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Ministry of
Transportation

WARS 1983-2002

Wildlife Accident
Reporting and Mitigation
in British Columbia

Special Annual Report

Ministry of Transportation

Engineering Branch

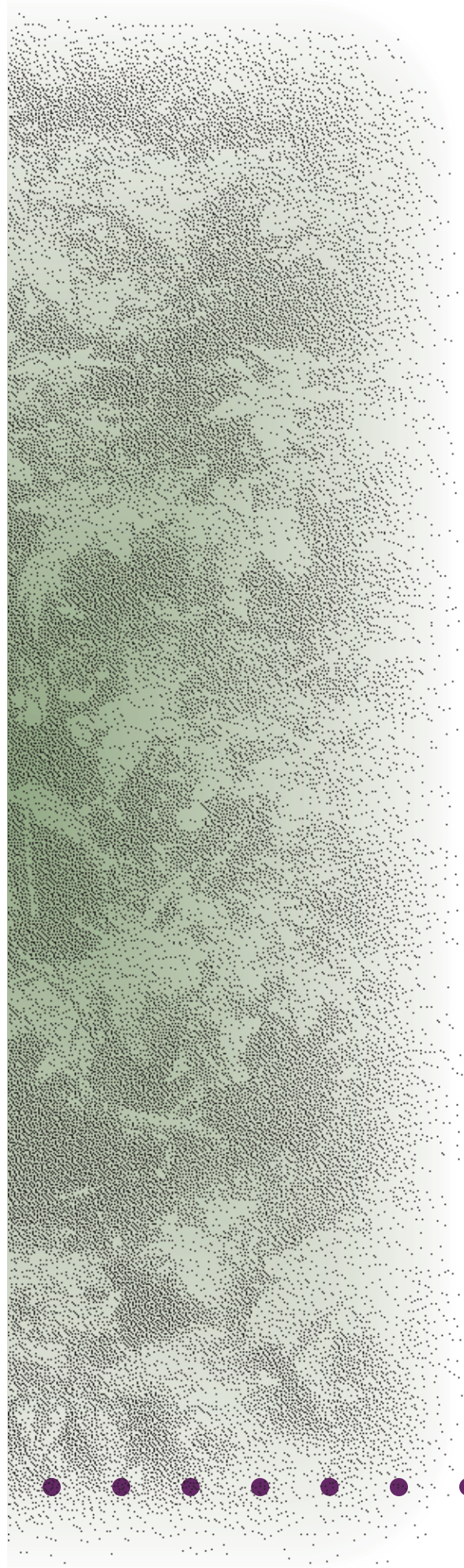
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WARS 1983–2002 Wildlife Accident Reporting and Mitigation in British Columbia Special Annual Report

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Abstract: The Wildlife Accident Reporting System (WARS) is designed to collect and store information on wildlife killed on highways in British Columbia. The WARS database contains over 78,000 records collected since 1978. Wildlife accident information is used by the Ministry to:

- 1) Identify accident-prone locations and accident trends;
- 2) direct cost-effective mitigation efforts;
- 3) evaluate the effectiveness of mitigation techniques;
- 4) provide data for highway planning purposes;
- 5) model and forecast accidents;
- 6) analyze traffic and climatic relationships for species-specific accident trends;
- 7) develop species-specific accident risk profiles for highway corridors; and
- 8) establish policies and strategies for accident issues and mitigation initiatives.

The success of the WARS system in British Columbia has made it a model for other agencies seeking to monitor wildlife-related motor vehicle accidents.

Comments: In 2002, Ministry Maintenance Contractors reported finding 5,032 dead wild animals on British Columbia highways. Approximately 80% of the animals reported killed were deer. The number of wildlife accidents reported to the Ministry decreased by 2.7% from 2001.

Keywords: WARS, wildlife, accident, reporting, system, road, kills, statistics, exclusion, fencing, British Columbia, risk, cost, deer, moose, elk, bear, sheep, mitigation, overpass, underpass, road ecology.



EXECUTIVE SUMMARY

The British Columbia Ministry of Transportation (BCMoT) administers the Wildlife Accident Reporting System (WARS). The WARS system is designed to analyze wildlife accident data collected by BCMoT Maintenance Contractors on numbered highways in British Columbia.

Since 1978, over 78,000 wildlife accidents have been reported on provincial highways. More than 90% of the accidents involved deer, moose and elk. Between 1995 and 2000, 13 people were reported killed in wildlife-related motor vehicle accidents in British Columbia. After weather, the Insurance Corporation of British Columbia (ICBC) rates wildlife as the next highest environmental contributing factor for police-attended accidents. Between 1997 and 2002, ICBC spent over \$118 million on wildlife-related motor vehicle accident claims.

In 2002, over 5,000 wildlife-related accidents were reported in British Columbia (table below). Between 2001 and 2002, the number of wildlife-related accidents reported decreased by 2.7%.

Wildlife Accidents by BCMoT Region (Year 2002)

	Region 1	Region 2	Region 3	Total
Wildlife Accidents	1,221	2,871	939	5,031

In 2002, it is estimated wildlife accidents cost the Province over \$20 million in motor vehicle accident claims; \$580,000 in highway accident clean-up costs; \$320,000 in lost provincial hunting license revenues; and \$30 million in lost value to residents and non-residents who view or hunt wildlife.

BCMoT is committed to protect the safety of the motoring public; stem the rising societal cost of human fatalities and injuries, motor vehicle damage, and highway maintenance; and reduce the loss of wildlife on provincial highways. Consequently, BCMoT uses the WARS system to:

- 1) identify accident-prone locations and accident trends;
- 2) direct cost-effective mitigation efforts;
- 3) evaluate the effectiveness of mitigation techniques;
- 4) provide data for highway planning purposes;
- 5) model and forecast accidents;
- 6) analyze traffic and climatic relationships for species-specific accident trends;
- 7) develop species-specific accident risk profiles for highway corridors; and
- 8) establish policies and strategies for accident issues and mitigation initiatives.

The WARS system is becoming an increasingly valuable information resource for BCMoT, and other government agencies, consultants, researchers, wildlife associations, special interest groups and members of the general public. The Ministry of Water, Land and Air Protection uses WARS data to assess provincial wildlife population trends. ICBC uses WARS data for identifying highway locations where joint BCMoT/ICBC initiatives, such as exclusion fencing, warning reflectors, and infrared camera detection systems, can be targeted to reduce wildlife-related motor vehicle collisions. The success of the WARS system in British Columbia has made it a model for other agencies seeking to monitor wildlife-related motor vehicle accidents.



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The timely assembly and proofing of the WARS monthly reports, vital for keeping the WARS system current and complete, was done by Ministry's District Staff:

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WARS 1983-2002

Wildlife Accident
Reporting and Mitigation
in British Columbia

Special Annual Report



6.0 WILDLIFE ACCIDENTS BY REGION

6.1 Regional Comparisons

Regional Overviews

The British Columbia Ministry of Transportation divides its operational administration into three Regions, South Coast, Southern Interior, and Northern. Each Region represents a large geographic area with distinct bioclimatic conditions and diverse wildlife habitats.

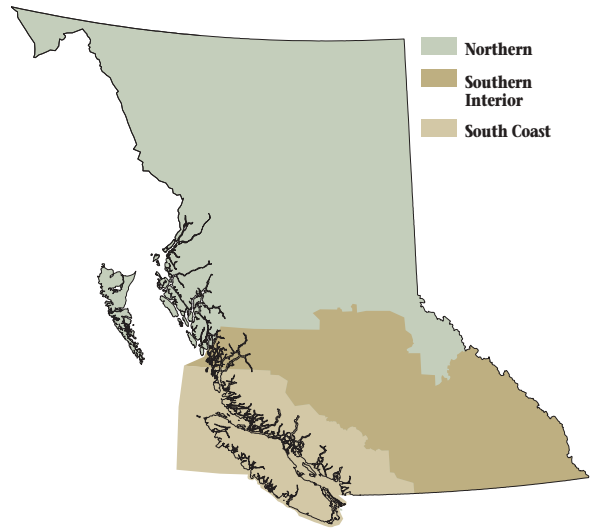
1. South Coast Region

The South Coast Region is approximately 118,000 km² in size, the smallest Region in the Province. It is primarily coastal, encompassing Vancouver Island and the southern portion of the British Columbia coast. Its weather is characterized by plentiful rainfall with mild winters and mild summers. Along the Pacific west coast, humid coniferous rain forests occur (Valentine et al., 1978). The ecosystems in this Region are some of the most productive areas in the Province. Black-tailed deer habitat is abundant (British Columbia Ministry of Forests, 1999).

2. Southern Interior Region

The Southern Interior Region is approximately 545,500 km² in size, the second largest Region in the Province. It is located between the Coast Mountains and the Rocky Mountains. Being in the lee of the Coastal Mountains, this Region is characterized by drier climates. These valleys provide critical winter and spring forage for bighorn sheep and white-tailed deer (British Columbia Ministry of Forests, 1999). At lower elevations, the Interior Plateau has some of the driest and hottest valleys

Map 6.1



Sea-to-Sky Highway

(Photo: Gord Smith)



Okanagan Valley

(Photo: Tourism BC)

in the Province. The Region has open woodlands and steppe grasslands. Grass and forest fires are not uncommon. At higher elevations, this Region has significant habitat for mule deer and elk. At the highest elevations, the mountains present severe and hostile environments for wildlife.

3. Northern Region

The Northern Region is approximately 643,700 km² in size, the largest in the Province. It extends from the Pacific Ocean to the Peace River and the Alberta border, and from approximately the middle of the Province to the Yukon border. In the north, the climate is characterized by cold continental climate, with long, cold winters. The habitat is largely high latitude northern boreal forests, characteristic of Northern Canada and Euro-Siberia (Valentine et al., 1978).

This Region provides extensive moose, caribou and elk habitat. In the east, moose are abundant in the Peace River area. At higher elevations, the essentially treeless alpine tundra provides critical habitat for caribou, mountain goats and mountain sheep (British Columbia Ministry of Forests, 1999).



Monkman Falls

(Photo: Tourism BC)

6.2 Regional Wildlife Accident Comparisons

Given the size of the province and the dramatically different climatic and geographical regimes within each Region, variations between Regions may vary significantly. Table 6.1 provides a general breakdown of all wildlife accidents by Regions from 1983 to 2002. Although all Regions exhibit similar trends, the Provincial annual totals are heavily influenced by Region 2 where the largest number of wildlife accidents are reported. For the most part, the Provincial trend follows the trend observed for Region 2.

In particular, the general pattern of wildlife accidents for the entire Province is greatly influenced by the number of deer-vehicle accidents recorded in Region 2. This Region has disproportionately more accidents than any other Region. Region 2 has some of the highest deer populations in the Province. This Region has areas with steep mountainous terrain transected by Highways 1, 3, 16 and 97.



Warning sign

(Photo: Brent Persello)

When comparing 2002 wildlife-vehicle accidents by Region to those during previous years, it is important to note, the fluctuation between years can be considerable (Table 6.2).



When the monthly distribution of wildlife-vehicle accidents for all species in each Region for the period between 1993 and 2001 are compared, trends also appear. Collectively, the accident rate for all Regions peaks in May and November. Since deer represent approximately 80% of the animals killed, the patterns of accidents for other species is overshadowed by the pattern found for deer in all Regions.

For example, depending on weather patterns, Region 1 can experience a very wet winter but exhibit fewer wildlife accidents, while Regions 2 and 3 can experience heavy snowfalls with higher wildlife accidents as animals migrate from higher elevations to valleys where highways are located.

Figure 6.1 Total Annual Wildlife Accidents by Region (1983 to 2002)

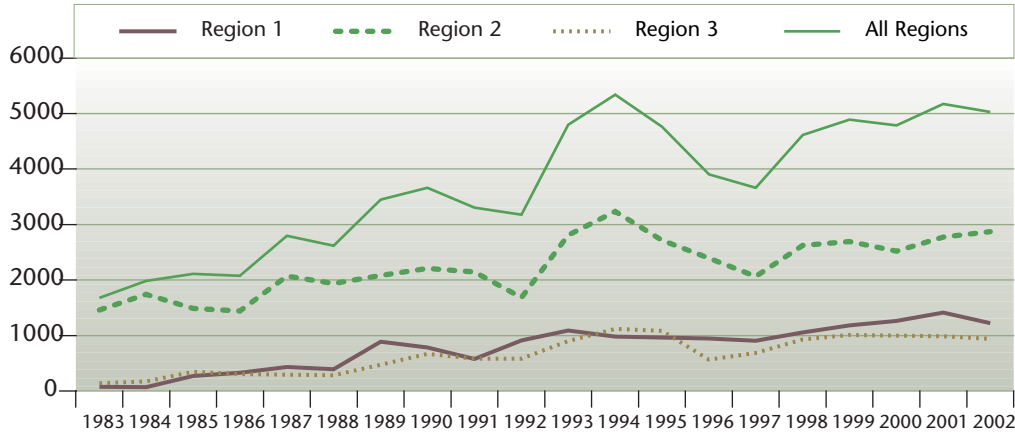
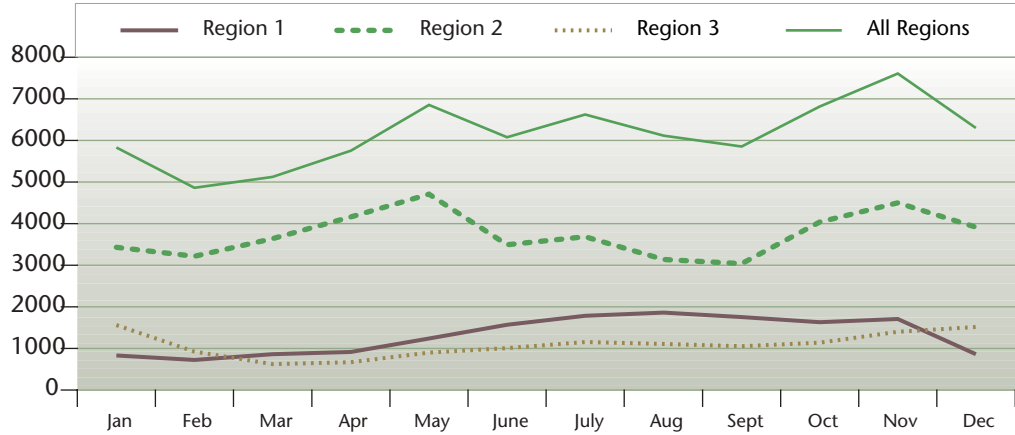


Figure 6.2 Total Monthly Wildlife Accidents by Region (1983 to 2002)



When the accident patterns for bear, deer, elk, and moose are examined, it is apparent the monthly accident distributions vary by species.

Table 6.1 Wildlife Accidents by Region (1983 to 2002)

YEAR	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Totals
Region 1	75	73	274	332	432	392	891	785	578	910	1,090	984	965	945	907	1,057	1,184	1,265	1,413	1,221	15,773
Region 2	1,461	1,741	1,489	1,441	2,071	1,940	2,083	2,207	2,147	1,683	2,810	3,237	2,716	2,393	2,067	2,626	2,694	2,520	2,772	2,871	44,969
Region 3	142	173	346	305	294	286	476	669	581	583	898	1,118	1,083	564	687	928	1,011	1,000	987	939	13,070
Totals	1,678	1,987	2,109	2,078	2,797	2,618	3,450	3,661	3,306	3,176	4,798	5,339	4,764	3,902	3,661	4,611	4,889	4,785	5,172	5,031	73,812

Table 6.2 Regional Wildlife Accidents (Fluctuations (1997 to 2002))

Region	1997	1998	% Change	1998	1999	% Change	1999	2000	% Change	2000	2001	% Change	2001	2002	% Change
1	907	1,057	16.5	1,057	1,184	12	1,184	1,265	6.8	1,265	1,413	11.7	1,413	1,221	-13.6
2	2,067	2,626	27	2,626	2,694	2.6	2,694	2,520	-6.5	2,520	2,772	10	2,772	2,871	3.6
3	687	928	35.1	928	1,011	8.9	1,011	1,000	-1.1	1,000	987	-1.3	987	939	-4.9
Total	3,661	4,611	25.9	4,611	4,889	6	4,889	4,785	-2.1	4,785	5,172	8.1	5,172	5,031	-2.7





Table 6.3 Wildlife Accidents in Region 1 (1983 to 2002)

Region 1	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Totals
Bear	1	1	11	14	4	4	14	10	8	13	24	18	16	33	16	20	29	16	24	26	302
Beaver	0	1	1	0	0	0	4	0	1	0	2	6	5	0	2	2	3	9	13	10	59
Bobcat	0	0	0	0	1	1	0	2	0	0	1	1	4	1	0	0	2	0	2	2	17
Caribou	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	3
Cougar	0	0	0	0	0	0	0	0	0	0	1	2	0	0	1	0	4	1	3	1	13
Coyote	0	0	10	11	6	6	28	24	7	66	59	61	49	42	35	55	26	40	44	50	619
Deer	74	68	248	298	392	356	840	743	554	817	992	850	875	820	821	932	1,045	1,098	1,174	954	13,951
Elk	0	1	0	1	0	0	1	3	2	6	2	5	1	4	0	1	9	16	5	4	61
Fox	0	0	1	0	0	0	0	0	0	0	0	1	0	0	2	1	1	0	6	0	12
Moose	0	0	0	0	0	0	1	0	0	1	2	3	0	1	2	5	3	2	5	5	30
Porcupine	0	0	1	1	0	0	1	0	0	3	2	1	3	1	1	1	0	0	1	0	16
Possum	0	0	0	0	0	0	0	0	0	0	0	25	5	3	0	0	0	0	1	4	38
Raccoon	0	0	0	5	28	25	1	1	6	2	5	8	3	36	22	34	44	43	94	103	460
Sheep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Skunk	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	5	7	14
Wolf	0	2	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	4
Other	0	0	2	2	0	0	1	2	0	0	0	3	4	3	3	6	18	39	36	54	173
Totals	75	73	274	332	432	392	891	785	578	910	1,090	984	965	945	907	1,057	1,184	1,265	1,413	1,221	15,773

Table 6.4 Wildlife Accidents in Region 2 (1983 to 2002)

Region 2	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Totals
Badger	0	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	2	2	0	1	8
Bear	18	17	24	36	25	22	29	23	31	36	57	54	54	54	54	80	94	44	62	107	921
Beaver	0	1	3	2	2	6	4	10	1	4	9	1	3	5	4	0	3	5	3	10	76
Bobcat	0	0	0	1	1	0	1	0	6	6	3	0	1	4	0	1	0	4	1	0	29
Caribou	0	0	0	0	0	0	0	0	1	1	0	4	4	3	1	3	0	0	0	2	19
Cougar	0	0	0	0	0	0	0	0	0	1	0	2	1	3	2	0	0	1	2	2	14
Coyote	6	12	8	15	22	28	28	44	36	35	79	50	59	50	40	59	42	41	46	49	749
Deer	929	1,177	957	1,067	1,229	1,749	1,875	1,966	1,917	1,495	2,472	2,888	2,436	2,053	1,816	2,269	2,318	2,153	2,345	2,361	37,472
Elk	56	73	45	50	71	77	62	68	54	48	69	109	76	95	62	86	109	133	146	165	1,654
Fox	0	0	3	0	1	0	1	3	2	0	3	3	0	1	3	2	5	5	7	3	42
Moose	23	37	39	27	32	40	46	45	55	29	60	80	51	98	72	89	83	70	94	76	1,146
Porcupine	0	0	6	10	21	6	9	33	38	18	33	17	11	7	3	6	4	4	1	0	227
Raccoon	0	0	0	0	0	0	3	0	1	1	3	0	2	8	0	2	2	7	6	4	39
Sheep	1	3	3	4	5	7	7	8	5	8	14	22	10	10	6	13	9	15	8	5	163
Skunk	0	0	0	1	0	0	0	1	0	1	6	4	7	2	1	1	0	9	13	10	56
Wolf	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2
Other	428	421	399	228	662	5	18	6	0	0	2	2	1	0	3	14	23	27	37	76	2,352
Totals	1,461	1,741	1,489	1,441	2,071	1,940	2,083	2,207	2,147	1,683	2,810	3,237	2,716	2,393	2,067	2,626	2,694	2,520	2,772	2,871	44,969





Table 6.5 Wildlife Accidents in Region 3 (1983 to 2002)

Region 3	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Totals
Bear	8	7	6	17	15	9	18	17	18	24	31	37	38	26	24	42	43	42	49	36	507
Beaver	0	0	18	1	6	3	3	4	2	0	0	2	5	2	12	7	3	6	7	3	84
Bobcat	0	0	0	0	0	0	0	0	1	0	3	0	0	0	0	0	0	0	0	0	4
Caribou	0	0	0	0	0	0	0	1	5	5	0	3	5	1	0	0	0	3	3	2	28
Cougar	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Coyote	0	0	0	0	0	1	3	8	5	18	27	23	21	12	15	21	21	24	14	11	224
Deer	25	36	58	78	111	131	232	241	274	273	528	637	606	301	369	512	536	589	509	543	6,589
Elk	0	0	1	2	1	1	3	3	3	9	4	6	16	5	16	16	11	18	8	10	133
Fox	0	0	0	3	3	1	3	0	6	0	1	1	3	4	1	2	6	9	12	3	58
Moose	105	130	102	150	111	112	152	190	128	166	209	322	316	185	181	270	325	251	293	270	3,968
Porcupine	1	0	158	52	46	26	58	200	136	87	88	85	62	25	66	54	55	46	44	43	1,332
Raccoon	0	0	2	0	0	1	2	0	0	0	2	0	0	0	0	0	0	1	21	1	30
Skunk	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	2
Wolf	1	0	0	0	1	1	1	1	2	1	2	1	5	2	2	1	3	0	8	3	35
Other	2	0	1	2	0	0	1	4	1	0	2	0	5	1	1	3	8	11	19	14	75
Totals	142	173	346	305	294	286	476	669	581	583	898	1,118	1,083	564	687	928	1,011	1,000	987	939	13,070

Figure 6.3 Region 1 – Major Species Accident Comparisons (1983 to 2002)

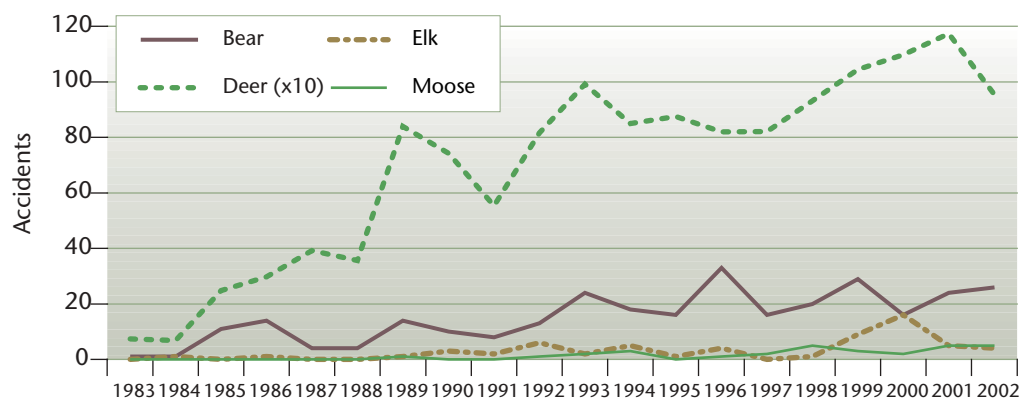


Figure 6.4 Region 2 – Major Species Accident Comparisons (1983 to 2002)

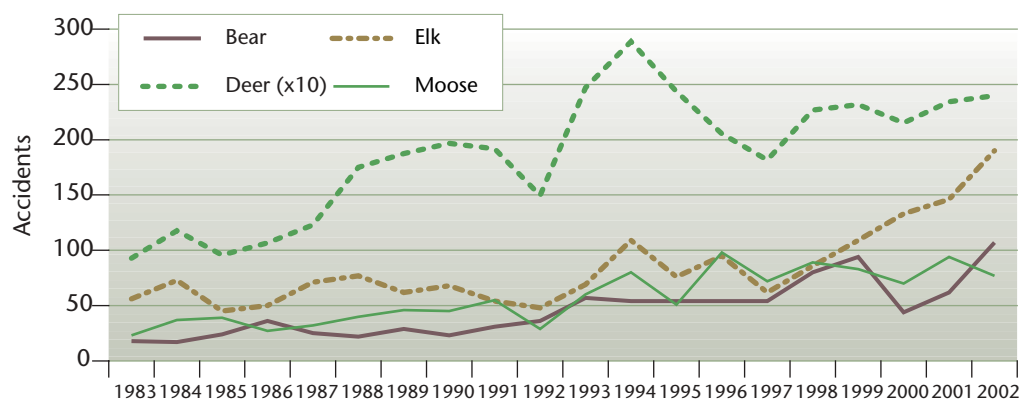
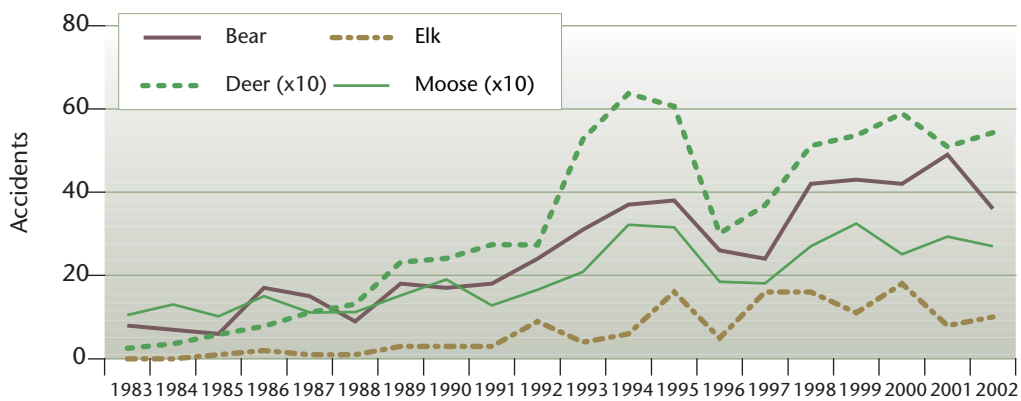


Figure 6.5 Region 3 – Major Species Accident Comparisons (1983 to 2002)



6.3 BEARS

Bear-related motor vehicle accidents have been generally increasing over the last 20 years. The greatest fluctuations in accident numbers has been in Region 2, where the greatest potential for bear-motor vehicle interaction exists. The pattern of bear accidents between 1993 and 2002 appears similar in all three Regions. In Regions 2 and 3, bear-related motor vehicle accidents occur more frequently in September. This peak coincides with the end of summer and the depletion of the bears' natural food sources in more remote locations. At this time, bears appear to migrate toward food sources located near human settlements. Consequently, the number of bear-motor vehicle accidents increases at the same time bear-human conflicts also increase. The peak in bear-related accidents occurs a month later, in October, in Region 1. This is a reflection of the later onset of fall and winter in the southwestern corner of the Province. Although common belief suggests all bears hibernate uninterrupted during the winter months, WARS data shows a small number of bears are killed between November and March. On warmer winter days, some larger male bears awake from hibernation and roam about. (Austin, 1999)



Grizzly

(Photo: BC Parks)



Black Bear

(Photo: Tourism BC)

Figure 6.6 Regional Comparisons – Total Annual Bear Accidents (1983 to 2002)

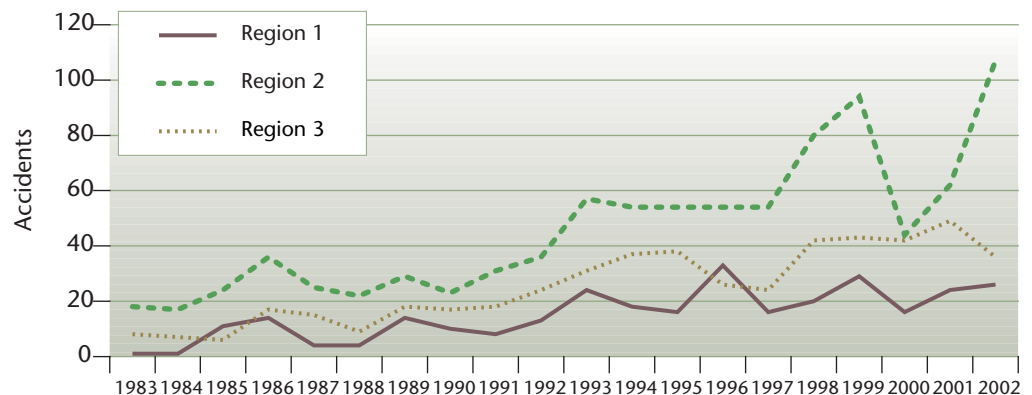


Figure 6.7

Region 1: Total Monthly Bear Accidents (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

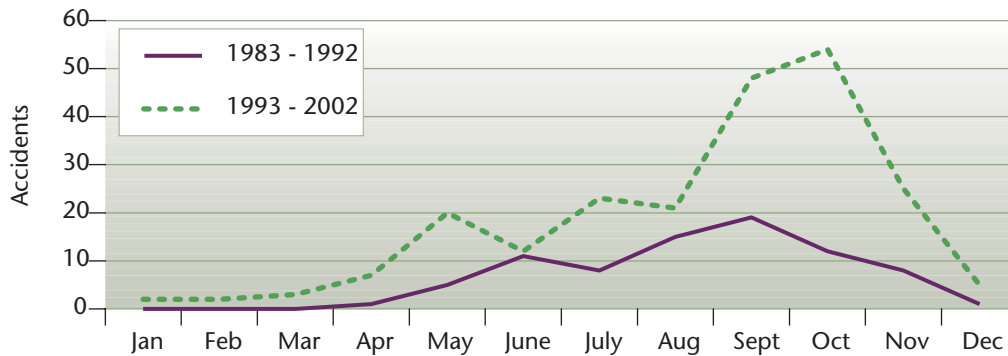


Figure 6.8

Region 2: Total Monthly Bear Accidents (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

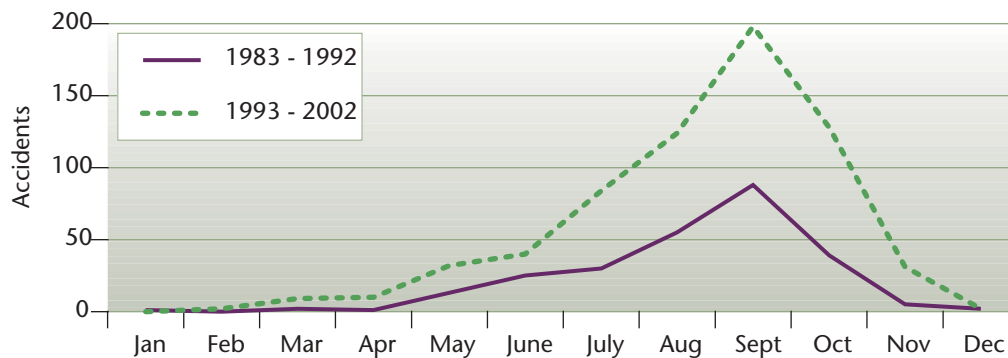


Figure 6.9

Region 3: Total Monthly Bear Accidents (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

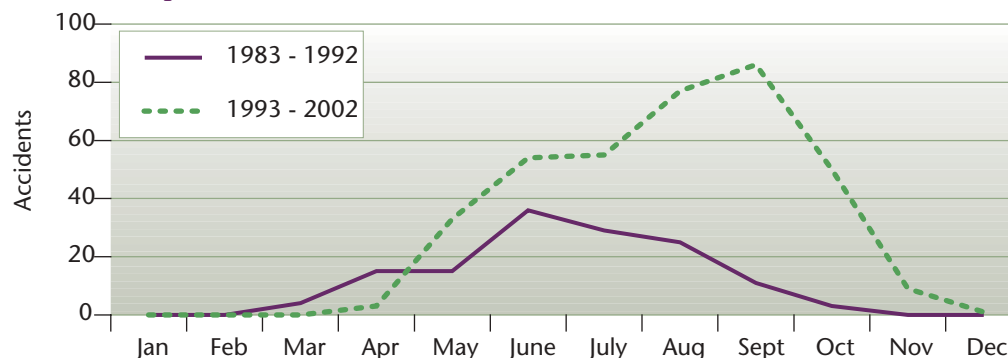




Figure 6.10

Region 1: Total Monthly Bear Accidents by Sex (1983 to 2002)

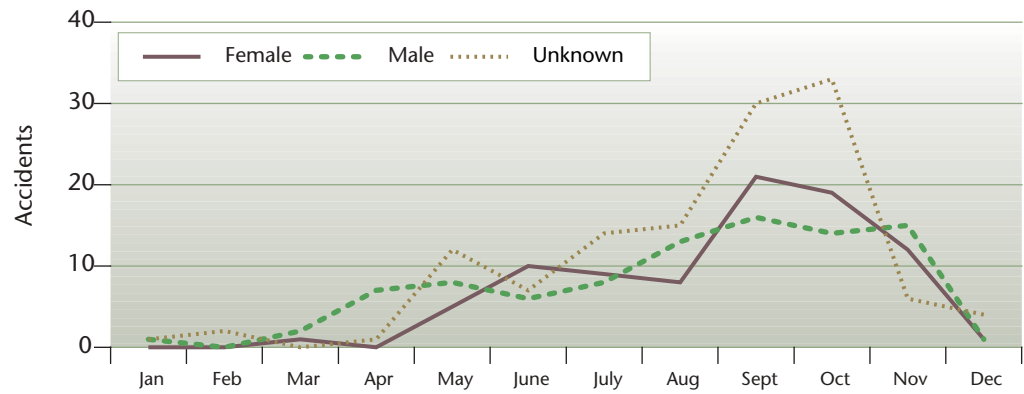


Figure 6.11

Region 2: Total Monthly Bear Accidents by Sex (1983 to 2002)

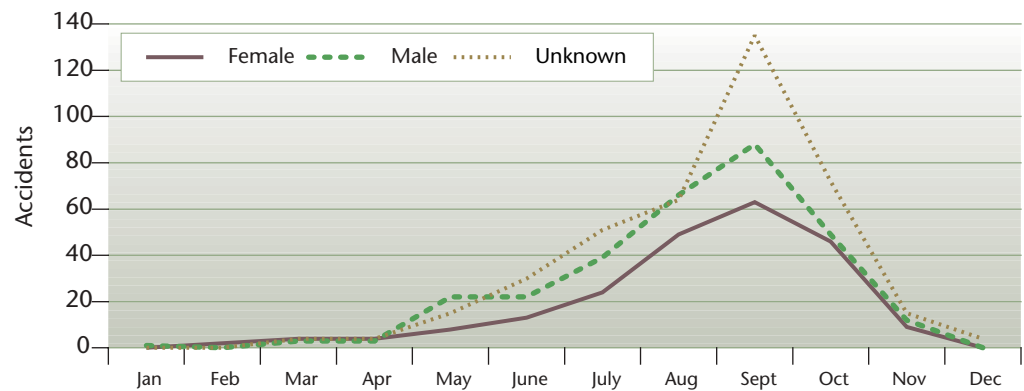
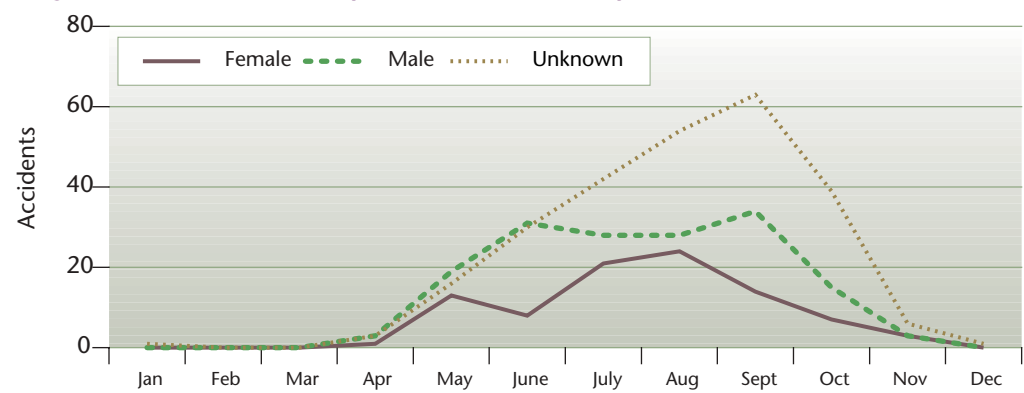


Figure 6.12

Region 3: Total Monthly Bear Accidents by Sex (1983 to 2002)



6.4 DEER

The general trend shows an increase in the number of accidents over the last 20 years. Although the magnitude of deer accidents in Region 2 is significantly greater than those found in the other Regions, Regions 2 and 3 exhibit relatively similar patterns. Region 1, with its milder climate, and fewer migratory herds, has more deer-related accidents in the summer months. In Regions 2 and 3, deer are more inclined to move to higher ground, further from highways located in valley bottoms, to feed during the summer months.

When comparing monthly deer accident rates over the last two decades, it appears the number of November accidents in all Regions has been increasing in the period between 1993 and 2002.



Deer in spring

(Photo: BC Parks)



Deer in winter

(Photo: BC Parks)

Figure 6.13 Regional Comparisons – Total Annual Deer Accidents (1983 to 2002)

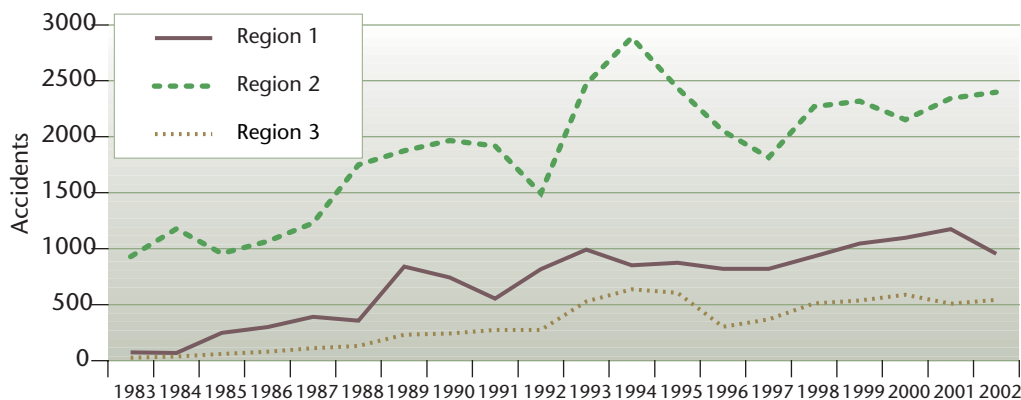




Figure 6.14

Region 1: Total Monthly Deer Accidents (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

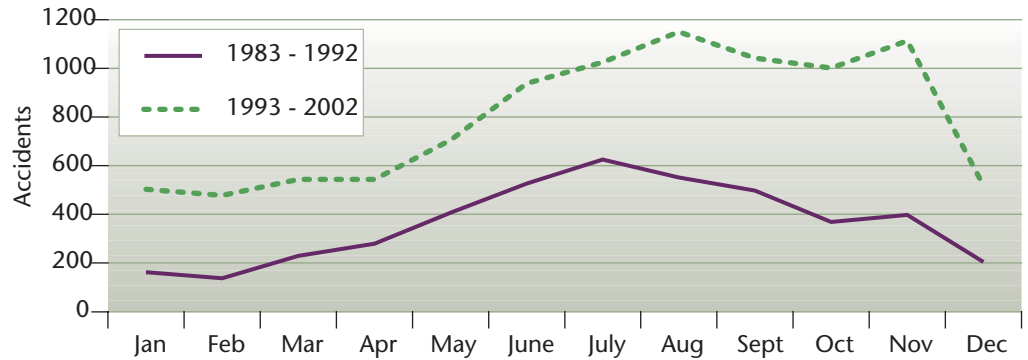


Figure 6.15

Region 2: Total Monthly Deer Accidents (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

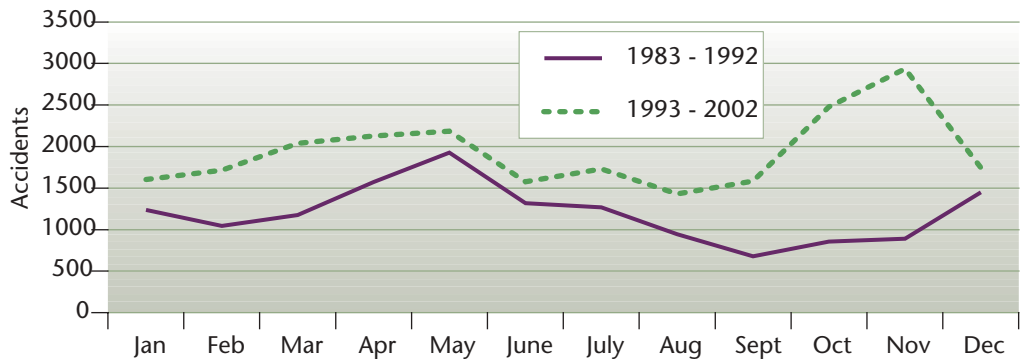


Figure 6.16

Region 3: Total Monthly Deer Accidents (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

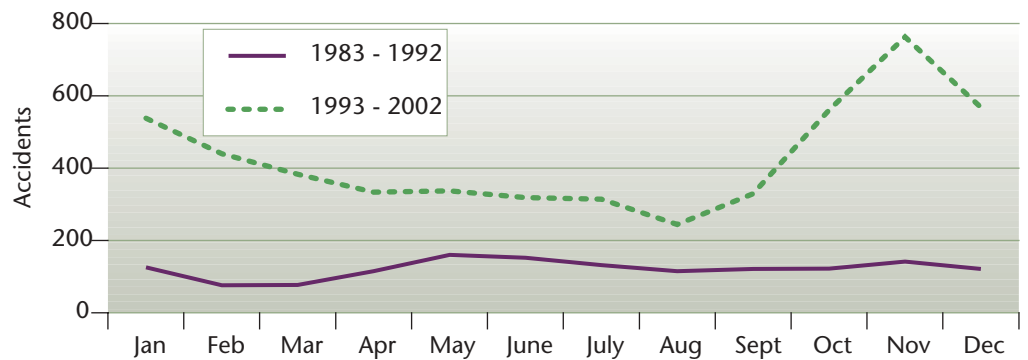


Figure 6.17

Region 1: Total Monthly Deer Accidents by Sex (1983 to 2002)

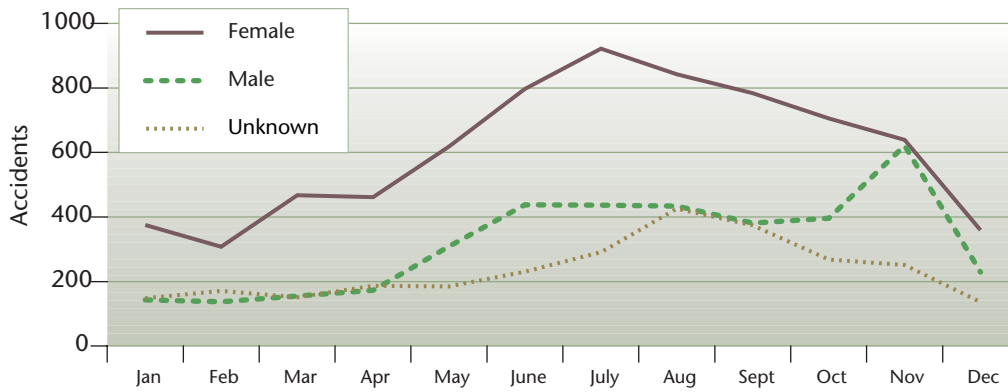


Figure 6.18

Region 2: Total Monthly Deer Accidents by Sex (1983 to 2002)

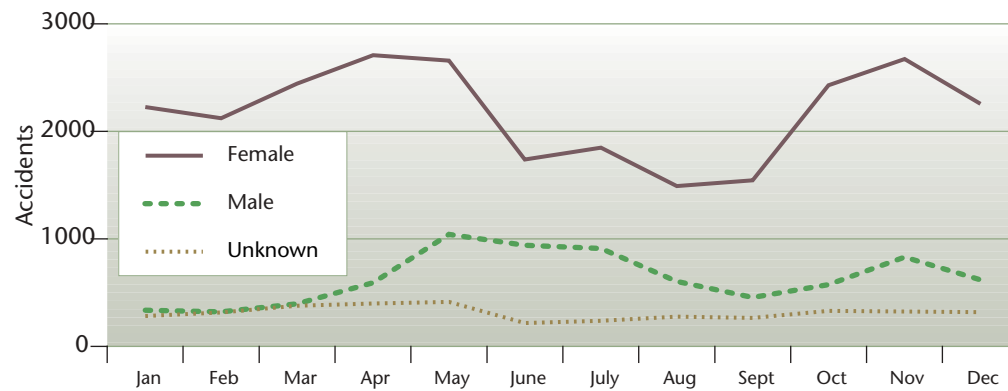
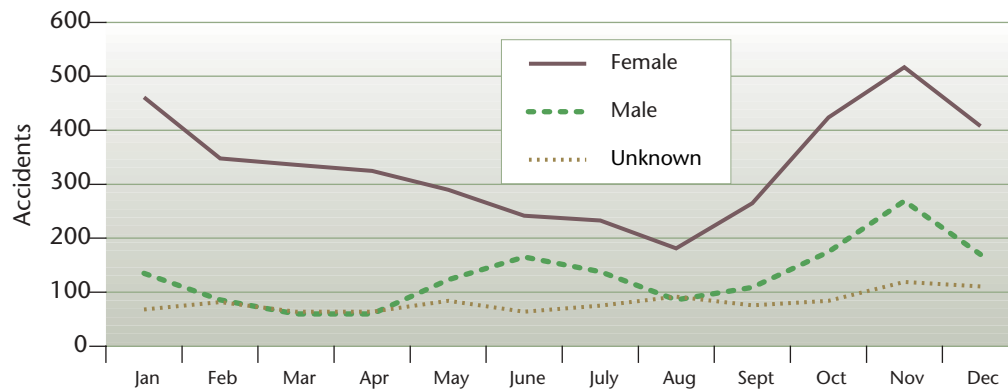


Figure 6.19

Region 3: Total Monthly Deer Accidents by Sex (1983 to 2002)



6.5 ELK

The patterns of elk-related motor vehicle accidents in the three Regions have been relatively consistent in each Region over the last 20 years. The number of accidents has increased between 1993 and 2002. In Region 1, the greatest number of accidents occurs in May and June, followed by a smaller peak in October. Region 2 has the greatest number of elk-related motor vehicle accidents. As a result, the monthly pattern for Region 2 is more well established, and has been consistent over the last two decades. While both Regions 2 and 3 have the greatest number of accidents in the winter, between October and February, Region 3 has a secondary peak in May and June.

In to the other large ungulates, primarily deer and moose, significantly fewer elk are reported found on Provincial highways. As a consequence, the pattern of elk-related motor vehicle accidents is less established. The winter peak appears to coincide with times of high snowfall in the Regions, when elk are found alongside highways that are actively kept cleared of snow. Elk appear to be influenced by the same snow conditions which affect moose.



Solitary Elk

(Photo: BC Parks)



Elk herd

(Photo: BC Parks)

Figure 6.20 Regional Comparisons – Total Annual Elk Accidents (1983 to 2002)

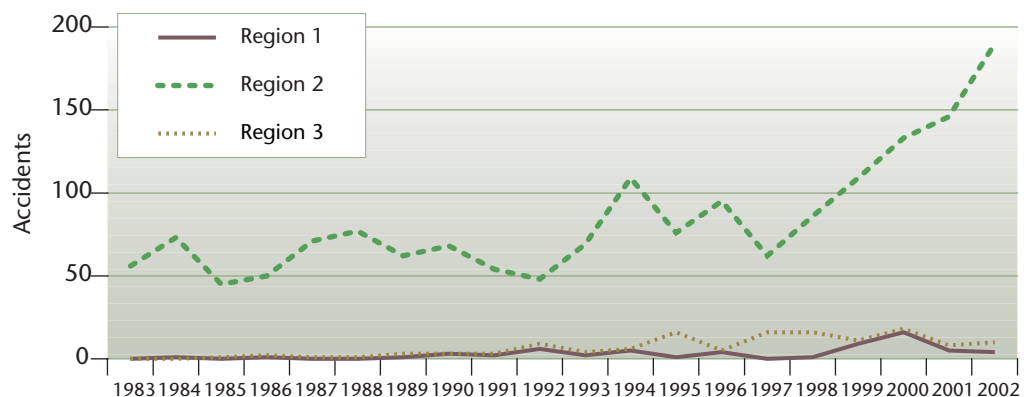


Figure 6.21

Region 1: Total Monthly Elk Accidents (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

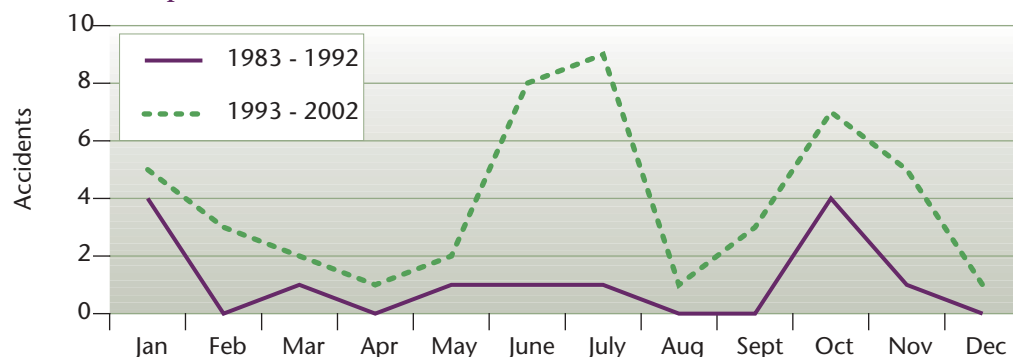


Figure 6.22

Region 2: Total Monthly Elk Accidents (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

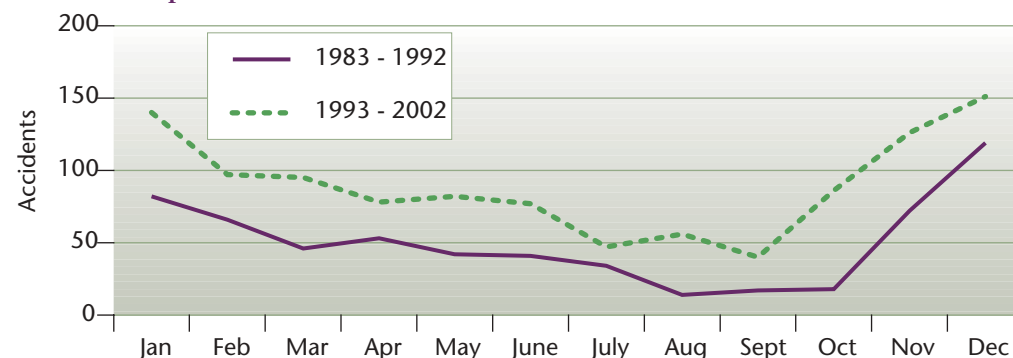


Figure 6.23

Region 3: Total Monthly Elk Accidents (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

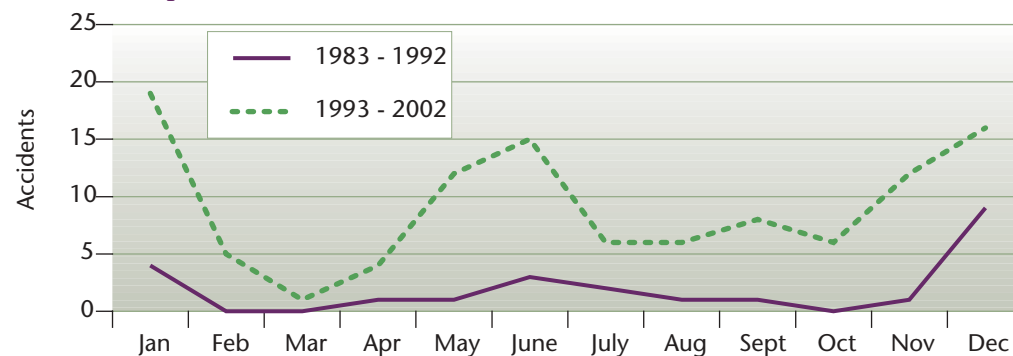




Figure 6.24

Region 1: Total Monthly Elk Accidents by Sex (1983 to 2002)

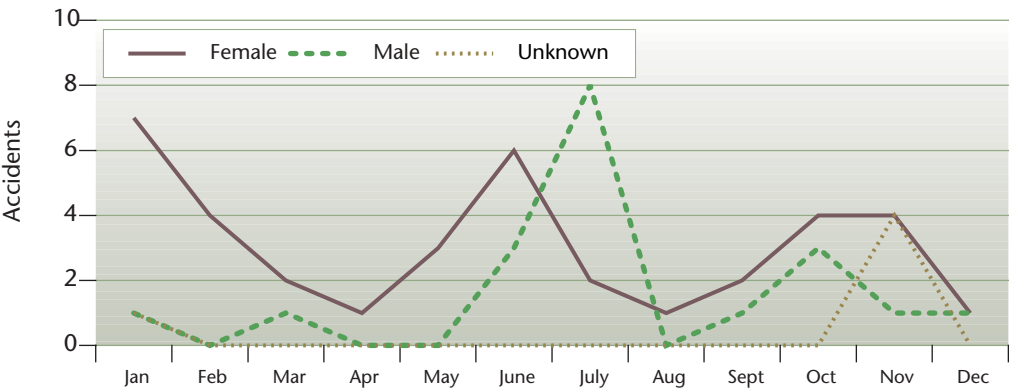


Figure 6.25

Region 2: Total Monthly Elk Accidents by Sex (1983 to 2002)

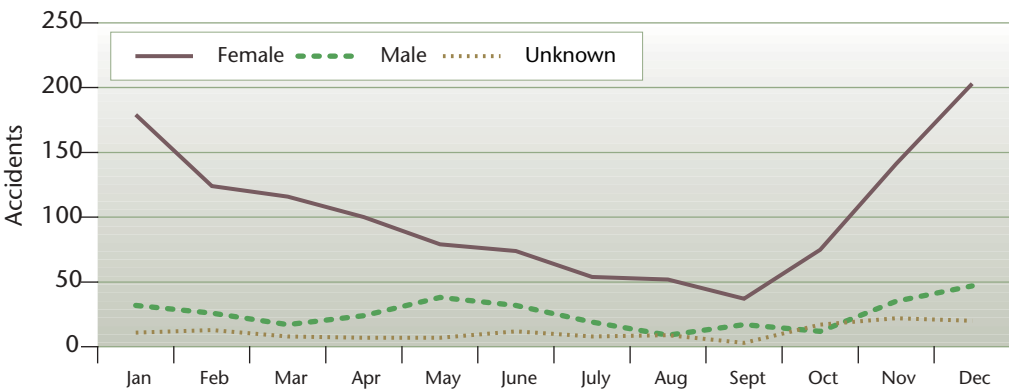
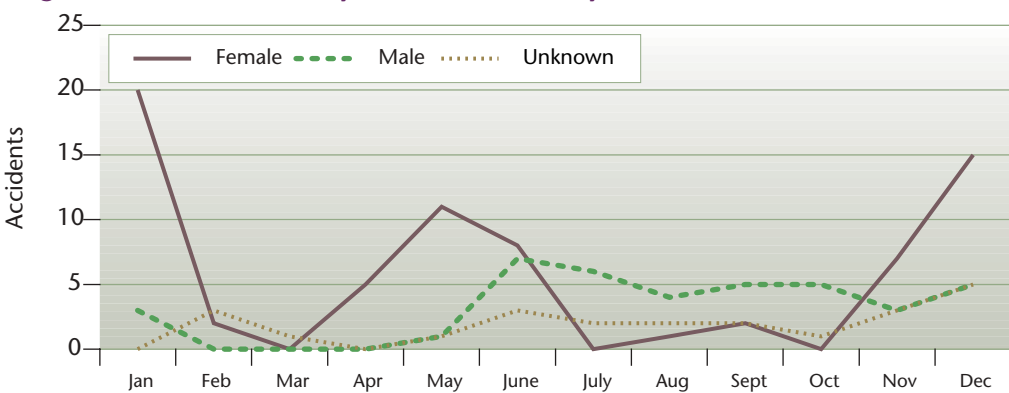


Figure 6.26

Region 3: Total Monthly Elk Accidents by Sex (1983 to 2002)



6.6 MOOSE

The number of moose-related motor vehicle in Region 1 has been relatively low over the last twenty years. There has been a gradual increase in the number of these accidents in Region 2. The greatest number of accidents, and the most dramatic increase in the number of accidents has occurred in Region 3. This increase has not been a steady one, as great fluctuations in the numbers of accidents appears to occur every 3 to 4 years. In both Region 2 and Region 3, the fluctuation can be as much as 90% in a single two year period. The causes of such dramatic fluctuation require further study.

Given the low number of moose-related accidents in Region 1, the pattern appears sporadic. In Regions 2 and 3, the accident patterns are far more defined, as considerably more accidents have been recorded in these Regions. For the most part, both Regions experience accident peaks in the summer (June and July) and in the winter (November, December and January). The summer peak may be due to pregnant cows moving to calving grounds in the early summer or licking salt on or along the highway. The winter peak appears to coincide with times of high snowfall in the Regions, when moose are found alongside highways that are actively kept cleared of snow.



Moose

(Photo: BC Parks)



Pair of Moose on highway

(Photo: Richard Ross, Sr.)

Figure 6.27 Regional Comparisons – Total Annual Moose Accidents (1983 to 2002)

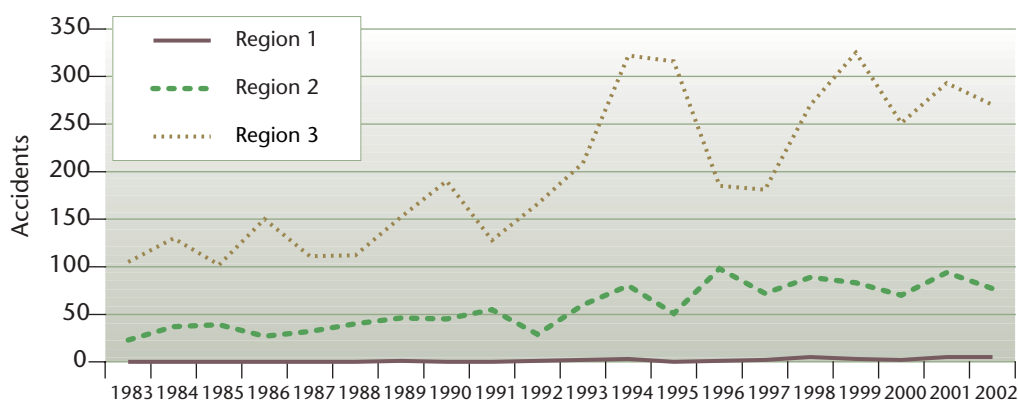




Figure 6.28

Region 1: Total Monthly Moose Accidents (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

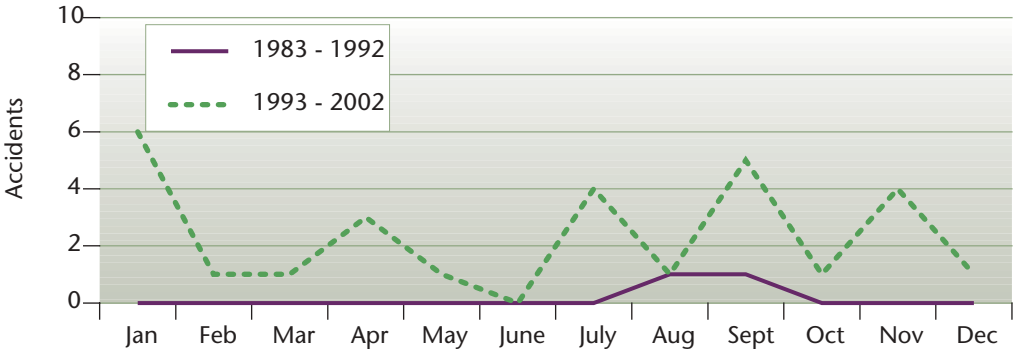


Figure 6.29

Region 2: Total Monthly Moose Accidents (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

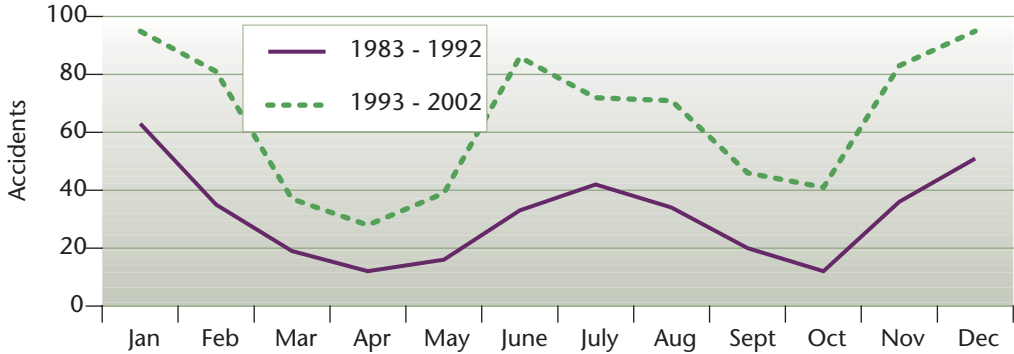


Figure 6.30

Region 3: Total Monthly Moose Accidents (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

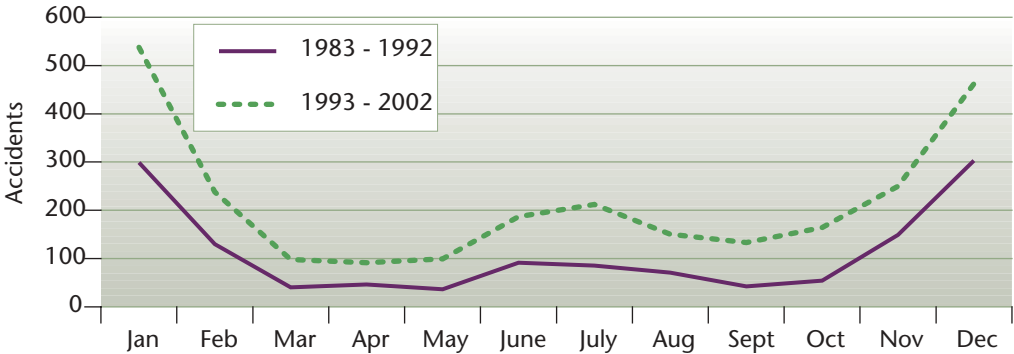


Figure 6.31

Region 1: Total Monthly Moose Accidents by Sex (1983 to 2002)

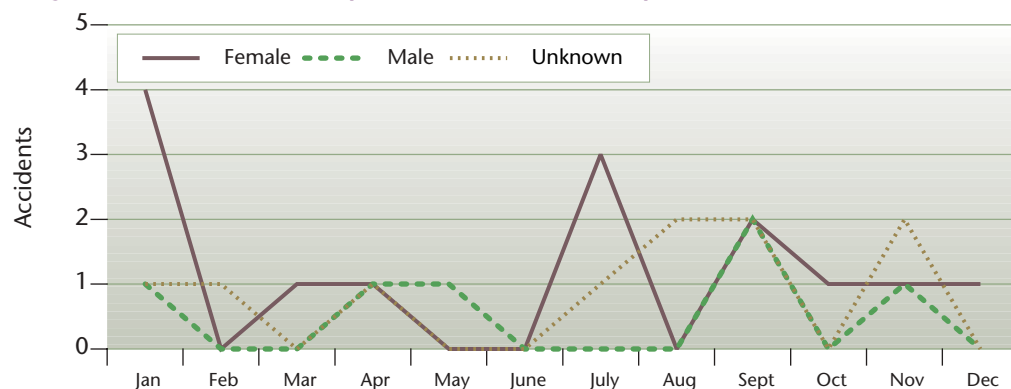


Figure 6.32

Region 2: Total Monthly Moose Accidents by Sex (1983 to 2002)

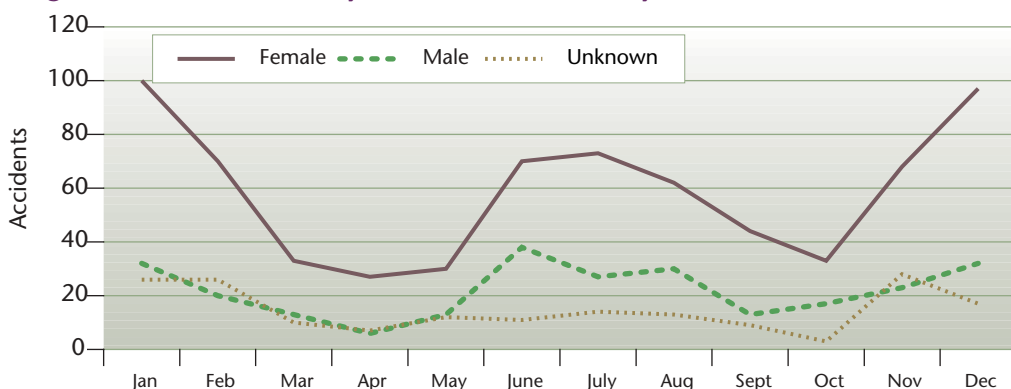
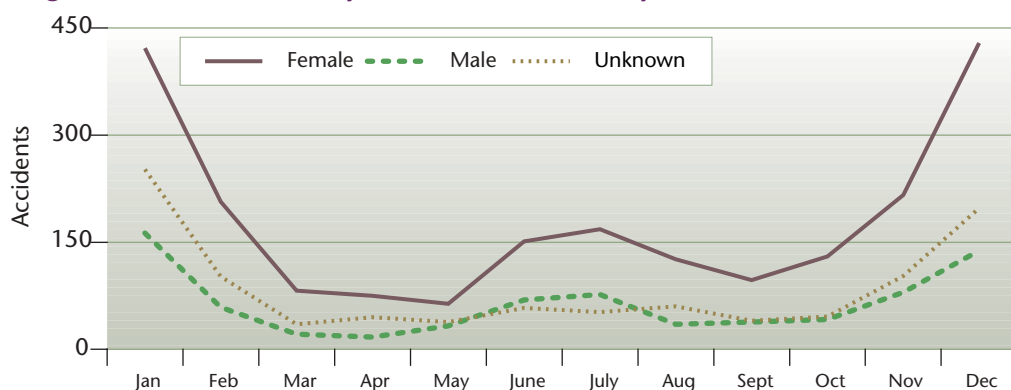


Figure 6.33

Region 3: Total Monthly Moose Accidents by Sex (1983 to 2002)



6.7 SHEEP

Sheep accidents primarily occur in Region 2. Except for a single sheep reported found in Region 1 in August of 2002, all sheep accidents reports have been located in Region 2. While most sheep accidents occur between November and February, intermittent peaks occur in April, June and September. In late winter, as snow levels at higher elevations increase, sheep migrate to valley bottoms where highways are typically located. In early summer, sheep begin moving out of the valleys, feeding near highways, on their way to higher elevations for lambing. In late summer, they begin moving back in preparation for the rutting season, which usually occurs in October or November.



Sheep

(Photo: Tourism BC)



Sheep and bus

(Photo: Alan Dibb)

Figure 6.34 Regional Comparisons – Total Annual Sheep Accidents (1983 to 2002)

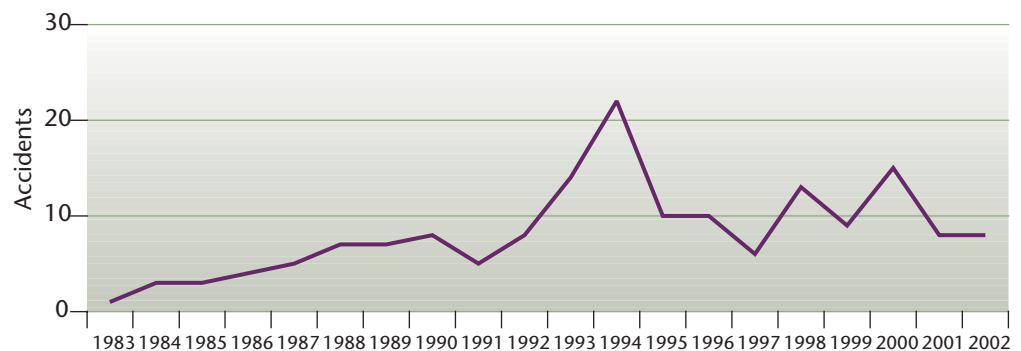
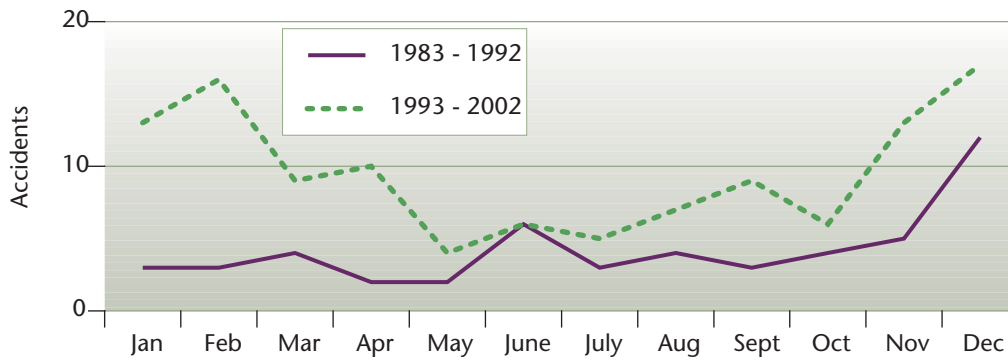


Figure 6.35 – Region 2: Total Monthly Sheep Accidents

Region 2: Total Monthly Sheep Accidents (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002



6.8 COYOTE

For all three Regions, a large number of coyote accidents occurred between August and October between 1993 and 2002. Unlike Regions 2 and 3, Region 1 had marked increases in coyote accidents between November and February. This may be related to the milder winters experienced in Region 1, which enable coyotes to search for food at greater distances when food is scarcer, thus increasing their likelihood of being involved in an accident. In all Regions, coyote accidents tend to decline between March and June. In Regions 2 and 3, there is a small peak in May, coinciding with the end of gestation for females when they begin to hunt to feed their pups. The small April peak in Region 1 may be indicative of an earlier end to gestation due to milder climate. Detailed analysis by sex is limited because the sex of over 80% of the coyotes reported was unknown. For the months July through October, coyote accidents peak at about the same time bear accidents do in Regions 2 and 3. Coyotes may be following bears onto roads in order to benefit from the remains of the animals bears kill or the remains bears find on the road or in the road right-of-way.



Coyote

(Photo: W. Scott Elliot)



Coyote

(Photo: W. Scott Elliot)

Figure 6.36 Regional Comparisons – Total Annual Coyote Accidents (1983 to 2002)

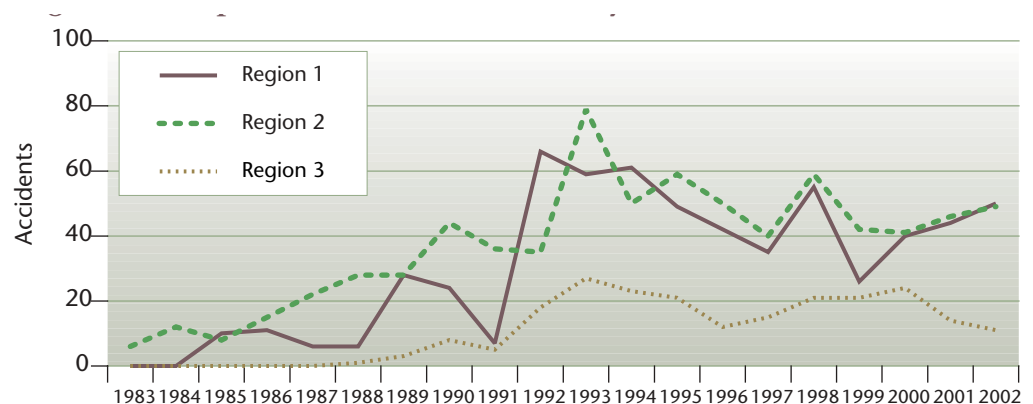


Figure 6.37 – Region 1: Total Monthly Coyote Accidents

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

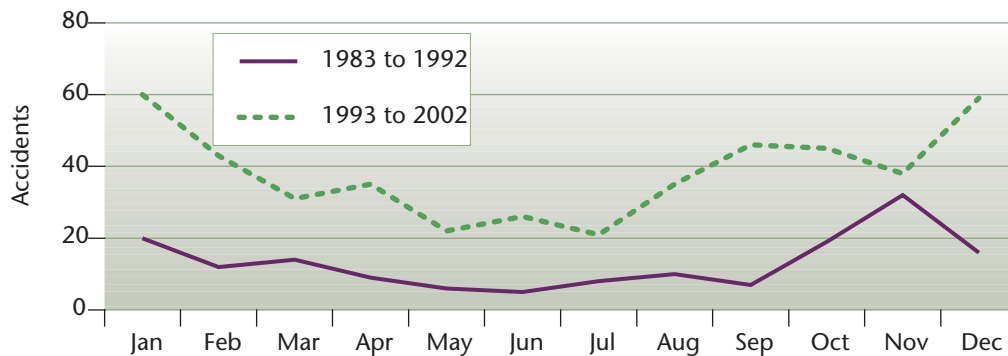


Figure 6.38 – Region 2: Total Monthly Coyote Accidents

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

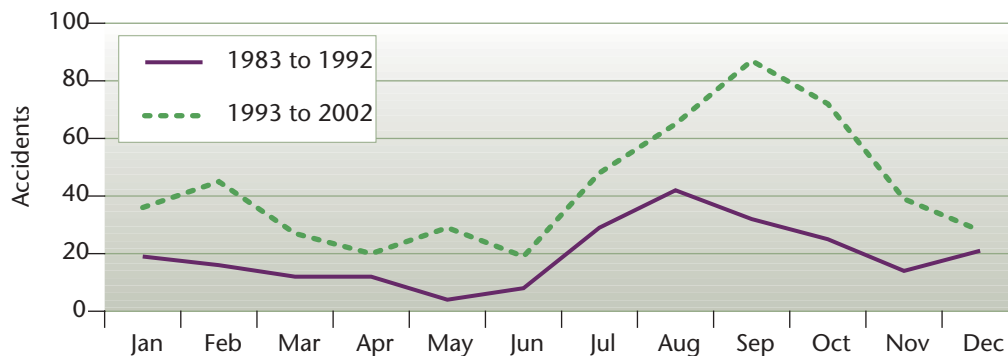
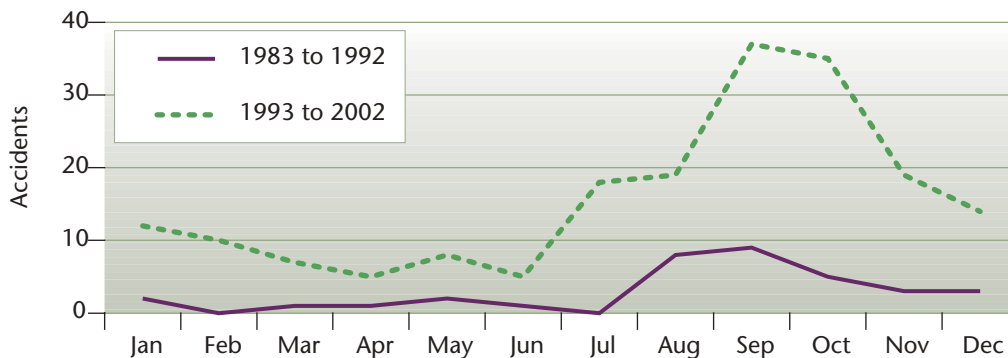


Figure 6.39 – Region 3: Total Monthly Coyote Accidents

10 Year Comparisons - 1983 to 1992 and 1993 to 2002





6.9 PORCUPINE

In Region 1, the very small number of porcupine accidents reported limits analysis as no trend appears. Conversely, the increased reporting of these accidents in Regions 2 and 3 show that porcupine accidents are most common between May and October, with a peak occurring in August. In Regions 2 and 3, porcupine accidents appear to exhibit two peaks, the first, a small peak in May, followed by a large peak in August. Although porcupines are not the largest animals found on provincial highways, they constitute a safety hazard as their quills can puncture motor vehicle tires and increase the severity of an accident. (Zacharias, 1999)



Porcupine

(Photo: BC Parks)



Porcupine

(Photo: Bolten Studios)

Figure 6.40 Regional Comparisons – Total Annual Porcupine Accidents (1983 to 2002)

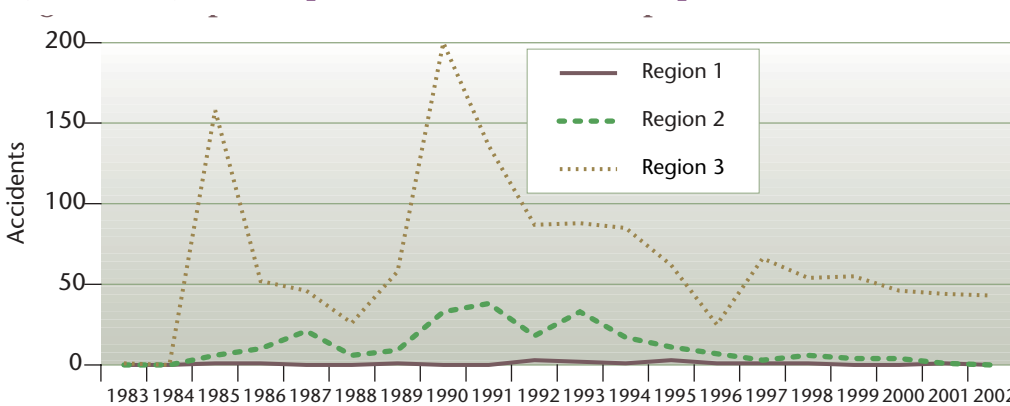


Figure 6.41 – Region 1: Total Monthly Porcupine Accidents

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

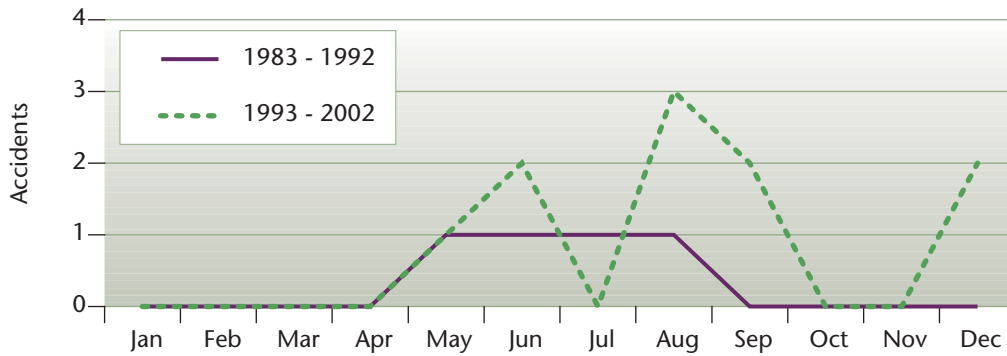


Figure 6.42 – Region 2: Total Monthly Porcupine Accidents

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

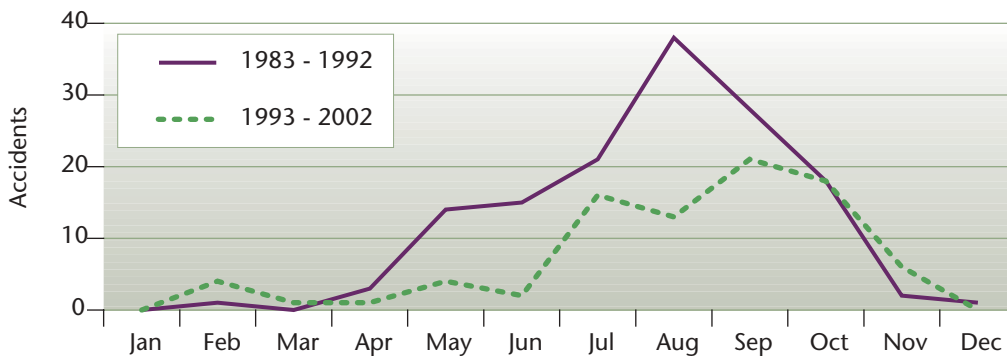
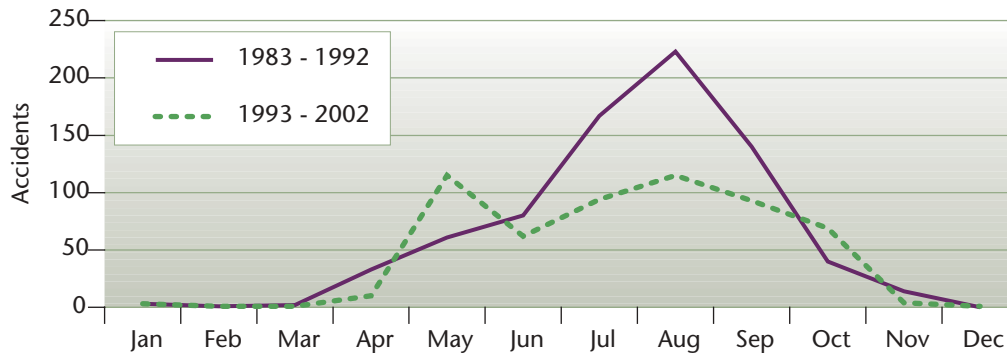


Figure 6.43 – Region 3: Total Monthly Porcupine Accidents

10 Year Comparisons - 1983 to 1992 and 1993 to 2002





7.0 DISTRICT ACCIDENT STATISTICS

7.1 District Overviews

British Columbia is a vast province. From the Pacific Ocean on the west, to the Rocky Mountains on the east, British Columbia has a very diverse range of physiographic characteristics. From vast ocean beaches, to gently rolling interior plateaus, to rugged mountains, the influence of topography, latitude, longitude and climate are factors in determining the Province's bioclimatic characteristics. The eastward movement of moist air masses off the Pacific Ocean combined with the Province's extremely variable topography leads to British Columbia's tremendous climatic diversity. As the heavy Pacific air masses rise to pass over the Coast Mountains, moisture is deposited creating the leeward rainshadow of the central interior of the Province. The west to east moisture contrast between the humid Pacific Coast and the dry Interior is dramatic, as is the decreasing temperature gradient between the southern border of the Province adjacent to Washington State in the United States, and the Province's northern border adjacent to Alaska and the Yukon. As a result of the size of British Columbia, the three Ministry Regions are divided into eleven Districts for operational purposes. Given their size and unique location, each District tends to have distinct bioclimatic conditions, and consequently characteristic highway/wildlife interactions. Information regarding the following:

1. Geographic Size
2. Geoclimatic Characteristics
3. Highway Information
4. Total Wildlife Accidents by Highway
5. Wildlife Accidents by Species
6. Species Comparisons by Time Series

is provided for each of the following Ministry Districts:

7.2 Region 1 – South Coast Region:

- 7.2.1 District 1 – Lower Mainland
- 7.2.2 District 2 – Vancouver Island

7.3 Region 2 – Southern Interior Region:

- 7.3.1 District 3 – Rocky Mountain
- 7.3.2 District 4 – West Kootenay
- 7.3.3 District 5 – Okanagan-Shuswap
- 7.3.4 District 6 – Thompson-Nicola
- 7.3.5 District 7 – Cariboo

7.4 Region 3 – Northern Region:

- 7.4.1 District 8 – Peace River
- 7.4.2 District 9 – Fort George
- 7.4.3 District 10 – Bulkley-Stikine
- 7.4.4 District 11 – Skeena

7.2 REGION 1 – SOUTH COAST REGION

7.2.1 District 1 – Lower Mainland

1. Geographic Size

This District is approximately 86,000 km² in size

2. Geoclimatic Characteristics

Northern latitude rainforests comprise much of this District. Western Hemlock and Amabilis fir are the dominant climax trees. Abundant precipitation, primarily rainfall, and mild temperatures make the forests in this District the most productive in British Columbia. In the drier parts, old-growth Douglas Fir can approach 100 metres in height, while on floodplains, Western Red Cedar and Sitka Spruce can grow up to four metres in diameter. Mature stands of timber provide valuable habitat for black-tailed deer. At higher elevations, where the growing season is short, forest productivity is reduced. Mountain Hemlock and Amabilis Fir are the dominant tree species. At the highest elevations, of the Coast Mountains, the alpine is essentially treeless. The long, cold winters and short, cool growing season result in a landscape covered in draft shrubs, herbs, lichens and mosses. These areas provide important range for caribou, mountain goats and mountain sheep. (Adapted from: British Columbia Ministry of Forests, 1999, Biogeographical Zones of British Columbia.)

3. Highway Information

This District has the following numbered Provincial highways: 1, 3, 5, 7, 99, and 101.

4. Total Wildlife Accidents by Highway

Wildlife accidents on each of the numbered highways in this District for the period 1983 to 2002 are provided in the following tables.

5. Wildlife Accidents by Species

Species specific accidents for this District are provided in the following tables and graphs.

6. Species Comparisons by Time Series

Comparisons by species of 10-year accident trends are provided in the following tables.

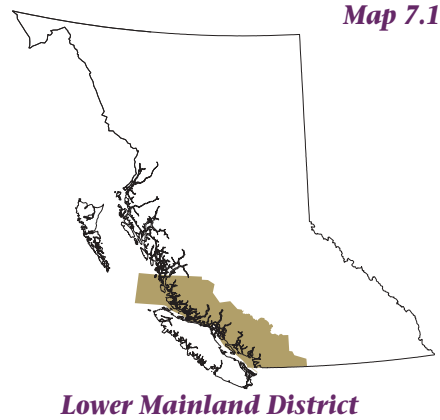




Table 7.2.1.1 – District 1: Total Wildlife Accidents by Highway (1983 to 2002)

HWY	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Totals
1	0	0	33	30	41	31	54	56	14	91	103	87	74	74	41	71	34	36	27	66	963
3	0	0	18	34	3	31	57	60	33	34	43	40	37	12	31	18	21	25	31	17	545
5	0	0	1	7	9	10	9	2	7	9	14	3	3	2	6	0	0	1	0	0	83
7	0	0	3	3	0	1	3	3	4	4	9	11	11	21	11	18	14	16	24	11	167
99	0	0	16	8	21	49	36	42	9	45	29	31	25	31	1	4	17	25	42	24	455
101	0	0	6	38	22	18	37	25	8	17	26	15	25	18	5	13	23	25	0	1	322
Other	0	0	16	12	41	27	93	62	8	54	67	46	57	48	56	55	90	130	204	229	1,295
Totals	0	0	93	132	137	167	289	250	83	254	291	233	232	206	151	179	199	258	328	348	3,830

Table 7.2.1.2 – District 1: Wildlife Accidents by Species (1983 to 2002)

SPECIES	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Totals
Badger	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bear	0	0	9	12	1	2	8	7	4	7	13	11	10	27	5	11	15	10	10	7	169
Beaver	0	0	0	0	0	0	2	0	0	0	1	2	2	0	1	0	1	3	5	6	23
Bobcat	0	0	0	0	0	1	0	2	0	0	1	1	4	1	0	0	2	0	2	2	16
Caribou	0	0	0	1	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	4
Cougar	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2
Coyote	0	0	10	11	6	6	24	24	7	66	59	61	49	42	34	54	26	39	44	49	611
Deer	0	0	72	105	101	133	252	216	70	174	211	153	163	126	105	108	138	183	175	180	2,665
Elk	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2
Fox	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	2	0	6
Horned Owl	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	3
Lynx	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Moose	0	0	0	0	0	0	1	0	0	1	2	1	0	1	2	2	1	2	3	2	18
Muskrat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
Otter	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	4
Owl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Porcupine	0	0	1	1	0	0	1	0	0	3	2	1	3	1	1	1	0	0	1	0	16
Possum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3
Rabbit	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	0	3
Raccoon	0	0	0	1	28	25	0	0	2	0	1	1	1	5	0	0	12	15	68	72	231
Sheep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Skunk	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	5	7	14
Wolf	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Other / Unknown	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	2	0	3	8	18	34
Totals	0	0	93	132	137	167	289	250	83	254	291	233	232	206	151	179	199	258	328	348	3,830

Table 7.2.2.3 – District 1: Species Comparisons by Time Series (1983 to 2002)

SPECIES	83 to 02 Total Accidents	83 to 02 % of Total Accidents	83 to 02 Annual Average Accidents	83 to 92 Total Accidents	83 to 92 % of Total Accidents	83 to 92 Annual Average Accidents	93 to 02 Total Accidents	93 to 02 % of Total Accidents	93 to 02 Annual Average Accidents	98 to 02 Total Accidents	98 to 02 % of Total Accidents	98 to 02 Annual Average Accidents	2002 Total Accidents	2002 Annual % of Total Accidents
Badger	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bear	169	4.4	8.5	50	3.6	5	119	4.9	11.9	53	4	10.6	7	2
Beaver	23	0.6	1.2	2	0.1	0.2	21	0.9	2.1	15	1.1	3	6	1.7
Bobcat	16	0.4	0.8	3	0.2	0.3	13	0.5	1.3	6	0.5	1.2	2	0.6
Caribou	4	0.1	0.2	3	0.2	0.3	1	0	0.1	0	0	0	0	0
Cougar	2	0.1	0.1	0	0	0	2	0.1	0.2	1	0.1	0.2	0	0
Coyote	611	16	30.6	154	11	15.4	457	18.8	45.7	212	16.2	42.4	49	14.1
Deer	2,665	69.6	133.3	1,123	79.9	112.3	1,542	63.6	154.2	784	59.8	156.8	180	51.7
Elk	2	0.1	0.1	1	0.1	0.1	1	0	0.1	1	0.1	0.2	0	0
Fox	6	0.2	0.3	1	0.1	0.1	5	0.2	0.5	3	0.2	0.6	0	0
Horned Owl	3	0.1	0.2	0	0	0	3	0.1	0.3	1	0.1	0.2	0	0
Lynx	1	0	0.1	0	0	0	1	0	0.1	1	0.1	0.2	0	0
Moose	18	0.5	0.9	2	0.1	0.2	16	0.7	1.6	10	0.8	2	2	0.6
Muskrat	2	0.1	0.1	0	0	0	2	0.1	0.2	2	0.2	0.4	1	0.3
Otter	4	0.1	0.2	1	0.1	0.1	3	0.1	0.3	3	0.2	0.6	1	0.3
Owl	1	0	0.1	0	0	0	1	0	0.1	1	0.1	0.2	0	0
Porcupine	16	0.4	0.8	6	0.4	0.6	10	0.4	1	2	0.2	0.4	0	0
Possum	3	0.1	0.2	0	0	0	3	0.1	0.3	3	0.2	0.6	2	0.6
Rabbit	3	0.1	0.2	1	0.1	0.1	2	0.1	0.2	2	0.2	0.4	0	0
Raccoon	231	6	11.6	56	4	5.6	175	7.2	17.5	167	12.7	33.4	72	20.7
Sheep	1	0	0.1	0	0	0	1	0	0.1	1	0.1	0.2	1	0.3
Skunk	14	0.4	0.7	0	0	0	14	0.6	1.4	13	1	2.6	7	2
Wolf	1	0	0.1	1	0.1	0.1	0	0	0	0	0	0	0	0
Other/ Unknown	34	0.9	1.7	1	0.1	0.1	33	1.4	3.3	31	2.4	6.2	18	5.2
TOTALS	3,830	100	191.5	1,405	100	140.5	2,425	100	242.5	1,312	100	262.4	348	100

Figure 7.2.1.1 – District 1: Total Annual Bear Accidents, (1983 to 2002)

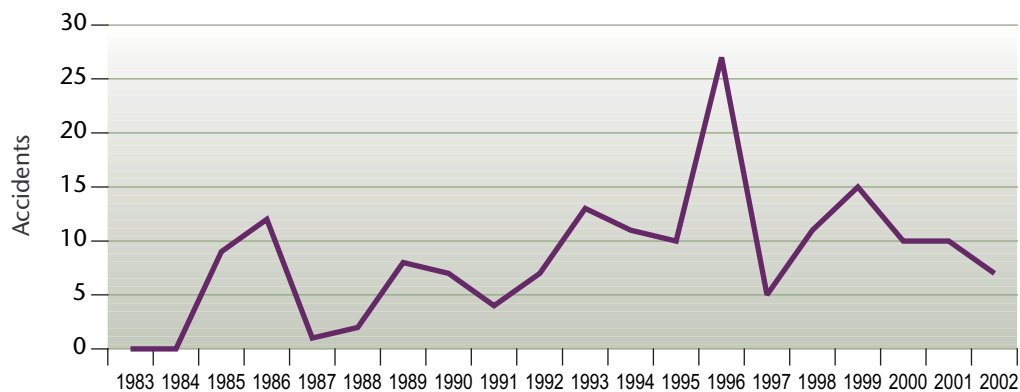


Figure 7.2.1.2 – District 1: Total Annual Deer Accidents, (1983 to 2002)

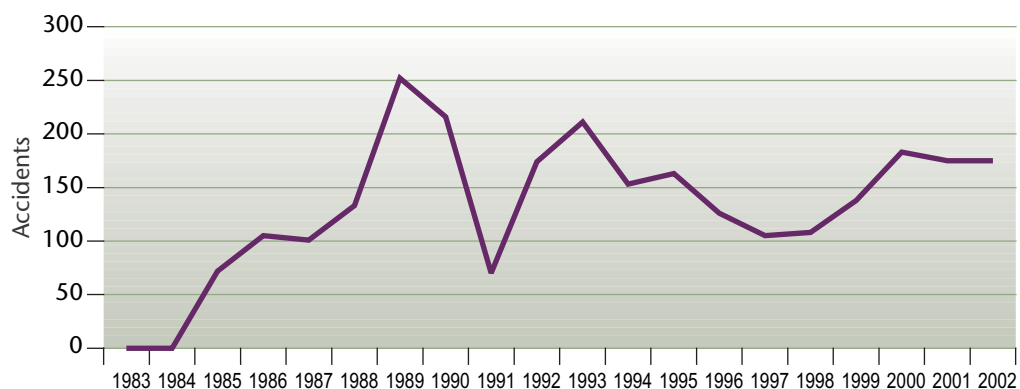


Figure 7.2.1.3 – District 1: Total Annual Elk Accidents, (1983 to 2002)

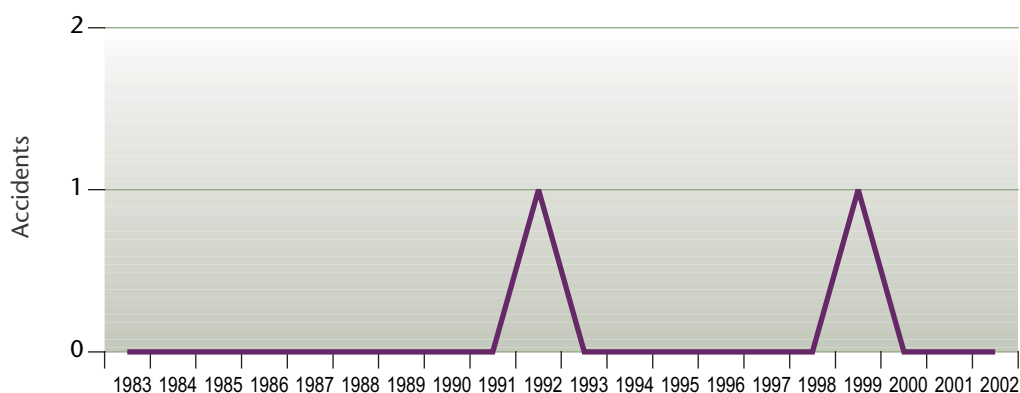


Figure 7.2.1.4 – District 1: Total Annual Moose Accidents, (1983 to 2002)

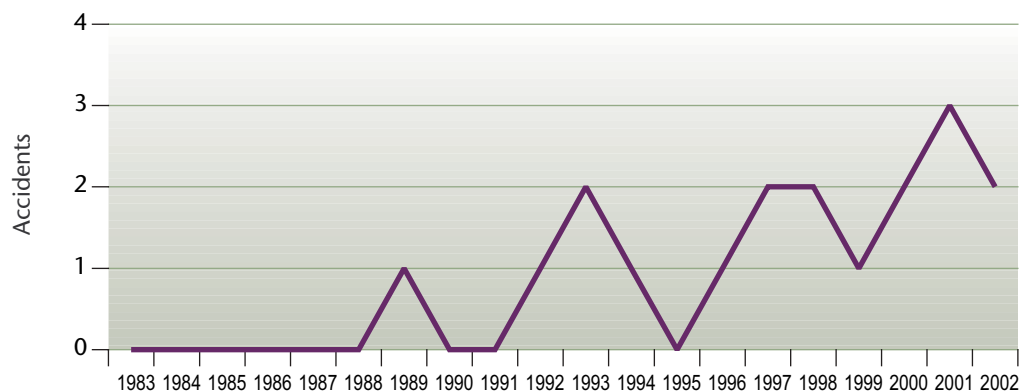




Figure 7.2.1.5 – District 1: Total Monthly Bear Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

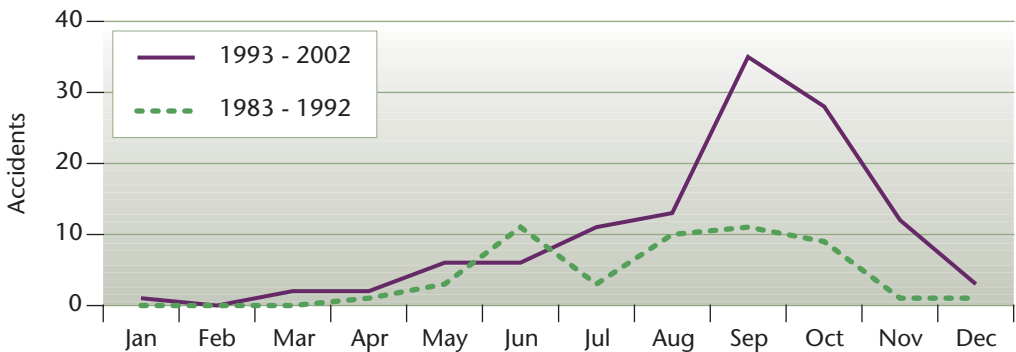


Figure 7.2.1.6 – District 1: Total Monthly Deer Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

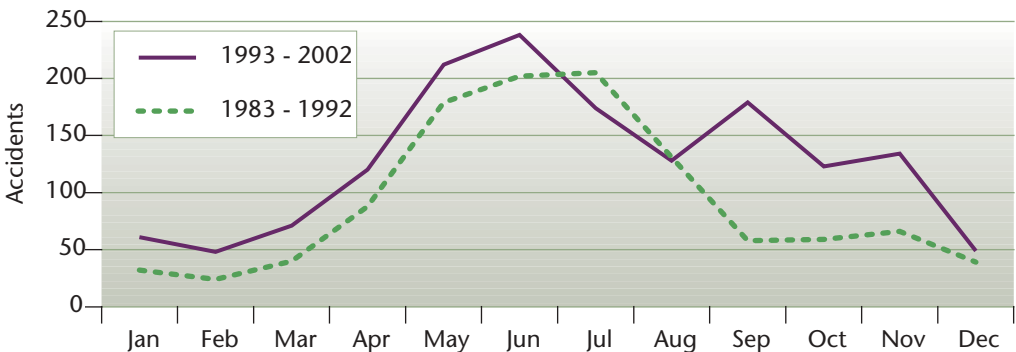


Figure 7.2.1.7 – District 1: Total Monthly Elk Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

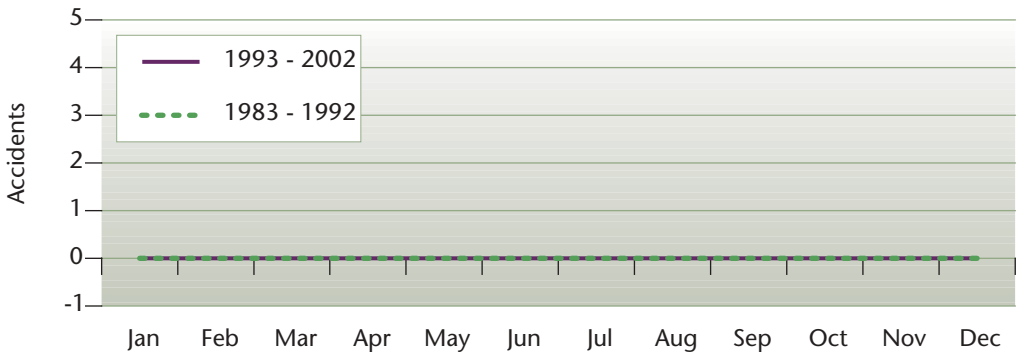
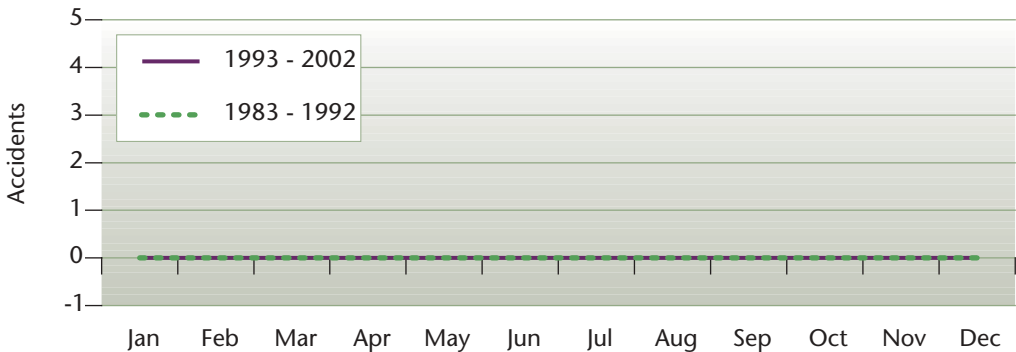


Figure 7.2.1.8 – District 1: Total Monthly Moose Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002



7.2.2 District 2 – Vancouver Island

1. Geographic Size

Vancouver Island District is approximately 32,000 km² in size.

2. Geoclimatic Characteristics

Northern latitude rainforests comprise much of this District. Western hemlock and amabilis fir are the dominant climax trees. Abundant precipitation, primarily rainfall, and mild temperatures make the forests in this District the most productive in British Columbia. In the drier parts, old-growth Douglas Fir can approach 100 metres in height, while on floodplains, Western Red Cedar and Sitka Spruce can grow up to four metres in diameter. Mature stands of timber provide valuable habitat for black-tailed deer. At higher elevations, where the growing season is short, forest productivity is reduced. Mountain Hemlock and Amabilis Fir are the dominant tree species.

On the east coast of southern Vancouver Island, in the lee of the Olympic and Vancouver Island Mountains, a mild “Mediterranean” climate prevails. The rainshadow coastal forests are dominated by Douglas Fir, with wetter areas having Western Red Cedar. Gary Oak and Arbutus characteristic of the drier areas occur no other location in Canada. The mild climate results in some of the Province’s most productive agricultural land, and habitat for black-tailed deer. (Adapted from: British Columbia Ministry of Forests, 1999, Biogeographical Zones of British Columbia.)

3. Highway Information

This District has the following numbered Provincial highways: 1, 4, 10, 14, 17, 18, 19, 19A, and 28.

4. Total Wildlife Accidents by Highway

Wildlife accidents on each of the numbered highways in this District for the period 1983 to 2002 are provided in the following tables.

5. Wildlife Accidents by Species

Species specific accidents for this District are provided in the following tables and graphs.

6. Species Comparisons by Time Series

Comparisons by species of 10-year accident trends are provided in the following tables.





Table 7.2.2.1 – District 2: Total Wildlife Accidents by Highway (1983 to 2002)

HWY	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Totals
1	0	0	21	29	27	20	101	85	103	105	119	91	62	95	141	119	101	117	95	77	1,508
4	5	0	5	15	13	17	40	26	10	14	63	26	22	21	18	7	13	17	4	8	344
10	0	0	0	0	0	0	0	0	0	0	0	1	0	0	3	11	16	18	8	10	67
14	0	0	15	7	7	9	39	44	36	33	60	30	25	25	33	44	31	30	23	15	506
17	0	0	4	4	6	12	1	45	5	9	1	9	27	7	11	9	5	9	13	7	184
18	0	0	0	0	0	0	0	1	10	6	16	17	0	1	12	21	26	9	13	8	140
19	37	25	62	63	110	99	239	229	148	204	220	190	152	214	221	276	305	283	316	184	3,577
19A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	1	21	57	94	88	268
28	6	17	4	3	2	0	14	17	7	3	14	11	11	5	4	8	9	7	2	7	151
Other	27	31	70	79	130	68	168	88	176	282	306	376	434	371	306	382	458	460	516	469	5,197
Totals	75	73	181	200	295	225	602	535	495	656	799	751	733	739	756	878	985	1,007	1,084	873	11,942

Table 7.2.2.2 – District 2: Wildlife Accidents by Species (1983 to 2002)

SPECIES	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Totals
Badger	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bear	1	1	2	2	3	2	6	3	4	6	11	7	6	6	11	9	14	6	14	19	133
Beaver	0	1	1	0	0	0	2	0	1	0	1	4	3	0	1	2	2	6	8	4	36
Bobcat	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Cougar	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	4	1	2	1	11
Coyote	0	0	0	0	0	0	4	0	0	0	0	0	0	0	1	1	0	1	0	1	8
Deer	74	68	176	193	291	223	588	527	484	643	781	697	712	694	716	824	907	915	999	774	11,286
Eagle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Elk	0	1	0	1	0	0	1	3	2	5	2	5	1	4	0	1	8	16	5	4	59
Fox	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	4	0	6
Horse	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Moose	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	3	2	0	2	3	12
Muskrat	0	0	0	0	0	0	0	0	0	0	0	2	0	1	1	0	0	0	0	0	4
Otter	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	2	1	6
Possum	0	0	0	0	0	0	0	0	0	0	0	25	5	3	0	0	0	0	0	2	35
Rabbit	0	0	1	0	0	0	0	0	0	0	0	0	3	0	1	0	0	3	0	1	9
Raccoon	0	0	0	4	0	0	1	1	4	2	4	7	2	31	22	34	32	28	26	31	229
Swan	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Wolf	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3
Other/ Unknown	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	14	30	23	32	102
Totals	75	73	181	200	295	225	602	535	495	656	799	751	733	739	756	878	985	1,007	1,085	873	11,943

Table 7.2.2.3 – District 2: Species Comparisons by Time Series (1983 to 2002)

SPECIES	83 to 02 Total Accidents	83 to 02 % of Total Accidents	83 to 02 Annual Average Accidents	83 to 92 Total Accidents	83 to 92 % of Total Accidents	83 to 92 Annual Average Accidents	93 to 02 Total Accidents	93 to 02 % of Total Accidents	93 to 02 Annual Average Accidents	98 to 02 Total Accidents	98 to 02 % of Total Accidents	98 to 02 Annual Average Accidents	2002 Total Accidents	2002 Annual % of Total Accidents
Badger	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bear	133	1.1	6.7	30	0.9	3	103	1.2	10.3	62	1.3	12.4	19	2.2
Beaver	36	0.3	1.8	5	0.1	0.5	31	0.4	3.1	22	0.5	4.4	4	0.5
Bobcat	1	0	0.1	1	0	0.1	0	0	0	0	0	0	0	0
Cougar	11	0.1	0.6	0	0	0	11	0.1	1.1	8	0.2	1.6	1	0.1
Coyote	8	0.1	0.4	4	0.1	0.4	4	0	0.4	3	0.1	0.6	1	0.1
Deer	11,286	94.5	564.3	3,267	97.9	326.7	8,019	93.2	801.9	4,419	91.5	883.8	774	88.7
Eagle	1	0	0.1	0	0	0	1	0	0.1	1	0	0.2	0	0
Elk	59	0.5	3	13	0.4	1.3	46	0.5	4.6	34	0.7	6.8	4	0.5
Fox	6	0.1	0.3	0	0	0	6	0.1	0.6	5	0.1	1	0	0
Horse	1	0	0.1	0	0	0	1	0	0.1	1	0	0.2	0	0
Moose	12	0.1	0.6	0	0	0	12	0.1	1.2	10	0.2	2	3	0.3
Muskrat	4	0	0.2	0	0	0	4	0	0.4	0	0	0	0	0
Otter	6	0.1	0.3	0	0	0	6	0.1	0.6	5	0.1	1	1	0.1
Possum	35	0.3	1.8	0	0	0	35	0.4	3.5	2	0	0.4	2	0.2
Rabbit	9	0.1	0.5	1	0	0.1	8	0.1	0.8	4	0.1	0.8	1	0.1
Raccoon	229	1.9	11.5	12	0.4	1.2	217	2.5	21.7	151	3.1	30.2	31	3.6
Swan	1	0	0.1	1	0	0.1	0	0	0	0	0	0	0	0
Wolf	3	0	0.2	2	0.1	0.2	1	0	0.1	0	0	0	0	0
Other / Unknown	102	0.9	5.1	1	0	0.1	101	1.2	10.1	101	2.1	20.2	32	3.7
TOTALS	11,943	100	597.2	3,337	100	333.7	8,606	100	860.6	4,828	100	965.6	873	100

Figure 7.2.2.1 – District 2: Total Annual Bear Accidents, (1983 to 2002)

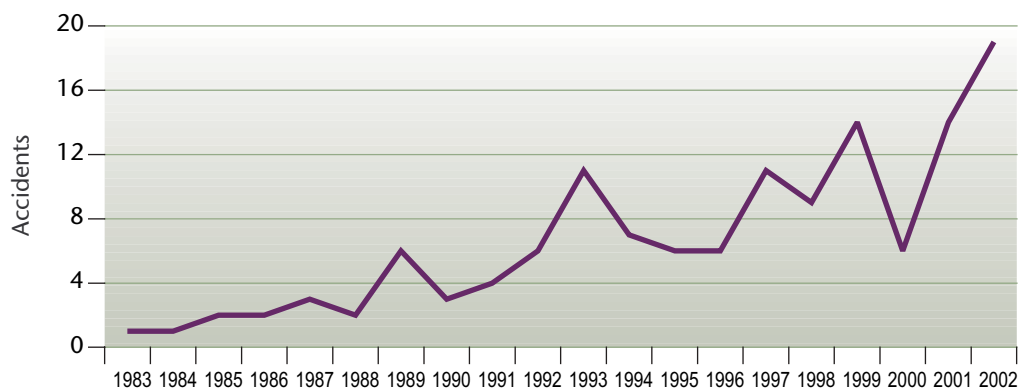


Figure 7.2.2.2 – District 2: Total Annual Deer Accidents, (1983 to 2002)

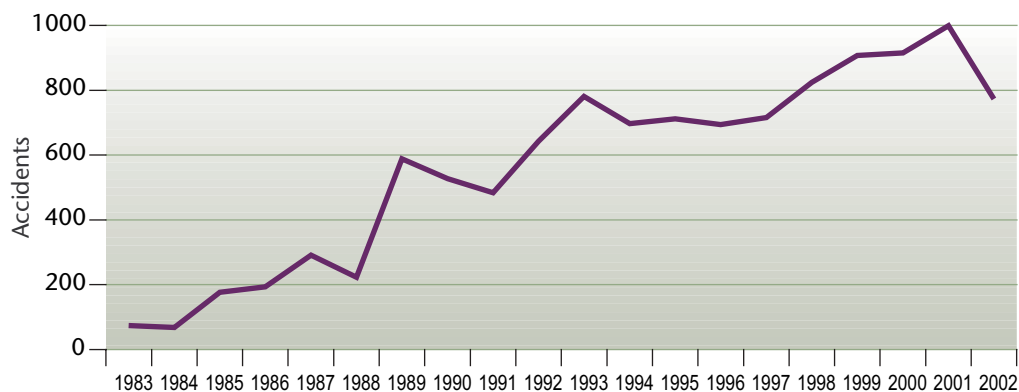


Figure 7.2.2.3 – District 2: Total Annual Elk Accidents, (1983 to 2002)

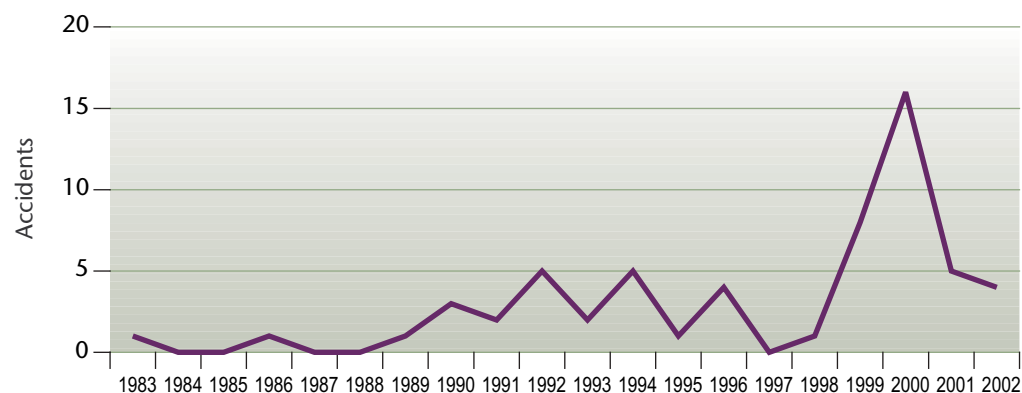


Figure 7.2.2.4 – District 2: Total Annual Moose Accidents, (1983 to 2002)

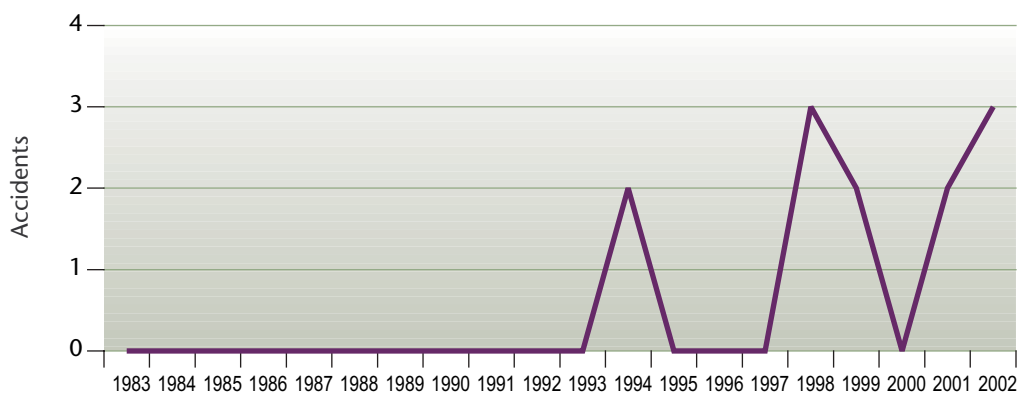




Figure 7.2.2.5 – District 2: Total Monthly Bear Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

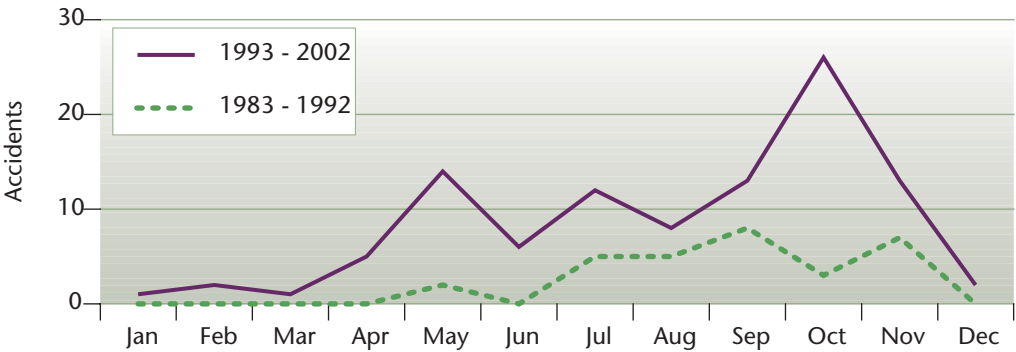


Figure 7.2.2.6 – District 2: Total Monthly Deer Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

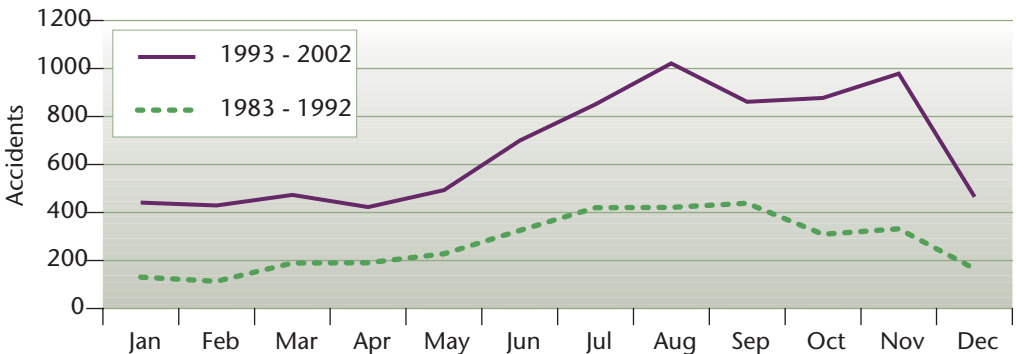


Figure 7.2.2.7 – District 2: Total Monthly Elk Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

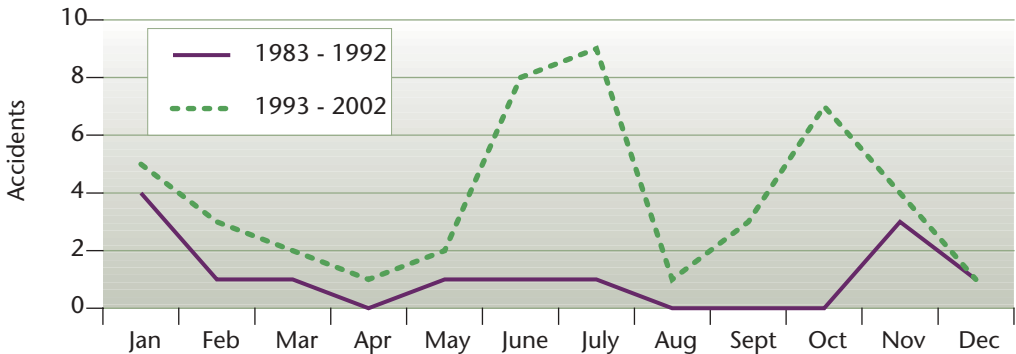
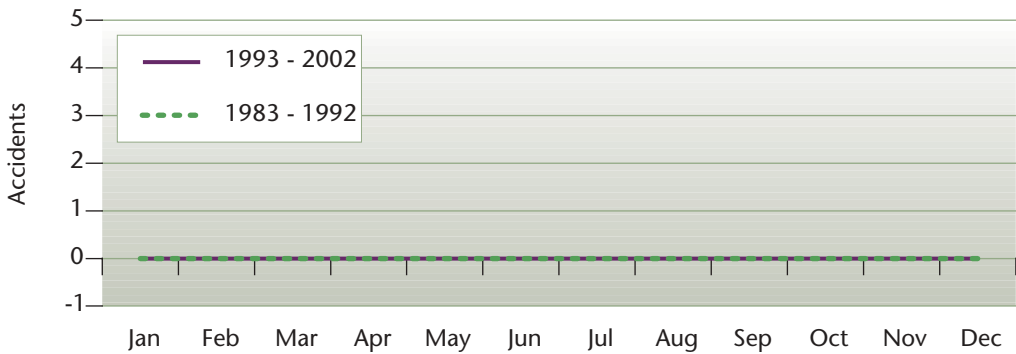


Figure 7.2.2.8 – District 2: Total Monthly Moose Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002



7.3 REGION 2 – SOUTHERN INTERIOR REGION

7.3.1 District 3 – Rocky Mountain

1. Geographic Size

This District is approximately 34,400 km² in size

2. Geoclimatic Characteristics

This District is characterized by deep, narrow valleys running north and south between the Selkirk, Purcell and Rocky Mountain ranges in the Rocky Mountain Trench. Winters are cold, while summers are moderately warm and short.

At the bottoms of the valleys, Ponderosa Pines are the dominant species in the warmest and driest areas. Frequent fires are responsible for maintaining these stands. In wetter, colder areas, Douglas Fir is common. The understory includes abundant grasses such as rough fescue and bluebunch wheatgrass, providing deer and elk habitat.

At higher elevations, the climate is severe, with long cold winters and short cool summers. Only trees capable of tolerating extended periods of frozen ground survive here. The landscape is open parkland, with groupings of trees interspersed with meadow, heath and grassland. The common dominant tree species are Engelmann Spruce, Subalpine Fir and Lodgepole Pine. False Azalea and Rhododendron are common understory shrubs. Due to previous wildfires, successional forest of Lodgepole Pine, Douglas Fir and Trembling Aspen as common. These forests provide important fall forage for mule deer. At drier locations, extensive Whitebark Pine forests can be found. Where snowfall is greater and the soils are wetter, Mountain Hemlock is the common dominant species. (Adapted from: British Columbia Ministry of Forests, 1999, Biogeographical Zones of British Columbia.)

3. Highway Information

This District has the following numbered Provincial highways: 1, 3, 3A, 3B, 23, 43, 93, 93B, 93/95, 95, and 95A.

4. Total Wildlife Accidents by Highway

Wildlife accidents on each of the numbered highways in this District for the period 1983 to 2002 are provided in the following tables.

5. Wildlife Accidents by Species

Species specific accidents for this District are provided in the following tables and graphs.

6. Species Comparisons by Time Series

Comparisons by species of 10-year accident trends are provided in the following tables.

Note: The information provided here represents data received and entered into the WARS database by October 23, 2003. A comprehensive review conducted after this date by the Ministry District Office and Maintenance Contractor indicated 819 animals were reported killed in 2001, and 933 animals were reported killed in 2002. These numbers are not included in this report but will be included in the next report.

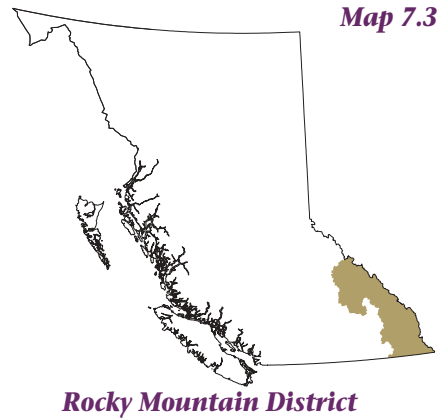




Table 7.3.1.1 – District 3: Total Wildlife Accidents by Highway (1983 to 2002)

HWY	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Totals
1	42	68	79	40	74	53	41	48	44	36	72	67	56	44	35	25	48	21	26	17	936
3	260	275	228	261	257	235	253	292	164	176	226	478	254	218	131	213	200	226	263	312	4,922
3A	0	0	0	0	0	0	0	0	0	0	1	2	0	0	1	2	18	10	15	24	73
3B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	12	13	17	14	58
23	13	27	21	13	23	16	21	26	28	13	12	18	9	16	7	12	4	1	5	2	287
43	7	15	5	22	26	12	5	10	16	10	18	20	45	22	13	24	6	27	12	28	343
93	34	34	27	36	39	32	21	23	28	47	61	68	54	44	42	63	138	133	155	8	1,087
93B*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	20	30
93/95*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	181	181
95*	172	176	133	192	267	147	117	134	68	111	165	190	115	137	96	163	80	85	90	77	2,715
95A	0	0	0	0	0	0	0	0	23	33	39	94	62	43	26	30	63	62	63	60	598
Other	9	18	9	12	31	18	12	9	8	17	27	38	37	19	39	44	93	128	136	122	826
Totals	537	613	502	576	717	513	470	542	379	443	621	975	632	543	390	578	662	706	792	865	12,056

* Reporting Highway designation changed in 2001

Note: The information provided here represents data received and entered into the WARS database by October 23, 2003. A comprehensive review conducted after this date by the Ministry District Office and Maintenance Contractor indicated 819 animals were reported killed in 2001, and 933 animals were reported killed in 2002. These numbers are not included in this report but will be included in the next report.

Table 7.3.1.2 – District 3: Wildlife Accidents by Species (1983 to 2002)

SPECIES	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Totals
Badger	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2
Bear	0	3	8	5	2	8	6	7	11	14	11	8	11	14	15	23	16	9	11	28	210
Beaver	0	1	0	1	0	0	0	0	0	1	1	1	1	1	0	0	1	1	0	4	13
Bobcat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Buffalo	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Caribou	0	1	0	2	0	0	2	0	0	0	0	1	1	3	0	1	0	0	0	2	13
Cougar	0	0	0	0	0	0	0	0	0	1	0	2	1	2	1	0	0	0	0	1	8
Coyote	0	0	1	2	0	6	4	4	6	10	15	19	15	6	4	11	7	6	9	11	136
Deer	246	312	245	286	283	404	361	447	297	363	506	814	515	406	300	440	519	543	605	646	8,538
Dog	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Elk	50	69	35	45	56	65	54	58	40	38	51	91	61	82	54	72	93	118	126	137	1,395
Fox	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	5
Goat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Horned Owl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Horse	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Moose	4	19	12	5	14	18	27	16	17	11	22	21	21	26	12	26	12	17	19	12	331
Mule	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Muskrat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	3
Porcupine	0	0	2	3	1	3	4	6	8	3	10	7	4	1	0	0	0	0	1	0	53
Rabbit	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	2	0	2	0	0	6
Raccoon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Sheep	0	0	0	1	2	7	6	3	0	2	3	11	0	1	1	2	7	3	7	3	59
Skunk	0	0	0	1	0	0	0	1	0	0	1	0	2	1	1	0	0	3	6	5	21
Other/ Unknown	237	208	197	225	358	1	3	0	0	0	0	0	0	0	0	0	4	0	8	14	1,255
TOTALS	537	613	502	576	717	513	470	542	379	443	621	975	632	543	390	578	662	706	792	865	12,056

Table 7.3.1.3 – District 3: Species Comparisons by Time Series (1983 to 2002)

SPECIES	83 to 02		83 to 02		83 to 92		83 to 92		83 to 92		93 to 02		93 to 02		98 to 02		98 to 02		2002	
	Total Accidents	% of Total Accidents	Annual Average Accidents	Total Accidents	% of Total Accidents	Annual Average Accidents	Total Accidents	% of Total Accidents	Annual Average Accidents	Total Accidents	% of Total Accidents	Annual Average Accidents	Total Accidents	% of Total Accidents	Annual Average Accidents	Total Accidents	% of Total Accidents	Annual Average Accidents	Total Accidents	Annual % of Total Accidents
Badger	2	0	0.1	0	0	0	0	0	0	2	0	0.2	2	0.1	0.4	0	0	0	0	0
Bear	210	1.7	10.5	64	1.2	6.4	146	2.2	14.6	87	2.4	17.4	28	3.2	3.2	28	3.2	3.2	28	3.2
Beaver	13	0.1	0.7	3	0.1	0.3	10	0.1	1	6	0.2	1.2	4	0.5	1.2	4	0.5	1.2	4	0.5
Bobcat	1	0	0.1	0	0	0	1	0	0.1	1	0	0.1	1	0	0.2	0	0	0.2	0	0
Buffalo	1	0	0.1	0	0	0	1	0	0.1	0	0	0.1	0	0	0	0	0	0	0	0
Caribou	13	0.1	0.7	5	0.1	0.5	8	0.1	0.8	3	0.1	0.6	2	0.2	0.6	2	0.2	0.6	2	0.2
Cougar	8	0.1	0.4	1	0	0.1	7	0.1	0.7	1	0	0.2	1	0.1	0.2	1	0.1	0.2	1	0.1
Coyote	136	1.1	6.8	33	0.6	3.3	103	1.5	10.3	44	1.2	8.8	11	1.3	8.8	11	1.3	8.8	11	1.3
Deer	8,538	70.8	426.9	3,244	61.3	324.4	5,294	78.3	529.4	2,753	76.4	550.6	646	74.7	550.6	646	74.7	550.6	646	74.7
Dog	1	0	0.1	1	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Elk	1,395	11.6	69.8	510	9.6	51	885	13.1	88.5	546	15.2	109.2	137	15.8	109.2	137	15.8	109.2	137	15.8
Fox	5	0	0.3	2	0	0.2	3	0	0.3	2	0.1	0.4	1	0.1	0.4	1	0.1	0.4	1	0.1
Goat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Horned Owl	1	0	0.1	0	0	0	1	0	0.1	1	0	0.2	0	0	0.2	0	0	0.2	0	0
Horse	2	0	0.1	2	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Moose	331	2.7	16.6	143	2.7	14.3	188	2.8	18.8	86	2.4	17.2	12	1.4	17.2	12	1.4	17.2	12	1.4
Mule	1	0	0.1	1	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Muskrat	3	0	0.2	0	0	0	3	0	0.3	3	0.1	0.6	0	0	0.6	0	0	0.6	0	0
Porcupine	53	0.4	2.7	30	0.6	3	23	0.3	2.3	1	0	0.2	0	0	0.2	0	0	0.2	0	0
Rabbit	6	0	0.3	1	0	0.1	5	0.1	0.5	4	0.1	0.8	0	0	0.8	0	0	0.8	0	0
Raccoon	1	0	0.1	0	0	0	1	0	0.1	1	0	0.2	1	0.1	0.2	1	0.1	0.2	1	0.1
Sheep	59	0.5	3	21	0.4	2.1	38	0.6	3.8	22	0.6	4.4	3	0.3	4.4	3	0.3	4.4	3	0.3
Skunk	21	0.2	1.1	2	0	0.2	19	0.3	1.9	14	0.4	2.8	5	0.6	2.8	5	0.6	2.8	5	0.6
Wolf	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other/ Unknown	1,255	10.4	62.8	1,229	23.2	122.9	26	0.4	2.6	26	0.7	5.2	14	1.6	5.2	14	1.6	5.2	14	1.6
TOTALS	12,056	100	602.8	5,292	100	529.2	6,764	100	676.4	3,603	100	720.6	865	100	720.6	865	100	720.6	865	100

Figure 7.3.1.1 – District 3: Total Annual Bear Accidents, (1983 to 2002)

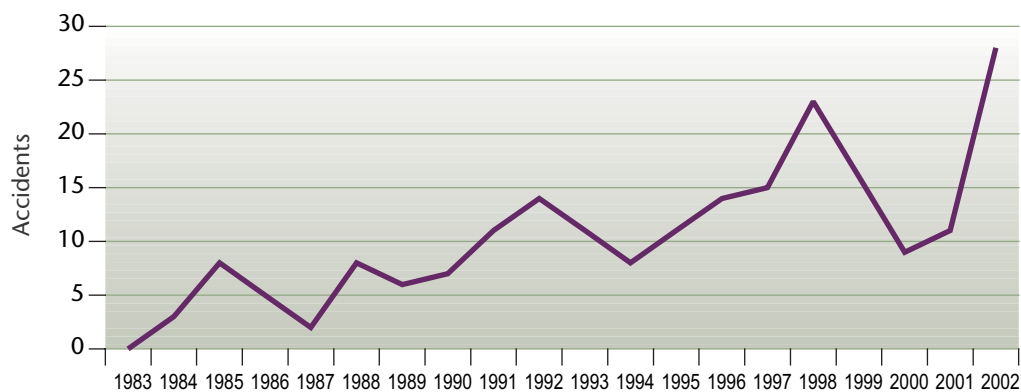


Figure 7.3.1.2 – District 3: Total Annual Deer Accidents, (1983 to 2002)

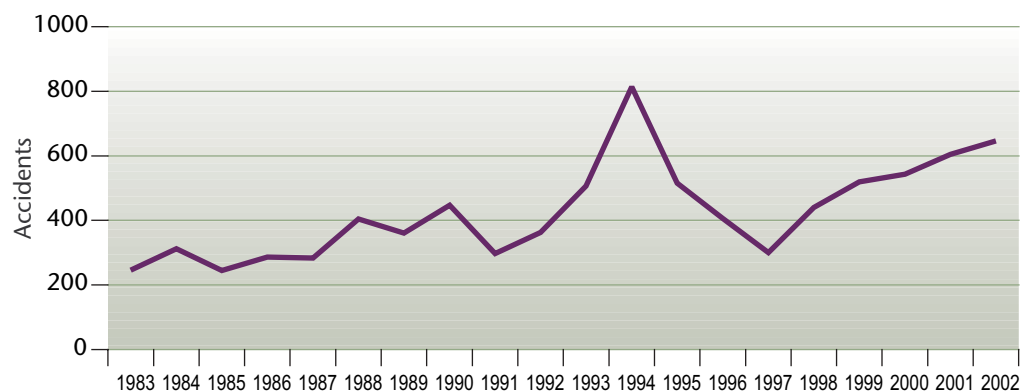


Figure 7.3.1.3 – District 3: Total Annual Elk Accidents, (1983 to 2002)

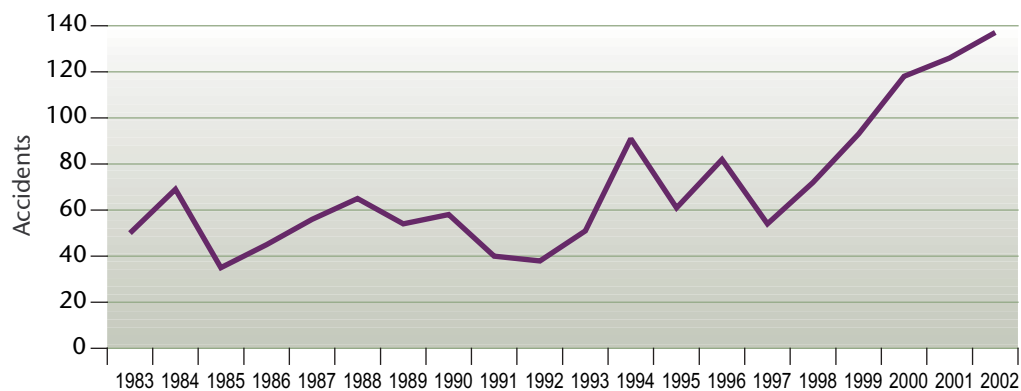


Figure 7.3.1.4 – District 3: Total Annual Moose Accidents, (1983 to 2002)

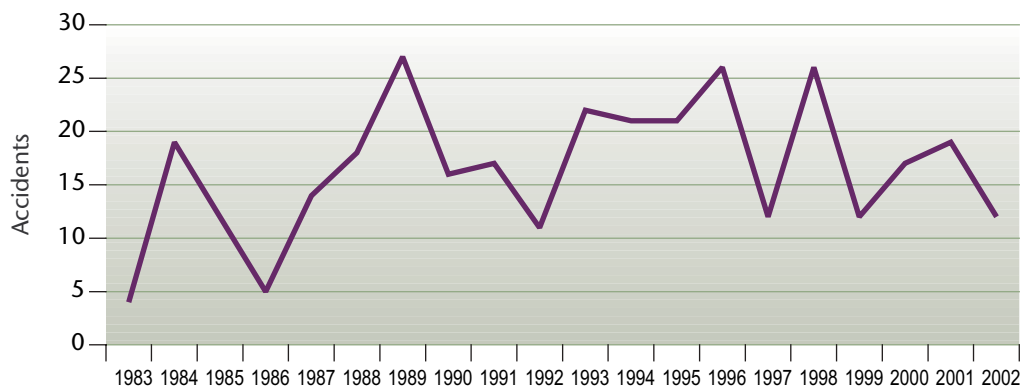




Figure 7.3.1.5 – District 3: Total Monthly Bear Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

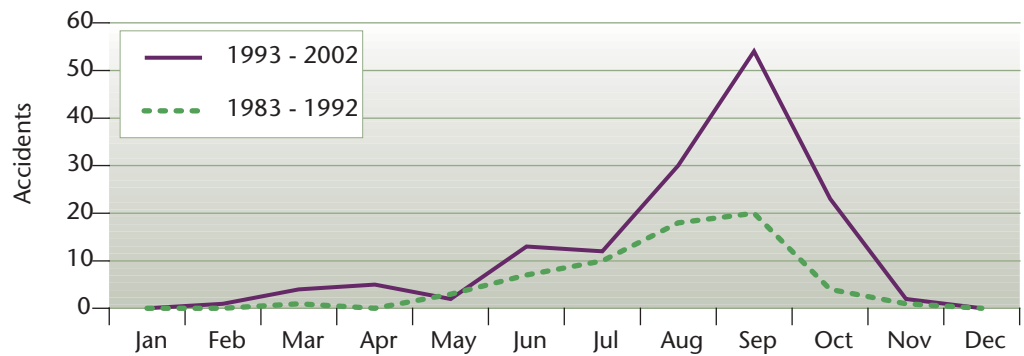


Figure 7.3.1.6 – District 3: Total Monthly Deer Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

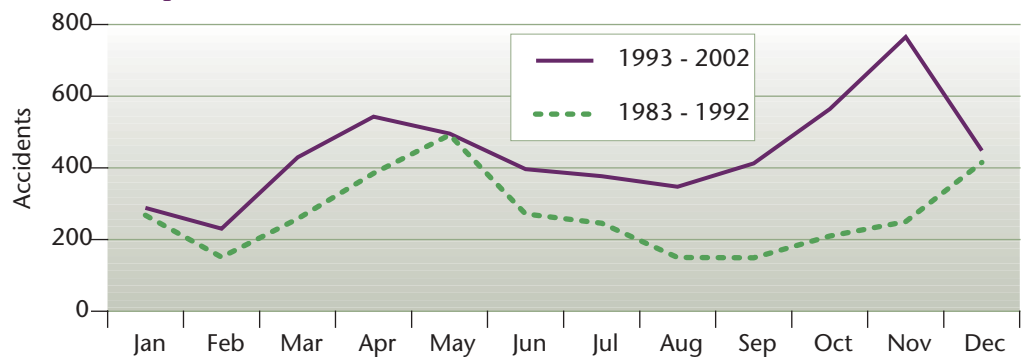


Figure 7.3.1.7 – District 3: Total Monthly Elk Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

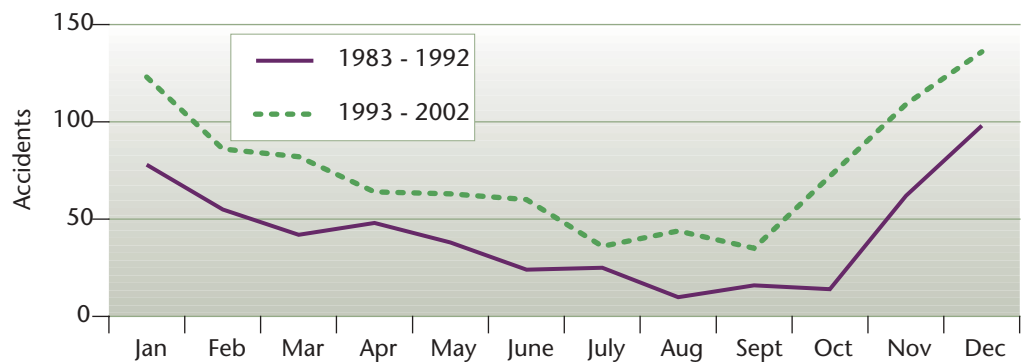


Figure 7.3.1.8 – District 3: Total Monthly Moose Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

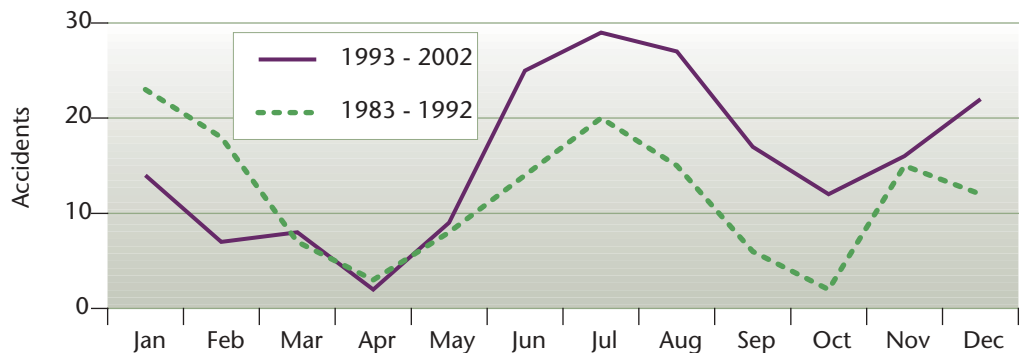


Figure 7.3.1.9 – District 3: Total Annual Coyote Accidents, (1983 to 2002)

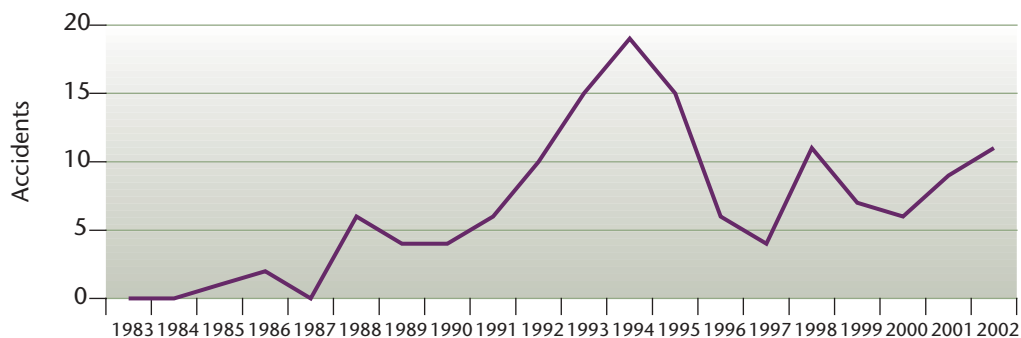
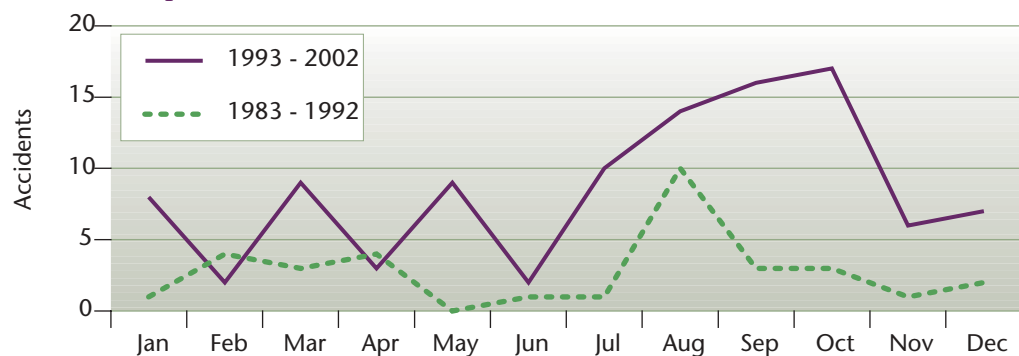


Figure 7.3.1.10 – District 3: Total Monthly Coyote Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002





7.3.2 District 4 – West Kootenay

1. Geographic Size

This District is approximately 31,400 km² in size

2. Geoclimatic Characteristics

This District has many of the narrowest valleys in the Province. It is transected north to south by the Monashee, Selkirk and Purcell mountain ranges. The District is one of the most productive in the British Columbia southern interior. It has one of the widest variety of coniferous tree species of any region of the Province. Winters are cool and wet, while summers are usually warm and dry. Although Western Hemlock and Western Red Cedar are characteristic of the area, Engelmann-White Spruce hybrids and Subalpine Fir are common. At drier locations, Douglas Fir and Lodgepole Pine can be found.

At higher elevations, the climate is severe, with long cold winters and short cool summers. Only trees capable of tolerating extended periods of frozen ground survive here. The landscape is open parkland, with groupings of trees interspersed with meadow, heath and grassland. The common dominant tree species are Engelmann Spruce, Subalpine Fir and Lodgepole Pine. False Azalea and Rhododendron are common understory shrubs. At drier locations, extensive Lodgepole Pine and Whitebark Pine forests can be found. Where snowfall is greater and the soils are wetter, Mountain Hemlock is the common dominant species. (Adapted from: British Columbia Ministry of Forests, 1999, Biogeographical Zones of British Columbia.)

3. Highway Information

This District has the following numbered Provincial highways: 3, 3A, 3B, 6, 21, 22, 22A, 23, 31, 31A, and 33.

4. Total Wildlife Accidents by Highway

Wildlife accidents on each of the numbered highways in this District for the period 1983 to 2002 are provided in the following tables.

5. Wildlife Accidents by Species

Species specific accidents for this District are provided in the following tables and graphs.

6. Species Comparisons by Time Series

Comparisons by species of 10-year accident trends are provided in the following tables.

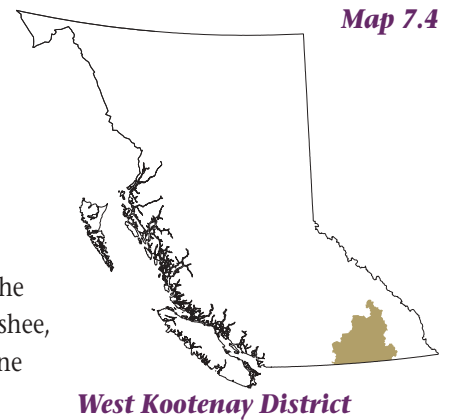


Table 7.3.2.1 – District 4: Total Wildlife Accidents by Highway (1983 to 2002)

HWY	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Totals
3	338	403	378	296	546	399	540	451	359	270	394	506	352	361	182	386	353	347	307	358	7,526
3A	0	0	0	0	0	0	0	1	94	43	119	145	109	86	38	41	42	47	79	73	917
3B	0	0	0	0	0	0	0	0	30	5	10	35	9	6	6	4	0	0	0	6	111
6	71	72	59	42	137	66	70	108	154	76	155	160	179	155	95	99	137	92	112	109	2,148
21	3	2	1	0	0	2	1	1	0	1	1	4	1	0	0	4	2	0	1	0	24
22	25	29	32	19	0	21	32	14	49	19	35	61	38	22	5	0	1	0	0	2	404
22A	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	3
23	38	13	13	0	19	2	8	33	23	19	47	13	17	10	3	3	9	5	5	5	285
31	14	10	13	2	6	2	14	32	42	6	47	39	39	31	15	21	17	6	15	11	382
31A	0	0	0	0	0	0	0	0	0	4	3	10	9	5	1	5	4	0	4	4	49
33	80	83	60	49	87	163	169	150	196	110	212	221	176	149	95	147	182	161	155	151	2,796
Other	14	19	7	9	4	79	64	39	39	48	58	98	88	43	104	53	92	97	101	146	1,226
Totals	583	631	563	417	799	734	898	829	988	601	1,081	1,292	1,017	868	544	764	839	755	779	865	15,847



Table 7.3.2.2 – District 4: Wildlife Accidents by Species (1983 to 2002)

SPECIES	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Totals
Badger	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
Bear	10	9	11	12	0	7	15	4	2	8	10	19	8	13	17	20	24	6	15	32	242
Beaver	0	0	1	0	1	0	2	2	0	2	5	0	0	1	0	0	0	0	1	1	16
Bobcat	0	0	0	1	0	0	0	0	2	0	0	0	1	0	0	0	0	0	1	0	5
Caribou	0	0	0	1	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	4
Cougar	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
Coyote	1	0	0	2	3	6	5	7	4	2	13	10	4	9	8	2	8	7	7	11	109
Deer	375	412	345	397	477	705	851	786	960	564	1,014	1,227	981	813	500	709	775	709	707	737	14,044
Eagle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2
Elk	5	1	3	4	14	8	5	10	13	8	17	18	11	12	7	12	15	12	16	25	216
Fox	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	1	4
Horned Owl	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0	3
Horse	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Moose	4	0	2	0	3	3	5	4	1	3	7	3	6	13	10	5	9	4	14	12	108
Otter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Porcupine	0	0	0	0	6	3	3	13	6	12	4	6	1	1	0	2	0	1	0	0	58
Rabbit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Raccoon	0	0	0	0	0	0	3	0	0	1	2	0	1	3	0	1	1	4	3	2	21
Sheep	0	0	0	0	0	0	0	0	0	0	5	0	3	1	1	3	1	0	0	2	16
Skunk	0	0	0	0	0	0	0	0	0	1	4	4	1	1	0	1	0	2	2	3	19
Wolf	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Other/ Unknown	188	209	200	0	295	2	9	3	0	0	0	0	0	0	0	5	5	8	12	37	973
TOTALS	583	631	563	417	799	734	898	829	988	601	1,081	1,292	1,017	868	544	764	839	755	779	865	15,847

Table 7.3.2.3 – District 4: Species Comparisons by Time Series (1983 To 2002)

SPECIES	83 to 02 Total Accidents	83 to 02 % of Total Accidents	83 to 02 Annual Average Accidents	83 to 92 Total Accidents	83 to 92 % of Total Accidents	83 to 92 Annual Average Accidents	93 to 02 Total Accidents	93 to 02 % of Total Accidents	93 to 02 Annual Average Accidents	98 to 02 Total Accidents	98 to 02 % of Total Accidents	98 to 02 Annual Average Accidents	2002 Total Accidents	2002 Annual % of Total Accidents
Badger	2	0	0.1	1	0	0.1	1	0	0.1	1	0	0.2	1	0.1
Bear	242	1.5	12.1	78	1.1	7.8	164	1.9	16.4	97	2.4	19.4	32	3.7
Beaver	16	0.1	0.8	8	0.1	0.8	8	0.1	0.8	2	0	0.4	1	0.1
Bobcat	5	0	0.3	3	0	0.3	2	0	0.2	1	0	0.2	0	0
Caribou	4	0	0.2	1	0	0.1	3	0	0.3	0	0	0	0	0
Cougar	2	0	0.1	0	0	0	2	0	0.2	1	0	0.2	0	0
Coyote	109	0.7	5.5	30	0.4	3	79	0.9	7.9	35	0.9	7	11	1.3
Deer	14,044	88.6	702.2	5,872	83.4	587.2	8,172	92.8	817.2	3,637	90.9	727.4	737	85.2
Eagle	2	0	0.1	0	0	0	2	0	0.2	2	0	0.4	0	0
Elk	216	1.4	10.8	71	1	7.1	145	1.6	14.5	80	2	16	25	2.9
Fox	4	0	0.2	0	0	0	4	0	0.4	4	0.1	0.8	1	0.1
Horned Owl	3	0	0.2	0	0	0	3	0	0.3	1	0	0.2	0	0
Horse	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Moose	108	0.7	5.4	25	0.4	2.5	83	0.9	8.3	44	1.1	8.8	12	1.4
Otter	1	0	0.1	0	0	0	1	0	0.1	1	0	0.2	1	0.1
Porcupine	58	0.4	2.9	43	0.6	4.3	15	0.2	1.5	3	0.1	0.6	0	0
Rabbit	1	0	0.1	0	0	0	1	0	0.1	0	0	0	0	0
Raccoon	21	0.1	1.1	4	0.1	0.4	17	0.2	1.7	11	0.3	2.2	2	0.2
Sheep	16	0.1	0.8	0	0	0	16	0.2	1.6	6	0.1	1.2	2	0.2
Skunk	19	0.1	1	1	0	0.1	18	0.2	1.8	8	0.2	1.6	3	0.3
Wolf	1	0	0.1	0	0	0	1	0	0.1	1	0	0.2	0	0
Other / Unknown	973	6.1	48.7	906	12.9	90.6	67	0.8	6.7	67	1.7	13.4	37	4.3
TOTALS	15,847	100	792.4	7,043	100	704.3	8,804	100	880.4	4,002	100	800.4	865	100



Figure 7.3.2.1 – District 4: Total Annual Bear Accidents, (1983 to 2002)

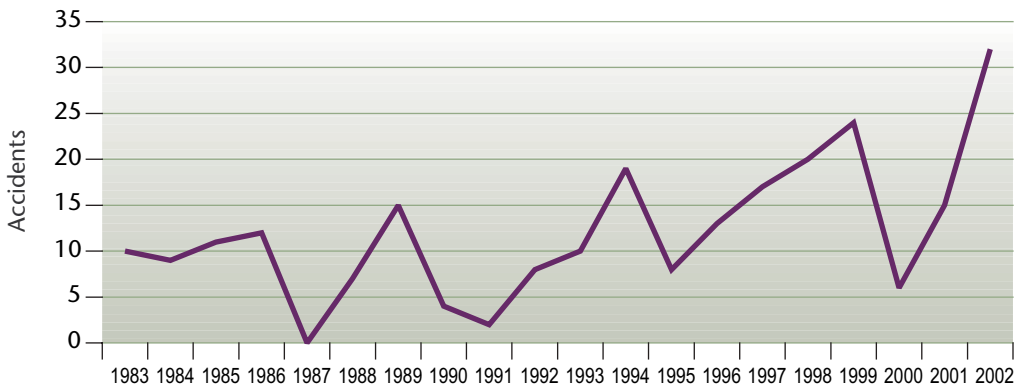


Figure 7.3.2.2 – District 4: Total Annual Deer Accidents, (1983 to 2002)

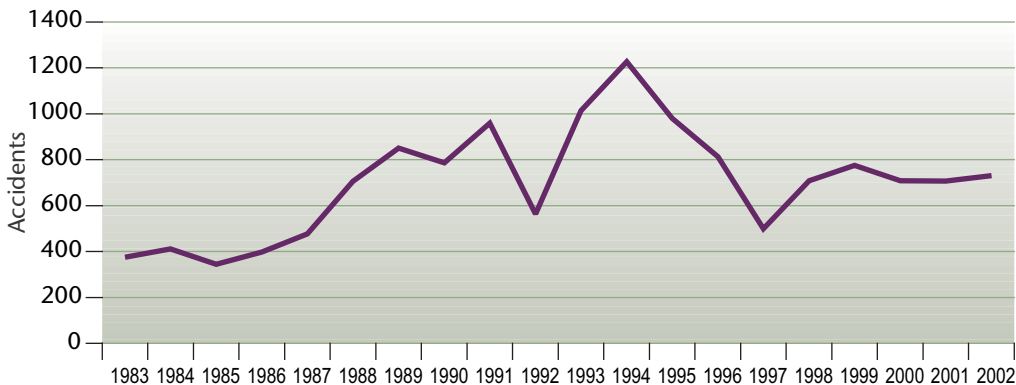


Figure 7.3.2.3 – District 4: Total Annual Elk Accidents, (1983 to 2002)

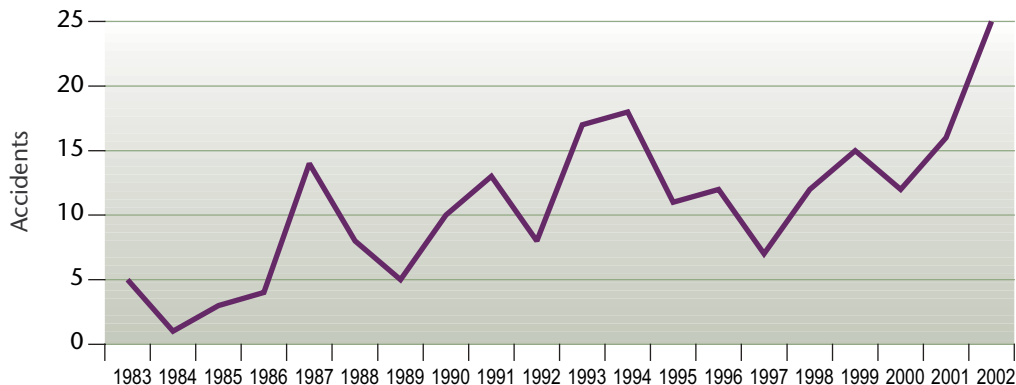


Figure 7.3.2.4 – District 4: Total Annual Moose Accidents, (1983 to 2002)

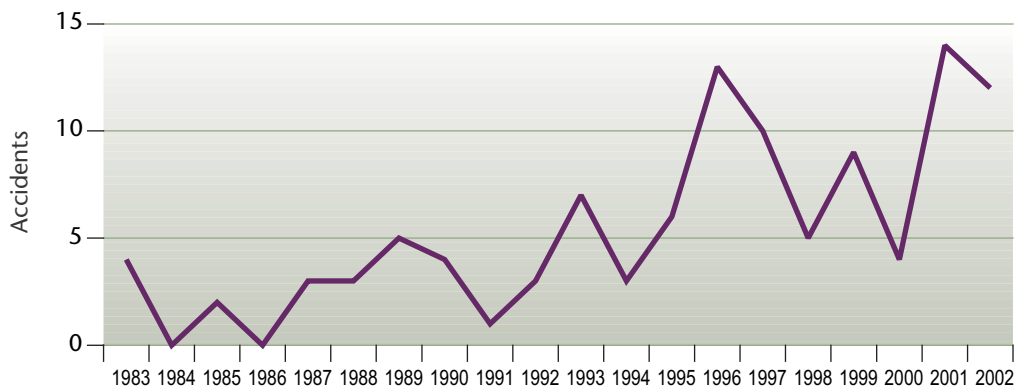


Figure 7.3.2.5 – District 4: Total Monthly Bear Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

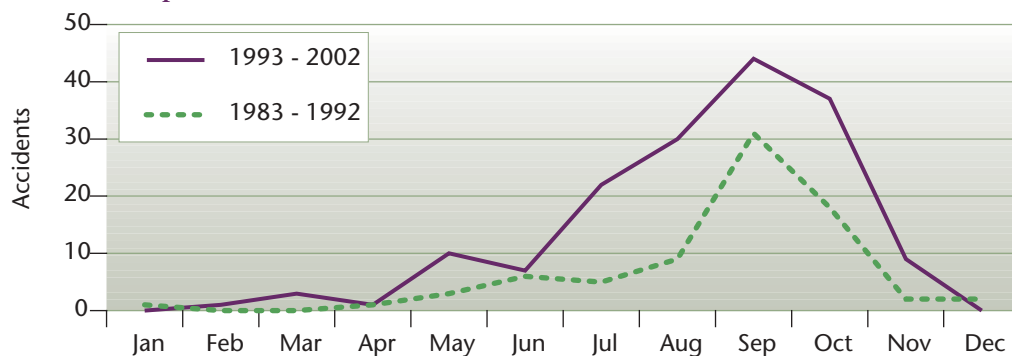


Figure 7.3.2.6 – District 4: Total Monthly Deer Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

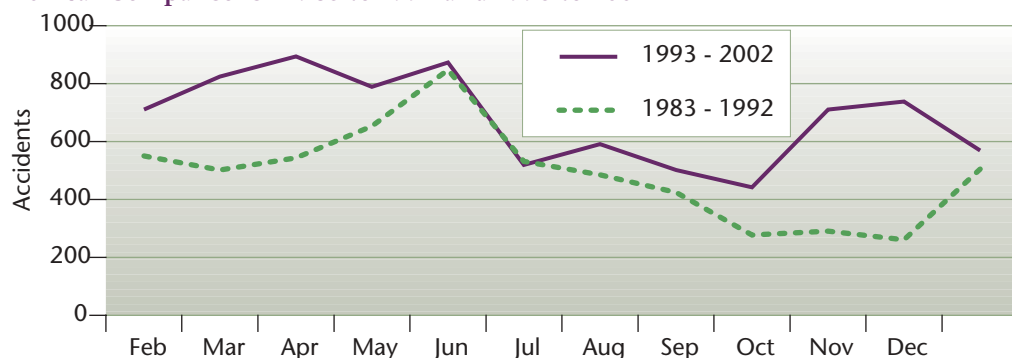


Figure 7.3.2.7 – District 4: Total Monthly Elk Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

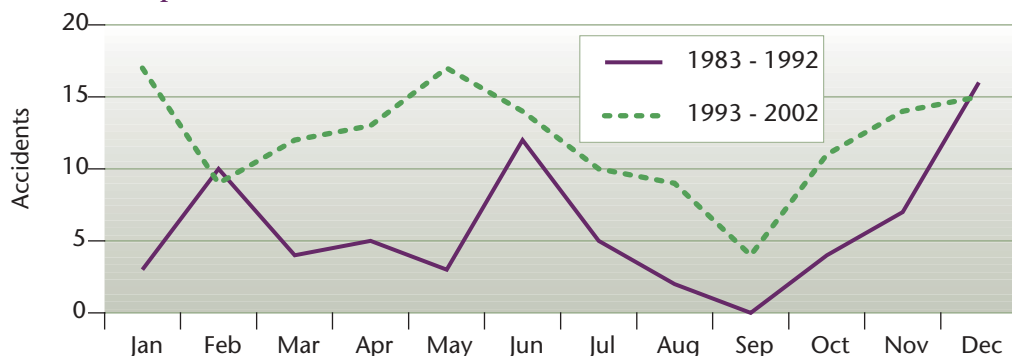


Figure 7.3.2.8 – District 4: Total Monthly Moose Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

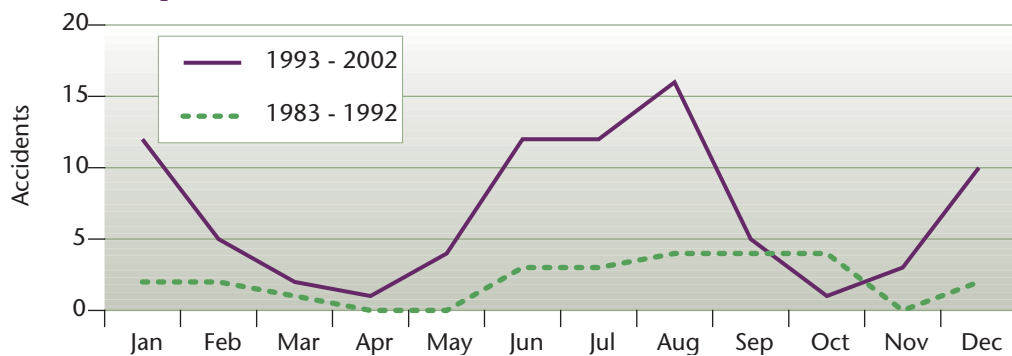




Figure 7.3.2.9 – District 4: Total Annual Coyote Accidents, (1983 to 2002)

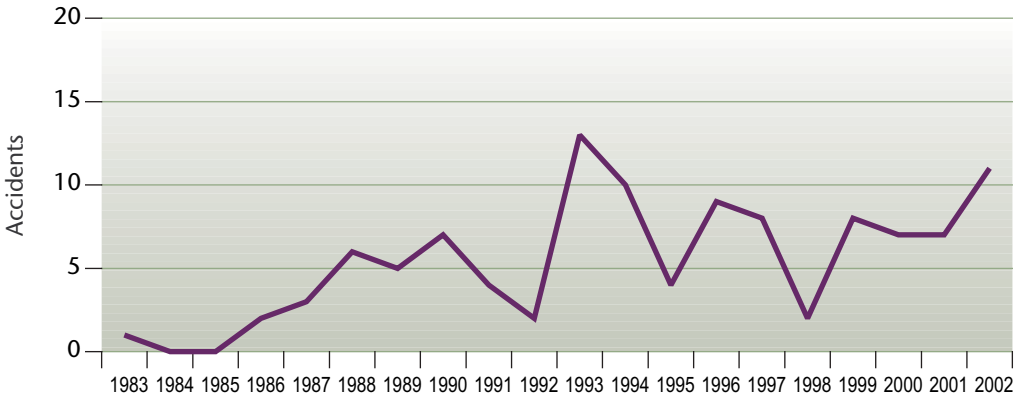
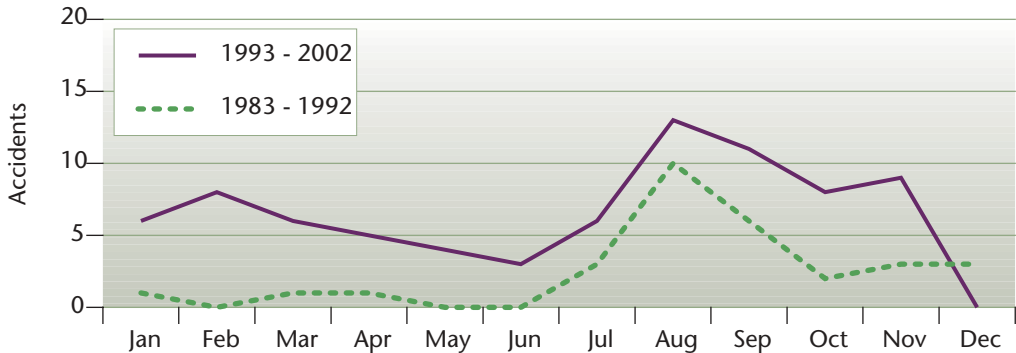


Figure 7.3.2.10 – District 4: Total Monthly Coyote Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002



7.3.3 District 5 – Okanagan-Shuswap

1. Geographic Size

This District is approximately 28,700 km² in size

2. Geoclimatic Characteristics

The lower elevations of the valleys in the southern portion of this District are some of the hottest and driest regions of the southern interior in British Columbia. Trees are scarce, and Bluebunch Wheatgrass is the dominant species, while Sagebrush is not uncommon. Although the extremely dry climate restricts their growth, Ponderosa Pine and Douglas Fir occasionally occur in depressions and on coarser textured soils. The grassland provides critical winter and spring forage for bighorn sheep and white-tailed deer.

Immediately above the grasslands, Douglas Fir tends to be the dominant species. Where frequent wildfires have occurred, even-aged Ponderosa Pine forests occur at lower elevations while even-aged Lodgepole Pine forests can be found at higher elevations. The understory is dominated by Feathermoss and Pinegrass with Soopolalie and Kinnikinnick being common shrubs. At the drier locations, the landscape becomes savannah-like with bunchgrasses including Bluebunch Wheatgrass and Rough Fescue providing important summer habitat for mule deer and elk.

At higher elevations in the valleys, the plateau areas experience cold winters and moderately short and warm summers. The common tree species are Engelmann and hybrid spruce, and Subalpine Fir. Successional forests of Lodgepole Pine, Douglas Fir and Trembling Aspen are the result of past wildfires. These areas provide important summer and fall forage for mule deer.

In the northeastern portion of this District, the climate is severe, with long cold winters and short cool summers. Only trees capable of tolerating extended periods of frozen ground survive here. The landscape is open parkland, with groupings of trees interspersed with meadow, heath and grassland. The common dominant tree species are Engelmann Spruce, Subalpine Fir and Lodgepole Pine. False Azalea and Rhododendron are common understory shrubs. At drier locations, extensive Lodgepole Pine and Whitebark Pine forests can be found. Where snowfall is greater and the soils are wetter, Mountain Hemlock is the common dominant species. (Adapted from: British Columbia Ministry of Forests, 1999, Biogeographical Zones of British Columbia.)

3. Highway Information

This District has the following numbered Provincial highways: 1, 3, 3A, 3B, 5, 5A, 6, 31, 33, 97, and 97A.

4. Total Wildlife Accidents by Highway

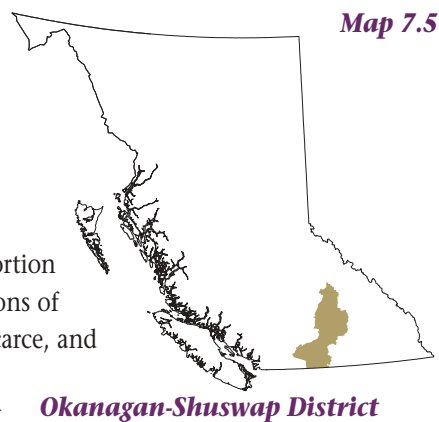
Wildlife accidents on each of the numbered highways in this District for the period 1983 to 2002 are provided in the following tables.

5. Wildlife Accidents by Species

Species specific accidents for this District are provided in the following tables and graphs.

6. Species Comparisons by Time Series

Comparisons by species of 10-year accident trends are provided in the following tables.



Map 7.5

Okanagan-Shuswap District





Table 7.3.3.1 – District 5: Total Wildlife Accidents by Highway (1983 to 2002)

HWY	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Totals
1	16	20	17	26	36	28	46	35	26	20	17	50	40	20	23	37	61	40	49	61	668
3	87	94	107	61	97	151	172	152	84	53	113	47	92	66	51	60	90	90	67	43	1,777
3A	0	0	0	0	0	0	0	0	8	14	21	19	33	29	6	18	11	27	23	13	222
3B	0	0	0	0	0	0	0	0	3	2	4	2	5	3	3	3	0	5	0	0	30
5	8	8	9	7	4	9	12	10	6	1	4	1	0	1	7	10	4	5	2	0	108
5A	0	0	0	0	0	0	0	1	4	3	13	4	24	9	1	6	11	15	10	4	105
6	0	40	25	32	52	67	63	60	64	76	94	128	99	62	27	56	45	48	53	44	1,135
31	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	11	12	7	2	13	46
33	3	7	7	7	18	13	9	24	14	13	35	6	19	15	20	30	31	24	21	20	336
97	85	146	89	94	64	98	129	120	118	61	161	64	109	131	276	236	132	139	152	101	2,505
97A	0	0	0	0	0	0	0	0	19	8	24	17	43	13	26	21	20	17	38	8	254
Other	9	19	21	38	32	33	49	57	56	56	92	91	90	49	58	90	89	72	90	76	1,167
Totals	208	334	275	265	303	399	480	459	402	307	578	429	555	398	498	578	506	489	507	383	8,353

Table 7.3.3.2 – District 5: Wildlife Accidents by Species (1983 to 2002)

SPECIES	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Totals
Badger	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Bear	4	3	2	5	10	2	2	4	4	3	10	10	8	4	8	12	19	9	12	11	142
Beaver	0	0	0	0	0	0	0	1	0	0	1	0	1	0	2	0	1	3	0	1	10
Bobcat	0	0	0	0	0	0	1	0	1	0	2	0	0	1	0	0	0	0	0	0	5
Caribou	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	3
Cougar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3
Coyote	0	0	2	3	1	2	5	8	9	4	19	4	12	5	3	17	9	10	11	10	134
Deer	201	324	260	250	275	393	465	438	372	298	535	412	519	378	478	535	468	443	464	338	7,846
Elk	0	0	1	0	0	1	3	0	1	0	1	0	2	1	0	1	1	3	3	2	20
Fox	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
Horned Owl	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	3
Horse	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
Lynx	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Moose	0	2	3	3	1	1	1	3	7	1	3	0	1	2	3	2	2	5	5	8	53
Porcupine	0	0	1	1	6	0	1	1	7	0	4	2	4	1	0	2	1	2	0	0	33
Raccoon	0	0	0	0	0	0	0	0	0	0	1	0	1	5	0	1	0	1	2	1	12
Sheep	0	3	3	3	2	0	1	3	1	0	2	1	3	1	4	1	0	7	0	0	35
Skunk	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	2	1	1	7
Wolf	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Other/ Unknown	3	2	2	0	8	0	0	1	0	0	0	0	0	0	0	1	4	4	5	10	40
TOTALS	208	334	275	265	303	399	480	459	402	307	578	429	555	398	498	578	506	489	507	383	8,353

Table 7.3.3.3 – District 5: Species Comparisons by Time Series (1983 to 2002)

SPECIES	83 to 02	83 to 02	83 to 02	83 to 92	83 to 92	83 to 92	83 to 92	93 to 02	93 to 02	93 to 02	98 to 02	98 to 02	98 to 02	98 to 02	2002	2002
	Total Accidents	% of Total Accidents	Annual Average Accidents	Total Accidents	% of Total Accidents	Annual Average Accidents	Total Accidents	% of Total Accidents	Annual Average Accidents	Total Accidents	% of Total Accidents	Annual Average Accidents	Total Accidents	% of Total Accidents	Annual Average Accidents	Total Accidents
Badger	1	0	0.1	1	0	0.1	0	0	0	0	0	0	0	0	0	0
Bear	142	1.7	7.1	39	1.1	3.9	103	2.1	10.3	63	2.6	12.6	11	2.9	2.9	11
Beaver	10	0.1	0.5	1	0	0.1	9	0.2	0.9	5	0.2	1	1	0.3	0.3	1
Bobcat	5	0.1	0.3	2	0.1	0.2	3	0.1	0.3	0	0	0	0	0	0	0
Caribou	3	0	0.2	1	0	0.1	2	0	0.2	2	0.1	0.4	0	0	0	0
Cougar	3	0	0.2	0	0	0	3	0.1	0.3	3	0.1	0.6	1	0.3	0.3	1
Coyote	134	1.6	6.7	34	1	3.4	100	2	10	57	2.3	11.4	10	2.6	2.6	10
Deer	7,846	93.9	392.3	3,276	95.5	327.6	4,570	92.9	457	2,248	91.3	449.6	338	88.3	88.3	338
Elk	20	0.2	1	6	0.2	0.6	14	0.3	1.4	10	0.4	2	2	0.5	0.5	2
Fox	2	0	0.1	0	0	0	2	0	0.2	2	0.1	0.4	0	0	0	0
Horned Owl	3	0	0.2	1	0	0.1	2	0	0.2	2	0.1	0.4	0	0	0	0
Horse	2	0	0.1	0	0	0	2	0	0.2	2	0.1	0.4	0	0	0	0
Lynx	1	0	0.1	0	0	0	1	0	0.1	0	0	0	0	0	0	0
Moose	53	0.6	2.7	22	0.6	2.2	31	0.6	3.1	22	0.9	4.4	8	2.1	2.1	8
Porcupine	33	0.4	1.7	17	0.5	1.7	16	0.3	1.6	5	0.2	1	0	0	0	0
Raccoon	12	0.1	0.6	0	0	0	12	0.2	1.2	5	0.2	1	1	0.3	0.3	1
Sheep	35	0.4	1.8	16	0.5	1.6	19	0.4	1.9	8	0.3	1.6	0	0	0	0
Skunk	7	0.1	0.4	0	0	0	7	0.1	0.7	4	0.2	0.8	1	0.3	0.3	1
Wolf	1	0	0.1	0	0	0	1	0	0.1	1	0	0.2	0	0	0	0
Other / Unknown	40	0.5	2	16	0.5	1.6	24	0.5	2.4	24	1	4.8	10	2.6	2.6	10
TOTALS	8,353	100	417.7	3,432	100	343.2	4,921	100	492.1	2,463	100	492.6	383	100	383	100

Figure 7.3.3.1 – District 5: Total Annual Bear Accidents, (1983 to 2002)

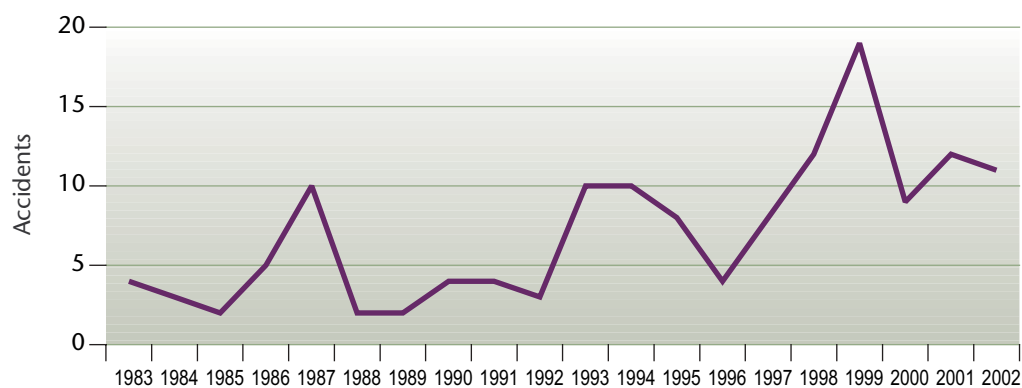


Figure 7.3.3.2 – District 5: Total Annual Deer Accidents, (1983 to 2002)

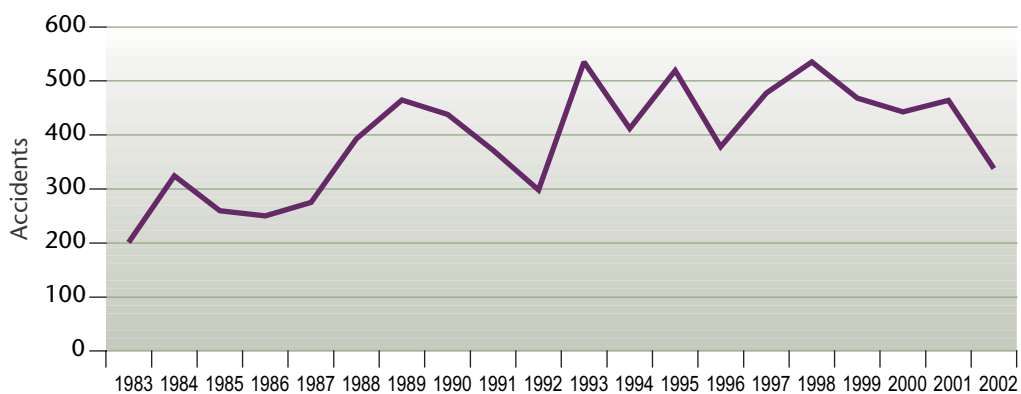


Figure 7.3.3.3 – District 5: Total Annual Elk Accidents, (1983 to 2002)

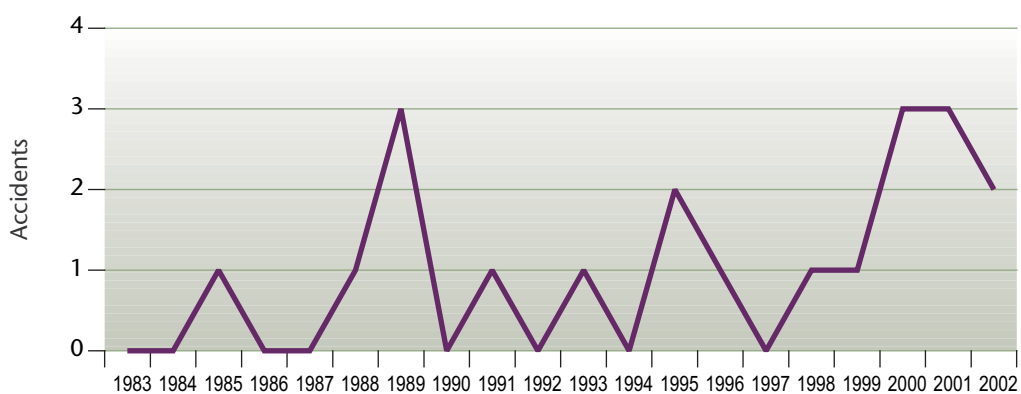


Figure 7.3.3.4 – District 5: Total Annual Moose Accidents, (1983 to 2002)

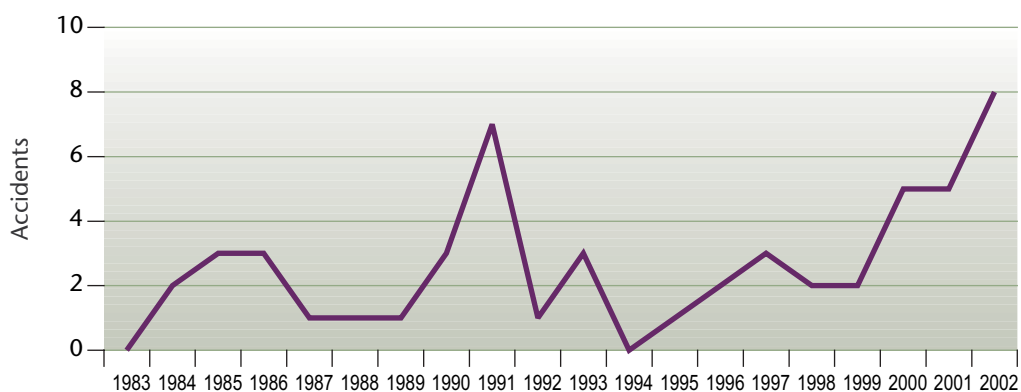




Figure 7.3.3.5 – District 5: Total Monthly Bear Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

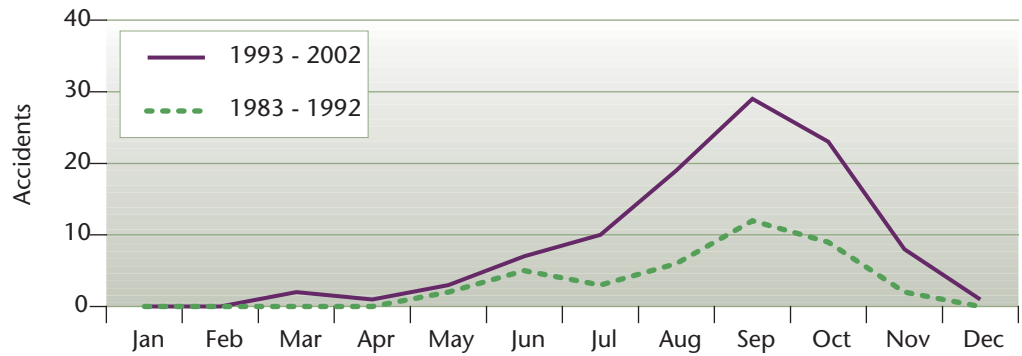


Figure 7.3.3.6 – District 5: Total Monthly Deer Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

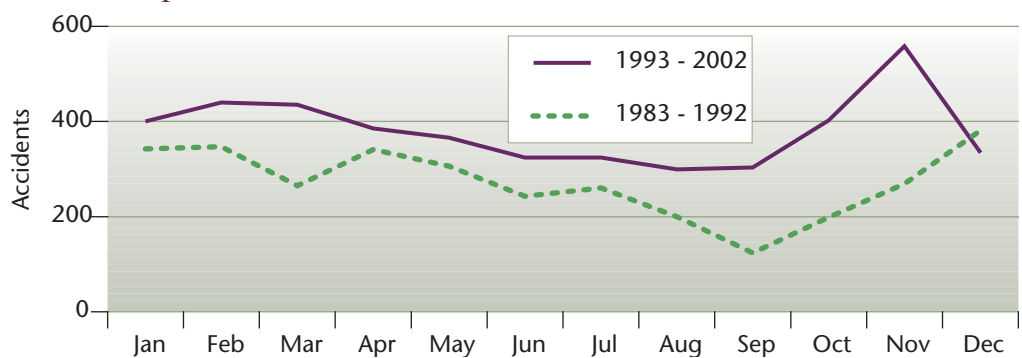


Figure 7.3.3.7 – District 5: Total Monthly Elk Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

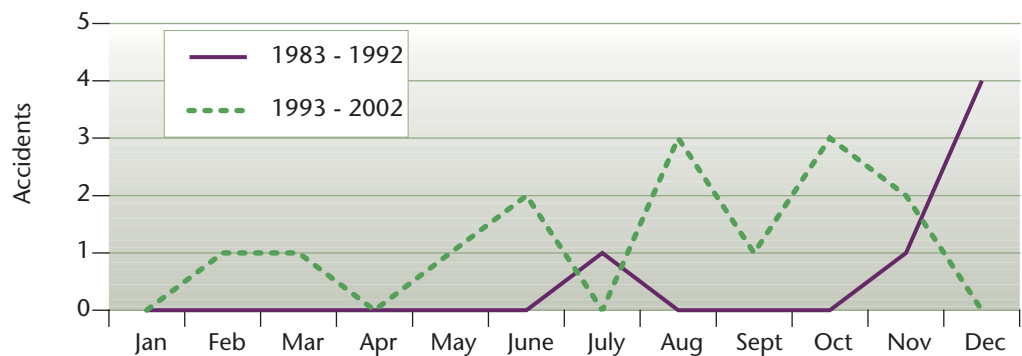


Figure 7.3.3.8 – District 5: Total Monthly Moose Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

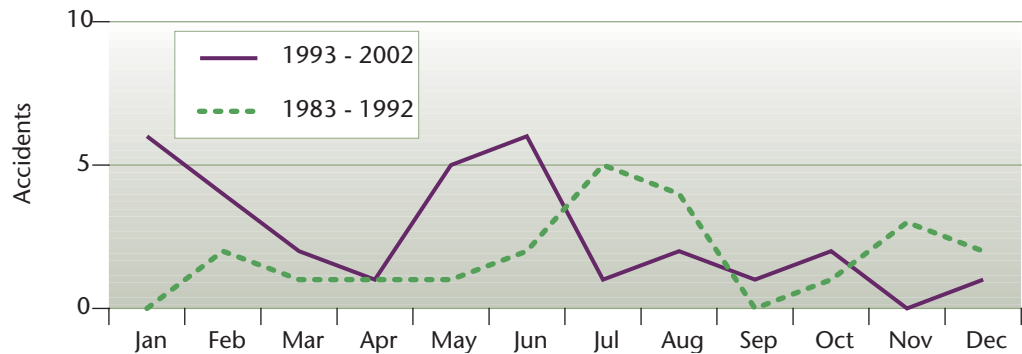


Figure 7.3.3.9 – District 5: Total Annual Coyote Accidents, (1983 to 2002)

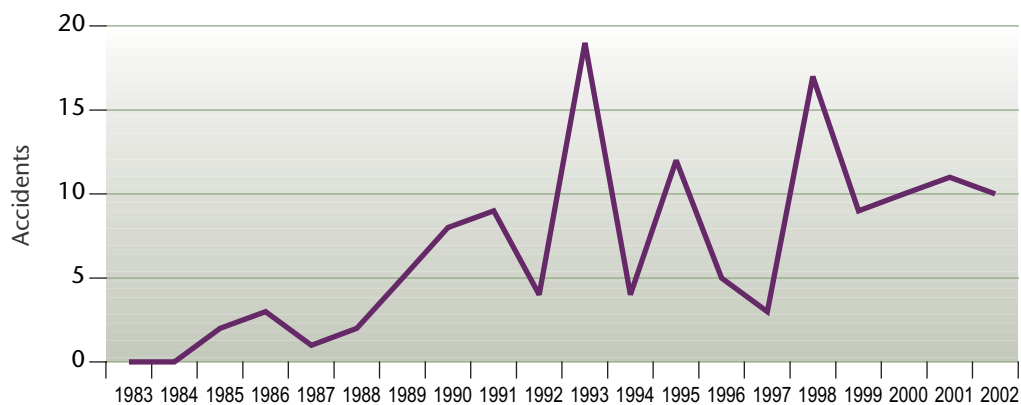
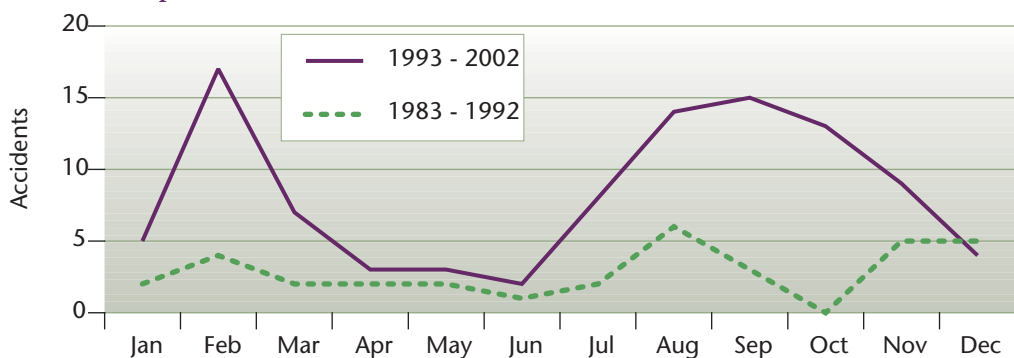


Figure 7.3.3.10 – District 5: Total Monthly Coyote Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002





7.3.4 District 6 – Thompson-Nicola

1. Geographic Size

This District is approximately 25,400 km² in size

2. Geoclimatic Characteristics

In the rainshadow of the Coast Mountains, the lower elevations of the valleys in this District are some of the hottest and driest regions of the British Columbia southern interior. Trees are scarce, and Bluebunch Wheatgrass is the dominant species, while Sagebrush is not uncommon. Although the extremely dry climate restricts their growth, Ponderosa Pine and Douglas Fir occasionally occur in depressions and on coarser textured soils. The grassland provides critical winter and spring forage for bighorn sheep and white-tailed deer.

Immediately above the grasslands, Douglas Fir tends to be the dominant species. Where frequent wildfires have occurred, even-aged Ponderosa Pine forests occur at lower elevations while even-aged Lodgepole Pine forests can be found at higher elevations. The understory is dominated by Feathermoss and Pinegrass with Soopolalie and Kinnikinnick being common shrubs. At the drier locations, the landscape becomes savannah-like with bunchgrasses including Bluebunch Wheatgrass and Rough Fescue providing important summer habitat for mule deer and elk.

At higher elevations, the plateau areas experience cold winters and moderately short and warm summers. The common tree species are Engelmann and hybrid spruce, and Subalpine Fir. Successional forests of Lodgepole Pine, Douglas Fir and Trembling Aspen are the result of past wildfires. These areas provide important summer and fall forage for mule deer. (Adapted from: British Columbia Ministry of Forests, 1999, Biogeographical Zones of British Columbia.)

3. Highway Information

This District has the following numbered Provincial highways: 1, 5, 5A, 8, 24, 97, and 97C.

4. Total Wildlife Accidents by Highway

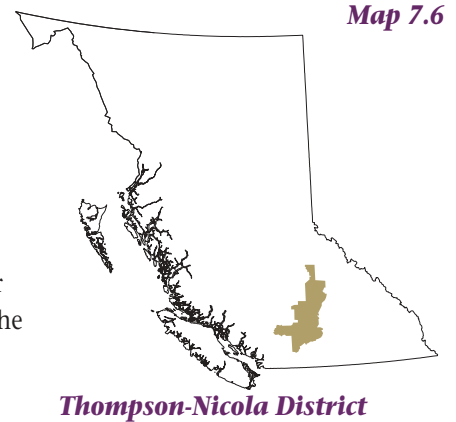
Wildlife accidents on each of the numbered highways in this District for the period 1983 to 2002 are provided in the following tables.

5. Wildlife Accidents by Species

Species specific accidents for this District are provided in the following tables and graphs.

6. Species Comparisons by Time Series

Comparisons by species of 10-year accident trends are provided in the following tables.



Thompson-Nicola District

Table 7.3.4.1 – District 6: Total Wildlife Accidents by Highway (1983 to 2002)

HWY	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Totals
1	15	26	26	22	30	39	26	17	27	27	33	40	53	51	63	59	57	48	49	71	779
5	17	26	25	70	141	138	50	153	139	116	102	100	106	93	89	99	127	86	140	48	1,865
5A	0	0	0	0	0	0	0	0	17	4	8	15	9	6	11	3	2	7	5	9	96
8	0	0	1	0	2	4	0	1	0	0	3	7	2	3	1	5	1	0	1	1	32
24	0	0	0	0	0	1	3	2	2	1	0	1	0	0	3	4	4	14	6	3	44
97	0	0	0	0	0	0	0	0	2	4	0	0	2	0	1	20	20	20	18	10	97
97C	0	0	0	0	0	0	0	0	5	5	8	16	14	26	14	0	8	2	4	10	112
Other	10	6	4	4	9	6	7	6	5	18	14	16	13	19	23	10	13	26	30	79	318
Totals	42	58	56	96	182	188	86	179	197	175	168	195	199	198	205	200	232	203	253	231	3,343





Table 7.3.4.2 – District 6: Wildlife Accidents by Species (1983 to 2002)

SPECIES	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Totals
Badger	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	3
Bear	0	2	2	8	9	4	5	8	9	10	15	10	13	6	9	17	19	15	18	22	201
Beaver	0	0	0	1	1	3	0	5	0	1	1	0	0	1	2	0	1	1	2	3	22
Bobcat	0	0	0	0	0	0	0	0	2	5	1	0	0	3	0	0	0	1	0	0	12
Caribou	0	0	0	0	0	0	0	0	1	0	0	0	3	0	0	0	0	0	0	0	4
Coyote	0	0	4	6	17	11	13	20	13	16	18	11	20	20	14	19	15	11	16	11	255
Deer	41	53	45	77	144	164	65	126	151	137	127	157	156	159	173	153	178	158	206	182	2,652
Elk	1	3	3	1	1	3	0	0	0	2	0	0	2	0	1	1	0	0	0	0	18
Fox	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	4
Horned Owl	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3	0	0	0	4
Horse	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Moose	0	0	1	1	5	2	3	9	8	3	1	14	3	4	3	5	7	6	2	5	82
Porcupine	0	0	1	2	5	0	0	9	12	0	4	2	1	3	3	2	3	1	0	0	48
Raccoon	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	2	1	0	5
Sheep	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	2	1	3	1	0	10
Skunk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3
Other/ Unknown	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	1	3	3	3	7	20
TOTALS	42	58	56	96	182	188	86	179	197	175	168	195	199	198	205	200	232	203	253	231	3,343

Table 7.3.4.3 – District 6: Species Comparisons by Time Series (1983 to 2002)

SPECIES	83 to 02 Total Accidents	83 to 02 % of Total Accidents	83 to 02 Annual Average Accidents	83 to 92 Total Accidents	83 to 92 % of Total Accidents	83 to 92 Annual Average Accidents	93 to 02 Total Accidents	93 to 02 % of Total Accidents	93 to 02 Annual Average Accidents	98 to 02 Total Accidents	98 to 02 % of Total Accidents	98 to 02 Annual Average Accidents	2002 Total Accidents	2002 Annual % of Total Accidents
Badger	3	0.1	0.2	0	0	0	3	0.1	0.3	2	0.2	0.4	0	0
Bear	201	6	10.1	57	4.5	5.7	144	6.9	14.4	91	8.1	18.2	22	9.5
Beaver	22	0.7	1.1	11	0.9	1.1	11	0.5	1.1	7	0.6	1.4	3	1.3
Bobcat	12	0.4	0.6	7	0.6	0.7	5	0.2	0.5	1	0.1	0.2	0	0
Caribou	4	0.1	0.2	1	0.1	0.1	3	0.1	0.3	0	0	0	0	0
Coyote	255	7.6	12.8	100	7.9	10	155	7.4	15.5	72	6.4	14.4	11	4.8
Deer	2,652	79.3	132.6	1,003	79.7	100.3	1,649	79.1	164.9	877	78.4	175.4	182	78.8
Elk	18	0.5	0.9	14	1.1	1.4	4	0.2	0.4	1	0.1	0.2	0	0
Fox	4	0.1	0.2	0	0	0	4	0.2	0.4	3	0.3	0.6	1	0.4
Horned Owl	4	0.1	0.2	0	0	0	4	0.2	0.4	3	0.3	0.6	0	0
Horse	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Moose	82	2.5	4.1	32	2.5	3.2	50	2.4	5	25	2.2	5	5	2.2
Porcupine	48	1.4	2.4	29	2.3	2.9	19	0.9	1.9	6	0.5	1.2	0	0
Raccoon	5	0.1	0.3	1	0.1	0.1	4	0.2	0.4	4	0.4	0.8	0	0
SHEEP	10	0.3	0.5	1	0.1	0.1	9	0.4	0.9	7	0.6	1.4	0	0
Skunk	3	0.1	0.2	0	0	0	3	0.1	0.3	3	0.3	0.6	0	0
Wolf	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other / Unknown	20	0.6	1	3	0.2	0.3	17	0.8	1.7	17	1.5	3.4	7	3
TOTALS	3,343	100	167.2	1,259	100	125.9	2,084	100	208.4	1,119	100	223.8	231	100



Figure 7.3.4.1 – District 6: Total Annual Bear Accidents, (1983 to 2002)

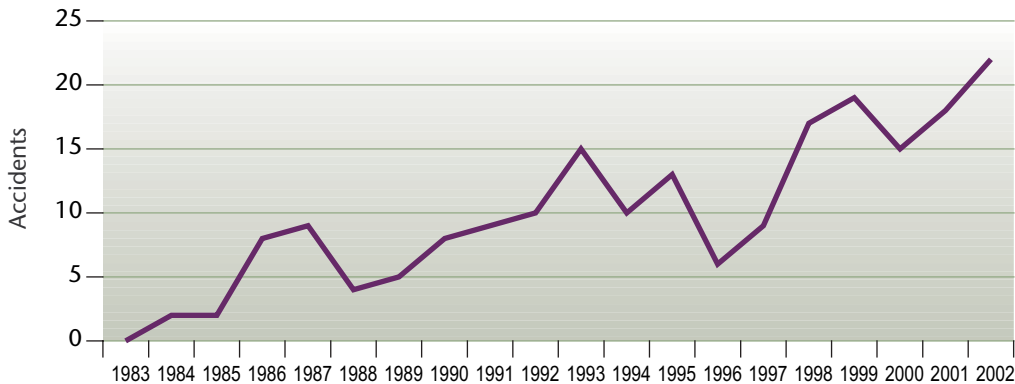


Figure 7.3.4.2 – District 6: Total Annual Deer Accidents, (1983 to 2002)

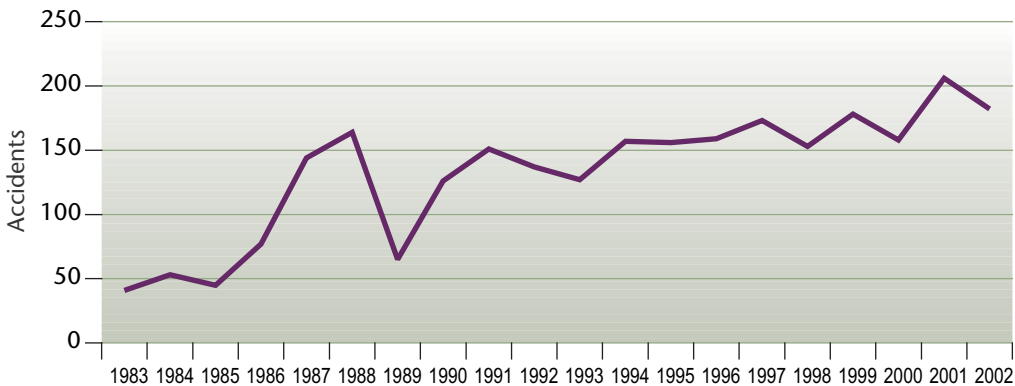


Figure 7.3.4.3 – District 6: Total Annual Elk Accidents, (1983 to 2002)

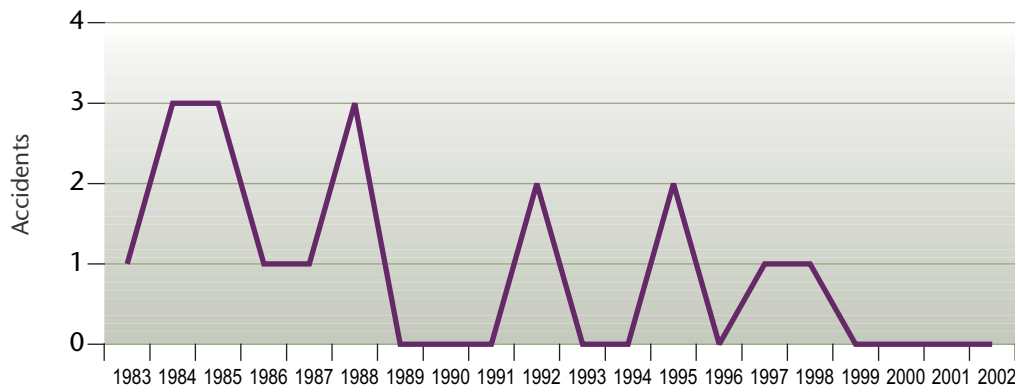


Figure 7.3.4.4 – District 6: Total Annual Moose Accidents, (1983 to 2002)

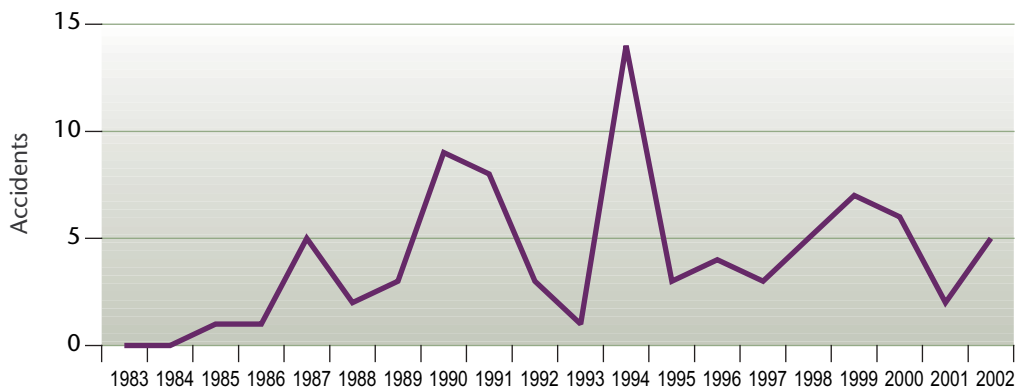


Figure 7.3.4.5 – District 6: Total Monthly Bear Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

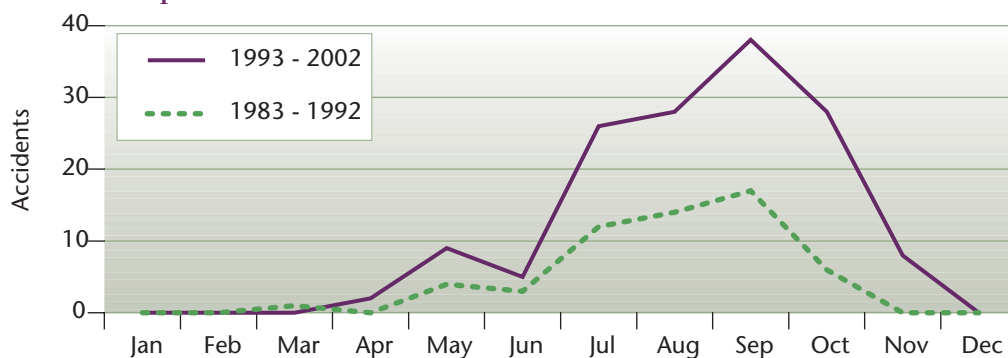


Figure 7.3.4.6 – District 6: Total Monthly Deer Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

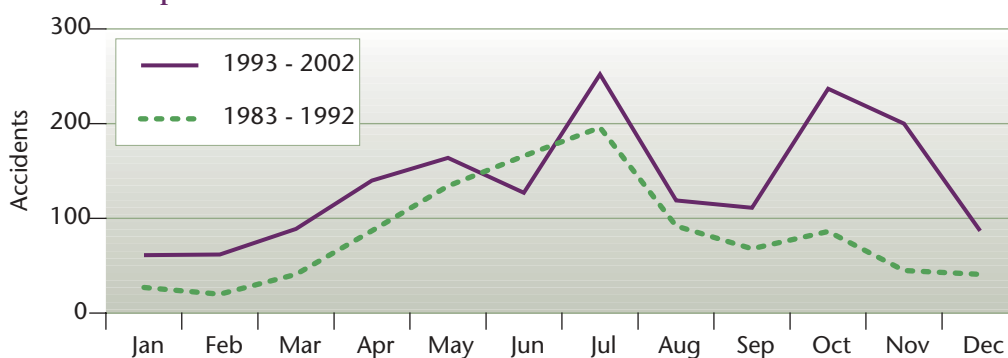


Figure 7.3.4.7 – District 6: Total Monthly Elk Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

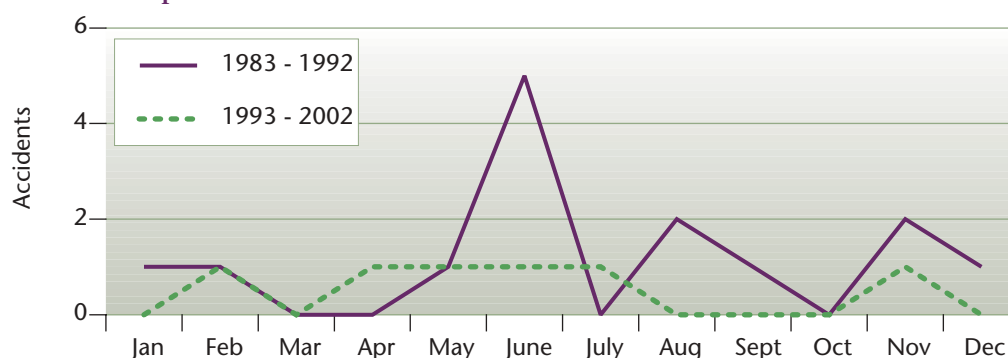


Figure 7.3.4.8 – District 6: Total Monthly Moose Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

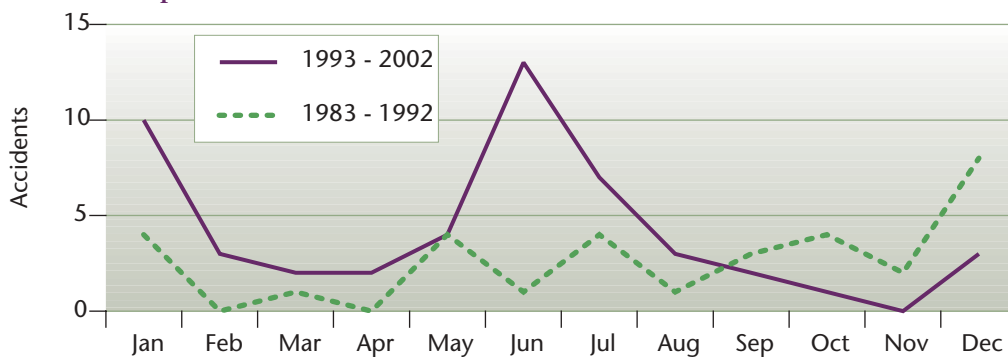




Figure 7.3.4.9 – District 6: Total Annual Coyote Accidents, (1983 to 2002)

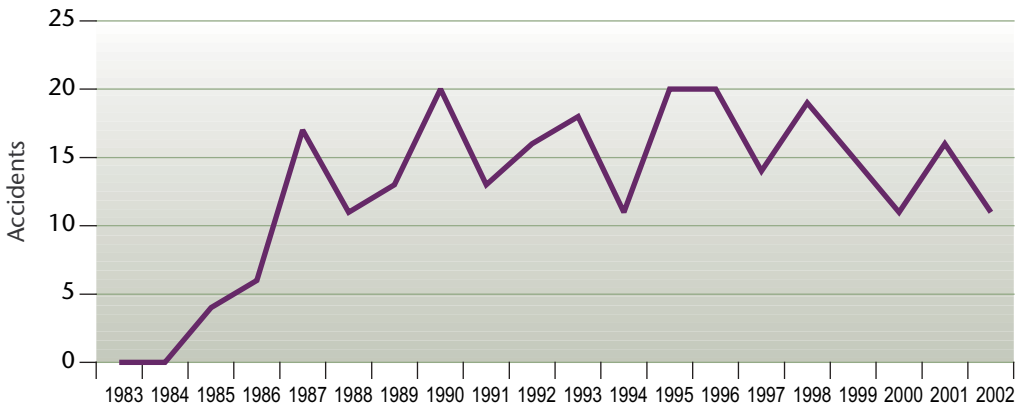
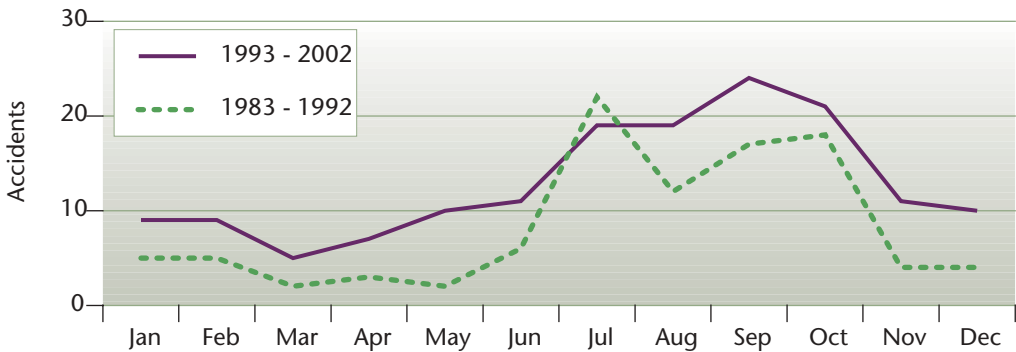


Figure 7.3.4.10 – District 6: Total Monthly Coyote Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002



7.3.5 District 7 – Cariboo

1. Geographic Size

This District is approximately 116,000 km² in size

2. Geoclimatic Characteristics

This District has the widest range of geoclimatic variation. It stretches from the Pacific Ocean to the Rocky Mountains, resulting in many types of ecosystems being represented.

At the western portion, at the Pacific Ocean, northern latitude rainforests occur. Western hemlock and amabilis fir are the dominant climax trees. Abundant precipitation, primarily rainfall, and mild temperatures make the forests some of the most productive in the Province. In the drier parts, old-growth Douglas Fir can approach 100 metres in height, while on floodplains, Western Red Cedar and Sitka Spruce can grow up to four metres in diameter. Mature stands of timber provide valuable habitat for black-tailed deer. At higher elevations, where the growing season is short, forest productivity is reduced. Mountain Hemlock and Amabilis Fir are the dominant tree species.

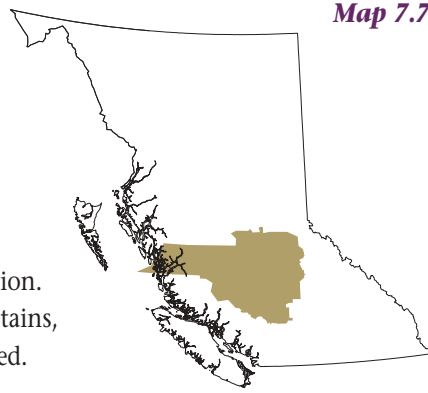
Away from the coast, at the highest elevations of the Coast and Chilcotin mountain ranges, the alpine in the is essentially treeless. The long, cold winters and short, cool growing season result in a landscape covered in draft shrubs, herbs, lichens and mosses. These areas provide important range for caribou, mountain goats and mountain sheep.

Further east, the plateaus at the higher elevations experience cold winters and moderately short and warm summers. The common tree species are Engelmann and hybrid spruce, and Subalpine Fir. Successional forests of Lodgepole Pine, Douglas Fir and Trembling Aspen are the result of past wildfires. These areas provide important summer and fall forage for mule deer.

Northeast, toward the Chilcotin River, the landscape is rolling with numerous scattered wetlands providing excellent wildlife habitat. The area is characterized by many even-aged Lodgepole Pine forest that have resulted from many previous wildfires. Feathermosses and/or lichens tend to dominate the understory, while Pinegrass and Kinnikinnick are also common. In the drier parts, the profuse ground lichens provide valuable winter forage for caribou.

The lower elevations of the valleys in this District are some of the hottest and driest regions of the British Columbia southern interior. Trees are scarce, and Bluebunch Wheatgrass is the dominant species, while Sagebrush is not uncommon. Although the extremely dry climate restricts their growth, Ponderosa Pine and Douglas Fir occasionally occur in depressions and on coarser textured soils. The grassland provides critical winter and spring forage for bighorn sheep and white-tailed deer.

Immediately above the grasslands, Douglas Fir tends to be the dominant species. Where frequent wildfires have occurred, even-aged Ponderosa Pine forests occur at lower elevations while even-aged Lodgepole Pine forests can be found at higher elevations. The understory is dominated by Feathermoss and Pinegrass with Soopolalie and Kinnikinnick being common shrubs. At the drier locations, the landscape becomes savannah-like with bunchgrasses including Bluebunch Wheatgrass and Rough Fescue providing important summer habitat for mule deer and elk.



Map 7.7

Cariboo District





At higher elevations in the valleys, the plateau areas experience cold winters and moderately short and warm summers. The common tree species are Engelmann and hybrid spruce, and Subalpine Fir. Successional forests of Lodgepole Pine, Douglas Fir and Trembling Aspen are the result of past wildfires. These areas provide important summer and fall forage for mule deer. (Adapted from: British Columbia Ministry of Forests, 1999, Biogeographical Zones of British Columbia.)

3. Highway Information

This District has the following numbered Provincial highways: 1, 20, 24, 26, 97, and 99.

4. Total Wildlife Accidents by Highway

Wildlife accidents on each of the numbered highways in this District for the period 1983 to 2002 are provided in the following tables.

5. Wildlife Accidents by Species

Species specific accidents for this District are provided in the following tables and graphs.

6. Species Comparisons by Time Series

Comparisons by species of 10-year accident trends are provided in the following tables.

Table 7.3.5.1 – District 7: Total Wildlife Accidents by Highway (1983 to 2002)

HWY	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Totals
1	4	4	12	8	10	0	8	22	16	22	12	42	40	22	10	24	10	8	2	4	280
20	13	15	14	9	13	2	39	44	33	25	32	49	28	25	56	39	37	53	32	55	613
24	3	4	4	6	5	13	14	16	9	14	22	17	11	19	17	28	23	15	21	10	271
26	4	6	5	7	4	2	0	0	0	0	5	14	3	16	13	9	7	3	9	14	121
97	42	48	42	46	37	78	78	91	87	71	217	162	165	258	243	328	287	228	328	348	3,184
99	0	0	0	0	0	0	0	0	0	0	8	8	5	0	1	1	2	0	0	1	26
Other	27	30	22	15	6	11	14	36	44	36	72	75	81	57	95	89	94	64	50	97	1,015
Totals	93	107	99	91	75	106	153	209	189	168	368	367	333	397	435	518	460	371	442	529	5,510





Table 7.3.5.2 – District 7: Wildlife Accidents by Species (1983 to 2002)

SPECIES	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Totals
Bear	4	0	1	6	4	1	1	0	5	1	11	7	14	17	5	8	16	5	6	14	126
Beaver	0	0	2	0	0	3	2	2	1	0	1	0	1	2	0	0	0	0	0	1	15
Bobcat	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	3	0	0	6
Caribou	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Cougar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Coyote	5	12	1	2	1	3	1	5	4	3	14	6	8	10	11	10	3	7	3	6	115
Deer	66	76	62	57	50	83	133	169	137	133	290	278	265	297	365	432	378	300	363	458	4,392
Elk	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	5
Fox	0	0	1	0	1	0	1	3	2	0	3	3	0	0	2	0	3	4	4	0	27
Horse	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Lynx	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Moose	15	16	21	18	9	16	10	13	22	11	27	42	20	53	44	51	53	38	54	39	572
Muskrat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Otter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Porcupine	0	0	2	4	3	0	1	4	5	3	11	0	1	1	0	0	0	0	0	0	35
Sheep	1	0	0	0	1	0	0	2	4	5	4	10	3	6	0	5	0	2	0	0	43
Skunk	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2	1	1	6
Other/ Unknown	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22
TOTALS	91	105	93	87	70	106	149	198	181	157	362	346	313	386	430	506	455	367	441	527	5,370

Table 7.3.5.3 – District 7: Species Comparisons by Time Series (1983 To 2002)

SPECIES	83 to 02		83 to 92		83 to 92		83 to 92		83 to 92		93 to 02		93 to 02		98 to 02		98 to 02		2002	
	Total Accidents	% of Total Accidents	Annual Average Accidents	Total Accidents	% of Total Accidents	Annual Average Accidents	Total Accidents	% of Total Accidents	Annual Average Accidents	Total Accidents	% of Total Accidents	Annual Average Accidents	Total Accidents	% of Total Accidents	Annual Average Accidents	Total Accidents	% of Total Accidents	Annual Average Accidents	Total Accidents	% of Total Accidents
Bear	126	2.3	6.3	23	1.9	2.3	103	2.5	10.3	49	2.1	9.8	14	2.7						
Beaver	15	0.3	0.8	10	0.8	1	5	0.1	0.5	1	0	0.2	1	0.2						
Bobcat	6	0.1	0.3	3	0.2	0.3	3	0.1	0.3	3	0.1	0.6	0	0						
Caribou	1	0	0.1	0	0	0	1	0	0.1	0	0	0	0	0						
Cougar	1	0	0.1	0	0	0	1	0	0.1	0	0	0	0	0						
Coyote	115	2.1	5.8	37	3	3.7	78	1.9	7.8	29	1.3	5.8	6	1.1						
Deer	4,392	81.8	219.6	966	78.1	96.6	3,426	82.9	342.6	1,931	84.1	386.2	458	86.9						
Elk	5	0.1	0.3	3	0.2	0.3	2	0	0.2	2	0.1	0.4	1	0.2						
Fox	27	0.5	1.4	8	0.6	0.8	19	0.5	1.9	11	0.5	2.2	0	0						
Horse	1	0	0.1	1	0.1	0.1	0	0	0	0	0	0	0	0						
Lynx	1	0	0.1	0	0	0	1	0	0.1	1	0	0.2	0	0						
Moose	572	10.7	28.6	151	12.2	15.1	421	10.2	42.1	235	10.2	47	39	7.4						
Muskrat	1	0	0.1	0	0	0	1	0	0.1	0	0	0	0	0						
Otter	1	0	0.1	0	0	0	1	0	0.1	1	0	0.2	0	0						
Porcupine	35	0.7	1.8	22	1.8	2.2	13	0.3	1.3	0	0	0	0	0						
Sheep	43	0.8	2.2	13	1.1	1.3	30	0.7	3	7	0.3	1.4	0	0						
Skunk	6	0.1	0.3	0	0	0	6	0.1	0.6	4	0.2	0.8	1	0.2						
Wolf	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
Other / Unknown	22	0.4	1.1	0	0	0	22	0.5	2.2	22	1	4.4	7	1.3						
TOTALS	5,370	100	268.5	1,237	100	123.7	4,133	100	413.3	2,296	100	459.2	527	100						



Figure 7.3.5.1 – District 7: Total Annual Bear Accidents, (1983 to 2002)

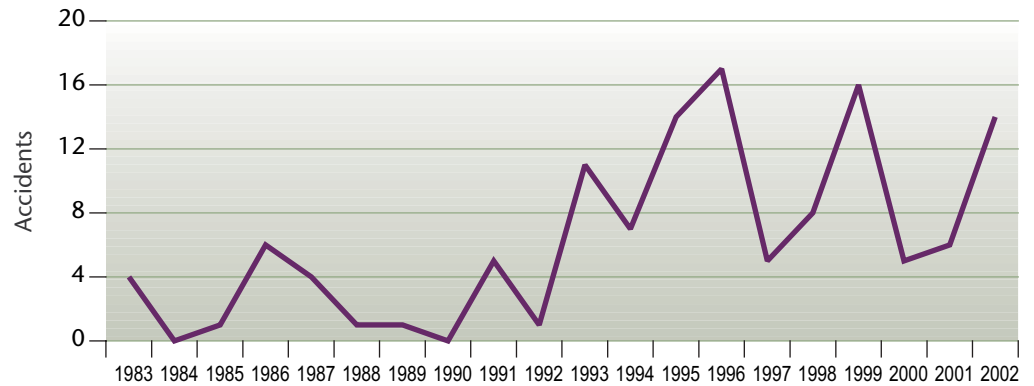


Figure 7.3.5.2 – District 7: Total Annual Deer Accidents, (1983 to 2002)

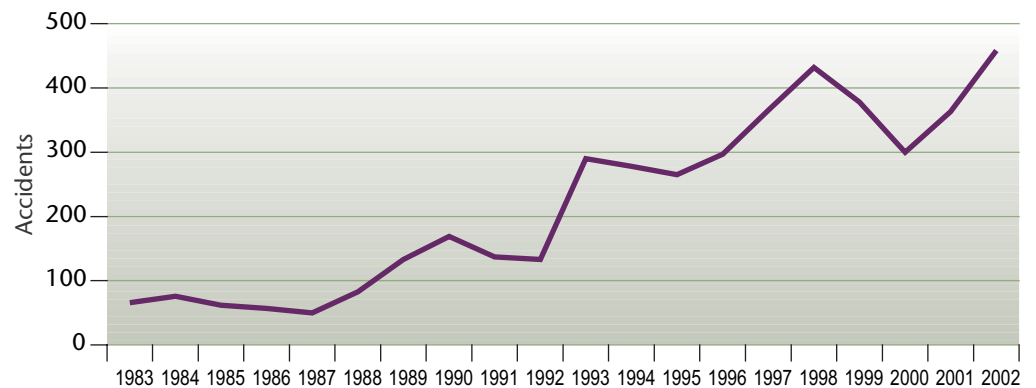


Figure 7.3.5.3 – District 7: Total Annual Elk Accidents, (1983 to 2002)

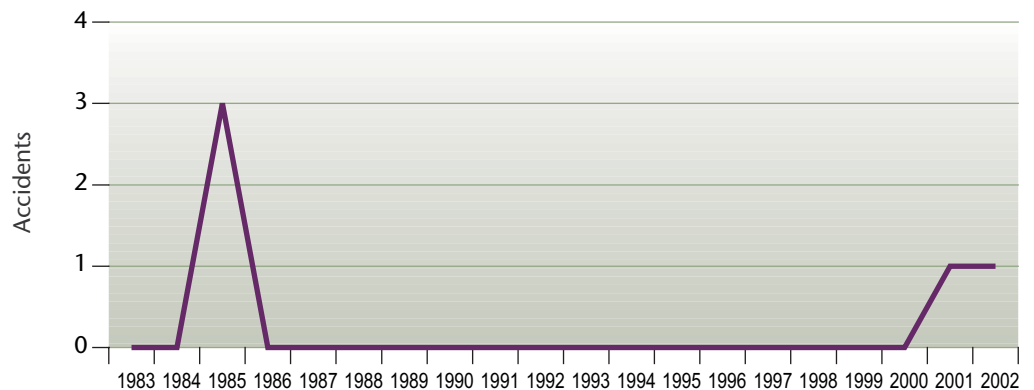


Figure 7.3.5.4 – District 7: Total Annual Moose Accidents, (1983 to 2002)

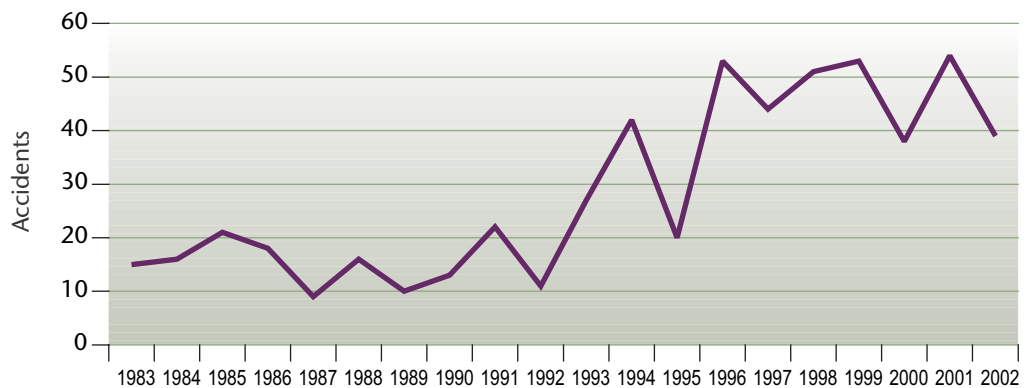


Figure 7.3.5.5 – District 7: Total Monthly Bear Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

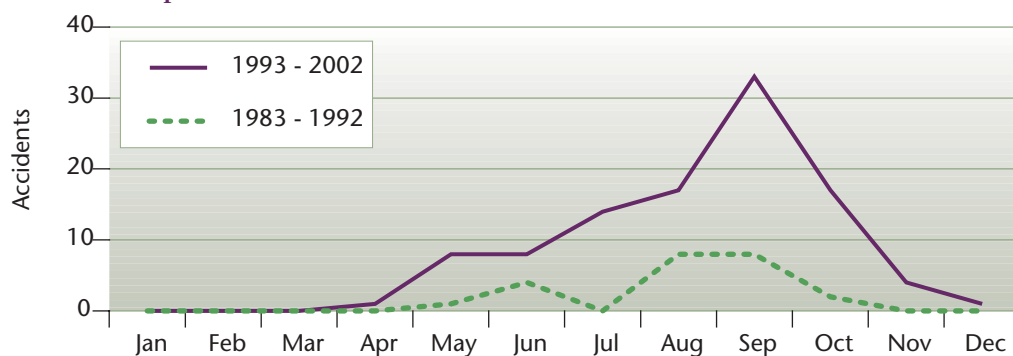


Figure 7.3.5.6 – District 7: Total Monthly Deer Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

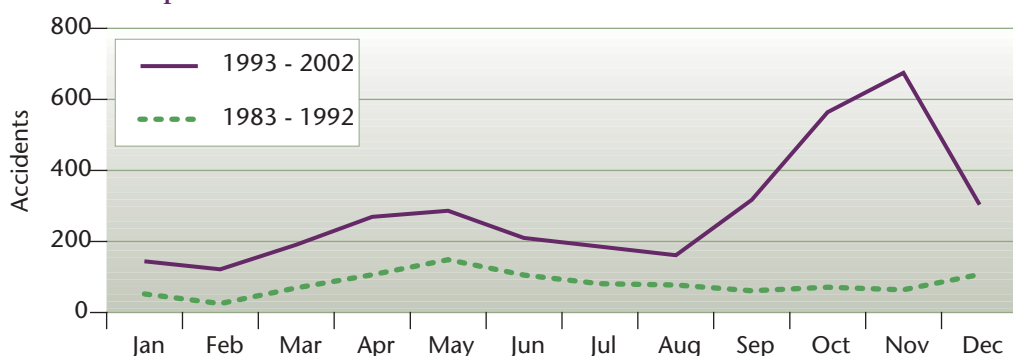


Figure 7.3.5.7 – District 7: Total Monthly Elk Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

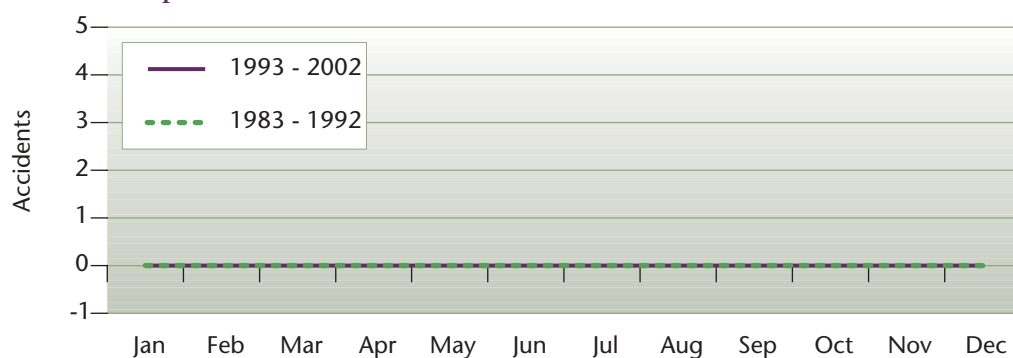


Figure 7.3.5.8 – District 7: Total Monthly Moose Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

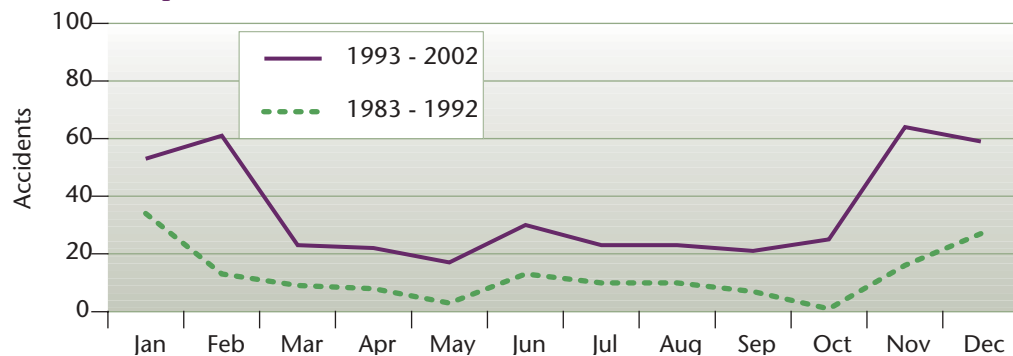




Figure 7.3.5.9 – District 7: Total Annual Coyote Accidents, (1983 to 2002)

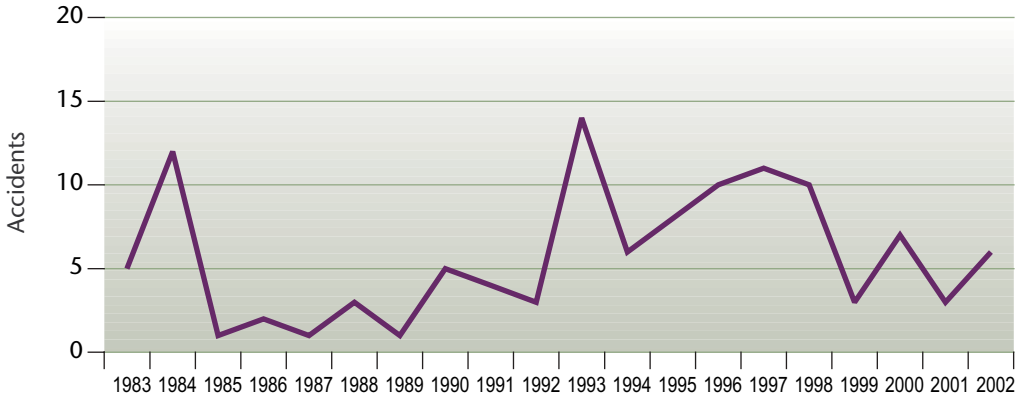
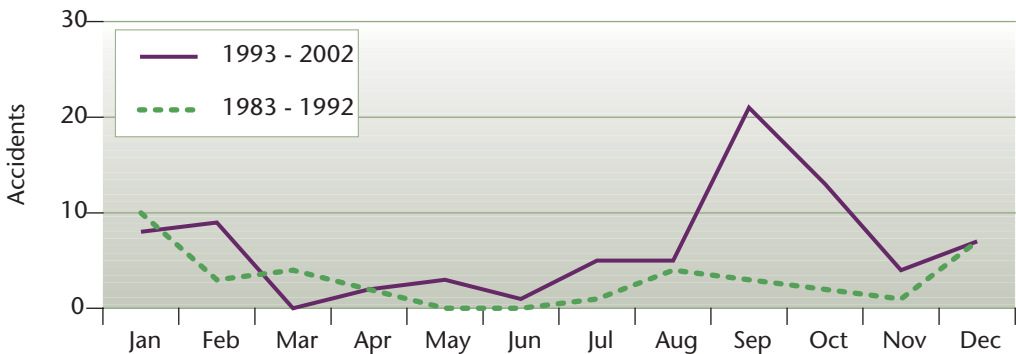


Figure 7.3.5.10 – District 7: Total Monthly Coyote Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002



7.4 REGION 3 – NORTHERN REGION

7.4.1 District 8 – Peace River District

1. Geographic Size

This District is approximately 186,900 km² in size

2. Geoclimatic Characteristics

The majority of this District consists of boreal coniferous forest. The gently rolling terrain is part of the Great Plains. The winters are long and cold. The ground remains frozen for much of the year and the growing season is very short. Numerous fires have resulted in extensive forests of Aspen and Lodgepole Pine. Where flat, the land is a mosaic of Black Spruce bogs and White Spruce and Trembling Aspen stands (British Columbia Ministry of Forests, 1999). The District has considerable rich agricultural land and moose are abundant.

In the northwestern corner of this District, open forests of White Spruce and Subalpine Fir characterize the landscape. Higher elevations are dominated by Scrub Birch and Willow. In some wide, open valleys, a mosaic of scrub, grassland, and wetland occur on the valley bottoms fringed by a band of forest on the valley sides, followed by shrubs above the forest. The portion of the District provides extensive habitat for moose, caribou, and elk. At the highest elevations, of the Coast and Cassiar mountain ranges, the alpine is essentially treeless. The long, cold winters and short, cool growing season result in a landscape covered in draft shrubs, herbs, lichens and mosses. These areas provide important range for caribou, mountain goats and mountain sheep.

The southwestern corner of this District is characterized by the severe climate, with long cold winters and short cool summers. Only trees capable of tolerating extended periods of frozen ground survive here. The landscape is open parkland, with groupings of trees interspersed with meadow, heath and grassland. The common dominant tree species are Engelmann Spruce, Subalpine Fir and Lodgepole Pine. False Azalea and Rhododendron are common understory shrubs. At drier locations, extensive Lodgepole Pine and Whitebark Pine forests can be found. Where snowfall is greater and the soils are wetter, Mountain Hemlock is the common dominant species (Adapted from: British Columbia Ministry of Forests, 1999, Biogeographical Zones of British Columbia.)

3. Highway Information

This District has the following numbered Provincial highways: 2, 29, 49, 52, and 97.

4. Total Wildlife Accidents by Highway

Wildlife accidents on each of the numbered highways in this District for the period 1983 to 2002 are provided in the following tables.

5. Wildlife Accidents by Species

Species specific accidents for this District are provided in the following tables and graphs.

6. Species Comparisons by Time Series

Comparisons by species of 10-year accident trends are provided in the following tables.

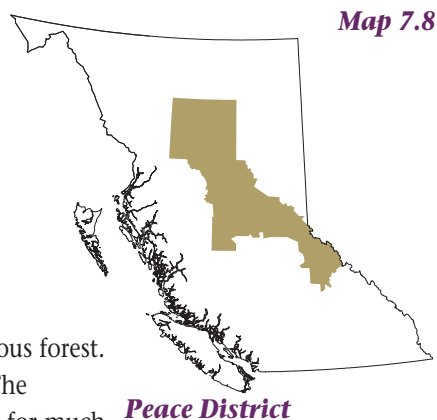




Table 7.4.1.1 – District 8: Total Wildlife Accidents by Highway (1983 to 2002)

HWY	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Totals
2	0	1	0	4	9	4	11	8	15	11	53	54	57	37	37	69	42	33	13	30	488
29	2	4	8	16	24	9	42	87	63	51	121	127	130	56	52	110	63	74	41	84	1,164
49	0	0	0	1	5	1	12	7	4	7	13	26	66	23	31	32	17	19	11	10	285
52	0	0	0	0	0	0	0	3	0	17	21	12	24	13	13	27	9	18	17	18	192
97	13	21	16	17	27	11	113	135	122	126	197	296	346	147	66	294	330	348	310	305	3,240
Other	2	7	5	4	8	7	29	29	44	44	101	151	94	27	171	60	68	98	100	118	1,167
Totals	17	33	29	42	73	32	207	269	248	256	506	666	717	303	370	592	529	590	492	565	6,536

Table 7.4.1.2 – District 8: Wildlife Accidents by Species (1983 to 2002)

SPECIES	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Totals
Bear	1	2	0	1	1	0	3	3	1	2	4	5	6	3	3	18	3	3	3	5	67
Beaver	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	4	0	0	0	0	5
Caribou	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
Caribou	0	0	0	0	0	0	0	0	0	1	0	2	2	1	0	0	0	0	3	1	10
Coyote	0	0	0	0	0	1	2	3	3	7	18	9	8	4	5	12	10	12	9	8	111
Deer	3	13	13	20	41	19	158	189	197	190	354	503	492	200	244	350	347	407	319	379	4,438
Elk	0	0	1	0	1	1	2	2	1	2	3	2	14	1	13	13	8	15	7	9	95
Fox	0	0	0	0	0	0	0	0	2	0	1	0	0	3	0	0	2	1	2	0	11
Horned Owl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Marten	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Moose	12	17	14	17	20	7	30	63	28	36	61	79	130	50	66	121	110	117	125	123	1,226
Muskrat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Otter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Porcupine	0	0	0	0	1	0	0	0	1	7	10	12	8	3	2	4	4	1	0	3	56
Rabbit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Wolf	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	3	0	6
Other/ Unknown	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	7	6	17
TOTALS	17	32	29	38	64	28	196	261	233	245	453	612	660	266	333	523	487	557	479	535	6,048





Table 7.4.1.3 – District 8: Species Comparisons by Time Series (1983 to 2002)

SPECIES	83 to 02			83 to 92			93 to 02			98 to 02			98 to 02			2002		
	Total Accidents	% of Total Accidents	Annual Average Accidents	Total Accidents	% of Total Accidents	Annual Average Accidents	Total Accidents	% of Total Accidents	Annual Average Accidents	Total Accidents	% of Total Accidents	Annual Average Accidents	Total Accidents	% of Total Accidents	Annual Average Accidents	Total Accidents	% of Total Accidents	Annual Average Accidents
Bear	67	1.1	3.4	14	1.2	1.4	53	1.1	5.3	32	1.2	6.4	5	0.9				
Beaver	5	0.1	0.3	1	0.1	0.1	4	0.1	0.4	4	0.2	0.8	0	0				
Caribou	2	0	0.1	2	0.2	0.2	0	0	0	0	0	0	0	0				
Caribou	10	0.2	0.5	1	0.1	0.1	9	0.2	0.9	4	0.2	0.8	1	0.2				
Coyote	111	1.8	5.6	16	1.4	1.6	95	1.9	9.5	51	2	10.2	8	1.5				
Deer	4,438	73.4	221.9	843	73.8	84.3	3,595	73.3	359.5	1,802	69.8	360.4	379	70.8				
Elk	95	1.6	4.8	10	0.9	1	85	1.7	8.5	52	2	10.4	9	1.7				
Fox	11	0.2	0.6	2	0.2	0.2	9	0.2	0.9	5	0.2	1	0	0				
Horned Owl	1	0	0.1	0	0	0	1	0	0.1	1	0	0.2	0	0				
Marten	1	0	0.1	0	0	0	1	0	0.1	0	0	0	0	0				
Moose	1,226	20.3	61.3	244	21.3	24.4	982	20	98.2	596	23.1	119.2	123	23				
Muskrat	1	0	0.1	0	0	0	1	0	0.1	1	0	0.2	0	0				
Otter	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Porcupine	56	0.9	2.8	9	0.8	0.9	47	1	4.7	12	0.5	2.4	3	0.6				
Rabbit	1	0	0.1	0	0	0	1	0	0.1	1	0	0.2	1	0.2				
Wolf	6	0.1	0.3	1	0.1	0.1	5	0.1	0.5	3	0.1	0.6	0	0				
Other / Unknown	17	0.3	0.9	0	0	0	17	0.3	1.7	17	0.7	3.4	6	1.1				
TOTALS	6,048	100	302.4	1,143	100	114.3	4,905	100	490.5	2,581	100	516.2	535	100				

Figure 7.4.1.1 – District 8: Total Annual Bear Accidents, (1983 to 2002)

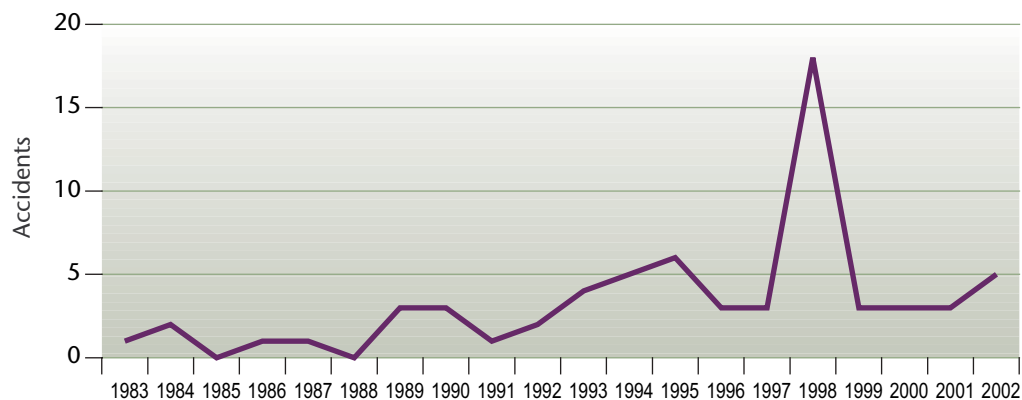


Figure 7.4.1.2 – District 8: Total Annual Deer Accidents, (1983 to 2002)

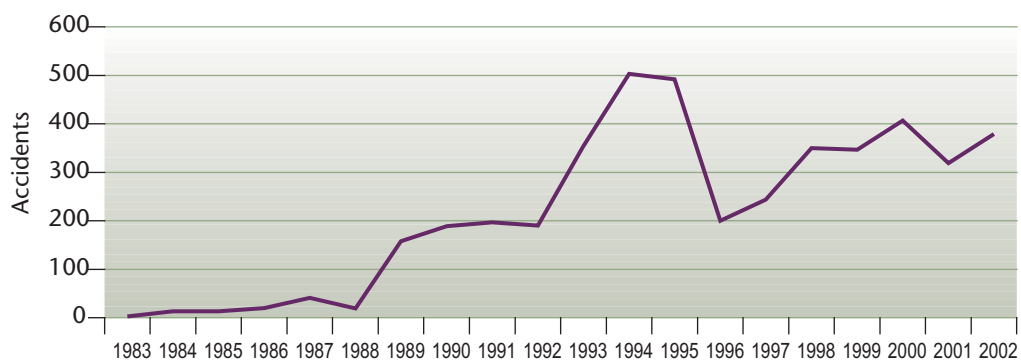


Figure 7.4.1.3 – District 8: Total Annual Elk Accidents, (1983 to 2002)

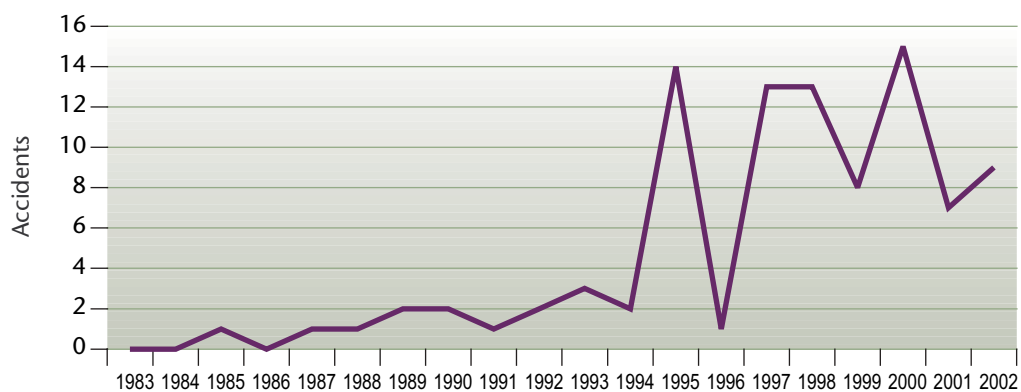


Figure 7.4.1.4 – District 8: Total Annual Moose Accidents, (1983 to 2002)

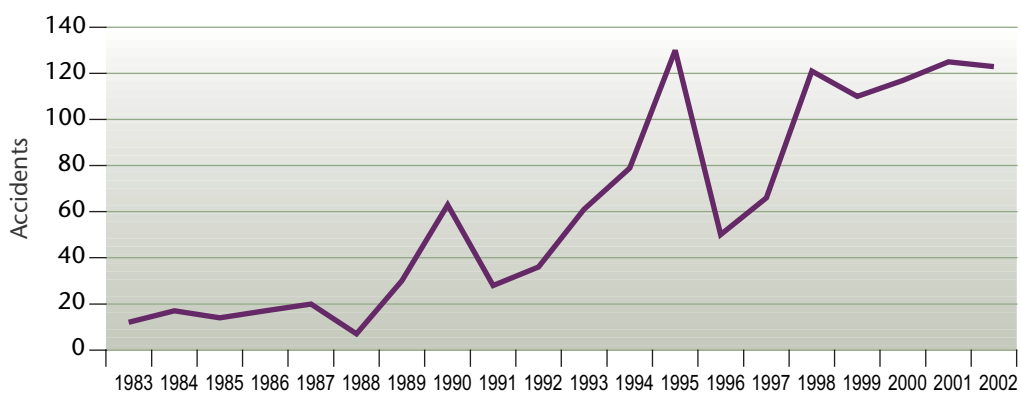




Figure 7.4.1.5 – District 8: Total Monthly Bear Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

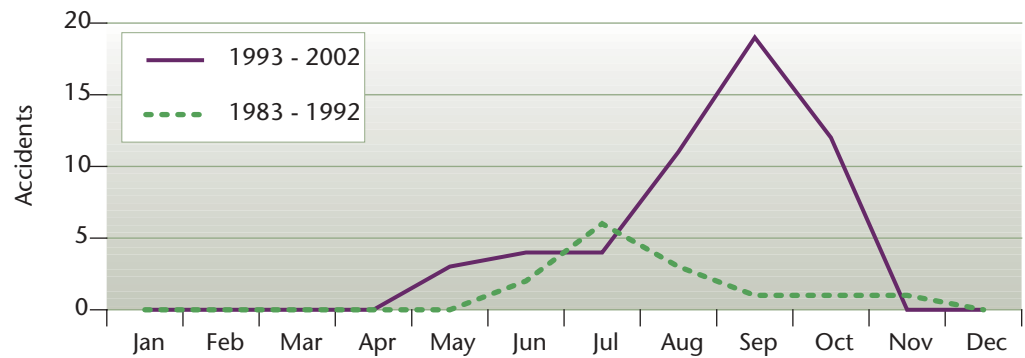


Figure 7.4.1.6 – District 8: Total Monthly Deer Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

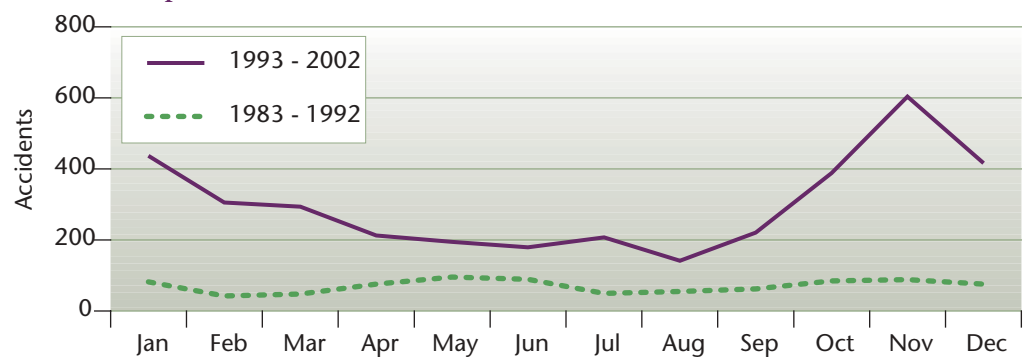


Figure 7.4.1.7 – District 8: Total Monthly Elk Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

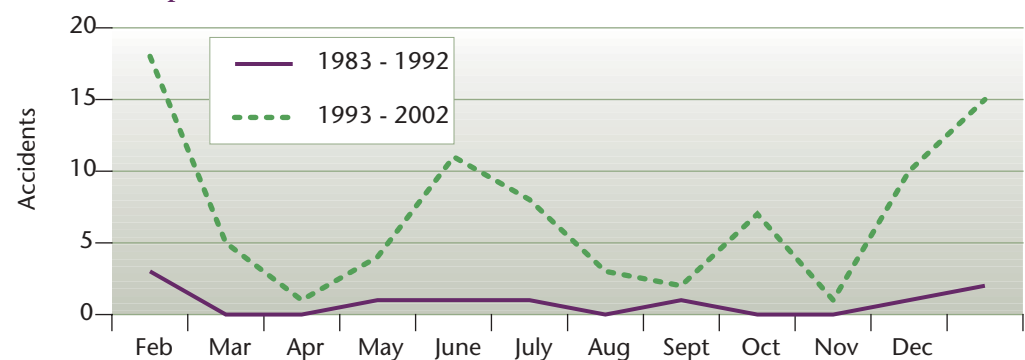


Figure 7.4.1.8 – District 8: Total Monthly Moose Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

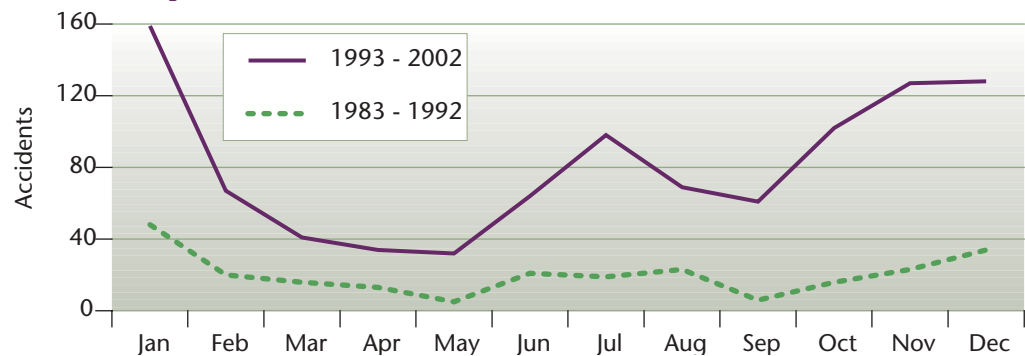


Figure 7.4.1.9 – District 8: Total Annual Coyote Accidents, (1983 to 2002)

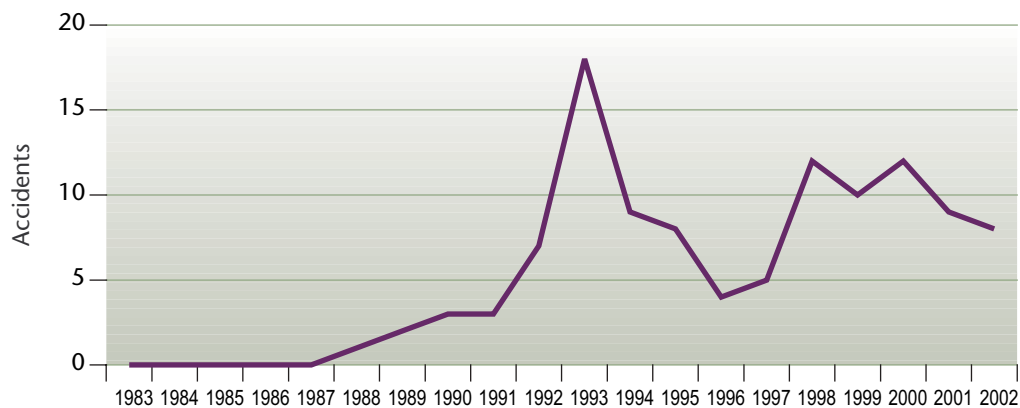
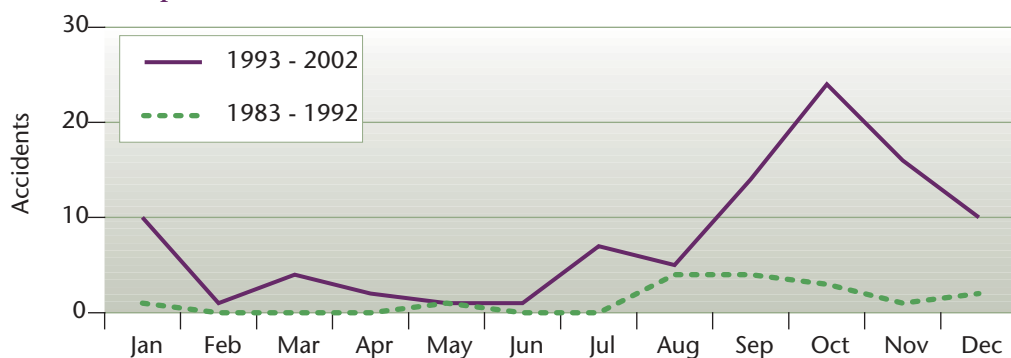


Figure 7.4.1.10 – District 8: Total Monthly Coyote Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002





7.4.2 District 9 – Fort George

1. Geographic Size

This District is approximately 153,200 km² in size

2. Geoclimatic Characteristics

The southern portion of this District is characterized by gently rolling plateaus. Although the climate is severe, but forest productivity is moderately good. Hybrid Engelmann-White Spruce and Subalpine Fir are the dominant trees. In the drier areas, extensive stands of Lodgepole Pine occur due to numerous previous fires. Wetlands are abundant, scattered across the landscape in areas of poor drainage, providing excellent habitat for moose.

The Omineca Mountains extend into the northern portion of this District. At lower elevations, the landscape is characterized by open forests of White Spruce and Subalpine Fir. Higher elevations are dominated by Scrub Birch and Willow. In some wide, open valleys, a mosaic of scrub, grassland, and wetland occur on the valley bottoms fringed by a band of forest on the valley sides, followed by shrubs above the forest. The portion of the District provides extensive habitat for moose, caribou, and elk. (Adapted from: British Columbia Ministry of Forests, 1999, Biogeographical Zones of British Columbia.)

3. Highway Information

This District has the following numbered Provincial highways: 5, 16, 27, 39, and 97.

4. Total Wildlife Accidents by Highway

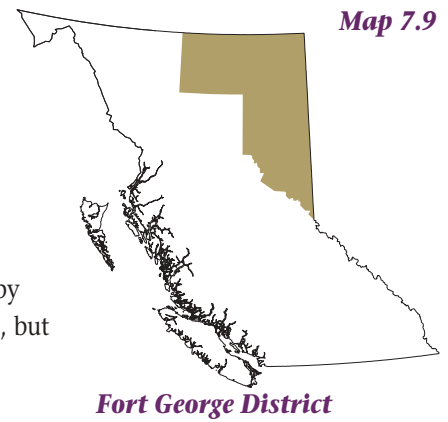
Wildlife accidents on each of the numbered highways in this District for the period 1983 to 2002 are provided in the following tables.

5. Wildlife Accidents by Species

Species specific accidents for this District are provided in the following tables and graphs.

6. Species Comparisons by Time Series

Comparisons by species of 10-year accident trends are provided in the following tables.



Map 7.9

Fort George District

TABLE 7.4.2.1 – District 9: Total Wildlife Accidents by Highway (1983 to 2002)

HWY	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Totals
5	14	22	13	31	13	5	17	13	20	42	46	55	37	32	30	36	89	60	65	61	701
16	58	50	21	100	28	44	87	97	52	86	140	155	134	88	57	140	150	127	102	103	1,819
27	0	0	0	0	0	2	1	1	0	0	3	7	1	3	3	0	0	2	8	0	31
39	0	1	2	1	4	0	0	0	1	2	3	0	3	0	0	1	3	2	2	0	25
97	17	4	18	19	13	22	27	105	76	21	48	62	37	8	8	26	33	21	31	7	603
Other	3	1	1	4	7	7	6	5	9	34	24	33	21	5	39	20	29	10	43	10	311
Totals	92	78	55	155	65	80	138	221	158	185	264	312	233	136	137	223	304	222	251	181	3,490





Table 7.4.2.2 – District 9: Wildlife Accidents by Species (1983 to 2002)

SPECIES	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Totals
Bear	5	1	0	12	6	6	7	10	4	13	22	21	21	9	6	16	18	12	13	9	211
Beaver	0	0	0	0	0	1	0	0	0	0	0	2	1	0	0	0	0	1	6	1	12
Bobcat	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
Caribou	0	0	0	2	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	5
Cougar	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Coyote	0	0	0	0	0	0	1	4	2	7	2	12	7	4	7	5	8	7	2	2	70
Deer	15	14	5	29	10	4	27	27	23	48	91	83	69	61	64	85	132	106	132	83	1,108
Eagle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Elk	0	0	0	2	0	0	1	1	2	3	1	4	2	4	1	3	3	3	1	1	32
Fox	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	4	2	1	9
Moose	72	63	50	105	49	68	101	91	69	83	104	145	126	57	55	105	135	88	88	79	1,733
Porcupine	0	0	0	5	0	0	1	88	57	29	41	42	4	0	4	7	7	0	1	4	290
Rabbit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Raccoon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Skunk	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Wolf	0	0	0	0	0	1	0	0	0	1	0	1	2	1	0	0	1	0	4	0	11
Other/ Unknown	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
TOTALS	92	78	55	155	65	80	138	221	158	185	264	312	233	136	137	223	304	222	251	181	3,490

Table 7.4.2.3 – District 9: Species Comparisons by Time Series (1983 to 2002)

SPECIES	83 to 02 Total Accidents	83 to 02 % of Total Accidents	83 to 02 Annual Average Accidents	83 to 92 Total Accidents	83 to 92 % of Total Accidents	83 to 92 Annual Average Accidents	93 to 02 Total Accidents	93 to 02 % of Total Accidents	93 to 02 Annual Average Accidents	98 to 02 Total Accidents	98 to 02 % of Total Accidents	98 to 02 Annual Average Accidents	2002 Total Accidents	2002 Annual % of Total Accidents
Bear	211	6	10.6	64	5.2	6.4	147	6.5	14.7	68	5.8	13.6	9	5
Beaver	12	0.3	0.6	1	0.1	0.1	11	0.5	1.1	8	0.7	1.6	1	0.6
Bobcat	2	0.1	0.1	0	0	0	2	0.1	0.2	0	0	0	0	0
Caribou	5	0.1	0.3	3	0.2	0.3	2	0.1	0.2	1	0.1	0.2	1	0.6
Cougar	1	0	0.1	0	0	0	1	0	0.1	0	0	0	0	0
Coyote	70	2	3.5	14	1.1	1.4	56	2.5	5.6	24	2	4.8	2	1.1
Deer	1,108	31.7	55.4	202	16.5	20.2	906	40	90.6	538	45.6	107.6	83	45.9
Eagle	1	0	0.1	0	0	0	1	0	0.1	1	0.1	0.2	0	0
Elk	32	0.9	1.6	9	0.7	0.9	23	1	2.3	11	0.9	2.2	1	0.6
Fox	9	0.3	0.5	1	0.1	0.1	8	0.4	0.8	7	0.6	1.4	1	0.6
Moose	1,733	49.7	86.7	751	61.2	75.1	982	43.4	98.2	495	41.9	99	79	43.6
Porcupine	290	8.3	14.5	180	14.7	18	110	4.9	11	19	1.6	3.8	4	2.2
Rabbit	1	0	0.1	0	0	0	1	0	0.1	1	0.1	0.2	0	0
Raccoon	1	0	0.1	0	0	0	1	0	0.1	1	0.1	0.2	0	0
Skunk	1	0	0.1	0	0	0	1	0	0.1	0	0	0	0	0
Wolf	11	0.3	0.6	2	0.2	0.2	9	0.4	0.9	5	0.4	1	0	0
Other / Unknown	2	0.1	0.1	0	0	0	2	0.1	0.2	2	0.2	0.4	0	0
TOTALS	3,490	100	174.5	1,227	100	122.7	2,263	100	226.3	1,181	100	236.2	181	100





Figure 7.4.2.1 – District 9: Total Annual Bear Accidents, (1983 to 2002)

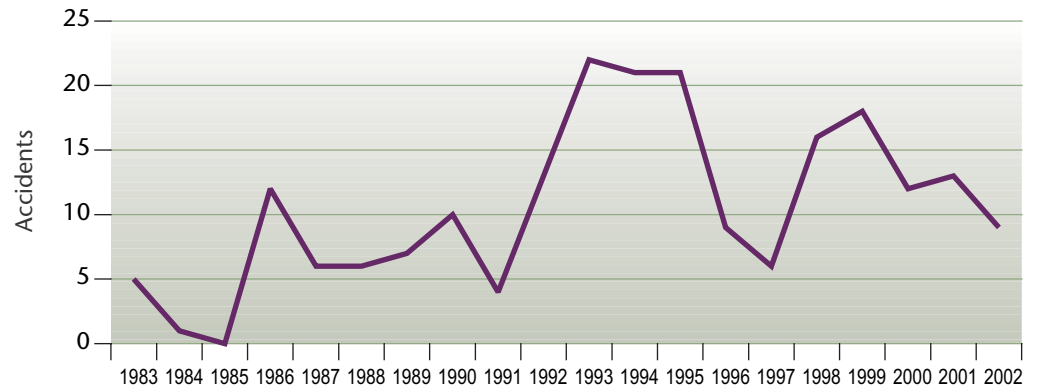


Figure 7.4.2.2 – District 9: Total Annual Deer Accidents, (1983 to 2002)

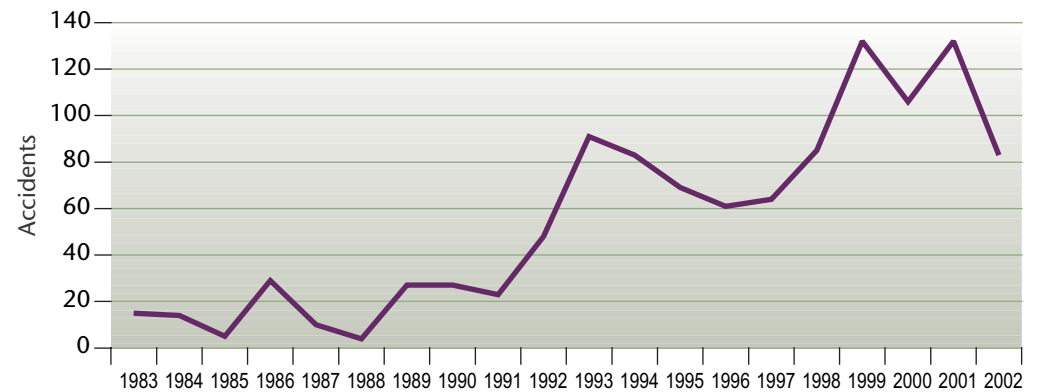


Figure 7.4.2.3 – District 9: Total Annual Elk Accidents, (1983 to 2002)

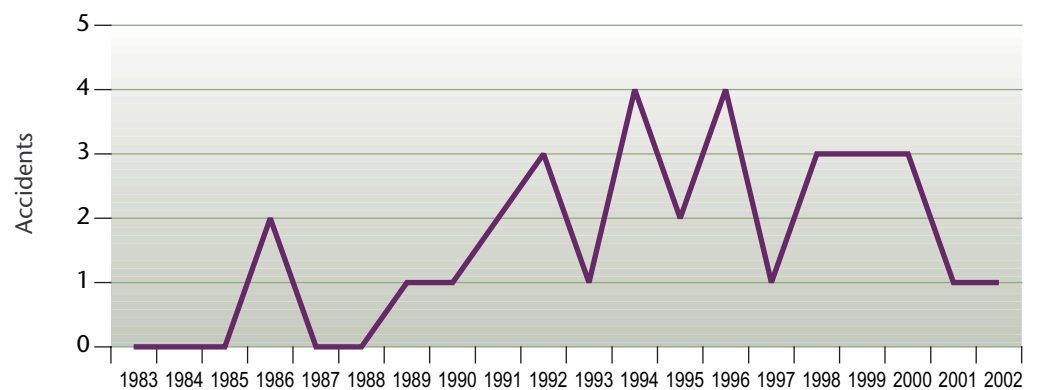


Figure 7.4.2.4 – District 9: Total Annual Moose Accidents, (1983 to 2002)

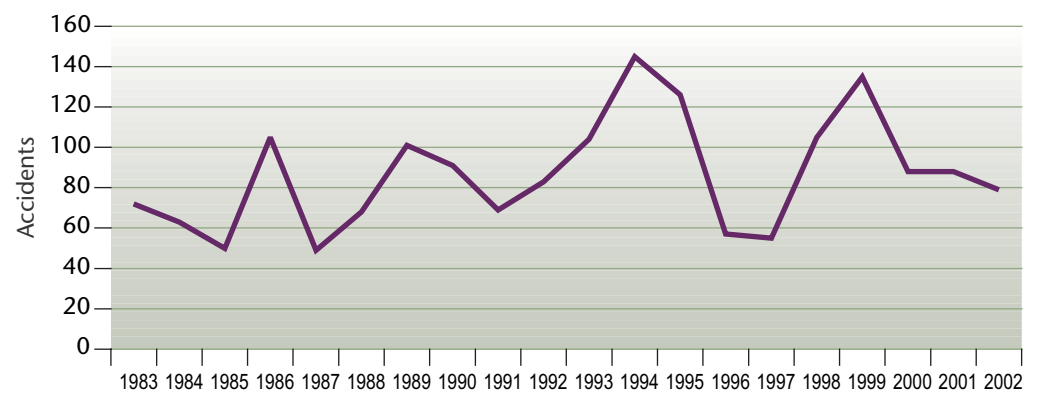


Figure 7.4.2.5 – District 9: Total Monthly Bear Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

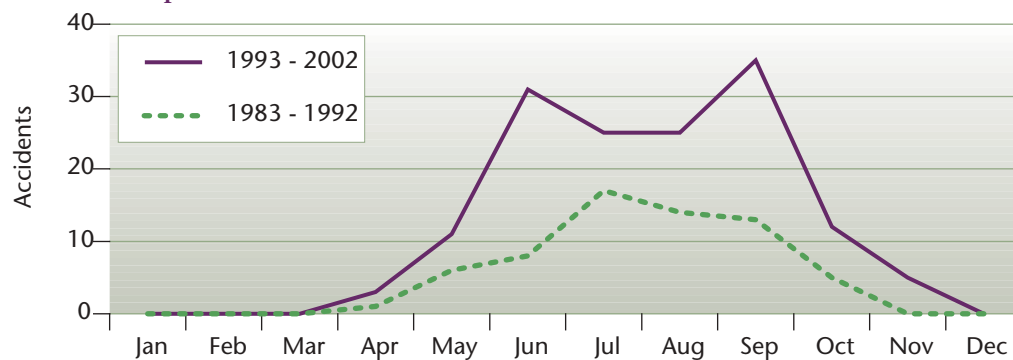


Figure 7.4.2.6 – District 9: Total Monthly Deer Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

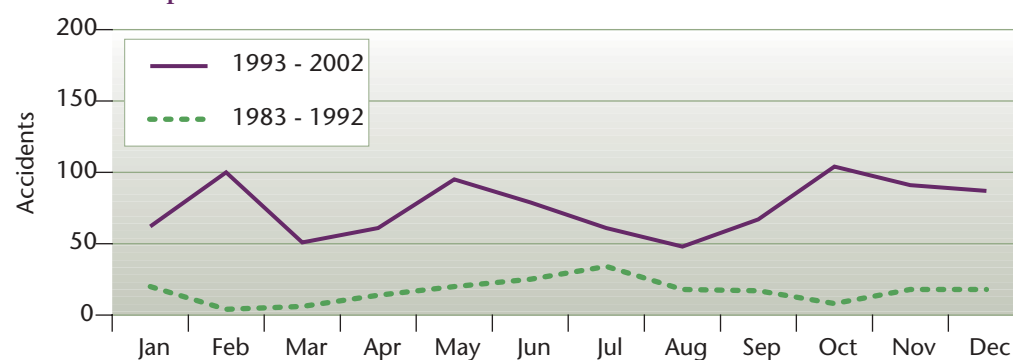


Figure 7.4.2.7 – District 9: Total Monthly Elk Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

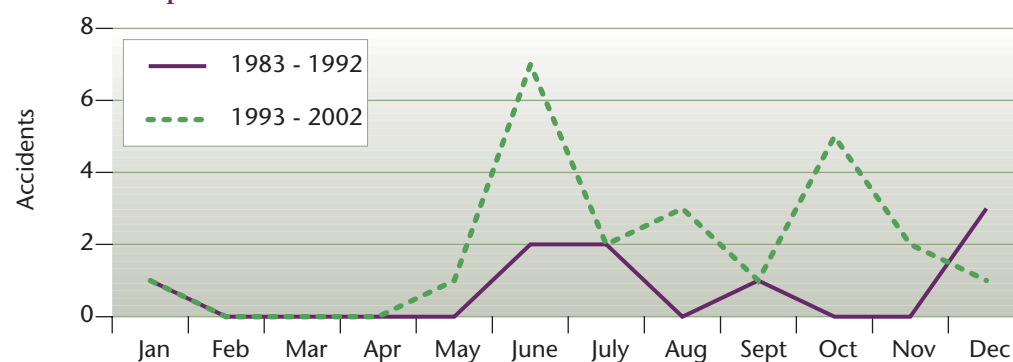


Figure 7.4.2.8 – District 9: Total Monthly Moose Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

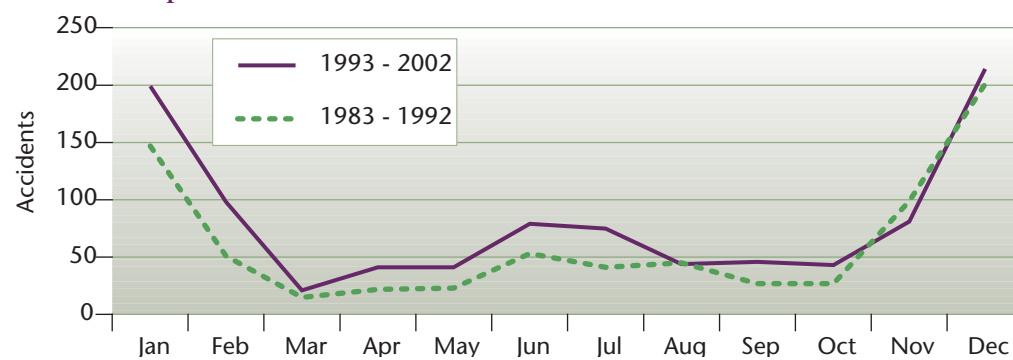




Figure 7.4.2.9 – District 9: Total Annual Coyote Accidents, (1983 to 2002)

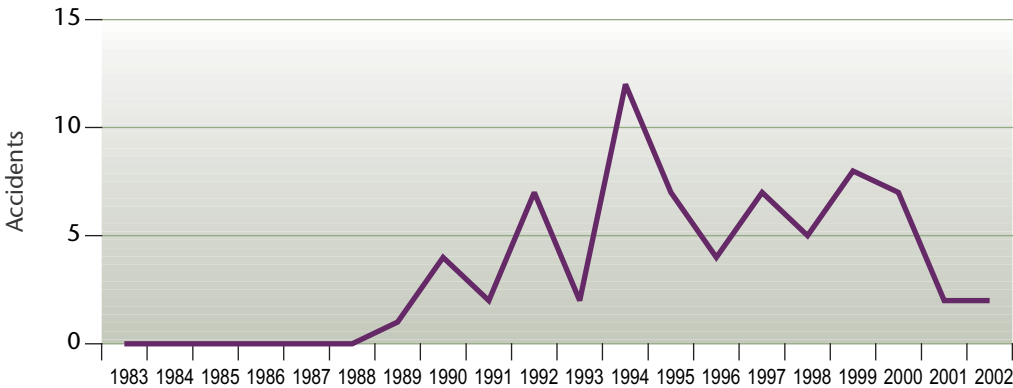
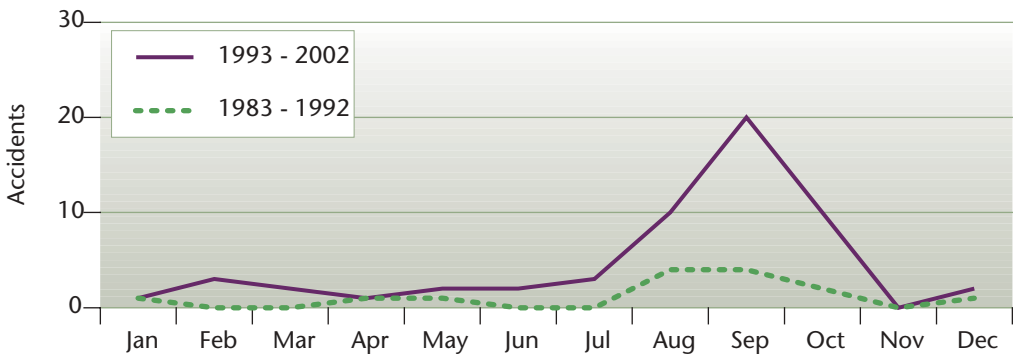


Figure 7.4.2.10 – District 9: Total Monthly Coyote Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002



7.4.3 District 10 – Bulkley-Stikine

1. Geographic Size

This District is approximately 201,700 km² in size

2. Geoclimatic Characteristics

The southern portion of this District is characterized by gently rolling plateaus. Although the climate is severe, but forest productivity is moderately good. Hybrid Engelmann-White Spruce and Subalpine Fir are the dominant trees. In the drier areas, extensive stands of

Lodgepole Pine occur due to numerous previous fires. Wetlands are abundant, scattered across the landscape in areas of poor drainage, providing excellent habitat for moose.

The central portion of this District is one of the most productive in the British Columbia Interior. It has the widest variety of coniferous tree species of any region of the Province. Winters are cool and wet, while summers are usually warm and dry. Although Western Hemlock and Western Red Cedar are characteristic of the area, Engelmann-White Spruce hybrids and Subalpine Fir are common. At drier locations, Douglas Fir and Lodgepole Pine can be found.

The landscape of northern portion of this District is characterized by open forests of White Spruce and Subalpine Fir. Higher elevations are dominated by Scrub Birch and Willow. In some wide, open valleys, a mosaic of scrub, grassland, and wetland occur on the valley bottoms fringed by a band of forest on the valley sides, followed by shrubs above the forest. The portion of the District provides extensive habitat for moose, caribou, and elk. At the highest elevations, of the Coast and Cassiar mountain ranges, the alpine is essentially treeless. The long, cold winters and short, cool growing season result in a landscape covered in draft shrubs, herbs, lichens and mosses. These areas provide important range for caribou, mountain goats and mountain sheep. (Adapted from: British Columbia Ministry of Forests, 1999, Biogeographical Zones of British Columbia.)

3. Highway Information

This District has the following numbered Provincial highways: 16, 35, 37, 37A and 118.

4. Total Wildlife Accidents by Highway

Wildlife accidents on each of the numbered highways in this District for the period 1983 to 2002 are provided in the following tables.

5. Wildlife Accidents by Species

Species specific accidents for this District are provided in the following tables and graphs.

6. Species Comparisons by Time Series

Comparisons by species of 10-year accident trends are provided in the following tables.

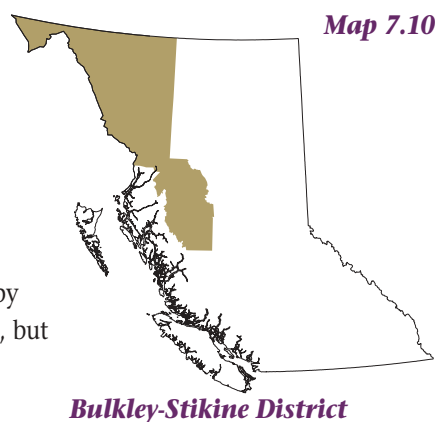


Table 7.4.3.1 – District 10: Total Wildlife Accidents by Highway (1983 to 2002)

HWY	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Totals
16	25	55	34	33	38	47	32	49	31	71	94	126	73	78	63	68	87	69	95	83	1,251
35	0	1	1	1	0	4	2	0	4	1	3	8	8	6	0	4	4	4	9	4	64
37	0	0	5	1	7	7	7	92	23	26	22	34	40	21	21	11	32	43	24	18	434
37A	0	0	0	0	0	0	0	0	10	3	4	0	21	8	1	0	3	6	8	4	68
118	0	0	2	1	0	3	1	0	0	0	0	0	4	1	1	2	1	1	2	2	21
Other	5	6	59	2	0	7	6	6	16	16	20	26	25	17	12	8	15	34	17	27	324
Totals	30	62	101	38	45	68	48	147	84	117	143	194	171	131	98	93	142	157	155	138	2,162

Table 7.4.3.2 – District 10: Wildlife Accidents by Species (1983 to 2002)

SPECIES	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Totals
Bear	2	3	2	1	2	2	6	0	9	8	5	11	11	13	10	6	21	24	26	19	181
Beaver	0	0	0	0	0	0	0	3	0	0	0	0	4	2	0	0	2	1	1	1	14
Bobcat	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2
Caribou	0	0	0	0	0	0	0	1	5	3	0	0	3	0	0	0	0	3	0	0	15
Coyote	0	0	0	0	0	0	0	1	0	4	7	2	6	4	3	4	1	5	3	1	41
Deer	7	9	9	14	8	21	9	22	27	33	64	51	44	37	34	40	37	55	39	45	605
Fox	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	2	3	4	5	1	18
Horse	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Marmot	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
Marten	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3
Moose	20	50	35	23	34	37	19	27	17	47	34	98	54	51	43	32	60	45	69	60	855
Porcupine	1	0	55	0	0	8	14	92	24	22	32	31	41	22	7	8	15	15	6	7	400
Wolf	0	0	0	0	1	0	0	1	1	0	0	0	2	1	1	1	1	0	1	2	12
Other/ Unknown	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4	5	2	13
TOTALS	30	62	101	38	45	68	48	147	84	117	143	194	171	131	98	93	142	157	155	138	2,162

Table 7.4.3.3 – District 10: Species Comparisons by Time Series (1983 To 2002)

SPECIES	83 to 02 Total Accidents	83 to 02 % of Total Accidents	83 to 02 Annual Average Accidents	83 to 92 Total Accidents	83 to 92 % of Total Accidents	83 to 92 Annual Average Accidents	93 to 02 Total Accidents	93 to 02 % of Total Accidents	93 to 02 Annual Average Accidents	98 to 02 Total Accidents	98 to 02 % of Total Accidents	98 to 02 Annual Average Accidents	2002 Total Accidents	2002 Annual % of Total Accidents
Bear	181	8.4	9.1	35	4.7	3.5	146	10.3	14.6	96	14	19.2	19	13.8
Beaver	14	0.6	0.7	3	0.4	0.3	11	0.8	1.1	5	0.7	1	1	0.7
Bobcat	2	0.1	0.1	1	0.1	0.1	1	0.1	0.1	0	0	0	0	0
Caribou	15	0.7	0.8	9	1.2	0.9	6	0.4	0.6	3	0.4	0.6	0	0
Coyote	41	1.9	2.1	5	0.7	0.5	36	2.5	3.6	14	2	2.8	1	0.7
Deer	605	28	30.3	159	21.5	15.9	446	31.4	44.6	216	31.5	43.2	45	32.6
Fox	18	0.8	0.9	0	0	0	18	1.3	1.8	15	2.2	3	1	0.7
Horned Owl	1	0	0.1	0	0	0	1	0.1	0.1	1	0.1	0.2	0	0
Marmot	2	0.1	0.1	0	0	0	2	0.1	0.2	0	0	0	0	0
Marten	3	0.1	0.2	0	0	0	3	0.2	0.3	0	0	0	0	0
Moose	855	39.5	42.8	309	41.8	30.9	546	38.4	54.6	266	38.8	53.2	60	43.5
Porcupine	400	18.5	20	216	29.2	21.6	184	12.9	18.4	51	7.4	10.2	7	5.1
Wolf	12	0.6	0.6	3	0.4	0.3	9	0.6	0.9	5	0.7	1	2	1.4
Other / Unknown	13	0.6	0.7	0	0	0	13	0.9	1.3	13	1.9	2.6	2	1.4
TOTALS	2,162	100	108.1	740	100	74	1,422	100	142.2	685	100	137	138	100





Figure 7.4.3.1 – District 10: Total Annual Bear Accidents, (1983 to 2002)

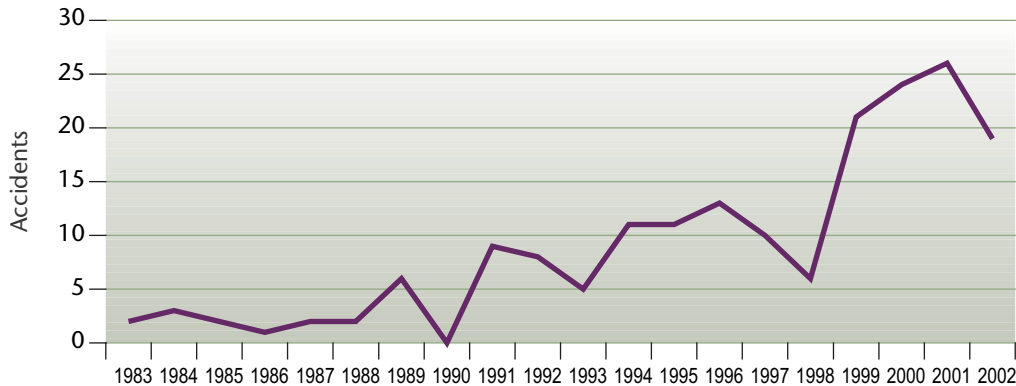


Figure 7.4.3.2 – District 10: Total Annual Deer Accidents, (1983 to 2002)

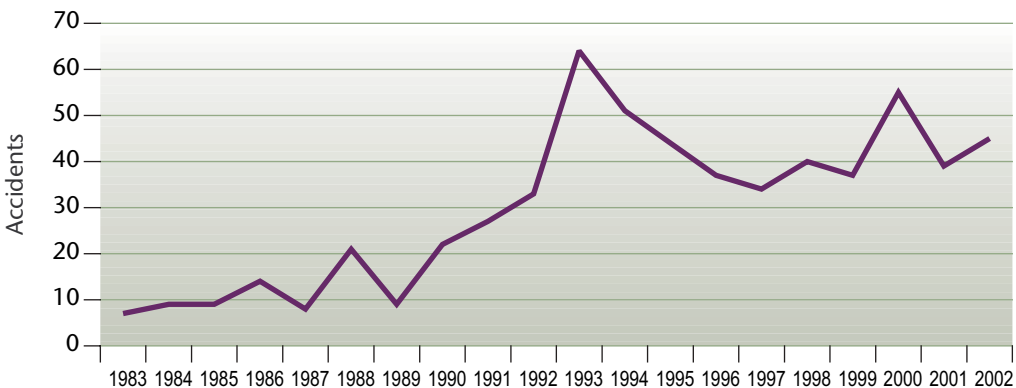


Figure 7.4.3.3 – District 10: Total Annual Elk Accidents, (1983 to 2002)

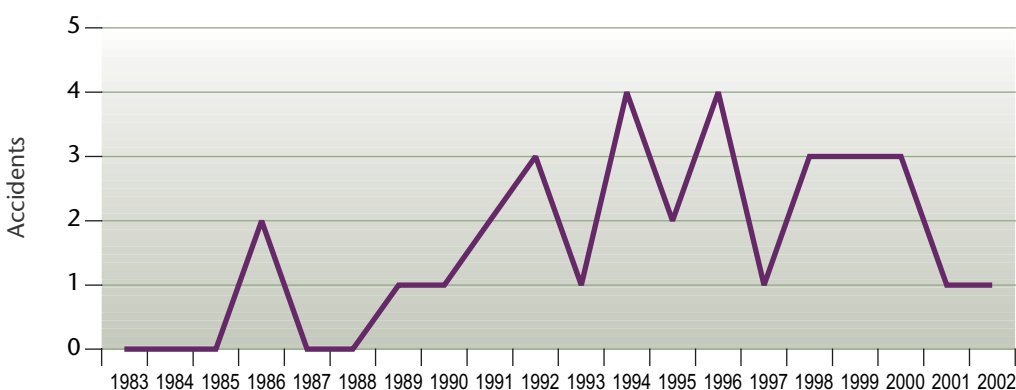


Figure 7.4.3.4 – District 10: Total Annual Moose Accidents, (1983 to 2002)

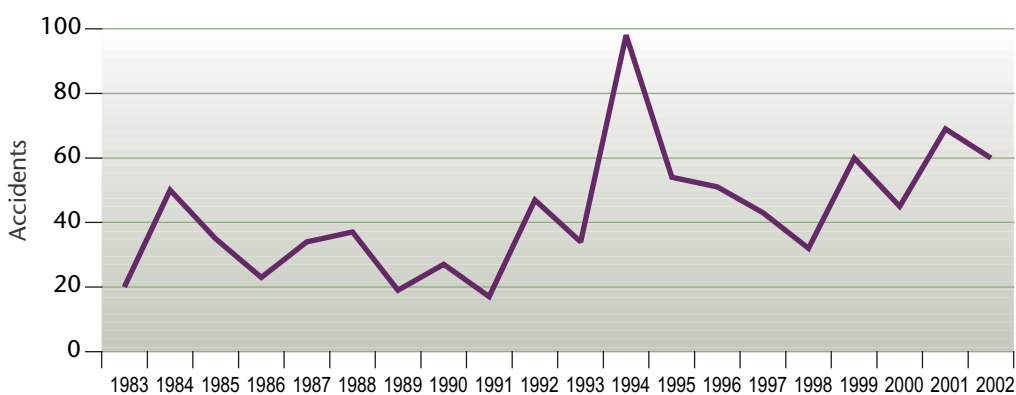


Figure 7.4.3.5 – District 10: Total Monthly Bear Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

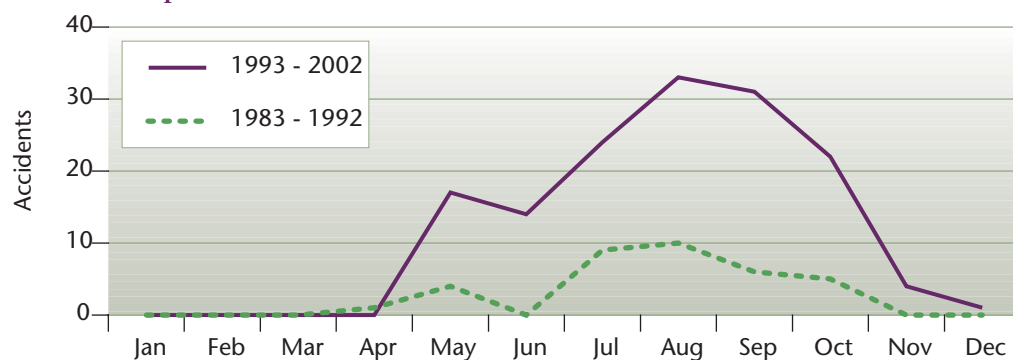


Figure 7.4.3.6 – District 10: Total Monthly Deer Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

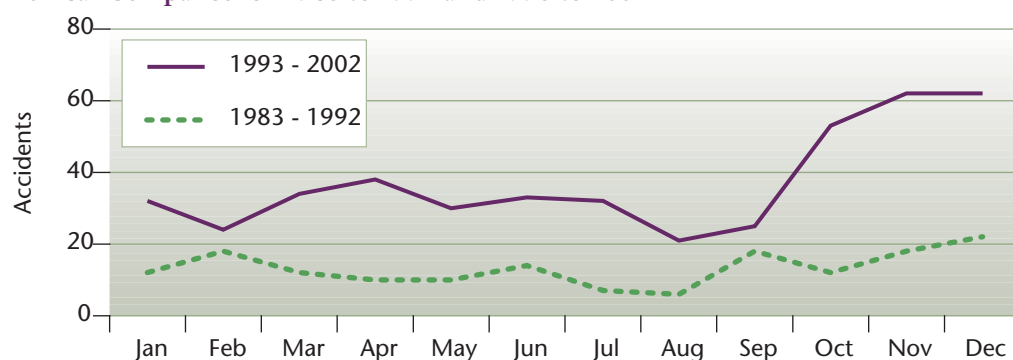


Figure 7.4.3.7 – District 10: Total Monthly Elk Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

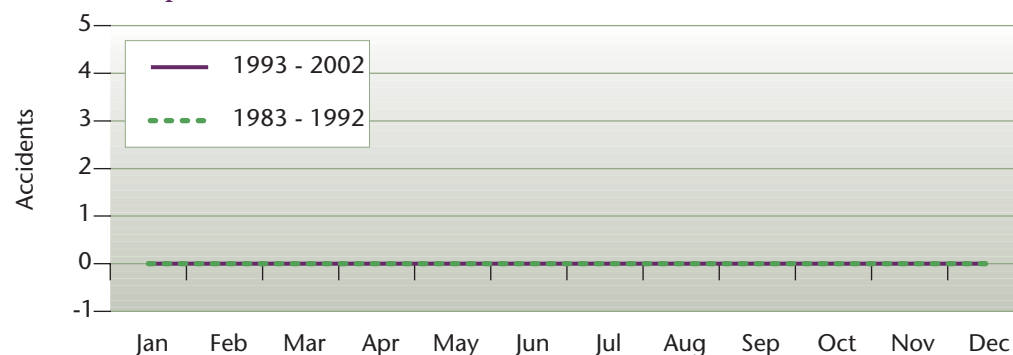


Figure 7.4.3.8 – District 10: Total Monthly Moose Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

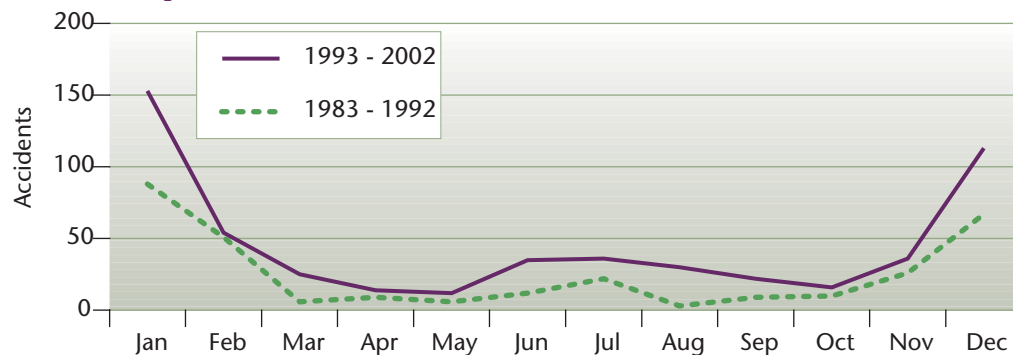




Figure 7.4.3.9 – District 10: Total Annual Coyote Accidents, (1983 to 2002)

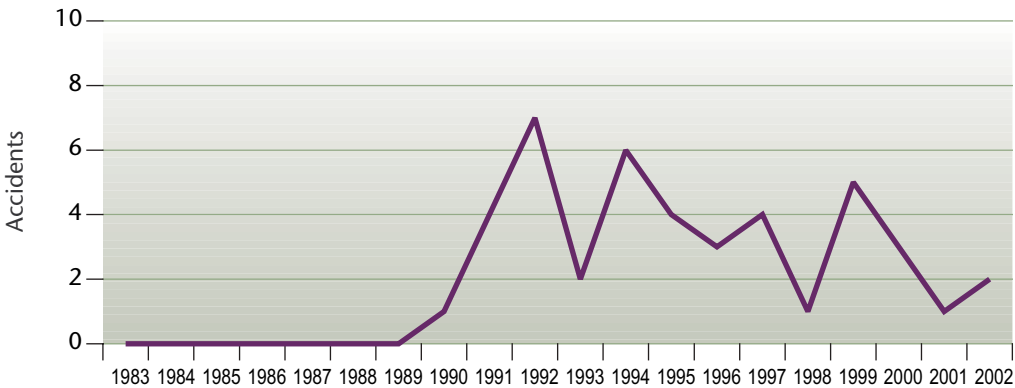


Figure 7.4.3.10 – District 10: Total Monthly Coyote Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

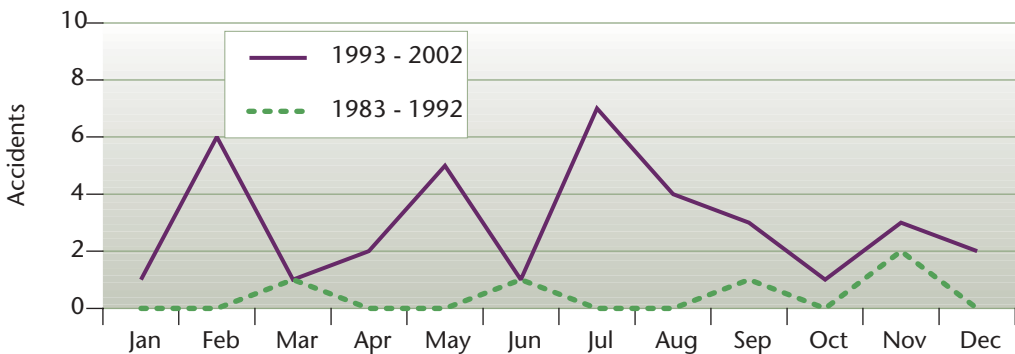


Figure 7.4.3.11 – District 10: Total Annual Porcupine Accidents, (1983 to 2002)

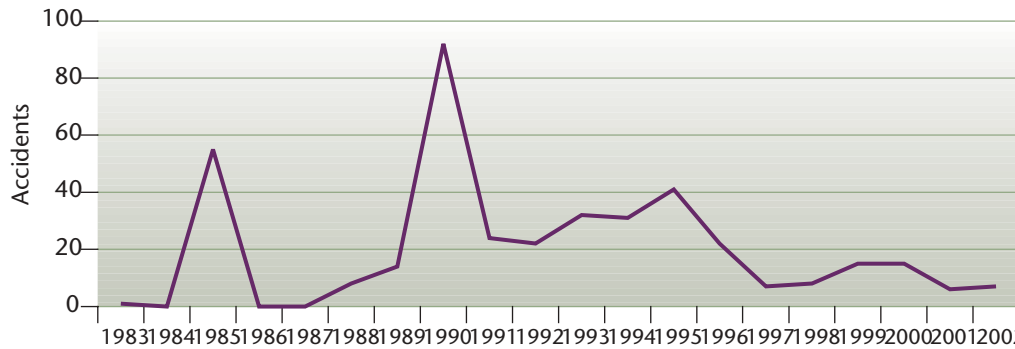
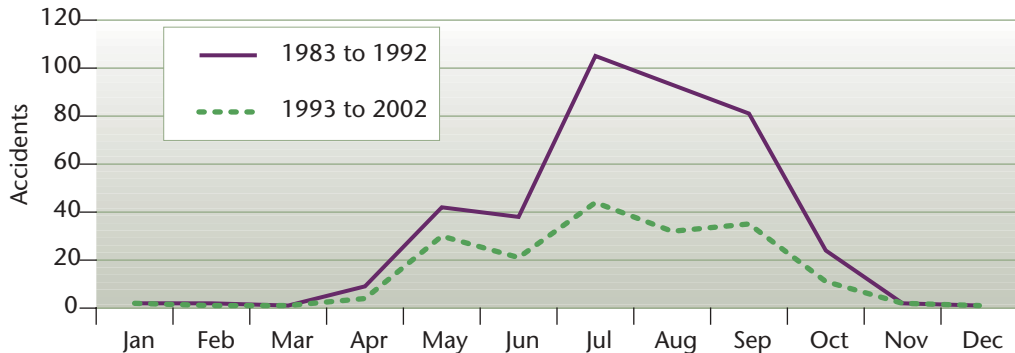


Figure 7.4.3.12 – District 10: Total Monthly Porcupine Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002



7.4.4 District II – Skeena

1. Geographic Size

This District is approximately 101,900 km² in size

2. Geoclimatic Characteristics

Northern latitude rainforests comprise much of this District. Western hemlock and amabilis fir are the dominant climax trees. Abundant precipitation, primarily rainfall, and mild temperatures make the forests in this District the most productive in British Columbia. In the drier parts, old-growth Douglas Fir can approach 100 metres in height, while on floodplains, Western Red Cedar and Sitka Spruce can grow up to four metres in diameter. Mature stands of timber provide valuable habitat for black-tailed deer. At higher elevations, where the growing season is short, forest productivity is reduced. Mountain Hemlock and Amabilis Fir are the dominant tree species. (Adapted from: British Columbia Ministry of Forests, 1999, Biogeographical Zones of British Columbia.)

3. Highway Information

This District has the following numbered Provincial highways: 16 and 37.

4. Total Wildlife Accidents by Highway

Wildlife accidents on each of the numbered highways in this District for the period 1983 to 2002 are provided in the following tables.

5. Wildlife Accidents by Species

Species specific accidents for this District are provided in the following tables and graphs.

6. Species Comparisons by Time Series

Comparisons by species of 10-year accident trends are provided in the following tables

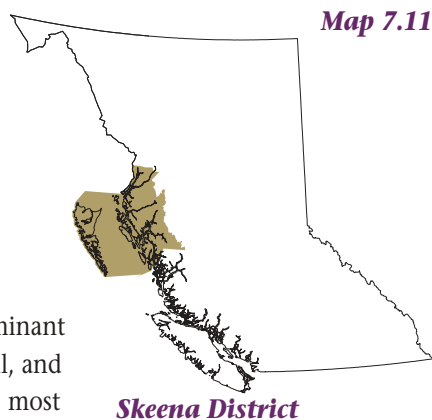


Table 7.4.4.1 – District 11: Total Wildlife Accidents by Highway (1983 to 2002)

HWY	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994**	1995	1996	1997	1998	1999	2000	2001	2002	Totals
16	0	1	132	45	103	96	78	27	43	10	24	0	14	10	90	81	44	36	25	37	896
37	3	0	8	16	6	0	6	5	26	5	9	0	4	14	22	2	15	4	13	4	162
Other	0	0	21	13	11	14	10	8	37	21	5	0	1	7	7	6	19	24	64	44	312
Totals	3	1	161	74	120	110	94	40	106	36	38	0	19	31	119	89	78	64	102	85	1,370

**Records missing – all 1994 monthly WARS reports

Table 7.4.4.2 – District 11: Wildlife Accidents by Species (1983 to 2002)

SPECIES	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Totals
Bear	0	1	4	3	6	1	2	4	4	1	0	0	0	1	5	2	1	3	7	3	48
Beaver	0	0	18	1	6	2	2	1	2	0	0	0	0	0	12	3	1	4	0	1	53
Coyote	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
Deer	0	0	31	15	52	87	38	3	27	2	19	0	1	3	27	37	20	21	19	36	438
Eagle	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	2
Elk	0	0	0	0	0	0	0	0	0	4	0	0	0	0	2	0	0	0	0	0	6
Fisher	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Fox	0	0	0	3	3	1	3	0	3	0	0	0	1	0	1	0	1	0	3	1	20
Marten	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Moose	1	0	3	5	8	0	2	9	14	0	10	0	6	27	17	12	20	1	11	8	154
Muskrat	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Otter	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	3
Porcupine	0	0	103	47	45	18	43	20	54	29	5	0	9	0	53	35	29	30	37	29	586
Rabbit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2
Raccoon	0	0	2	0	0	1	2	0	0	0	2	0	0	0	0	0	0	1	20	1	29
Skunk	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Wolf	0	0	0	0	0	0	1	0	1	0	0	0	1	0	1	0	1	0	0	1	6
Other/ Unknown	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	5	5	17
TOTALS	3	1	161	74	120	110	94	40	106	36	38	0	19	31	119	89	78	64	102	85	1,370

Table 7.4.4.3 – District 11: Species Comparisons by Time Series (1983 To 2002)

SPECIES	83 to 02 Total Accidents	83 to 02 % of Total Accidents	83 to 02 Annual Average Accidents	83 to 92 Total Accidents	83 to 92 % of Total Accidents	83 to 92 Annual Average Accidents	93 to 02 Total Accidents	93 to 02 % of Total Accidents	93 to 02 Annual Average Accidents	98 to 02 Total Accidents	98 to 02 % of Total Accidents	98 to 02 Annual Average Accidents	2002 Total Accidents	2002 Annual % of Total Accidents
Bear	48	3.5	2.4	26	3.5	2.6	22	3.5	2.2	16	3.8	3.2	3	3.5
Beaver	53	3.9	2.7	32	4.3	3.2	21	3.4	2.1	9	2.2	1.8	1	1.2
Coyote	2	0.1	0.1	0	0	0	2	0.3	0.2	2	0.5	0.4	0	0
Deer	438	32	21.9	255	34.2	25.5	183	29.3	18.3	133	31.8	26.6	36	42.4
Eagle	2	0.1	0.1	1	0.1	0.1	1	0.2	0.1	0	0	0	0	0
Elk	6	0.4	0.3	4	0.5	0.4	2	0.3	0.2	0	0	0	0	0
Fisher	1	0.1	0.1	1	0.1	0.1	0	0	0	0	0	0	0	0
Fox	20	1.5	1	13	1.7	1.3	7	1.1	0.7	5	1.2	1	1	1.2
Marten	1	0.1	0.1	1	0.1	0.1	0	0	0	0	0	0	0	0
Moose	154	11.2	7.7	42	5.6	4.2	112	17.9	11.2	52	12.4	10.4	8	9.4
Muskrat	1	0.1	0.1	0	0	0	1	0.2	0.1	0	0	0	0	0
Otter	3	0.2	0.2	2	0.3	0.2	1	0.2	0.1	1	0.2	0.2	0	0
Porcupine	586	42.8	29.3	359	48.2	35.9	227	36.3	22.7	160	38.3	32	29	34.1
Rabbit	2	0.1	0.1	0	0	0	2	0.3	0.2	1	0.2	0.2	0	0
Raccoon	29	2.1	1.5	5	0.7	0.5	24	3.8	2.4	22	5.3	4.4	1	1.2
Skunk	1	0.1	0.1	0	0	0	1	0.2	0.1	0	0	0	0	0
Wolf	6	0.4	0.3	2	0.3	0.2	4	0.6	0.4	2	0.5	0.4	1	1.2
Other / Unknown	17	1.2	0.9	2	0.3	0.2	15	2.4	1.5	15	3.6	3	5	5.9
TOTALS	1,370	100	68.5	745	100	74.5	625	100	62.5	418	100	83.6	85	100



Figure 7.4.4.1 – District 11: Total Annual Bear Accidents, (1983 to 2002)

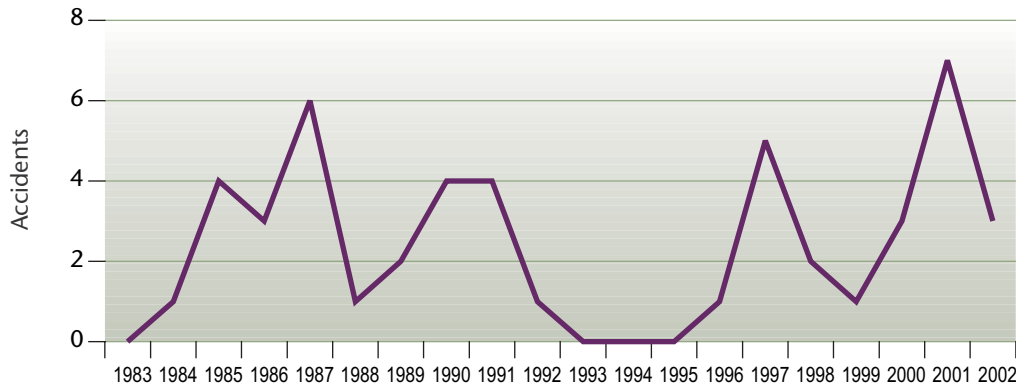


Figure 7.4.4.2 – District 11: Total Annual Deer Accidents, (1983 to 2002)

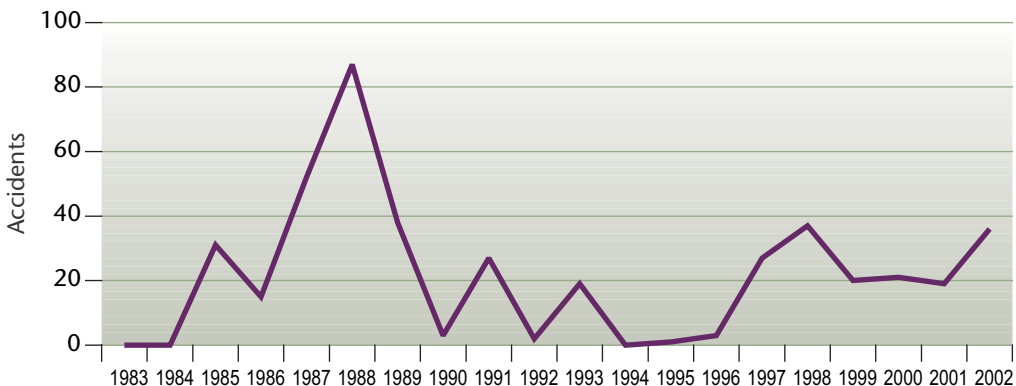


Figure 7.4.4.3 – District 11: Total Annual Elk Accidents, (1983 to 2002)

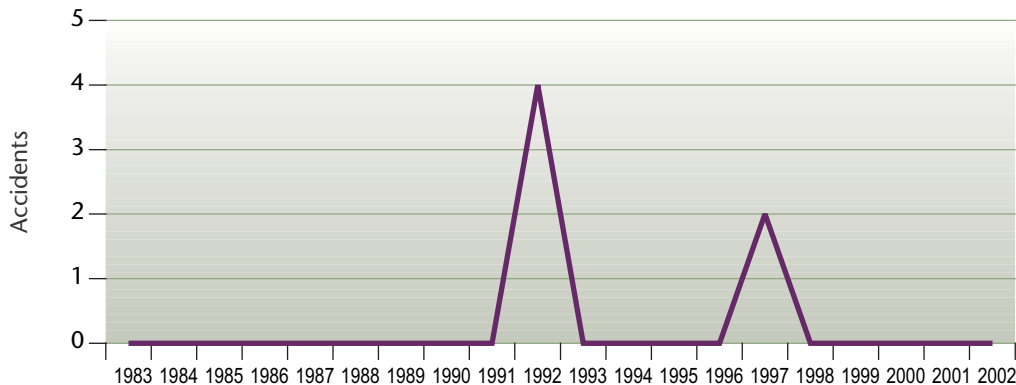


Figure 7.4.4.4 – District 11: Total Annual Moose Accidents, (1983 to 2002)

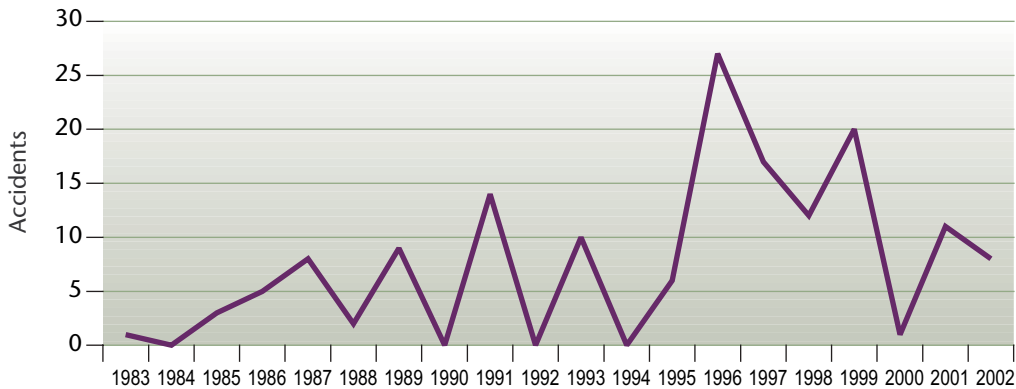


Figure 7.4.4.5 – District 11: Total Monthly Bear Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

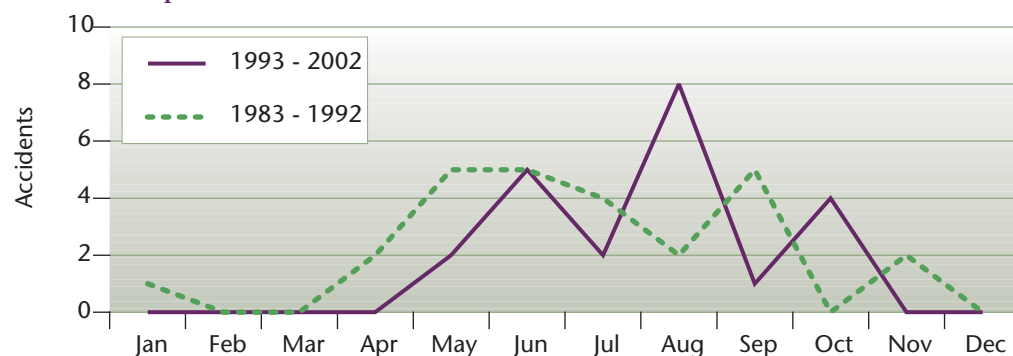


Figure 7.4.4.6 – District 11: Total Monthly Deer Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

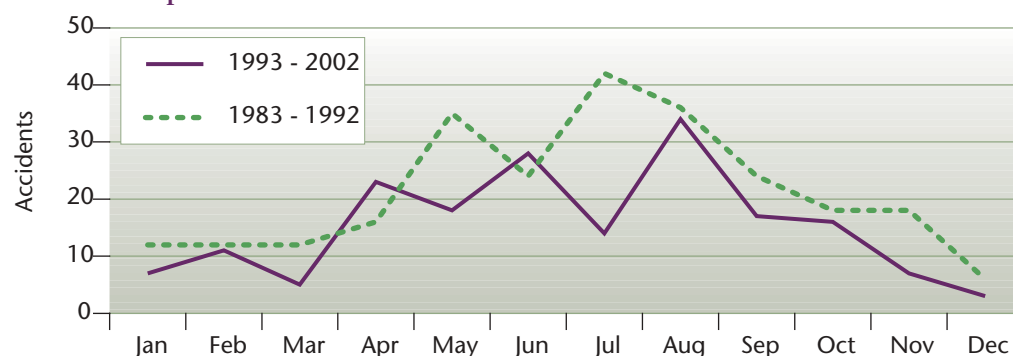


Figure 7.4.4.7 – District 11: Total Monthly Elk Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

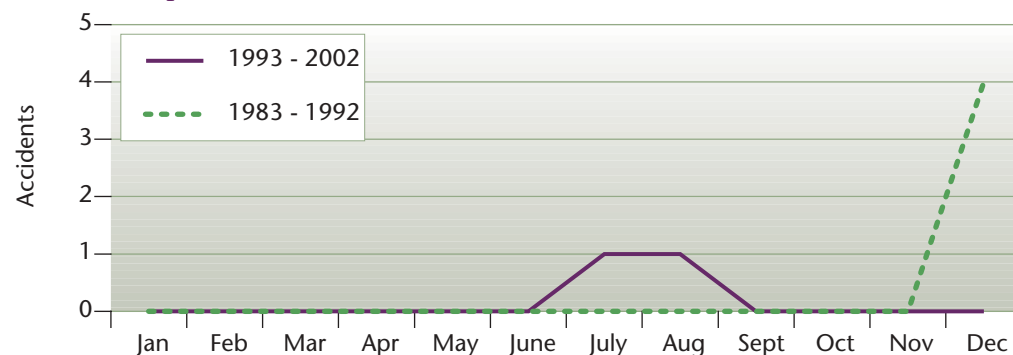


Figure 7.4.4.8 – District 11: Total Monthly Moose Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002

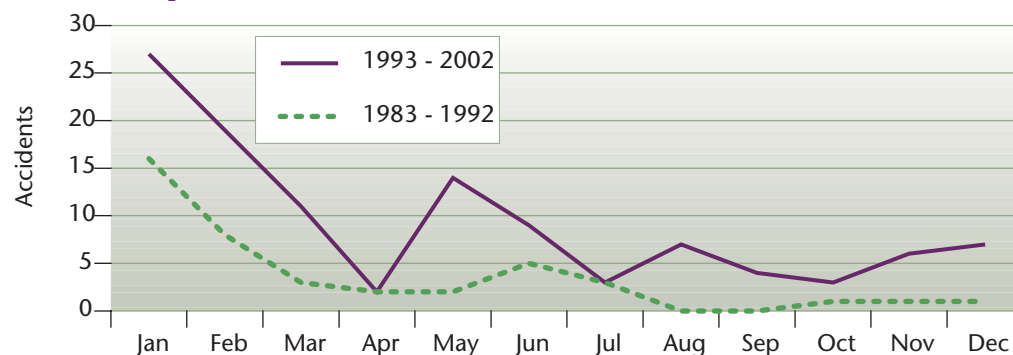




Figure 7.4.4.9 – District 11: Total Annual Porcupine Accidents, (1983 to 2002)

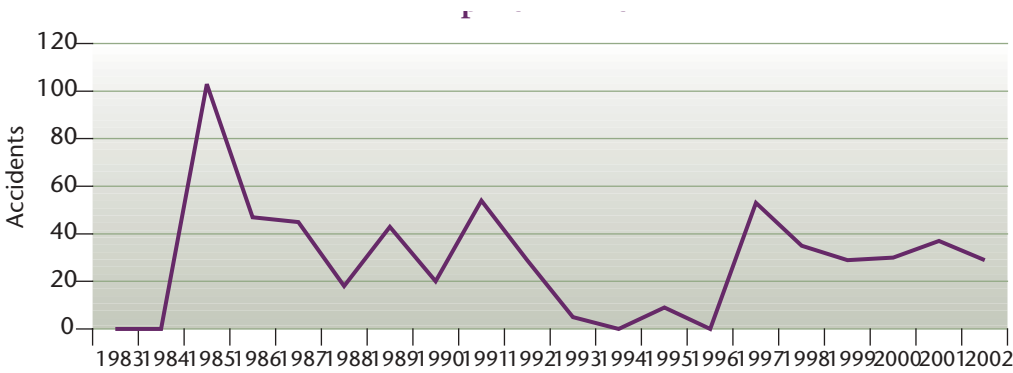
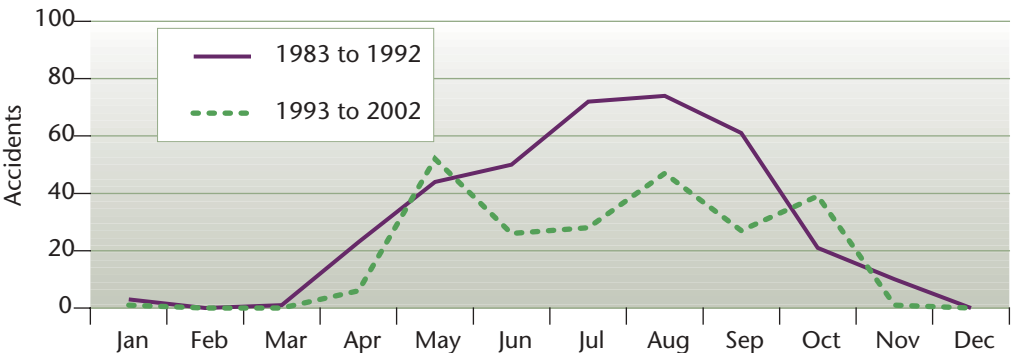


Figure 7.4.4.10 – District 11: Total Monthly Porcupine Accidents, (1983 to 2002)

10 Year Comparisons - 1983 to 1992 and 1993 to 2002







8.0 SUMMARY


The ongoing systematic daily collection of multi-species wildlife accident data by the Ministry's Maintenance Contractors continues to provide the Ministry with information critical for understanding the highway/wildlife habitat interface. In addition to helping identify motor vehicle-related accident trends among larger ungulates and carnivores, the WARS system has provided unexpected insights into the evolution of the Province's road ecology. It has been used to identify the introduction of alien species in the natural habitat (possums on Hornby Island; bison in the Peace Country) the colonization or recolonization of an area (coyotes in the Lower Mainland), and the impact of new highway development on higher carnivores (cougars on Vancouver Island).

The ability to continuously monitor wildlife accidents has become a vital component in understanding many of the spatial and temporal aspects of wildlife-related motor vehicle accidents in the Province. As the WARS database grows each year, it becomes an increasingly valuable tool for directing and focusing the Ministry wildlife accident mitigation efforts. As improvements in the WARS system occur over time, the Ministry's ability to proactively address the issues of wildlife-related motor vehicle accidents will increase. The success of the WARS system in British Columbia has made it a model for other agencies seeking to monitor wildlife-related motor vehicle accidents (Staines, B. *et al*, 2001; Ramp and Croft; 2002, L-P Tardiff and Associates, 2003.)

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APPENDIX 1



The Wildlife Rehabilitators Network of British Columbia Member Rehabilitation Facilities

Region	Name, contact and specialty	Address and website	Phone and email
1 – Vancouver Island and Gulf Islands	Gabriola Rescue of Wildlife Society (GROWLS) – Darlene Mace-Harvey Rescue and transport all species	1430 Harrison Way Gabriola Island, BC V0R 1X2	(250) 247.7415 maceharvey@shaw.ca
	Island Wildlife Natural Care Centre – Jeff Lederman Marine mammals, homeopathy; treat all species	322 Langs Road Salt Spring Island, BC V8K 1N3 www.sealrescue.org	(250) 537.0777 iwncc@aol.com
	Mountaineer Avian Rescue Society (MARS) – Maj Birch Birds; rescue all species	6817 Headquarters Road Courtenay, BC V9J 1N2 www.wingtips.org	(250) 337.2021 mars@minfo.com
	North Island Wildlife Recovery Assn. – Robin and Sylvia Campbell Eagles, bears; treat all species	1240 Lefler Road P.O. Box 364 Errington, BC V0R 1V0 www.northislandwildliferecoverycenter.org	(250) 248.8534 niwra@nanaimo.ark.com
	Rory's Refuge – Aurora Paterson Birds	P.O. Box 45 Tofino BC, V0R 2Z0	(250) 725.3783 saw-whet@island.net
	Second Chance Wildlife Centre – Lorinne Anderson Raccoons, small mammals, nuisance wildlife advice; rescue all species	1788 Fielding Road Nanaimo, BC V9X 1T5 www.geocities.com/connladylori	(250) 618.8888 coonladylori@hotmail.com
	Thora Fleming Hummingbirds	866 Ash Street Campbell River, BC V9W 1G2	(250) 923.1524 t42@connected.bc.ca
	Wild Animal Rehabilitation Centre (SPCA WildARC) – Sara Dubois Small birds and mammals; rescue all species	1020 Malloch Road Victoria, BC V9C 4G9 SPCA – 3150 Napier Lane Victoria, BC V8T 4V5 www.wildarc.com	(250) 478.9453 SPCA – (250) 388.7722 wildarc@shaw.ca
2 – Lower Mainland and Sunshine Coast	Creature Comfort Wildlife Care – Cindy Rudolph Raccoons, small mammals, birds	5171 Brooks Road Halfmoon Bay, BC V0N 1Y2	(604) 885.4697 crudolph@uniserve.com
	Critter Care Wildlife Society – Gail Martin Mammals, education	481 – 216th Street Langley, BC V2Z 1R5 www.crittercarewildlife.org	(604) 530.2064 crittercare1@shaw.ca
	Elizabeth's Wildlife Centre – Elizabeth Melnick Small mammals and birds	32508 Verdon Way Abbotsford, BC V2T 7Y3 elizabeth_melnick@bc.sympatico.ca	(604) 855.3914 (pager) (604) 852.9173
	Gibsons Wildlife Rehabilitation Centre – Clint and Irene Davy Birds and small mammals	RR4 1211 Carmen Road Gibsons, BC V0N 1V4 www.gibsonswildlife.org	(604) 886.4989 gwrc@sunshine.net
	Monika's Wildlife Shelter – Monika Tolksdorf All species, research, education	8137 – 192nd Street Surrey, BC V4N 3G5 www.monikas.com	(604) 882.0908 wildlife@monikas.com

Region	Name, contact and specialty	Address and website	Phone and email
Lower Mainland and Sunshine Coast cont'd.	Orphaned Wildlife Rehabilitation Society (OWL) – Bev Day Raptors, education	3800 – 72nd Street Delta, BC V4K 3N2 www.owlcanada.ca	(604) 946.3171 owlrehab@dcnet.com
	Vancouver Aquarium Marine Mammal Rescue and Rehabilitation – Jeremy Fitz-Gibbons Marine mammals	845 Avison Way Stanley Park P.O. Box 3232 Vancouver, BC V6B 3X8	(604) 659.3545 (604) 659.3540
	Wildlife Rescue Association of BC (WRA) Birds, bats, oil spill; rescue all species	5216 Glencairn Drive Burnaby, BC V5B 3C1 www.wildliferescue.ca	604) 526.7275 wildlife@vcn.bc.ca
3 – Thompson	Kamloops Wildlife Park Wildlife Rehabilitation Centre – Paul Williams, John Benedik All species	9077 Dallas Drive P.O. Box 698 Kamloops, BC V2C 5L7 www.kamloopswildlife.org	(250) 573.3242 ext. 230 johnbenedik@kamloopswildlife.org
	Kee-Two Wildlife Rehabilitation Centre – Karen Beggs Raptors, migratory birds, small mammals	2061 – 70th Street SE Salmon Arm, BC V1E 1X4	(250) 832.8200
4 – Kootenay	BEAKS – Carol Pettigrew CWS Migratory permit only	318 – 103rd Street Castlegar, BC V1N 3G2	(250) 365.3701 cpet@netidea.com
5 – Cariboo	Raptor Rehabilitation Centre – Elizabeth Schupbach Raptors, waterfowl, migratory birds; rescue all species	Site 13C – 9 RR4 Williams Lake, BC V2G 2P1	(250) 989.8900
	Sedge and Dona-Gail Barnes Stabilization and transport	3985 McLean Road Quesnel, BC V2J 6V5	(250) 992.7787
6 – Skeena	Janet Gifford-Brown Birds, small mammals	P.O. Box 57, Tlell Queen Charlotte Islands, BC V0T 1Y0	(250) 557.4253 jgbrown@qcislands.net
	Prince Rupert Wildlife Rehabilitation Shelter – Nancy and Gunther Golinia Raptors, all species	P.O. Box 26 Prince Rupert, BC V8J 3P4 www.citytel.net/wildlife	(250) 624.4143 fax (250) 624.4159 wildlife@citytel.net
	Peter Grundmann & Nancy Robbins Raptors, all spp.	PO Box 438 Sandspit, Queen Charlotte Islands, BC V0T 1Y0	(250) 637.5499
7A – Omineca	Northern Wildlife Rescue Society – Rachel Morey Raptors and small mammals	2269 Canan Way Prince George, BC V2K 4A7 www.northernwildliferescue.com	(250) 962.0015 info@northernwildliferescue.com
7B – Peace	Northern Lights Wildlife Society – Angelika Langen Bears, large ungulates, raptors	17366 Telkwa High Road Smithers, BC V0J 2N7	(250) 847.5101
8 – Okanagan	South Okanagan Rehabilitation Centre for Owls – Sherri Klein Raptors	P.O. Box 1166 RR2 Eagle Bluff Road Oliver, BC V0H 1T0 www.sorco.org	(250) 498.4251 sherriklein@telus.net
Out of BC	Progressive Animal Welfare Society (PAWS) – Kip Parker Large mammals, treat all spp.	15305 – 44th Avenue W Lynnwood, WA USA 98037 www.paws.org	(425) 787.2500 kparker@paws.org