

Regional Deer Management Strategy

August 2012

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Regional Deer Management Strategy Recommendations for the CRD

Citizens Advisory Group Members

SIGNED ON THE 27TH DAY OF AUGUST 2012



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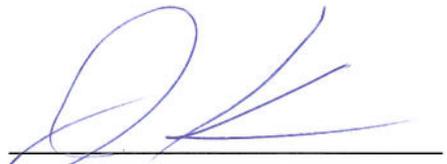
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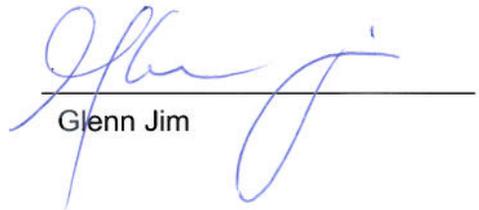
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Preamble/Note from Chair and Vice Chair

When the Citizens' Advisory Group (CAG) for the development of the Capital Regional District's (CRD) Regional Deer Management Strategy (RDMS) first began our work together, each of us brought our own unique perspective, preparations and anticipations to the table. The three local food producers whose hard work and livelihood are directly impacted by Black-tailed deer invading their crops naturally tended to see things through a different lens than the CAG members who had never experienced life as a farmer. Because the deer-human conflict is an emotional matter, it is fair to say that many, if not all, members experienced a shift in their beliefs and viewpoints during the process of developing our recommendations.

Eleven volunteers signed on to the CAG to complete a task that would prove very complex. Differing opinions amongst the group often led to more thorough discussions - and we had plenty of those! Nothing multifarious is ever simply black or white so, using the best available knowledge at this time, we endeavoured to examine the many shades of grey surrounding each management option as we evaluated it.

All of us may have been a little too optimistic when we agreed and aspired to reach optimal consensus with our evaluations. Indeed, two members of the CAG resigned part way through the evaluation process after informing the Board of the CRD that they were unable to finish the task with the rest of the group. The remaining CAG continued to work diligently to produce a set of strong - and consensus-based - recommendations for the Planning, Transportation and Protective Services Committee, a standing committee of the CRD Board that is responsible for making final recommendations to the CRD Board on a RDMS.

One challenge we faced during the evaluation process was a lack of scientific evidence in some cases, hence reliance upon anecdotal evidence was necessary. Statistical information was lacking for the exact number of deer within the CRD and also for the exact figures regarding farmers' income losses caused by deer. It is however important to note that "anecdotal evidence" and "convincing evidence" are not antonyms, nor does "anecdotal" mean "unscientific". Sometimes anecdotal evidence is not only all that is available (as in this case) but it can often be enough evidence to support a decision.

Examples: The use of cowpox as a vaccine for smallpox arose from "anecdotal" evidence. Many of Darwin's observations were "anecdotal" and while some may argue with his conclusions, few argue that his method of collecting evidence was "unscientific".

To maintain the transparency of the CAG's meetings, members of the public were invited to attend as observers, but not permitted to interrupt with questions or comments. Sometimes the topics being discussed by the group were not perceived favourably by attending members of the public. For some of the volunteers on the CAG, the presence of members of the media and photographic and recording devices was a distraction. Moving to a larger facility allowed for more space between the CAG and the public gallery and ensured more open discussion between the group's members.

Three staff members from the CRD's Regional Planning Division provided invaluable assistance to the CAG and were reliable and helpful in every way possible. They also liaised with the Expert Resource Working Group members who were able to ensure the CAG had the latest information and assessments available about the efficacy and sustainability of all known deer management options.

It is difficult to estimate how long it will take to complete a complex process such as this one done by the CAG. When working with such a diverse group of people – selected to represent a broad cross-section of CRD residents - it's important to allow them sufficient time to do their job properly. The commitment of their time and effort from those volunteers chosen to serve on such a committee is sizeable as everyone selected must have a voice. As well, in order to maintain continuity of input, any person who cannot attend meetings regularly should be removed and replaced early in the process so as to avoid gaps in information that they could contribute regarding specific communal and cultural perspectives.

It has been our privilege to serve with the fine people who have persisted through this challenging process. We believe our recommendations for this emotional, economic and politically-charged issue will make a valuable contribution towards finding acceptable solutions to the RDMS.



Jocelyn Skrlac
Chair, Citizens Advisory Group, CRD Regional Deer Management Strategy



Robert Moody
Vice Chair, Citizens Advisory Group, CRD Regional Deer Management Strategy

EXECUTIVE SUMMARY

The report from the Citizens Advisory Group (CAG) provides recommendations to the Capital Regional District (CRD) on a Regional Deer Management Strategy.

The CAG held 14 meetings between May and August to discuss how to reduce the deer-human conflicts in the region with a focus on agricultural areas. This task has been challenging, because deer in the CRD range over rural, agricultural and urban geographies across all 13 local government areas and the electoral areas. Emotional and ethical considerations associated with deer management were forefront over the course of CAG's deliberations.

The CAG strongly believes there is clear and convincing evidence that deer-human conflicts are on the rise in the CRD and that the deer population in many urban, rural and agricultural areas is increasing. While no scientific study has been done to count the deer in the CRD and one is not feasible, it is appropriate to rely on the observations of those who live in the CRD. The information received from the public cannot be considered simply anecdotal. There are too many reports and observations reported from farmers, residents, First Nations and hunters indicating that the deer population in many areas has increased significantly over the past 10 years. As a result, damage to crops, deer-vehicle collisions, ornamental and food vegetation damage, public health and safety risks and other deer-human conflicts have also increased.

The CAG has considered these issues based on the information provided by CRD staff, the Expert Resource Working Group (ERWG), citizens input into the deermanagement@crd.bc.ca e-mail address and the diverse personal experiences of CAG members. For many CAG members, their initial understanding of the issue and ideas for solutions changed as they grappled with the complexity of this issue. However, after much deliberation, the CAG reached a consensus on what they believe is a viable long-term strategy for managing deer in the CRD.

The 12 management options considered by the CAG were mostly derived from the *BC Urban Ungulate Conflict Analysis* report. These options were organized into four categories Conflict Reduction, Deer-Vehicle Collision Mitigation, Population Reduction and Fertility Control. Conflict Reduction options include: hazing and frightening, landscaping alternatives, fencing and repellents. Deer-Vehicle Collision Mitigation was divided into infrastructure and administrative options. Population Reduction options include: capture and relocate, capture and euthanize, controlled public hunting, professional sharpshooting and crop protection. Fertility Control focuses on a single option, immunocontraception. In addition, CAG also considered and evaluated public education as a management option as well as the option of taking no further action, i.e. status quo.

Evaluation of options was undertaken for three distinct geographies in the CRD: agricultural, rural and urban, in order to address the unique approaches required for each. For each option, consideration was given to individual properties as well as to broader geographic effectiveness and effectiveness in addressing the underlying issue of high deer population density. For example, options such as repellants or fencing are 'private' options that may be effective for individual property owners. Alternatively, options that involve population reduction are 'public' options that would have a broader impact across a larger area and address the key underlying population issue.

In order to evaluate each management option a set of criteria was developed, including consideration of effectiveness, feasibility, capability, cost, time required to implement, public support and whether there would be negative community impacts. Evaluation criteria were ranked using a simple scoring system representing low to high desirability. Each management option was evaluated individually by CAG members, followed by group facilitated sessions to produce consensus maps. Individual and group considerations, concerns, caveats, opinions and assumptions were documented in the process.

The evaluation process informed outcome statements and recommendations for each geography and by time period, ranging from immediate to long-term (10+ years). Recommendations were made on the principle that all options, including population control measures, should be carried out in the most humane manner possible, and in particular, should avoid inflicting suffering on deer through actions that expose deer to an undue risk of starvation or injury.

Agricultural Geography

Outcome

Address the economic loss in agricultural areas by reducing the deer population to acceptable levels. Maintain the population at that level by improving programs and tools for farmers to minimize crop losses.

Recommendations

Immediate/Short Term

1. Increase effectiveness of hunting
2. Explore opportunities to support and expand First Nations harvest
3. Improve Crop Protection Program
4. Population Reduction Measures
5. Remove regulatory barriers to effective fencing (e.g., height, placement)
6. Reinststate and expand government incentives for fencing including greater subsidies
7. Explore new technology for the use of electrical fencing where it was previously thought to not be technically feasible
8. Pursue compensation program for crop loss with provincial and federal government
9. Initiate data collection for crop loss information documentation to be used as baseline data to measure the effectiveness of options
10. Develop partnerships between local, regional, provincial governments and nongovernment organizations (NGOs) for implementing options (e.g., animal control bylaw officers, anglers and hunter associations)

Medium Term

1. Preliminary evaluation of short term actions/outcomes
2. Adjust short term measures based on outcome of preliminary evaluation and continue implementation

Rural Geography

Outcome Statement

Reduce the deer population to natural levels outside of settled areas and provide rural residents with measures to reduce deer human conflicts to within the range of individual tolerance levels.

Recommendations

Immediate/Short Term

1. Develop partnerships between local, regional, provincial governments and NGOs for implementing options (e.g., animal control bylaw officers, anglers and hunter associations)
2. Remove regulatory barriers to fencing (i.e., height, placement)
3. Population Reduction Measures
4. Increase effectiveness of hunting
5. Explore opportunities to support and expand First Nations harvest
6. Local governments consider impacts on deer habitat (wildlife corridors) with new developments in planning document (official community plan, zoning bylaws, etc.)

Medium Term

1. Preliminary evaluation of short term actions/outcomes
2. Adjust short term measures based on outcome of preliminary evaluation and continue implementation

Urban Geography

Outcome

Reduce the deer population to natural levels inside settled areas and provide urban residents with measures to reduce deer human conflicts to within the range of individual tolerance levels.

Recommendations

Immediate/Short Term

1. Promote range of mitigating options for property owners (public and private)
2. Encourage provincial government to delegate authority to local government to deal with aggressive deer
3. Encourage local governments to develop bylaws prohibiting deer feeding and take appropriate enforcement action
4. Encourage local government to provide incentives for fencing that protects food and considers cost
5. Encourage local government to undertake bulk purchase and distribution of repellents
7. Population Reduction Measures
8. Local governments consider impacts on deer habitat (wildlife corridors) with new developments in planning document (official community plan, Zoning bylaws)

Medium Term

1. Preliminary evaluation of short term actions/outcomes.
2. Adjust short term measures based on outcome of preliminary evaluation and continue implementation.

Deer Vehicle Collision Mitigation (Entire Region)

Outcome

Reduce the number of deer vehicle collisions (auto and cyclist)

Recommendations

1. Encourage provincial government and municipalities to increase effectiveness of deer warning signage.
2. Encourage provincial government and municipalities to partner with ICBC to increase driver education on deer vehicle collision mitigation.
3. Encourage provincial government and municipalities to explore partnerships with school districts to produce unique mobile signage to increase awareness.
4. Encourage provincial government and municipalities to increase and extend right of way brushing in high collision areas as identified in ICBC collision map.
5. Encourage provincial government and municipalities to consider designs to minimize deer vehicle collisions in capital infrastructure planning.
6. Encourage provincial government and municipalities to revise speed limits in high collision areas identified in the ICBC collision map.
7. Encourage the CRD to integrate deer vehicle collision mitigation measures into the Regional Transportation Plan.

Over-arching Recommendations (Entire Region)

1. That the CRD establish an overall monitoring and reporting program to measure the effectiveness of the regional deer management strategy, to be overseen by a permanent body (with expert and citizen representation) for deer issues and make recommendations for changes to the strategy over time.
2. Wherever population reduction measures are used, encourage techniques be adopted and regulations be changed to allow for meat to be used.
3. CRD should engage with First Nations on recommendations for deer management.
4. Encourage the CRD to establish a region-wide public education program to support the management options in addressing deer-human conflicts in the CRD.
5. Increase public awareness of health concerns e.g., Lyme disease, through existing health services (Nurseline) and public health providers (clinics).

Long Term (Entire Region)

1. Monitor state of emerging technologies.
2. Ongoing monitoring and adjustment of short and medium term management measures.

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PROCESS

The Capital Regional District (CRD) has acknowledged that conflicts exist between the Vancouver Island population of Columbia Black-tailed deer (*Odocoileus hemionus columianus*) and private land owners of the region as an ongoing issue. Some areas provide excellent deer habitat and protection from predation and hunting, with the result that some of the deer are now permanent residents. The close proximity with human residents has increased conflict in these areas.

There are a number of forms of conflicts that occur between people and deer, including increasing rates of crop losses for commercial agricultural producers, deer-vehicle collisions, damage to gardens and landscaping, increasing reports of aggressive deer behavior toward humans and pets and increased risk of transmission of diseases and parasites from deer to humans and pets.

In 2011, a number of CRD reports were produced to respond to initial public concerns by describing the issues and outlining the provincial position. Correspondence was submitted from the CRD to the Ministry of Environment (MoE) Compliance Division outlining the concerns raised by citizens, indicating the need for a management plan and requesting the Ministry to develop a comprehensive provincial deer management plan as the region was of the opinion that issues pertaining to wildlife management are a provincial responsibility (Appendix 5). Response from the Ministry indicated that responsibility for developing a community deer management strategy rests at the local level of government (Appendix 6).

On the basis of this response and continued public and municipal government calls for a regional deer management strategy, a CRD report was prepared outlining existing research and data analysis, including detailed email submissions from the public. The information is compiled on a dedicated web page, www.crd.bc.ca/deermanagement. A brief summary of the issue, the deer population and deer/human conflicts are found in Appendix 1. A MoE report, the *British Columbia Urban Ungulate Conflict Analysis* recommended that communities establish Urban Deer Management Advisory committees to develop comprehensive management strategies based on consensus-based decision making. Black-tailed deer populations are managed as big game species under the *Wildlife Act* by MoE and the Ministry of Forests, Lands and Natural Resource Operations (MFLNRO) through hunting seasons. Deer within communities cannot be harvested in this manner so communities are advised that if they identify deer conflict as a high priority, they can develop community deer management plans with government input. Government staff may assist in the process of developing strategies through participation on committees and, as capacity allows, be involved in delivery of management options. Ministry staff cannot lead these processes but can encourage and facilitate community involvement and leadership. Population management options that may form part of a management strategy require permission by the Province prior to implementation.

In accordance with provincial government advice, the CRD developed Terms of Reference (ToR) for a Regional Deer Management Strategy (RDMS) guided by a Citizens' Advisory Committee (CAG). Effectively the CAG was tasked with preparing and recommending the management strategy and action plan as set out in the project ToR (See Appendix 2). The group was requested to prioritize agriculture-deer conflicts in their deliberations on

recommendations. The CAG operated within Board-adopted ToR (See Appendix 3) and were tasked with completing their recommendations to the CRD by the end of July; this date was subsequently extended to the end of August, 2012.

A number of government and agency professionals knowledgeable in wildlife management and specifically deer, were invited to participate on an Expert Resource Working Group (ERWG) to support the CAG by providing factual information and professional opinion in response to CAG questions, and reviewing materials and documents prepared by the CAG.

The purpose of the project is to identify, evaluate and recommend options to mitigate deer-human conflicts over short and long terms. Nearly all options considered by the CAG were derived from the *British Columbia Urban Ungulate Conflict Analysis*. The *Analysis* was produced by a comprehensive review and interviews with experts in BC and other North American jurisdictions. The *Analysis* is provincial in scope and applicable to all communities in BC that are currently experiencing deer-human conflicts. The report can be found online at http://www.env.gov.bc.ca/cos/info/wildlife_human_interaction/UrbanUngulates.html.

Citizens Advisory Group

Eleven citizens were appointed by the CRD Board to the CAG from a pool of 75 applicants responding to online and media advertisements issued by the CRD in the spring of 2012. The CAG members were selected primarily based on geographical representation and, specifically three food producers and a First Nations person were appointed as per the ToR (Appendix 3). Beyond these selection criteria, care was taken to provide a broad cross-section of citizens, neither "pro" or "anti" deer and without consideration of any group affiliation. The role of CAG was to provide advice, based on personal experience and knowledge, as well as the information provided as part of RDMS process. A chair and vice chair were selected by the group to lead the meetings and act as official spokesperson for the group. Over the course of the process, two members resigned (July 8, 2012) and one additional member was appointed to assist in providing a First Nations perspective.

The decision making process for the CAG was to be by consensus as per the ToR; in the event that consensus could not be reached, the decision would be by a majority vote. All views (consensual, majority and minority) were recorded in detailed minutes taken by CRD staff at each meeting. All minutes of the CAG are available at www.crd.bc.ca/deermanagement.

In total, the CAG held 14 meetings over 4 months to arrive at the recommended options to manage deer-human conflicts for CRD Board consideration. Meetings were open to the public to observe; delegations were not permitted. All CAG proceedings were available to the public through the website (www.crd.bc.ca/deermanagement); online input was accepted and considered by the CAG at their discretion.

This report contains the RDMS recommendations of the CAG to the CRD Board. All recommendations reflect the consensus of the 10 current members of the CAG.

Expert Resources Working Group

The ERWG provided technical and scientific input as requested. The following groups were represented on the ERWG for most of the process:

- Ministry of Agriculture
- Ministry of Forest, Lands and Natural Resource Operations
- Peninsula Agriculture Commission
- Society for the Prevention of Cruelty to Animals
- First Nations representative (Tseycum Nation – representing himself)
- Parks Canada biologist

The ERWG was established as set out in the RDMS ToR (Appendix 2). Individuals were contacted requesting their organization's representation on the group. A number of individuals and groups declined to participate due to time constraints and attendance was not consistent. The First Nation representative was appointed to the CAG along the way and the Parks Canada biologist was only available for the first part of the process.

Goals, Objectives & Principles

The goal of the process from the ToR was to provide recommendations to mitigate deer-human conflicts in the region pertaining to agricultural impacts (as a priority), public health and safety and ornamental gardens.

In order to reach this goal the following objectives were established by the CAG:

- to decrease the incidence of deer-human conflicts in agricultural, rural and urban settings in both the short and long term;
- to improve the level of information regarding impacts; and
- to propose a monitoring program to assess the effectiveness of the deer management strategy.

The CAG also established a set of principles to guide the strategy development process, as follows:

1. The CAG acknowledges the need for sustainable agriculture in the region.
2. The CAG recommendations will consider both opportunities and impacts on local food security.
3. The RDMS must be sustainable over the long-term; however this should not preclude the use of short term options.
4. The RDMS will focus its recommendations on minimizing deer-human conflict.
5. The CAG will give serious consideration to all viewpoints.
6. Consideration of all options and solutions will be based to the degree possible, on scientific information.
7. The CAG recommendations must be credible and reasonably reflective of public views.
8. Decision by consensus is optimum.
9. The CAG recommendations will respect local First Nations considerations as much as these are known and possible.

APPROACH AND METHODOLOGY

The CAG reviewed background information and data for orientation and acknowledged that the CRD situation is complex given the variety of deer-human conflicts across the region. In order to thoroughly consider and prioritize agricultural issues as requested, the CAG identified three geographies: agricultural, rural and urban to focus their discussion, evaluation and management option considerations. Options were evaluated by geography against a standard set of criteria; these evaluations informed the CAG's recommended management options. Management options for deer-vehicle conflict were approached differently as the CAG viewed this conflict to be universal to all geographies. Therefore it was evaluated on its own, and accordingly, recommendations that address all geographies were made for this particular type of conflict.

The land use types are broadly defined as:

Agricultural: Lands that are currently zoned or designated for agricultural use, within or outside the Agricultural Land Reserve or land under active cultivation for commercial agricultural purposes.

Rural: Lands that are zoned or designated as rural or rural residential in the Regional Growth Strategy and municipal planning documents characterized by private land holdings primarily used for residential purposes and containing single detached, duplex and other housing types. Isolated commercial and industrial uses may be interspersed, although the area is predominantly rural in character. These areas are primarily contained within the rural municipalities of the Peninsula and the West Shore as well as rural Saanich.

Urban: Lands zoned or designated in official community plans for urban development (including all housing forms, commercial, industrial and large scale institutional and utility uses). Generally, this type of land use is predominated by lots under 0.2 ha, with high percentages of impervious surface. Urban areas are contained within the Core and the major centres of the West Shore and Peninsula.

Management Options and Evaluation Criteria

The management options are as follows:

Conflict Reduction

1. Hazing and frightening
2. Landscaping alternatives
3. Fencing
4. Repellents

Deer-Vehicle Collisions

5. Deer-vehicle collision mitigation

Population Reduction

6. Capture and relocation
7. Capture and euthanize
8. Controlled public hunting
9. Professional sharpshooting
10. Crop protection

Fertility Control

11. Immunocontraceptives

Public Education and Outreach

12. Public education

In addition, the CAG also evaluated 'status quo' or take no further action as an option.

The CAG, with assistance from the ERWG developed several criteria to evaluate each of 12 management options in the various geographies. The evaluation criteria are summarized as follows:

1. Effectiveness
 - a. Consider efficacy of the option in terms of its ability to address the broader issue of high deer population density;
 - b. Consider efficacy of the option in achieving a sustained reduction in deer-human conflict;
 - c. Consider effectiveness of the option over the short and long term;
 - d. Consider whether the option is easily monitored.
2. Feasibility/Capacity
 - a. Consider the ease of implementation and technology required to implement each option;
 - b. Consider what capacity requirements (i.e., personnel, equipment) required to implement each option.
3. Capability
 - a. Consider legal and regulatory barriers, limitations of authority and jurisdiction in terms of the required means for implementing each option.
4. Cost/Economic Impact
 - a. Consider cost to implement/maintain each option;
 - b. Consider overall economic impact associated with implementing each option.
5. Time
 - a. Consider the time required to implement each option, including any delays that may result from jurisdictional authority and permissions;
 - b. Consider both short and long term time requirements for establishing and maintaining each option.

6. Support/Enthusiasm
 - a. Consider the degree of support that each option may have by the general public in terms of addressing the conflict;
 - b. Consider the degree of support that each option may have by policy makers in terms of addressing the conflict;
 - c. Consider acceptability of each option from the perspective of humaneness.

7. Negative Community Impacts (Health, Safety, Environment)
 - a. Consider public safety, public health and environmental impacts associated with each option;
 - b. Consider opportunities for First Nations involvement in implementing each option.

Effectiveness was evaluated both at the individual property level and also from a broad-based geography level. Similarly, the support/enthusiasm criterion was evaluated from the perspective of the community and interest groups as well as from the perspective of government.

The CAG relied on available qualified background information and data, expert opinion from the ERWG and anecdotal information provided through e-mail submissions to deermanagement@crd.bc.ca and other sources in combination with experience and personal judgment and informed opinion to evaluate each option.

The evaluation criteria were ranked using a simple scoring system of 1-3. One indicated low desirability, two indicated medium and three indicated high desirability. Each management option was evaluated individually by CAG members, followed by group facilitated sessions to produce consensus maps. Individual and group considerations, concerns, caveats, opinions and assumptions were documented in the process. The evaluation results for each option are contained in Appendix 9.

Information Availability

Data Sources

Available data and information were provided to the CAG as background. The CAG identified data limitations, some of which were filled by the ERWG. In many cases data was not available at the regional geography. Data limitations in agricultural loss expressed in economic terms and population count data at the regional or sub-regional levels were noted and are discussed below.

The CAG recognized that many policy decisions in many different fields have to be made on the basis of available information. The CAG relied on available data as well as background information, anecdotal accounts from affected groups, ERWG expertise and discussions held during the evaluation phase of the work as valid inputs to decision-making. A '*no regrets strategy*' – one that wouldn't preclude consideration of all available options - was adopted, so that the strategy would be broad-based with multiple options and approaches to address the variety of conflicts in all geographies.

As indicated later in the report, one of the recommended approaches is to establish a monitoring program to benchmark and measure the outcomes of the management options over time. This approach is purposeful in that it will measure the effectiveness of the management options in reducing conflicts, which is the main objective of the strategy.

Agricultural Crop Loss

The Ministry of Agriculture was contacted to provide documentation on crop damage and economic losses at the regional level. The Ministry responded that such information is not currently collected at the regional level, nor was animal type related loss collected, i.e. loss that could be attributed specifically to deer. Available economic loss data are dated and/or do not cover all agricultural producers in the region.

A 2001 Ministry of Agriculture, Food and Fisheries report in conjunction with the Island Farmers' Alliance surveyed 1,000 Vancouver Island agricultural producers on the subject of problem wildlife on farmland. The goal was to gather information from farmers to help determine which species of wildlife were most negatively impacting agricultural operations, including extent of damage and associated losses. Of the 300 farms surveyed on southern Vancouver Island 25 responded (8% response).

Of the responses received, black-tailed deer were the number one year round concern. Impacts were felt across many agricultural commodities including grasses, vegetables, trees, flowers, tree fruits and grapes. Deer feeding habits resulting in vegetable and tree damage and crop loss were most frequently cited. Other complaints included fencing damage, grass damage due to bedding down, trails, and feces. Financial loss/damage estimates due to ungulates of all kinds ranged from \$5000-\$50,000 annually per farm. In some cases farmers could not provide an estimated figure.

The survey asked what management measures farmers preferred and the most common response was the right to shoot deer on their property at the time of damage, regardless of hunting season restrictions. If this option could not be implemented, responding farmers requested total compensation for crop value and damages should be awarded. There was a noted willingness to fence if the government supplies low interest loans, or grants for the total amount of the fencing project.

The Census of Agriculture collects crop loss information but the data are aggregated and do not indicate whether the deer are the cause.

More recently, the Capital Regional Food and Agriculture Initiatives Round Table (CR FAIR) Food Policy Working Group collected information through a petition and self-reporting form from a number of farmers on the Saanich Peninsula (see Appendix 7). This information was submitted to the CRD in February, 2012 and was described later in this report.

On balance, the CAG feel there is sufficient information, as well as CRD Board direction, to recommend strategies to address agricultural loss due to deer invasion in agricultural areas. This is in keeping with the CAG's mandate as outlined in the ToR.

Population Count/Inventory

The Ministry inventories deer for Vancouver Island as a whole and estimates the deer population to be 45,000-65,000 individuals with a steady to increasing growth rate. There is no inventory of black-tailed deer in the CRD, and one is neither possible, given current technical and labour constraints -- nor required in order to develop conflict-reduction plans according to the MFLNRO and the ERWG. Anecdotal evidence of increased conflict confirms that urban deer are present in areas where they were not seen in earlier years, indicating that urban populations are increasing, even if overall counts may be stable.

Senior provincial biologists stated that there is no clear methodology to count deer in urban, rural or agricultural areas. Volunteer estimates are likely unreliable and therefore not advisable. The recommended approach was to use existing metrics such as number of deer-vehicle collisions, crop damage and loss information, aggressive deer complaints and overall ornamental garden complaints. Accordingly, the CAG's recommendations focus on measures that address these conflicts.

Perceptions and Opinions

Over the course of the CAG evaluation process, several submissions and media opinion pieces were received on various options, some of which were not proposed in the *BC Urban Ungulate Analysis*. The CAG, with the assistance of the ERWG, considered the new options, such as the use of sonic devices. This consideration is documented in the management option discussion and evaluation outcome section.

Regarding other management options and measures that the CAG were in the process of evaluating, claims were made in main-stream and alternate media (e-mail submissions, and interest group blogs, for example) that contained incomplete or erroneous information. For example, the management measure of capture and relocation has been reviewed favourably by these sources, however the negative impacts on the animal and the current provincial review of this measure questioning it as inhumane, have not been identified in any media coverage.

Similarly, fencing in agriculture areas has also been put forward as a viable option for farmers, however, input from farmers and CAG members demonstrates that, for larger land owners, this option is not considered financially feasible.

Immunocontraception has also been identified by opinion pieces in the media as a viable option. Background information provided to the CAG by ERWG confirms that no products are currently available for use in Canada other than for small scale research projects and that limited testing of the efficacy of immunocontraceptive vaccines has been undertaken on black-tailed deer.

The CAG has relied on best available qualified information and opinion to inform option evaluation and recommendations and have disregarded unsubstantiated or incomplete information and opinion.

DEER-HUMAN CONFLICTS IN THE CRD

Agricultural, Rural and Urban

Documented deer-human conflicts in the CRD were discussed during initial CAG and ERWG meetings in order to gain a complete understanding of the nature of conflict reduction to be achieved through a regional deer management strategy. These conflicts are described below by geography. The over-arching deer-vehicle conflict spans all geographies and is documented separately.

Agricultural

The impact of deer on agricultural crops, particularly fruits and vegetables for human consumption, was a primary concern when considering the agricultural geography. The CR FAIR Food Policy Working Group submitted a formal letter to the CRD Board detailing understory loss, disease transmission risk (specifically Lyme disease), automobile accidents and agriculture losses attributed to deer grazing (Appendix 7). The CR FAIR also conducted a (non-statistical) survey of the farm community, which indicated crop loss estimates of between \$500-\$25,000 per farm, including additional fencing costs and changes in farming practices, primarily no longer planting certain crops, like lettuces, due to deer consumption.

Submissions to the Planning, Transportation and Protective Services Committee, were made on behalf of Saanich Peninsula farmers which also detailed deer related crop loss. A number of farm operators with smaller farms indicated that fencing had been installed and was effectively reducing conflicts. Farm operators with larger operations noted that deer fencing was cost prohibitive.

Secondary issues from the agricultural area include purposeful feeding by residents that promotes crop damage as well as restrictions on hunting and First Nations harvest that interfere with deer population control. Purposeful feeding of deer by residents appeared to result in personal attachments to individual deer and groups of deer, and leads to abnormally high deer densities; this is true of all geographic categories. The action creates dependency on the feeding practice and habituates deer to humans. Feeding bylaws prevent people from feeding deer, including during harsh seasonal conditions. Although difficult to enforce, additional efforts are required from the community, enforcement officers, and wildlife agencies to discourage this human behaviour. Wildlife feeding bylaws to ban the practice are in place in 4 of 13 municipalities; however, most are relatively recent.

Hunting and firearms discharge bylaws prevent deer harvest in many municipalities. In most cases, opportunities for hunting are limited through bylaws that restrict the discharge of firearms in proximity to structures, roads and other infrastructure. As a result, success is minimal and ineffective for deer population control (Appendix 4).

Rural

In rural areas, the primary issues pertain to the impact of deer-vehicle collisions, garden losses (ornamental and fruit/vegetable) and human health risks.

Ornamental garden and fruit and vegetable losses account for a large number of concerns submitted by residents to the deermanagement@crd.bc.ca e-mail. Although some accounts included personal economic losses from plantings and failed fencing attempts, the majority expressed a level of personal frustration with the current situation. Concerns also included close contact with deer feces and ticks and the potential for increased human health risks, including exposure to Lyme disease.

Secondary issues included impacts on parks/open space, loss of habitat for other wildlife and endangered/threatened species (Garry Oak ecosystems). Although these are not direct human conflicts in most cases, they affect ecology valued significantly by the public.

Recent studies focused on the impacts of deer on ecologically sensitive areas, and songbird habitat in the Southern Gulf Islands with observed declines in native species abundance and ecosystem condition from deer. Recent papers from the University of British Columbia's Faculty of Forestry's Centre for Applied Conservation Research show compelling results that the human deer relationship is having considerable impacts on native plant and bird populations in the coastal Douglas-fir zone of BC, deer densities were shown to be particularly high on Salt Spring Island, limiting reproduction of spring ephemerals in oak meadow and woodland habitats. Another study demonstrated that higher deer density explains a large fraction of the observed variation in plant and songbird abundance across a sub section of the San Juan and Gulf Islands. Most notably on islands with lower deer densities, songbirds that rely on understory for feeding and nesting were more than twice as abundant compared to islands with higher densities.

As in the agricultural geography, purposeful feeding is also a concern in rural areas, often adjacent to agricultural areas. Individuals develop emotional relationships with a particular resident deer group or family and intervene with food, substituting their natural diet. Such relationships are cross generational, with related deer learning the habituation behavior.

Urban

Primary issues in the urban geography include garden losses (ornamental and food), human/pet health and deer-human/pet safety. Ornamental and food gardens, community gardens and landscaping losses account for a large number of concerns submitted by residents in areas with resident deer populations. Although some accounts included personal economic losses from plantings and failed fencing attempts, the majority expressed a level of personal frustration with the current situation. Concerns also included close contact (for humans and pets) with deer feces and ticks and the potential for increased human health risks, including exposure to Lyme disease. Additional anecdotal information from phone calls and e-mail submissions indicate that individuals have experienced threatening or aggressive behaviour from territorial or protective deer (particularly with fawns) and while walking their dogs. Such reports were most frequent in late spring to early summer.

Secondary issues in the urban geography included concerns regarding human safety from predators. The presence of deer increases the potential presence of deer predators. High deer populations may increase interactions between deer predators and humans. In rural and urban areas, the predation of adult deer by wild carnivores is almost non-existent, likely due primarily to the presence of humans.

Southern Vancouver Island has three predator species that will prey on deer of all ages: cougars, wolves and black bears. Cougars and wolves are the most dependent on deer, and are occasionally observed in rural and urban areas of the CRD.

Deer-Vehicle Collisions

The CAG identified deer-vehicle collisions as a primary issue not specific to any one geography. The Insurance Corporation of BC (ICBC) Wildlife Accident Reporting System (WARS) database identifies a 13% annual increase in deer-vehicle collisions between 2000 and 2010 in the CRD, growing from 35 collisions to 100. Over that time period certain local governments had comparably more collisions than others, Saanich, Langford, Central Saanich and Sooke, all had notably higher numbers of deer-vehicle collisions. Collisions occur more frequently in summer months (see Appendix 1).

Ministry of Transportation and Infrastructure (MoTI) data for the CRD indicates that total annual road-related deer fatalities from motor vehicles on provincial highways (Highway 1, Highway 14 and Highway 7) have increased annually by 3.3% on average between 2001 and 2010. Data over this time period shifted from annual totals in 2001 of 214, to 324 in 2009 and 236 in 2010. In communities with high deer populations, there are generally higher rates of vehicle collisions.

Aggregated ICBC values show animal-related insurance claims in BC have increased from \$15.8M to \$30.8M between 1997 and 2007. ICBC does not release valuation cost data by animal or regional geography. Estimates from the *British Columbia Urban Ungulate Conflict Analysis* estimate a per collision cost including property damage, accident investigation, animal value, carcass removal/disposal based on US and Canada figures at \$2,913 USD (2007). If human injury or fatality is included, the estimated cost increases to \$6,617 in USD (2007).

MANAGEMENT OPTIONS EVALUATION

Most management options were taken directly from the *BC Urban Ungulate Conflict Analysis* and assessed by the CAG for their applicability within the region. This section provides an explanation of each management option along with a summary of the CAG's discussion and outcome of the evaluation process. In addition to the 12 management options evaluated, the CAG also included 'status quo' as an additional option, which means that no further action would be taken. The detailed evaluation results are contained in Appendix 9.

Status Quo as a Management Option

The status quo option would mean that no further action would be taken than what is currently available and permitted without any change to increase or expand opportunities or any concerted effort to educate the public regarding available options. Under this scenario, information on conflicts and damage may continue to be collected.

Currently, the following options are available to address deer-human conflicts: hazing and frightening, landscape alternatives, fencing, repellents, controlled public hunting and crop protection. These alternatives are described in detail in subsequent sections. The existing regulatory framework is provided below.

Some municipalities have bylaws that enable or impede population control interventions, including control of practices such as restrictions on noise, deer feeding, landscaping types, fencing and firearms discharge. Local government bylaws limit the ability for noise based options (such as cannons) to be viable in urban and rural areas.

In the CRD, wildlife feeding bylaws that include deer, have been adopted by the following municipalities: Victoria, Saanich, Oak Bay and Esquimalt. The majority of these bylaws are relatively new and do not have associated enforcement statistics. The remaining municipalities do not have wildlife feeding bylaws.

Some local government bylaws limit fencing height to 6' which is not sufficient to restrict deer from fenced areas. The ERWG identified 8' as the proper fence height to successfully protect properties from deer damage. Smaller areas are more viable to fence; fencing large farm operations is considered cost prohibitive.

Local governments also have jurisdictional authority over the use of firearms within their boundaries. Most local governments within the CRD have firearms bylaws in place. Currently View Royal, Colwood and First Nations reserves are the only municipalities and communities within the CRD without firearms discharge bylaws. Local bylaws define the specific circumstances within which a firearm maybe discharged, in some cases there is a complete prohibition, in others the conditions for discharge are outlined. Specific details are available in Appendix 4.

Hunting regulations under the *Wildlife Act* are managed by the MFLNRO and include hunting seasons, hunting areas, bag limits and firearms discharge licensing and permitting. *Wildlife Act* regulations outline what distance must be left between structures, cultivated lands, roads, fences, parks, private lands, and specific facilities such as schools. MFLNRO also administers a program called crop protection that permits hunting of problem deer on individual properties, subject to a permit. This is described in detail as a management option which has potential for population control subject to changing permit conditions.

The boundaries of municipalities are contained within provincial hunting management unit areas. Local bylaws and provincial regulations often limit or prohibit firearms and bow discharge or set such narrow operating requirements that result in hunting, the primary method used to manage deer populations, being ineffectual.

Status Quo Evaluation

The CAG agreed that if the deer population stays the same or increases, negative community impacts will continue to increase. Further, status quo was not considered to be effective at reducing deer-human conflicts either at the individual property level or over the broader geographic area. While easy to implement, as it requires no regulatory or other change, this option masks costs associated with delaying more aggressive action as potential for deer-human conflicts increase over time. The CAG also felt that, as a management option, the status quo has low levels of public support.

Without intervention, deer populations will continue to grow until the biological carrying capacity is reached. While human settlement has altered the landscape, changed plant communities, displaced predators, removed native species and introduced exotic species, deer have learned to adapt to these circumstances. With few limitations on resources in habitat areas and few predators, deer will thrive, exacerbating negative community impacts in all geographies.

Conflict Reduction Management Options

Conflict reduction options focus on keeping animals away from susceptible properties, minimizing damage and conflicts using methods such as hazing and frightening, landscaping alternatives, repellents, and fencing. These measures are intended to deliberately deter deer from habituating to human activity. These management options do not reduce population levels, but have the effect of moving deer away from susceptible properties. This may simply transfer the conflict between properties.

Hazing and Frightening Techniques

These techniques are intended to reduce damage by deer through the use of visual, auditory or other sensory stimulation to trigger the flight or fright reaction in specific areas.

Deer tend to be afraid of unknown or unfamiliar things. A number of devices are available to frighten deer away from agricultural, rural and urban plantings. Some use visual or auditory stimulation such as wind chimes or radios. Off-leash dogs in fenced yards can condition deer to avoid these areas. The MFLNRO has banned the use of dogs for hazing deer under any other circumstances.

Deer behaviour, once established, is difficult to modify, particularly if it is associated with a pre-existing home range. Early action before a territory is established may be advisable. Deer will rapidly habituate to unfamiliar sights and sounds, therefore combinations and alterations are advised. Locations of devices should be changed regularly to maintain effectiveness.

The majority of reports of deer behavior when in the presence of humans indicate lack of fear, suggesting previous habituation. The natural reaction should be suspicion, so to restore this precaution in deer, interactions with humans should be perceived to be negative and/or stressful. This option requires cooperation, first by the public, but also outdoor local government employees, bylaw enforcement officers and considerable staff time and resources. Since widespread programming of hazing and frightening across large areas is complex, such actions must be undertaken with set protocols and ethics. Prior and consistent absence of individual animal habituation is far better and more effective.

Hazing and Frightening Evaluation

Discussions of hazing and frightening considered sound, tactile and site based means of creating undesirable environments for deer. Local government bylaws limit the viability for noise based options. Noise based hazing and frightening can also impact other wildlife. This is considered to be an option with relatively high levels of effort required on an ongoing basis. The rapid habituation to the stimulus further limits the effectiveness of this option.

Overall, this option was considered to be most viable in rural areas at the individual property level (with fenced yards). The technique results in moving deer from property to property, called deer displacement, and does not address the broader issue of over population. Regulations limiting noise and use of dogs limit feasibility and capability. Comparatively, the cost of the option was low, and could be undertaken quickly and was considered to have greater public support in the rural geography, although there are some concerns due to the nuisance effects on surrounding properties.

Landscaping Alternatives

This management option consists of changing or updating landscaping practices and selection of plants that are less palatable to deer in order to reduce browsing opportunities.

Deer preferences for plant types is dependent upon a number of factors: time of year, availability of food in the wild, level of plant palatability, prior/learned feeding behaviour, and the nutritional needs of the animal. Natural diets are primarily native browse plants but deer are very adaptable. Deer density may partially determine the availability of food; lower density populations may have abundant food options, allowing deer to exercise their preferences. Higher density populations create competition for food sources resulting in the consumption of plants that deer normally would avoid. Deer resistant planting may reduce damage in some areas, however, in areas of high deer densities nearly all plants are at risk. Plant palatability changes throughout seasons and this, along with plant health can also impact deer browsing. Regularly watered and fertilized plants are very attractive overall, and therefore difficult to prevent browsing without physical or chemical barriers.

Landscaping Alternatives Evaluation

Landscaping Alternatives were examined at the rural and urban geography, not the agricultural geography, as agricultural lands were assumed to be growing food crops and therefore have limited options for deer resistant plantings.

Residents from urban and rural geographies were the main complainants regarding deer damage to landscaping. Deer resistant plants have variable success across the region and have proved effective in decreasing browsing pressure in some areas while not in others.

There is increased effectiveness for this option when used in combination with fencing and/or repellents. However, as these options are left to individual discretion to adopt, overall uptake maybe spotty, which could limit the effectiveness over a broader area.

Regional food security was also considered, noting increased promotion for residents to grow edible gardens and local governments to consider planting boulevards and gardens with edible plants. These plants would not be deer resistant. Promotion of deer resistant planting could potentially contradict other community goals such as increasing local food production.

This option, comparatively requires a short amount of time implement, and should be considered in future design guidelines for development permits and zoning bylaws. However, a difference in anticipated cost was identified between new developments that could plant less palatable plantings initially compared to existing properties which would need to replace existing landscaping with deer resistant alternatives. Less palatable plants may include the use of non-native, exotic species, some of which may include invasive species. Deer resistant plants may be used in such a manner as to not detract from Victoria's reputation as a city of gardens. Overall, the effectiveness of this option does not address the broader issue of reducing the number of deer that result in high numbers of deer-human conflicts, even though the ability to implement the option is high, there are challenges associated with implementation. There are few negative community impacts, average public and stakeholder support and enthusiasm and relatively low to medium cost to implement and maintain.

Fencing

Fences restrict or contain deer using a physical barrier, a psychological barrier (using negative conditioning) or a combination. There are two main types of fencing: physical and electrical. A physical barrier is a fence that the animal cannot pass over, through or under such as a wooden or wire mesh fence. Electrical fences are minimal, in terms of their physical characteristics but deliver negative stimulation through an electric shock when contacted. The ERWG advised the CAG based on current information, that electric fencing had proved increasing effective and lower cost that previously understood. Specialty fencing systems exist that can be very effective.

Fencing materials for organic farms are limited due to certification regulations, some types of treated wooden fence posts have been found to leach into soils compromising organic certification standards. Farms seeking or preserving organic certification would be limited to

metal fence posts. Some local government bylaws limit fencing height to 6' which is not sufficient to restrict deer from fenced areas. The ERWG identified 8' as the proper fence height to successfully protect properties from deer damage.

The former Environmental Farm Plan offered by the Ministry of Agriculture in partnership with the federal government provided fencing subsidies for farmers; however, the available subsidy was small and only covered a fraction of the overall cost. This program has expired.

The fencing option is most effective when combined with other management options. Aesthetics of fencing may be a consideration for residential areas; fences must be designed with local characteristics and regulations in mind. Additional considerations include desirability of fenced area by the deer, ability of deer to penetrate different designs and cost of installation and maintenance. The cost of fencing relative to savings is an important consideration; good quality materials and design as well as maintenance are required for effectiveness.

Deer can jump barriers as high as 2.4m and move through poorly constructed fences, passing through gaps in fencing as narrow as 19 cm wide. This behaviour can be learned and is taught to other deer through demonstration; in addition, avoidance of electric fencing can be learned.

Fencing Evaluation

The fencing management option considered regular fencing and electric fencing options. In the agricultural geography fencing was considered to be more viable for smaller farms, however, for large land holdings fencing is cost prohibitive. Additional ERWG input suggested fencing higher value vegetated sections of properties and accepting deer damage in others.

Currently, electric fencing has been used to protect fruit trees in the Okanagan. It was noted that the cost of electric fencing was decreasing, but is not effective for protecting all crops.

As with landscaping alternatives, implementation of this option is left to individual discretion, and it cannot be assumed that all landowners could afford to, or would want to put up fences. This option could also be used in conjunction with other options such as landscaping alternatives and repellents.

There may be limitations on the ability to fence due to municipal bylaws and inability to encroach onto municipal property, rights of way or easements. Some agricultural properties extend farming practices into the municipal lands (roadside), rights of way or easements, however fencing of these areas would not be permitted; further, many bylaws restrict the fencing of front yards in all geographies.

There were concerns regarding aesthetics of fencing in urban and rural areas and additional environmental concerns with some lower cost, plastic fencing types which degrade and become damaged, thus quickly become ineffective. The quality or type of fencing materials and construction may also result in the risk of injury to the deer.

The cost to implement and maintain physical fencing is high and would be borne by the individual. Although fencing was considered to be a quick and relatively effective option at the individual property level, it was not considered effective at addressing the broad issue of high

deer population densities. Fencing is considered much easier to implement, with fewer problems in urban and rural geographies compared to agricultural, while the means to implement fencing is restricted in urban areas compared to rural and agricultural due to fencing bylaws that restrict height. Higher support is assumed in rural and agricultural geographies and less public support is anticipated in the urban geography, due to aesthetic considerations. There are many negative community impacts associated with fencing in all geographies such as the aesthetics, neighbor conflicts and resulting waste from trial and error fence construction using cheap or poorly constructed fencing types.

Repellents

Repellents are defined as substances that create aversion behaviour using chemical barriers that animals will not cross, or products with an odour that causes deer to avoid an area. The best results occur when nearby food sources are available, and the repellent is applied to a plant that is already of low palatability or “deer resistant”. Repellents use four sensory modes to interact with deer: fear, behaviour modification, pain and taste (encompasses smell and taste). Odour based repellents have better results than taste repellents.

This option has limitations. Most repellents require reapplication after rain, and often use biological agents such as blood meal or substances that have no guarantees to safety and source. In some areas of the region, there is limited success however, any plant that is watered and fertilized becomes attractive to deer, and may negate the use of repellents.

The CAG specifically reviewed the use of sonic devices with input from the ERWG, the analysis is included in the evaluation section below.

Repellents Evaluation

Repellents may be cost prohibitive on larger land holdings. Repellents need to be reapplied often and especially after precipitation; the amount of time to reapply on larger properties was thought to be considerable. There is limited use on organic farms, and may be implications on organic foods.

Despite being promoted for consumption by manufacturers as safe, consumer behaviour towards crops treated with repellents is unknown and it is assumed that there would be reservations when purchasing treated food products. Other environmental concerns were considered including potential runoff and plume dispersal to surrounding properties.

In the rural geography, landowners may not be able to afford to, or would want to, apply repellents.

It was noted that the municipality of Oak Bay would be piloting a repellent product called Bobbex© on some gardens this year, and a presentation from the Senior Biologist, MFLNRO noted that PlantSkydd © has proven effective in the forestry industry.

The use of sonic barriers was also considered. There are a number of products that claim success however information provided by the ERWG indicates that overall, they are currently seen as ineffective. The ERWG advised that if the devices were to be considered, that they be

included in a larger deterrent program along with street signage, landscaping, fencing and other chemical deterrents.

Repellents overall are considered to have limited effectiveness at the individual property level, with slightly higher effectiveness in reducing the frequency of deer-human conflicts in rural and urban geographies. Repellents do not adequately address the broader issue of high population densities. Landowners have few restrictions in their ability and ease of implementing repellents; cost to implement is comparatively low, particularly in urban areas due to smaller property size. Support and enthusiasm for repellents was thought to be average across urban and rural geographies, and low in the agricultural geography. Negative community impacts relative to food safety were identified.

Deer-Vehicle Collision Mitigation Options

Options to reduce deer-vehicle collision are to be applied to areas with higher deer densities around high traffic roads. The *BC Urban Ungulate Conflict Analysis* contains a table that identifies a number of mitigation measures, their efficacy, cost, constraints and the agency that is responsible for implementation. The CAG focused on options that were evaluated in the *Analysis* as effective. These options were categorized as infrastructure and administrative.

Infrastructure options include exclusionary fencing, wildlife crossings and roadway design and planning. Administrative options include speed limit reductions and right of way brushing. Other effective options to address deer-vehicle collision identified in the *Analysis*, such as fencing, public education and repellents, are covered in other sections of this report.

Deer-Vehicle Collision Mitigation Evaluation

This option was evaluated at the regional level.

Opportunities for new roadway design and planning was considered minimal in the region, however, those roads that are retrofitted or rebuilt could be improved within the capital planning and design process.

Roadway brushing, although effective requires ongoing maintenance. Reducing speed limits may not be well-accepted by drivers but may have higher support from residents. The District of Saanich was asked for input regarding the impact of deer signage on Blenkinsop Road; since signage installation in 1999, there have been limited reductions in deer-vehicle collisions.

Administrative options were evaluated as much more desirable than infrastructure options due to the fact that most roadways are unlikely to be retrofitted for deer. High costs, difficulty associated with implementing this option, long periods of time to implement and low support make infrastructure options undesirable. Administrative options may be more effective at addressing deer-vehicle collisions, and are considered to be easier to implement, lower cost, require no new road authority and could be implemented relatively quickly. Further, there was thought to be higher overall public support and few negative community impacts.

Population Reduction

Population reduction programs are ongoing with an initial reduction phase followed by a maintenance phase after localized population densities are reduced. Community specific management decisions are required to inform control details. Support for these options is considered to be higher where meat can be put to use rather than wasted. There is currently a prohibition on the sale of wild meat.

Capture and Relocation

Capture and relocation is defined as the capture, transport and release of wild animals for ecological and conservation reasons. The relocation site is different from where the animal originated. Deer are either captured physically or immobilized remotely with pharmaceuticals. Physical capture may be combined with the administration of tranquilizers for transport. A number of capture techniques may be used such as drop nets, rocket nets, corral or Clover traps. Most of these methods require traps to be baited with an attractant, after which the animal is restrained and blindfolded while handled.

Chemical immobilization involves a remote injection of a combination of pharmaceuticals. Deer are a significant challenge to effectively immobilize. The response to dart administration is never predictable and the animal may run and hide. The length of time for the drug to take effect varies with a number of factors. There is no ability to control the movement of the animal and this creates safety, time and land approval issues. In addition, the administration of drugs creates a drug residue issue if the animal is later used for food by humans or predators.

Transportation methods can involve putting deer in transportation crates before they are placed on trucks or trailers to their release sites with no more than five deer being transported at a time. Males should have antlers removed prior to transport or be moved individually. This option is useful in localized situations but is costly on a large scale with high stress levels and high mortality rates resulting. There is additional risk to those handling animals.

MFLNRO staff noted that this option is under humane and conservation review by the Province due to the high stress and rate of animal mortality it causes from transport as well as post release survival and effects on resident wildlife such as starvation or immediate predation. Overall, animal welfare issues prevent the support of this option by the Province.

Capture and Relocate Evaluation

Capture and relocate was considered to be reasonably effective in reducing deer-human conflicts at the individual and broader community scales, particularly for the agricultural (where there is more space) and urban geographies (where this option may be viewed more favourably). However, on further consideration of ERWG information, including the current review of the option as potentially being inhumane, the CAG did not view this option as desirable or feasible. Many barriers and challenges are associated with implementation, not the least of which would be gaining permission from the Province to carry out this option. Further, costs of implementation would be high across all geographies.

Timing is also a significant concern with this option. Winter was identified by the ERWG as the best time to capture deer, but, releasing deer in winter would significantly increase mortality

rates. Given that no facilities exist for holding captured deer also renders this option less feasible.

Currently there appears to be a high level of public support for this option. However, the CAG assume that public support would drop dramatically once information regarding the high levels of stress and mortality rates were better understood. Overall this option evaluated as relatively undesirable with slightly higher desirability in urban areas.

Capture and Euthanize

Capture and euthanize involves the physical capture and subsequent humane killing of deer by professionals, using a penetrating captive bolt gun applied directly to the head. Deer may be trapped, netted or tranquilized then killed. The capture techniques may vary, but would be reviewed by the Province. Provincial approval is required to implement this option.

As with capture and relocate, most techniques involve pre baiting to attract and positively reinforce behaviour to the capture site. The drop net technique allows for the capture of multiple deer at a time, with the consequent need for much more infrastructure and personnel, while Clover traps usually capture one deer at a time. This option is considered humane and has the advantage that the meat from the deer can be consumed.

Capture and Euthanize Evaluation

The CAG acknowledged that provincial approval would be required for this option, as would private land owner permission. This option would need to be carried out annually in order to reduce deer population densities to acceptable levels, followed by non-lethal options to mitigate conflicts due to the remaining deer population.

The capture and euthanize option was seen to be effective and feasible particularly in the rural and agricultural geographies, though relatively high cost. However, the CAG assumes there is relatively less public support for this option in the urban geography and possibly the rural geography, but higher support in the agricultural geography. On balance, there were relatively minimal negative community impacts. Overall, this option was considered to be more desirable in agricultural and rural areas, with less desirability in urban areas.

Controlled Public Hunting

Controlled public hunting consists of heavily controlled and restricted legal hunting methods by regular hunters. These restrictions may include time limits for seasons, methods of take, size of hunting area and added incentives for antlerless harvest and hunter participation.

Deer management through controlled public hunting focuses more on individual animals and smaller groups versus large scale population management or herds. A number of alternative goals may exist, for example, to reduce the antlerless population, compared to bucks which are traditionally emphasized in hunting. Successes may be measured with different metrics than traditional population management, for example, reduction in landowner complaints, reduced deer-vehicle collisions, or reduced crop loss estimates.

Within local government boundaries where bylaws, permits and physical geography allow, many jurisdictions have concluded that this management option is effective, economical, efficient and acceptable. Traditional public hunting bylaws as per provincial regulations may not be considered to have adequate strength for public safety for use in urban, rural or agricultural areas to achieve reductions in deer-human conflicts. Some safety concerns may be mitigated by increased competency such as pre hunt shooting proficiency tests, additional safety training, pre hunt seminars, pre hunt interviews, mandatory check in/check out, proof of experience (specified by number of years) and registration of any special equipment.

Controlled Public Hunt Evaluation

This option differs from sharpshooting, as individual hunters assume costs to gain the right to hunt. Property owners have greater control with this option, deciding whether to take action or not by giving permission to hunters to hunt on their property. This option is considered medium to highly effective in the agricultural and rural geographies with relatively low cost.

Hunting regulations and firearms and bow discharge bylaws would need to be amended in some areas in order maximize the effectiveness of this option; this was factored in to the time score in the evaluation. Suggested regulatory changes might include longer seasons, fewer restrictions to weekday hunts, allowance of baiting, increased bag limits, quota hunts, ability to increase buck limit, inclusion of archery seasons with and without crossbows, allowance to donate meat, lowered cost for antlerless hunts.

The CAG acknowledged that within the Douglas Treaty area, First Nations already have more hunting privileges than the public at large. First Nations should be encouraged to maximize the potential of these rights in cooperation with private landowners. One CAG member indicated that some First Nations people have already established these relationships to harvest deer on private property.

With changes in the regulatory regime, controlled public hunt was considered above average in its ability to directly reduce deer-human conflicts at the broader geography level and at the individual property level in agricultural and rural geographies, and less effective in urban areas due to difficulties in implementing such a measure where there are high human population densities. Public support and enthusiasm were considered to be medium in agricultural and rural geographies and low in urban areas. Fewer negative community impacts were expected in the agricultural and rural geography compared to urban, which anticipated concerns over public safety.

Professional Sharpshooting

Professional sharpshooting consists of the systematic culling of specifically targeted deer by trained and authorized personnel, often at a number of approved prepared bait sites. Sound-suppressed small caliber firearms are suggested, while crossbows with a minimum peak draw of 50 pounds may be used in areas with restrictive firearms bylaws. Best practices specify when a shot may be taken, to ensure no misplaced shots and animals are dispatched with a single well placed shot.

Shots are taken from stopped vehicles, elevated locations (tree stands), or ground blinds, during day or night. Shots may only be taken when there is an earthen backstop through geographic features or elevated position where there is a clear view and only when no humans are present. Antlerless deer are taken as a first priority.

This option has proven successful at a small scale, through localized deer control/over-abundance programs in a range of urban areas in the United States. Substantial numbers of deer can be effectively and discreetly removed in short periods of time. Many techniques can be implemented to ensure safety, discretion, efficiency and humaneness. There is often little disturbance to local residents if sound suppression measures are taken and it is an ideal method to target known aggressive animals.

Firearms discharge bylaws at the local level would need to be amended to permit this option. Provincial approval for implementing this option is also required.

Professional Sharpshooting Evaluation

The evaluation of professional sharpshooting assumes hunting with rifles and crossbows by contracted professionals. The proximity to structures and smaller properties limits this option in urban areas. This option would need to be ongoing over time in order to reduce deer population densities to acceptable levels.

Professional sharpshooting is considered highly effective at reducing deer-human conflicts for both the individual property and broader agricultural and rural geographies, though considered less effective in urban areas due to public safety concerns. Higher costs have been identified based on the need to pay professionals, however if volunteers are used there is less cost to government. Public support was rated as average in the agricultural geography, relatively low in the rural geography and low in the urban geography. Negative impacts relative to public safety were identified for this option, primarily in the urban geography.

Crop Protection

The CAG chose to consider the MFLNRO crop protection permitting program as an additional management option, separate from controlled public hunting, in that may be particularly beneficial to agricultural producers. This type of permit allows a resident to hunt nuisance wildlife on his or her own property during the open or closed hunting season for the purposes of reducing damage. The resident must provide compelling reasons why the permit is required and list preventative measures already in place. A resident may allow a designate to hunt for the purpose of managing problem wildlife. The resident must provide the professional qualifications of staff, employees or contractors involved, in addition to the hunting methods proposed. Currently, there is annual bag limit of five deer per property. In many cases the size and location of a property limits the use of this option, due to variable movement by deer.

Often times, animals are not located in areas where firearms discharge is permitted, based on firearms discharge bylaws or, where discharge is permitted, hunting is subject to the same distance separation requirements as regular hunting. The purpose of this measure is to address significant crop destruction. It does not address larger landscape issues of deer damage. The permit does not allow for the deer meat to be used by the hunter, unless the

animal is taken during regular hunting season. First Nations can also assist farmers in this regard and are not restricted by municipal or provincial regulations on firearms discharge or use of the meat.

Crop Protection Evaluation

In its current state, this option is perceived to be relatively ineffective current restrictions. However, with changes to the program to address these shortcomings, the CAG sees potential for this option to be an effective population control option in areas of high agricultural damage.

To make the option more effective, amendment of local government firearm and bow discharge bylaws and provincial permits to expand the permitted bag limit, allow hunters to keep the meat and relax regulations relative to distance separation are required.

On balance, with changes to the permit program and local bylaws, the crop protection program was considered to be highly effective in the agricultural geography, with benefits spilling over into the rural geography. Once the regulatory changes are made, the option could be quickly and easily implemented, affordable and already has the support of the agricultural community.

Fertility Control

Fertility control is a method of reducing the ability of the population to reproduce. It is a new option but its practicality is limited due to the specific situation for most high density deer populations, the cost and the lack of approved fertility control drugs for ungulates in Canada.

Immunocontraception

Immunocontraception is the use of a specific vaccine that prevents conception through the immune system and is used to reduce fertility rates of population to less than or equal to its mortality rate.

Immunocontraceptive vaccines are promising but require specific permits for experimental research purposes only. While fallow and white-tailed deer can be contracepted for up to six years with one vaccine administration, long term study results are not available for black-tailed deer. Most research suggests that deer should be in a closed population (i.e. on an island where there is no immigration into the population) and that numbers should be reduced prior to vaccination.

According to the *BC Urban Ungulate Conflict Analysis*, from the perspective of population dynamics, fertility control is best suited for management of short lived bird and rodent populations; however, there is an active field of academic research on contraception for longer lived species. Most literature on fertility control in ungulates concentrates on white-tailed deer, although there are a number of studies on black-tailed deer.

Achieving successful fertility control in smaller captive populations may or may not be indicative of the ability to achieve fertility control in large free ranging populations. The use of these drugs has not been tested for long enough at large enough population levels to accurately predict long term results.

Maintaining large free ranging populations with chemical contraception may be possible with long lasting contraceptives, however, immediate population reduction will not result as the treated deer will continue to live out their natural lifespan of 10 - 12 years. Some population reduction results have been experienced as early as five and seven years in smaller isolated populations. Researchers suggest reducing the population first through a cull followed by contraception to maintain the desired population level. Immunocontraception is relatively high cost, but is perceived as being humane.

Deer treated with immunocontraceptives are not considered to be consumable by humans; further, the effects of consumption on predators is unknown.

Immunocontraception Evaluation

Currently, this option is only available for site specific, experimental use in planned research studies, subject to provincial approval. Therefore, it is neither available nor feasible for widespread use; considerable time may be required before widespread availability. Effectiveness is unknown as the pharmaceuticals are still under investigation. Costs are assumed to be high as it involves capturing females and administering the vaccine, which would involve personnel, equipment and vaccine costs. Further, the animal would undergo the stress of capture, treatment and release, and potentially be subject to capture multiple times. Treated animals would not be fit for human consumption and the impact on natural predators is unknown. Public education would be required to educate First Nations and hunters not to consume tagged deer. Concerns were expressed regarding negative community impacts across all geographies as environmental impacts of residual immunocontraceptives in deer feces and urine are unknown. Negative impacts of residual human chemical contraception have been demonstrated in the natural environment, impacting local fauna.

With researchers suggesting that fertility control be introduced following a cull, this option was viewed as more of a maintenance option, rather than a population reduction option. No immediate population reduction would result as treated deer would live out their natural lives; the contraception may not last the full life time of a deer, making it possible for females to resume reproduction in later years.

Because this option does not involve the killing of deer, it is appealing to the public, particularly in the urban geography.

On balance, the CAG felt that this option could have potential in the future, and that it should be monitored for advancements over the longer term.

Public Education and Outreach

Public education distributes two types of information: process based information and knowledge based information (biology, ecology, behaviour, management information).

This option can be paired with a number of other options and can be carried out by a range of agencies and groups involved. The goal may be to increase the general knowledge of the public and change attitudes or behaviors associated with active options. Outcomes may include:

- creating realistic expectations for achievable results,
- increasing appreciation for wildlife in appropriate settings,
- reducing undesirable human activity,
- broadening the public's knowledge of the range of concerns of all affected by deer habituation and
- increasing public understanding of deer management measures.

Public Education Evaluation

This option was evaluated and considered as an overarching management option that will become increasingly effective, if paired with a number of other options.

Public education could shift the public's expectations and perceptions of deer-human conflicts, although this will take a significant amount of time. However, the end result may be to increase the effectiveness of other management options.

This option can be initiated relatively quickly, with few costs, high levels of public support and no negative community impacts. Alone, this option is not very effective at reducing deer-human conflicts; however, it complements other management options. This option is comparatively easy to implement and the CRD currently has the means to undertake public education across all geographies. This option is publicly supportable.

RECOMMENDATIONS

The CAG made recommendations for each geographic area, as well as some over-arching recommendations that span all geographies, including addressing deer-vehicle conflict. Each set of recommendations is preceded by an outcome statement that explains the intended outcome the recommendations seek to achieve. Recommendations are categorized by immediate or short term, medium term (approximately 5 years) and long term (10 years and beyond).

Principle for Recommendations

All options, including population control measures, should be carried out in the most humane manner possible, and in particular, should avoid inflicting suffering on deer through actions that expose deer to an undue risk of starvation or injury.

Agricultural Geography Management Options

Outcome Statement

Address the economic loss in agricultural areas by reducing the deer population to an acceptable level¹ and then maintaining the population at that level and by improving programs and tools for farmers to minimize crop losses.

Recommendations

Immediate/Short Term:

1. Increase effectiveness of hunting
 - increase bag limit
 - extend the public hunting season by way of a longer antlerless season
 - increase incentives for hunters
 - decrease restrictions (bylaws/regulations)
 - build partnerships with farmers for hunting areas
2. Explore opportunities to support and expand First Nations harvest
 - build partnerships with farmers for hunting areas
 - e.g., Memorandum of Understanding with First Nations
3. Improve Crop Protection Program
 - reduce restrictions in firearms bylaws for deer harvest (e.g., reduce 100m separation distance)
 - increase bag limits
 - allow for the retention of meat by farmer or hunter
 - build partnerships with farmers for hunters
4. Population Reduction Measures
 - develop partnerships with municipalities and the province to implement sharpshooting, capture and euthanize
5. Remove regulatory barriers to effective fencing (e.g., height, placement)
6. Reinstate and expand government incentives for fencing including greater subsidies
7. Explore new technology for the use of electrical where it was previously thought to not be technically feasible
8. Pursue compensation program for crop loss with provincial and federal government
9. Initiate data collection for crop loss information documentation to be used as baseline data to measure the effectiveness of options
10. Develop partnerships between local, regional, provincial governments and nongovernment organizations (NGOs) for implementing options (e.g., animal control bylaw officers, anglers and hunter associations)

Medium Term:

1. Preliminary evaluation of short term actions/outcomes
2. Adjust short term measures based on outcome of preliminary evaluation and continue implementation

¹ For agricultural areas, acceptable level is defined as the level at which farmers do not attribute the majority of crop loss to deer damage. This should be ascertained through aggregate information provided by farmers through monitoring.

Long Term (10 years +):

See “Overarching Management Options”

Rural Geography Management Options

Outcome Statement

Reduce of the deer population to natural levels outside of settled areas and provide rural residents with measures to reduce deer-human conflicts to within the range of individual property owner tolerance levels.

Recommendations

Immediate/Short Term

1. Develop partnerships between local, regional, provincial governments and NGOs for implementing options (e.g., animal control bylaw officers, anglers and hunter associations)
2. Remove regulatory barriers to fencing (i.e., height, placement)
3. Population Reduction Measures
 - o develop partnerships with municipalities and the province to implement sharpshooting, capture and euthanize
4. Increase effectiveness of hunting
 - o increase bag limit
 - o extend the public hunting season by way of a longer antlerless season
 - o increase incentives for hunters
 - o decrease restrictions (bylaws/regulations)
 - o build partnerships with farmers for hunting areas
5. Explore opportunities to support and expand First Nations harvest
 - o build partnerships with landowners for hunting areas
 - o e.g., Memorandum Of Understanding with First Nations
6. Local governments consider impacts on deer habitat (wildlife corridors) with new developments in planning document (official community plan (OCP), zoning bylaws, etc.)

Medium Term:

1. Preliminary evaluation of short term actions/outcomes
2. Adjust short term measures based on outcome of preliminary evaluation and continue implementation

Long Term (10 years +):

See “Overarching Management Options”

Urban Geography Management Options

Outcome Statement

Reduce the deer population to natural levels inside of settled areas and provide urban residents with measures to reduce deer-human conflicts to within the range of individual property owner tolerance levels.

Recommendations

Immediate/Short Term:

1. Promote range of mitigating options for property owners (public and private)
 - landscaping alternatives
 - specify effective fencing types
 - public education for deer resistant planting
 - outline repellent options
2. Encourage provincial government to delegate authority to local government to deal with aggressive deer
3. Encourage local governments to develop bylaws prohibiting deer feeding and take appropriate enforcement action
4. Encourage local government to provide incentives for fencing that protects food and considers cost
 - consider the use of subsidies (e.g., financial, tax breaks) for home owners and renters
 - provide fencing kits/packages for different size of property at reasonable prices, aesthetics
5. Encourage local government to undertake bulk purchase and distribution of repellents
7. Population Reduction Measures
 - develop partnerships with municipalities and the province to implement sharpshooting (on large properties where appropriate, parks, post-secondary institutions, golf courses, government held properties such as Government House), capture and euthanize
8. Local governments consider impacts on deer habitat (wildlife corridors) with new developments in planning document (OCP, zoning bylaws)

Medium Term:

1. Preliminary evaluation of short term actions/outcomes
2. Adjust short term measures based on outcome of preliminary evaluation and continue implementation

Long Term (10 years +):

See “Overarching Management Options”

Deer-Vehicle Collision Mitigation (Entire Region)

Outcome Statement

Reduce the number of deer-vehicle collisions (auto and cyclist)

Recommendations

1. Encourage provincial government and municipalities to increase effectiveness of deer warning signage.
2. Encourage provincial government and municipalities to partner with ICBC to increase driver education on deer-vehicle collision mitigation.

3. Encourage provincial government and municipalities to explore partnerships with school districts to produce unique mobile signage to increased awareness.
4. Encourage provincial government and municipalities to increase and extend right of way brushing in high collision areas as identified in ICBC collision map (Appendix 1, page 6).
5. Encourage provincial government and municipalities to consider capital infrastructure planning to consider designs to minimize deer-vehicle collisions in master planning.
6. Encourage provincial government and municipalities to revise speed limits in high collision areas identified in the ICBC collision map (Appendix 1, page 6).
7. Encourage the CRD to incorporate deer-vehicle collision mitigation measures be integrated into the Regional Transportation Plan.

Over-arching Recommendations (Entire Region)

1. That the CRD establish an overall monitoring, and reporting program to measure the effectiveness of the regional deer management strategy to be overseen by a permanent body (with expert and citizen representation) for deer issues and make recommendations for change to the strategy.
2. Where ever population reduction measures are used encourage techniques be adopted and regulations to be changed to allow for meat to be used.
3. CRD should engage with First Nations on recommendations for deer management.
4. Encourage the CRD to establish a region-wide public education program to better inform the public of deer behaviour, individual options to employ.
5. Increase public awareness of health concerns e.g., Lyme disease through existing health services (Nurseline), public health providers, clinics).

Public Education

This is a key component moving forward to address deer-human conflicts in the CRD over the short and long terms. Each geography and recommendation relies on the delivery of strong public education materials. Extending the public hunting season, deer-vehicle collision mitigation, fencing efficacy and barriers, driver education, agricultural crop protection, consequences of human supplemented feeding, options for deer resistant plantings, limitations based on geography and existing barriers to change, have all been identified as topics for public education throughout CAG deliberations.

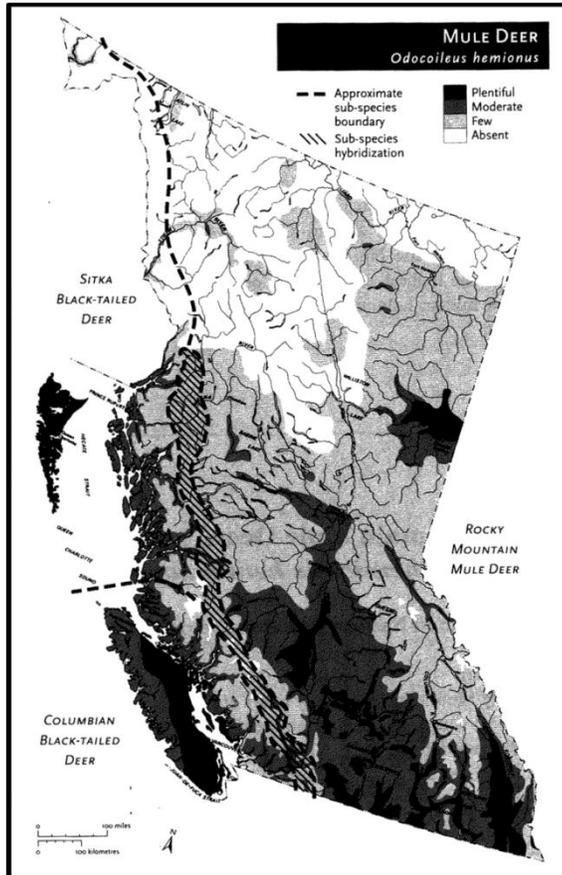
Lyme's disease received considerable media attention during the RDMS CAG process and accordingly, a sizeable number of submissions concerning health were received. Discussions considered partnerships with the Vancouver Island Health Authority, which has current public health infrastructure and communications in place to increase awareness of Lyme disease as deer-human encounters become more frequent.

Long Term

1. Monitor state of emerging technologies (e.g., Immunocontraception and sonic barriers) in terms of availability and efficacy.
2. Ongoing monitoring and adjustment of short and medium term management measures.

Appendix 1 – Summary of Deer Human Conflicts – Appendices for October 2011 Staff report to Planning, Transportation & Protective Services Committee

APPENDIX A – Population Trends



Regional Deer Management Strategy Final Report – Appendix 1
Page 2

Admin. Region No.	Region	BC Urban Ungulate Species: 2008 Pre-Season Population Estimates by Region and Sub Region											
		Moose		Elk		Bighorn Sheep		Black-Tailed Deer		Mule Deer		White-Tailed Deer	
		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	4,000-10,000	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	24,000-40,000	I	40,000-45,000	Increasing
5	Cariboo	20,000-28,000	S	<250	I	<800	D	1,000-4,000	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	7,000-15,000	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		131,500-224920		22,000-76900		4000-6650		98,500-101,000		108,000-194,000		81,500-128,030	

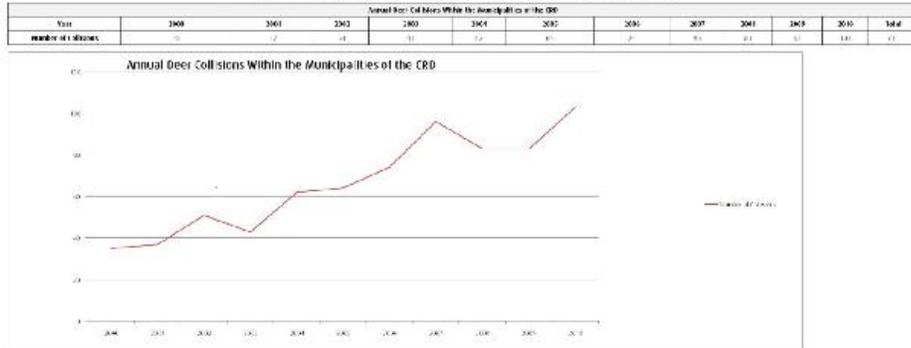
Admin. Region No.	Region	British Columbia Ungulate Species Regional Population Estimates and Status - Preseason 2011																																							
		MOOSE		ELK		CARIBOU		THINHORN SHEEP		BIGHORN SHEEP		MOUNTAIN GOAT		COAST BLACK-TAILED DEER ¹		MULE DEER		WHITE-TAILED DEER		BISON ⁴																					
		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	4,800-5,400	S-I	0	n/a	0	n/a	0	n/a	1,900-3,700	S-I	45,000-45,000	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-I	0	n/a	500-800	S-I	4,000-5,000	S	1,000-6,000	S	15,000-30,000	S-I	500-1,000	I	0	n/a																				
6	Skeena	25,000-45,000	S-I	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	S-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-I	5,250-7,500	S-I	50-150	S	2,000-4,000	S-I	0	n/a	6,000-11,000	S-I	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-I		44,000-79,000		S-I		17,000-29,000		S-I		9,900-15,000		S-I		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 pre-harvest 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, 10,000-99,999 to nearest 500, 100,000-999,999 to nearest 1,000, >1,000,000 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)

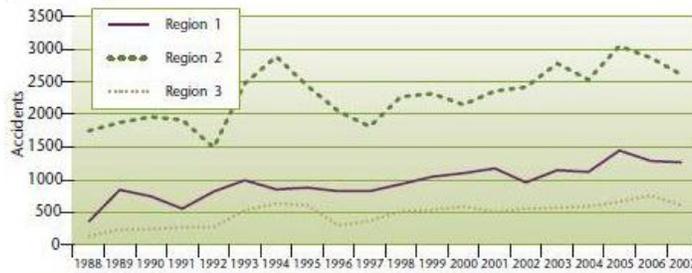
³ Region 6 estimates includes Elk and Black-tailed Deer on Haida Gwaii.
⁴ Includes Stone Sheep in Region's 6 and 7, and Dal Sheep (600-600) in Region 6.
⁵ Includes Caribou Bighorn Sheep in Region's 3, 5 and 8 (2100-3900) and Rocky Mountain Bighorn Sheep in Region's 3, 4 and 7 (2750-3250).
⁶ Includes both Plains Bison (1100-1850) and Woods Bison (600-600).

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

APPENDIX B – Deer Collision Statistics



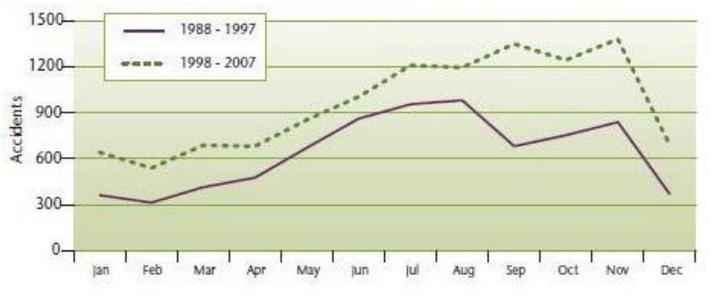
Regional Comparison of Total Annual Deer Accidents



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

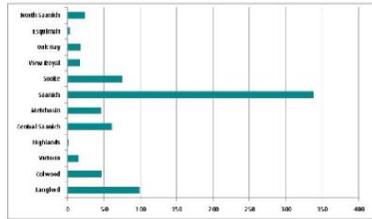
- Region 1: Vancouver Island
- Region 2: Lower Mainland
- Region 3: Thompson River

Monthly Deer Accidents on Vancouver Island



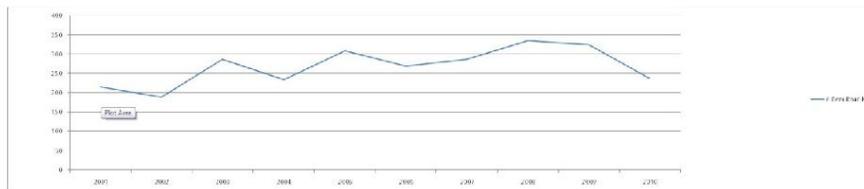
Appendix B – Deer Collision Statistics
Page 2

Deer Collisions 2009-2010 by Municipality Reported to RCMP												
Langford	Colwood	Victoria	Highlands	Central Saanich	Metchosin	Saanich	Sooke	View Royal	Oak Bay	Esquimalt	North Saanich	Total
99	17	33	2	41	46	338	32	12	18	3	30	745

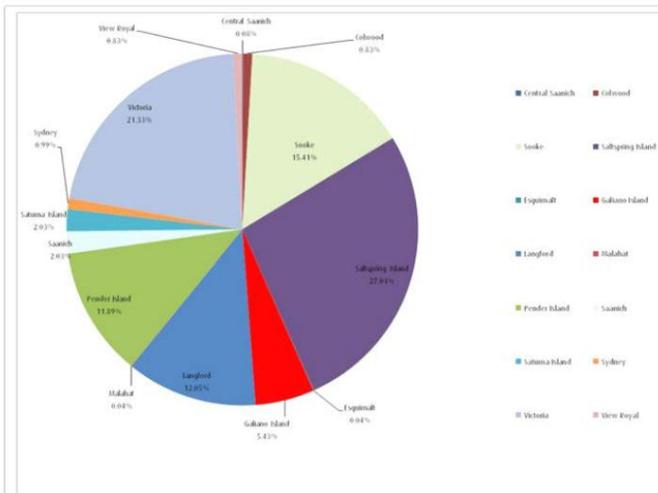


RCMP Animal-related Motor Vehicle Accident Claims in British Columbia (1997 to 2007)											
Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Claims Cost (in millions \$)	515.8	518.4	517.8	528.6	525.2	529.1	527.7	525.5	534.4	534.3	538.8

Total Annual Deer Fatalities from Motor Vehicles in the CRD from 2001-2010										
Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Reported Deaths	214	309	187	254	339	298	184	315	321	216



Reported Road Kill in the CRD by Muni from 2001-2010													
Central Saanich	Colwood	Sooke	Subspring Island	Esquimalt	Gulfano Island	Langford	Malahat	Frederic Island	Saanich	Saturna Island	Sydney	Victoria	View Royal
2	28	272	652	1	631	291	1	207	49	49	21	515	28

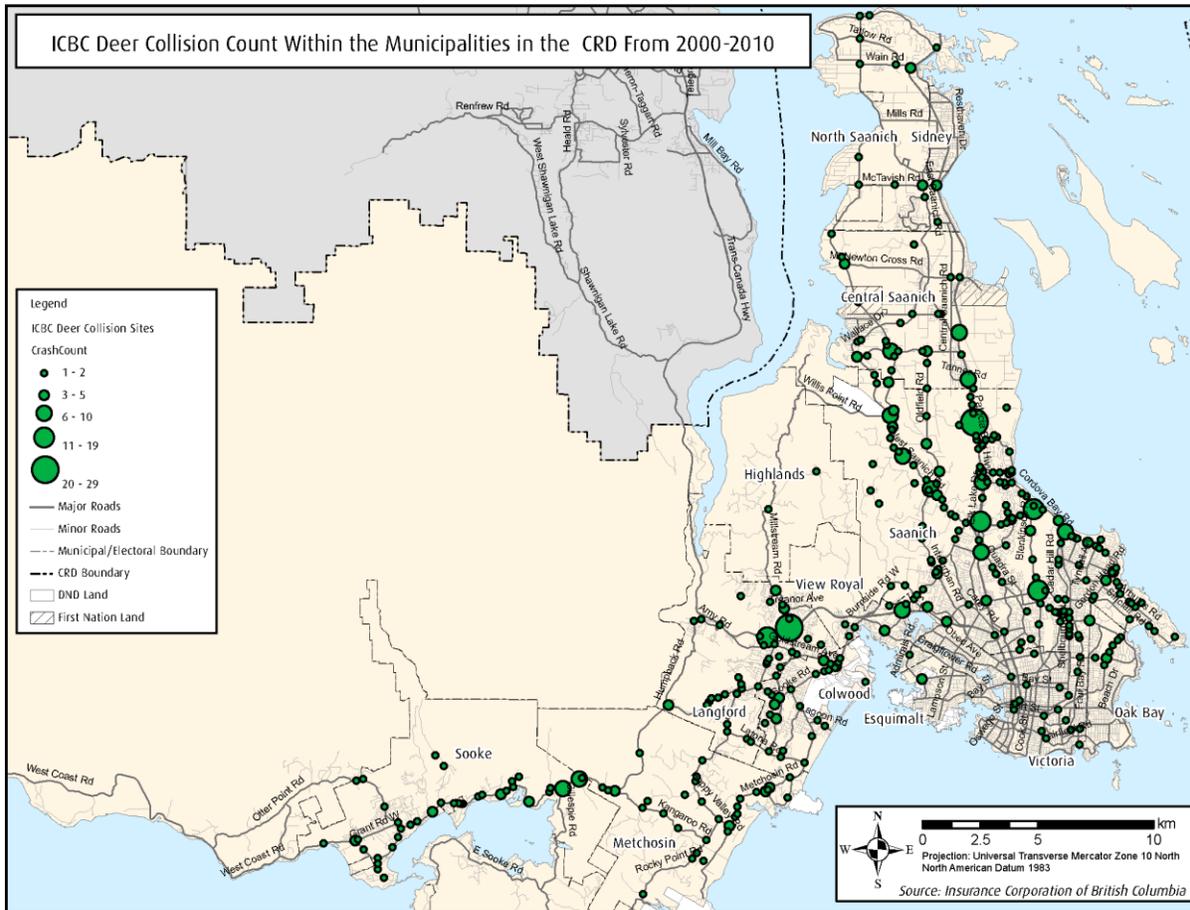


Accident Clean-Up		
Animal Size	Animal Example	Cost Estimate
Small	fox, porcupine, skunk	\$25
Medium	bear, cougar, deer, mountain sheep	\$100
Large	caribou, elk, moose	\$350

Appendix B – Deer Collision Statistics
 Page 3

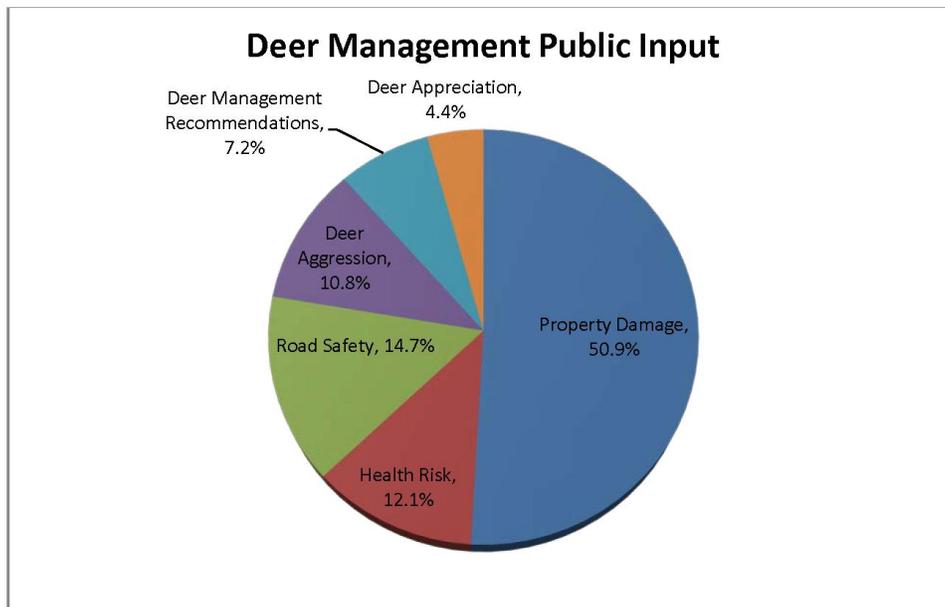
Deer Collision Severity to Humans within British Columbia from 2000-2007				
Year	Fatal	Injury	Property Damage Only	Total
2000	0	198	617	815
2001	3	263	1054	1319
2002	2	293	1212	1507
2003	4	286	1392	1682
2004	6	267	1312	1585
2005	1	302	1466	1769
2006	3	304	1276	1583
2007	3	272	1103	1378
Total	21	2185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



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.

Appendix D – CR FAIR Letter
Page 2

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

Possible health issues of Black-tailed Deer in the CRD

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 some areas of North America. It is caused by an abnormal protein that is transmitted between animals but also through environmental contamination from decomposition of infected carcasses. CWD and related diseases (e.g. bovine spongiform encephalopathy in cattle and Creutzfeldt-Jakob

syndrome in humans) tend to be species specific and CWD has not been diagnosed in humans. CWD has not been diagnosed in British Columbia.

Symptoms in deer:

- nonspecific; abnormal behaviour by deer separating itself from the herd or ignoring humans
- drooling , excessive thirst
- emaciation

Escherichia coli (E. coli)

E. coli is a bacterium, commonly found in the lower intestine of mammals. Some strains carry toxins that can cause gastrointestinal disease in humans. E. coli has been found rarely in hunter harvested white-tailed deer feces and in venison from white-tailed deer and black-tailed deer. Infection through physical contact with feces is usually only a concern where there are extremely high concentrations of deer feces, such as at feeding stations.

Human symptoms:

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

Johne's disease

Johne's disease is a chronic disease that affects the small intestine of some domestic and wild ruminants, including deer. Animals are infected, usually at a young age by bacteria (*Mycobacterium paratuberculosis*) shed in feces of infected older animals. The most common method of infection is the ingestion of bacteria via manure-contaminated udders, milk, water or feed.

It is a disease of high density situation, hence is more common with domestic animals. The infection causes thickening of the intestinal wall and poor absorption of nutrients and results in weight loss and digestive upsets. Humans are not diagnosed with this disease but there are concerns that these bacteria can be responsible for other chronic intestinal conditions of humans.

Animal symptoms:

- in some species; diarrhea and weight loss, others show no sign

Parasites

There are a number of external and internal parasites normally present in blacktailed deer populations. The presence of and transmission of parasites from deer to deer generally has few consequences to individual animals, but when deer densities increase parasite levels can cause clinical signs, depending on the type and levels of infection. For example, there are two exotic lice species on Vancouver Island deer that, when present at high levels, can cause hairloss from intense irritation.

Deer symptoms – vary with the parasite:

- poor haircoat (hair loss may be normal from spring shedding)
- diarrhea
- nasal discharge or coughing - lungworm

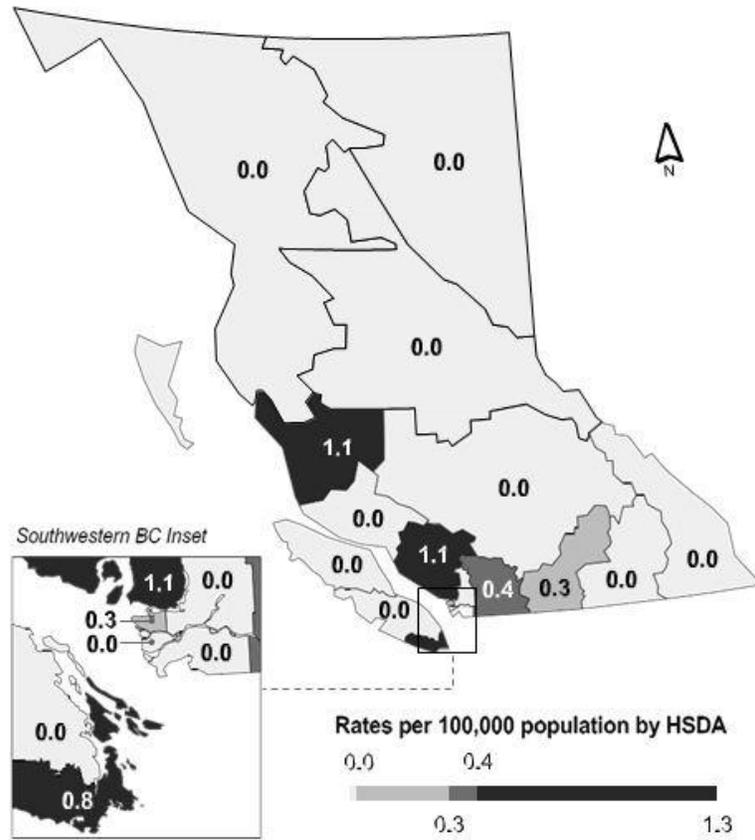
Tick Borne Diseases

Tick borne diseases may be caused by bacteria, viruses or related organisms that are transmitted when a tick feeds on human blood and transmits the organism. The type of tick and its ability to carry and transmit the organism varies with location. On Vancouver Island the tick species is primarily *Ixodes pacificus*, the Western blacklegged tick. The abundance and distribution of these ticks may be correlated with deer densities.

The disease of primary concern for humans and some domestic animals is Lyme's disease, caused by a bacterium, *Borrelia burgdorferi*, see http://www.bccdc.ca/dis-cond/a-z/_/LymeDisease/default.htm. Wild animals show no signs of illness from this disease. If humans remove a tick and notice symptoms of ill health they should save the tick and notify their medical doctor.

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

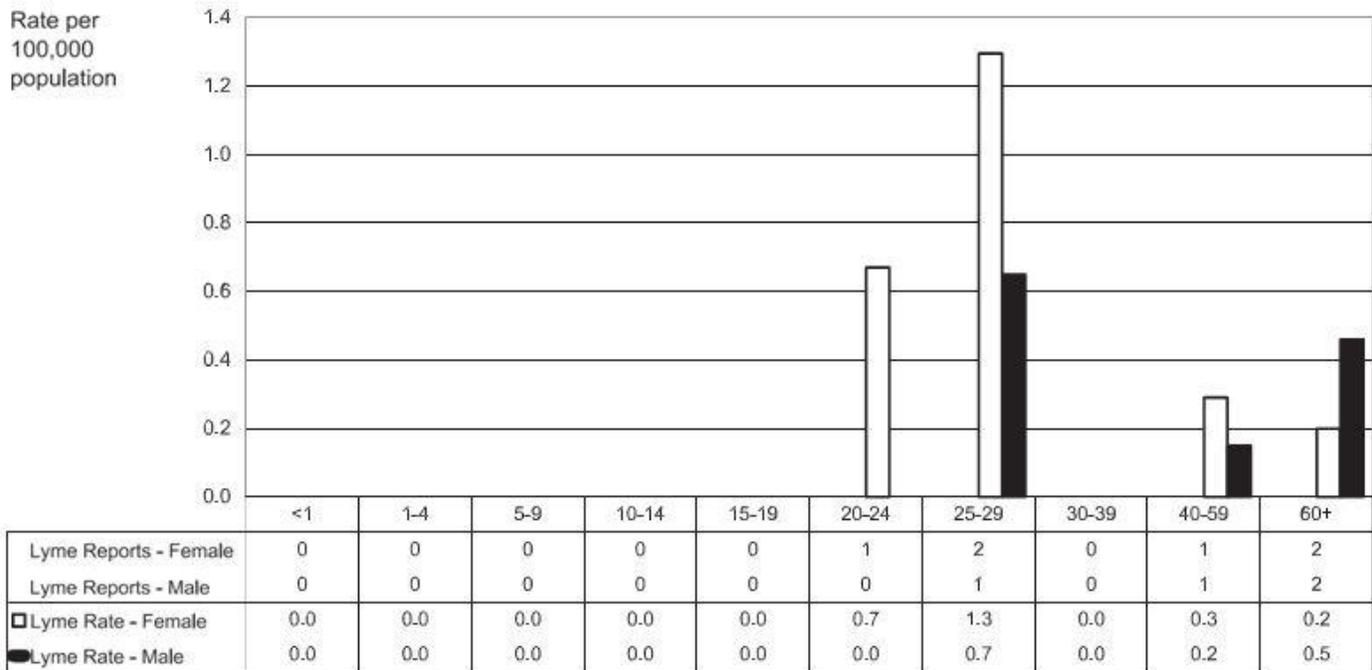
34.2 Lyme Disease Rates by Health Service Delivery Area, 2009



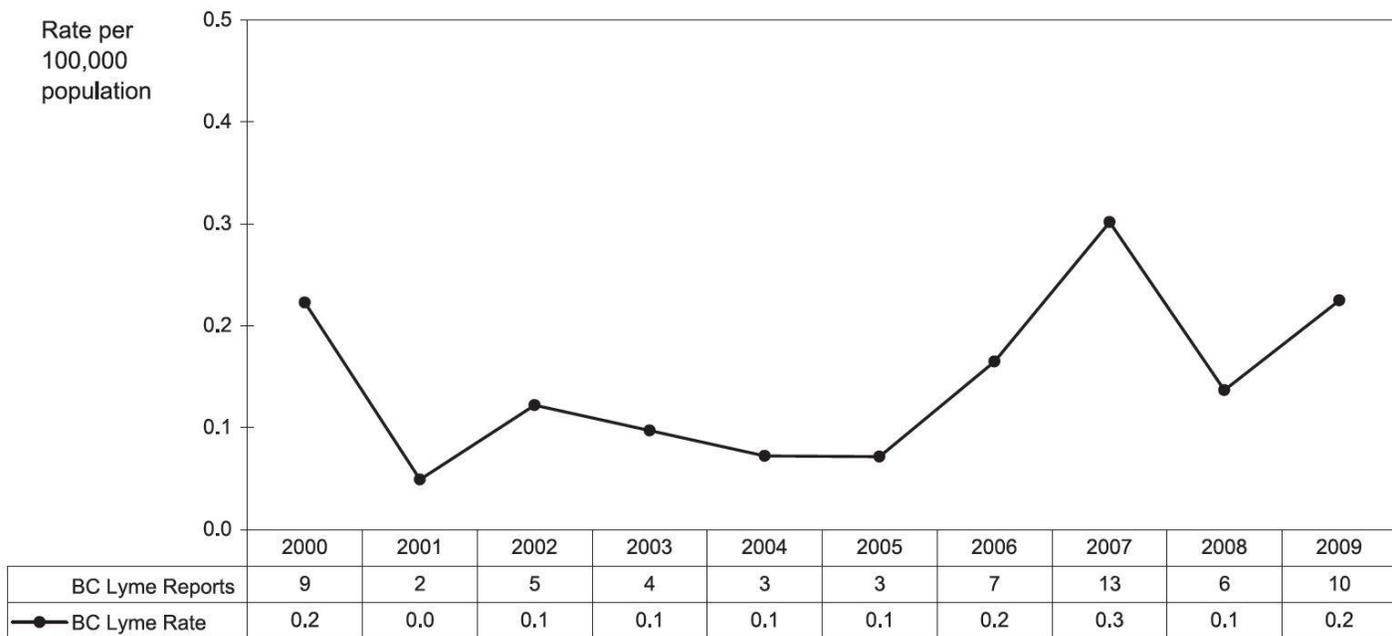
South	Central	North	Vancouver Island Total
0.8	0	0	0.4

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

WILDLIFE HEALTH FACT SHEET “WINTERKILL” IN COASTAL BLACK-TAILED DEER

This fact sheet gives an overview of the increasingly common issue of **deer in poor health during the late winter and early spring in and around coastal British Columbia**. Some of the information can also be applied to many wild animals during extreme and persistent inclement weather conditions.

The south coast of British Columbia has one species of native deer, the coastal black-tailed deer. The population density of deer varies significantly throughout its range on Vancouver Island and the coastal mainland. They are at moderate to high density on some islands and increasing in some semi-rural, suburban and even urban areas on Vancouver Island and the Fraser Valley. In these areas, deer now inhabit a new type of habitat for the species, sharing fields with domestic livestock and using cultivated landscapes such as golf courses, gardens and shrubs for feeding, in some cases on a year round basis. The lack of natural predators and milder winter conditions in rural and suburban areas also supports increased numbers of deer living near humans.

Every year Ministry of Environment staff and the concerned public report a variable number of deer, particularly the young of the previous year, showing one or several signs that can indicate poor health. These include:

- Loss of fear of humans
- Weakness and presence near homes, on porches, in outbuildings
- Poor to extremely thin body condition
- Poor hair coats – from small areas of hairloss to almost completely bald
- Digestive tract upsets – especially diarrhea, seen as green soft to liquid feces on the ground or coating the tail area
- Death with no apparent warning, especially after a period of supplemental feeding

Surprisingly, there is no evidence that these deer suffer from infectious diseases, but there is indication that the **poor health is associated with high deer density and seasonal nutritional issues**. It is difficult to do laboratory analyses on all deer reported in poor health, but the analyses done so far do not show infectious diseases other than high numbers of parasites in some animals, both in their intestinal tracts and on their skin. And these parasites do not appear to be the primary cause of their ill health but just one of several factors.

Deer that live at low elevation on the coast are born over a more extended period of time than other populations. This results in fawns born later in the year that are typically very small as winter approaches. When they live in habitats that are partially or highly disturbed and not considered natural to them (i.e. farmlands, , gardens, golf courses), they feed on many types of vegetation that may or may not provide proper nutrition. Deer evolved as browsers of native shrub-like plants more than grazers of grasses. Even if their nutrition was the very best, any animal entering the most nutritionally stressful time of the year (i.e. winter) at a small size will be highly stressed. These small deer must not only maintain their weight when the weather is cold, wet and windy, using large amounts of energy, but also invest energy in growing muscle and bone. A very high quality and quantity of nutrition is needed to grow and maintain weight during our wet and windy coastal winters.

There are a number of other animals that live on or in our coastal deer. Several species of ticks, lice, deer keds and internal parasites are normally present in most deer populations. In a highly stressed young animal that may not have the energy to move around much, and in a high density population, the

numbers of parasites on each animal are more likely to increase. The parasites alone - or the combination of them and the nutritional challenges the animals face - can be enough to push struggling young deer “over the edge” and show the signs of poor health noted above.

For many people the solution appears to be to give deer a “high quality” feed when the weather worsens – that is what we would do for our livestock, pets or ourselves. However, for any animal in a negative energy state, even for a horse or a dog, changing to a positive or weight gaining state can be a challenge. For a wild animal that did not evolve to eat a high carbohydrate diet of grains and rich feeds such as apples, grasses and alfalfa, the result can be a slow death. They cannot adjust to and digest feeds that they are not used to, and the result can be diarrhea, impaction (severe constipation) and a worse situation than before. In addition, the provision of supplemental feeds creates another challenge - further increasing animal density and the reliance on unnatural feeds - increasing the likelihood of parasite or disease transmission and further degrading the existing habitat.

Both parasites and improper feeds – too rich or too sudden a change – can start the diarrhea, weight loss and other metabolic changes that can end in emaciation and death. Once they are in this state they cannot be medicated into health – any handling or intensive care causes extreme stress and usually results in death. Many die as a result of end-state metabolic problems such as hypothermia (low body temperature), hypoglycaemia (low blood sugar), or exhaustion, and all of these, if not fatal, add to their stress.

Please do care for these animals by reporting their condition to the Ministry of Environment – we are interested in tracking wildlife health and sampling specific animals. But please do not add to the problem by providing supplemental feed to deer at any time of year – you may be “killing them with kindness”. Help us keep BC wild animals wild and healthy.

Dr. Helen Schwantje
Wildlife Veterinarian
Wildlife Health Program
<http://www.env.gov.bc.ca/wld/wldhealth.html>
Ministry of Environment
April 16, 2009

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.

Appendix F – Approaches to Deer Management
Page 2

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).”

Appendix 2 – RDMS Terms of Reference

Attachment 1

CAPITAL REGIONAL DISTRICT REGIONAL DEER MANAGEMENT STRATEGY TERMS OF REFERENCE

OVERVIEW

An increasing population of Coast Black Tail Deer or Columbian Black Tailed Deer in urbanized areas has been identified as an on-going issue in the Capital Region. In 2011, a number of reports respond to initial public concerns by better defining the issue, outlining the provincial position, providing detailed research and data analysis, including public input obtained through a dedicated e-mail address, and recommending steps to address the issue. All information to date on the history of the process, reports, data and research can be found at www.crd.bc.ca/deermanagement. Based on the preliminary input from the community thus far, the major deer-human conflict communities are Saanich, Victoria and Oak Bay.

On November 9, 2011, staff was directed by the Capital Regional District (CRD) Board to develop an action oriented terms of reference for a Regional Deer Management Strategy (RDMS) and report back to the CRD Board in early 2012.

A four step process for developing a deer management strategy and action plan is proposed, designed to be flexible, depending on available resources. Public consultation on proposed management measures will make up the bulk of the budget.

PURPOSE & OBJECTIVES

The purpose of the terms of reference is to develop a RDMS that will guide the control of deer population in areas of conflict in the regional district.

The objectives of the process are to:

1. Prepare a deer management strategy that will address:
 - the impact of deer on agricultural crops which results in economic loss to producers;
 - public health and safety concerns related to deer-auto collisions and risk of aggressive deer-human or deer-pet interaction or transmission of disease;
 - deer encroachment on private urban residential properties resulting in vegetative loss and increased exposure to risk of deer aggression;
 - engage community stakeholders, citizens, government/private/non-profit experts, First Nations and farmers in preparing an action-oriented deer management strategy.
2. Gain public and local/provincial government support for the implementation of a strategy that reduces the urban deer population to a sustainable level.

A four step process is proposed to develop the RDMS. A proposed timeline with project tasks is attached in Appendix B.

STEP 1: Establish Expert Resource Working Group and Citizens Advisory Committee and Proposed Management Options

Expert Resource Working Group

The proposed Expert Resource Working Group (ERWG) will be a body of individuals who have technical expertise to contribute to the RDMS. This group will provide technical and scientific expertise to the Citizens Advisory Committee (CAC). Individual members will act as a liaison with their organizations and provide knowledge and expertise to support the work of the CAC. Members of the Working Group will represent the following interests:

- Parks Canada biologist
- Canadian Wildlife Service
- Ministry of Environment
- Ministry of Transportation
- Wildlife Veterinarian
- Ministry of Agriculture
- Ministry of Forest, Land and Natural Resources
- CRD Parks
- CRD Regional Planning
- University of Victoria wildlife population researcher
- independent biologist
- Peninsula Agriculture Commission

The ERWG will be established based on the members proposed in Appendix A. These people have demonstrated technical expertise and experience with deer-human conflicts and many have expressed an interest in assisting with the RDMS. As part of Step 1, staff will contact each of them and confirm their willingness to serve as working group members.

The ERWG is expected to advise the CAC on the following:

- factors contributing to the over abundant population
- population estimates
- population annual rate of increase and projected growth with and without any intervention
- documentation of property, agricultural, or natural resource damage, as well as human health and safety concerns
- legal ramifications or jurisdictional issues – city bylaws, provincial and federal laws
- identified or suspected ecological, economic, sociological and political consequences
- efficacy of management options and geographic project scope for implementation
- development of a management option evaluation matrix
- contents of communications materials and surveys

Citizens Advisory Committee

The proposed CAC will be the body that guides the development of the RDMS. The CAC will decide the scope of public consultation within the prepared framework and available resources and communicate and engage with regional stakeholders and the ERWG. Effectively this committee will be tasked with preparing and recommending the management strategy and action plan to meet the objectives set out above and address the deer-human conflicts in the region.

A number of members of the public have indicated interest in their e-mail submissions in participating in the deer management strategy development process. A call for interest in appointment to the CAC will be circulated by e-mail and through media releases. Efforts will be made to ensure representation from across the region with special regard to those most

affected by deer as well as those implicated in publicly suggested management options. Input to date suggests representation from the following groups:

- agriculture
- citizens in areas where deer invasion is most acute, i.e. Oak Bay, Victoria, Saanich
- First Nations

Individuals will be requested to submit a letter of interest. Committee appointments will be made by the Planning, Transportation and Protective Services Committee.

Committee membership will be constituted as follows:

- Chair – appointed from CAC membership
- five members from the Core sub-region
- four members from the Peninsula sub-region
- two members from the West Shore sub-region

The CAC will function as the steering committee for the development of the RDMS and will have access to the ERWG for technical support. Regional Planning and Corporate Communications staff will provide administrative and communications support, including compilation and distribution of information and meeting materials, meeting arrangements, communications and consultation and reporting to the Planning, Transportation and Protective Services Committee.

The CAC will lead communications and consultation on the draft RDMS, within the proposed budget and make final recommendations on the strategy and actions to the Board through the Planning, Transportation and Protective Services Committee. The proposed terms of reference for the committee is contained in Appendix C.

This advisory committee-based approach is based on a co-managed, community oriented process which is considered more efficient and equitable compared to more authoritative wildlife management approaches. The *British Columbia Urban Ungulate Conflict Analysis Summary Report for Municipalities* notes that although this type of process is more time consuming, greater stakeholder participation and satisfaction will result.

Management Options

Also as part of Step 1, committee and working group orientation is required. Information pertaining to the management options to be considered for the RDMS will be compiled with the assistance of the working group and distributed to the CAC, public and media. Further investigations for consultation and implementation funding will also continue.

A number of short and long term strategies are required to address current, immediate conflict issues and long term population levels. Each of these strategies requires inter-governmental cooperation to achieve results. The *British Columbia Urban Ungulate Conflict Analysis Summary Report for Municipalities* (the Hesse report) emphasizes management of expectations by balancing management strategies that reduce the conflict problem.

According to the report, management options can be categorized into four areas:

- conflict reduction
- population reduction
- fertility control
- 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 localized population densities are reduced. Community specific management decisions are required to inform control details. 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 include amending municipal bylaws or provincial regulations to permit lethal control options and other measures. The administrative options are actually not a management strategy in and of themselves, but rather how the other measures would be implemented and the results monitored. A more appropriate fourth category would be 'status quo', or learning to live with deer perhaps through such measures as public education.

It is proposed that the CAC will consider all of these management options, specifically including the following measures:

Conflict Reduction

- hazing and frightening techniques
- repellents
- landscaping alternatives
- fencing
- ungulate vehicle collision mitigation

Population Reduction

- capture and relocate
- capture and euthanize
- controlled public hunting
- sharpshooting

Fertility Control

- immunocontraception

Status Quo

- public education

STEP 2: RDMS Preparation and Communications/Consultation Strategy

RDMS preparation will involve:

- agreeing on goals and objectives for the strategy
- confirming an understanding of the management options and measures under consideration
- identifying whether additional management options or measures should be considered
- identifying implementation requirements for each management option under consideration
- identifying and addressing data/information gaps
- scoping geographic areas where measures are most warranted
- developing evaluation criteria and designing an evaluation matrix
- agreeing on the format and content of the RDMS

In considering the management options and measures, evaluation criteria would be developed, with the assistance of the ERWG, including but not limited to:

- public acceptability
- efficacy in addressing documented deer-human conflict
- short and long-term implications
- geographic scope of applying various measures
- implementation considerations such as amending bylaws, provincial statutes or regulations, licensing, monitoring, education
- duration of recommended actions
- cost

The CAC, the ERWG and Regional Planning staff will prepare a draft RDMS.

Communications and Consultation Strategy:

Early and ongoing communications and consultation regarding the deer management strategy are proposed as part of the process, including:

1. A more aggressive online campaign using the CRD website and dedicated e-mail address to communicate progress and accept input, by:
 - using this medium for recruiting CAC members;
 - providing opportunities for the exchange of information by building awareness and understanding of what issues exist in the deer population in the capital region and options for inclusion in the RDMS;
 - an online forum established through a discussion board on the CRD's website that will provide regional residents with key messages and engagement questions regarding the evolving deer management strategy for discussion and input. The discussion board will be moderated by CRD staff.
2. Dedicated correspondence and sharing of key messages and engagement questions regarding the RDMS with federal Members of Parliament, provincial Members of the Legislative Assembly, CRD directors and municipal councillors so that they can monitor the process and provide input.

Use of the online campaign has several benefits, including:

- moderated format to allow for ongoing public discussion
- available through the CRD website
- users can be anonymous
- introduces subsequent stages of the consultation process
- provides opportunities for participants to have questions answered
- solicits feedback
- structured so that feedback is constructive and solution focused

The online campaign will be initiated upon approval of the terms of reference by the Planning, Transportation and Protective Services Committee and supported through earned media opportunities and social media over the duration of the process.

In addition to the online campaign, once a draft RDMS has been prepared under CAC direction, it is recommended that a regional survey be conducted by an organization like Ipsos Reid or

Malatest with either a random or stratified sampling of regional representatives. This will provide a statistical approach to testing the recommended management options and measures in the court of public opinion. The survey will provide a level of confidence in the results to inform the final recommendations of the CAC and, ultimately, the decision of the Board on the RDMS. The same survey can be posted online over the same period, in order for those interested but not selected in the sample to weigh in; results will be tabulated separately.

The regional survey would be undertaken once the CAC has agreed on a draft RDMS and would constitute the primary consultation tool, in addition to the online campaign. Following the survey, a summary of the findings will be prepared for the CAC and for posting online.

STEP 3: Finalize Regional Deer Management Strategy

Based on the totality of input from the communications and consultations of Step 2 as well as professional judgement of the ERWG and the CAC's direction, staff will finalize the RDMS and prepare a transmittal report to the Board via the Planning, Transportation and Protective Services Committee for consideration.

STEP 4: Implementation

Implementation is dependent on the approved recommendations of the RDMS. No regional resources are currently allocated to implementation. Over the duration of the process, external funding sources will be investigated for assistance with implementation.

Project Management and Support Resources

This project will be managed by the CRD, with Jeff Weightman, Planning Analyst, as project manager, who will coordinate the ERWG and CRD Corporate Communications and Regional Planning staff support. Regional Planning will provide administrative and project coordination services as well as support for online and media campaigns and the public survey in conjunction with Corporate Communications.

Budget and Sources of Funding

As previously indicated, no external cash funding source has been secured to assist with the development of the RDMS. In-kind support will be sought from the agencies listed in Appendix A to contribute expertise and guidance to this process as part of the ERWG. Also, volunteer time and effort will be contributed by the CAC members toward the RDMS.

In-kind support will be made available from the Regional Planning division through dedication of the planning analyst as project manager for the duration of the project and administrative support provided by the administrative clerk. The senior manager and the general manager will also contribute time and guidance to the process. Additional resources are required to fund CAC information, meeting and reporting needs as well as the online campaign, earned media and social media promotion. A single supplementary requisition to the Regional Planning budget of \$20,000 is required for this work.

Should the statistical public survey approach to testing the CAC proposed management options and measures be accepted, an additional \$20,000 is required through a single supplementary for this purpose. In total, the proposed approach to the RDMS requires a single supplementary to the Regional Planning 2012 budget of \$40,000.

Timeline

The RDMS will be completed between March and July 2012, with implementation anticipated thereafter, pending the Board's approval. Appendix B contains a more detailed timeline.

Appendix 3 – CAG Terms of Reference

APPENDIX C

Citizens Advisory Committee Terms of Reference

The proposed Citizens Advisory Committee (CAC) will be the body that guides the development of the RDMS. The CAC will carry out public consultation within the prepared framework of the RDMS terms of reference (ToR) and available resources and communicate and engage with regional stakeholders and the ERWG. Effectively this CAC will be tasked with preparing and recommending the management strategy and action plan to meet the objectives set out in the ToR and address the deer-human conflicts in the region.

A number of members of the public have indicated interest in their e-mail submissions in participating in the deer management strategy development process. A call for interest in appointment to the CAC will be circulated by e-mail and through earned media. Efforts will be made to ensure representation from across the region with special regard to those most affected by deer as well as those implicated in publicly suggested management options. Input to date suggests representation from the following groups:

- Agriculture
- Citizens in areas where deer invasion is most acute, i.e. Oak Bay, Victoria, Saanich
- First Nations.

Interested individuals will be requested to submit a letter of interest. CAC appointments will be made by the Planning, Transportation and Protective Services Committee (PTPSC). Members will be asked to put the regional public interest before any specific group or individual interest. CAC membership will be constituted as follows:

- Chair – appointed from CAC membership
- five members from the Core sub-region
- four members from the Peninsula sub-region
- two members from the West Shore sub-region

The CAC chair will be the designated media spokesperson.

Appointment and Term

Members shall be appointed by PTPSC for a term of six months. Members may be appointed for three consecutive terms. To be eligible, members must be a resident or elector of specified project areas in the Capital Region. Successful candidates must possess a strong sense of community, willingness to work respectfully as part of a team and have good communications skills. PTPSC 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 PTPSC.

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

The CAC will meet as required until the RDMS has been successfully completed.

Decision Making Process

The guiding decision making framework will be by consensus, defined as follows:

“An expression of general agreement about an issue, recommendation or report without using a voting process”

Members may have concerns about specific aspects of decisions but can accept that the general agreement goes forward and will support the overall decision. Members will strive to reach the best possible decision for the group. Consensual decision-making is an open process that ensures every member is able to exercise their full involvement at every stage of the process in a timely manner, without delay.

When a consensus cannot be reached the issue, recommendation or report will be subject to a vote. The guiding decision making framework will be a majority vote.

Each member of the committee, including the chair, has one 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.

Quorum of the CAC is seven voting members.

Reporting and Transparency

All minutes of the CAC will be made available to the public through the CRD online document library and email distribution.

Regular reporting for key stakeholders will be posted on the website.

Working Group meetings will be open to the public.

CAC meetings will be posted and open to the public.

Any public attending must be an observer and will not take an active role in the meeting. Delegations to the CAC are not permitted.

Authority

The CAC members, aside from the designated media spokesperson, do not have the authority to communicate with other levels of government on behalf of the Region. Members (other than designated media spokesperson) do not have the authority to speak publically (e.g., to media) on behalf of the CAC or working group unless so directed by PTPSC. Committee members cannot authorize any expenditure to be charged against the Region.

Reference Material

- Website: <http://www.crd.bc.ca/deermanagement>

Appendix 4 – Firearms discharge bylaw review

Hunting and Firearm/Bow Discharge Bylaw and Provincial Law Review

The Ministry of Forests, Lands, and Natural Resource Operations (formerly the Ministry of Environment) has jurisdiction over hunting in British Columbia and prepares the Hunting and Trapping Regulations synopsis for the province.

The Community Charter also provides municipalities with fundamental powers related to regulating weapons, including firearms and archery equipment, within their boundaries. Chapter 26, Section 8 (3) states that a council “may, by bylaw regulate, prohibit and impose requirements in relation to the following: (e) bows and arrows, knives and other weapons” and Section 8 (5) state that “a council may, by bylaw, regulate and prohibit in relation to the discharge of firearms.”

Provincial Regulations that cover the entire Province

Wildlife Act: Closed Areas Regulation (excerpts)

No shooting and hunting areas

4 The areas set out in Schedule 3 are designated as no shooting areas and, for the purposes of section 26 (1) (c) of the Act, there is no open season for any wildlife species in those areas except as prescribed for the trapping of furbearing animals.

Road allowance no shooting or hunting areas

12 (1) For the purposes of subsections (2) and (3) and of section 31 of the Act, "**highway**" means every public road of two lanes or more that is maintained by the ministry of the minister responsible for the administration of the *Transportation Act*, and includes all other public roads of two lanes or more within the Province that are operated or maintained by the government of another province or of a territory or by the government of Canada.

(2) For the purpose of subsection (3), "**road allowance**" means the highway and that area on either side of the highway including the shoulder and ditch to the lesser of

(a) a distance of 15 m from

(i) the midline of a road of less than three lanes, or

(ii) the nearest edge of the paved surface of a highway with three lanes or more, or

(b) the boundary of private property as indicated by

(i) a fence, or

(ii) the limit of cultivated land.

(3) The road allowance of any highway is designated as a no shooting area, and for the purposes of section 26 (1) (c) of the Act there is no open season for any wildlife species in that area.

Wildlife Act: Closed Areas Regulation: Schedule 3

No shooting and hunting areas

The Province

19 That portion of British Columbia within 100 m of

- (a) a church, school building, school yard and playground,
- (b) a dwelling house,
- (c) a farm or ranch building that is occupied by persons or domestic animals, and
- (d) a regional district park in Management Units 1-1 to 1-15 and 2-1 to 2-19.

No shooting areas

6 The areas set out in Schedule 5 are designated as No Shooting areas.

Prohibited discharge areas under section 108 (2) (o) of the Act

10 (1) A person commits an offence if the person discharges

- (a) a firearm in an area set out in Schedule 9 unless the person uses shot only,
- (b) a firearm in an area set out in Schedule 10 during the period set out for each area unless the person uses shot only,
- (c) a rifle in an area set out in Schedule 11, or
- (d) a firearm in an area set out in Schedule 13 unless the person uses non-toxic shot only.

Provincial Regulations that cover Specific Areas of the Province

Wildlife Act: Closed Areas Regulation: Schedule 5

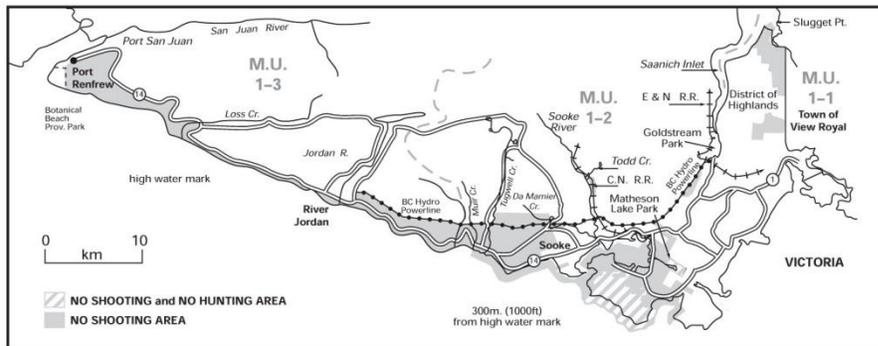
No Shooting Areas (excerpts)

CRD Staff Note: No Shooting still allows discharge of bows

Sooke and Metchosin

32 That portion of the Province of British Columbia in the South Saanich, Malahat, Goldstream, Otter Point, Sooke, Metchosin and Esquimalt Districts which is contained within the following described boundaries:

CRD Staff Note: See the map below:



Map A5 Sooke/Metchosin - No Shooting Area and No Shooting or Hunting Area (situated in MUs 1-1, 1-2 and 1-3).

Wildlife Act: Closed Areas Regulation: Schedule 11

Prohibited Discharge Areas — Rifles (excerpts)

Management Unit 1-1

5 That portion of the Province of British Columbia within the boundaries of M.U. 1-1, excepting those portions of Valdes Island, Sidney Island or James Island located above the mean high water mark.

CRD Staff Note: There is a bow-only season from August 25 – September 9 each year in Management Units 1-1 and 1-2. There are also a number of No Shooting and No Hunting areas in M.U. 1-2 as per the attached map

Municipal Bylaws

Peninsula

	Firearm Discharge and Bow Bylaws	Other Wildlife Control bylaws
Sidney	All discharge of firearms or bows prohibited (Bylaw 1607)	No mention of wild deer (Animal & License Control Bylaw 1965)
North Saanich	“Permits may be issued to farmers within the District by the officer in charge of the Sidney/North Saanich R.C.M.P. Detachment, under the following conditions: (a) The applicant is a farmer actively engaged in agriculture on land of which he is the owner or tenant; (b) The land owned or leased by the applicant for the purpose of farming, is a minimum of 5 acres; (c) The purpose of the application and the subsequent use of firearms allowed by the permit is limited to the hunting of predatory animals or birds which may reasonably be expected to kill farm animals or destroy crops necessary to the livelihood of the farmer; (d) The use of the firearm is consistent with the conditions and any mandatory permits issued pursuant to the Firearm Act, the Wildlife Act and the Criminal Code of Canada regarding the	No mention of wild deer (Bylaw 751)

	possession and use of firearms; (e) The permit specifies the length of time for which it is issued, which period shall not in any event exceed one year (12 months);” (Bylaw 846) Crop protection is by firearms only, bow use is prohibited Note: Agricultural Advisory Committee asked for a bylaw change to allow bow hunting in 2010.	
Central Saanich	“Any person holding a valid permit issued by the Central Saanich Police Service to: i) a person, being the owner of land or having the permission of the owner, discharging a crossbow or longbow or live rounds, excluding a single projectile, with a shotgun on a parcel of land outside the area outlined in heavy black line on Schedule "A" and having an area greater than 2 ha (5 acres), in order to humanely kill livestock or protect agricultural crops, livestock or domestic animals from wildlife; or ii) a person, being the owner of land or having the permission of the owner, discharging blank rounds with a firearm on any parcel of land outside the area outlined in heavy black line on Schedule "A", in order to protect agricultural crops, livestock or domestic animals from wildlife.” (See attached map) (Firearms bylaw 1612, 2009)	No mention of wild deer (Animal Control Bylaw 1471)

Core

	Firearm Discharge and Bow Bylaws	Other Wildlife Control bylaws
Saanich	“Any person who is the holder of a valid and subsisting permit under the <i>Wildlife Act</i> and who is engaged in hunting designated wildlife for agricultural crop protection and who is the holder of a valid and subsisting permit [granted by the Chief of Saanich Police] under this bylaw.” (Firearm and Bow Discharge Regulation Bylaw, 2000, No. 8092)	No mention of wild deer (Animals Bylaw 8556)
City of Victoria	All discharge prohibited (Firearms Control Bylaw 80-43) Discharge of firearms banned in parks (Parks Regulation Bylaw - No. 07-059)	No mention of wild deer (Animal Control Bylaw 11-044)
Oak Bay	All discharge prohibited (Firearms Discharge Bylaw NO 2310, 1961)	Feeding deer prohibited (Animal Control Bylaw 4013)
Esquimalt	Any person over 18 at the discretion of the Chief of Police (Firearms Regulation Bylaw No. 407, 1945)	No mention of wild deer (ANIMAL BYLAW, 2002, NO. 2495)
View Royal	None	No mention of wild deer (Animal Control Bylaw No. 614, 2005)

West Shore

	Firearm Discharge and Bow Bylaws	Other Wildlife Control bylaws
Highlands	“Any person who is engaged in humanely killing livestock or protecting agricultural crops or livestock from wildlife.” (Firearms and Bow Hunting Bylaw 145) Note: Firearms only, bow hunting is specific areas only (see attached map)	No mention of wild deer (CRD Animal Regulation and Impounding By-law No. 1465, 1986.)
Langford	“d) Any person who is engaged in hunting wildlife for agricultural crop protection.” (Firearms and Bow Use Bylaw No. 509, 2000)	No mention of wild deer (CRD Animal Regulation and Impounding By-law No. 1465, 1986), amended by bylaw 1310
Colwood	None (Waiting on confirmation)	No mention of wild deer (Animal Regulation and Impounding Bylaw, 1990)
Metchosin	“Any person who is the holder of a valid permit and is engaged in hunting wildlife for agricultural crop protection” (Firearms and Bow Use Bylaw 2001, No. 419)	No mention of wild deer (Animal Control Bylaw, 2002, No. 421)
Sooke	All discharge prohibited (Firearms Regulation Bylaw, 2001)	No mention of wild deer (Bylaw No. 392, Animal Regulation and Impounding Bylaw, 2009”.)

CRD Animal Regulation and Impounding By-law No. 1465 predates the incorporation of Langford, Colwood, Metchosin, Highlands and Sooke.

Other

	Firearm Discharge and Bow Bylaws	Other Wildlife Control bylaws
Juan de Fuca EA	Provincial laws supersede regional district bylaws. Provincial No shooting areas do exist within the JdF EA. Firearm discharge not allowed before 9:00am or after 7:00pm (Noise Suppression Bylaw (Juan de Fuca) No.1, 2007) Hunting and discharge of firearms, bows and crossbows are prohibited within CRD Water Supply and Regional Park lands (CRD BYLAW NO. 3682 & BYLAW NO. 2804)	No mention of wild deer (CRD Animal Regulation and Impounding By-law No. 1465, 1986.)
First Nations Reserves	None	None

Definitions

"firearm" includes a rifle, shotgun, handgun or spring gun and any device that propels a *projectile by means of an explosion, compressed gas or spring but does not include a bow*;

"hunt" includes *shooting at, attracting, searching for, chasing, pursuing, following after or on the trail of, stalking or lying in wait for wildlife, or attempting to do any of those things, whether or not the wildlife is then or subsequently wounded, killed or captured,*

(a) *with intention to capture the wildlife, or*

(b) *while in possession of a firearm or other weapon;*

"no shooting area" means *a designated area in which the discharge of a firearm is prohibited;*

Other Regulations

Provincial Firearms Act

Exercise of care for safety of others

3 A person who is in possession or control of a firearm must exercise care for the safety of other persons or property.

Criminal Code of Canada

244.2. Discharging firearm — recklessness

244.2 (1) Every person commits an offence

(a) who intentionally discharges a firearm into or at a place, knowing that or being reckless as to whether another person is present in the place; or

(b) who intentionally discharges a firearm while being reckless as to the life or safety of another person.

Definition of "place"

(2) For the purpose of paragraph (1)(a), "place" means any building or structure — or part of one — or any motor vehicle, vessel, aircraft, railway vehicle, container or trailer.

Punishment

(3) Every person who commits an offence under subsection (1) is guilty of an indictable offence and

(a) if a restricted firearm or prohibited firearm is used in the commission of the offence or if the offence is committed for the benefit of, at the direction of or in association with a criminal organization, is liable to imprisonment for a term of not more than 14 years and to a minimum punishment of imprisonment for a term of

(i) five years, in the case of a first offence, and

(ii) seven years, in the case of a second or subsequent offence; and

(b) in any other case, is liable to imprisonment for a term of not more than 14 years and to a minimum punishment of imprisonment for a term of four years.

Subsequent offences

(4) In determining, for the purpose of paragraph (3)(a), whether a convicted person has committed a second or subsequent offence, if the person was earlier convicted of any of the following offences, that offence is to be considered as an earlier offence:

(a) an offence under this section;

(b) an offence under subsection 85(1) or (2) or section 244; or

(c) an offence under section 220, 236, 239, 272 or 273, subsection 279(1) or section 279.1, 344 or 346 if a firearm was used in the commission of the offence.

However, an earlier offence shall not be taken into account if 10 years have elapsed between the day on which the person was convicted of the earlier offence and the day on which the person was convicted of the offence for which sentence is being imposed, not taking into account any time in custody.

Sequence of convictions only

(5) For the purpose of subsection (4), the only question to be considered is the sequence of convictions and no consideration shall be given to the sequence of commission of offences or whether any offence occurred before or after any conviction.

Appendix 5 – Letter from CRD to Ministry regarding deer management

March 9, 2011

Mr. Tom Clark, Executive Director
Ministry of Environment
Compliance Division
Box 9337, Stn Prov Govt
Victoria, BC V8W 9M1

Dear Mr. Clark:

RE: Report to the Capital Regional District Board on Deer Control, February 16, 2011

The purpose of this letter is to inform you of the Capital Regional District's (CRD) position on responsibility for deer control. Increases in the population of ungulates, deer in particular, are apparent throughout the Region as evidenced by a rise in public complaints regarding damage to gardens, landscaping and urban forests as well as a rise in deer-vehicle collisions. This trend prompted a staff report prepared for consideration by the Planning, Transportation and Protective Services Committee (the committee) and subsequently by the Board.

At its meeting of February 16, 2011 the CRD Board passed the following resolution:

That CRD Planning, Transportation and Protective Services Committee concerns regarding the effect of urban and rural deer population be expressed to the Province with a strong and urgent recommendation to have them develop a comprehensive provincial deer management plan including a public consultation framework and funding.

It is the clearly expressed position of the committee and Board that deer control is within the jurisdiction of the Province. Further, there is a sense of immediacy to the need for a plan to address the deer population, in accordance with guidance given by the Hesse report, recently issued by the Ministry of Environment. While the committee and Board do not believe that this responsibility falls to municipal or regional governments, they agree that a management plan is necessary to address the issues associated with the deer population. The CRD is not in favour of committing resources to the development of an ungulate management plan; however, CRD staff is available to discuss the matter further with ministry staff.

Should you wish clarification or further discussion on this matter, please contact Mr. Robert (Bob) Lapham, General Manager, Planning and Protective Services at 250.360.3285.

Sincerely,

Geoff Young, Chair
CRD Board

cc Mr. Edward Illi, Chief Conservation Officer, Ministry of Environment
Ms Lana Popham, MLA Saanich South
Mr. Kelly Daniels, Chief Administrative Officer, CRD
Mr. Robert (Bob) Lapham, General Manager, Planning and Protective Services, CRD

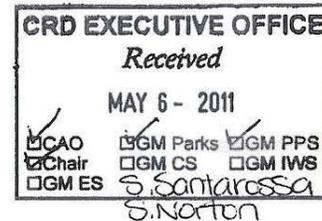
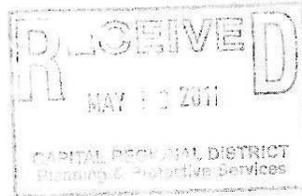
Appendix 6 – Letter from the ministry to the CRD



Reference: 139047

APR 28 2011

Geoff Young, Chair
CRD Board
Capital Regional District
625 Fisgard Street
Victoria BC V8W 2S6



Dear Mr. Young:

Thank you for letter of March 9, 2010, regarding urban deer issues in the Capital Regional District.

We certainly recognize that in some British Columbia (BC) communities, there are increasing numbers of human-deer conflicts in urban areas. This is not unique to BC; it is a North American phenomenon. Deer inhabit residential areas because they feel protected from predators and have access to an abundance of food. Urban sprawl is also contributing to this trend. Deer are not considered dangerous wildlife but can act aggressively to protect themselves or their fawns. As with any wildlife, they must be given respect and space.

The Conservation Officer Service will respond to deer conflicts if public safety is at risk. Conservation Officers have responded to reports of aggressive deer incidents on several occasions, however, in many cases the offending deer had moved on, could not be identified or could not be safely captured or shot.

This is not an easy situation to resolve and our primary focus is on conflict reduction. Deer readily adapt to human activity and are sometimes seen in unlikely places. It is important that homeowners understand the consequences of attracting deer into town. Feeding can increase the dependence of deer on people, lead to aggressive behaviour and facilitate disease transmission. Humans will have to adapt and co-exist with wildlife using the same piece of land.

I understand that you are familiar with the *British Columbia Urban Ungulate Conflict Analysis* and it is unfortunate that you will not be establishing an Urban Deer Management Advisory Committee. Ministry of Environment (MoE) and Ministry of Forests, Lands and Natural Resource Operations (MFLNRO) staff have an active role in the process of developing

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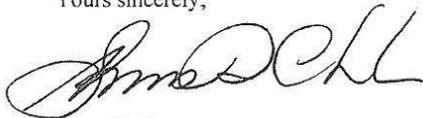
strategies through participation on committees and, as capacity allows, involvement in delivery of management options. MoE/MFLNRO staff will not lead these processes, but will encourage and facilitate community involvement and leadership. Communities are expected to develop their own deer management objectives with government oversight. Lessons learned through these initial efforts will be used to further develop this process and will be shared with other communities to assist with their initiatives.

We believe this direction will result in a consistent approach to community-led deer conflict management strategies. It gives communities the responsibility of leading the process which ensures broad community support for proposed management actions, and allows management strategies to reflect the unique biological and social conditions of individual communities. Successful resolution will involve cooperation and partnerships between all parties involved.

If you have further questions, please feel free to contact Mr. Mike Badry by phone at 250 356-9134, or by email at Mike.Badry@gov.bc.ca.

Thank you again for writing and we look forward to continuing toward effective management of this difficult issue.

Yours sincerely,



Tom Clark
Executive Director

cc: Chief Conservation Officer Edward Illi, Conservation Officer Service,
Ministry of Environment
Mike Badry, Wildlife Conflicts Prevention Coordinator, Conservation Officer Service,
Ministry of Environment

Appendix 7 – Submissions to Board from Peninsula Farmers

Page 1 of 1

Barbara Brennan

From: "Kildara farms" <kildara@shaw.ca>
To: "Barbara Brennan" <barbara.brennan@shaw.ca>
Sent: October-07-11 12:15 PM
Attach: IMAGE1.JPG
Subject: deer

Kildara Farms,
11293 Chalet Rd.,
North Saanich

To Whom it may Concern:

Our problems with deer have been increasing year after year.

In 2009 they ate 6000 strawberry plants, down to the ground - we got 2 strawberries from the whole patch.

In 2010 they ate all of our bean crops, 2 plantings as they did again in 2011, along with our three pea plantings; snap peas, snow peas and about half the flowers on our English Peas. They also stripped our pole beans and even ate some of our salad plantings.

In winter, when it snows and the only green showing above the snow is leeks, they have eaten them too.

In the last 18 months we have lost an estimated \$14,200 in crops, not counting seed and labour etc. They have come right up on our patio and eaten the roses, phlox, day lillies and hostas.

J. BRIAN HUGHES
07.10.11

07/10/2011

Deer Management Information from farmers

Name: Robert Burke

Farm Name: Pineood Farm

Farm Address: 2926 Tudor Ave

Phone: 417 5386

Briefly describe what damages deer have caused this year on your farm:

Areas is fenced. Deer periodically get in

Estimated value of crop damage: 100⁰⁰ - 500⁰⁰ / year

Would you be interested in being part of a Deer Management Committee?

yes no

Do you support a deer cull?

yes no

Deer Management Information from farmers

Name: Teresa Turgeon

Farm Name: Star Hill Farm (developing farm)

Farm Address: 5519 Forest Hill Rd.

Phone: 250 881 1004

Briefly describe what damages deer have caused this year on your farm:

Saplings (1+2 year-old) are grazed by
the deer and killed due to stripping.

Apple and pear trees are stripped.

Estimated value of crop damage: \$ 200 in tree stock

Would you be interested in being part of a Deer Management Committee?

yes no

Do you support a deer cull?

? yes ? no

Deer Management Information from farmers

Name: Barry

Farm Name: "Every Blooming thing"

Farm Address: Keating Road

Phone: _____

Briefly describe what damages deer have caused this year on your farm:

Keating X Road 4-5 X Killed
at night

has fenced but deer come at
night to feed.

Estimated value of crop damage: DANGER

Would you be interested in being part of a Deer Management Committee?

_____yes _____no

Do you support a deer cull? _____yes _____no

Deer Management Information from farmers

Name: Satnam Dheershaw

Farm Name: Gobind Farms

Farm Address: 6929 Veyness Rd.

Phone: 250 744 7942

Briefly describe what damages deer have caused this year on your farm:

1 Acre Cuces Loss
2.5 Acre Everbearing Strawberry Loss
2 Acre June Bearing Strawberry

Estimated value of crop damage: 20-25 k

Would you be interested in being part of a Deer Management Committee?

_____yes _____no

Do you support a deer cull? yes _____no

Deer Management Information from farmers

Name: Munro Kit

Farm Name: Munro Farms

Farm Address: _____
Phone: _____

}
}

Briefly describe what damages deer have caused this year on your farm:

Estimated value of crop damage: _____

Would you be interested in being part of a Deer Management Committee?

_____ yes no

Do you support a deer cull? yes _____ no

Deer Management Information from farmers

Name: John Hanagan

Farm Name: _____

Farm Address: 7151
Wallace Drive

Phone: _____

Briefly describe what damages deer have caused this year on your farm:

TREE Damage
SPRAY Control
12 yrs ago no deer -
HAY DAMAGE + LOSS (Flattened)
- Bold approaching house - spray more around
house.

Estimated value of crop damage: _____

COST ASS w/ control

Would you be interested in being part of a Deer Management Committee?

_____yes _____no

Do you support a deer cull? _____yes _____no

Deer Management Information from farmers

Name: Willi Boepple (Ms.)

Farm Name: Hexenwald / Killdeer Hill

Farm Address: 5951 Killdeer Rd Road named after a BIRD eh.

Phone: 652-5583 Answering machine may hang up on you.

Briefly describe what damages deer have caused this year on your farm:

Not particular ^{some} not end sleep
particularly where I farm - but neighbors
sustain ongoing fruit/vegetable losses.
Also I love venison.

Estimated value of crop damage: _____

Would you be interested in being part of a Deer Management Committee?

yes no Sharpshooter, licensed hunter.

Do you support a deer cull?

yes no Experienced with using .22 for slaughter and am familiar with small ruminant skull anatomy/correct cut placement.

Deer Management Information from farmers

Name: TAN STEWART

Farm Name: STEWART'S BERRY PATCH

Farm Address: 6283 Oldfield Rd SAAVICHTON

Phone: 250-480-8113

Briefly describe what damages deer have caused this year on your farm:

DESTROYED BLUE BERRY PLANTS
EAT NEW SHOOTS
EAT BERRIES

Estimated value of crop damage: 2500,00

Would you be interested in being part of a Deer Management Committee?

_____ yes no

Do you support a deer cull? yes _____ no

Deer Management Information from farmers

Name: _____ Ryan Vantreight _____

Farm Name: _____ Vantreight Farms _____

Farm Address: _____ 8277 Central Saanich Road _____

Phone: _____ 250-652-7777 _____

Briefly describe what damages deer have caused this year on your farm:

They have damaged our lettuce, savoy, squash, and berries and have laid down our grain crops to making bedding just to name a few. They have eaten our tulips and have dug out the bulbs and eaten those as well. They have made tracks through our daffodil fields and have damaged nearly 100 rows of daffodil bulbs. There are out of control.

Estimated value of crop damage: _____ Conservatively \$10,000 _____

Would you be interested in being part of a Deer Management Committee?

_____ X _____ yes _____ no

Do you support a deer cull? _____ X _____ yes _____ no

Send to Bob

Deer Management Meeting – August 24th

Name: Wendy Fox

Farm Name: Silver Hill Corn

Farm Address: 7117 Central Puanich Rd.
plus 6 other leased properties

Phone: silverhillcorn@shaw.ca

Briefly describe what damages deer have caused this year on your farm:

1/2 June bearing Strawberries
Damage to cane berries
Entire everbearing Strawberry patch
lettuce, broc, Cauli, carrots, beets - beans, peas,
pretty much all our crops were, corn about 1/4 of one
field damaged.

Estimated value of crop damage: 40-50,000.00

Would you be interested in being part of a Deer Management Committee?

X yes _____ no

Do you support a deer cull? ✓ yes _____ no

Deer Management Information from farmers

Name: TERRY Michell

Farm Name: Michell BROTHERS FARM

Farm Address: 3015 ISLAND VIEW Rd

Phone: 250-652-0389
cell 250-883-2474

Briefly describe what damages deer have caused this year on your farm:

- ① DAMAGE TO apple trees, EAT new Growth
- ② DAMAGE TO new strawberry plantings. EAT plants
- ③ DAMAGE TO CORN fields
- ④ considerable DAMAGE TO CARROT crop.
EAT carrots, trample field so machine
will not harvest, completely destroyed
Approx 3 1/2 ACRES carrots.
- ⑤ ATR all the Beans

Estimated value of crop damage: 75 - \$100,000 to date this
year (late august)
2011

Would you be interested in being part of a Deer Management Committee?

yes no

Do you support a deer cull? yes no

Terry Michell
aug 29/2011

Deer Management Information from farmers

Name: _____ Dan Ireland _____

Farm Name: _____ Ireland Farms _____

Farm Address: _____ 1910 Meadowbank
Road _____

Phone: _____ 250 652-3251 _____

Briefly describe what damages deer have caused this year on your farm:

__ None. We have both perimeter page wire fencing as well as electrified fences on all of our properties. We raise grass and deer are browsers (for the most part) unless tempted with something more tasty...eg. vegetables, fruits, etc. Therefore the deer really have no desire in what we produce. _____

Estimated value of crop damage: _____ 0 _____

Would you be interested in being part of a Deer Management Committee?

__ X _____ yes _____ no

Do you support a deer cull? X yes _____no

OF POSSIBLE INTEREST, WHEN I WAS EMPLOYED WITH THE MINISTRY OF AGRICULTURE, I WAS RESPONSIBLE FOR 'GAME FARMING' IN BC WHICH INCLUDED THE MANAGEMENT OF FALLOW DEER, REINDEER, BISON, ETC. I'VE GOT A FAIRLY DEEP KNOWLEDGE AND EXPERIENCE ON THESE CRITTERS AND WAS ALSO RESPONSIBLE FOR EXECUTING CULLING PROGRAMS IN ENVIRONMENTALLY SENSITIVE AREAS OF THE PROVINCE. My 'two cents' worth.

Deer Management Meeting – August 24th

Name: JACK MAR

Farm Name: MAR FARMS

Farm Address: 7120 JEFFERSON

Phone: 250-213-8575

Briefly describe what damages deer have caused this year on your farm:

DEER HAVE EATEN ALL LEAVES OF 2ND YEAR
STRAW PLANTS AS WELL AS NEW PLANTINGS
TWICE, CURRENTLY EATING TASSELS OF CORN +
CHEWING CORN, EATING LEAVES OFF ON
CUCUMBER PLANTS & ALSO DESTROYING BROAD BEAN,
CHEWING UP SQUASH.

Estimated value of crop damage: \$10,000.00 +

Would you be interested in being part of a Deer Management Committee?

yes no

Do you support a deer cull?

yes no

Deer Management Meeting – August 24th

Name: Robin Herlin Veau

Farm Name: Hazelmeve Farms

Farm Address: 1424 Laurel Rd N. Saanich B.C.

Phone: 250 6567651

Briefly describe what damages deer have caused this year on your farm:

Wiped out Bush Beans.
Lettuce damage about 30-40%

Estimated value of crop damage: \$300.00

Would you be interested in being part of a Deer Management Committee?

yes no

Do you support a deer cull? yes no

Deer Management Meeting – August 24th

Name: Sandwich Christmas Tree Farm
+ Woodstock Evergreens Inc.

Farm Name: Joan + Mike + Olivia Fleming

Farm Address: 8231 E. Sandwich Rd.
+ 6999 W. Sandwich Rd.

Phone: 250-452-3345

Briefly describe what damages deer have caused this year on your farm:

After 30 years, deer are encroaching on
our farm. Damage includes Christmas Trees,
+ garden veggies, even though we have 6 ft high
fencing.

Estimated value of crop damage: \$3000.00

Would you be interested in being part of a Deer Management Committee?

 yes ✓ no

Do you support a deer cull?

 ✓ yes no

Deer Management Meeting – August 24th

Name: NORRIE SPENCER.

Farm Name: ROSEMEADE FARMS.

Farm Address: 1939 MEADOWBANK RD.

Phone: 652 1862

Briefly describe what damages deer have caused this year on your farm:

- SOME LOSS IN STRAW BERRIES

- WELL FENCED - AS LONG AS WE CLOSE THE GATES AT NIGHT

DOG - HELPS.

Estimated value of crop damage: not much now.!

Would you be interested in being part of a Deer Management Committee?

 yes no

Do you support a deer cull? ✓ yes no

Deer Management Meeting – August 24th

Name: Diane Williamson.

Farm Name: Firbank Farm.

Farm Address: 2869 Lamont Rd + 2834 Island View Rd

Phone: 250 652-9016.

Briefly describe what damages deer have caused this year on your farm:

They ate all 1st crop of cauliflowers. Flattened Broad Beans + started to eat Beets.

Estimated value of crop damage: _____

Would you be interested in being part of a Deer Management Committee?

yes no

Do you support a deer cull? yes no

Deer Management Meeting – August 24th

Name: MIKE DOENEL

Farm Name: _____

Farm Address: 8510 ALER RD.

Phone: 250-652-4354

Briefly describe what damages deer have caused this year on your farm:

- COMPLETELY GRAZED OFF WINTER BARLEY FIELD
- HEAVY HAY FIELD GRAZING
- YIELD LOSS OF APPROX 4 TONNES GRAIN
- YIELD LOSS 400 BALES HAY

Estimated value of crop damage: \$ 8,000 - \$ 10,000

Would you be interested in being part of a Deer Management Committee?

yes no

Do you support a deer cull? yes no

Deer Management Meeting – August 24th

Name: Cindy Stark

Farm Name: Elk Lake Farm

Farm Address: 700 Linnet Lane

Phone: 250 479-7773

Briefly describe what damages deer have caused this year on your farm:

A large population of deer attract cougars.
A cougar was spotted at Elk Lake last week.
This poses a danger for public walking on the Elk Lake
trail, tourists etc. This is a public concern for
everyone.

Estimated value of crop damage: _____

Would you be interested in being part of a Deer Management Committee?

_____ yes _____ no

Do you support a deer cull? yes _____ no

Deer Management Meeting – August 24th

Name: ROTH + ERICH SCHULZ

Farm Name: BEAR HILL BLUEBERRY FARM

Farm Address: 5839 BEAR HILL ROAD

Phone: 250 652 1338

Briefly describe what damages deer have caused this year on your farm:

WE ARE TOTALLY DEER FENCED, SO NO
CROP DAMAGE

Estimated value of crop damage: _____

Would you be interested in being part of a Deer Management Committee?

_____ yes no

Do you support a deer cull? yes _____ no

Deer Management Meeting – August 24th

Name: PAT & BARB BRENNAN

Farm Name: BAILIWICK FARM

Farm Address: 1765 METAVISH RD

Phone: (250) 656-7808

Briefly describe what damages deer have caused this year on your farm:

Eaten kiwifruit vines
Eaten grape vines
Young veggies

Estimated value of crop damage: ?? ~~1000~~ ~~1000~~

Would you be interested in being part of a Deer Management Committee?

yes no

Do you support a deer cull? ✓✓✓✓ yes no

Deer Management Meeting – August 24th

Name: ROBIN TUNNICLIFFE

Farm Name: SARNICH ORGANICS

Farm Address: 1438 MT NEWTON XRD

Phone: 250 479 8273

Briefly describe what damages deer have caused this year on your farm:

- DESPITE EXTENSIVE INVESTMENT AND REGULAR MAINTENANCE ON OUR 8FT PERIMETER FENCING, WE REGULARLY HAVE DEER COME INTO OUR 10ACRE FIELD.
- THE DEER SEVERELY PRUNE THE FRUIT TREES AND DEVASTATE THE VEGETABLE CROPS. THEY ALSO EAT OUR 1 ACRE OF BLUEBERRIES.

Estimated value of crop damage: AT LEAST \$5000 PER YEAR.

Would you be interested in being part of a Deer Management Committee?

X yes no

Do you support a deer cull? X yes no

I WOULD LIKE TO SEE THE MAL HAVE DEER HUNTERS ON CONTRACT SO THAT WE COULD CALL THEM UP WHEN WE SEE DEER.

Appendix 8– Vancouver Island Problem Wildlife Survey, 2001

Evaluation of the Vancouver Island Problem Wildlife Survey

Prepared for the Ministry of Agriculture, Food and Fisheries

By: Graeme Fowler

August 15, 2001

Table of Contents

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Background

In the spring of 2001, the Ministry of Agriculture, Food and Fisheries in conjunction with the Island Farmers' Alliance surveyed over 1,000 Vancouver Island agricultural producers on the subject of "problem wildlife on farmland".

The objective of this survey was to gather information from farmers to help determine which species of wildlife were impacting the most on their agricultural operations, what type of damage they were causing, and to see what economic loss the farmers attributed to wildlife damage.

Completed surveys were returned to the three agricultural office's Courtenay, Duncan and Sidney. The information has been tabulated according to these districts to identify geographic significance.

The survey response rate was very low. The Courtenay district response rate was 5% (31/600). The Duncan district had a response rate of 10% (43/400) and the Sidney district had a response rate of 8% (25/300).

Brief summaries of the most significant responses for each category have been included in the body of this report. All responses from the questionnaire have been recorded per district and have been included as appendices.

Summary of Information

The wildlife species impacting on agricultural production identified by the survey were, from the most number of responses to the least:

1. Black-tailed Deer (*Odocoileus hemionus columbianus*) (60)
2. Canada Goose (*Branta canadensis*) (45)
3. Black Bear (*Ursus americanus altifrontalis*) (24)
4. Trumpeter Swan (*Cygnus buccinator*) (24)
5. Western Cougar(*Felis concolor vancouverensis*) (19)
6. Roosevelt Elk (*Cervus canadensis*) (12)
7. Ducks (11)
8. Raccoon (*Procyon lotor*) (8)
9. European Starling (*Sturnus vulgaris*) (7)
10. Bald Eagle (*Haliaeetus leucocephalus*) (6)
11. Northwestern Crow (*Corvus caurinus*) (5)
12. Common Raven (*Corvus corax*) (4)
13. Beaver (*Castor canadensis*) (4)
14. Mink (*Mustela vison*) (4)
15. Domestic Dog (*Canis spp.*) (4)
16. Gray Wolf (*Canis lupus*) (3)
17. Muskrat (*Ondatra zibethica*) (2)
18. Hawks (2)
19. River Otter (*Lutra canadensis*) (2)
20. Rats (*Neotoma spp.*) (2)
21. American Robin (*Turdus migratorius*) (1)

- 22. Pigeon (*Columba livia*) (1)
- 23. Ring-necked Pheasant (*Phasianus colchicus*) (1)
- 24. Owls (1)
- 25. Gray Squirrel (*Sciurus carolinensis*) (1)
- 26. Rabbits (*Sylvilagus* spp.) (1)
- 27. Opossum (*Didelphis marsupialis*) (1)

Waterfowl Summary

The survey identified Canada Geese as the number one species of waterfowl causing concern with Trumpeter Swan running a close second in Courtenay, but not so close in Duncan and Sidney.

When asked “what problems the waterfowl were causing?” 36 farmers checked off grazing, 26 checked off cash crop losses, and 18 checked off soil compaction. The majority of other comments pertained to fecal deposits fouling grass crops preventing livestock from feeding on it. Concerns of fecal deposits polluting water sources was also mentioned several times. Many farmers mentioned the problem of Canada Geese pulling out newly germinated crops of corn, grass, lettuce and peas in the spring.

When asked to estimate financial losses/damage caused by waterfowl 20 farmers estimated less than \$5,000 annually, 4 farmers estimated between \$5,000 and \$10,000 annually, 8 farmers estimated between \$10,000 and \$50,000 annually, and 2 farmers estimated losses over \$100,000 annually. Eleven farmers were unable to come up with a figure.

When asked if the number of waterfowl frequenting their properties had increased the majority replied yes, and estimated it had doubled over the last three years. Most respondents would like to see the overall populations controlled better by hunting and out of season kill permits – these responses also included the protected trumpeter swan species. Many of the farmers have tried dogs to control waterfowl on their farms. Some are willing to try other methods of control but are not very optimistic about the success of these methods. Most feel shooting to kill is the only effective control measure.

Ungulate Summary

The responses clearly showed Black Tailed Deer as the number one species of concern. The deer are a year-round problem unlike migrating waterfowl. They impact on all agriculture sectors, as they feed on a variety of crops (grasses, vegetables, trees, flowers, tree fruits and grapes) and are widespread across all of Vancouver Island. The majority of complaints were associated to the feeding habits of the deer. Grass crop grazing and tree and vegetable damage accounted for most of the responses. Other responses of note pertained to fence damage; damage to forage grasses by bedding down, trails and feces; trampling of cranberry vines.

Roosevelt Elk accounted for 1/5 of the ungulate related problems and were only evident in the Courtenay and Duncan districts. The majority of damage complaints were grazing crops, fence damage, trampling vines, and compacting and roughing up fields in production.

When asked to estimate financial losses/damage caused by ungulates 26 farmers estimated losses of less than \$5,000 annually, 10 farmers estimated losses between \$5,000 and \$10,000 annually and 5 farmers estimated losses between \$10,000 and \$50,000 annually. There were no responses in the greater than \$100,000 range and 7 farmers couldn't come up with a figure.

Most farmers would like to be granted the ability to shoot deer/elk on their property when the animals are causing the damage, in or out of legal hunting season. They feel if this permission can't be granted then total compensation for crop value and damages should be awarded to them. Some farmers are willing to fence their properties but can not afford to do it themselves. These farmers are looking for low interest loans, cost sharing, or grants for the total amount of the project. They expect the government to provide these opportunities.

Predator Summary

The survey identified Black Bear and Western Cougar as the most significant predatory species of concern on agricultural land. All but one of the 21 Black Bear responses were from the Courtenay and Duncan districts. The 20 responses regarding cougars were from all three districts. Other species worth noting in this section are Raccoon, Bald Eagle, Mink, Crows and Ravens.

When asked what problems the predators were causing 23 farmers checked off killing stock, 19 farmers checked off cash crop losses, and 16 checked off other. Other types of damage included damaging fences, human and pet safety concerns, stalking/upsetting livestock, and unsafe to keep poultry.

When asked to estimate financial losses/damage caused by predators 30 farmers estimated losses of less than \$5,000 annually; 2 farmers estimated losses of between \$5,000 and \$10,000 annually; and 8 farmers were unable to come up with a figure.

Most farmers indicated that the predator population had increased over the last three years. Most responses indicated at least a doubling of the problem.

The majority of farmers would like legislation to be changed so they can shoot the predators directly – not have to call in the conservation officer, in and out of the regular hunting season. One suggestion was to have a neighbouring farm predator alert phone system. Compensation for losses was also suggested several times. The SPCA has been observed releasing raccoons in rural areas – urban problem transported to a rural location.

The majority of farmers' feel fencing out predators is too costly and trapping and transporting is only a temporary solution. Many feel hunting and killing is the only effective way to deal with the problem.

Recommendations

1. Develop a protocol for farmers' to follow to help them discourage problem wildlife from using their farms. The protocol should identify socially, environmentally, economically, and legally acceptable techniques to reduce/eliminate problem wildlife concerns on farmland, as a preventative measure to compensation. The protocol should address the most prevalent problem wildlife species (Black-tailed Deer, European Starling, Pigeon, Canada Goose, Trumpeter Swan, Black Bear and Western Cougar). The compilation of economically feasible, effective wildlife damage control techniques in a step by step procedure manual should appeal to agriculture producers, agriculture governing agencies and wildlife agencies. This process would ensure that farmers take the appropriate steps to address problem wildlife on their farms before asking for compensation or more drastic methods of population control. In the event these steps do not reduce wildlife impacts then, compensation or other measures are deemed necessary and should be considered by the governing agencies, to keep economic losses to agricultural production caused by wildlife to a minimum. This protocol manual should be made available to farmers through the MAFF offices in each district. It will should also be posted on the Island Farmers' Alliance web site.
2. Educate Vancouver Island farmers on existing effective management techniques, preventative measures, and equipment suppliers by publishing articles in the IFA's newsletter "Farmspeak". This is a quarterly newsletter, which goes out to over 1,000 Vancouver Island agricultural producers. Information specific to identified problem wildlife species would address general biology of the subject species, preventative measures farmers can take to limit damage, effective management tools if damage is occurring, as well as identify where wildlife damage prevention materials and new technology can be purchased. The farmers may be more willing to try different methods of wildlife control if the information comes directly to them.
3. Re-structure the Problem Wildlife Committee for Vancouver Island to include volunteer farmers (as identified by the survey). Their support, ideas and involvement in problem wildlife management decisions are imperative if success is to be achieved. Schedule regular meetings to ensure all involved parties can make attendance a priority.
4. Setup and operate a pilot project to develop and demonstrate effective management tools to limit problem wildlife use of agricultural lands in three geographically separate areas on Vancouver Island.
The three-year pilot project should include:
 - a) Capture, remove and relocate deer from Birkdale Farms in the Comox Valley, in cooperation with Ministry of Water, Land and Air Protection and Courtenay Fish and Game Protective Assoc. The trapping season for all three sites should be from December to March.
 - b) Develop effective measures to trap and euthanize starlings and pigeons at Birkdale Farms in Comox.
 - c) Apply developed and honed techniques to two other cooperating farms in the Cowichan and Sidney districts to ensure geographic and site adaptability

as well as consistent success of the methods. This phase of the project should be carried out in year's 2 and 3, once the process is deemed effective. Demonstration activities for Southern Vancouver Island should also include Canada Goose Management. Cooperating farms should be encouraged to work with organized hunting clubs to fill their scare kill permits on the farm.

Conclusions

If these recommendations are followed and do not reduce the wildlife use of the farm to an acceptable level, then more drastic wildlife control measures may be warranted. The adopted protocol will put the onus on the farmer to try and solve the problem. In many cases these measures will solve the problems, but in the event it does not, governing agencies will be justified in researching other problem wildlife mitigation measures. The farm community will also be in a better position to demand other actions (changes in regulations for example) by governing agencies.

The development of an effective deer trapping and handling procedure will remove problem deer from agricultural lands and transport them to under-stocked areas of crown land. This will put the deer back into their natural habitat where current populations are low. Reintroduced deer population dynamics will be controlled by nature (weather, attrition, and predators) as well as hunting at no risk to the farmer or the general public. The corral traps would be made portable and of good-quality construction so they can be rotated throughout the farm community for many years after the pilot project ends. In the event this procedure is harmful to the deer or does not capture the number of deer required to alleviate the problem, it will demonstrate more permanent, and lethal measures are justified.

Many farmers have tried various methods of reducing problem wildlife impacts on their farm. Generally they apply these methods on an individual basis usually because they have heard about the method from somebody else and decided to try it. If the whole farm community adopted problem wildlife strategies and methods there would be a better chance of success for each method or an overwhelming account of each methods' ineffectiveness. Each of these results would send a strong message to the wildlife agencies in charge of managing the problem wildlife species. If all farmers were supplied with the same information on effective wildlife damage prevention techniques and encouraged to try them on a collective basis, a better understanding of the scope of the problem and the effectiveness of the techniques would be achieved by all parties concerned.

List of Appendices

- Appendix 1. Survey of Problem Wildlife on Farmland
- Appendix 2. Courtenay Response Summary
- Appendix 3. Duncan Response Summary
- Appendix 4. Sidney Response Summary

SURVEY OF PROBLEM WILDLIFE ON FARMLAND

COURTENAY DISTRICT RESULTS – JANUARY 2001

MAILOUT – 600

RESPONSES - 31

Please circle/check the appropriate answer to the following questions and fill in the blanks. If you need more space, please use the back of the questionnaire.

Do you have problems with:

1. Waterfowl **18 Y**
2. Elk / Deer **25 Y**
3. Predators **17 Y**

If you indicated 'yes' to any of these questions, providing your name, address and telephone number will assist in the development of a Management Plan for your area.

Section 1 Waterfowl

The waterfowl causing the damage are:

Canada Geese	14
Trumpeter Swans	12
Ducks	6
Robins	1
Starlings	2
Pigeons	1

1(a) Please describe the crop type, acreage and location of fields.

- Hay/pasture
- Cranberries – 65 acres Comox Valley
- Hay – 25 acres Port Alberni
- Forage – 400 acres Comox Valley
- Forage/ Winter Wheat – Qualicum Beach
- Grazing lowlands
- Apples (robins)
- Forage – 29 acres Comox Valley
- Grassland – 123 acres Comox Valley
- Hayfields – Nanoose Bay
- Use fields but cause no problems
- Forage Grasses – 110 acres (Courtenay Flats) Comox Valley
- Forage – Sunnydale Golf Course, Cox Rd., Portugese Creek, Comox Valley
- Potatoes – (Dashwood) Qualicum Beach
- Peas/Fall Rye – Port Alberni
- Hay/Pasture – 60 – 70 acres Nanoose
- Potato Fields (post harvest) – 50 acres (Merville) Comox Valley
- Hay/Pasture – 160 acres Comox Valley
- Cranberries – 30 acres Comox Valley
- Hay – 35 acres Comox Valley
- Grass – 175 acres Headquarters Rd. Comox Valley

1(b) What problems are the waterfowl causing?

- (a) Cash crop losses 10
- (b) Grazing 13
- (c) Soil compaction 7
- (d) Other (specify) _____

- Robins peck a hole in each apple
- Stand of grass thinned
- Starling causing disease problems with dairy cows eg. Mastitus. Also eating corn crop, not allowing it to dry before harvesting (4000-5000 per night)
- Difficult to sell hay when full of goose droppings
- Cratering and soil loss due to swans feeding in flooded fields
- Starlings and pigeons eat a considerable amount of grain intended for livestock and the potential of carrying disease into barns – everything gets covered in bird droppings
- You don't know what disease the waterfowl are carrying in their droppings

1(c) Can you give a rough dollar estimate of losses and/or damage? _____

- No, 200 geese eat a lot of grass
- ?
- No
- \$100,000 +/- 20,000/year
- 100% on winter wheat, 60% on fall seeded grass
- \$1,000/year
- \$3,000 annually
- \$138,100/year, plus losses from Canada Geese
- \$6,000 – 7,000 annually
- \$10,000 +/- (cranberries)
- \$1,500
- ?
- Hard to quantify
- \$1,000 – 2,000 per year
- \$25,000 – 30,000 (potatoes)
- losses include grain and loss of potential for export of live animals due to testing positive for avian TB
- \$2,000/year – One year the geese ate my whole second cut crop
- \$17,5000

1(d) Have you observed an increase in the number of waterfowl frequenting your property over the last 3 years? **14 Yes 6 No**

Could you quantify this increase? 3 Less than doubled over past 3 years
8 Doubled over last 3 years
7 Other (specify) _____

- about the same
- from 10 –20/day to 100-160/day within the last 4 months
- swans for the first time this year
- weather determines swan numbers
- population fluctuation depends on weather patterns – excessive rains brings excessive numbers of ducks and gulls
- numbers of starlings and pigeons definitely increasing
- some years are really bad

- 1(e) What would you like to see done to solve the problem on your property?
- Controlled shooting (permits)
 - Population control of wigeon & mallards, geese with open season hunting, tax credit for wildlife damage or tax write off for losses
 - Nothing – we charge a fee for hunting birds on our place, if all would do that = no problem
 - Move over to the neighbours
 - Limit duration of flooding on adjacent farm and no lure crops planted near my fields
 - Increase the money for the cover crop program and include some of the reseeding costs. It is difficult to maintain the overwintering improvement – it is just being destroyed
 - Not a problem
 - Keep the birds off of the property
 - Keep swans off
 - Controlled hunting during excessive problem times and hazing
 - ?
 - Grant a longer open hunting season with the occasional summer shoot
 - Geese should be culled out
 - ?
 - Since starlings have displaced a number of other birds and they have limited benefit to environment perhaps they should be disposed of by some means
 - Have them go away or get some kind of compensation
 - I do not want to see them shot but if we are to stay in business then we have to be compensated for the damage
- 1(f) Other than shooting, would you be willing to collaborate actively to solve the problem on your property? **12 Yes 3 No** Comments?
- Time is limited to participate – have done so with swans and is marginally effective
 - After 2 goose hunts with 12 guns they never came back. Our gamebird release hunting puts people and dogs into the fields. I wish we had more
 - Just keep chasing them over to the neighbours
 - I already am
 - Farmers should not have to carry the cost of the populations environmental concerns. The taxpayer should help us. It is cheaper for us to not produce a crop than deal with ever increasing environmental pressures
 - However, must be able to continue shooting Canada Geese in spring, summer and fall. Shooting swans may have to be considered as there are too many in area
 - I am open to other suggestions that make sense
 - If you want me to keep looking after them I should get some kind of compensation as they feel real safe here. I have more waterfowl here than there are on Farquharsons (Comox Bay Farm)
 - Users fee: if the public wish to see the swans, let them pay for it

Section 2 Elk / Deer

2(a) What problems are the Elk 4 Deer 23 causing?

- Eating vegetables, grazing hayfields and pasture
- Deer eat cranberries/damage vines walking on them
- Elk walk on fields causing hoof holes/uncertain of damage to vines
- Consuming garden produce
- Heavy grazing on pasture, hay and silage crops, destroy fencing used to subdivide intensively grazed pasture
- Forage damage to standing crops and excessive grazing
- Foraging on growing market crops
- N/A in last three years
- Eating my garden and flowers
- Deer have repeatedly chewed every tree over and over till they produce no fruit and die because of it. Also they have used the trees to rub the velvet off their antlers. They can rip a tree right down the center, break a few branches or break the tree in half
- Plant and seedling destruction
- Grazing on new seeding does the most damage
- Crop and fence damage
- Deer come onto property but don't do much damage
- Eat the grass and corn
- Bedding down in fields, eating grass and killing grass due to trails. Manure droppings getting into silage bags and causing mold spots
- Feeding on carrots beans and potatoes
- Eat raspberry and strawberry shoots
- Trample and grazing on cranberries
- Enter vegetable/seed gardens and pastures and eat crops
- Crop destruction, compaction – erosion in flood times
- It is the potential problems that is limiting how I can use the land
- Loss of yield & trampling down and eating forage. I have 10-14 all year round
- Deer eat grass and corn

2(b) Please describe the crop type, acreage and location of fields affected.

- Any field that is not deer fenced
- Cranberries – 65 acres Campbell River
- Deer love pea and bean plants. They will walk down a row of lettuce taking a bite out of each one. They eat the silk off the corn
- Improved seeded hay silage crops – 65 acres Texada Island
- Developed pasture land – 165 acres Texada Island
- Forage crops – 400 acres (80+ deer in evenings every night) Comox
- Market crops ie. Beans, cabbage, lettuce, spinach etc. – 3 acres Fanny Bay
- Hay fields – 65 acres
- Apples (Jonagold, elstar, ida red (none left), gala apples – 2 acres
- Saskatoon berries – 1 acre Campbell River
- Deer grazing on new seeding
- We have a 14 acre forest seedling nursery. The deer go in the greenhouses and up on the benches
- We have 40 acres in the Sayward Valley. An elk herd of 11-15 graze and bed in our 12-15 acre hay field
- Forage 110 acres, Corn 23 acres – Courtenay Flats
- I've tried growing other feeds besides grain and hay but it just gets eaten unless fenced, so I quit trying
- Approx. 30 acres Sayward
- Mixed crops – 4 acres (farm is surrounded by second growth forest)

- 35 acres cranberries, 140 acres in potatoes – some in all
- 0.5 acres raspberries, 2 acres strawberries, may eat other crops
- Carrots and beans have to be fenced every year. Potatoes in Merville are dug up and damaged by sunlight as well as eaten. 15 – 20 acres Merville and Cape Lazo
- Cranberries – 30 acres Comox Valley
- Grass fields – 160 acres Comox
- Hay – 50 acres Comox Valley – even eat plants close to barn and home
- Grass and Corn

2(c) Can you give a rough dollar estimate of losses and/or damage? _____

- When growing turnip the loss would be up to \$2,000 – 3,000/year. Hay land and pasture can't estimate
- \$5,000 – 15,000. Growing area is fenced. Without fence \$50,000 – 100,000
- \$1,000
- \$5,000/year
- No
- \$10,000
- \$2,000-3,000/year
- \$500/year
- Whole orchard decimated. Will take years to come back
- None, completely fenced entire area – can show \$2000 plus labour
- Part of \$3000 from 1(c)
- \$20,000
- Up to 20 deer graze year-long. I try to get hunters to reduce the number of deer each fall
- None, I just don't grow anything I can't fence
- \$2,000-3,000 per year in crop loss – no third cut due to animals (elk) rutting on field
- Winter 2000-2001 \$200 vegetable plants
- \$10,000
- \$1,000
- \$2,000 – 3,000
- \$10,000+/-
- \$6,000
- ?
- \$5,800

2(d) What would you like to see done to solve the problem on your property?

- Permits for controlled hunting
- Property is fenced with page wire and electric. "Visitors" are "trained" to go away
- Battery powered motion detector floodlights and sound alarms available on rental basis
- Financial assistance for fencing to keep deer off hay and silage crops
- ?
- Open season on deer. Fencing supplied like OK to keep deer off fields. Tax write off for damage/losses
- Extend hunting season – fencing
- Free fencing or no/low interest loans or farm grants for fencing plus help to install. Have put farm up for sale
- Nothing
- Ability to pit lamp as deer come out after hours of hunting
- Shoot the deer

- Allow controlled hunting of deer on fields through the summer months. Fence property – but who is going to pay for it? Perhaps a thick hawthorn hedgerow could control entry onto farm.
- ?
- Fencing? Can't afford proper fence- 385 acres
- I need to be more vigilant – build higher, tighter fences and check them more often
- I plan to try guardian dog – current dog has been hurt by elk and will no longer chase them
- ?
- ?
- open season on deer

2(f) Other than shooting would you be willing to collaborate actively to solve the problem on your property? **12 Yes 4 No** Comments _____

- ?
- Create low cost, low maintenance alternative grazing
- Yes, till opening day of hunting season
- Yes, see attached “problem wildlife-deer grazing and hunting violations on Texada Island”. Fencing these areas would result in significant savings and eliminate ongoing problems with illegal hunting
- ?
- Are certified organic and cannot use treated posts, this is an area of concern for us
- Fencing would be costly
- Problem already solved by me
- Have tried working with MOE on issue. Waste of time and money. Bullets cheapest solution
- Numbers are definitely increasing
- Only success has been removal of yearling elk from herd, causing lead cow to remove herd -- only short term
- But time is limited
- ?

Section 3 Predators

The wild predator causing damage is:

Cougar	08	Eat deer – Good; Once; Occasional
Bear	10	Once; Climb fences and damage beehives
Other	12	Beaver, muskrat, bald eagles, wolves, mink, dogs, racoons, crows, ravens, hawks, opossum, otter

3(a) What problems are the predators causing?

- (a) Cash crop losses **8**
- (b) Killing stock **7**
- (c) Other **11**

- Silage and sweet corn
- Bear – Apple orchard
- Bear – feeds on pumpkins, squash, strawberries and is danger to employees and children
- Mink – eat eggs
- Ravens – eat ducks
- Muskrats – burrow into fields and reservoir banks
- Muskrats – burrow into fields
- Beaver – flooding land and redirecting creek possibly causing erosion
- Bear attempt to eat berries and honey from bees used for pollination

- Cougar – fear for children safety
- Bear – tree damage
- Dogs – tearing up garden
- Cougars – killed calves and pups, Wolves – killed turkeys
- Bear – extensive grazing in conjunction with elk
- Crows – feces around creep-feed area of piglets
- Opossum – damage and eat tree fruits, vegetable crops, eat eggs, kill poultry, eat stored food
- Water problems (drainage)
- Bear could very easily get my grandchildren

3(b) Can you give a rough dollar estimate of losses and/or damage?

- \$1,000-5,000
- No
- \$1,200/lamb x 2.5/year
- \$2000
- 60 chickens +/-
- 35 – 40%
- fence keeps them out
- average \$500/animal
- \$1000
- \$1000+/- per year
- ?
- ?
- ?
- \$2,000
- ?
- \$2,000 – water on hayfields from beaver dams above me
- \$7,500

3(c) Have you observed an increase in the number of predators on your property over the last 3 years? **13 Yes 4 No**

Could you quantify this increase? _____

- ?
- Noticing the unusual creek level and flood plain in the last 2 months
- Protected species – not enough food
- Doubled
- More wolf sign, they come in when we are home
- From 20% (1 bear to 3 bears)
- Yes
- ?
- Reasons: fewer fish for eagles, enhanced wetlands nearby bring more predators closer
- It fluctuates
- From 1 bear to 5 bears
- ?
- ?
- 2 cougars and 6-7 bears but don't do much damage
- No population control

3(d) What would you like to see done to solve the problem on your property? _____

- Trapping works, returns to trapping should be sufficient to keep trappers working

- Monitor the situation. Was planning on planting xmas trees in this area, but now might have some trout ponds, which will be ok.
- Removal from endangered and protected species
- Compensation for losses
- Have them trapped or shot. We have other animals that haven't been attacked but could be
- Change hunting season so bears can be taken out at the beginning of trouble. They make great pepperoni. Permits don't work
- Already done
- Assistance with more fencing and predator control
- More land clearing would help push predators back and make them less bold
- A by-law preventing dog owners from letting them run loose. It poses a risk for farmers and drivers
- Remove the bears
- ?
- Remove the bears
- ???
- A compensation fund for loss of poultry to predatory birds and mink would help
- Allow trapping
- They seem to keep to themselves – sometimes I chase them off
- Control population of Bears

3(e) Other than killing the predators, would you be willing to collaborate actively to solve the problem on your property? **8 Yes 3 No**
 Comments _____

- Not possible at this property alone – must be a larger picture
- Suggestion by MELP to build an electric fence to protect our crop at \$1.20/foot is not practical. We rather not grow corn.
- Already solved
- If the wolves can be kept out, so that they can only go after their normal diet, rather than an easy meal they would not be a problem
- Have purchased expensive livestock protection dogs and have not seen a cougar attack since. We are currently erecting a one-mile long 8 ft high fence to prevent loose dog attacks. A cost of \$15,000 for the materials alone!
- We have an agreement they leave me alone I leave them alone – it works

Would you be willing to be a member of a Problem Wildlife Committee for Vancouver Island?

5 Yes 2 Maybe 15 No 1 Not at this time

The committee will likely meet in Nanaimo 1 to 3 times per year. Conference calls may work after the first meeting. The purpose of the committee will be to develop Problem Wildlife Management Plans for Vancouver Island. Local committees may be needed for Regional Plans.

If **Yes**, please provide the following information:

Colin Springford 250-951-0263
 1950 Northwest Bay Rd. Nanoose BC V9P 9C5

Don Hurford 250-338-5686
 1681 Back Rd. PO Box 3071 Courtenay BC V9N 5N3

David Opko 604-486-7686
 RR 1 Van Anda BC V0N 3K0

Walter Schoenfeldu ? 250-338-7473

6288 Michael's Dr. Courtenay

Linda O'Brennan 250-282-3681
RR 1 Sayward

John Walsh 250-752-5205
550 Bayliss Rd. Qualicum Beach BC V9K 2G2
Yes – but not at this time

Steve Sharrock 250-335-0945
1795 Swan Rd. Denman Island
Yes – only on a local level though

R. Owen Selby 250-338-9743
2721 Rennison Rd. Courtenay BC V9J 1S5
Maybe

SURVEY OF PROBLEM WILDLIFE ON FARMLAND

DUNCAN DISTRICT RESULTS – JANUARY 2001

MAILOUT – 400

RESPONSES - 43

Please circle/check the appropriate answer to the following questions and fill in the blanks. If you need more space, please use the back of the questionnaire.

Do you have problems with:

- | | | | | |
|---------------|-----------|------------|----------|----------------------------------|
| 1. Waterfowl | 22 | Yes | N | (If Yes, please go to Section 1) |
| 2. Elk / Deer | 20 | Yes | N | (If Yes, please go to Section 2) |
| 3. Predators | 16 | Yes | N | (If Yes, please go to section 3) |

If you indicated 'yes' to any of these questions, providing your name, address and telephone number will assist in the development of a Management Plan for your area.

Section 1 Waterfowl

The waterfowl causing the damage are:

Canada Geese	20
Trumpeter Swans	9
Ducks	3
Pheasants	1
Crows/Starlings	4
Ravens	1

1(a) Please describe the crop type, acreage and location of fields.

- Grass & corn. Nature Trust on Cowichan Bay Road in Cowichan Bay.
- Hay
- Lowland pasture new seeding, Year 2000. 22 acres, section 13, Tzouhalem Farm, North Cowichan.
- Golf Course & sheep fields. 60 acres adjacent to Hogan Lake.
- Corn and/or barley for silage. 20 acres, low land.
- Silage – haying fields. 4155 – 4147 Riverside Rd., Duncan
- Hay & grazing 40 acres. Herd Road near Maple Bay.
- Hay field, 5 acres. Drinkwater Road between Somenos & North Roads
- Grass fields, 95 acres. Trans Canada Hwy, Lake Cowichan Hwy, Somenos Rd.
- Grass – Fields – Lake surface & surround.
- Vegetables, young broccoli plants, young corn plants. 5 acres, Nanoose Bay.
- Corn silo / silage
- 130 acres hay grain rotation in Metchosin.
- Grass, 20 acres on the Lake.
- Potatoes, 50 acres, Cobble Hill.
- E60 Sec 9, Range 10 Sahtlam District – Forage Pasture.
- Duncan (Hwy 18). Corn & grass, 70 acres.
- Grass fields. One 20 acres, another 30 acres at junction at Kelvin Creek and Koksilah River.
- Annual grasses, new seedings, 250 acres.
- Usually geese pull out germinated corn in early spike stage, also peas. PI 4, Bright Land District & DL 8 , Bright Land District.
- 25 acres, Cedar District.
- Hay land, pasture land.
- Pasture land on Prevost Island, totaling about 130 acres.
- Grazing, hay field – 4 acres (roughly) ruined.

1(b) What problems are the waterfowl causing?

- (a) Cash crop losses 12
- (b) Grazing 17
- (c) Soil compaction 8
- (d) Other (specify) _____

- And Corn
- Droppings / mud land, salmonella – bacteria; grass knocked down.
- Polluting Lake and drinking water. E-coli, dead beaver, etc. due to geese shit.
- Pollution from droppings.
- Soiling of dikes around ponds.
- Contaminate orchard floor. The geese also contaminate playing fields.
- Water fowl manure.
- Pollution.
- Soil erosion and soil damage.
- Sheep & cattle reluctant to graze after geese.
- What about damage & feed losses caused by ever increasing flocks of starlings?
- Those costs are likely shared with neighbouring farms.
- Usually geese pull out germinated corn in early spike stage. Also peas.
- "We have had an ongoing problem with the waterfowl along with drainage problems in our area. The District Ag is aware of these concerns but nothing ever seems to get ----- except you send people out to "name" hand dug drainage ditches as "creeks" including some you have running the wrong way!!" (Albert & Moira Benson)
- Reduce forage / hay yields.
- Contaminate grass with feces & feathers so stock won't eat it.

1(c) Can you give a rough dollar estimate of losses and/or damage? _____

- \$15,000
- \$1,000
- 22 acres lost – 1st crop, hay. Purchased over \$15,000 alfalfa so far.
- \$25 in corn seed that had to be reseeded (\$5,000 had it matured).
- Approximately \$1,500 annually.
- \$500
- \$2,000 - \$3,000
- \$35 per day
- \$5,000 - \$10,000 per year
- \$4,000 per year
- Don't know.
- \$20,000
- \$4,000
- Approx. \$1,500 by geese (100 geese); \$5,000 swans (200 swans).
- Very minimal – several hundred dollars per year.
- Difficult to estimate.
- Up to 1/3 of crop damage or reduced – currently cut 1000 bales of hay

1(d) Have you observed an increase in the number of waterfowl frequenting your property over the last 3 years? **20 Yes** **3 No**

Could you quantify this increase? 3 Less than doubled over past 3 years
13 Doubled over last 3 years
7 Other (specify) _____

- Giant flocks, 1,500 at a time.
- Sometimes flocks of around 150 trumpeter swans.

- 0 – 150
- No - Gave up on cereal grains.
- No – hunting has helped.
- 10 times
- 4 – 5 times
- Pretty constant.

1(e) What would you like to see done to solve the problem on your property?

- Shoot them all.
- No idea.
- Border collie dogs chase off. I have done it. Mine is old and swans are scared but not so much the geese.
- Yes. Poison geese or what is their natural predator.
- Hunting.
- Removal.
- Eliminate the trumpeter swans.
- Increased hunting on agricultural land. Increased with permission of landowner only until resident geese are no longer damaging fields & crops.
- Reduction of geese population.
- Be able to shoot them.
- Remove to applicable area?
- Open shooting – NOT just during hunting season.
- Programs to reduce numbers. Freedom to scare them off by any method, compensation if not allowed.
- Decrease total population. Do not move them, they will return.
- Don't know.
- a) Cull resident flocks in Somenos Marsh.
- b) Feed resident flocks to discourage foraging of private land.
- Continued hunting.
- Would like to shoot a small number so that scare tactics would become effective.
- Neighbour dug illegal pond in Creek to encourage waterfowl.
- Shoot the B-----!
- Support payments. Canada Geese are a Canadian icon and a public responsibility.
- I don't know WHAT TO DO!! I would do anything within reason. I let the Border Collies run them off the fields but they just land in the Bays and come right back.
- Permit to kill, increase limit.

1(f) Other than shooting, would you be willing to collaborate actively to solve the problem on your property? **15 Yes** **5 No** Comments?

- But how? Have a shooting permit all year round.
- I go out 2 – 3 times a day with my dog and chase the swans away. It does make a difference.
- Yes. Poison geese or what is their natural predator.
- What are the options?
- Drain Somenos Flats so that the geese stay down there. Have a hunting season on the Flats.
- Local Government.
- Unless the total population is brought under control it is only temporary.
- Anything else is going to increase the population even further leading to more problems.
- I don't see any "activity" to solve this problem.
- Depends on what you have in mind. The geese might be less disturbing than sound repellants.
- Details?

Section 2 Elk / Deer

2(a) What problems are the Elk 8 Deer 23 causing?

- Elk wreck fences, run cattle, wreck fruit trees and eat feed. Deer eat feed.
- Our orchard needed an 8 foot fence to keep them out.
- Major problems this year, they have eaten everything except dahlias and carrots.
- Although we have no real problems with deer we have had visits from Elk on occasion. Usually just one large bull and he is after fruit as we have apple trees. I have found that a surprise run straight toward him, flapping a white sheet & a garbage bag & yelling has worked well for us. The one visit is enough & usually the animal doesn't return for that year. Actually last Fall, one of the cows helped as once I had the Elk turned and leaving, she ran after him and he really speeded up – it was quite comical to watch as she is not a large cow.
- Eating flowers and vegetables.
- Vegetables, broccoli, sweet corn.
- Eating down specially grown pasture, veggies.
- Electric fences are down and grazing.
- Not much.
- Loss of prime forage (any legumes) and fence damage.
- Potential damage to forage by chewing up fields in early spring, punching holes plus fence damage. Plus tree damage of managed forest.
- Ever increasing population consuming & damaging crops.
- Eating new growth, flowers & fruit.
- Grazing on young shoots of hazelnut trees.
- Eating grapes, cherry trees, apple trees, etc.
- Browse on domestic gardens (flowers & vegetables)
- Destruction of crop.
- No problem – 2 border collies.
- Crop loss through grazing, as well as discouraging alternate crops.
- We have already put 1 mile of 8 foot elk fencing on our property and 2 miles on our home farm. Total cost was close to \$50,000.00. The fence has worked well and we have cooperated closely with Fish & Wildlife.
- Eating crops.
- Eating crops. Parasite contamination of pastures.
- Minimal damage to flower beds – not really a problem.
- Deer eating vegetables, flowers.
- Grazing, fence damage.

2(b) Please describe the crop type, acreage and location of fields affected.

- Perennial pasture. 40 acres in Cobble Hill.
- Silage – haying fields and 1,350 tree orchard.
- Strawberries, green beans, dry beans, young kale plants, belgian andive.
- Ornamental gardens & vegetables (tomatoes)
- Vegetables, sweet corn. 5 acres, Nanoose Bay area.
- Grass & grain in Metchosin.
- 6 acres of pasture.
- Grass, 45 acres, all over.
- Loss of prime forage (any legumes) and fence damage.
- Duncan (Hwy 18). Corn and grass, 70 acres.
- Grass forage for hay & silage. 45 acres at Fairburn Farm, Cowichan Station.
- Forage crops. e.g. pasture, hay, silage & corn. 200+ acres – various locations, East of #2 Hwy., Cobble Hill area.
- Blueberries in Saanich. Raspberries in Central Saanich Border.
- Hazelnut trees 8.5+ acres. Farm located at corner of Lakes & Stamps Road in Duncan.
- Grapes – 20 acres; apples – 3 acres; cherries – 2 acres; blackberries – 2 acres.

- Kale crops, strawberries, tulips, roses, fruit trees. "CITY LOT"
- Fields, vegetable produce
- Silage/hay – corn. Sylvester Rd., Shawnigan Lake - 35 acres & Shawnigan Mill Bay Rd., Shawnigan Lake - 50 acres.
- Virtually all 30 acres have been affected by compaction and direct "grazing".
- Various vegetables, beans, cabbage, carrots, brussel sprouts, blueberries. 20 acres in Cobble Hill, off Telegraph Road (Now 20 acres – will increase to 50 acres under cultivation)
- Hay, pasture, fruit & fruit trees, raspberries, strawberries, garden crops.
- Hay
- 4 acres – Cobble Hill – Squash, corn, beans, cut flowers.

2(c) Can you give a rough dollar estimate of losses and/or damage? _____

- \$6,000 - \$7,000
- +/- \$1,500
- \$2,000
- \$3,000 - \$5,000
- Unclear; food value (replacement hay) \$1,000.
- \$20,000, crop loss and fences.
- Do not know actual dollar damage.
- \$22,000 per year.
- \$1,500
- No – difficult because of time element for tree to develop.
- Year 2000 – Loss of \$10,000. This year it will be more as production increases.
- Complete failure of kitchen garden crop – cauliflower, brussel sprouts, cabbage.
- \$1,000 or more.
- ?? We (witness on call) have seen as many as 16 deer on a 10 acre field & deer around all the time during growing season. What is the cost??
- They were \$1,000's per year.
- Up to \$1,000.
- \$3,000 - \$5,000 first year Organic Farm
- \$10,000

2(d) What would you like to see done to solve the problem on your property?

- Started harvesting deer. Fence out elk. Financial compensation.
- Keep the elk controlled on their treks.
- Reduce the amount of deer. There are too many.
- Organic spray (garlic mixture).
- Permit to shoot during the growing season.
- This seems stable. e.g. Not expanding problem. I am not sure I would want to do anything. Get thinned out by cars & hay mowers.
- Fewer deer roaming and hungry.
- Cull & feed herds to control foraging on private land.
- Trap and remove elk.
- Elk fence around the fields.
- Eliminate over population & control future numbers.
- Government aid to purchase netting, poles, etc.
- Have taken problem in hand!
- Significant reduction of deer population.
- Drastic reduction of the deer population.
- Basically we already have solved it. But lots of maintenance is required.
- Either the deer should be fenced out or support payments should be made. Again, they belong to the Crown.
- Assistance or subsidy for fence construction. Information on types of fences, effectiveness, etc.

- Scare away.
- Trap & remove to forestry location.

2(e) Other than shooting would you be willing to collaborate actively to solve the problem on your property? **Y N** Comments _____

- Would work cooperatively on a fencing project.
- What other options are there?
- Provide money for adequate fencing.
- Any scare tactics or fencing ideas.
- Collaborating actively to control a problem caused by encroachment of development on wildlife habitat without compensation is not an option.
- Solution seems to be very high fence around perimeter of property which is too expensive.
- Not worth growing anything. Starlings stay here all winter therefore you can't scare them like you can in the Okanagan Valley.
- Already actively engaged in alternative control measures.
- Why would you discount shooting? Other than increasing the wolf population or fencing, both not all that practical – if there is another way let's give it a try.
- Basically we already have solved it. But lots of maintenance is required. Also, moving more elk by trapping would be good.
- How much does the deer population rely on pasture of farmers fields. They sure seem to hang out there a lot. I see 7 or 8 at a time but my place may be a refuge since I don't hunt.
- Experimental fencing to reduce construction costs, etc., wildlife perimeters or corridors, etc.
- Yes – Details.

Section 3 Predators

The wild predator causing damage is:

Cougar 8
 Bear 10
 Other _____

- Raccoons in Orchard.
- Black bears damage apple trees
- Bald eagles, raccoons
- Bears damage fences
- Safety issue – populated area (cougar)
- Mink / weasel
- Cougar and bear live here &/or move through but do not cause problems.
- Domestic dogs are problem.
- Rats, Raccoons
- Squirrels are a huge problem. Red squirrels disappeared about 5 years ago. Now grey & black squirrels are dramatically increasing in numbers. A real problem!!
- Rats? Maybe somewhat far fetched definition.
- Rabbits, birds
- Ravens, starlings on the fruit. Loganberries, plums, apples & pears.
- Beaver
- Bears frighten employees. The silk women workers are much less productive when bears are around.
- Hawks, Owls, Eagles, Ravens, Mink, Raccoons.
- Cougar – Prints.

3(a) What problems are the predators causing?

- (a) Cash crop losses 10
- (b) Killing stock 11
- (c) Other _____
- Forage, corn crop losses.
- Stalking livestock
- Killing stock – 32 chickens this year.
- Fences damaged by bears.
- Safety, fear – education needed.
- Unsafe to keep poultry.
- Polluting through nesting, etc.
- Damage to fruit.
- Bears threaten livestock.
- Fence and orchard tree destruction.
- Ravens kill lambs when first born.
- Eating blueberry bushes (100 so far)
- Eating strawberries, raspberries & corn. Also serious and continuing damage to elk fence that requires lots of maintenance and when it's done, more damage occurs.
- None – (No losses)

3(b) Can you give a rough dollar estimate of losses and/or damage? _____

- \$500
- \$5,000 in a bad year.
- \$200
- \$75 per lamb – usually 1 a year, sometimes more. \$100 on fences plus our labour. Apple trees are standard but lots of limb damage.
- \$800 in 1998 – one time only.
- \$500
- \$250 per year
- \$100 – Unsafe to keep poultry.
- Minimal.
- \$500
- Difficult to assess.
- No.
- \$10,000
- \$2,000
- Loss of \$2,000
- Sever thousand dollars per year.
- \$500
- \$200 + many sleepless nights.

3(c) Have you observed an increase in the number of predators on your property over the last 3 years? **16 Yes** **5 No**
 Could you quantify this increase? _____

- Double
- 3 X
- More frequent
- Our dog was killed on the road, not a lot of problems when the dog was around.
- Yes for 1999, as we had hungry bears, at least 3 coming in long before the fruit was ready to pick. But last year only 1 bear came and did little damage.
- Only to say more sightings more often – closer.
- Seems to be more activity in our area last 2 years.
- Increase of 25%
- No problems at present.
- 200%

- Due to construction, elimination of natural cover immediately adjacent to property – new School construction.
- Birds – starlings staying here all winter.
- Marked increase and duration.
- Ravens – last year none but this year 4 lambs killed. Neighbouring farm is not the cleanest and could be attracting ravens; maybe attracted to dead birds on chicken farms.
- Approximately 20%
- Fairly constant.
- Twice
- Steady in last 3 years. Increased earlier than that. I see a decrease in wild duck population. Eagles forced to take domestic birds.
- Up to 4 different bears passing through.

3(d) What would you like to see done to solve the problem on your property?

- Find some reliable way to trap raccoons.
- I have no idea what could be done.
- The Government hunter does a superb job with cougars that kill stock. We have found that placing sheets of metal roofing around apple tree trunks keeps the bear off the trees.
- Community Predator Alert Program. A telephone system is set up to notify members of predator in area. This would encourage producers to take extra management steps to reduce the risk of a kill for a few days/weeks. Discuss with MELP.
- Nothing at this time.
- Means of trapping & killing so the problem doesn't just move down the road.
- Change idiotic Regional District Policies regarding dog damage and owners liability.
- Some sort of population control.
- Am attending privately by maintaining bait stations that are pet & bird proof.
- Destroy the birds or get Agriculture Dept. to finance a farmer.
- Shoot or remove bears from agricultural and residential regions.
- Numbers reduced.
- Some trapping to reduce population.
- Trapping bears and shooting.
- Nothing. We are the intruders into cougar habitat. Our sheep must look very enticing.
- Compensation. Again, Crown animals live here.

3(e) Other than killing the predators, would you be willing to collaborate actively to solve the problem on your property? **15 Yes** **2 No** Comments _____

- We do hunt them.
- Only good fences can solve most of the problems.
- We solve most problems ourselves but a cougar will return again & again to kill livestock and though they are kept in a pen at night beside the house, the cougar if determined enough will come right in and kill.
- A Registry would have members contact each other when there is a problem predator.
- Do not wish to see animals destroyed. Alternatives seem to be education?
- No – am killing!
- Fencing off blueberry patch.
- I don't think there are viable alternatives except to encourage more bear hunting.
- I have attempted to fence them out but to have free range eggs is difficult when all you do is feed the wildlife.
- Details?

3427 Gibbins Road, Duncan, BC V9L 6E6
Poelman, Jannes 743-9714
1505 Cowichan Bay Rd., RR 3, Cobble Hill, BC V0R 1L0
Spencer, Rick (CVRD) 743-0501 or 746-2500
2361 Kews Road, Shawnigan Lake, BC V0R 2W0
Vanden Dungen, John 746-4537
4766 Koksilah Rd., Duncan, BC V9L 6N8
Trudell, Norman 245-2840
13601 Michael Road, Ladysmith, BC V9G 1G7
4766 Koksilah Road, Duncan, BC V9L 6N8
Wikkerink, Wayne 743-3127
847 Garnet Rd., RR 3, Cobble Hill, BC V0R 1L0
Clegg, David & Nancy * Maybe** 743-1092
4164 Telegraph Rd., RR 3, Cobble Hill, BC V0R 1L0

Thank you for taking the time to complete this questionnaire. Please return the questionnaire to one of the Ministry of Agriculture, Food and Fisheries offices below:

331B - 6 th Street Courtenay BC V9N 1M2 Tel (250) 334-1239 Fax (250) 334-1472	5785 Duncan Street Duncan BC V9L 5G2 Tel (250) 746-1210 Fax (250) 746-1292	Bldg 20, 8801 E Saanich Rd Sidney BC V8L 1H3 Tel (250) 655-5649 Fax (250) 655-5657
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SURVEY OF PROBLEM WILDLIFE ON FARMLAND

SIDNEY DISTRICT RESULTS – JANUARY 2001

MAILOUT – 300

RESPONSES -25

Please circle/check the appropriate answer to the following questions and fill in the blanks. If you need more space, please use the back of the questionnaire.

Do you have problems with:

- 1. Waterfowl **17 Yes**
- 2. Elk / Deer **14 Yes**
- 3. Predators **7 Yes**

If you indicated 'yes' to any of these questions, providing your name, address and telephone number will assist in the development of a Management Plan for your area.

Section 1 Waterfowl

The waterfowl causing the damage are:

Canada Geese	12
Trumpeter Swans	3
Ducks	2
Starling	2
Robin	1

1(a) Please describe the crop type, acreage and location of fields.

- Good pasture – eat most new growth first crop - and hay
- Grass and alfalfa -- approx 12 acres – Cedar District
- Pasture land near pond
- 300 acres on Saanich Peninsula
- Hay fields and pasture
- Grass – 350 acres -- Mid Vancouver Island
- On my property address stated Malahat
- Grass – Hay occupation hay fields-180 acres Durrance road – left hand side of driveway – Pond – irrigation area 8 acres
- Geese pulling out new plantings of lettuce – location Martindale Road
- Blueberries – 200 bushes –near subdivisions some raspberry loss
- Lose bulk of crop to starlings and other small birds
- Grazing
- Grass – 40 acres field – 10 acres affected by geese
- Centre south side grass fields – Mayne Island 250 acres
- 5 acres vegetable deer fence – 15 acres improved pasture irrigated Metchosin
- Carrots 0.5 acres – 2732 Martindale Road
- Vegetables – 400 acres – Central Saanich
- Vegetables – 20 acres – off Island View Road
- Grass 100 A – Cover crops 100 A

Crop type/field:

Pasture	5
Grass	6
Vegetables	3
Hay Crops	3

1(b) What problems are the waterfowl causing?

- (a) Cash crop losses 6
- (b) Grazing 5
- (c) Soil compaction 4
- (d) Other (specify)

- Ruining edge of ditch
- Fouling of fields so cattle won't graze
- Defecation – competing with grazing sheep
- Killing the grass stands
- Water source fecal contamination
- Killing cats
- Feces contamination
- The ducks/geese pick the grass so low that the grass can not recover – to the point of mud
- Geese pulling out new plantings of lettuce – location Martindale Road
- Generally mucking up the area
- Hay crops eaten
- All of the above, plus soil erosion because of killed cover crop.

1(c) Can you give a rough dollar estimate of losses and/or damage? _____

- Approx \$10,000 over a 5 year period
- ?
- \$10,000/year and need to reseed every 3 years
- No
- \$20 – 40,000
- Didn't bother is first crop
- 1st 160 per acre bales X 8 acres = 1280 bales X \$5 per bale = \$6400
- 2nd 80 per acre X 8 = 650 bales X \$6 per bale = \$3,840
- 3rd 80 per acre (bales) X 8 acres = 640 bales X \$6 per bale = \$3,840
- Total = \$14,080
- \$500 - \$750 per year \$500 ?
- Approx \$1,000 per year
- \$2,500
- \$25,000 – 2 years
- Hard to do \$100's

1(d) Have you observed an increase in the number of waterfowl frequenting your property over the last 3 years? **18 Yes 1 No 1 Not sure**

Could you quantify this increase? 2 Less than doubled over past 3 years
9 Doubled over last 3 years
5 Other (specify) _____

- more than doubled
- got this under control in the last two years so the problem is only occasional
- tripled over last 3 years
- variable (200 – had geese population in excess of 5,000!
- Tripled
- So far this year less than other years

- 1(e) What would you like to see done to solve the problem on your property?
- Drastically reduce the geese #'s!! – easier said than done – Saanich doesn't usually give shooting permits – catch the young before they can fly – we've tried shaking the eggs but always miss some nests. Don't know what to do with them once you've caught them!
 - Destroy more of them
 - Advice on discouraging nesting at the pond or dealing with eggs once laid
 - Shot or poisoned
 - Selective culling – donate to food banks/geese are all corn/forage "finished"
 - Over seeding damaged areas, off season shooting wild fowl (Geese particularly)
 - Rebate on damages – if shooting is not a option
 - Nest site control
 - Nets? Can't use noise because we neighbour a subdivision
 - The population may be reduced
 - Shoot them
 - Control of over population over entire region
 - Allow hunting? Culling?
 - Reduce or total elimination of the birds
 - Hunting – It solves 99% of the problem on our farm
 - Shoot and kill geese. Move trumpeter swans.
 - Destroy the geese
 -
- 1(f) Other than shooting, would you be willing to collaborate actively to solve the problem on your property? **14 Yes 1 No** Comments?
- Yes – Jacklin Moole (for Pat Moole) 479-5947
 - Shooting them on a systematic basis seems to be the best control. Birds shot here are dressed and given to a soup kitchen for the needy.
 - Suggestions
 - Not sure
 - If I get paid yearly for the damages
 - If we have to yes
 - Hunting takes the least amount of time, other people do it for the farm at no cost.
 - Open to any avenues of relief

Section 2 Elk / Deer

2(a) What problems are the Elk ____ Deer 12 causing?

- Very minor problem compared to geese
- Eating raspberry canes and apple trees
- Re elk wildlife parks herd in my area 2 years ago saw 2 but wildlife says have moved to Mill Bay. Deer destroyed my crop of grapes 100%
- Deer eating crops
- Deer cabbage, strawberry, raspberry and cauliflower damage
- Stripping of fruit trees to over grazing hay crop
- Resident population of approx 8-10 animals – grazing pasture.
- Eating 95% of new raspberry canes, eating pumpkins, cabbage, lettuce, beets, sprouts and leaves of strawberry plants.
- Deer damage to fruit trees, consumption of pasture and fruit
- Deer eat fruit, eat young trees, eat everything

2(b) Please describe the crop type, acreage and location of fields affected.

- Raspberry canes – shoots eaten. Apple trees – bark nibbled apples eaten branches broken
- 4 acres of grapes of which 2 ½ acres producing 1 ½ acres 2 ½ years old – 1 acre 3 to 4 years midsummer. I have the property surrounded by a fence 76" high plus
- Eating lettuce, strawberry, peas, beans
- Eating up the gardens fruit etc.
- Hay fields grazed and trampled
- John Rd. Veyness Rd 17 acres, 12 acres
- Same as A: stripping of fruit trees and over grazing hay crop
- 15 acres forage. Metchosin
- Raspberry 0.5 acres 3191 Martindale; 7120 Veyaness; Vegetables 2 acres Martindale, 7120 Veyaness and 2591 Martindale; Strawberries 2.5 acres 3191 Martindale, 6539 Welsh road, 2591 Martindale
- Tree fruit, one acre, Saanich Peninsula
- 3 acres, apples, grape vines, roses, young trees – so it's hard to replant crops, strawberries
- Apple trees, Central Saanich – Island View Road area
- Vegetable – 6 – off Lamont Road

Crop type Damaged:

- | | |
|--------------------|---|
| • Vegetables | 3 |
| • Fruit | 4 |
| • Shrubs/trees | 4 |
| • Pasture | 4 |
| • Hay Crop | 2 |
| • Vegetables/Fruit | 7 |

2(c) Can you give a rough dollar estimate of losses and/or damage? _____

- ?
- Near vineyard expect min of 4 ½ tons – to come \$30,000. Starting in April of last year deer kept getting into vineyard and ate growth, shoots, when it appeared to approx ¾ to 1". I didn't notice, but my son kept saying the damage was quite extensive. By June the damage was very obvious as shoots bitten off only returned and remained at 2 ½" for the rest of the season.

In August late and September. I had the vineyard part that was producing, ie 2 ½ acres completely netted, as the previous year I had bird problems so was not taking any chances. This cost me \$4100. Grapes kept disappearing and I kept checking the netting for opening for birds. Then about 3 weeks before expected harvest I found out that the deer were getting in continuously. I always had deer around my property but deer never went near my vineyard from when I started 3 years ago, until this year. My son estimated that now was at least 17 deer in my area - Valley including others property. I went to Wildlife who said not much could be done, possibly checking my fence more frequently. I got a hunter who patrolled my vineyard who legally removed some deer by rifle. Result no grapes this year. Luckily I have other funds, because otherwise if I were relying on the vineyard I would be on welfare.

- \$14,082.00
- \$1,500 – \$2,000 a year
- \$500
- \$5,000
- Approx \$1,000/year
- \$6,000 plus
- \$600 p.a.
- \$1,000 annually
- \$2,000

2(d) What would you like to see done to solve the problem on your property?

- Ways to discourage deer from these areas
- I want Wildlife to grant me permission of open season to shoot deer to protect my crops.
- Have permission to shoot, or pay for the damages. Can not keep going this way
- Total elimination of deer population on Saanich Peninsula
- Encourage hunting
- Deer must be reduced in number.
- Kill the dears
- Elimination of introduced species
- Hunting? Culling?
- Total elimination of animals. High fencing, uneconomical, too costly, most acreage is leased land other than 7120 Veyaness Rd. .
- Reduce deer population
- The population has been steadily growing each year, it needs to be reduced.
- Shoot - Kill

2(f) Other than shooting would you be willing to collaborate actively to solve the problem on your property? **7 Yes 1 No** Comments _____

- I have tried everything any expert ie. Head gardener Butchard Gardens said nothing can control deer except 15' fence. I could be the (sly guy) in our country with a \$15,000 15 foot fence I can't afford. Bullets are cheaper.
- Shooting is very social unacceptable and often appears in the press – farmer appears to be at blame.
- Maybe
- Open to ideas other than fencing

Section 3 Predators

The wild predator causing damage is:

Cougar	4
Bear	1
Racoons	3
Other	1

Neighbourhood Dogs

Otter

Raccoon

Eagles

Loose suburban dogs! Seriously!

We know of 3 sighting in the area. I'm told that wolves are driving deer down from the north hence cougars – one crossed our lawn last year.

3(a) What problems are the predators causing?

(a) Cash crop losses	1
(b) Killing stock	5
(c) Other	1

- Killing cats
- Chickens – 150 chickens
- Killing chickens, ducks, geese. Dogs damage to vegetable gardens – running thru tilled soil – upsetting livestock
- Disrupting the peace and tranquility of the Farm

3(b) Can you give a rough dollar estimate of losses and/or damage?

- \$800
- No
- \$1,125.00 (otter killing chickens)
- \$2-3,000 over 5 years (dogs)
- 8 X \$8.50 per bird per year from a 99 bird flock (dogs cause nuisance damage – repeat work)
- 20 chickens
- \$800
- \$210 per year

3(c) Have you observed an increase in the number of predators on your property over the last 3 years? **7 Yes 1 No**

Could you quantify this increase? _____

- 1st cougar attack since 1946
- Negligent dog owners
- Eagles – protected. Neighbours gave up keeping chickens because of losses
- We have trapped 14 (sic raccoons) our neighbours trapped about the same (last 2 years)
- Goose, deer, raccoons, beavers flooding
- Never had a problem before last year a cougar killed a calf, a lamb and our dog.
- Racoons same. Cougars/sighting increased to 10 per year

3(d) What would you like to see done to solve the problem on your property? _____

- No ideas – very infrequent so hopefully won't happen again
- Not sure
- Have the Wild Game Branch come in to trap them. We have tried no luck.

- Arm SPCA Officers and get the Municipalities to quit hiring weinys.
- String art over the chicken run works really well, but need more cheap string as it needs replacing each year. Raccoons are bolder. SPCA has been observed releasing raccoons on Haldon Road!? ie. Urban raccoons in rural area.
- We have a dog and setting of traps.
- Cougars must be removed from the area
- Gun legislation changed to allow Farmers to deal with problem predators directly. Alternativley problem deer from urban and agricultural areas can be relocated and become a natural food source for cougars.

3(e) Other than killing the predators, would you be willing to collaborate actively to solve the problem on your property? **5 Yes 1 No 1 Not Sure**

Comments _____

- Not sure.
- No. Not for otters as they love meat!!!!
- How? Killing works well for raccoons as it controls the overpopulation and doesn't move the offenders to someone else's backyard. Can I shoot the dogs?
- Have residents not feeding them as pets.
- See above comment on cougars -- Artificially High population due to the availability of cat and dog food.

Would you be willing to be a member of a Problem Wildlife Committee for Vancouver Island?

6 Yes

10 No

The committee will likely meet in Nanaimo 1 to 3 times per year. Conference calls may work after the first meeting. The purpose of the committee will be to develop Problem Wildlife Management Plans for Vancouver Island. Local committees may be needed for Regional Plans.

IYes, please provide the following information:

Ronald Page
Box 113 Cedar. PO V9X 1W1
250 722-2340 in an advisory capacity only

Dan Ireland
1910 Meadowbank Rd. Saanichton, BC V8M 1X9
250 652-3251 or 356-1672

G. Lorne Tomalty
Box 39 Malahat (1197 Aspen Rd)
1 250-474-5129 Fax – same number

Ted A. Bartlett
6120 Wallace Drive
250-544-1027 or 544-1028

Robin Herliuveaux
1424 Laurel Rd. Sidney
250 656-7651

R. Norrie Spencer (Rosemeade Farms) (Did not circle Y or N)
1939 Meadowbank Rd. Saanichton
250-682-1862

Albert Finlay?? (Did not circle Y or N)

Fiona Smith
314 Becher Bay Rd. Sooke B.C. V0S 1N0
250-642-5483

Jack Mar If time permits
7120 Veyaness Rd. Saanichton, B.C.
250-652-8449

Bob Mitchell (Did not circle Y or N)
542 Wootton Rd. V9C 3Z4
250-474-3156

Appendix 9 – Evaluation of Management Options

Regional Deer Management Strategy

Summary Evaluation Working Sheets

Version 3 - July 27, 2012

Deer Management Option - Hazing and Frightening

Evaluation Criteria	Geography		
	Agricultural	Rural	Urban
Effectiveness for the Individual	● (1)	● (2)	● (1)
Effectiveness at addressing the Root Cause	● (1)	● (1)	● (1)
Feasibility/Capacity	● (1)	⊕ (1.5)	● (1)
Capability	● (1)	⊕ (1.5)	● (2) [originally 1.5+]
Cost/Economic Impact	● (3)	● (3)	● (3)
Time	● (3)	● (3)	● (3)
Support and Enthusiasm	● (1)	● (1)	● (1)
Negative Community Impacts	● (1)	● (3)	● (1)

Legend - General			
	Low Rating	Medium Rating	High Rating
Most criteria	● (1)	● (2)	● (3)
Legend – Reversed Criteria			
	High Cost/Time/Impact	Medium Cost/Time/Impact	Low Cost/Time/Impact
Cost/Economic Impact	● (1)	● (2)	● (3)
Time	● (1)	● (2)	● (3)
Negative Community Impacts	● (1)	● (2)	● (3)

Summary of Notes/Opinions/Assumptions/Considerations¹

- Hazing using dogs is banned by the Ministry of Forest, Lands and Natural Resource Operations
- Hazing and Frightening techniques include sound, water-based and visual options

¹ Recorded during CAG meetings and from ERWG input.

Regional Deer Management Strategy

Summary Evaluation Working Sheets

Version 3 - July 27, 2012

Deer Management Option - Hazing and Frightening

- Cannon-based frightening not allowed
- Many areas have dog and noise bylaws which restrict this option
- Concerns were expressed with respect to disruption to other species with noise-based frightening
- Issues with feasibility include property size, neighbour tolerance, geography including proximity to roads
- With the agricultural geography, the farm size and location of neighbours as well as proximity to roads affects the feasibility of this option.
- Sound-based hazing could include the use of cannons currently used to scare birds on farms outside the CRD. Deer become habituated to sound-based hazing and frightening. In urban areas, sound based options are less viable. Other issues with sound-based techniques include proximity to highways, effects of noise on other species such as owls and time of year.
- Many barriers to using dogs for hazing were noted. In the agricultural areas, the Ministry of Forest, Lands and Natural Resources have banned dog-based hazing for deer. It was noted that this has been attempted in the Interior of BC. Rural areas are more likely to own dogs; whereas, in the urban areas dogs are less likely to be effective at hazing deer (although small dogs may prove effective). Also, dogs need to be off leash to be effective.
- There are sprinkler attachments that operate on motion detectors that may work as a hazing technique, until deer become habituated.
- Hazing and frightening is a property-based solution that may move the problem between neighbours and onto roadways.
- There is assumed to be greater support in urban areas due to higher deer and human populations leading to more conflicts.
- Frightening deer is an ongoing option and is highly labour intensive.

Regional Deer Management Strategy
Summary Evaluation Working Sheets
Version 5 - July 27, 2012

Deer Management Option – Repellents

Evaluation Criteria	Geography		
	Agricultural	Rural	Urban
Effectiveness for the Individual	● (1)	● (2)	● (2)
Effectiveness: Broader Impact	● (1)	● (1)	● (1)
Feasibility/Capacity	● (2)	● (3)	● (3)
Capability	⊕ (2.5)	⊕ (2.5)	⊕ (2.5)
Cost/Economic Impact	● (2)	● (2)	● (3)
Time	● (2)	● (2)	● (2)
Support and Enthusiasm	● (1)	● (2)	● (2)
Negative Community Impacts	● (1)	● (2)	● (2)

Legend - General			
	Low Rating	Medium Rating	High Rating
Most criteria	● (1)	● (2)	● (3)
Legend – Reversed Criteria			
	High Cost/Time/Impact	Medium Cost/Time/Impact	Low Cost/Time/Impact
Cost/Economic Impact	● (1)	● (2)	● (3)
Time	● (1)	● (2)	● (3)
Negative Community Impacts	● (1)	● (2)	● (3)

Summary of Notes/Opinions/Assumptions/Considerations¹

- Precipitation reduces the Effectiveness score of Repellents and increases maintenance/reapplication costs
- The low evaluation score in Negative Community Impacts is due to the potential environmental impact due to contaminated run-off
- The Cost of Repellents is higher for larger properties such as acreages or farms
- It was noted that PlantSkydd has worked in forestry but heavy rains reduces effectiveness.

¹ Recorded during CAG meetings and from ERWG input.

Regional Deer Management Strategy

Summary Evaluation Working Sheets

Version 5 - July 27, 2012

Deer Management Option – Repellents

- No core municipal government use repellents in day-to-day operations, although Oak Bay will use on rose bushes this year.
- There is a contamination risk for organic farms when using repellants but it is unknown if repellents are available that are acceptable under organic certification standards.
- Some small farms reported success with perimeter spraying.
- This option is more effective for non-food crops.
- Large volume purchases of repellent may lower unit cost.
- The required application equipment might contribute to capital costs.
- Due to the need for ongoing application, operational costs were assumed to be higher (especially after rain)
- Deer may become habituated to the smell of repellents.
- In areas where repellants are effective, deer may be displaced to wild areas and the increase in population may impact biodiversity. Displacement may be less of an issue if the deer move on to properties of owners who do not object to their presence. This may be problematic given the inability of this management option to control where deer go when repellents are successful.

Regional Deer Management Strategy

Summary Evaluation Working Sheets

Version 1 - July 18, 2012

Deer Management Option - Fencing

Evaluation Criteria	Geography		
	Agricultural	Rural	Urban
Effectiveness for the Individual	● (3)	● (3)	● (3)
Effectiveness at addressing the Root Cause	● (1)	● (1)	● (1)
Feasibility/Capacity	⊕ (1.5)	⊕ (2.5)	⊕ (2.5)
Capability	● (2)	● (2)	⊕ (1.5)
Cost/Economic Impact	● (3)	⊕ (2.5)	● (3)
Time	⊕ (2.5)	● (3)	● (3)
Support and Enthusiasm	● (2)	● (2)	⊕ (1.5)
Negative Community Impacts	● (1)	● (1)	● (1)

Legend - General			
	Low Rating	Medium Rating	High Rating
Most criteria	● (1)	● (2)	● (3)
Legend – Reversed Criteria			
	High Cost/Time/Impact	Medium Cost/Time/Impact	Low Cost/Time/Impact
Cost/Economic Impact	● (1)	● (2)	● (3)
Time	● (1)	● (2)	● (3)
Negative Community Impacts	● (1)	● (2)	● (3)

Summary of Notes/Opinions/Assumptions/Considerations¹

- Treated fence posts are not used adjacent to growing areas on organic farms due to risk of soil contamination, metal is generally the material of choice.

¹ Recorded during CAG meetings and from ERWG input.

Regional Deer Management Strategy

Summary Evaluation Working Sheets

Version 1 - July 18, 2012

Deer Management Option - Fencing

- Capability in the Agricultural and Urban Geographies is limited by local government fencing bylaws that restrict height (generally to less than 8') and reduce the effectiveness of fencing at restricting deer access.
- One member abstained from scoring in the validation process from effectiveness broader impact, feasibility and capacity, capability, and cost because it was felt that a cost-benefit analysis of fencing was needed and, in general, there was insufficient information to properly evaluate.
- Publicly-owned land such as road allowances or boulevards require different jurisdictional approval to be fenced and in some cases cannot be fenced.
- Higher aesthetic standards in urban areas may lead to higher fencing Costs.
- One CAG member dissents with this option.
- The CAG could recommend the Federal government funding partnership with the Ministry of Agriculture Fencing Subsidy program (Environmental Farm Plan) be restarted.
- The CAG could recommend grants or breaks on property taxes to encourage fencing.
- Fencing costs for farmers with larger acreages would be "prohibitive".
- K. Brunt a presenter from the Ministry of Environment mentioned that electric fencing is becoming increasingly inexpensive, but not effective for protecting all crops. However, it was requested that electric and barrier fencing be separated as electric fencing was "becoming more feasible" at the request of an ERWG member.
- O. Schmidt encouraged agricultural fencing for higher value crops. On a similar note rural fencing should focus on gardens and high value ornamental vegetation.
- Many organic farmers used metal posts.
- Fencing can cause deer displacement to neighbouring farms and increase forage pressure in other locations such as parks or roads leading to more vehicle collisions, one CAG member opposed this assumption that deer human conflicts would be displaced to neighbouring properties.
- The Ministry of Agriculture subsidy program subsidy would cover a relatively small percentage of the overall cost for fencing.
- Fencing costs are the same per foot regardless of geography
- Farmers can write off the cost as a tax expense.
- Challenges with soil type and vegetation cover add to costs
- There is a limitation to extent of fencing in the region (cannot assume uptake by ever agricultural, rural and urban landowner in the region)

Regional Deer Management Strategy

Summary Evaluation Working Sheets

Version 1 - July 18, 2012

Deer Management Option - Fencing

- Timing of fence construction impacts effectiveness and is dependent on the planting season
- As a management strategy, fencing does not need continuous application, although ongoing maintenance is required.
- Although this option is effective for specific individuals it does not address broader issues associated with deer populations .
- Many farm properties extend into road allowances which cannot be fenced.
- Aesthetics of high fences may reduce support and enthusiasm
- Environmental considerations of large amounts of plastic fencing have been noted as they deteriorate overtime.

Regional Deer Management Strategy
Summary Evaluation Working Sheets
Version 2 - July 27, 2012

Deer Management Option - Landscaping Alternatives

	Geography		
Evaluation Criteria	Agricultural	Rural	Urban
Effectiveness for the Individual		● (2)	● (2)
Effectiveness at addressing the Broader Impact		● (1)	● (1)
Feasibility/Capacity		+ (1.5)	● (1)
Capability		● (3)	● (3)
Cost/Economic Impact		● (2)	● (1)
Time		● (2)	+ (2.5)
Support and Enthusiasm		● (2)	● (2)
Negative Community Impacts		+ (2.5)	● (3)

Legend - General			
	Low Rating	Medium Rating	High Rating
Most criteria	● (1)	● (2)	● (3)
Legend – Reversed Criteria			
	High Cost/Time/Impact	Medium Cost/Time/Impact	Low Cost/Time/Impact
Cost/Economic Impact	● (1)	● (2)	● (3)
Time	● (1)	● (2)	● (3)
Negative Community Impacts	● (1)	● (2)	● (3)

Summary of Notes/Opinions/Assumptions/Considerations¹

- Landscaping Alternatives is not a possible option for agricultural areas.
- Cost is different between new developments, which are not replacing plants, and existing developments which are replacing plants.

¹ Recorded during CAG meetings and from ERWG input.

Regional Deer Management Strategy

Summary Evaluation Working Sheets

Version 2 - July 27, 2012

Deer Management Option - Landscaping Alternatives

- Some non-native and invasive plants rated as deer-resistant could have negative environmental impacts.
- Suggesting native plants could further the goals of the Invasive Species Council
- Community pressure to increase the number of fruits trees planted in public boulevards could clash with recommendations to plant more deer-resistant plants.
- Two CAG members abstain from evaluating this option.
- Although native planting reduces deer browsing, higher deer volumes lead to higher browsing pressure. Deer will switch their browsing patterns as food becomes scarce and that starving deer are may be fed by local residents. This option may be more viable as browsing pressures decrease.
- Any plant that is deer resistant or not that is watered or fertilized will become attractive to deer.
- There is an inability of some commercial ventures to implement this option.
- This option should be bundled with other options.
- There is a cost to individuals to retrofit gardens with deer-resistant plants.
- There are non-plant landscaping options such as hard surfaces.

Regional Deer Management Strategy
Summary Evaluation Working Sheets
Version 2 - July 24, 2012

Deer Management Option – Controlled Public Hunt

Evaluation Criteria	Geography		
	Agricultural	Rural	Urban
Effectiveness for the Individual	⊕ (2.5)	⊕ (2.5)	● (2)
Effectiveness: Broader Impact	⊕ (2.5)	⊕ (2.5)	● (2)
Feasibility/Capacity	⊕ (2.5)	⊕ (2.5)	● (1)
Capability	⊕ (2.5)	⊕ (1.5)	● (1)
Cost/Economic Impact	● (3)	● (3)	● (3)
Time	● (2)	● (2)	● (2)
Support and Enthusiasm	● (2)	● (2)	● (1)
Negative Community Impacts	● (3)	● (3)	● (1)

Legend - General			
	Low Rating	Medium Rating	High Rating
Most criteria	● (1)	● (2)	● (3)
Legend – Reversed Criteria			
	High Cost/Time/Impact	Medium Cost/Time/Impact	Low Cost/Time/Impact
Cost/Economic Impact	● (1)	● (2)	● (3)
Time	● (1)	● (2)	● (3)
Negative Community Impacts	● (1)	● (2)	● (3)

Summary of Notes/Opinions/Assumptions/Considerations¹

- The option assumes hunting with firearms (rifles, shotguns, etc.) and bow-hunting
- Effectiveness for the Individual score is reduced because the hunters are non-professional (assumed to be less skilled)
- Feasibility/Capacity would be reduced on smaller agricultural properties
- Hunting on farms for crop protection purposes has a per-property bag limit of 5 animals annually and the meat cannot be retained by either farmer or hunter.

¹ Recorded during CAG meetings and from ERWG input.

Regional Deer Management Strategy

Summary Evaluation Working Sheets

Version 2 - July 24, 2012

Deer Management Option – Controlled Public Hunt

- Feasibility/Capacity score is considered by the CAG to be impacted by the requirement of needing the permission of the land owner.
- Capability is currently limited by existing firearms discharge bylaws that prevent discharge of firearms or bows in many municipalities. Some municipalities currently have exemptions to these bylaws for Crop Protection purposes.
- The Time criteria is impacted by the variable length of time required to change bylaws and by the length of time before the number of deer taken starts to reduce deer human conflicts
- Existing deer hunting regulations restrict hunters, so this may take more time to notice a change in population.
- Support & Enthusiasm may be higher with individual land owners vs the general public
- Higher Community Impacts are assumed due to the relative unpopular public perception of the management option
- Opportunity to leverage the existing provincial licencing process by maximizing the hunter's skill by adding additional testing.
- Controlled Public Hunt is currently in use with the CRD's Goose Management Strategy

Regional Deer Management Strategy
Summary Evaluation Working Sheets
Version 2 - July 19, 2012

Deer Management Option – Professional Sharpshooting

Evaluation Criteria	Geography		
	Agricultural	Rural	Urban
Effectiveness for the Individual	⊕ (2.5)	⊕ (2.5)	● (2)
Effectiveness: Broader Impact	⊕ (2.5)	⊕ (2.5)	● (2)
Feasibility/Capacity	● (3)	● (2)	⊕ (1.5)
Capability	⊕ (2.5)	● (2)	● (1)
Cost/Economic Impact	● (1)	● (1)	● (1)
Time	● (2)	● (2)	● (2)
Support and Enthusiasm	● (2)	● (1.5)	● (1)
Negative Community Impacts	● (3)	● (3)	⊕ (2.5)

Legend - General			
	Low Rating	Medium Rating	High Rating
Most criteria	● (1)	● (2)	● (3)
Legend – Reversed Criteria			
	High Cost/Time/Impact	Medium Cost/Time/Impact	Low Cost/Time/Impact
Cost/Economic Impact	● (1)	● (2)	● (3)
Time	● (1)	● (2)	● (3)
Negative Community Impacts	● (1)	● (2)	● (3)

Summary of Notes/Opinions/Assumptions/Considerations¹

- The option assumes hunting with rifles or crossbows by paid professionals
- Effectiveness for the Individual is likely reduced in urban areas due to limited number of areas available where this option can be done safely.
- Feasibility/Capacity is rated higher in the agricultural geography due to larger open spaces which would make hunting easier but negatively impacted in rural and urban

¹ Recorded during CAG meetings and from ERWG input.

Regional Deer Management Strategy

Summary Evaluation Working Sheets

Version 2 - July 19, 2012

Deer Management Option – Professional Sharpshooting

geographies due to safety issues although Sharpshooting has been done using bows and deer stands to reduce safety risks.

- Capability was scored lower in the urban geography due to higher number of regulatory barriers and positively scored in the agricultural geography due to existing precedents with Crop Protection and Goose Management
- Cost was scored based on the negative impact of deer carcass disposal either through butchering or landfilling, as well as the Cost for hired professionals. Cost recovery through sale of meat is unlikely.
- Time is impacted by a possible limit on the number of professional sharpshooters currently available in BC, although qualified law enforcement, Park Rangers and Conservation officers may be used.
- Support & Enthusiasm may be negatively impacted by perceived cost of service to individual land owners.
- Support & Enthusiasm in the urban geography may be positively impacted by support for a cull but may be negatively impacted by safety concerns or concerns about specific culling methods
- Negative Community Impacts: few issues have been noted in the literature with regards to safety, First Nations or health impacts but safety may be an issue in urban geography.
- Professional Sharpshooting as a population management tool needs to be continuous or pulsed.

Regional Deer Management Strategy
Summary Evaluation Working Sheets
Version 3 - July 25, 2012

Deer Management Option – Capture & Relocate

Evaluation Criteria	Geography		
	Agricultural	Rural	Urban
Effectiveness for the Individual	● (2)	⊕ (1.5)	● (2)
Effectiveness: Broader Impact	● (2)	⊕ (1.5)	● (2)
Feasibility/Capacity	⊕ (1.5)	⊕ (1.5)	● (1)
Capability	● (1)	● (1)	● (1)
Cost/Economic Impact	● (1)	● (1)	● (1)
Time	⊕ (2.5)	⊕ (2.5)	● (3)
Support and Enthusiasm	⊕ (1.5)	⊕ (1.5)	⊕ (1.5)
Negative Community Impacts	● (2)	● (2)	● (2)

Legend - General			
	Low Rating	Medium Rating	High Rating
Most criteria	● (1)	● (2)	● (3)
Legend – Reversed Criteria			
	High Cost/Time/Impact	Medium Cost/Time/Impact	Low Cost/Time/Impact
Cost/Economic Impact	● (1)	● (2)	● (3)
Time	● (1)	● (2)	● (3)
Negative Community Impacts	● (1)	● (2)	● (3)

Summary of Notes/Opinions/Assumptions/Considerations¹

- Current support is anticipated to decline after education and first relocation's high mortality.
- Effectiveness is influenced by where the deer would be relocated to, i.e. not just moving them to another area or type of conflict.
- Feasibility/Capacity is impacted by the costs of labour, the range in the rural geography and the trap location restrictions in the urban geography
- The province would need to grant the CRD a permit to relocate deer

¹ Recorded during CAG meetings and from ERWG input.

Regional Deer Management Strategy

Summary Evaluation Working Sheets

Version 3 - July 25, 2012

Deer Management Option – Capture & Relocate

- Time will be impacted by complexity of trying to do this option in urban geography
- Support & Enthusiasm may be reduced in urban geography due to the visibility of the option
- Community Impacts may be increased by deer mortality during transport due to stress and the environmental impact of the deer on the areas to which they are relocated.
- Community Impacts may be higher in urban geography due to public acceptance of deer presence
- It is unclear as to where the deer could be relocated to that would not result in other/further conflicts or environmental impacts if there is already an established deer population in the new area, i.e. would there be enough food?
- The literature suggests this option may not be that effective. In addition, it was noted that deer reproduction may replace relocated animals quickly.
- It was also noted that K. Brunt of the Ministry of Forest, Lands and Natural Resource Operations stated in his presentation that according to Ministry counts deer populations are currently increasing.
- ERWG noted that capturing deer in winter is easier due to less food but that relocation cannot be done until spring. However, wild deer cannot be held for long periods, so capturing and relocation would both need to be done during the spring, reducing Effectiveness.
- Capture and Relocate subject to Ministry of Forest, Land, and Natural Resources Operations permission, which is unlikely at this point.
- Consideration given to potential risk of injury to handler.
- High mortality rates of Capture and Relocation will impact Support and Enthusiasm.

Regional Deer Management Strategy
Summary Evaluation Working Sheets
Version 3 - July 27, 2012

Deer Management Option – Capture & Euthanize

Evaluation Criteria	Geography		
	Agricultural	Rural	Urban
Effectiveness for the Individual	⊕ (2.5)	⊕ (2.5)	⊕ (2.5)
Effectiveness: Broader Impact	⊕ (2.5)	⊕ (2.5)	⊕ (2.5)
Feasibility/Capacity	⊕ (2.5)	⊕ (2.5)	⊕ (1.5)
Capability	⊕ (2)*	⊕ (2)*	⊕ (2)*
Cost/Economic Impact	⊖ (1)	⊖ (1)	⊖ (1)
Time	⊕ (2)	⊕ (2)	⊕ (2)
Support and Enthusiasm	⊕ (2)	⊕ (1.5)	⊕ (1.5)
Negative Community Impact	⊖ (3)	⊖ (3)	⊖ (3)

Legend - General			
	Low Rating	Medium Rating	High Rating
Most criteria	⊖ (1)	⊕ (2)	⊖ (3)
Legend – Reversed Criteria			
	High Cost/Time/Impact	Medium Cost/Time/Impact	Low Cost/Time/Impact
Cost/Economic Impact	⊖ (1)	⊕ (2)	⊖ (3)
Time	⊖ (1)	⊕ (2)	⊖ (3)
Negative Community Impacts	⊖ (1)	⊕ (2)	⊖ (3)

Summary of Notes/Opinions/Assumptions/Considerations¹

- *This Criterion assumes Provincial approval would be provided to the CRD (for Capability criterion) to implement
- There are several different methods to implement this option, including a cull.
- Any cull would need to be maintained year to year or be pulsed overtime in order to be Effective (ERWG).
- Urban and Rural geographies may present more difficulty to find landowners willing to provide space to set net traps.
 - There is little Crown Land in the CRD to use to implement this option

¹ Recorded during CAG meetings and from ERWG input.

Regional Deer Management Strategy

Summary Evaluation Working Sheets

Version 3 - July 27, 2012

Deer Management Option – Capture & Euthanize

- This option might be limited to specific seasons and time of day (Cranbrook traps were setup between 7 – 9 pm and checked the next morning)
- It is assumed, but not confirmed that Provincial approval would be provided to the the CRD (Capability) to implement this option as other communities have implemented Capture & Euthanize with Provincial support based on similar processes.
- The Support and Enthusiasm criteria is dependent on how the meat is used, i.e. given to First Nations or charitable groups.
- The CAG has opined approximately equal support for and against a cull among the people who have spoken to them about this option.
- The Cost criteria would consider processing and butchering of the meat
- The limited number of local processors that would be able to accommodate the volume of deer meat. Influenced the Feasibility/Capacity rating.
- It was assumed that this method was less humane than sharpshooting due to stress on the animal when captured.
- A cull may be geographically broad-based (covering agricultural, rural and urban) and require coordinated local, regional and provincial government efforts for implementation.
- A large number of animals would need to be culled initially to make this option effective in reducing deer human conflicts through population reduction.
- In an urban area a cull may not be possible, a cull in areas with small properties, and small population numbers would result in a lower number of animals being caught during capture periods. It is also assumed that it is more difficult to set up traps in rural and urban areas compared to agricultural areas
- Assumption: that any cull would be done by professionals and monitored by government employees.
- This option has been used in other communities (Sidney Island, Cranbrook, Invermere)
- When considering comparative cost, it appears that Capture and Euthanize would cost less than Capture and Relocate.

Regional Deer Management Strategy
Summary Evaluation Working Sheets
Version 2 - July 19, 2012

Deer Management Option – Immun contraceptives

Evaluation Criteria	Geography		
	Agricultural	Rural	Urban
Effectiveness for the Individual	● (1)	● (1)	● (1)
Effectiveness: Broader Impact	⊕ (1.5)	⊕ (1.5)	⊕ (1.5)
Feasibility/Capacity	● (1)	● (1)	● (1)
Capability	● (1)	● (1)	● (1)
Cost/Economic Impact	● (1)	● (1)	● (1)
Time	● (1)	● (1)	● (1)
Support and Enthusiasm	● (1)	● (2)	⊕ (2.5)
Negative Community Impacts	● (1)	● (1)	● (1)

Legend - General			
	Low Rating	Medium Rating	High Rating
Most criteria	● (1)	● (2)	● (3)
Legend – Reversed Criteria			
	High Cost/Time/Impact	Medium Cost/Time/Impact	Low Cost/Time/Impact
Cost/Economic Impact	● (1)	● (2)	● (3)
Time	● (1)	● (2)	● (3)
Negative Community Impacts	● (1)	● (2)	● (3)

Summary of Notes/Opinions/Assumptions/Considerations¹

- There are currently no immunocontraceptives that are legal in Canada for broad-based implementation; all current implementations are based on site specific approvals for experimental use -only, negatively affecting Capability
- Effectiveness is negatively impacted by the need to treat 90%+ (correction: 70%) of does to be effective

¹ Recorded during CAG meetings and from ERWG input.

Regional Deer Management Strategy

Summary Evaluation Working Sheets

Version 2 - July 19, 2012

Deer Management Option – Immun contraceptives

- This management option would need to be bundled with population reduction or another option to reduce impact of deer during existing deer lifespan (10-12 years). On its own this option would take a long time to cause a reduction in population.
- Effectiveness: Broader Impact is likely higher in Urban areas due to limited migration of deer
- Feasibility/Capacity is reduced by the need to capture and handle animals.
- Feasibility/Capacity reduces over time during any immunization program, as already-treated animals or males are recaptured
- Cost to treat each animal is high, made higher by the high percentage of the total deer population that would need to be treated
- The Time assumed to request changes to Federal regulations is long, and once implemented there is a considerable time lag before any noticeable reduction in deer population.
- Support & Enthusiasm may be negative impacted by the cost of the option in addition to its current legal status
- Support & Enthusiasm in the Agricultural geography is considered lower due to inability to immediately deal with problem animals currently causing crop loss.
- Treated deer are not fit for human consumption, and would have to be tagged so those hunted are not consumed. Public education would be needed to inform hunters of this information. Hunted treated deer would need to be disposed of and could not serve another purpose such as food supply.
- There are known environmental impacts with in the environment from humans using contraceptives, it is unclear what environmental impacts if any would result from immunocontraceptive use in deer. Deer scat is widely distributed resulting in broad-based leeching potential.
- It is also unknown what effect immunization would have upon deer predators.
- First Nations use of deer for food may be negatively impacted due to unintended harvest of treated of animals rendered them unfit for human consumption.

Regional Deer Management Strategy
 Summary Evaluation Working Sheets
 Version 2 - July 19, 2012

Deer Management Option – Public Education

Evaluation Criteria	Geography		
	Agricultural	Rural	Urban
Effectiveness for the Individual	● (1)	● (1)	● (2)
Effectiveness: Broader Impact	● (1)	● (1)	⊕ (1.5)
Feasibility/Capacity	⊕ (2.5)	⊕ (2.5)	⊕ (2.5)
Capability	● (3)	● (3)	● (3)
Cost/Economic Impact	● (2)	● (2)	⊕ (1.5)
Time	● (2)	● (2)	● (2)
Support and Enthusiasm	● (2)	● (2)	● (2)
Negative Community Impacts	● (3)	● (3)	● (3)

Legend - General			
	Low Rating	Medium Rating	High Rating
Most criteria	● (1)	● (2)	● (3)
Legend – Reversed Criteria			
	High Cost/Time/Impact	Medium Cost/Time/Impact	Low Cost/Time/Impact
Cost/Economic Impact	● (1)	● (2)	● (3)
Time	● (1)	● (2)	● (3)
Negative Community Impacts	● (1)	● (2)	● (3)

Summary of Notes/Opinions/Assumptions/Considerations¹

- This option should be packaged with other options
- Public education is defined as information that help people make better decisions on fencing, deer feeding, landscaping alternatives and more.
- Effectiveness for the Individual is likely higher in urban areas due to livelihood not being threatened by deer forage and browsing

¹ Recorded during CAG meetings and from ERWG input.

Regional Deer Management Strategy

Summary Evaluation Working Sheets

Version 2 - July 19, 2012

Deer Management Option – Public Education

- If no problem is perceived, there is no conflict. If no conflict is perceived, there is no problem.
- Effectiveness: Broader Impact is higher in urban geography as there are more in a smaller area people to be educated which will have a bigger impact.
- Feasibility/Capacity depends on the type of public education and the need to compete for public attention.
- Cost is higher in Urban geography due to the increased number of people to educate
- Educating people takes Time, especially when considering behavioural change.
- Support & Enthusiasm is negatively impacted due to the lack of immediate effect and possible perception that public education may be the only management option that CRD undertakes.

Regional Deer Management Strategy
 Summary Evaluation Working Sheets
 Version 3 – August 8, 2012

Deer Management Option – Status Quo

Evaluation Criteria	Geography		
	Agricultural	Rural	Urban
Effectiveness for the Individual	● (1)	● (1)	● (1)
Effectiveness: Broader Impact	● (1)	● (1)	● (1)
Feasibility/Capacity	● (3)	● (3)	● (3)
Capability	● (3)	● (3)	● (3)
Cost/Economic Impact	● (1)	⊕ (1.5)	⊕ (1.5)
Time	● (3)	● (3)	● (3)
Support and Enthusiasm	● (1)	⊕ (1.5)	● (2)
Negative Community Impacts	● (1)	● (2)	● (2)

Legend - General			
	Low Rating	Medium Rating	High Rating
Most criteria	● (1)	● (2)	● (3)
Legend – Reversed Criteria			
	High Cost/Time/Impact	Medium Cost/Time/Impact	Low Cost/Time/Impact
Cost/Economic Impact	● (1)	● (2)	● (3)
Time	● (1)	● (2)	● (3)
Negative Community Impacts	● (1)	● (2)	● (3)

Summary of Notes/Opinions/Assumptions/Considerations¹

- The Cost to do nothing is low for government but high for individuals and ICBC.
- When considering long-term cost versus short-term cost, long-term cost will increase with increase in deer population.
- The later the decision is made the longer it will take to implement.
- If population of deer increases or stays the same negative community impacts will increase over time.

¹ Recorded during CAG meetings and from ERWG input.

Regional Deer Management Strategy
 Summary Evaluation Working Sheets
 Version 2 – August 10, 2012

Deer Management Option – Crop Protection

Evaluation Criteria	Geography		
	Agricultural	Rural	Urban
Effectiveness for the Individual	● (1)		
Effectiveness: Broader Impact	● (1)		
Feasibility/Capacity*	● (2)		
Capability*	● (2)		
Cost/Economic Impact	⊕ (2.5)		
Time	● (2)		
Support and Enthusiasm	⊕ (2.5)		
Negative Community Impacts	● (3)		

*Option has potential to more effective. Saanich feasibility is impeded by bylaws. Saanich Peninsula has fewer regulations.

Legend - General			
	Low Rating	Medium Rating	High Rating
Most criteria	● (1)	● (2)	● (3)
Legend – Reversed Criteria			
	High Cost/Time/Impact	Medium Cost/Time/Impact	Low Cost/Time/Impact
Cost/Economic Impact	● (1)	● (2)	● (3)
Time	● (1)	● (2)	● (3)
Negative Community Impacts	● (1)	● (2)	● (3)

Summary of Notes/Opinions/Assumptions/Considerations¹

- The per-property bag limit is 5 deer.
- Crop Protection is currently in use for the CRD Goose Management Strategy.
- Crop Protection is difficult to use and implement given existing firearms bylaws. The result is that there are limited locations where firearms discharge is not permitted, including properties under 5 acres in certain jurisdictions, provincial regulations dictate that all gun discharge must

¹ Recorded during CAG meetings and from ERWG input.

Regional Deer Management Strategy

Summary Evaluation Working Sheets

Version 2 – August 10, 2012

Deer Management Option – Crop Protection

occur over 100m from structures, roads, parks, property line (subject to neighbouring property owner's consent).

- In the Kootenays hunters are connected with farm owners, this is the same procedure used with the CRD's Goose Management Strategy and in the Interior with elk.
- With a Crop Protection permit, the landowner or lessee can allow as many hunters to use it as they wish, provided they stay under the limit of 5 deer per property.
- The local police have to run a background check for each hunter.
- The province assigns the permit to the land owner or lessee and that it is renewed each year.
- The permit does not limit which days the hunting takes place.
- Only applies to the agricultural geography.
- Crop Protection covers only specific properties.
- Harvested animals cannot be kept by hunters, but can be distributed to First Nations and charitable organizations if properly processed.
- There are concerns over disposal of deer.
- Cost is low and economic impact is high.
- Increasing bag limit would increase feasibility. Once population has been reduced the bag limit could be adjusted to a maintenance level.
- This option is ongoing.
- There is current Provincial support.

Appendix 10 – Management Option Evaluation Worksheets

Management Options Evaluation Worksheet: Agricultural Geography

Version 5
Created: August 20, 2012

Evaluation Criteria	Conflict Reduction			Population Reduction					Fertility Control		Administrative	Unclassified
	Hazing and Frightening	Repellents	Fencing	Landscaping Alternatives	Controlled Public Hunt	Professional Sharpshooting	Capture & Relocate	Capture & Euthanize	Immunocontraceptives	Public Education		
Effectiveness for the Individual	●	●	●	+	+	●	+	●	●	●	●	●
Effectiveness at addressing the Root Cause / Effectiveness: Broader Impact	●	●	●	+	+	●	+	+	●	●	●	●
Feasibility/Capacity	●	●	+	+	●	+	+	●	+	●	●	●
Capability	●	+	●	+	+	●	●	●	●	●	●	●
Cost/Economic Impact	●	●	●	●	●	●	●	●	●	●	●	+
Time	●	●	+	●	●	+	●	●	●	●	●	●
Support and Enthusiasm	●	●	●	●	●	+	●	●	●	●	●	+
Negative Community Impacts	●	●	●	●	●	●	●	●	●	●	●	●

Legend - General

- 3 - High Rating
- 2 - Medium Rating
- 1 - Low Rating

Legend - Specific Criteria
Cost/Economic Impact, Time and Negative Community Impacts

- 3 - Low Cost/Time/Impact
- 2 - Medium Cost/Time/Impact
- 1 - High Cost/Time/Impact

Management Options Evaluation Worksheet: Rural Geography

Version 5
 Created: Aug 20, 2012

Evaluation Criteria	Conflict Reduction				Population Reduction				Fertility Control			Administrative	Unclassified
	Hazing and Frightening	Repellents	Fencing	Landscaping Alternatives	Controlled Public Hunt	Professional Sharpshooting	Capture & Relocate	Capture & Euthanize	Immunocontraceptives	Public Education	Status Quo		
Effectiveness for the Individual	●	●	●	●	+	+	+	+	●	●	●		
Effectiveness at addressing the Root Cause / Effectiveness: Broader Impact	●	●	●	●	+	+	+	+	+	●	●		
Feasibility/Capacity	+	●	+	+	+	●	+	+	●	+	●		
Capability	+	+	●	●	+	●	●	●	●	●	●		
Cost/Economic Impact	●	●	+	●	●	●	●	●	●	●	+		
Time	●	●	●	●	●	●	+	●	●	●	●		
Support and Enthusiasm	●	●	●	●	●	+	+	+	●	●	+		
Negative Community Impacts	●	●	●	+	●	●	●	●	●	●	●		

Legend - General

- 3 - High Rating
- + 2 - Medium Rating
- 1 - Low Rating

Legend - Specific Criteria
 Cost/Economic Impact, Time and Negative Community Impacts

- 3 - Low Cost/Time/Impact
- + 2 - Medium Cost/Time/Impact
- + 1 - High Cost/Time/Impact

Management Options Evaluation Worksheet: Urban Geography

Version 7
Created: August 20, 2012

Evaluation Criteria	Conflict Reduction				Population Reduction				Fertility Control			
	Hazing and Frightening	Repellents	Fencing	Landscaping Alternatives	Controlled Public Hunt	Professional Sharpshooting	Capture & Relocate	Capture & Euthanize	Immunocontraceptives	Public Education	Status Quo	Crop Protection
Effectiveness for the Individual	●	●	●	●	●	●	●	+	●	●	●	
Effectiveness at addressing the Root Cause / Effectiveness: Broader Impact	●	●	●	●	●	●	●	+	+	+	●	
Feasibility/Capacity	●	●	+	●	●	+	●	+	●	+	●	
Capability	●	+	+	●	●	●	●	●	●	●	●	
Cost/Economic Impact	●	●	●	●	●	●	●	●	●	+	+	
Time	●	●	●	+	●	●	●	●	●	●	●	
Support and Enthusiasm	●	●	+	●	●	●	+	+	+	●	●	
Negative Community Impacts	●	●	●	●	●	+	●	●	●	●	●	

Legend - General

- 3 - High Rating
- + 2 - Medium Rating
- + 1 - Low Rating

Legend - Specific Criteria
Cost/Economic Impact, Time and Negative Community Impacts

- 3 - Low Cost/Time/Impact
- + 2 - Medium Cost/Time/Impact
- + 1 - High Cost/Time/Impact

Management Options Evaluation Worksheet: Deer/vehicle Collision Mitigation

Evaluation Criteria	Management Option	
	Infrastructure	Administrative
Effectiveness for the Individual		
Effectiveness at addressing the Root Cause / Effectiveness: Broader Impact		
Feasibility/Capacity		
Capability		
Cost/Economic Impact		
Time		
Support and Enthusiasm		
Negative Community Impacts		

Legend - General

-  3 - High Rating
- 
-  2 - Medium Rating
- 
-  1 - Low Rating

Legend - Specific Criteria
Cost/Economic Impact, Time and Negative Community Impacts

-  3 - Low Cost/Time/Impact
- 
-  2 - Medium Cost/Time/Impact
- 
-  1 - High Cost/Time/Impact

Version 1
Created: July 24, 2012

Appendix 11 – Minutes of the Citizens Advisory Group

Minutes for the CAG can be seen on <http://www.crd.bc.ca/regionalplanning/deermanage.htm>