



**REPORT TO THE
PLANNING, TRANSPORTATION AND PROTECTIVE SERVICES COMMITTEE
MEETING OF OCTOBER 26, 2011**

SUBJECT REGIONAL DEER MANAGEMENT

ISSUE

Update on research and data analysis of the region's deer situation.

BACKGROUND

Reports were presented to the Planning, Transportation and Protective Services committee (PT&PSC) on January 26, 2011 and June 22, 2011. In January, staff presented a report outlining concerns regarding the increase in deer population and consequent rise in the number of public complaints regarding deer damage to gardens, landscaping and urban forests, and an apparent increase in deer vehicle collisions. Moreover, increases in deer population escalate concerns over public health and deer-borne diseases and human/deer conflicts.

In January, the committee discussion indicated that the issue was under the jurisdiction of the province. The following resolution was passed and subsequently adopted by the Board:

“That the CRD Planning, Transportation and Protective Services committee concerns regarding the effect of urban deer population be expressed to the province with the recommendation to have them develop a deer management plan including a public consultation framework and funding.”

Accordingly, a letter was submitted to the Ministry of Environment (MoE) on March 9, 2011 outlining the regional concern that the province takes the lead on funding and developing a comprehensive deer management plan. The ministry responded on April 20, 2011 with regret that the Capital Regional District (CRD) was unwilling to establish an Urban Deer Management Advisory Committee and, acknowledging the deer-human conflicts in urban areas. The letter further indicated an interest in provincial staff contributing to such a committee and having an active role in strategy development. Provincial staff firmly indicated that the province would not take a lead role in the process.

As a result of the response from the ministry a June 22, 2011 report (PPS/RP 2011-01) outlined a need for a multi-faceted, intergovernmental approach to manage the region's deer population. Furthermore, the report highlighted the need for further research and consultation in order to determine the extent of the problem, trends and range of appropriate control measures. The report also, identified the need for an inter-municipal, cross departmental committee should the CRD wish to actively address deer conflicts. The financial implications section outlined escalating costs and complaints under the current status quo scenario with costs being borne by public, private and government sources.

The PT&PSC passed the following motion:

“That the report be referred back to staff to arrange for the speakers (i.e., wildlife conservation officer and ICBC representative) to come to committee, and then committee will consider a resolution to the Union of BC Municipalities (UBCM).”

Background research has been conducted on the deer population in conjunction with ICBC and various ministries to establish a quantitative and qualitative snapshot of the current situation. The deer issue was discussed in detail at the UBCM convention, however did not come to a resolution. The CRD has conducted preliminary public consultation and received feedback from nearly 400 households. Cranbrook has recently gained provincial approval to begin implementing its deer management plan, and that plan has been examined by staff. Furthermore, the CRD and a number of partners are developing a regional goose management strategy, whose process is being viewed as a potential model for deer. A resolution was passed at UBCM regarding the control of Canada geese (see Appendix G).

ALTERNATIVES

1. Direct staff to prepare the terms of reference for a Deer Management Plan and seek out partnership interests to prepare and fund the plan.
2. Receive Report No. PPS/RP 2011-21 for information and take no further action at this time.

RESEARCH RESULTS

Population, Status and Trends

Deer migrations into human populated areas occur when the carrying capacity of wilderness habitats is reached. Fertility surges can be attributed to lack of predation, plentiful food sources, strict hunting bylaws and more mild winter seasons. Of the 115,000 Columbian Black Tailed deer in the province, 86,000 (75%) live on Vancouver Island. Conservation officers conducted deer population surveys on Vancouver Island in rural and forested environments away from urban areas, with survey results indicating a population range between 45,000 – 65,000 prior to the 2011 hunting season. The estimated population trend is stable to increasing (for full details see Appendix A).

Deer Collision Data

ICBC data shows motor vehicle collisions with deer reported to ICBC within CRD municipalities have increased by an average of 13% annually since 2000, growing from 35 collisions in 2000 to over 100 collisions in 2010. Collisions are not evenly distributed across municipalities. Between 2000 and 2010, Saanich (Pat Bay Hwy), Langford, Central Saanich and Sooke had notably more collisions compared to the rest of the local governments in the CRD. Deer collisions increase in the summer months when individuals migrate out of wilderness environments in search of additional food sources in anticipation of scarce resources in winter (for full details see Appendix B).

Between 1997 and 2007 animal-related insurance claims in BC have increased from \$15.8 million to \$30.8 million. Costs for animal related motor vehicle insurance claims are available at the provincial level; specific data by region and by animal has not been produced at the time of this report. According to the Ministry of Transportation and Infrastructure (MoTI), total annual road-related deer fatalities from motor vehicles on provincial highways have increased by an average of 3.3% annually in the CRD between 2001 and 2010, growing from 214 deer fatalities in 2001 to 324 in 2009 before falling to 236 in 2010. Due to the discrepancy between the ICBC claim data and the MoTI road-related fatality data, an inference can be made that not all deer collision damages are pursued through insurance claims.

The costs to clean up wildlife road kill are borne by the ministry. Human fatalities from deer collisions are rare and none have been recorded in the region.

Community Feedback

In response to an increased number of public inquiries on the issue of deer control, media reporting resulting from individual delegations to municipal councils and media reporting on the committees request for a staff report, CRD staff provided a dedicated e-mail address to receive public input on deer-related concerns. There was no direct advertising inviting public input on the issues between August 22, 2011 and October 14, 389 submissions were received and categorized into six different streams: Property Damage, Health Risk, Road Safety, Deer Aggression, Deer Appreciation, and Deer Management Recommendations. The majority of responses came from Saanich, Victoria, Oak Bay and Langford. The majority of suggestions for management methodologies favour a cull, birth control measures or relocation (for full details see Appendix C).

Category	Responses	Share of Total
Property Damage	198	50.9%
Health Risk	47	12.1%
Road Safety	57	14.7%
Deer Aggression	42	10.8%
Deer Appreciation	28	7.2%
Deer Management Suggestions	17	4.4%

Agricultural Impacts

The Capital Regional Food and Agriculture Initiatives Round Table (CR FAIR) Food Policy working group submitted a formal letter to the CRD Board detailing understory loss, disease transmission (ticks and Lyme disease), automobile accidents, and urban agriculture losses attributed to the deer population. A brief survey of the farming community indicates crop loss estimates of between \$500 - \$25,000 per farm, additional fencing costs and crops no longer being planted (lettuces in particular) due to deer invasion. Moreover, farmers are considering a petition for action on deer management. In closing the letter recommends that the CRD pursue a deer management plan mirroring the process of the current CRD Goose Management Strategy (for full details see Appendix D).

Health

Deer are susceptible to many health issues, as are humans, however, health concerns with human-deer interactions have largely been limited to Lyme disease resulting from ticks. Lyme disease cases on South Vancouver Island (approximating CRD Geography) among human population are the second highest in the province with a total of three per 100,000, for a rate of 0.8 (for full details see Appendix E).

APPROACHES TO DEER MANAGEMENT:

A number of other similar initiatives offer potential templates to move forward. The CRD in partnership with a wide number of stakeholders undertook a Goose Management Strategy after survey's from farmers in 2009 concluded estimated annual damage to all farms to be \$300,000 annually in the region. This builds on public safety issues of human exposure to fecal matter in public outdoor areas and goose-aircraft interactions at Victoria International Airport. The phased approach relies on a working group and steering committee to oversee the process. The initial phase will focus on problem analysis and data collection, and phase two will focus on the development of the management control plan itself. The project costs are broken down into two phases.

The first phase which will cover start up consulting costs, initial contacts, background data research, field inventories (including crop loss data collection) and analysis and draft project outline amount to \$128,706 (\$69,426 in cash, \$59,280 in-kind). The second phase of the project includes the regional Canada Goose Population Management Plan (CGPMP) preparation in print and for website posting, educational field tours and meetings for the amount of \$97,094 (\$52,374 in cash and \$44,720 in-kind). Total project costs were \$225,800. Cash and in-kind funding sources included Saanich Peninsula and Metchosin farmers, District of Central Saanich, Victoria Airport Authority, District of Saanich, Peninsula Agriculture Commission, District of Metchosin, Town of Sidney, Saanich Fruit Growers Association, District of North Saanich, Greater Victoria Golf Course Association, Capital Regional Parks, Peninsula Streams Society, BC Ministry of Agriculture and Lands, BC Ministry of Environment, Environment Canada – Canada Wildlife Service. CRD Parks contributed \$5,000 in cash and \$7,000 in kind for a total of \$12,000. The project was also successfully selected for the \$70,000 Agriculture Environment & Wildlife Fund (for full details see Appendix F).

The City of Cranbrook recently received provincial approval on a plan that began in 2010 through the establishment of an Urban Deer Management Advisory Committee. The Terms of Reference for the Committee were to:

- assess the results of the public survey on urban deer population
- coordinate a count of the urban deer population within the boundaries of the city
- identify acceptable options for the management of the urban deer population
- identify strategies for the management of human/deer conflicts;
- present final report to council with recommendations on management of the urban deer population

The report establishes a threshold of number of deer per kilometre which was set in Helene, Montana at 9.6 deer/ km². Although the City of Cranbrook did not meet this density based on its survey, the anecdotal information of an increasing population combined with public frustration of property damage and aggression towards pets and the growing number of incidents of negative deer behaviour proved enough to warrant the initiation of a deer management plan process.

The Cranbrook Deer Management Plan development including internal committee work, administration, and advertising was planned and funded using internal resources and staff time. A small advertising campaign was completed for the survey with a budget of \$300. The costs and responsibility of the ongoing implementation of the plan are anticipated to be the responsibility of the City of Cranbrook. The city contributed approximately \$13,000 to carry out the cull this year; \$15,000 of provincial funding was provided for hardware to carry out the cull including nets, traps, one bolt gun and other equipment. The equipment was purchased with the intent of being made available to other communities as required. MoE further contributed a staff biologist to advise the City of Cranbrook's committee and council on appropriate measures and approaches to deer management.

The MoE released the *British Columbia Urban Ungulate Conflict Analysis Summary Report for Municipalities* in March of 2010, which presents different options to manage deer, moose, elk, and bighorn sheep. The report lends strong support to community based, co-managed processes that are considered more efficient and equitable compared to traditional authoritative wildlife management approaches. Although notably more time consuming, according to the report, these processes result in greater stakeholder participation and satisfaction. The

management of expectations is also addressed by focusing population management strategies on the reduction of conflict and population, not the elimination of a herd or problem. Both short and long term strategies are required to address current symptoms and long term population levels, this requires inter-governmental cooperation to achieve results.

Appropriate management options can be categorized into four areas: conflict reduction, population reduction, fertility control, and administrative options. Conflict reduction options focus on keeping animals away from susceptible properties, minimising damage and conflicts using methods such as landscaping, repellents, and fencing. Population reduction programs are ongoing with an initial reduction phase followed by a maintenance phase after densities are reduced. Community specific management decisions are required to inform control details. Capture and relocation has not often been implemented in Canada due to animal mortality in transit, while sharpshooting, capture and euthanization and controlled public hunting have all been successfully used in the United States. When complaints caused by over abundant populations are increasing in number and severity, then conflict reduction practices will not be sufficient to reduce complaints. Population reduction is necessary to reduce the damage caused by over abundance. Once the population is lowered, conflict reduction techniques maybe introduced. Fertility control options are very limited due to the lack of approved fertility control drugs for ungulates in Canada. Immunocontraceptive vaccines are most promising but are only approved for experimental research purposes. Long-term study results are not yet available. Most researchers suggest populations be lowered using lethal control, then once lowered, introduce fertility controls. Finally, administrative options such amending municipal bylaws, provincial regulations to permit lethal control options need to be implemented. Public education and formal monitoring will be required before, during and after population management interventions.

FINANCIAL IMPLICATIONS

A deer management plan is the first step in addressing ongoing deer population concerns in the CRD. There will be costs associated with developing the plan itself and ongoing costs associated with its implementation. Staff has been advised that deer management is a long-term, ongoing undertaking. The cost of developing the plan may be in the order of \$225,000, if the Goose Management Strategy is used as a model. Ongoing implementation costs are unknown at this time, but would be estimated during the development of the plan so that informed decisions can be made regarding an ongoing deer management program as well as cost-sharing.

Planning staff recently met with MoE staff to discuss the prospect of a regional deer management plan, including what resources might be available from the ministry to assist. MoE staff confirmed that in-kind support would be offered in the form of staff time to assist with the plan, but no financial resources would be available. They further indicated that MoE-funded equipment (from Cranbrook) may be available to borrow during plan implementation. While the deer management plan was added to the Regional Planning 2012 Business Plan in anticipation that committee and Board direction was provided to undertake such a plan, it was anticipated that funding would come from other sources. The terms of reference and funding strategy can be prepared by planning staff, should the committee so direct. Additional resources will be required for the preparation of the plan and this will be addressed in the next report to committee.

CONCLUSION

Roughly three quarters of the growing Black Tail Columbian Deer population lives on Vancouver Island. As their population continues to reproduce in close proximity to developed areas, new generations will learn to live comfortably in and around human settlements. Preliminary public input has emphasized frustrations with property damage, concerns around health risks, road safety, and deer aggression, and the majority of email input for deer management recommendations favours a deer management plan. A smaller contingent favours no action at all. The research analysis summarized in this report verifies many public concerns:

- the deer population is stable to increasing and the habitat is shifting toward settlement areas for food source and predator evasion
- deer–auto collisions are on the rise and present risks to public safety as well as increasing insurance and cleanup costs
- deer invasion of farms results in substantial crop loss, changes to cropping patterns, additional costs associated with fencing and damage to woodlot understory
- public health concerns with respect to Lyme disease transmission which, while still low, is the second highest rate in BC

Staff believes these conditions may warrant the development of a regional deer management strategy. Committee endorsement is sought to work with MoE and reference the City of Cranbrook plan, the CRD Goose Management Strategy and other sources to develop the terms of reference for a regional deer management plan and to seek funding through grants and partnerships. As indicated above, additional resources will be required to undertake the plan. Staff will report back to committee with the terms of reference and funding arrangements.

RECOMMENDATION

That the Planning, Transportation and Protective Services Committee recommends to the Capital Regional District Board:

1. That staff be directed to prepare the terms of reference for a Deer Management Plan and seek out partnership interests to prepare and fund the plan.



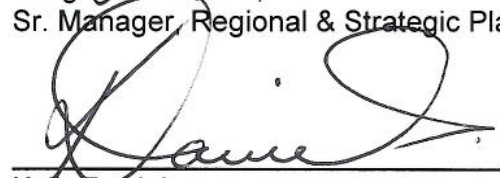
Jeff Weightman
Planning Analyst



Robert Lapham, MCIP
GM, Planning & Protective Services
Concurrence

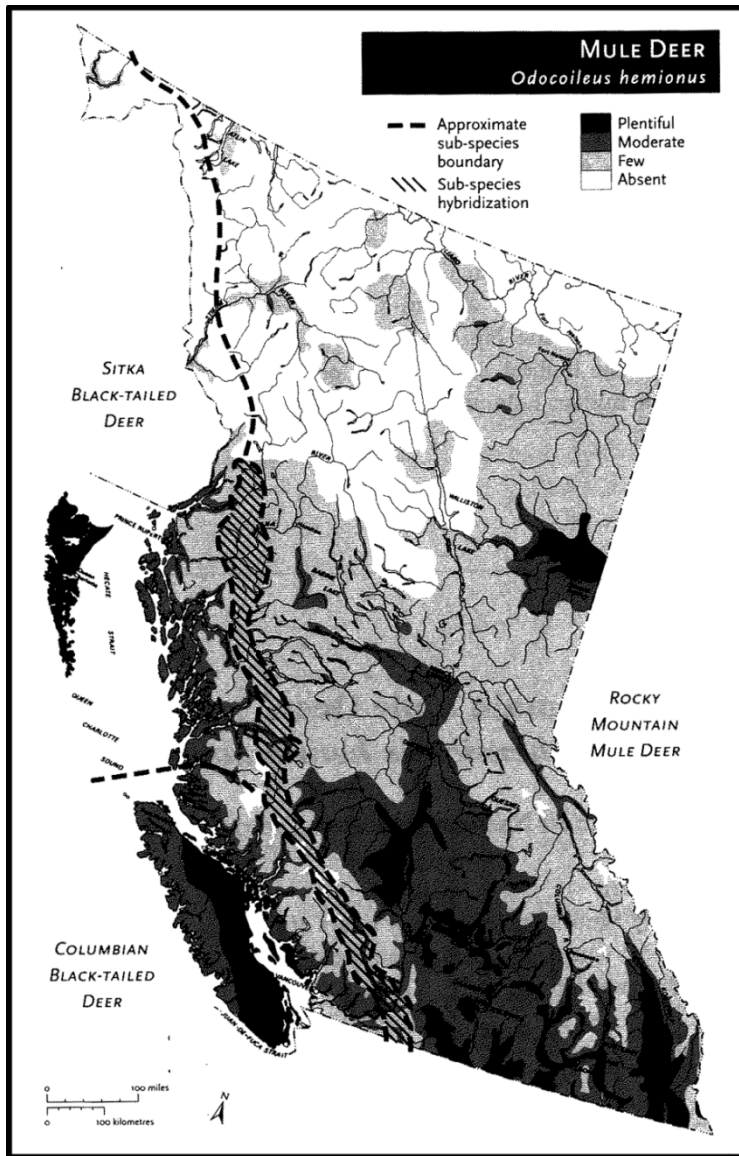


Marg Mizek-Evans, MCIP
Sr. Manager, Regional & Strategic Planning



Kelly Daniels
Chief Administrative Officer
Concurrence

APPENDIX A – Population Trends



Admin. Region	BC Urban Ungulate Species: 2008 Pre-Season Population Estimates by Region and Sub Region												
	Region	Moose		Elk		Bighorn Sheep		Black-Tailed Deer		Mule Deer		White-Tailed Deer	
No.	Region	Estimated Number	Estimated Trend	Estimated Number	Estimated Trend	Estimated Number	Estimated Trend	Estimated Number	Trend	Estimated Number	Estimated Trend	Estimated Number	Estimated Trend
1	Vancouver Island	<20	S	3,500-4,900	S-I	0	N/A	45,000-60,000	S-I	0	N/A	0	N/A
2	Lower Mainland	<100	S	800-1,200	I	0	N/A	17,000-29,000	S	3,000-5,000	S	<30	S-I
3	Thompson	6,000-10,000	I	<400	I	1,500-2,000	S	500-1,000	S-I	25,000-45,000	I	2,000-3,000	Increasing
4	Kootenay	5,500-6,800	S	27,000-33,500	S-I	2,300-2,500	S	0	N/A	24,000-48,000	I	40,000-65,000	Increasing
5	Cariboo	20,000-28,000	S	<250	I	<800	D	1,000-6,000	S	15,000-30,000	S-I	500-1,000	Increasing
6	Skeena	28,000-47,000	S	<250	S-I	0	N/A	35,000-65,000	S	4,000-6,000	S	500-1,000	Increasing
7A	Omineca	30,000-50,000	S	<500	I	0	N/A	0	N/A	3,000-6,000	I	500-1,000	Increasing
7B	Peace	40,000-80,000	Fluctuates	15,000-35,000	S-I	<150	D-S	0	N/A	6,000-12,000	S	7,000-13,000	Increasing
8	Okanagan	2,000-3,000	I	<900	S-I	1000-1,200	I	0	N/A	28,000-42,000	S	31,000-44,000	Increasing
Provincial Totals		131,500-224,920		22,000-76,900		4,800-6,650		98,500-101,000		108,000-194,000		81,500-128,030	

Admin. Region	British Columbia Ungulate Species Regional Population Estimates and Status - Preseason 2011.																				
	Region	MOOSE		ELK		CARIBOU		THINHORN SHEEP		BIGHORN SHEEP		MOUNTAIN GOAT		COAST BLACK-TAILED DEER ¹		MULE DEER		WHITE-TAILED DEER		BISON ⁴	
No.	Region	Estimated Number	Estimated Trend	Estimated Number	Estimated Trend	Estimated Number	Estimated Trend	Estimated Number	Trend	Estimated Number	Estimated Trend	Estimated Number	Estimated Trend	Estimated Number	Estimated Trend	Estimated Number	Estimated Trend	Estimated Number	Estimated Trend	Estimated Number	Estimated Trend
1	Vancouver Island	10-20	S	4,600-5,600	S-I	0	n/a	0	n/a	0	n/a	1,900-3,100	S-D	45,000-65,000	S-I	0	n/a	0	n/a	0	n/a
2	Lower Mainland	75-150	S	1300-1500	I	0	n/a	0	n/a	0	n/a	1500-2300	S-I	17,000-29,000	S	3,000-5,000	S	20-50	S-I	0	n/a
3	Thompson	8,000-12,000	I	300-400	S-I	200-300	D	0	n/a	2,000-2,500	I	1,400-2,000	D	1,000-2,000	I	35,000-55,000	I	5,000-8,000	I	0	n/a
4	Kootenay	7000-9000	S	21,000-32,000	S-I	290-350	D	0	n/a	2300-2500	S	9,200-9,900	S	0	n/a	25,000-51,000	S-I	44,000-72,000	I	0	n/a
5	Cariboo	20,000-28,000	S	100-250	I	3,000-3,500	S-D	0	n/a	500-800	S-D	4,000-5,000	S	1,000-6,000	S	15,000-30,000	S-D	500-1,000	I	0	n/a
6	Skeena	25,000-45,000	S-D	200-500	S	6,000-12,000	S	4,000-6,500	S	0	n/a	18,000-35,000	S-I	35,000-55,000	D	2,000-3,000	D	500-1,500	S	5-10	I
7A	Omineca	30,000-50,000	S	500-2000	I	3,000 - 4,000	D	600-900	S	0	n/a	3,000-4,000	S	0	n/a	3,000-6000	I	500-1,000	I	0	n/a
7B	Peace	52,000 -87,000	I-D	15,000-35,000	I-D	4,600 - 8,600	S-D	5,250 - 7,500	S-D	50-150	S	2,000-4,000	S-I	0	n/a	6,000-11,000	S-D	5,000-12,000	S-I	1,500 - 2,400	S-I
8	Okanagan	2,000-3,000	S	1000-1500	I	5-15	S	0	n/a	1,000-1,200	S	200-300	S	0	n/a	28,000-42,000	S	31,000-44,000	I	0	n/a
PROVINCIAL TOTAL		140,000-235,000	S-D	44,000-79,000	S-D	17,000-29,000	S-D	9,900-15,000	S-D	5,900-7,200	I-D	41,000-66,000	I-D	99,000-155,000	I-D	115,000-205,000	I-D	87,000-140,000	S-I	1,500-2,400	S-I

Notes:

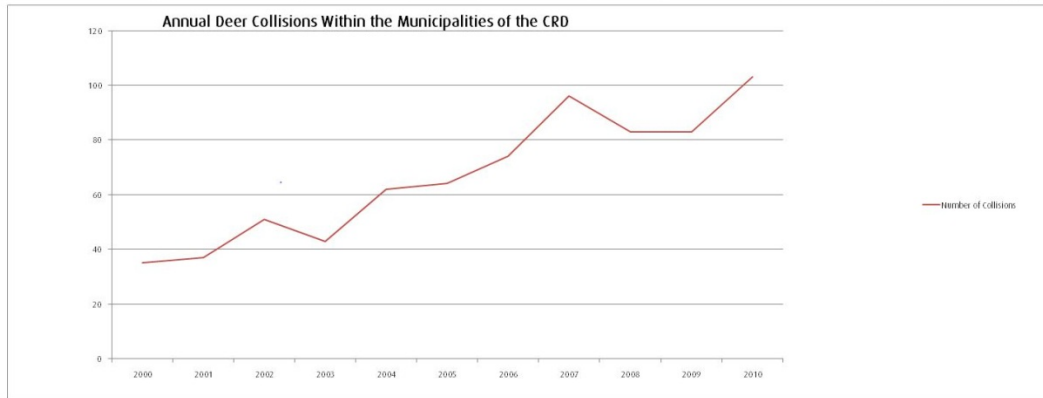
¹ Estimates are for early fall preharvest populations and are based on information supplied by Regional Wildlife Biologists. Values include both plausible minimum and maximum estimates of population size.
² ** Estimates should be considered general approximations based on limited, but best available information. Minimum and maximum estimates are rounded as follows: <100 to nearest 5; 100-499 to nearest 10; 500-1,999 to nearest 50; 2,000 to 9,999 to nearest 100; 10,000-39,999 to nearest 500; 40,000-99,999 to nearest 1,000; >100,000 to nearest 5,000. Totals may not add because of rounding.
Population Trend is from 2008 - 2011: D = Declining (> 20% decline over last 3 years), S = Stable (< 20% change over last 3 years), I = Increasing (> 20% increase over last 3 years)

- ¹ Region 6 estimates includes Elk and Blacktailed Deer on Haida Gwaii.
- ² Includes Stone Sheep in Region's 6 and 7, and Dall Sheep (400-600) in Region 6.
- ³ Includes California Bighorn Sheep in Region's 3, 5 and 8 (3100-3900); and Rocky Mountain Bighorn Sheep in Region's 3, 4 and 7 (2750-3250).
- ⁴ Includes both Plains Bison (1100-1800) and Woods Bison (400-600).

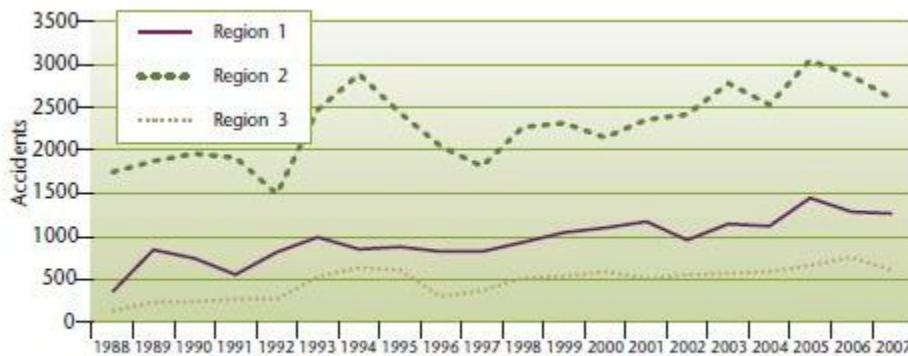
Source: Kim Brunt, Ungulate Wildlife Biologist (Ministry of the Environment)
Contact# 250-751-3213

APPENDIX B – Deer Collision Statistics

Annual Deer Collisions Within the Municipalities of the CRD												
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total
Number of Collisions	35	37	51	43	62	64	74	96	83	83	103	731



Regional Comparison of Total Annual Deer Accidents



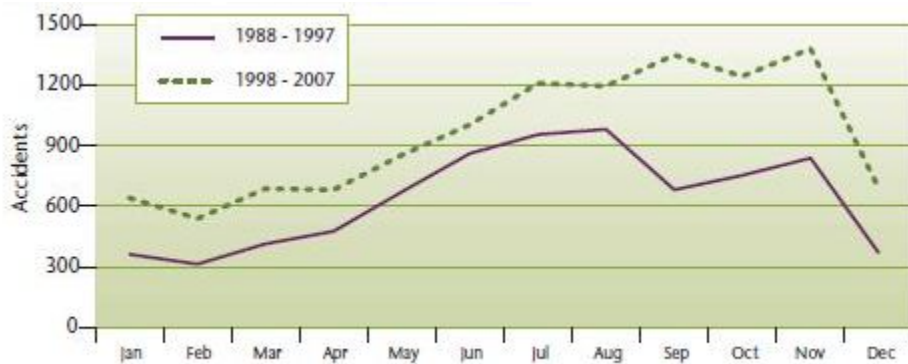
6-12 WARS 1988-2007 – Wildlife Accident Reporting and Mitigation in British Columbia – Special Annual Report

Region 1: Vancouver Island

Region 2: Lower Mainland

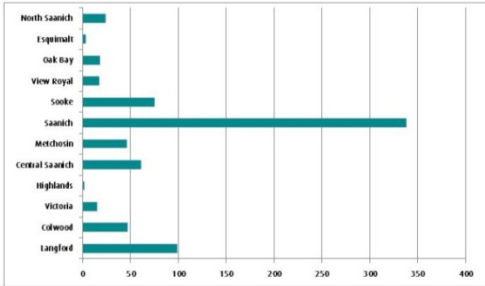
Region 3: Thompson River

Monthly Deer Accidents on Vancouver Island



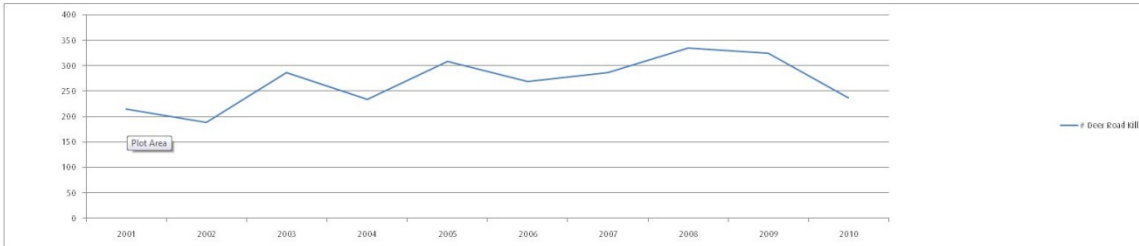
Appendix B – Deer Collision Statistics
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Deer Collisions 2000-2010 By Municipality Reported to ICBC												
Langford	Colwood	Victoria	Highlands	Central Saanich	Metchesin	Saanich	Sooke	View Royal	Oak Bay	Esquimalt	North Saanich	Total
99	47	15	2	61	46	338	75	17	18	3	24	745

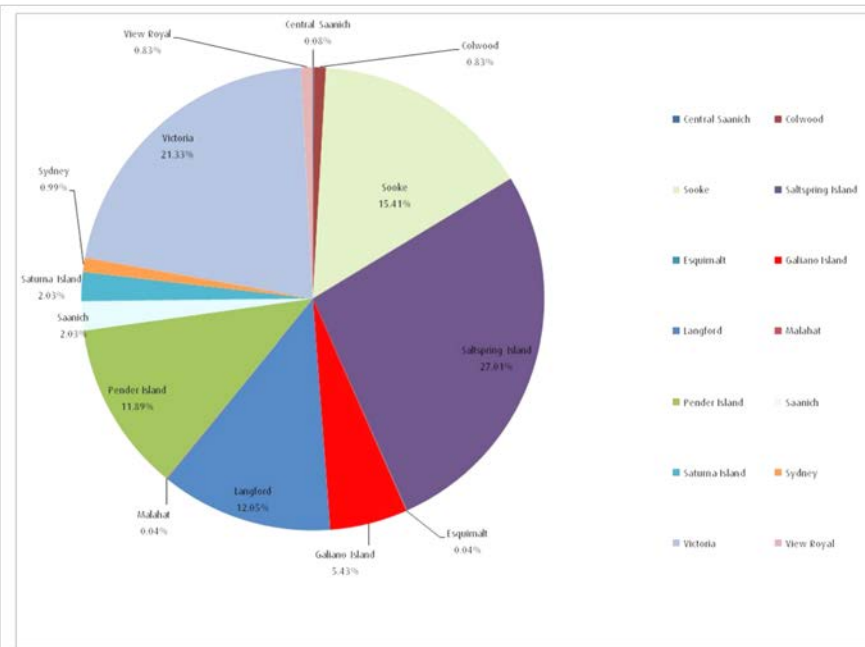


ICBC Animal-related Motor Vehicle Accident Claims in British Columbia (1997 to 2002)											
Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Claims Cost (in millions \$)	\$15.8	\$18.4	\$19.1	\$21.6	\$25.2	\$29.1	\$27.7	\$25.5	\$31.4	\$34.3	\$30.8

Total Annual Deer Fatalities From Motor Vehicles in the CRD from 2001-2010										
Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
# Recorded Deaths	211	189	267	234	309	269	266	335	321	236



Recorded Road Kill in the CRD by Mot From 2001-2010													
Central Saanich	Colwood	Sooke	Salt Spring Island	Esquimalt	Gulfano Island	Langford	Malahat	Pender Island	Saanich	Saturna Island	Sydney	Victoria	View Royal
2	20	372	652	1	131	291	1	207	49	49	24	515	20



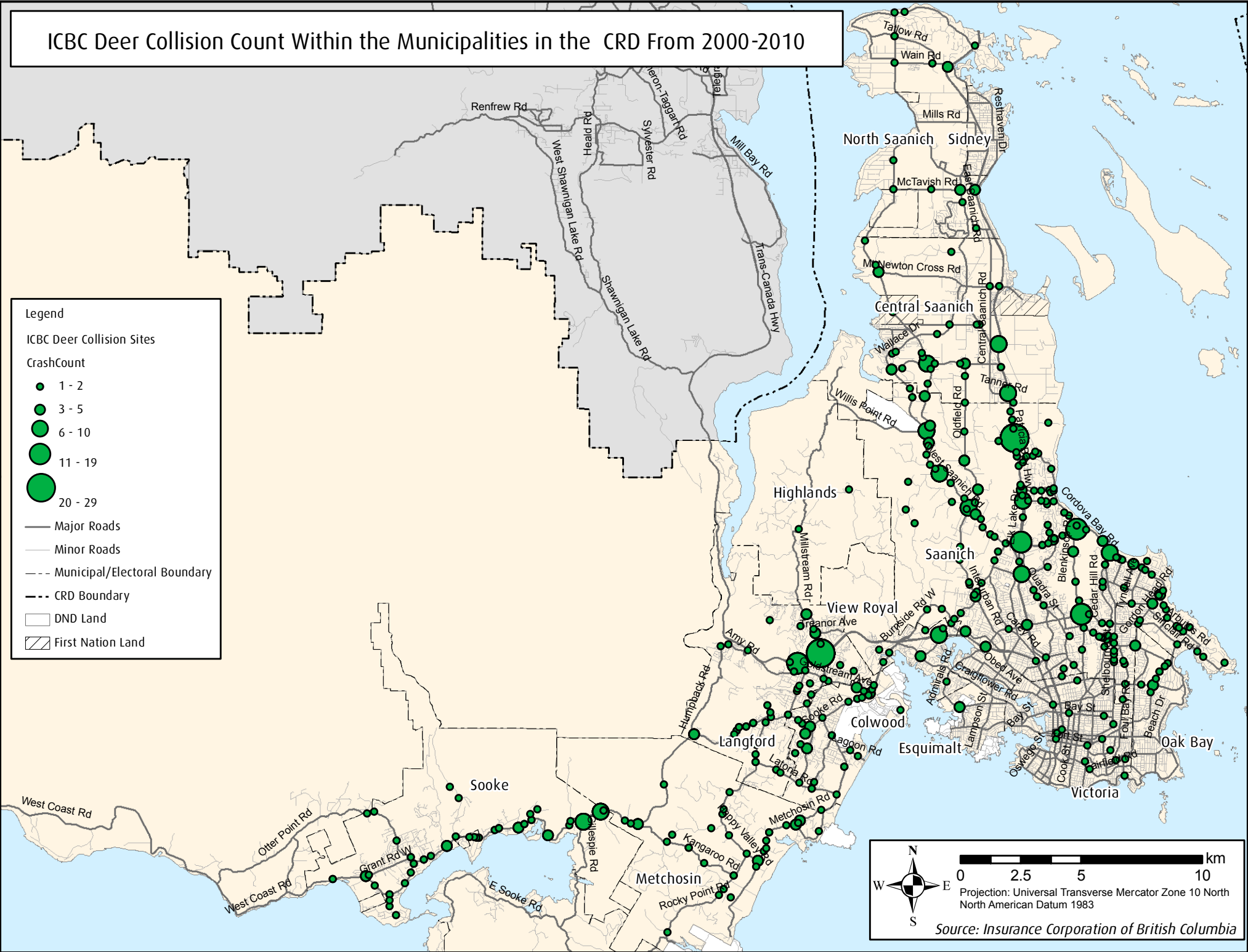
Accident Clean-Up		
Animal Size	Animal Example	Cost Estimate
Small	fox, porcupine, skunk	\$25
Medium	bear, cougar, deer, moutain sheep	\$100
Large	caribou, elk, moose	\$350

Appendix B – Deer Collision Statistics
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Deer Collision Severity to Humans within British Columbia from 2000-2007				
Year	Fatal	Injury	Property Damage Only	Total
2000	0	198	617	815
2001	3	263	1054	1319
2002	2	293	1212	1507
2003	4	286	1392	1682
2004	6	267	1312	1585
2005	1	302	1466	1769
2006	3	304	1276	1583
2007	3	272	1103	1378
Total	21	2185	9432	11639

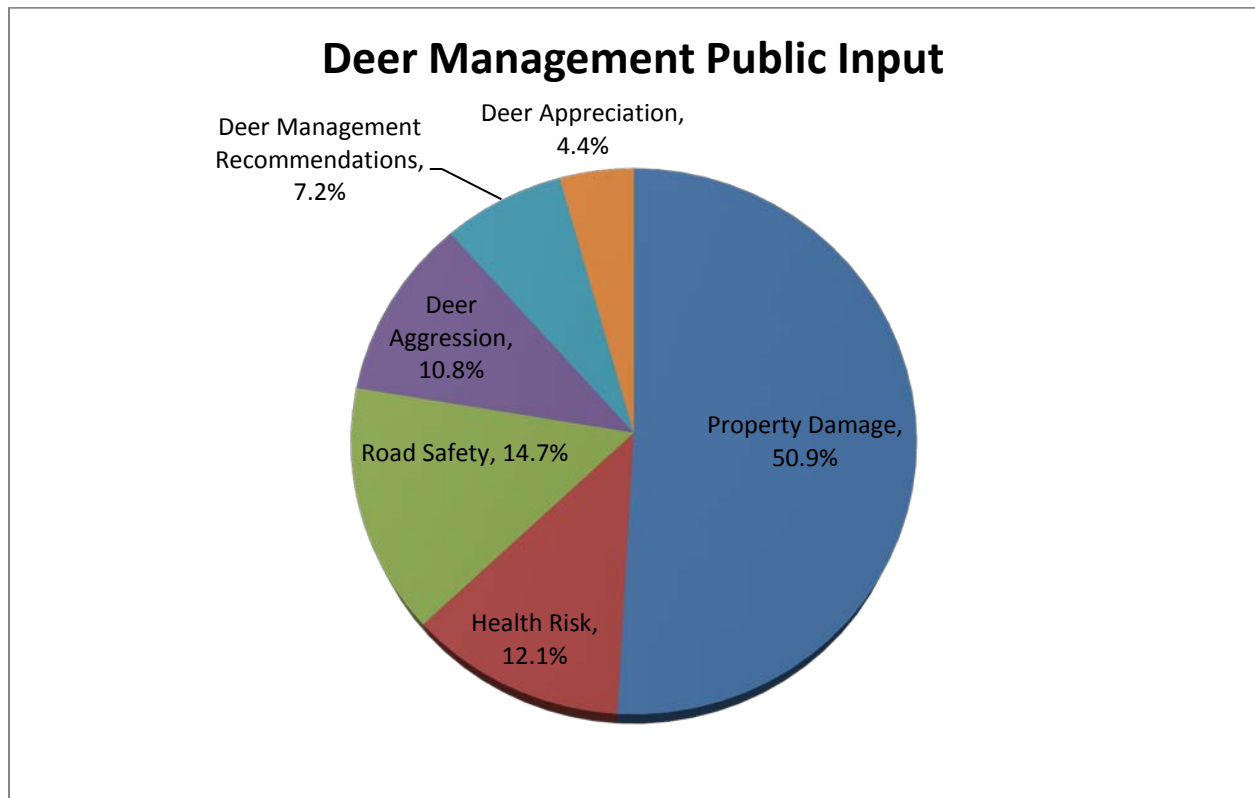
Deer Collision Severity to Humans within the CRD from 2006-2010				
Year	Fatal	Injury	Property Damage Only	Total
2006-2010(Average)	0	10(8 injured Victims)	245	255

ICBC Deer Collision Count Within the Municipalities in the CRD From 2000-2010



APPENDIX C – Community Feedback

Categories	Responses	
Property Damage	198	50.9%
Health Risk	47	12.1%
Road Safety	57	14.7%
Deer Aggression	42	10.8%
Deer Management Recommendations	28	7.2%
Deer Appreciation	17	4.4%



Full community feedback: <http://www.crd.bc.ca/regionalplanning/documents/deer-management-submissions.pdf>.

APPENDIX D – CR FAIR Letter



Board of Directors
Capital Region District
625 Fisgard Street Victoria, BC

Re: Deer Issue

On behalf of the Capital Region Food Policy Working Group we would like to ask the CRD Board of Directors to approve a motion to actively work with appropriate levels of government and key stakeholders to develop a strategy and action plan to tackle the issue of an overabundance of deer in the Capital Region.

Although there are a broad range of detrimental effects from current deer populations (degraded ecosystems, disease transmission, damage to gardens and public and private property, safety concerns), we would like to highlight the impacts on local agriculture.

Over the past few months we have been consulting with the farm community to determine their issues with deer, and associated costs to the farm community. The farmers have organized a meeting to discuss the issue, started a petition asking for action on deer management, as well as currently surveying their community to determine crop losses. From surveys collected to date we have determined:

- Crop losses this year are estimated at between \$500 to \$25,000 for some farms
- Additional costs have been incurred from fencing
- There are reports of an increase in deer related accidents on roadways adjacent to fenced fields
- Some crops (lettuces in particular) not planted due to previous losses

The time has come for action to be taken by the various levels of government that have jurisdiction over this issue.

The BC Ministry of Environment released a report, Urban Ungulate Conflict analysis for BC (March 2010), which was prepared for the Wildlife Conflicts Coordinator of the Conservation Officer Service of the Ministry of Environment by Gayle Hesse.

We are aware that in January of this year the CRD Planning Transportation and Protective Services Committee received a staff report around the Deer issue. The staff report referenced the Hesse report and provided a background of the issues, potential courses of action and provided recommendations for the CRD and its role in resolving the regional issue.

The CRD Staff referenced the Hesse report, indicating some of the pieces involved in deer management include: “changing stakeholder attitudes or behaviours; developing community capacity to increase participation in management decisions; establishing measurable management objectives for each community; modifying deer behaviour; modifying human behaviour; reducing herd size; and amending provincial and municipal regulations to facilitate management interventions.

It pointed out that the report outlines that “no single technique will be universally appropriate and that complexities of deer management and limitations on available interventions make quick-fix solutions unlikely. Further, it notes that because both the positive and negative values associated with ungulates are so high, setting management goals and determining treatment options can be very difficult”.

The report goes on to state: that management options fall into four categories: conflict reduction, population reduction, fertility control, and administrative options. Where it is determined that the problems and impacts are severe the report indicates that most researchers suggest populations be lowered using lethal control, and then, when proven practical, population levels can be maintained using fertility control.

There are many different areas across the Province, also struggling with the same issue and approaches being taken that we can learn from.

Recommendations:

The CRD staff report recommendation was to create a committee to investigate creating an Ungulates Management Plan. We support this recommendation and see that it could mirror the current process of the Goose Management Strategy. What is required is that all levels of government and key stakeholders are at the table to develop strategy, a study, and management plan. The CRD must take a leadership role in moving this forward.

We will support this process within our capacity,

Sincerely,

Linda Geggie

APPENDIX E – Health

Possible Disease or Pests among Deer Population

Anthrax

Anthrax is caused by bacteria found in soil. Infection is normally contracted through cuts, open sores, scratches, inhaling spores or eating under-cooked meat. It can be a skin, lung, or gastrointestinal infection, treatable by antibiotics. A severe lung infection can be fatal. The risk of human infection in the outdoors is extremely unlikely. Vector borne transmission from cervids (hoofed mammal) and bovids (hoofed hallow horned mammals) to humans.

Symptoms

- Skin infection begins as a small, raised bump that might itch-similar to an insect or spider bite.
- Within one to two days, the bump develops into a fluid-filled blister about 1 cm (0.4 in.) to 3 cm (1.2 in.) in diameter. Within seven to 10 days, the blister usually has a black center of dying tissue (Escher) surrounded by redness and swelling. The blister is usually painless.
- Additional blisters may develop.
- Swollen lymph nodes close to the area of the blister.
- Fever.
- Headache.

Bovine tuberculosis (TB)

Bovine TB is a contagious and communicable disease caused by a bacterium (*Mycobacterium bovis*). It affects cattle, bison, deer, elk, and goats. Bovine TB is caused by a different bacterium than human TB (*Mycobacterium tuberculosis*), and although highly unlikely, it can affect humans. Disease transmission usually requires frequent and extended exposure to respiratory secretions and coughing, and/or contact with infected urine, manure and saliva. Vector borne transmission from livestock to wildlife.

Symptoms:

- weight loss
- lung involvement with coughing
- painful breathing
- enlarged lymph nodes

Chronic Wasting Disease (CWD)

CWD is a fatal disease of the central nervous system found in mule deer, white-tailed deer, elk and moose in North. CWD can be transmitted between individuals of the same species. Involves nasal-oral pathways, urine or faeces and possible environmental contamination. CWD and related diseases (e.g. bovine spongiform encephalopathy in cattle and Creutzfeldt-Jakob disease in humans) tend to be species specific. Vector borne transmission from ungulate to ungulate.

Symptoms:

- abnormal Behavior by deer separating itself from the herd or ignoring humans
- excessive thirst
- emaciation(muscular tremors)
- excessive drooling

Escherichia coli (E. coli)

E. coli is a bacterium that is commonly found in the lower intestine of warm blooded animals. *E. coli* has been found in hunter harvested white-tailed deer faeces and in venison from white-tailed deer and black-tailed deer. Infection through physical contact with faeces is usually only a concern where there are extremely high concentrations of deer faeces, such as at feeding stations. Vector borne transmission from deer to humans.

Symptoms:

- stomach cramps
- diarrhea (usually bloody)
- vomiting
- low-grade fever

Haemorrhagic diseases of deer

These diseases are caused by epizootic haemorrhagic disease virus (EHDV) or blue tongue virus (BTV). Mule deer are more affected by these diseases than white-tailed deer. EHDV and BTV are extremely unlikely to affect humans. Vector borne transmission from deer to humans.

Symptoms

- excessive bleeding

Johne's disease

Johne's disease is a chronic, contagious bacterial disease that affects the small intestine of ruminants such as cattle, sheep, goats, elk, deer, mountain goats, bighorn sheep, antelope and bison. Infected animals shed large numbers of the bacteria (*Mycobacterium par tuberculosis*) in their faeces, leading to contamination of feed and water sources. The most common method of infection is the ingestion of bacteria via manure-contaminated udders, milk, water or feed. Vector borne transmission from livestock to wildlife.

Symptoms:

- diarrhoea
- major weight loss

Parasites

Transmission of parasites from deer to deer is generally a natural phenomenon with little consequence to the animal, but when conditions change, deer numbers increase beyond acceptable levels and suitable habitat becomes over utilized, the effect of parasite transmission and disease can be significant. Vector borne transmission from wildlife to wildlife.

Symptoms:

- poor coat(except during moulting periods)
- diarrhoea
- swelling and lumps from healing bone fractures
- unusual secretion from mouth, nose, or anus
- deformed antlers

Tick Borne Diseases

Tick borne diseases are transmitted when a tick that is infected with bacteria bites a human. Three closely interrelated elements must be present in order for tick borne diseases to be transmitted: the bacteria, the ticks that can transmit them, and alternate hosts such as mice and

deer that provide food for the ticks in their various life stages. Abundance and distribution of ticks are correlated with deer densities.

Symptoms:

- flu-like symptoms
- fever
- numbness
- rash
- confusion
- weakness
- pain and swelling in joints
- palpitations
- shortness of breath
- nausea and vomiting

Rocky Mountain Spotted Fever (RMSF)

RMSF is a severe tick-borne disease caused by *Rickettsia rickettsii*. The American dog tick (*Dermacentor variabilis*) in the east and the Rocky Mountain wood tick (*D. andersoni*) in the west are the principal vectors for bacterial transmission. Hosts for the adult ticks are carnivores, deer and domestic animals, especially dogs. Vector borne transmission from ticks carried by deer to humans.

Symptoms:

- fever
- abundant rashes on the back, wrists, or ankles
- nausea and Vomiting
- sensitivity to light (photophobia)

Ehrlichiosis

Human ehrlichiosis has been recognized as an emerging tick-borne infectious disease since 1986. There are three forms of ehrlichiosis: human monocytic ehrlichiosis (HME); human granulocytic ehrlichiosis (HGE); and one other undefined human ehrlichiosis. The lone star tick (*Amblyomma americanum*), the blacklegged tick (*Ixodes scapularis*), and the western blacklegged tick (*Ixodes pacificus*) are known vectors of ehrlichiosis. As ehrlichiosis is not a national notifiable disease in Canada, the incidence is largely unknown. In the USA, the highest incidence rates of HME have been reported from southern and south central regions, and the highest incidence rates of HGE from north eastern and upper mid-western areas. Although most cases of ehrlichiosis are mild, complications can occur in about 10% to 20% of patients. The case fatality ratios can be as high as 5% for HME and 10% for HGE. Vector borne transmission from ticks via deer to humans.

Symptoms:

- high fever tiredness
- major muscle aches
- severe headache
- rashes

Lice

Black-tailed deer infected by lice exhibit severe hair loss, skin inflammation. This loss of hair is asymmetric and perceived first as a change in coat colour. Recently a new species of exotic Eurasian louse (*Damalinea Cervicola*) has been introduced to mule deer. There is concern that

this new disease may impact deer, particularly during fawn winter survival. Deer infected with exotic lice tend to develop severe skin irritation, leading to excessive grooming by the animal and eventual patchy hair loss of body condition. In addition, they tend to develop a hypersensitivity (severe allergic) reactions to lice. Louse infestations are seasonal with the most prevalence during winter and early spring. Exotic louse does not affect humans or domestic livestock. Vector borne transmission from deer to deer.

Symptoms:

- hair loss
- change in coat colour to yellow

Lyme disease

Deer ticks are responsible for transmitting the bacteria to humans in the north-eastern and north-central United States, and on the Pacific Coast, the bacteria are transmitted to humans by the western black-legged tick. Deer are the primary host for the adult deer tick and are key to the reproductive success of the tick, however, reducing the incidence of Lyme disease is a complex issue, and cannot likely be achieved by a simple reduction in the deer population. Although dogs and cats can contract Lyme disease, there is no evidence that they can transmit the infection directly to humans. Pets however, can carry infected ticks into the home or yard. Fatalities from Lyme disease are rare. However, undiagnosed Lyme disease may develop into chronic disease that may be difficult to treat. The transmission of Lyme disease through over abundant deer populations is a serious concern in north-eastern parts of the USA, but only of low to moderate concern in BC. White-tailed deer do not appear to suffer from the clinical signs of infection from the bacteria that causes Lyme disease. Vector borne transmission from ticks via deer to humans.

Symptoms

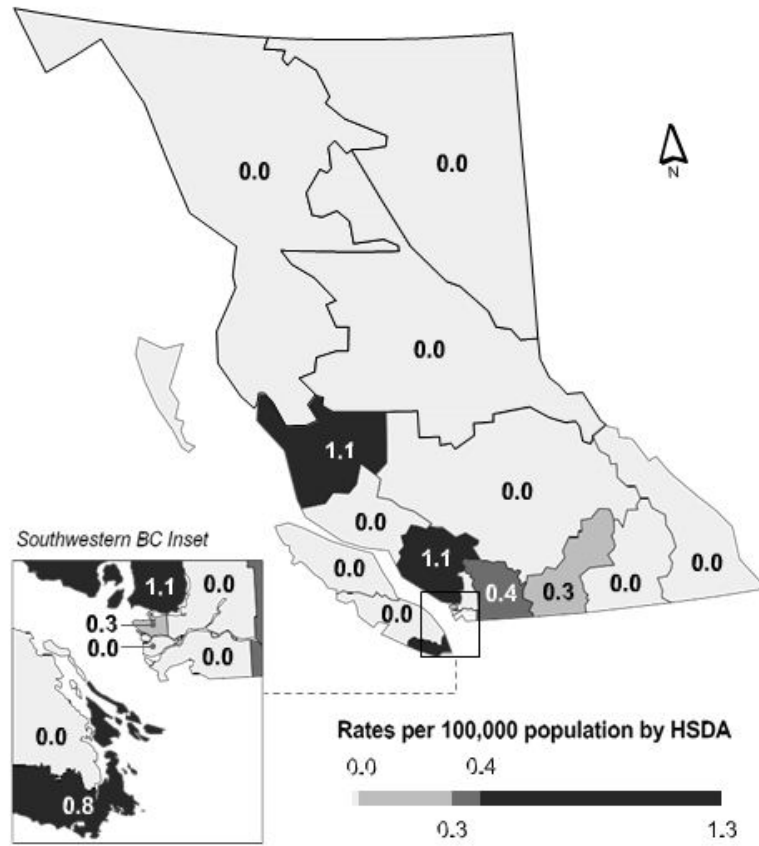
- fatigue
- chills
- fever
- headache
- muscle and joint pain
- swollen lymph nodes

If untreated, the second stage of the disease can last up to several months and include

- central and peripheral nervous system disorders
- multiple skin rashes
- arthritis and arthritic symptoms
- heart palpitations
- extreme fatigue and general weakness

Human Cases of Disease or Pests among Deer Population (BC Centre for Disease Control Annual Report 2009)

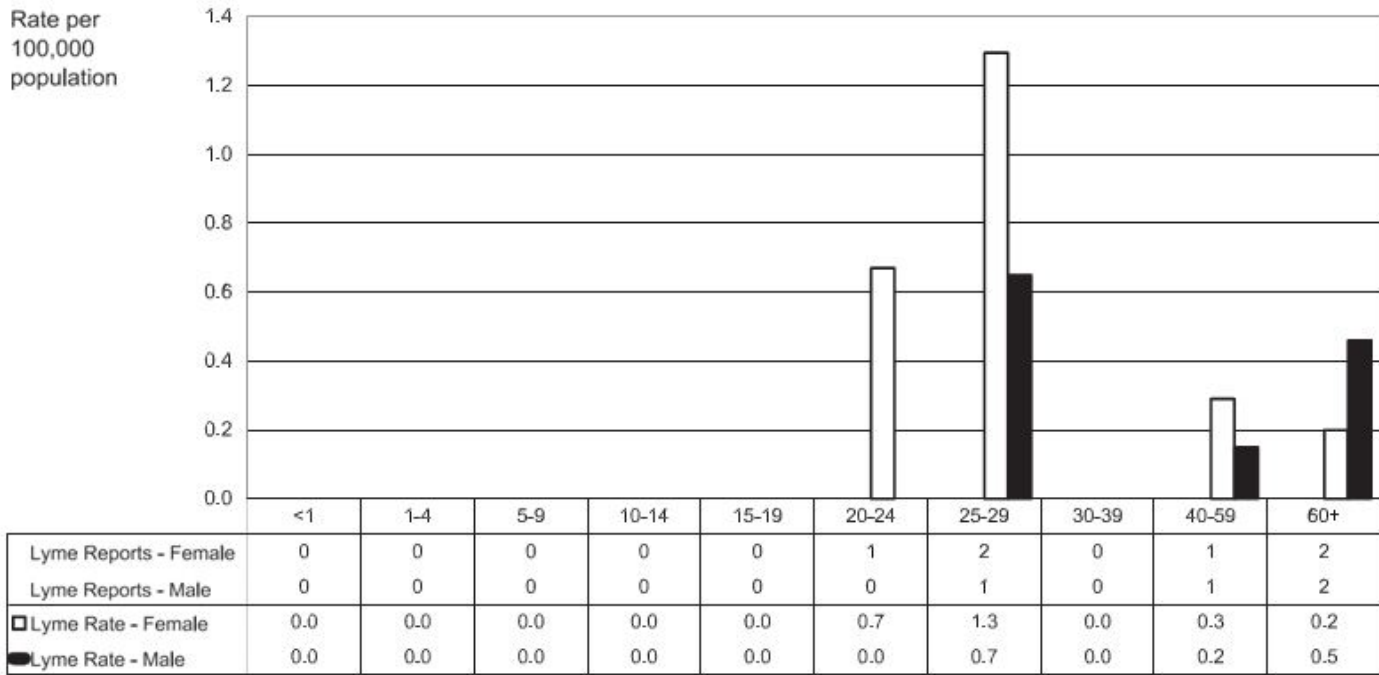
34.2 Lyme Disease Rates by Health Service Delivery Area, 2009



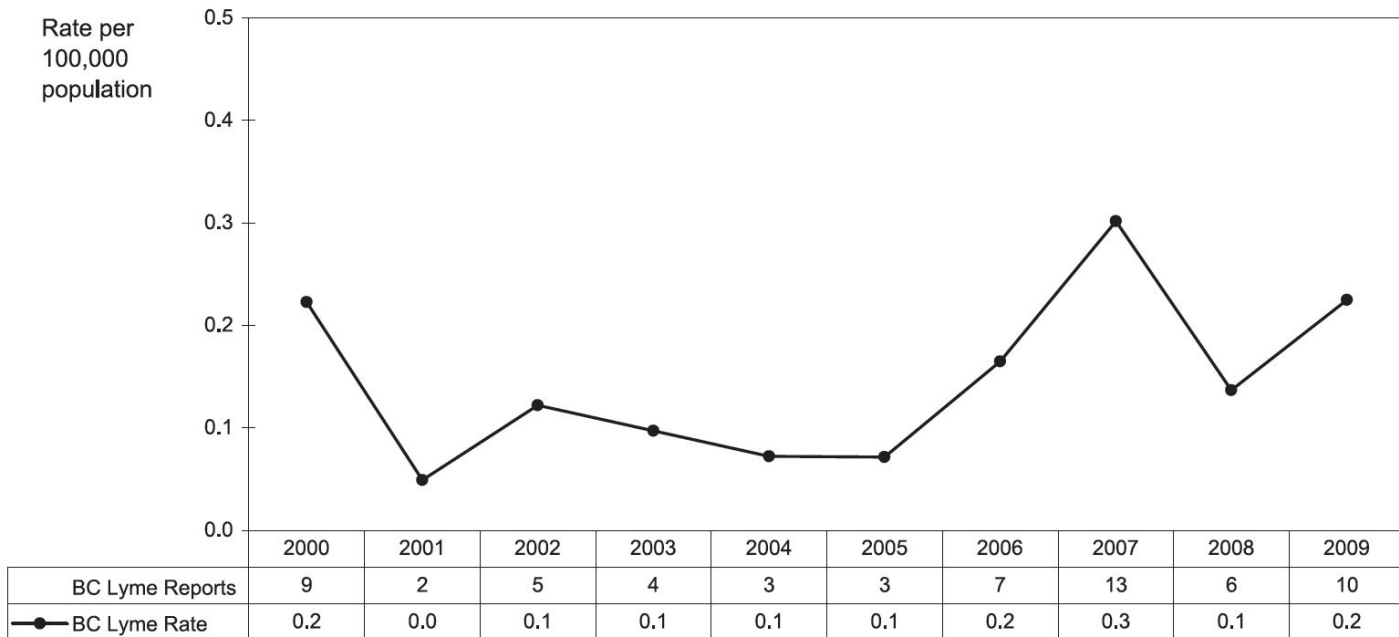
Lyme Disease Rates on Vancouver Island per 100,000 people			
South	Central	North	Vancouver Island Total
0.8	0	0	0.4

Health Services Delivery Area	Lyme Disease Cases	Rate
East Kootenay	0	0
Kootenay Boundary	0	0
Okanagan	1	0.3
Thompson Cariboo Shuswap	0	0
Fraser East	1	0.4
Fraser North	0	0
Fraser South	0	0
Richmond	0	0
Vancouver	2	0.3
North Shore/Coast Garibaldi	3	1.1
South Vancouver Island	3	0.8
Central Vancouver Island	0	0
North Vancouver Island	0	0
Northwest	0	0
Northern Interior	0	0
Northeast	0	0

Lyme Disease Cases in British Columbia By Age and Gender



BC Lyme Disease Report by Year



Note: Lyme Disease became nationally notifiable in 2009

Deer in Poor Health (Schwantje, 2009, pp.1-2)

Signs that indicate poor health include:

- loss of fear to humans
- weakness and presence near homes, on porches, in outbuildings
- extremely thin body condition
- poor hair coats- small areas of hair loss to completely bald
- digestive tract upsets- diarrhoea, seen as green soft to liquid feces
- death with no apparent warning, especially after a period of supplemental feeding

It is evident that poor health is associated with harsh winters, seasonal nutritional issues, and high deer density. Deer that live in low elevation coastal environments are born later in the year over an extended period of time. Fawns are usually born as winter approaches and must maintain their weight and invest energy in growing muscle and bone. This is a physically gruelling period as the weather gets colder, wetter, and windier with little shrub-like plants to provide a high quantity and quality of nutrition. In turn, these deer resort to eating crops on farmlands, gardens, and golf courses that provide improper nutrition and unstable digestion. These crops such as grains, apple, grass and other rich feeds can start diarrhoea, severe constipation, weight loss, and other metabolic changes that can end in emaciation and death. As deer grow weaker and more physically stressed they do not have the energy to move around and in a high density population, the number of parasites on each animal are more likely to spread. Many deer die from hypothermia (low body temperature), hypoglycaemia (low blood sugar), or exhaustion.

Pound Statistics on Deer in Saanich

Pound Statistics - Deer

2010

Date	Deceased	Injured	Problem	Dispatched	Gone on Arrival	Total
January	0	0	0	0	0	0
February	0	0	0	0	0	0
March	0	0	0	0	0	0
April	0	0	0	0	0	0
May	0	0	0	0	0	0
June	0	0	0	0	0	0
July	0	0	0	0	0	0
August	27	2	0	0	6	35
September	25	7	0	5	1	38
October	33	6	1	4	2	46
November	30	5	0	2	3	40
December	23	0	0	1	3	27
Totals						
	138	20	1	12	15	186

APPENDIX F – Approaches to Deer Management



URBAN DEER MANAGEMENT ADVISORY COMMITTEE TERMS OF REFERENCE MANDATE

The Urban Deer Management Advisory Committee is a select committee of Council established under section 142 of the *Community Charter*. It was formed to examine the issues related to urban deer within the boundaries of the City of Cranbrook and develop a management plan.

SCOPE OF WORK

The Urban Deer Management Committee shall:

- Assess the results of the public survey on urban deer population;
- Coordinate a count of the urban deer population within the boundaries of the City;
- Identify acceptable options for the management of the urban deer population;
- Identify strategies for the prevention and management of human-deer conflicts;
- Present final report to Council with recommendations on management of the urban deer population.

MEMBERSHIP

The Committee shall consist of eight (8) voting members as follows:

- Two members from City of Cranbrook Council
- One representative from the Ministry of Environment (MOE)
- Five members from citizens selected “at large” to provide balance in the committee.

All members excepting the representative of MOE, must be residents of the City of Cranbrook.

APPOINTMENT AND TERM

Members shall be appointed by Council for a term of up to one year.

Council may, at any time, remove any member of the Committee and any member of the Committee may resign at any time upon sending written notice to Council.

Committee members who are absent for three consecutive meetings shall forfeit their appointment unless such absence is authorized by resolution of Council.

Committee members shall serve without remuneration. **CHAIR**

The Chair shall be appointed by Council.

QUORUM

Quorum of the committee is 5 voting members.

MAYOR’S ATTENDANCE

As per City of Cranbrook Council Procedure Bylaw No. 3644, 2009, the Mayor is an ex-officio member of the Committee and as such has the same rights as other committee members, but is not obligated to attend meetings. The ex-officio member shall not be counted in determining quorum of the Committee, but is included in determining if a Committee has quorum.

COUNCILLOR’S ATTENDANCE

As per City of Cranbrook Council Procedure Bylaw No. 3644, 2009, any member of council not appointed to the select committee may attend the committee meetings, speak if recognized by the Chair, but is not entitled to vote.

MEETINGS

The Committee shall meet as required in order to adequately address Scope of Work in a timely manner. Meetings shall generally be held once per month.

The Committee shall be responsible for minutes and a copy of approved minutes shall be provided to the Municipal Clerk within 5 days of approval.

RULES OF PROCEDURE

The Committee must follow the City of Cranbrook Council Procedure Bylaw, No. 3644, 2009.

VOTING

All members of the Committee, including the chair, have a vote. If the votes of the members present at the time of the vote are equal for and against a motion, the motion is defeated. For the purposes of counting the vote, any member who abstains from voting (except for a stated conflict of interest) has their vote counted in the affirmative.

REPORTING TO COUNCIL

The Chair or designate shall report to Council on behalf of the Committee once every three (3) months, and shall provide other reports to Council, as needed from time to time.

AUTHORITY

The Committee does not have the authority to communicate with other levels of government on behalf of the City of Cranbrook, to pledge the credit of the City, or to authorize any expenditures to be charged against the City.

Members (other than Council Members) do not have the authority to speak publicly (e.g. to the media) on behalf of the Committee unless so directed by City Council.

STAFF SUPPORT

The Committee Administration Liaison will be appointed as non-voting member by the Chief Administrative Officer.

Other City staff shall be available from time to time and upon request through the Chief Administrative Officer to provide technical and periodic administrative support.

CRD Goose Management Strategy:

<http://www.crd.bc.ca/parks/documents/regional-canada-goose-management-strategy-proposal2010.pdf>

Ministry of Environment BC Urban Ungulate Conflict Analysis Summary Report:

http://www.env.gov.bc.ca/cos/info/wildlife_human_interaction/UrbanUngulatesSummaryReportFINALJune21-2010.pdf

APPENDIX G – UBCM Resolution for Goose Management

“B42 Control of Canada Geese, Metchosin

WHEREAS the Canada Goose was introduced and habituated to the Capital Region in the early 1950s by the BC Fish & Wildlife Service to provide stock for hunting purposes;

AND WHEREAS recent population counts of Canada Geese now fluctuate between 3000 to 5000 in the Capital Region and these geese inflict significant damage to farms crops in Metchosin and on the Saanich Peninsula:

THEREFORE BE IT RESOLVED that UBCM work with the provincial and federal governments to manage and control burgeoning populations of Canada geese which, left uncontrolled, present major and significant human health and safety, food production, environmental, recreational, water quality and other impacts; and that UBCM support continued provincial support for the multi-phased approach adopted by the Peninsula Agriculture Commission.

ENDORSED BY THE ASSOCIATION OF VANCOUVER ISLAND & COASTAL COMMUNITIES

*UBCM RESOLUTIONS COMMITTEE RECOMMENDATION: **Endorse***

UBCM RESOLUTIONS COMMITTEE COMMENTS:

The Resolutions Committee notes that the UBCM membership endorsed resolution 2002-B53, which called on the federal government to make effective mechanisms available to assist municipalities in dealing with the overpopulation problems with Canada Geese. The membership has also consistently endorsed resolutions calling for an increase in the numbers of conservation officers and resources to support wildlife management (2010-B25; 2003-B32; 1996-B27; 1992-B35).”