0	0	8	9
$2\frac{1}{2}$	4	7	2	3	2	2	8	12
$3\frac{1}{2}$	6	11	2	3	1	2	9	16
$4\frac{1}{2}$	6	5	3	1	0	0	9	6
$5\frac{1}{2}$	2	1	4	1	0	0	6	2
$6\frac{1}{2}$	1	4	0	2	1	0	2	6
$7\frac{1}{2}$	1	1	0	0	0	0	1	1
$8\frac{1}{2}$	0	1	0	0	0	0	0	1
Total	25	38	18	20	4	4	47	62

1) Two unknown aged males and

2) one unknown sex pup omitted.

Table 4. Sex proportions of wolves taken in the 1974-75 wolf control program in Alberta: by age.

Age	Number Sexed	Number Males	% Males
$\frac{1}{2}$	13	4	30.8
$1\frac{1}{2}$	17	8	47.1
$2\frac{1}{2}+$	79	35	44.3
Total	109	47	43.1

Table 5. Age proportions (%) of wolves taken in the 1974-75 wolf control program in Alberta; by sex.

Sex	n	Proportion (%)		
		$\frac{1}{2}$	$1\frac{1}{2}$	$2\frac{1}{2}+$
Male	47	8.5	17.0	74.5
Female	62	17.0	14.5	71.0
Both Sexes	109	11.9	15.6	72.5

Table 6. Numbers of embryos, placental scars and corpora lutea of wolves taken in the 1974-75 wolf control program.

	n	r	\bar{x}
Embryos	3	6-8	7.0 ¹⁾
Placental Scars	6	4-7	5.8
Corpora Lutea	7	6-9	6.7

¹⁾All embryos in very early stages.

Table 7. Contents of stomachs, small intestines and colons of wolves taken in the 1974-75 wolf control program.

Contents	Stomach (91) ¹⁾				Small intestine(96)		Colon(81)	
	with bait		without bait		n	%	n	%
	n	%	n	%				
Cervid	37	40.7	7	7.7	22	22.9	22	27.2
Beef	13	14.3	7	7.7	6	6.3	4	4.9
Beaver	8	8.8	1	1.1	1	1.0	2	2.5
Pork	6 ²⁾	6.6	3	3.3	3	3.1	0	0
Grouse	3	3.3	3	3.3	1	1.0	0	0
Hare	2	2.2	2	2.2	1	1.0	2	2.5
Wolf/Coyote	2 ³⁾	2.2	2 ³⁾	2.2	3	3.1	7 ⁴⁾	8.6
Small Mammal	1	1.1	1	1.1	3	3.1	1	1.2
Lynx	1	1.1	1	1.1	0	0	0	0
Vegetation	1	1.1	1	1.1	2	2.1	0	0
Empty or Unidentified	26	28.6	26	28.6	58	60.4	43	53.1

1) number examined

2) three of six pork represent known carrion utilization

3) in larger amounts than expected from grooming etc.

4) in minor amounts probably from grooming

Table 8. Occurrence of non-bait dietary items in stomachs, small intestines and colons of wolves taken in the 1974-75 wolf control program.

Dietary Item	n Occurrences	% Occurrence
Cervid	51	52.0
Beef	17	17.3
Pork	6	6.1
Hare	5	5.1
Small Mammal	5	5.1
Beaver	4	4.1
Grouse	4	4.1
Vegetation	3	3.1
Wolf/Coyote	2	2.0
Lynx	1	1.0
Total	98	99.9

Table 9. Incidence of mange in wolves in the 1974-75 wolf control program in Alberta; by Region.

Region	Wolves Examined	Number with Mange	% with Mange
Peace River	65	24	36.9
Edson	37	4	10.8
Calgary	8	2	25.0
Total	110	30	27.3

Table 10. Incidence of mange in wolves in the 1974-75 wolf control program in Alberta; by age.

Age	Wolves Examined	Number with Mange	% with Mange
$\frac{1}{2}$	12	7	58.3
$1\frac{1}{2}$	16	3	18.8
$2\frac{1}{2}+$	79	20	25.3

Table 11. Weights of the xiphoid fat body in wolves taken in the 1974-75 wolf control program in Alberta.

Cohort	n	r	\bar{x}
Pups ($\frac{1}{2}$)	11	24.3-141.8	69.2
Yearlings ($1\frac{1}{2}$)	13	21.4-163.4	108.2
Adults ($2\frac{1}{2}+$)	67	25.5-355.5	144.7
Male Adults	29	28.5-355.5	138.9
Female Adults	38	25.5-299.0	149.1
With Mange (all ages & both sexes)	25	24.3-299.0	117.3
With Mange (Adults)	19	28.5-299.0	133.9

Table 12. Primary colour of wolves taken in the 1974-75 wolf control program in Alberta.

Region	n	Proportion (%)			
		Grey	Black	White	Blue
Peace River	65	67.7	27.7	3.1	1.5
Edson	33	69.7	30.3	0	0
Calgary	8	87.5	12.5	0	0
Total	106	69.8	27.4	1.9	0.9

Table 13. Standard measurements of wolves taken in the 1974-75 wolf control program in Alberta; by sex and age.

Age	Whole Weight			Total Length			Tail			Hind Foot		
	n	r	\bar{x}	n	r	\bar{x}	n	r	\bar{x}	n	r	\bar{x}
Male												
$\frac{1}{2}$	4	50-81	64.5	4	137-166	152.1	4	40-43	41.3	4	26-30	27.8
$1\frac{1}{2}$	2	84-91	87.5	4	164-174	169.8	4	44-46	45.5	4	28-29	28.6
$2\frac{1}{2}+$	24	78-127	105.4	27	149-182	173.1	27	41-54	44.5	27	27-33	29.6
Female												
$\frac{1}{2}$	7	52-96	68.0	7	139-171	156.1	7	32-50	43.1	7	25-29	27.2
$1\frac{1}{2}$	4	76-110	86.8	5	149-173	160.1	9	41-48	44.1	9	26-30	28.0
$2\frac{1}{2}+$	33	74-117	90.8	40	150-187	167.5	40	31-50	43.9	40	24-31	28.1

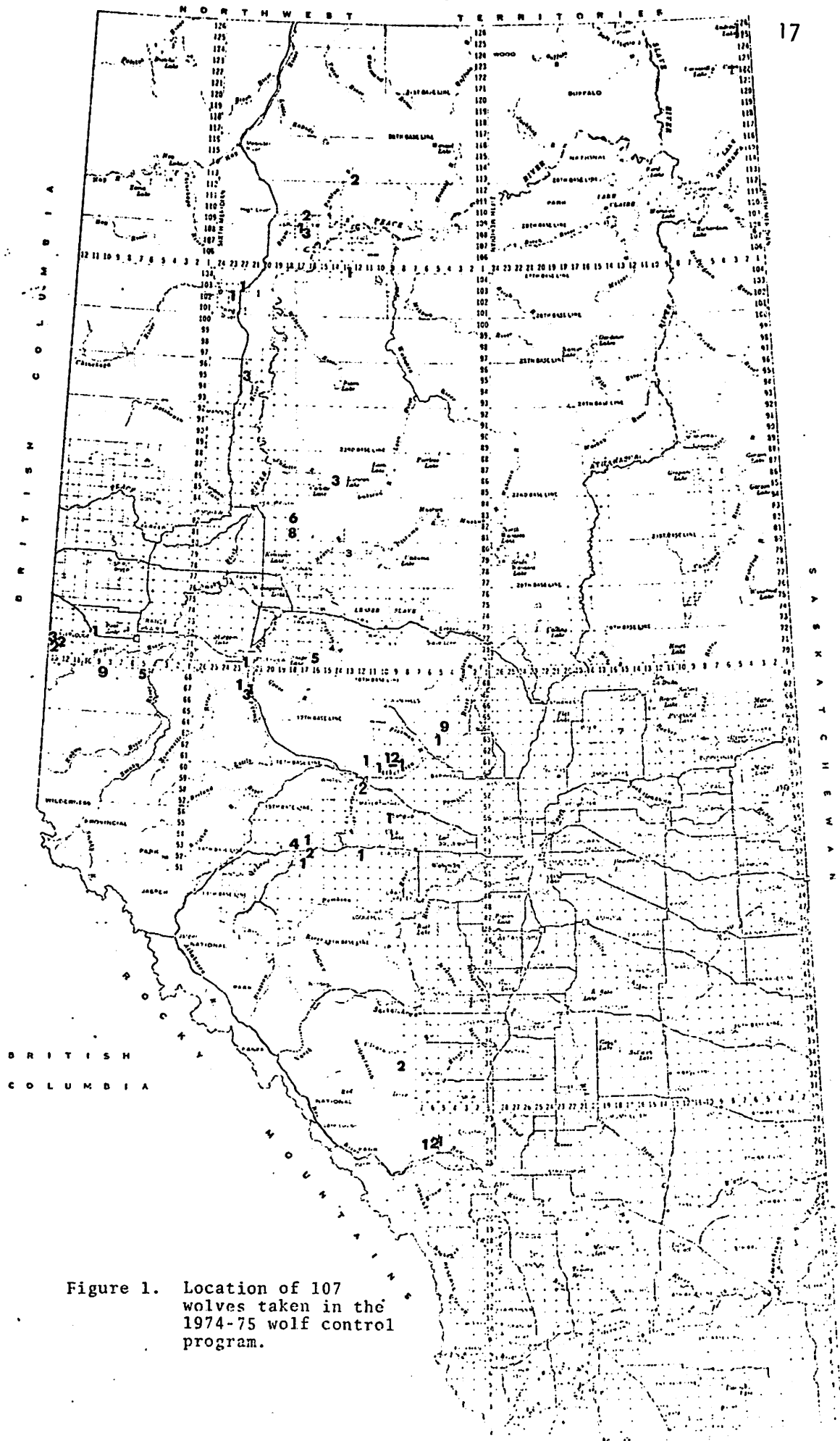


Figure 1. Location of 107 wolves taken in the 1974-75 wolf control program.

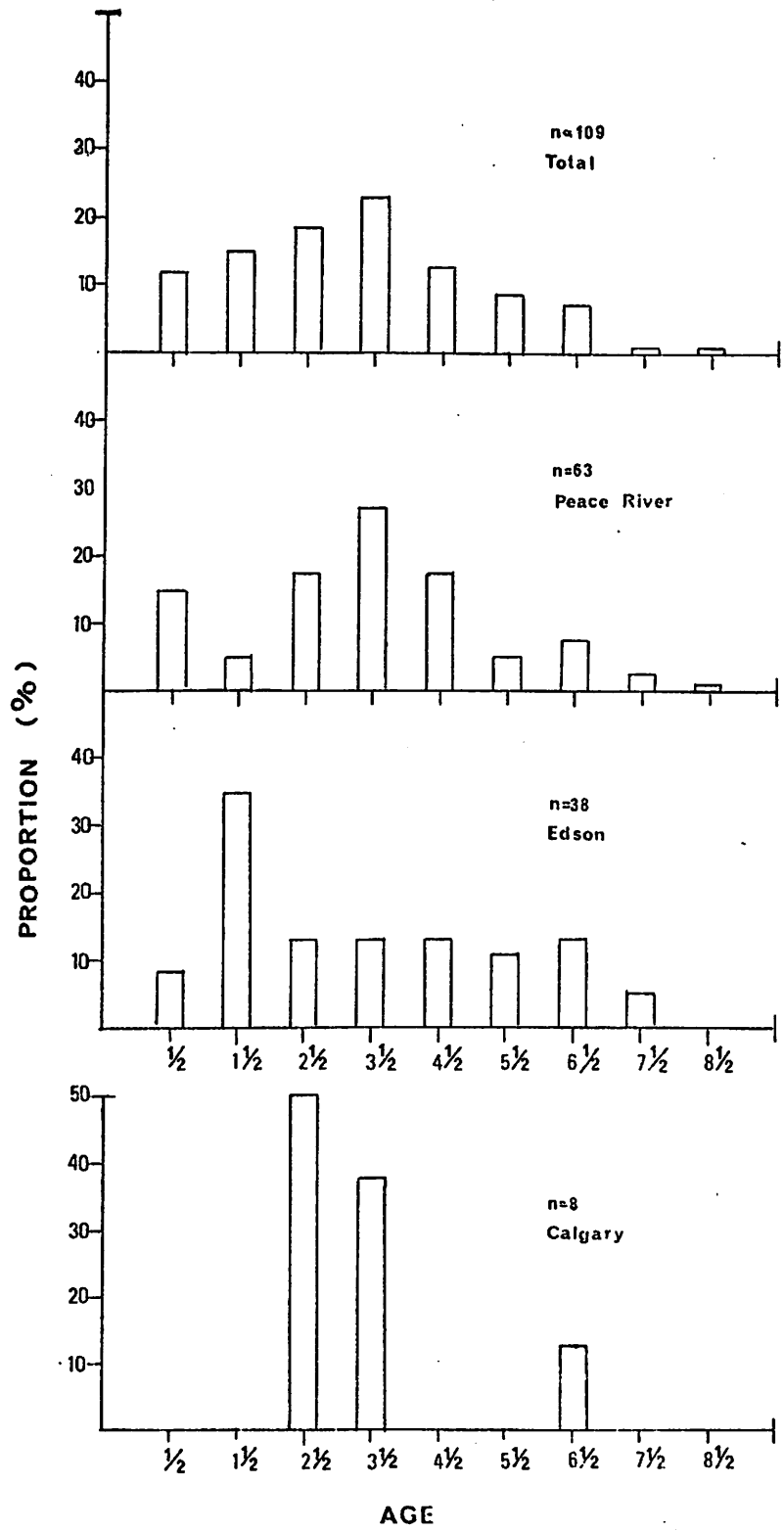


Figure 2. Age structure of wolves taken in the 1974-75 wolf control program.

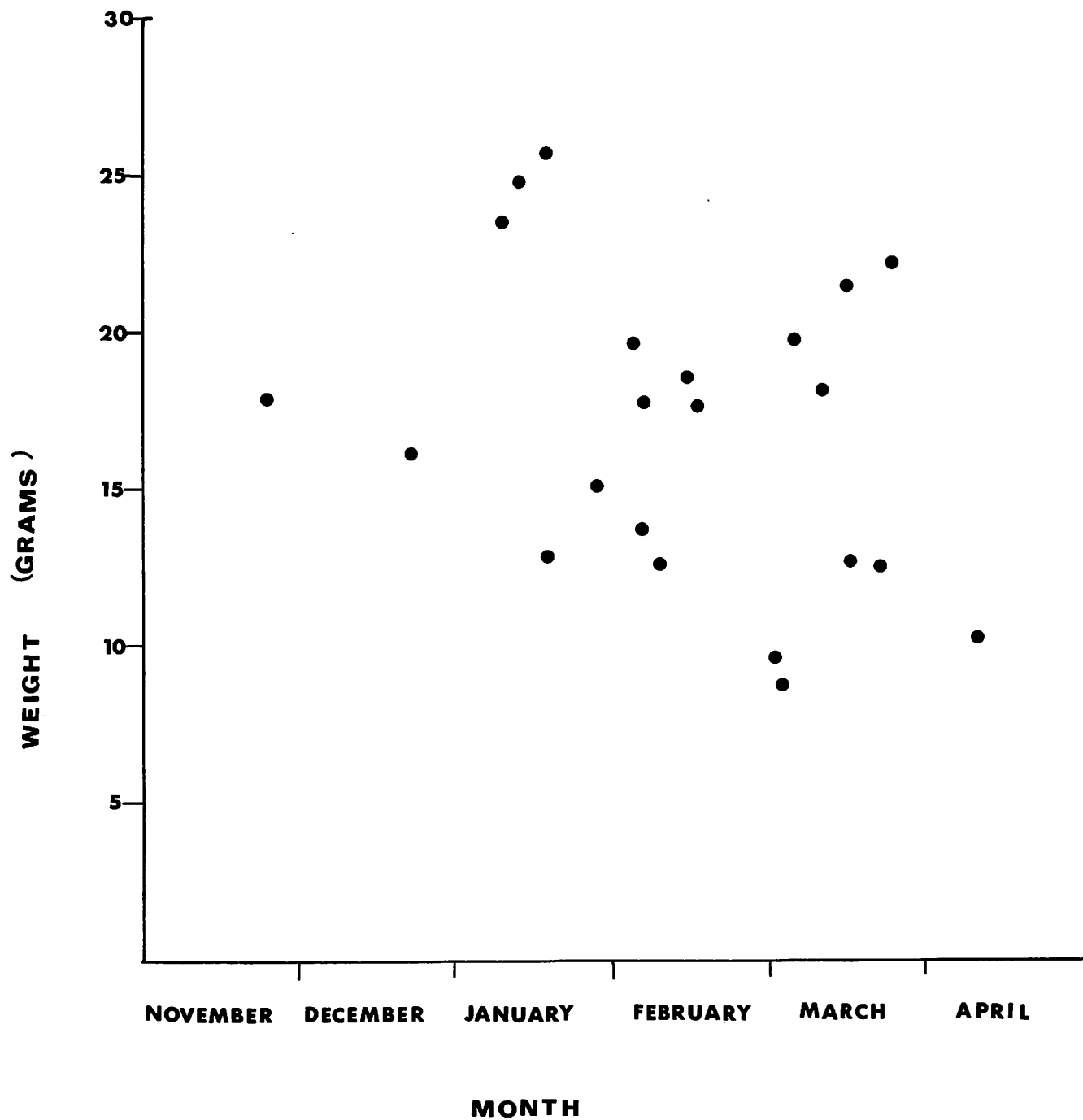


Figure 3. Mean testis weight of 22 adult wolves taken in the 1974-75 wolf control program.

Appendix 1: Specifics of wolves taken by Alberta Fish and Wildlife in the 1974-75 wolf control program in Alberta.

Specimen No.	Location	Kill Date	Sex	Age	Color	Weight Pounds	Length Centimeters	Tail Centimeters	H.F.	Other
V442601	Beaverlodge	Nov-Dec/74	F	3½	Black	77	151.0	42.0	27.0	Mange
V442602	S½ 28-81-18 W5	25/11/74	F	2½	Grey	74	163.5	45.5	28.5	
V442603	S½ 28-81-18 W5	25/11/74	M	½	Grey	50	136.5	40.0	26.5	Mange
V442604	S½ 28-81-18 W5	25/11/74	F	3½	Grey	96	167.0	47.0	29.5	Mange
V442605	S½ 28-81-18 W5	25/11/74	M	2½	Grey	90	179.0	48.0	30.5	Mange
V442606	S½ 28-81-18 W5	25/11/74	F	½	Grey	54	152.5	42.0	26.0	Mange
V442607	20-108-17 W5	20/11/74	F	2½	Grey	100	174.0	47.0	26.0	
V442608	S½ 28-81-18 W5	25/11/74	F	½	Grey	52	154.0	45.5	29.0	Mange
V442609	NW 15-67- 9 W6	04/12/74	M	3½	Black	95	167.0	43.0	31.0	Mange
V442610	NW 15-67- 9 W6	04/12/74	F	2½	Grey	90	187.0	45.0	29.0	
V442611	NW 15-67- 9 W6	04/12/74	F	4½	Grey	84	163.0	46.0	28.0	
V442612	NW 22-112-12W5	30/11/74	F	½	Black	55	139.0	32.0	25.0	
V442613	S½ 28-81-18 W5	25/11/74	M	7½	Grey	106	177.0	51.5	31.0	Mange
V442614	Peace River Region	Nov-Dec/74	F	3½	Grey	-	-	-	-	Shot
V442615	NE 15-103-22W5	17/10/74	F	6½	Blue	97	176.5	42.0	28.0	
V442616	10102-23W5	02/11/74	M	4½	Grey	108	178.0	47.0	29.5	
V442617	S½ 28-81-18 W5	28/12/74	M	½	Grey	72	166.0	43.0	29.5	
V442618	SW 25-108-17W5	27/12/74	F	½	Grey	67	170.5	42.0	28.0	
V442619	SW 2-86-14 W5	23/12/74	F	2½	Grey	89	164.5	43.5	28.0	
V442620	53-68- 5 W6	11/12/74	F	2½	Grey	90	165.0	42.0	28.0	
V442621	E½ 26-95-21 W5	24/12/74	M	2½	Grey	90	165.5	43.5	29.0	
V442622	E½ 26-95-21 W5	04/01/75	F	6½	White	96	160.5	44.0	28.0	
V442623	S 11-71-13 W6	09/12/74	F	4½	Black	96	170.0	42.0	27.0	
V442624	NW 22-112-12W5	27/12/74	F	6½	Black	74	152.0	40.5	30.0	

Continued

Appendix 1: Specifics of wolves taken by Alberta Fish and Wildlife in the 1974-75 wolf control program in Alberta continued

Specimen No.	Location	Kill Date	Sex	Age	Color	Weight	Length	Tail	H.F.	Other
						Pounds	Centimeters			
V442625	SW 2-86-14 W5	18/12/74	F	1/2	Grey	96	160.5	43.0	27.0	
V442627	SW 25-108-17W5	11/01/75	M	2 1/2	Grey	88	181.0	48.0	29.5	Snared
V442628	S 15-67- 9 W6	07/01/75	F	3 1/2	Black	69*	164.0	44.0	28.0	Skinned prior to measurement
V442629	S 15-67-9 W6	07/01/75	F	1/2	Grey	77	158.5	50.0	28.5	Mange
V442630	SE 1068- 6 W5	20/01/75	M	1 1/2	Grey	81*	-	-	-	Skinned prior to measurement
V442631	SE 1-64- 6 W5	20/01/75	F	1/2	Grey	66*	158.0	46.0	26.0	
V442632	SE 6-61- 9 W5	24/01/75	F	2 1/2	Grey	66*				Skinned prior to measurement
V442633	NW 27-61- 9 W5	20/01/75	F	1/2	?	47*	146.0	-	27.0	"
V442635	NW 27-61- 9 W5	20/01/75	M	1 1/2	?	74*				"
V442636	NW 27-11- 9 W5	20/01/75	F	3 1/2	Black	101	158.0	31.0	28.5	Mange
V442637	SE 1-64- 6 W5	20/01/75	M	1 1/2	Grey	91	174.0	46.0	29.0	
V442638	SE 1-64- 6 W5	20/01/75	F	1 1/2	Grey	76	172.5	28.0	29.5	
V442639	SE 1-64- 6 W5	20/01/75	F	3 1/2	Grey	98	177.0	43.0	29.5	
V442640	NW 27-61- 9 W5	20/01/75	M	5 1/2	Grey	124	166.0	46.0	28.5	
V442641	NW 27-61- 9 W5	20/01/75	F	1 1/2	Grey	79	155.5	42.0	29.5	Mange
V442642	NW 27-61- 9 W5	20/01/75	M	3 1/2	Grey	95	172.0	47.0	29.0	
V442643	SE 1064- 6 W5	20/01/75	F	1 1/2	Grey	82	172.0	47.0	29.0	
V442644	SE 1-64- 6 W5	20/01/75	M	1 1/2	Grey	84	172.0	44.0	29.0	
V442645	NW 27-61- 9 W5	20/01/75	F	6 1/2	Black	92	176.0	44.0	28.0	
V442646	NW 27-61- 9 W5	20/01/75	F	2 1/2	Black	82	170.5	43.0	29.0	

Continued

Appendix 1: Specifics of wolves taken by Alberta Fish and Wildlife in the 1974-75 wolf control program in Alberta continued

Specimen No.	Location	Kill Date	Sex	Age	Color	Weight	Length	Tail	H.F.	Other
						Pounds	Centimeters			
V442647	NW 27-61- 9 W5	20/01/75	M	1½	Black	76*	159.5	45.0	-	Skinned prior to measurement
V442648	SW 18-61-10 W5	15/01/75	M	4½	Grey	89*	176.0	47.6	-	"
V442649	S½ 28-67- 9 W6	06/01/75	F	½	Grey	75	170.0	47.0	27.0	Mange
V442650	S½ 13-68- 5 W6	02/01/75	M	3½	Black	116	175.5	44.0	29.0	
V442651	S½ 32-82-18 W5	28/01/75	M	6½	Grey	105	182.0	46.0	30.0	
V442652	E½ 26-95-21 W5	05/02/75	F	3½	Grey	86	166.0	48.0	27.0	
V442653	S½ 13-68- 5 W6	02/01/75	F	4½	Grey	100	172.5	46.0	29.0	
V442654	S½ 15-67- 9 W6	02/01/75	F	5½	Grey	98	175.0	49.0	29.5	Mange
V442655	S- 13-48- 5 W6	28/01/75	F	7½	Black	-	175.0	50.0	30.0	Destroyed by birds
V442656	SW 26-66-22 W5	08/02/75	M	4½	Black	90	170.5	49.5	29.0	Mange
V442657	S½ 28-67-9 W6	17/02/75	M	3½	Grey	125	179.0	54.0	30.0	Mange
V442658	S½ 32-82-18 W5	07/02/75	F	3½	Grey	89	166.5	44.5	29.0	Mange
V442659	S½ 32-82-18 W5	07/02/75	M	½	Grey	81	151.5	40.0	29.0	Mange
V442660	S½ 32-82-18 W5	07/02/75	M	½	Grey	55	154.5	42.0	26.0	Mange
V442661	S½ 32-82-18 W5	07/02/75	F	6½	Grey	102	171.0	44.5	29.0	Mange
V442665	27-33- 9-5	Winter 74/75	M	3½	Grey	78*	164.0	42.0	29.5	Skinned prior to measurement
V442666	NE 7-27- 6-5	Winter 74/75	M	6½	Black	84*	177.0	79.5	30.0	"
V442667	NW 20-27- 6-5	Winter 74/75	F	2½	Grey	83*	169.0	45.0	29.0	"
V442668	Sec.1-64- 6 W5	04/03/75	M	5½	Grey				29.0	Legs & tail missing
V442669	Sec.1-64- 6 W5	04/03/75	M	2½	Grey		173.0	49.0	30.5	Legs missing
V442670	NW 27-61- 9 W5	20/02/75	Unknown	½	Grey				28.0	Destroyed by birds

Continued

Appendix 1: Specifics of wolves taken by Alberta Fish and Wildlife in the 1974-75 wolf control program in Alberta continued

Specimen No.	Location	Kill Date	Sex	Age	Color	Weight	Length	Tail	H.F.	Other
						Pounds	Centimeters			
V442671	SW 6-59-12- 5	08/03/75	F	5½	Grey	79*	165.0	41.5	28.5	
V442672	SW 6-59-12- 5	08/03/75	M	2½	Black	93*	169.5	45.5	30.0	
V442673	Edson Region	Winter 74/75	F	1½	Grey		163.0	47.0	27.5	Destroyed by scavengers
V442674	Edson Region	Winter 74/75	F	4½	Black	82	162.0	47.0	28.0	
V442675	Sec.1-64- 6 W5	04/03/75	F	1½	Grey		154.5	42.0	26.0	Legs missing
V442676	Edson Region	Winter 74/75	F	2½	Grey	81	156.0	47.0	27.0	
V442677	NW 1-53-17 W5	03/03/75	M	5½	Grey	117	179.5	53.5	32.5	
V442678	NW 20-26- 6- 6	Winter 74/75	M	2½	Grey	112	178.0	47.5	30.5	
V442679	S½ 13-68- 5 W6	17/03/75	F	4½	Black	80	167.0	44.0	27.0	
V442680	S½ 32-82-18 W5	06/02/75	M	3½	Grey	127	181.0	49.0	31.0	
V442681	S½ 2-105-14W5	06/03/75	F	2½	White	90	167.0	40.0	29.0	
V442682	NE 22-70-13 W6	02/03/75	F	3½	Grey	92	172.0	48.0	28.0	Mange
V442683	S½ 30-71-13 W6	18/02/75	M	3½	Black	96	177.0	48.0	30.0	Mange
V442684	NE 22-70-13 W6	02/03/75	M	2½	Grey	86	175.0	45.0	28.0	Mange
V442685	NE 7-25- 6 W5	08/03/75	F	2½	Grey	92	166.0	47.0	28.0	
V442686	NW 30-27- 6 W5	10/03/75	F	w½	Grey		164.0	1	28.0	Destroyed by scavengers
V442687	Sec.36-33-9 W5	13/03/75	M	2½	Grey	99	149.0	41.0	39.5	Mange
V442688	Sec.36-33-9 W5	13/03/75	F	3½	Grey	85	162.0	44.0	28.0	Mange
V442689	Sec.30-71-13W6	25/03/75	M	4½	Grey		168.0	47.0	27.0	Destroyed by scavengers
V442690	Sec.30-71-13W6	25/03/75	F	2½	Grey		171.0	42.5	28.5	"
V442691	Valleyview	15/02/75	F	3½	Black	74	150.0	41.0	24.0	Mange, shot
V442692	S½ 23-67-22 W5	Winter 74/75	M	5½	Black	78	172.0	44.0	28.0	Mange, shot

Continued

Appendix 1: Specifics of wolves taken by Alberta Fish and Wildlife in the 1974-75 wolf control program in Alberta continued

Specimen No.	Location	Kill Date	Sex	Age	Color	Weight	Length	Tail	H.F.	Other
						Pounds	Centimeters			
V442693	S½ 34-70-16 W	17/03/75	F	3½	Grey	104	168.5	41.0	27.5	
V442694	S½ 34-70-16 W	17/03/75	F	4½	Black	117	174.0	43.0	29.5	
V442695	S½ 35-109-17W5	26/03/75	F	3½	Grey	98	168.0	48.0	27.0	
V442696	S½ 15-67- 9 W6	25/03/75	M	3½	Black	110	172.5	42.0	29.5	
V442697	S½ 15-67- 9 W6	25/03/75	M	3½	Black	113	169.5	40.5	28.0	
V442698	S½ 34-70-16 W5	17/03/75	F	3½	Black	91	167.0	40.0	26.5	Carcass destroyed
V442699	S½ 34-70-16 W5	17/03/75	M	4½	Black	115				
V442700	S½ 34-70-16 W5	17/03/75	F	1½	Black	110	173.0	42.5	29.0	
V441628	NW 27-61- 9 W5	15/03/75	F	6½	Black	85*	170.0	43.0	28.0	
V441629	Edson Region	Winter 74/75	M	1½	Grey		164.0	46.0	28.0	
V441630	NW 38-53-18 W5	17/03/75	M	5½	Black	79*	168.0	36.0	28.5	
V441631	NW 27-61- 9 W5	15/03/75	F	1½	Grey	69*	159.0	46.5	28.0	Mange
V441632	NW 27-61- 9 W5	15/03/75	F	1½	Black	55*	149.0	41.0	26.0	
V441634	NW 1-53-17 W5	15/03/75	F	3½	Grey	62*	162.0	43.0	26.5	
V441635	S½ 24-66-22 W5	22/04/75	F	8½	Black		176.0	49.5	31.0	
V441636	S½ 24-66-22 W5	22/04/75	F	1½	Grey		165.0	41.0	27.5	
V441637	S½ 24-66-22 W5	22/04/75	M	1½	Grey		169.0	46.0	28.5	
75-18	S 11-71-13 W6	09/12/74	M		Black	98	172.0	45.0	29.0	Mange
75.5.3	SW 2-86-14 W5	15/12/74	M	4½	Grey	122	181.0	43.5	30.5	
75.8.2	Not stated	26/12/74	M		Grey	128	180.5	45.0	30.0	
75.5.1	SW 25-108-17W5	28/12/74	M	4½	Grey	122	169.0	43.0	31.0	Mange
75.16.1	SW 7-56-10 W5	12/01/75	M			76	173.0	35.1		
75.62	S½ 35-109-17W5	26/03/75	M		Grey	112	168.0	42.0	28.0	
E-1	South of Edson	02/03/75	M	4½		90				
S-1	Ft. Assiniboine	25/01/75	M	1½		104				Mange

*weight minus pelt