

# Regional Deer Management Strategy

## Project Chronology

Capital Regional District | November 2015



CRD

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# Regional Deer Management Strategy

The Capital Regional District, in collaboration with municipalities, electoral areas, provincial wildlife authorities, stakeholders and farmers developed a [Regional Deer Management Strategy](#) to reduce human-deer conflicts in rural and urban areas.

The CRD Board accepted the report on the urban and rural regional deer management pilot projects in November 2015. No additional requests for assistance were received from municipalities, and additional services at the regional level were not required at this time. This document summarizes the project chronology from May 2012 to November 2015.

## November 2015

### Deer Count Results

#### Oak Bay

- Deer counts were conducted over three weeks in late October and early November.
- Counts were conducted by paid counters from the University of Victoria, Camosun College, Urban Wildlife Stewardship Society and the CRD.
- All the streets in Oak Bay were driven. Each route was alternately driven in each direction. The Victoria Golf Club was counted using optics (binoculars/spotting scope) and a golf cart. Four dawn and dusk counts were completed.
- Provincial staff interpret results for a driving count by considering the highest count of all the repetitions as the overall result. The high count was 55 deer. Of those, 14 were counted on the Victoria Golf Club. The overall count is equivalent to finding one deer every two kilometers.
- Most animals appeared to be in good condition with few injuries observed.
- More females than males were observed: approximately 60% female and 40% male.
- As the count was completed using a different methodology than in 2014, the results are not comparable. The exact location of the deer varied from one count to the next.

#### Central Saanich

- Deer counts were conducted over three weeks in late October and early November to complete Regional Deer Management Urban and Rural Pilot Projects.
- Counts were conducted using scopes from high points or spotlights at night from moving vehicles. Routes were driven at dusk. Locations were counted in the same order each time.
- The province interprets count results for spotting scope and driving/spotlight by considering the highest of all repetitions as the overall result.

- The highest scope count was 20 deer and the highest spotlight count was 25 deer. In 2014 the highest scope was 22 deer and the highest spotlight count was 37 deer. Technically, these two counts are not comparable because they took place at different times of year.

## August 2015

### CRD Board Limits CRD Deer Management Role

At the August 12, 2015 [meeting](#) of the Capital Regional District Board the recommendations of the Planning and Protective Services Committee were accepted. Staff were directed to:

- Continue to manage wildlife services, as necessary, at an operational level by various line departments, and not establish an ongoing service for deer.
- Report back to the Board with recommendations regarding an ongoing consolidated wildlife management service once each division has reported out on their wildlife management activities to their respective Committees and obtained feedback as to whether there is an ongoing need for each service.

## May 2015

### Concluding Recommendations

To conclude the Deer Management Strategy Pilot Project, a Staff Report on the project activities was received by the CRD Board on May 13, 2015. The Board endorsed the recommendations to refer the report to the Planning, Transportation and Protective Services Committee to consider whether an ongoing deer or wildlife management service should be established.

### Urban Pilot Project

After implementing the deer/human conflict reduction, public education and deer-vehicle collision mitigation recommendations such as signage and low speed limits, the Ministry of Forests, Lands and Natural Resource Operations issued a permit to the District of Oak Bay to capture and euthanize up to 25 black-tailed deer within Oak Bay borders. In total, 11 deer were harvested and given to the First Nations on whose Traditional Territory Oak Bay resides.

### Rural Pilot Project

The majority of work on the rural pilot project was done in the Fall of 2013 including public education relating to conflict reduction (brochure distribution) and deer-vehicle collision mitigation (additional road side brushing and signage). Thirty-five farms were contacted for one-on-one meetings and 16 visits were conducted to assess crop damage and discuss deer management tools. Packages were distributed



to provide information on fencing requirements, constructing effective fencing and completing municipal permit and provincial nuisance wildlife permit forms.

#### Public Education

The CRD will continue in its commitment to public education across the region on all aspects of the Regional Deer Management Strategy. Two information brochures are available, providing general information (PDF) and conflict reduction (PDF) measures.

### March 2015

Public Submissions October 20, 2014- March 3, 2015

- [Public Submission](#)

There are no out of region submissions at this time.

### September 2014

Public Submissions May 1- September 30

- [Public Submissions](#)

There are no out of region submissions at this time.

### September 2014

Public Submissions May 1- September 30

- [Public Submissions](#)

There are no out of region submissions at this time.

### June 2014

Update on Regional Deer Management Strategy implementation.

- [June 25, 2014 Staff Report to Planning, Transportation & Protective Services Committee](#)

### March 2014

Public Submissions January 1 - March 31

- [Public Submissions](#)

No out of region submissions at this time.

### February 2014

Update on Regional Deer Management Strategy implementation.

- [February 27, 2014 Staff Report to Planning, Transportation & Protective Services Committee](#)

## December 2013

Public Submissions November 13 - December 31

- [Public Submissions](#)
- [Out of Region Submissions](#)

## September 2013

Public Submissions May 23 - September 30

- [Public Submissions](#)

No out of region submissions for this time period

## July 2013

Update report on Regional Deer Management Strategy implementation

The July 24, 2013 staff report to Planning, Transportation & Protective Services Committee provided an update on urban and rural implementation of the Regional Deer Management Strategy, with a focus on building community partnerships. The Terms of Reference for implementation are under development prior to being submitted for municipal consideration.

Public education materials have been drafted and will be further refined with the assistance of municipalities before being distributed.

- [July 24, 2013 Staff Report to PT&PSC](#)

Progress report on Regional Deer Management Strategy implementation

Public Submissions

The May 22 staff report to the Planning Transportation & Protective Services Committee outlined the progress made in implementing the RDMS with our municipal partners in rural and urban areas. The focus on the Peninsula municipalities continues in order to mitigate the impact of deer on agriculture. A pilot project is planned, to be completed in both a rural and an urban area. The details of the project approach are under development.

- [May 22 staff report to PT&PSC](#)

Public Submissions February 29 - May 22

- [Public Submissions](#)
- [Out of Region Submissions](#)

Update report on Regional Deer Management Strategy

Public Submissions

The February 27 staff report to the Planning Transportation & Protective Services Committee outlined the progress of the municipal, regional and provincial levels of government in implementing the RDMS.

- [February 27 staff report to PT&PSC](#)

Public Submissions December 12 - February 28

- [Public Submissions](#)

## December 2012

- CRD Board Adopts Regional Deer Management Strategy
- Public Submissions

On December 12, 2012, the CRD Board supported the recommendations in staff report PPS/RP 2012-37. The recommendation is as follows:

1. Adopt the framework for a Regional Deer Management Strategy set out in the attachments to Report No PPS/RP 2012-37
2. Authorize staff to share the report with municipalities to gain concurrence as well as cooperation to implement the management measures within their jurisdiction; and
3. Approve the additional budget necessary to support the proposed CRD role in implementing a regional deer management strategy in 2013.

Staff level meetings will be held with the Peninsula Municipalities (including Saanich) first regarding the report information. Presentations to Councils will follow to outline the potential implementation of management measures at the local level.

- [December 12 meeting agenda](#)
- [December 12 staff report to CRD Board](#)

Public Submissions November 28 - December 11

- [Public Submissions](#)
- No out of region submissions for this time period

## November 2012

### Citizens Advisory Group Recommendations Referred to CRD Board

#### Public Submissions

The Regional Deer Management Strategy (RDMS) recommended by the Citizens Advisory Group (CAG) was discussed by the CRD Planning, Transportation & Protective Services Committee (PT&PSC), which directed staff to bring the report forward to the Board at their regular meeting on December 12, 2012. Public delegations had an opportunity to speak to Committee.

The PT&PSC recommended that the November staff report be circulated to municipalities for feedback for feedback regarding their willingness to implement measures under their jurisdiction. In addition, the report outlines what the ongoing role of the region could be if the Board adopts the proposed framework.

- [November 28 meeting agenda](#)
- [November 28 staff report to PT&PSC](#)

#### Staff Report Summary

Under prior direction of the PT&PSC, CRD staff convened a meeting among inter-jurisdictional partners on October 3, 2012. Staff representatives from CRD municipalities and Electoral Areas, and Provincial government (Federal government and First Nations were unable to attend) met to determine what it would take to implement the CAG recommendations and to then report back to the PT&PSC. Input on the CAG's recommendations is detailed in the November 28, 2012 staff report and attachments and is summarized as follows:

- Recommended options are separated into those with potential to be implemented and those that are considered impractical or unfeasible (mainly due to public safety and resourcing). For those that have potential, next steps of different levels of government and actions required to begin implementation are identified. In the case of population control measures, provincial approval is required but conflict reduction measures need to be in place prior to qualifying for such approval. Conflict reduction measures are largely within the jurisdiction of local governments.

#### Public Submissions September 4 - November 27

- [Public Submissions](#)
- [Out of Region Submissions](#)



## September 2012

The Citizens Advisory Group recommendations were received for information at the PT&PSC special meeting on September 5, 2012. The Committee would like to thank the Citizens Advisory Group and the Expert Resource Working Group for their dedicated effort and voluntary time spent preparing their recommendations.

- [Regional Deer Management Strategy Recommendations](#)

A Staff Report on the CAGs recommendations was also submitted to the PT&PSC at the September 5 meeting:

- [Deer Management Strategy Staff Report](#)

The following motion was passed by the PT&PSC:

MOVED by Director Derman, SECONDED by Director Blackwell,

1. That the Citizens Advisory Group and the Expert Resource Working Group be thanked for their dedicated effort and voluntary time spent preparing the Regional Deer Management Strategy; and
2. That the Regional Deer Management Strategy be received for information and that Regional Planning staff be directed to convene staff representatives from CRD municipalities, electoral areas, the Provincial and Federal governments and First Nations to determine how to partner on implementing the recommended management options.
3. That Regional Planning staff report back to Committee this fall.

CARRIED

### Delegations to PT&PSC Meeting

Requests to address the special PT&PSC meeting on Sept. 19, 2012 regarding the CAG's recommendations could not be accepted as the recommendations were not an item on the agenda. (CRD Board Procedures Bylaw 3708, Part 3, Section 12 (1): a Committee may, by resolution, allow delegations to address a meeting on the subject of an agenda item).

## August 2012

Citizens Advisory Group meetings & public submissions

Submissions: August 28 - September 4

- [Public Submissions](#)
- No out of region submissions for this time period

CAG meeting, August 27

- [Agenda](#)
- [Minutes](#)

Submissions: August 24 - 27

- [Public Submissions](#)
- No out of region submissions for this time period

CAG meeting, August 23

- [Agenda](#)
- [Minutes](#)

Submissions: August 9 - 23

- [Public Submissions](#)
- No out of region submissions for this time period

CAG meeting, August 8

- [Agenda](#)
- [Minutes](#)

The CAG added two more Management Options - Status Quo and Crop Protection. Feedback closed August 8, with results as follows:

- [Public Feedback - Crop Protection & Status Quo](#)
- [Public Feedback - Crop Protection & Status Quo - long form responses](#)

Submissions: August 2 - 8

- [Public Submissions](#)
- [Out of Region Submissions](#)

CAG meeting, August 1

- [Agenda](#)
- [Minutes](#)

Feedback on the fourth set of Management Options - Capture and Relocate & Repellents, closed August 1, with results as follows:

- [Public Feedback - Capture and Relocate & Repellents](#)
- [Public Feedback - Capture and Relocate, long form responses](#)

Submissions: July 25 - August 1

- [Public Submissions](#)
- No out of region submissions for this time period

## July 2012

CAG meeting, July 24

- [Agenda](#)
- [Minutes](#)

Feedback on the third set of Management Options - Public Education, Controlled Public Hunt, Professional Sharpshooting, Immunocontraceptives and Deer-Vehicle Collision Mitigation - closed July 24 with responses as follows:

- [Public Feedback](#)
- [Public Feedback - long form responses](#)

Submissions: July 19 - 24

- [Public Submissions](#)

A letter of resignation from two CAG members was received by the CAG Chair on July 8, 2012. The Board appointed Mr. Glenn Jim to the CAG on July 19, 2012.

CAG meeting, July 18

- [Agenda](#)
- [Minutes](#)

Feedback on the CAG's second set of Management Options - Capture & Euthanize - closed July 18 with results as follows:

- [Public Feedback - Capture & Euthanize](#)
- [Public Feedback - Capture & Euthanize, long form responses](#)

CAG meeting, July 11

- [Agenda](#)
- [Minutes](#)

Feedback on the CAG's first set of Management Options - Hazing & Frightening, Fencing and Landscaping Alternatives closed July 11 with results as follows:

- [Public Feedback - Hazing & Frightening, Fencing and Landscaping](#)
- [Public Feedback - Hazing & Frightening, Fencing and Landscaping, long form](#)

CAG meeting, July 04

- [Agenda](#)
- [Minutes](#)

## June 2012

CAG meeting, June 05

- [Agenda](#)
- [Minutes](#)

CAG meeting, June 12

- [Agenda](#)
- [Minutes](#)

CAG meeting, June 19

- [Agenda](#)



- [Minutes](#)

CAG meeting, June 27

- [Agenda](#)
- [Minutes](#)

## May 2012

CAG meeting, May 16

- [Minutes](#)

CAG meeting, May 09

- [Minutes](#)

# CRD Regional Deer Management Strategy

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Citizen Advisory Group Meeting

June 05 2012

Orlando Schmidt\Rob Kline

BC Ministry of Agriculture

# Insurance/Compensation Programs

- Production Insurance (PI)
  - helps producers manage their risk of crop losses caused by specified perils not predictable in nature
  - PI covers tree fruits from uncontrollable deer & elk (only when the producer has constructed a fence built according to specified standards)
  - PI covers silage corn and grain from uncontrollable wildlife and waterfowl



# Insurance/Compensation Programs

- Agriculture Wildlife Program (AWP)
  - Compensates losses on standing forage/cereals as livestock feed by bison, deer, elk, moose, mountain sheep, bear, cranes and waterfowl
  - pays a maximum of 80% of the verified losses of the crop
  - minimum 10% visual plant loss required for compensation & minimum damage claim is \$1000
  - 2011 AWP paid \$552,000 to VI farmers; \$18,000 for a combination of deer and waterfowl damage to 3 CRD farmers



# Farm Practices for Wildlife Damage Control

- fences - woven wire & electric;
- netting
- scare tactics – audible/visual
- repellents - natural & chemical repellants
- trapping (live & lethal) where allowed (Wildlife Act)
- firearms (Wildlife Act/local gov't bylaw)
- poisoning (rodents)
- habitat modification
- cultural management

# Ag Wildlife Mgt Options

- Advertise the AWP to CRD farmers for forage/cereal crop damage compensation
- Seek to expand PI insurable crops to include waterfowl/wildlife damage
- Encourage FLNRO and MoE to develop hunting regulations that assist in reducing wildlife damage
- Encourage the use of fences for high value crops
- Establish an on-going Regional Agriculture Wildlife Committee under the Provincial Agriculture Zone Wildlife Program



# Provincial Agriculture Zone Wildlife Program (PAZWP) [TOR]

- Establish Regional Agriculture Wildlife Committee to address:
  - wildlife damage prevention, mitigation and compensation on private agricultural land, including policy/legislation, program development, funding and implementation
  - private land environmental stewardship programs/initiatives or Crown stewardship that impacts private lands
  - access programs that will allow landowners to grant access to individuals while ensuring that safety, workload and liability issues are addressed.



# Regional Agriculture Wildlife Committee (RAWC)

Scope and Tasks - RAWC empowered to comment, make recommendations and advise:

Ministry of Forests, Lands & Natural Resource Operations (FLNRO) to develop hunting regulations and implement policy (*Wildlife Act*) to address agriculture/wildlife conflicts and/or environmental stewardship;

Ministry of Agriculture (AGRI) to implement the Agriculture Wildlife Program for crop losses;

BC based organizations (e.g.: BC Agriculture Council, BC Wildlife Federation, etc) to develop and implement programs/projects that address wildlife damage, environmental stewardship or private land access;

BC regional/local governments, agencies and organizations involved in activities that regulate wildlife populations, habitat or stewardship on private land



# Successful Examples of Ag Wildlife Management

- Environmental Farm Plan Beneficial Management Practices Program - Wildlife Damage Protection (2005-2009)
  - 318 projects in BC, 24 in CRD
  - Highest demand provincially from tree fruit growers (35%) and grape growers (28%)
  - Deer was species of interest with 94% of respondents
  - 88% of respondents indicated average wildlife crop damage \$5454 annually prior to BMP adoption
  - For the most part, fencing resulted in complete protection.

# Questions?

- Links:

- EFP/BMP Program – [www.ardcorp.ca](http://www.ardcorp.ca)
- Ag Wildlife Program: [www.agf.gov.bc.ca/awp](http://www.agf.gov.bc.ca/awp)

- LOCAL CONTACTS:

- Rob Kline (Regional Agrologist)
- Tel 250-356-2521
- Email: [rob.kline@gov.bc.ca](mailto:rob.kline@gov.bc.ca)



# Citizens Advisory Group Recommendations Proposed for Implementation

## Conflict Reduction

Pre-requisite to Provincial approval for population reduction

	Agricult	Rural	Urban
<b>Fencing</b>			
• Remove regulatory barriers	✓	✓	X
• Fencing subsidies or incentives	✓		X
• Permit electric fencing	✓		
<b>Landscaping Alternatives</b>			
• Review bylaws, development permits to consider impacts on wildlife and provide for wildlife corridors and deer resistant plantings		X	X
<b>Repellents</b>			
• Promote use through public education		✓	✓
• Municipal bulk purchase and distribution and at low cost			X
<b>Deer Feeding</b>			
• Adopt and enforce bylaw prohibiting intentional deer feeding			✓
<b>Aggressive Deer Mitigation</b>			
• Delegation of authority to Municipalities to address aggressive deer complaints			X

## Population Reduction

Requires Provincial approval

<b>Controlled Public Hunt</b>			
• Increase bag limit	✓	✓	
• Extend hunting season with longer antlerless season	✓	✓	
• Reduce costs for antlerless hunts	✓	✓	
• Increase incentives for hunts	✓	✓	
• Decrease distance separation requirements for firearms discharge	X	X	
• Add archery (bow) seasons	✓	✓	
• Permission to donate meat	✓	✓	
• Increase geographic areas where hunting is permitted	✓	✓	
<b>Crop Protection Program</b>			
• Increase bag limit	✓		
• Permit meat to be used by farmer or hunter or donated, regardless of hunting season limits	✓		
• Reduce distance separation requirements for firearm discharge	X		
<b>Professional Sharpshooting</b>			
• Explore approval requirements	✓	✓	X
• Amend municipal firearms discharge bylaws to permit	✓	✓	
• Permit meat to be used or donated	✓	✓	
<b>Capture and Euthanize</b>			
• Explore approve requirements	✓	✓	✓
• Allow for meat to be used or donated	✓	✓	✓

## Public Education/ Administration

<b>Controlled Public Hunt/Crop Protection</b>			
• Build partnerships between farmers/landowners and hunters	✓	✓	
<b>First Nations Hunting</b>			
• Build partnerships between farmers/landowners and First Nations to expand harvest	✓	✓	
<b>Public Health</b>			
• Partner with public health agencies to increase awareness about Lyme Disease	✓	✓	✓
<b>Public Education</b>			
• Provide public education programs on all aspects of RDMS	✓	✓	✓
<b>Advocacy</b>			
• Pursue compensation program for crop loss with Provincial and Federal Governments	✓		
• Pursue fencing subsidy program with provincial and federal governments	✓		
<b>Administration</b>			
• Develop partnerships between governments and NGO's to implement RDMS	✓	✓	✓
• Establish monitoring and reporting and adjust program to measure effectiveness of RDMS	✓	✓	✓
• Establish permanent oversight body for RDMS implementation	✓	✓	✓

## Deer-Vehicle Collision Mitigation

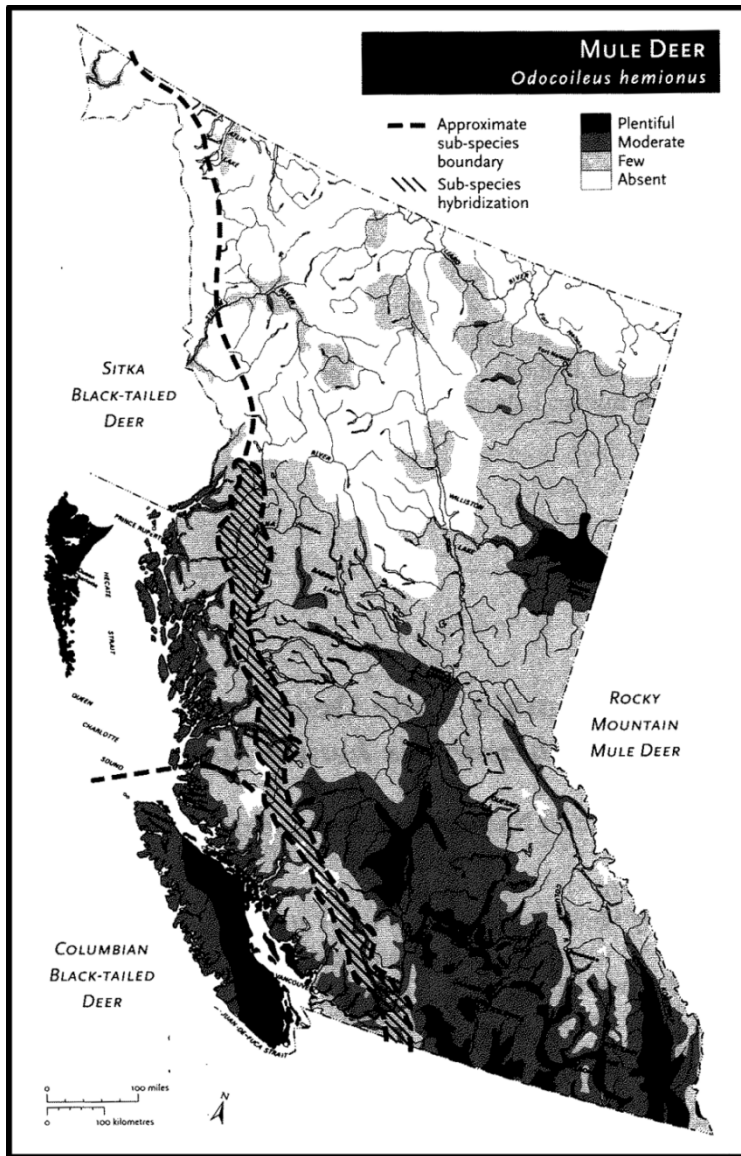
<b>Infrastructure</b>			
• Revise road designs for new roads and road re-construction to mitigate deer collision	✓	✓	✓
• Increase and extend right-of-way brushing in high collision areas	✓	✓	✓
<b>Administrative</b>			
• Increase effective signage	✓	✓	✓
• Increase driver education or collision avoidance	✓	✓	✓
• Reduce speed limits in high collision areas	✓	✓	✓

# Jurisdictional Roles for Regional Deer Management Strategy (RDMS)

	Regional			Municipal			Provincial				
	agric	rural	urban	agric	rural	urban	agric	rural	urban		
<b>Conflict Reduction</b>											
<b>Fencing</b>											
<ul style="list-style-type: none"> <li>Pursue fencing subsidies with provincial &amp; federal government</li> </ul>	✓				✓	✓					
<ul style="list-style-type: none"> <li>Remove regulatory barriers</li> <li>Permit electrical fencing</li> </ul>				✓	✓						
<b>Landscaping Alternatives</b>											
<ul style="list-style-type: none"> <li>Deer resistant plantings - public education</li> </ul>		✓	✓								
<b>Repellents</b>											
<ul style="list-style-type: none"> <li>Public education</li> </ul>		✓	✓								
<b>Deer Feeding</b>											
<ul style="list-style-type: none"> <li>Develop Model Bylaw</li> </ul>			✓	<ul style="list-style-type: none"> <li>Adopt and enforce bylaws prohibiting intentional deer feeding</li> </ul>		✓					
<b>Aggressive Deer Mitigation</b>											
<ul style="list-style-type: none"> <li>Explore alternate arrangements to better address aggressive deer complaints</li> </ul>	✓	✓	✓				<ul style="list-style-type: none"> <li>Discuss alternatives with CRD to better address aggressive deer complaints</li> </ul>	✓	✓	✓	
<b>Population Reduction</b>											
<b>Controlled Public Hunt</b>											
<ul style="list-style-type: none"> <li>Coordinate request to the Province to change public hunting regulations and program</li> <li>Partnership building program connecting landowners and hunters</li> </ul>	✓	✓		<ul style="list-style-type: none"> <li>Amend Municipal bylaws in keeping with changes to provincial regulations</li> </ul>	✓	✓	<ul style="list-style-type: none"> <li>Expediently change hunting regulations and program in response to CRD request</li> </ul>	✓	✓		
<b>Crop Protection Program</b>											
<ul style="list-style-type: none"> <li>Coordinate request to the Province to change crop protection program</li> <li>Partnership building program connecting landowners and hunters</li> </ul>	✓						<ul style="list-style-type: none"> <li>Expediently change program in response to CRD request</li> </ul>	✓			
<b>Professional Sharpshooting</b>											
<ul style="list-style-type: none"> <li>Explore approval and implementation options with Province and other partners as well as options for use of meat</li> </ul>	✓	✓		<ul style="list-style-type: none"> <li>Consider resolution to permit the use of this measure locally</li> <li>Participate on regional committee to advance approvals and implementation</li> <li>Amend municipal bylaws to permit</li> </ul>	✓	✓	<ul style="list-style-type: none"> <li>Discuss implementation requirements and options with CRD</li> </ul>	✓	✓		
<b>Capture and Euthanize</b>											
<ul style="list-style-type: none"> <li>Explore approval and implementation options with Province as well as options for use of meat</li> <li>Coordinate implementation on behalf of municipalities</li> </ul>	✓	✓	✓	<ul style="list-style-type: none"> <li>Consider resolution to permit the use of this measure locally</li> <li>Participate on regional committee to advance approvals and implementation</li> </ul>	✓	✓	✓	<ul style="list-style-type: none"> <li>Provide approvals and partner on implementation with CRD</li> <li>At a minimum provide access to equipment</li> </ul>	✓	✓	✓
<b>First Nations Hunting</b>											
<ul style="list-style-type: none"> <li>Build partnerships between landowners and First Nations to expand harvest</li> </ul>	✓	✓									
<b>Public Education/Administration</b>											
<b>Public Health</b>											
<ul style="list-style-type: none"> <li>Partner with public health agencies to increase awareness of Lyme disease</li> </ul>	✓	✓	✓				<ul style="list-style-type: none"> <li>Partner with CRD to increase awareness of Lyme disease</li> </ul>	✓	✓	✓	
<b>Advocacy</b>											
<ul style="list-style-type: none"> <li>Pursue compensation for crop loss with other governments</li> </ul>	✓						<ul style="list-style-type: none"> <li>Consider and respond to requests for programs to address crop loss and subsidies</li> </ul>	✓			
<b>Administration/Public Education</b>											
<ul style="list-style-type: none"> <li>Provide public education on all aspects of RDMS</li> <li>Develop partnerships for RDMS implementation</li> <li>Establish monitoring &amp; reporting program</li> <li>Establish oversight committee for RDMS implementation</li> </ul>	✓	✓	✓	<ul style="list-style-type: none"> <li>Cooperate with region on RDMS implementation</li> <li>Participate in monitoring</li> <li>Participate in RDMS oversight committee</li> </ul>	✓	✓	✓	<ul style="list-style-type: none"> <li>Work with CRD and municipalities to implement RDMS</li> <li>Participate in monitoring</li> <li>Participate in RDMS oversight committee</li> </ul>	✓	✓	✓
<b>Deer-Vehicle Collision Mitigation</b>											
<b>Infrastructure</b>											
<ul style="list-style-type: none"> <li>Coordinate with municipalities and Province to develop improved signage and speed reduction in high collision areas</li> <li>Partner with ICBC to increase driver education for collision avoidance</li> </ul>	✓	✓	✓	<ul style="list-style-type: none"> <li>Consider deer mitigation in road design/reconstruction</li> <li>Increase and extend right-of-way brushing in high collision areas</li> <li>Install improved signage</li> <li>Implement &amp; enforce speed reductions</li> </ul>	✓	✓	✓	<ul style="list-style-type: none"> <li>Revise road designs for new roads &amp; reconstruction to mitigate deer collisions</li> <li>Increase and extend right-of-way brushing and fencing in high collision areas</li> <li>Install improved signage</li> <li>Implement &amp; enforce speed reductions</li> </ul>	✓	✓	✓



# 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 <sup>1</sup>		MULE DEER		WHITE-TAILED DEER		BISON <sup>4</sup>	
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:**

<sup>1</sup> 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.  
<sup>2</sup> \*\* 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)

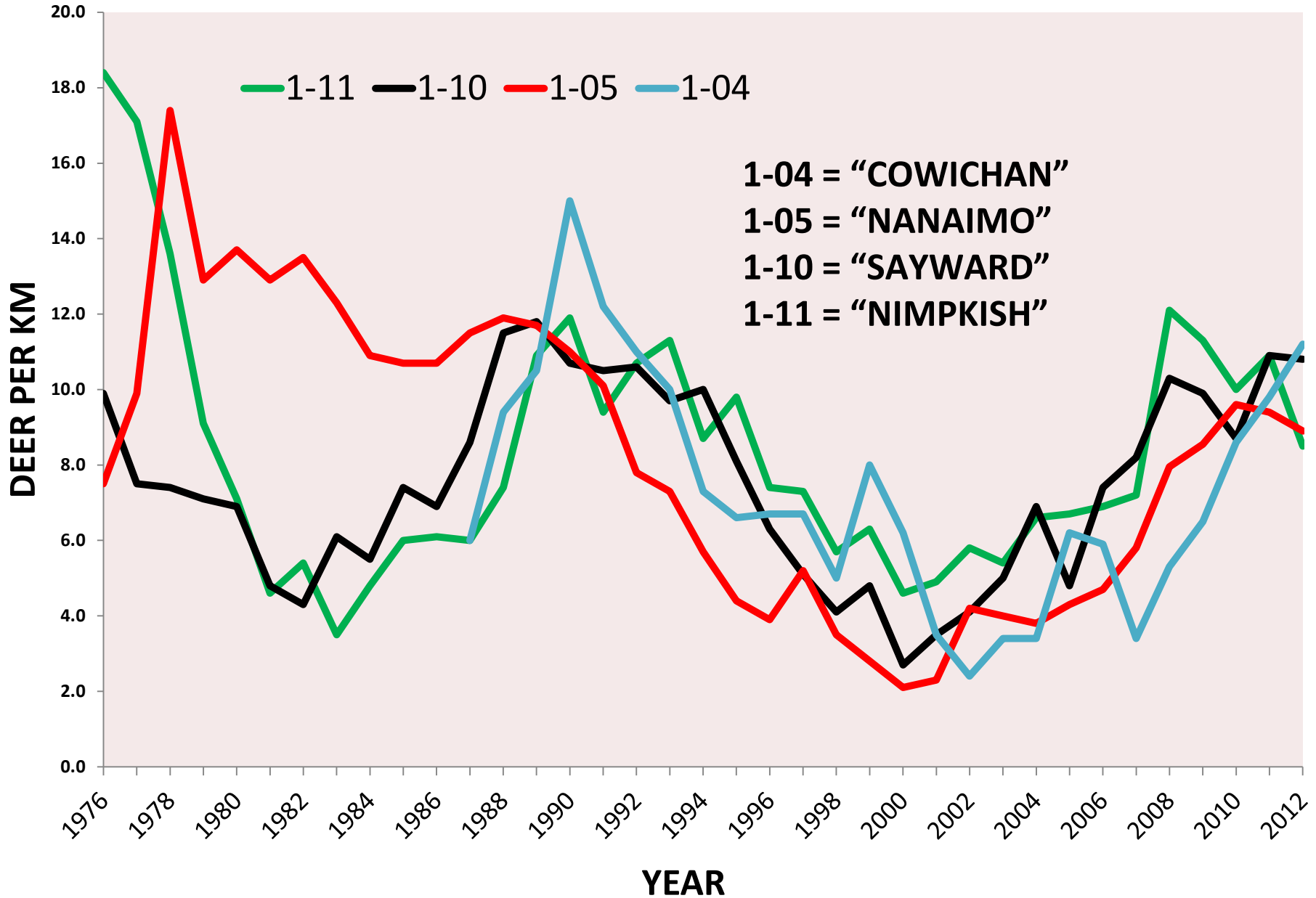
- <sup>1</sup> Region 6 estimates includes Elk and Blacktailed Deer on Haida Gwaii.
- <sup>2</sup> Includes Stone Sheep in Region's 6 and 7, and Dall Sheep (400-600) in Region 6.
- <sup>3</sup> Includes California Bighorn Sheep in Region's 3, 5 and 8 (3100-3900); and Rocky Mountain Bighorn Sheep in Region's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

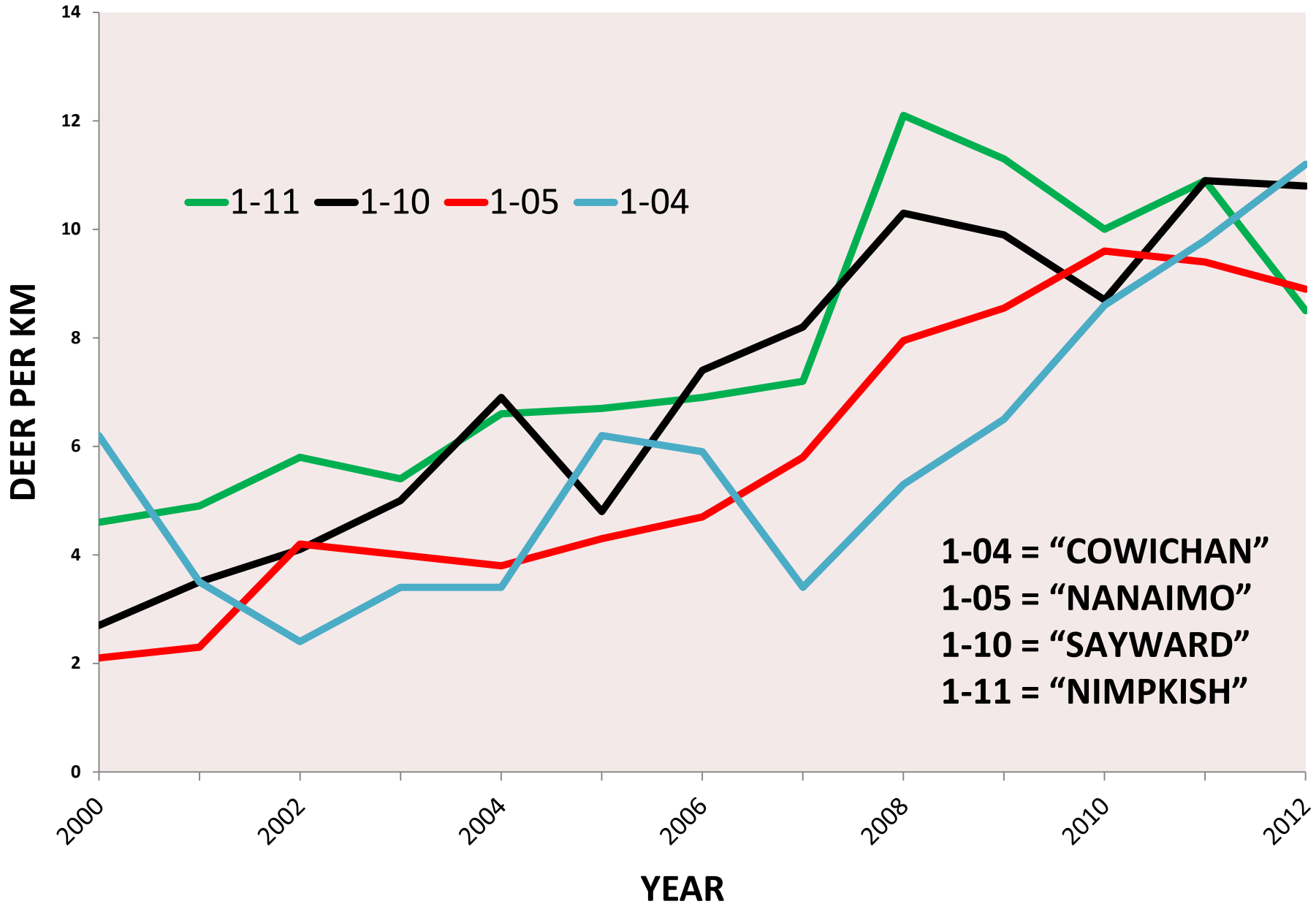


Region 1  
Management Unit  
Boundaries

# SPRING DEER INVENTORY - MUs 1-04, 1-05, 1-10, 1-11 1976 - 2012



# SPRING DEER INVENTORY - MUs 1-04, 1-05, 1-10, 1-11 2000 - 2012



## CONCERNS WITH CONDUCTING AN URBAN DEER INVENTORY

- Deer populations in the urban/rural environment will be highly variable by area, neighbourhood, or even individual block within a neighbourhood due to high variability in habitat suitability
- There is no standardized inventory methodology available for use in the urban environment
- Any count would only generate an index – with very wide confidence intervals – not an estimate of the actual population
- Past experience has noted that there are very serious concerns in the use of volunteers conducting deer inventory work
- Any inventory with any possibility of defensibility would be very labour and \$ expensive to carry out, and would require numerous years of data to detect trends – if a reliable/defensible method could even be identified

***For all of the above reasons, any inventory work carried out would not be considered scientifically defensible, and therefore subject to intense criticism as to its reliability.***

**RECOMMENDATION: Use metrics of the problem – not the deer population – to identify areas of priority concern and to measure results of treatment.**

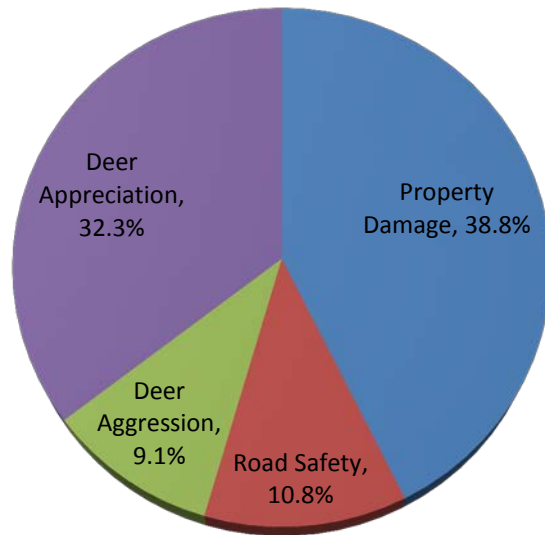
## Appendix C - Community Feedback

Categories	Responses	
Property Damage	242	38.8%
Road Safety	67	10.8%
Deer Aggression	57	9.1%
Deer Appreciation	201	32.3%
Total Responses	623	

Number of responses with  
Deer Management  
Recommendations: 266

*Note: These submissions are  
already included in the above total*

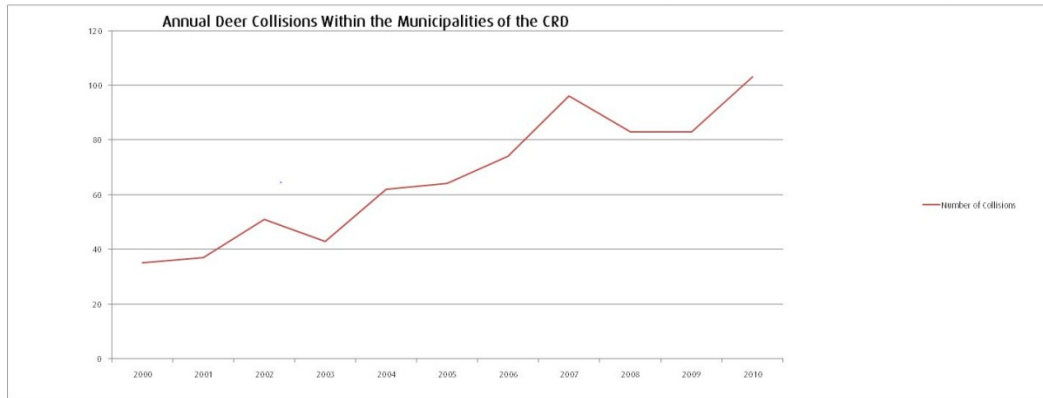
### Deer Management Public Input



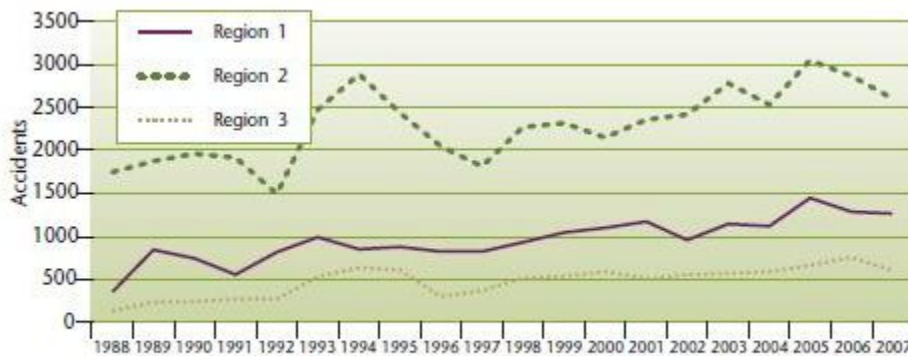
Note: this analysis includes input from areas outside the CRD

## 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

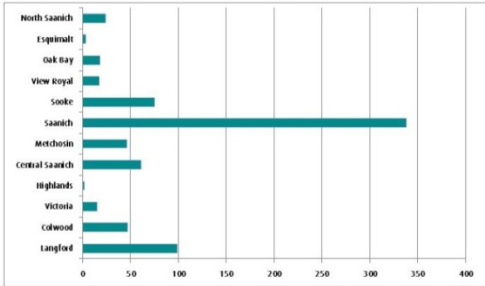
### Monthly Deer Accidents on Vancouver Island





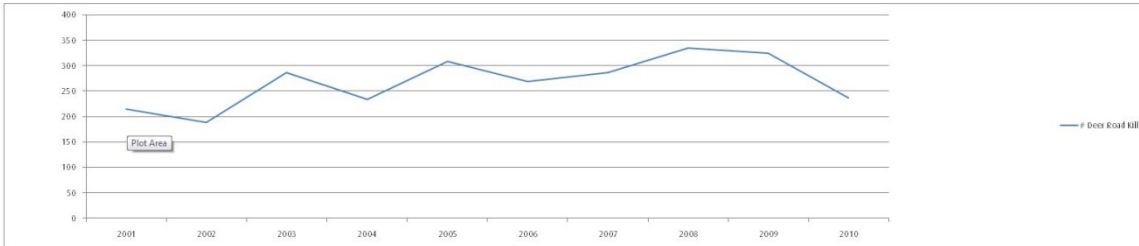
Appendix B – Deer Collision Statistics  
Page 2

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

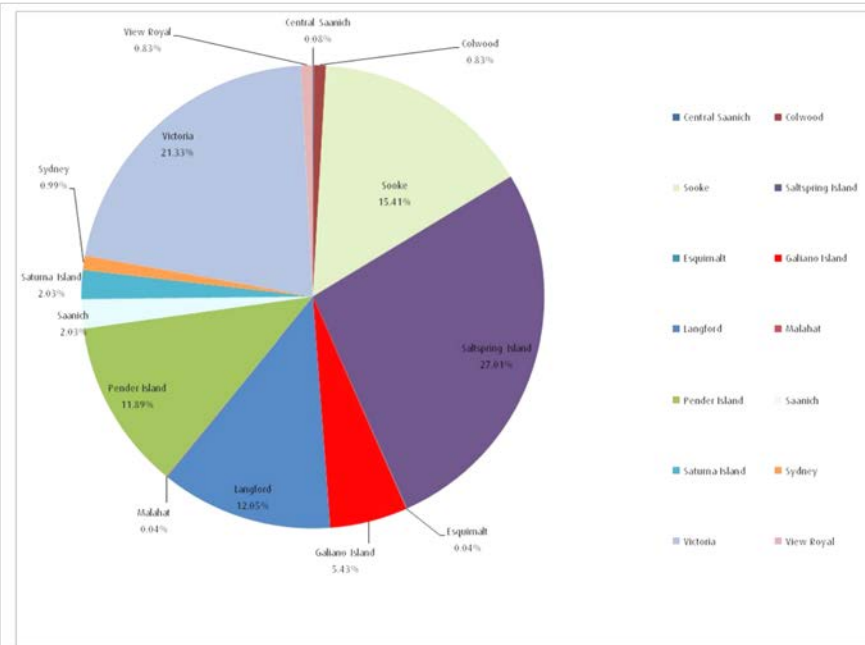


ICBC Animal-related Motor Vehicle Accident Claims in British Columbia (1997 to 2002)											
Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Claims Cost (in millions \$)	\$15.8	\$18.4	\$19.1	\$21.6	\$25.2	\$29.1	\$27.7	\$25.5	\$31.4	\$34.3	\$30.8

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



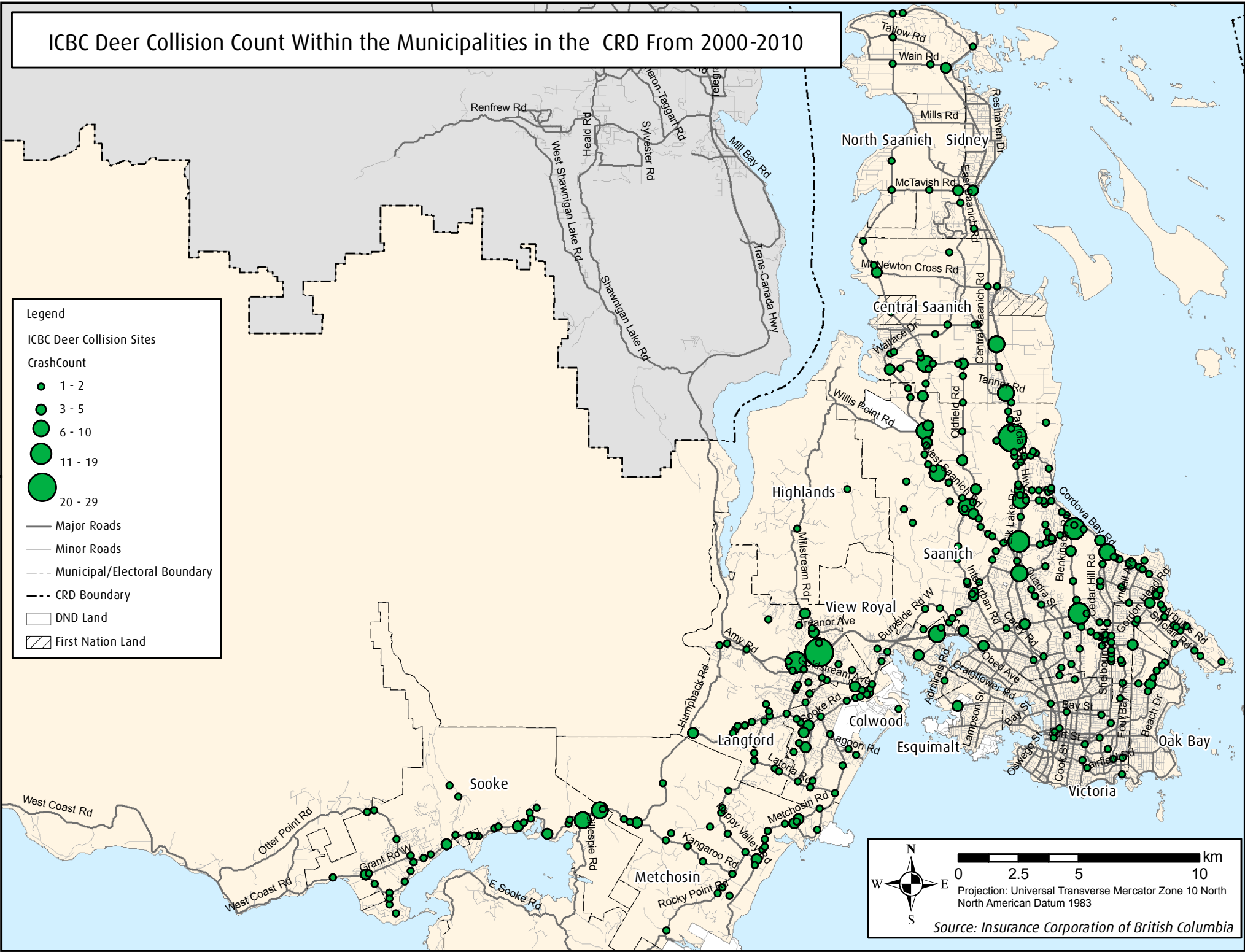
Accident Clean-Up		
Animal Size	Animal Example	Cost Estimate
Small	fox, porcupine, skunk	\$25
Medium	bear, cougar, deer, moutain sheep	\$100
Large	caribou, elk, moose	\$350

Appendix B – Deer Collision Statistics  
Page 3

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
<b>Total</b>	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



**Legend**

ICBC Deer Collision Sites

CrashCount

- 1 - 2
- 3 - 5
- 6 - 10
- 11 - 19
- 20 - 29

— Major Roads

— Minor Roads

- - - Municipal/Electoral Boundary

- - - CRD Boundary

□ DND Land

▨ First Nation Land

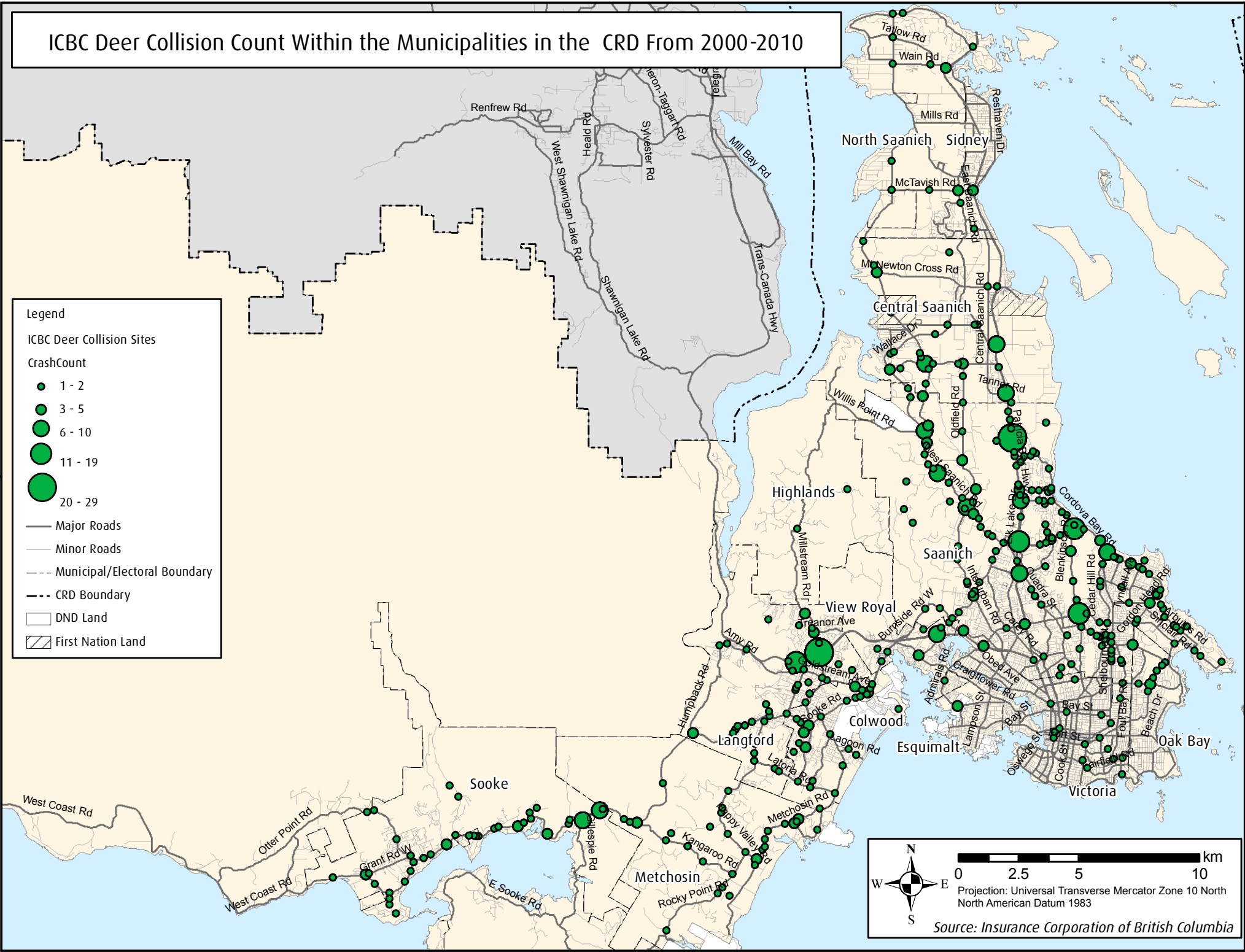
N  
W E S

0 2.5 5 10 km

Projection: Universal Transverse Mercator Zone 10 North  
North American Datum 1983

Source: Insurance Corporation of British Columbia

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



**Legend**

ICBC Deer Collision Sites

CrashCount

- 1 - 2
- 3 - 5
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— Major Roads

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- - - Municipal/Electoral Boundary

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□ DND Land

▨ First Nation Land

N  
W E S

0 2.5 5 10 km

Projection: Universal Transverse Mercator Zone 10 North  
North American Datum 1983

Source: Insurance Corporation of British Columbia

## 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

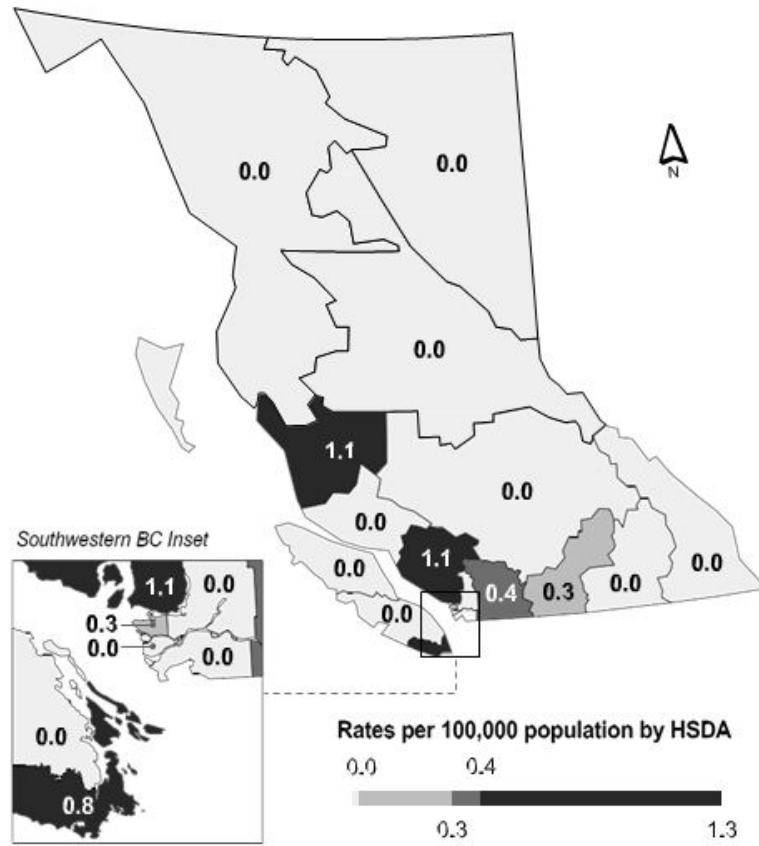
If untreated, the second stage of the disease can last up to several months and include

- 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)**



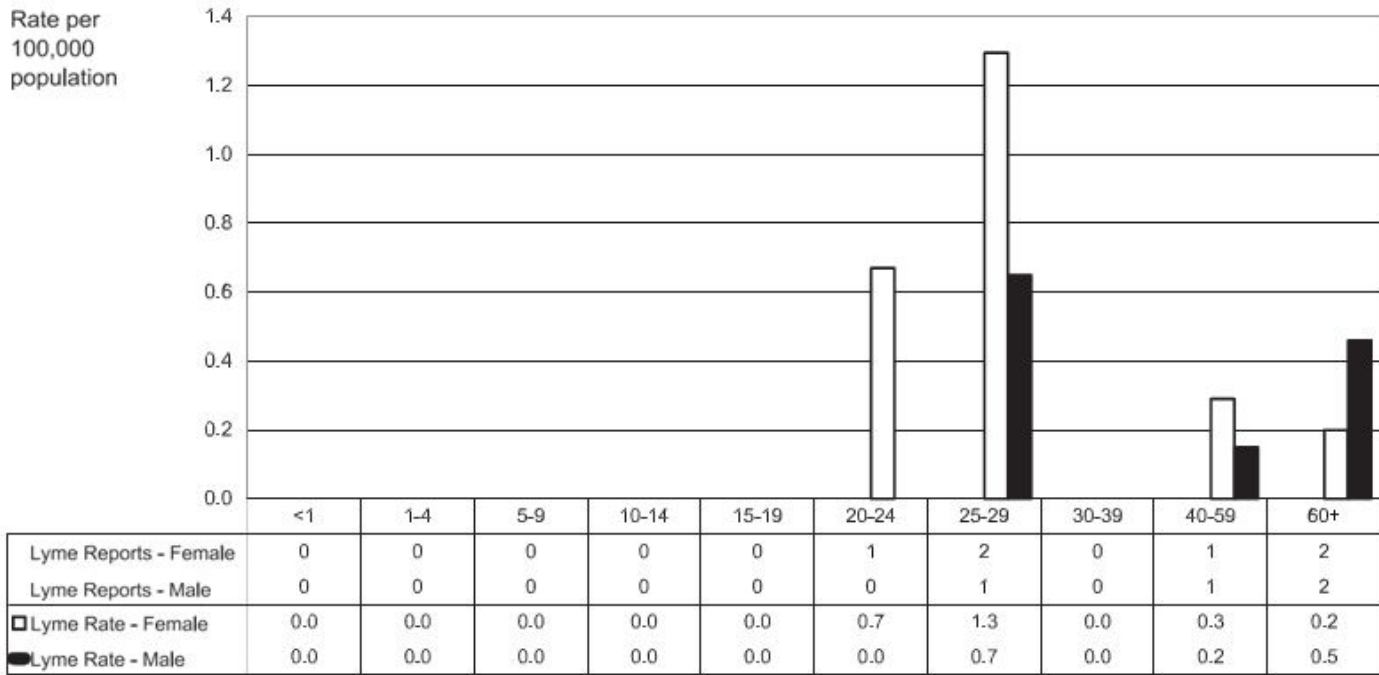
34.2 Lyme Disease Rates by Health Service Delivery Area, 2009



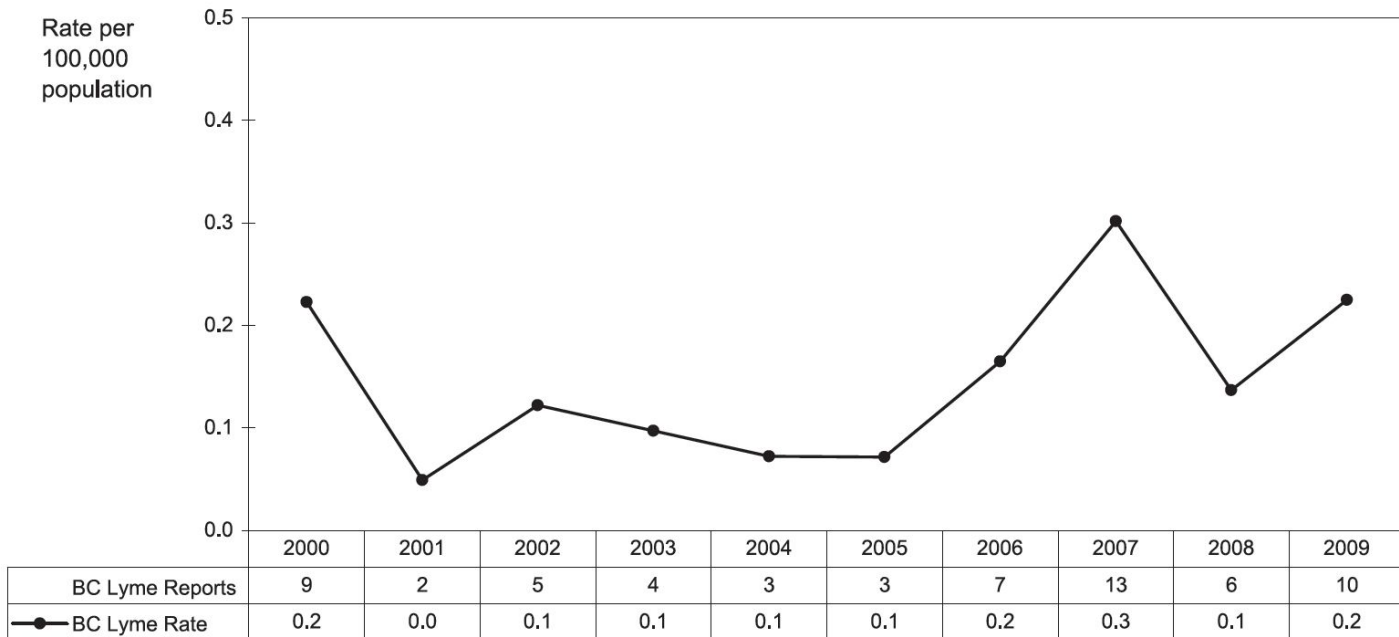
Lyme Disease Rates on Vancouver Island per 100,000 people			
South	Central	North	Vancouver Island Total
0.8	0	0	0.4

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
<b>Totals</b>						
	138	20	1	12	15	186

