Administrative Review of the 2006 and 2007 Deer Hunts

Environment Yukon

Yukon
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Yukon Fish and Wildlife Branch

MR-08-01

Copies available from:

Yukon Department of Environment
Fish and Wildlife Branch, V-5A
Box 2703, Whitehorse, Yukon Y1A 2C6
Phone (867) 667-5721, Fax (867) 393-6263
Email: environmentyukon@gov.yk.ca

Also available online at www.environmentyukon.gov.yk.ca

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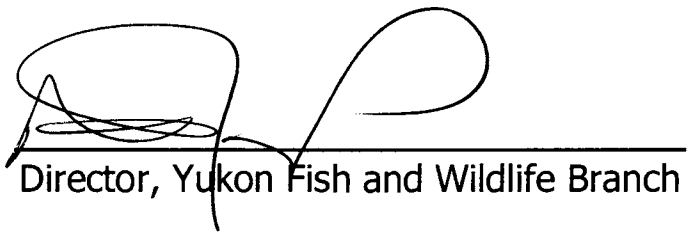

Director, Yukon Fish and Wildlife Branch

Acknowledgements

Many individuals contributed to the design and the completion of this small study. We particularly thank Don Toews who recommended the review in 2006 and reminded us it was due. The study was designed and led by Barney Smith. Contractor Dr. George Calef ably completed dozens of interviews in an engaging manner, and prepared tables of the findings and summaries of the findings. Gord Zealand, Executive Director of the Yukon Fish and Game Association, sent out and summarized the survey with the members of that organization. Carol Domes completed many interviews, frequently phoning the busy Chairs and Executive Directors of Renewable Resources Councils and Yukon First Nation staff. Jean Carey, Carol Domes, Manfred Hoefs, Harvey Jessup, Diane Nikitiuk, Graham van Tighem, Rick Ward and Gord Zealand provided helpful comments on earlier drafts. Finally we wish to thank the many interviewees for their candid thoughts on the hunt and how to improve it.

Summary

The Fish and Wildlife Branch of Environment Yukon completed an administrative review of Yukon's permit deer hunt in March and April, 2008. This review was based on interviews with 18 deer hunt permit holders, 9 conservation officers, 5 regional biologists, 17 farmer landowners, highway maintenance personnel in 13 camps, 7 Renewable Resources Council Chairs, and staff in 6 Yukon First Nation government land, resource and wildlife management departments.

All interviewed groups are, for the most part, neutral or satisfied with the deer hunt as currently conducted and administered. Negative satisfaction scores are almost exclusively associated with the comment that there are not enough permits.

Landowners have experienced no significant conflicts or problems with deer hunters. With some exceptions, most landowners did, or would if asked, grant permission for deer hunting.

Interviewees described deer being most abundant in developed or agricultural areas near Whitehorse; hunters find it difficult to hunt there because of the regulation prohibiting hunting within 1 km of an occupied dwelling without permission.

Ninety percent of the deer hunt permit holders were from the Whitehorse area, and most of the hunting took place within 160 km of Whitehorse. Hunter kills occurred in Game Management Zones 4, 5, 7, and 8.

Recommendations arising from the interviewees and the contractor would

- increase the number of deer hunt permits (allocating them geographically),
- allowing bow hunting to address the problem of hunting close to residences,
- allocating permits to youth, and
- avoiding the harvest of white tailed deer.

Next steps in 2008 include

- continuing the administration of the hunt,
- encouraging permit holders to avoid taking white tailed deer,
- providing more information in the synopsis on appropriate hunter behaviour in farmed settings, and
- obtaining information from deer permit holders on the composition and number of deer seen as a population monitoring tool.

Issues requiring further discussion include

- increases to permit numbers and dispersion of these permits,
- allocation of some permits to youth,
- increasing opportunities for bow hunting deer particularly within farming areas,
- expanding the awareness of First Nation hunters about deer hunting rules and the importance of providing kill information, and

- how to inexpensively monitor trends in deer numbers.

Landowners/farmers with deer on their properties need to be informed about

- deer hunt rules,
- trespass laws,
- the content of educational programs directed at hunters in relation to hunting on or near farmland, and
- where to report hunters who are behaving in an inappropriate manner.

Further interview-based reviews of hunt administration should be encouraged, with standard interview guides to ensure consistent questioning between interviewers, greater use of standard prompts to encourage more complete examination of concerns, and more attention to informed consent.

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Introduction

This paper summarizes the results of a small study designed to examine if changes are needed to administrative aspects of the Yukon deer hunt. The first deer hunt in the Yukon was approved by the Minister of Environment in 2006. It was a small hunt, 10 permits each year, because there was no information on population size and it was not clear how hunters would respond to the opportunity. The original proposal from the Yukon Fish and Game Association had met with a variety of responses during the public consultation led by the Yukon Fish and Wildlife Management Board in 2005. Along with the Yukon Fish and Wildlife Management Board's recommendation to enable a deer hunt there were 2 caveats: a) there was to be a review after 2 years and b) all harvest, including First Nation harvest was to be documented. No criteria were set for the review.

This assessment has not considered the types and levels of diseases and parasites that may occur in mule or white-tailed deer populations. Samples were taken from some of the hunter killed deer and from some road killed deer. These will be examined and reported in a separate publication.

Background

Available information on the trend and abundance of deer was compiled into 2 reports by Manfred Hoefs in the 1990s. He found that both mule deer (*Odocoileus hemionus*) and white-tailed deer (*O. virginianus*) are relatively recent arrivals in the Yukon fauna. Mule deer were not reported prior to the 1940s and white-tails not before 1975. As the earliest records of both species occur in the southern part of the Territory, after 1940, it is likely that they came into the Yukon along the highway corridor. Their distribution is still largely tied to road right-of-ways, but they have expanded into agricultural areas and forestry blocks, as well as some wilderness areas where suitable habitat exists. No population studies of deer in the Yukon have been conducted. However, it is clear from sighting records that both the population and overall range of mule deer has been expanding. White-tails appear to still be relatively rare and discontinuous in distribution.

Mule deer prefer south-facing, open slopes along rivers and lakes and other open areas such as forest fire sites or areas cleared for agriculture and grazing. Such preferred habitats are found south of Whitehorse near the Yukon River Crossing, north of the city along the Klondike Highway to the Deep Creek Road, and west of the city in the agricultural areas along the Takhini River as well as in the Takhini burn area west to the Kusawa Lake Road. Other good, but smaller, deer habitats are located around the northern half of Kusawa Lake, (particularly near the mouths of Primrose

River and Sandpiper Creek), northeast of Carmacks along the Campbell Highway (from its junction with the Klondike Highway eastward to Eagle Nest Bluff on the Yukon River), between Minto and Selkirk along the Yukon River, and at Ross River on the south-facing slopes of the large hill along the north shore of the Pelly River.

While the deer seem to be hardy they are at the northern edge of their range and have a hard time and die offs in winters with deep snow or prolonged severe may be significant.

Legal status

Deer are unusual in comparison to other large mammals in terms of their legal status, particularly as it relates to hunting. Since 1960, prior to the signing of First Nation Final Agreements, "black-tailed deer" were protected species under the *Yukon Act*. This meant that all deer harvest was illegal; there were no provisions that allowed subsistence or ceremonial harvest by First Nation people.

With the settling of each Final Agreement there was a rolling repeal of Section 19.3 of the *Yukon Act*, and deer were no longer afforded protection from subsistence harvesting although they still continued to be listed as a specially protected species under the *Wildlife Act*. The following rules now apply:

- Yukon residents with a permit hunt authorization, hunting licence and deer seal from Environment Yukon can harvest deer on crown land during the open season. The antlers and incisor bar must be submitted and the kill must be reported not later than 15 days after the end of the month in which the deer was killed.
- A beneficiary of a First Nations Land Claims Final Agreement can harvest deer on crown and settlement land within their traditional territory according to the rules set by the First Nation. Most First Nations request that members taking deer report the kill, but do not have rules requiring the submission of the antlers or incisor bar.
- A First Nation person from another traditional territory with a final agreement can hunt deer on the traditional territory of a First Nation with a final agreement but they must obtain permission from that First Nation, or hunt according to the rules for licensed hunters.
- A member of a First Nation without a final agreement has no special deer hunting privileges in their traditional territory or elsewhere. This is because section 20 of the Yukon Act is in effect where a Final land Claims Agreement does not exist. These individuals can harvest deer according to the rules for licensed hunters.
- Anyone wanting to hunt deer on Settlement land or private land needs permission from the landowner. Most First Nations have permit systems in place to allow this. There are no permit systems for other land owners.

Other considerations:

- There are no trespass laws in the Yukon.

  The *Wildlife Act* does not make any reference to deer. *The Wildlife Regulations* authorize mule or white-tailed deer hunting by permit only in 12(1) Schedule A Part 1 (changed in 2006). This means that hunting rules could differ for the two species.
- The hunting synopsis and wildlife regulations refer to "female" deer being protected. In practice this means deer without antlers.
- Hunters are not asked when they report their harvest if they used a bow, rifle, or shotgun.

Scope of the assessment

An "administrative review" looks at the way a hunt is administered- the various government regulations and procedures that allow the hunt to proceed. It is not a "Consultation" on continuing the hunt, or an opinion poll on each of the rules. It is designed to identify what is working well and what important changes are needed to meet the goals of the hunt.

In a formal adaptive management framework, there would be clear criteria established at the outset by which the performance and behaviour of the system would be evaluated to see if the goals were met. In this case, we developed questions that seemed relevant to the assumed goals to provide an opportunity for a few individuals to hunt deer, in a manner that would be sustainable and safe, in the absence of population counts. Most hunted and trapped species in the Yukon are managed using similar assumptions. What is unique about this hunt is that there was an expectation that most of the hunting would be on or near grass-rich road sides, on private land, and on fields with planted hay or oats near built up areas, so safety concerns would be greater than hunts that occur in more remote areas.

The data for this administrative review came almost exclusively from a small number of interviews, to gather the range in perspectives, assuming that important concerns related to the administrative aspects of the hunt would be revealed.

The methods of the assessment are detailed to support further studies.

Objective

The main objective of the study was to summarize information and perspectives relevant to the decision to vary administrative aspects of the deer hunt. A secondary objective was to create and describe an approach to this kind of study that the Department, First Nation governments and land claim bodies could consider for future studies.

Description of the administration of the 2006 and 2007 deer hunts

Over 400 Yukon residents with hunting licences chose to apply in each of June 2006 and 2007 for one of 10 randomly drawn permits to hunt a deer anywhere in the territory between August 1 and November 30. Important rules in the Wildlife Act and regulations that licensed deer hunters had to follow included:

- Hunters could only take male deer, and hunt deer in the open season August 1 to November 30.
- No hunting (not just no shooting) within 1 km of a dwelling without permission. This included bow hunting.
- Hunters were expected and requested to obtain written permission to hunt on Category A First Nation settlement land. Only a few First Nations have laws that support this expectation and there is usually limited enforcement.
- Hunters needed to use a rifle over 6 mm calibre, a bow with a draw weight greater than 20 kg, a black powder rifle 11.4 mm or larger, a shotgun 20 gauge or larger with slugs, or a bow. They could not use a cross bow, a pistol or revolver, a silencer or full metal jacket bullets.
- The paper seal had to be attached around the base of the antler with all or part of the skull attached or the tendon of the hind quarter.
- Hunters could not hunt in a way that would likely cause injury to crops, livestock, domestic animals or other personal property, or to a person.
- Hunters could not discharge a firearm on or across the traveled portion of a public road or highway.
- Hunters had to report their kill by December 10 and submit the incisor bar and antlers with the skull attached for inspection and measurement.
- Hunters were requested to obtain permission to hunt on private land (e.g. agricultural holdings). There are no trespass laws so landowners did not have the right to exclude hunters if they were hunting on their land over 1 km from a dwelling. There are no laws to support any 'no hunting' signs along fences that a landowner may choose to install.
- Hunters who received a deer permit were not eligible for a deer permit the following year unless there were permits left over after the draw.
- Closed areas Game Management Subzones included 1-01 through 1-14, 1-16, 1-20, 4-03, 4-51, and all subzones in Game Management Z one 6.
- Individuals needed to be at least 12 years of age to be eligible for a big game hunting licence and hunters born after 1987 needed to complete a recognized hunter education program.

In addition to this we understood from some First Nations that there was a small number of deer taken annually by First Nation subsistence hunters. These hunters do not require tags or licences to hunt deer within their traditional territory. Part of the review looks at the deer harvest reported to or estimated by the First Nation Land and Resource Departments.

Information collection procedures and results

We describe the methods in some detail to allow readers to understand the deliberate manner in which interviewees were selected and what they were asked. This detail supports some critical thinking of how future studies like this should be conducted.

Review of permit application and allocation records

Environment Yukon's Corporate Planning Section (Client Services and Information Management & Technology sections) and Conservation Officer Services handle applications, the computer records of the draw, the random draw, and the notification of hunters for all hunts that are subject to limited entry permit regulations. Hunters must apply for these permits in person at one of 9 department offices. Successful permit holders are only eligible for a permit the following year if there are permits left over after the draw, a rare occurrence. The names of unsuccessful applicants remain in the system and individuals who apply in subsequent years are weighted accordingly. The first and last names of hunters who receive permits are listed on the department's website. Successful applicants are also sent registered letters with their permit.

The permit application costs $10; the hunting licence is free for First Nation or Inuit hunters or Yukon residents over 65 or $10 for others. The seal fee for deer is $50.

Review of biological submissions from successful permit holders

Successful licensed deer hunters were required to bring the antlers attached to the skull plate and the incisor bar into the wildlife lab or district conservation officer office to allow

- tooth removal from the lower incisor bar to allow the deer to be aged;
- the sex of the deer to be confirmed; and
- tissue collection to determine the presence of pathogens such as chronic wasting disease or ectoparasites such as winter ticks.

During these visits, hunters were asked about the location (game management subzone) and date of the kill.

Review of First Nation harvesting records

Most of the Yukon First Nation governments regularly interview hunters about the location and number of animals harvested. We asked the land and resource departments for the total number of deer they thought were harvested in their traditional territory by their beneficiaries and by hunters from other first nations. The latter can be difficult to estimate.

Interviews: Methods by group

Several Fish and Wildlife Branch staff developed some survey questionnaires in late December and early January, to start the thinking on the approach that was needed. The Yukon Bureau of Statistics Director and the senior statistician reviewed these and recommended narrowing the scope of the study, focusing on an administrative review because this was not intended to be an opinion poll on the future of the deer hunt or a statistically valid comparison of the perspectives of various groups.

Branch staff, the Yukon Fish and Game Association (President Paul Jacobs, Director Tammy Hamilton, and Executive Director Gord Zealand), and the Yukon Fish and Wildlife Management Board Executive Director (Graham van Tighem), reviewed a draft outline of the report and agreed on the scope and the structure of the study in mid February. This approach used small numbers of interviews of specific groups, with selection of specific individuals within some of the larger groups who were expected to be most knowledgeable. This is called 'purposive sampling' and it limits the kinds of comparisons and conclusions that can be drawn, but provides a good idea of the range in perspectives.

The Yukon Fish and Game Association (G. Zealand), the Yukon Fish and Wildlife Management Board (G. van Tighem), Fish and Wildlife Branch (B. Smith) and the contractor (G. Calef) next reviewed draft tables that would summarize the interviews of each group. The columns in these tables clarified the set of topics that would be covered with each group (Table 1). This set of topics varied between interview groups. We discussed interview question sequence and formats, but left the development of the interview guide to the interviewers. Hunters, landowners, conservation officers and regional biologists were asked to rate their overall satisfaction with the Yukon deer hunt as currently constituted from very satisfied (+2) to very unsatisfied (-2).

The contractor completed most interviews between March 1 and 31. Dr. Calef has deer hunting experience in several provinces and states, wildlife research experience in the north, interviewing experience associated with magazine articles he writes on various hunting topics, and deer viewing experience near his home in the Takhini River valley. About half of the interviewees required a second call, and one third required 3 or more calls before contact was made. His interviews averaged 20 minutes each, with some taking 50 minutes, mostly using voice-over-Internet software (Skype) to make telephone calls over the computer. About one quarter of the interviews were over satellite links from his off-grid rural home, demonstrating that technology now allows distant contractors to support this kind of project. He kept handwritten notes from the interviews and typed the paraphrased thoughts into the cells in the table after most of the interviews were completed.

The Harvest Management Specialist, Carol Domes, new to telephone

interviewing, completed the interviews with the renewable resources councils' chairs and the First Nation government personnel from late March to early May, entering the information directly into the tables. Each interview took about 10–15 minutes, partly because she was explaining the context of the study and answering questions on other topics. Many call-backs were required due to 'phone-tag' and busy schedules.

Interviews did not include any map-based questions. Questions on deer abundance sought perceptions of trends in roadside areas where individuals were anticipated to be particularly knowledgeable. Questions also sought unusual sighting locations, particularly of white-tailed deer, to get an idea of range expansion.

The study sampled 8 groups, each asked to address the study topics that we anticipated they could best answer (Table 1). Some of these choices were obvious. For example, we asked highway maintenance personnel for estimates of the number of deer killed by vehicles on particular stretches of road, and successful deer hunters were asked questions about meat palatability. We did not ask everyone about their perception of trends in Yukon-wide deer numbers, instead only focusing on the individuals with long experience in particular stretches of highway. This kind of questioning was designed to limit the number of interviewees per question to those that were most knowledgeable, to reduce the question load per interviewee, and to minimize situations where people provided answers to questions that they might not be informed about. The contractor's 20-minute interviews covered a wider range of deer hunting topics than was summarized in the table; noteworthy ideas were placed in the comments columns. When the Yukon Fish and Game Association sent out the reminder email, they asked an additional question requesting opinions on increasing opportunities for bow hunting.

Table 1. Topics asked of interviewee groups.

Topic	Permit holder	Successful permit holder	Farmers Land owners	FN staff	RRC Chairs	Highway Maintenance Supervisors	YFGA members	Regional Biologist Cons Off Vet
Aware deer hunt			X	X	X			
Satisfaction overall with hunt	X	X	X	X	X		X	X
Satisfaction Permit numbers				X	X		X	X
Satisfaction Season start end dates				X	X		X	X
Concerns deer hunt			X	X	X			
Recommendations- seasons, numbers/permits/locations or comments on deer hunt and deer populations	X	X	X	X	X	X	X	X
Trends in deer numbers in area where person lives or drives			X	X	X	X		X
Location of most hunting in the region/district/TT				X	X			X
Estimates of FN harvesting in particular areas				X	X	"Knowledge of deer hunting on road section"		X
Est. Road Kills on particular road stretches						X		X
Farm location			X					
Deer on farmer's land, max seen, estimated numbers now								
Days when hunting/shooting on farmer's land								
Number of hunters who asked permission to hunt deer on individual's private land			X					
Unusual recent deer observations				X	X		X	
New mule deer areas				X	X	X		X
New WT deer areas	X			X	X	X	X	X
Recent WT Deer observations				X	X		X	

Topic	Permit holder	Successful permit holder	Farmers Land Owners	FN staff	RRC Chairs	Highway camps	YFGA members	Biologist Cons Off Vet
Years of experience hunting M /WT deer		X						
Relative difficulty deer hunting in Yukon vs. other areas		X						
No of deer seen while hunting	X	X						
% time spent hunting developed or wild areas	X	X						
Number of landowners asked if ok to hunt on land who said no or yes	X	X						
Hunted habitats that had most deer sign	X	X						
Days hunted	X	X						
Deer wariness	X	X						
Hunting for meat or trophy	X	X						
Meat quality		X						
Deer wariness	X	X						
Factors leading to success		X						
Rump fat (deer), Meat texture, meat flavour, parasites in meat		X						
More bow hunting							X? second set	
Advice for new deer hunters	X	X						
Hunting tips		X						

Farmers

The majority of farming occurs around Whitehorse because of access to markets and off-farm income. Seventy-seven percent of Yukon farms are located around Whitehorse. Based on the 2006 census there are 150 farms in the territory with 50 reporting hay or grain feed crops (33%). This represents approximately half of Yukon on-farm income. The contractor interviewed 17 individuals with large agricultural land holdings. These individuals had been recommended by the Agriculture Branch and conservation officers because they knew these farmers had deer on their land and they anticipated or knew that hunters would be attracted to hunt deer on these properties. Of the 17 landowners interviewed, 9 had land around Whitehorse, 3 near Carmacks, 2 near Watson Lake, 1 in the Wheaton River valley, and 1 west of Pelly Crossing. Hence, the landowners interviewed did not represent a random sample but rather were selected as having large holdings in areas of relative deer abundance and, in several cases, because it was known that deer hunting had occurred on their land. They were not questioned about crops, their perceptions towards deer, or grazing leases, but many interviewees provided information on these topics.

Regional Biologists and Conservation Officers

The contractor interviewed all 5 of the regional biologists and 9 of 13 district conservation officers. He also included the individual acting as the Branch wildlife veterinarian and a Whitehorse-based senior conservation officer. They were asked for names of farmers who would be suitable to interview. The biologist responsible for moose, deer, and elk, Rick Ward, was not available for interview in February and March but contributed information to this table and provided editorial comments on this report.

Renewable Resources Council Chairs

The Wildlife Harvest Management Specialist interviewed personnel in 8 renewable resources councils. The North Yukon Renewable Resources Council was not contacted.

First Nation Government Land and Wildlife Management Personnel

The Wildlife Harvest Management Specialist requested interviews from personnel in 12 First Nation government departments with fish and wildlife management responsibilities. Six of these departments responded to the request, answering the same questions as those posed to renewable resources council chairs. An important dimension to the management program was the compliance with reporting of deer harvested by First Nation members because this had been a specific request by the Yukon Fish and Wildlife Management Board. With no information on population sizes, an accurate estimate of hunter (and road) kills was critical to assess the hunt

Highway Maintenance camp foreman

The manager of the Yukon Highways and Public Works 'grader stations' scattered along Yukon's highways approved the interviews of camp foremen. We sent the camps an email alerting them to the coming interview. This email provided them with a list of topics and 4 images of white-tailed and mule deer to stimulate discussion about sightings. The contractor was able to interview foremen in 13 of the 18 camps. Note the North and South Canol camps were not sampled as these roads are not maintained in the winter.

Yukon Fish and Game Association members

The Association president sent a message and survey via email to 150 members for whom email addresses were available, followed by a reminder and 2 additional questions 14 days later. Individuals were asked to hit the "return" tab, answer the questions and then hit the "send" tab. No incentives were offered. The reminder email asked about support for expanded bow hunting. The executive director tabulated the 58 responses and reviewed them with some directors. Forty-six percent of the respondents had applied for deer hunt permits in 2006, so this sample gives perspectives on the broad set of hunting and angling members, not just those keen on deer hunting. This was the first survey emailed by the Yukon Fish and Game Association, and they took care to only send the questionnaire to email addresses known to be correct.

Deer hunt permit holders

The contractor located 19 of the 20 permit holders, and interviewed them for 20 to 30 minutes each. As the interviewing progressed the contractor felt it was important to learn about whether permit holders had been keen on a large versus any male deer, that is if they were hunting for meat or a large buck. He also felt it was important to ask them about bow hunting as a way to reduce the risk of hunting near developed areas. He continued the remaining interviews asking these additional questions.

Fourteen permit holders killed deer and were asked additional questions looking at meat quality, deer condition, the quality of the hunting experience compared to other areas they had hunted deer, and tips they had for future deer hunters. These added to the questions that had been asked of each successful hunter when they submitted their deer for inspection.

We assumed minimal overlap between the set of permit holders and the sample of Yukon Fish And Game Association members because the permit holders were few and we believe that following the interview with the contractor a Yukon Fish And Game Association member having a permit would not also respond to the emailed Yukon Fish And Game Association survey. In fact the Yukon Fish and Game Association indicated that several permit holders responded to their emailed survey.

Interviews- results by topic

Patterns in the deer permit holders

Number of deer hunt permit applicants

Environment Yukon received 487 applications to hunt deer in 2006 and 406 in 2007.

Permits issued

In each year, Environment Yukon issued 10 permits that authorized hunting male deer, either mule or white-tailed, from 1 August to 31 November throughout most of the territory.

Town of residency of permit recipients

Eighteen of the 20 successful applicants for deer hunt permits lived in the Whitehorse area, 10 in 2006 and 8 in 2007.

Gender of permit holders

Eighteen of the permit holders were men and 2 were women.

Number of permit holders who actually hunted

One permit holder in 2006 did not collect his seal, did not hunt, and has since left the Yukon. One hunter from the 2006 season could not be located for interview. Of the 18 hunters interviewed, 16 reported hunting deer and the hunter who was not interviewed reported killing a deer. Thus, 17 of 19 (89%) of the permit holders actually hunted deer.

Patterns in how deer were hunted and taken by permit holders

Number of days deer hunters spent afield.

Permit hunters spent an average of 8 days (range 1–20 days) in the field during the 4-month long hunting season. The deer hunters averaged 1 day afield in August (range 1–5 days), 3 days hunting in both September and October (range 0–12 days in Sept. and 0–15 days in October) and 1 day in November (range 0–8 days).

Trophy hunting vs. meat hunting

The majority (62%) of hunters said they were hunting primarily for meat, although some (12%) said they were looking for a trophy if possible but wanted meat regardless.

Hunting in developed areas vs. the wild

The interviewed hunters were asked what proportion of their time hunting was spent in developed areas vs. wild areas. Of the 16 active deer hunters, 7 (44%) reported hunting exclusively in wild habitats, 7 hunted in both wild and developed areas,

and 2 (12%) hunted in only developed habitats. These remarks require an important qualification however: Many hunters reported hunting mostly or exclusively along roadsides; indeed several hunters remarked that road hunting was the most effective way to hunt. Thus, these habitats are developed in the sense that they have road access, but are wild in that the areas hunted were primarily remote from human habitation and agriculture. It is also noteworthy that one hunter reported hunting exclusively on wild land but is known to have shot a deer on private agricultural land.

Ten of the 18 hunters (56%) did not ask permission to hunt on any private land; the other 8 hunters (44%) did ask one or more landowners for permission. Six of 8 hunters (75%) who asked for permission to hunt received it from at least one property owner; 2 were refused. In total, 9 favourable replies and 7 refusals were reported by the hunters who requested hunting permission. However, it is not known how many individual land owners this total represents; some may have been asked more than once.

Deer seen by hunters while hunting

Every hunter who spent time in the field saw mule deer, averaging 2.5 deer/day of hunting. The ratio of bucks to does *and* fawns reported was 47:100 (n=368). Most hunters did not note the number of fawns they saw, but rather, lumped them in with does, suggesting that fawns are difficult for inexperienced observers to distinguish in the autumn or that hunters did not spend the time to count smaller deer. Four 2006 permit holders provided fawn and doe numbers totalling 8 fawns and 18 does (0.44 fawns/doe). In 2007, 5 permit holders provided similar detail, totalling 27 fawns and 72 does (0.37 fawns/doe). Based on his judgement of the identification skill of the interviewee, the contractor selected 2 experienced hunters who did distinguish does from fawns. They reported 14 does and 8 fawns, and 11 does and 5 fawns respectively, a ratio of .52 fawns/doe.

Five of the 18 hunters (28%) reported having seen white-tailed deer in the Yukon in the past, but none while hunting in 2006 or 2007.

Perceptions of deer wariness

At least two-thirds of the hunters described the deer as "not wary", "curious", or "habituated to cars and traffic" and similar remarks. Half of the successful hunters shot their deer at ranges less than 100 yards, and several at 50 yards or less. Three hunters described some of the deer they hunted as wary or spooky; 2 of these mentioned that deer around Carmacks and those around Cultus Bay were more wary than in other places, and believed that these warier deer had been hunted.

Deer hunters' success rate

A total of 14 deer were taken by the 17 permit holders who hunted. The 16 deer permit holders who hunted and were interviewed killed 13 deer, a success rate of

72% for all permit holders and 82% for active hunters. The proportion of successful hunters was greater in 2006 than in 2007, but the difference is likely not significant.

Location of deer kill

Deer were killed in Game Management Zones 5, 7, and 8 in 2006 and Game Management Zones 4, 5, 7, and 8 in 2007. All but 2 deer were killed within 100 km of Whitehorse; all were near Whitehorse, Haines Junction, or Carmacks.

Hunters' perception of relative difficulty of the Yukon deer hunt

Eleven of the permit holders (50%) had previous experience hunting deer in the south (average 10 years experience hunting mule deer, and 16 years hunting white-tailed deer). When asked to compare their deer hunt in the Yukon with previous hunts, 73% rated it easier or much easier, while 27% said it was harder or much harder. Those who rated Yukon deer hunting easier mentioned less wary animals, less human hunting pressure, and the fact that deer occur primarily along roads. Those rating it more difficult mentioned lower deer density, more hiking required, and having to learn the details of an unfamiliar area.

Meat quality and health of animals taken

Ninety one percent (n=11) of the successful hunters rated their venison both delicious and tender. Descriptions included "wonderful", "amazing", and "excellent". Only one hunter found his meat "just edible" and commented "rutting mule deer are not good". It is noteworthy that the majority of deer were killed before the rut. Because the 120 day Yukon deer season is much longer than deer seasons in southern Canada, there is opportunity for meat hunters (the majority) to kill a deer before the rut. None of the hunters reported seeing parasites in the meat of their animals.

Hunting near farms and rural residences and related concerns

Deer on agricultural holdings

Ninety percent (all but 2) of the landowners interviewed reported having deer currently on their property. Interestingly 2 of the 3 landowners who said that they were unaware of the deer permit hunt had no deer on their land. Most landowners estimated they had fewer than 10 (often just 2 or 3) deer on their property but 3 in the Whitehorse area have seen 20 to 50 deer on occasion. Remember, the sample was biased towards larger landowners in areas of high deer numbers.

Landowner awareness of the deer permit hunt

All but 3 of the landowners interviewed said they were aware of the deer hunt. The sample of landowners was biased, however, towards large landholders, some of whom were known to have been asked for hunting permission. Awareness of the deer hunt may have been less among rural residents on smaller land holdings.

Deer hunting occurs on private land

Only 5 of the land owners interviewed (29%) had deer hunters ask them for permission; one of these 5 was a land owner hunting on his own land i.e. he asked himself permission. Only 4 land owners actually had hunters on their land—all 4 of these were north of Whitehorse. Two landowners (one near Whitehorse, one near Watson Lake) reported seeing hunting or evidence of hunting on their land when they had not been asked for permission. No interviewed landowners reported complaints about potential problems such as: shooting livestock, damage to property, shooting near dwellings, littering, or tracks of all terrain vehicles.

One landowner near Whitehorse related an incident involving a deer hunter. He had been asked for permission by this hunter and refused permission. Nevertheless, the hunter shot a deer on his land, and when confronted, claimed the deer had been shot outside the property and ran onto it. The hunter promised the landowner a portion of the meat from the deer but has never delivered it. This hunter reported hunting only on undeveloped land in this survey.

Three (23%) of the 13 deer taken during the permit hunt were killed on private land. Please remember that the sample of interviewees probably overestimated the amount of deer hunting on private property because the sample emphasized larger agricultural holdings, and in some cases, the parties were interviewed specifically because it was known that hunting had occurred on their land.

Both Watson Lake area landowners who were interviewed said they would refuse permission to hunt deer, as did a few from the Whitehorse region. The reasons given were that

- they enjoyed seeing deer and didn't want them hunted or made more wary; and
- they believed that there wasn't a large enough deer population around to warrant a hunt.

Overall satisfaction with the deer hunt

Overall, interviewees seemed satisfied with deer permit hunt, although a few expressions of dissatisfaction were received. Some respondents had suggestions for improving the hunt administration even though they rated themselves satisfied or highly satisfied with the hunt (see recommendations section). We present the results in this section by interviewee category.

Hunter satisfaction with the Yukon deer hunt

The responses indicated overwhelming satisfaction with the deer hunt among hunters who obtained permits. Ninety four percent of the respondents rated themselves as either "very satisfied" (67%) or "satisfied" (28%) and none expressed dissatisfaction. The sample of Yukon Fish and Game Association members showed moderate levels of satisfaction (no +2 ratings) with negative or zero ratings being almost exclusively because the number of permits was too low.

Conservation officer satisfaction with the Yukon deer hunt

Conservation officers were also satisfied with the deer hunt administration. All of the respondents rated themselves as either "very satisfied" (50%) or "satisfied" (50%) and none expressed dissatisfaction.

Landowner satisfaction with the Yukon deer hunt

Landowners expressed a lower rating of satisfaction with the permit hunt than did deer hunters or conservation officers, but were still on the satisfied side of neutral. Only 3 landowners (18%) rated themselves "very satisfied" compared with 12 (66%) of the hunters interviewed. However, several landowners stated specifically that they had rated themselves "neutral" about the deer hunt simply because they didn't know enough about the hunt to form any opinion.

Regional biologist satisfaction with the Yukon deer hunt

Regional biologists, as a group, presented the widest range of satisfaction with the deer hunt: One was very satisfied, one satisfied, one very dissatisfied, and 2 neutral simply because they had no experience with deer hunting in their region. The very dissatisfied perspective was related to the absence of population information and incomplete harvest reporting by some First Nations, resulting in a harvest that could not be described or assessed.

Yukon First Nation staff satisfaction with the Yukon deer hunt

These ratings were mostly zero or +1. The interviewees felt that the deer hunt was not a priority of the First Nation government or of member families. Overall the sentiment was that the hunt is not a big issue and should continue.

Renewable resources council chair satisfaction with the Yukon deer hunt

These ratings were mostly zero or +1. The interviewees felt that the deer hunt was not a priority of many families in the region, although they are often seen along some road edges. They indicated that there could be a few more permits but it was important to spread out the hunting pressure. Some areas could be managed for viewing so that people have a chance to watch and appreciate these animals.

Deer hunting by First Nations people

Caribou and moose are the important species in the sustenance economy of First Nation families. In this assessment very few interviewees expressed any knowledge of the extent of hunting by First Nation people. Some respondents remarked that they had heard reports or rumours of such hunting in their areas. Areas where First Nation hunting was reported included:

- on highways around Carmacks, especially east along the Campbell Highway;

- on the Alaska Highway south of Destruction Bay (carcasses of 4 small deer found in the dump);
- around Haines Junction, particularly east along the Alaska Highway (no estimate made); and
- around Mayo (no estimate made).

Two hunters reported that deer in some of the areas they hunted were wary or skittish and attributed this wariness to hunting by First Nation hunters or by non-First Nation people who were hunting illegally without permits.

A couple of respondents in the Carmacks area suggested that hunting by First Nation hunters or by non-First Nation people who were hunting illegally without permits might be reducing the population in some local areas, or at least driving the deer away from the highways.

Concerns raised by interviewees

Interviewees offered a variety of comments explaining their level of satisfaction with the deer hunt and offering suggestions to improve the hunt. These included:

- Increasing the number of permits. This comment came from some interviewees in all categories, but was especially prevalent among hunters, landowners, and conservation officers. Two variations of this theme were offered; the idea that a minimum point rule for bucks could be instituted as a method of increasing hunting opportunities without increasing the take, and the idea that landowners should be able to apply for a special category of deer hunt permits. No one suggesting an increased number of permits offered a specific figure.
- Several people from all categories mentioned that in areas of high residential density hunters have a difficult time finding a place to hunt that is more than 1 km from an occupied dwelling, to comply with territorial hunting regulations. Since some of these areas of higher residential density coincide with high deer populations, the hunt is compromised. Some of these interviewees recommended a bow hunt in areas where deer hunters have trouble finding a place to hunt.
- Some landowners enjoy watching relatively tame deer, and/or think that there are not enough deer around to justify a hunt.
- Interviewees in the Watson Lake area felt that white-tailed deer should not be open to hunting.
- A few comments suggested that the deer season could run later than November so that tick infestation could be measured, tracking snow could be assured, or, so that hunters could still hunt the rut if the rut were late.
- Several respondents commented that deer population studies should be carried out now that hunting was occurring.
- One comment was received that the lack of First Nations hunting data severely handicapped the evaluation of the hunt.
- Several First Nation resource managers indicated that many First Nation hunters are not aware that they can hunt deer, and that there needs to be more information to First Nation families about the rules related to hunting deer.
- One renewable resources council expressed concern that white-tailed deer

were too few in number to be hunted, and that the synopsis should request that hunters refrain from taking white-tailed deer.

Other concerns, not specifically about the hunt, fell into two themes. The first was related to safety of people driving. These interviewees related experiences of collisions or near collisions between their vehicles and deer on the highway. The second theme related to dogs chasing deer, especially in farm areas where deer get trapped by fences.

Mule deer distribution and population trends

Areas of mule deer abundance

The largest concentrations of mule deer in the territory occur:

- around Whitehorse, especially in agricultural areas along the Takhini Hotsprings Road, Takhini River Rd. and north along the Klondike Highway to Lake Laberge and beyond;
- along the roads linking Teslin, Atlin, Carcross, and Tagish;
- around Carmacks in all directions, as far as the grassy hills extend; and
- around Haines Junction and along Kluane Lake as far as Destruction Bay, especially along the roads.

There are also established populations around Watson Lake and Ross River. Mule deer are very scarce in the Beaver Creek, Dawson and Mayo areas.

These evaluations were synthesized from interviews with all 8 categories of interviewees and they are confirmed by the statistics on the hunter kill and the information on deer mortality from highway collisions

Mule deer population trends

Deer numbers are almost certainly increasing around Whitehorse. Their numbers are probably increasing or stable around Carmacks, Haines Junction, Watson Lake, and Teslin. However, opinions on population dynamics varied considerably within interviewee categories in most regions. For example of the 9 interviewed landowners from around Whitehorse, 4 thought the regional population was increasing slowly, 2 thought it was a "major" or "dramatic" increase , and 3 believed it was stable.

The area around Carmacks is certainly the most complex area in terms of estimating the trend in the mule deer populations. Deer are clearly abundant there, but reports vary considerably on whether numbers are increasing, decreasing, or stable. Hunting by First Nations hunters, collisions with vehicles and predation by wolves and cougars have all been noted there.

White-tailed deer distribution and population trends

White-tailed deer do not appear to be abundant anywhere. While some respondents reported seeing isolated white-tailed deer in various locations at rare intervals in the past, there do not appear to be established populations anywhere. The

majority of interviewees had never seen a white-tailed deer; for example 5 of the 18 hunters (28%) reported having seen white-tailed deer in the Yukon in the past, but none while hunting in 2006 or 2007. The exception to this statement may be the Watson Lake area where the conservation officer believed that there is an established small population of white-tailed deer that may be increasing, and both land owners in that area reported recently seeing white-tailed deer. A long term resident estimated about 20% of the deer seen in the Watson Lake area are white-tailed.

There was doubt in the contractor's mind that certain interviewees who had reported seeing white-tailed deer could reliably distinguish between white-tailed and mule deer. Some suggested that they knew they had seen white-tailed deer because they were smaller in size, which is not a valid criterion.

Predation on deer

Some respondents believed that deer are concentrating in developed areas, for example agricultural areas, forestry blocks, and rural residential areas for protection from predators. One interviewee reported seeing the remains of dozens of deer killed by wolves at Kusawa Lake. He noted that wolves are especially effective at killing deer when they can drive them out on the ice of the lake. This tactic was also reported seen on Lake Laberge. Two landowners reported examples of multiple deer kills on their own land; e.g. "Wolves killed a minimum of 10 deer in 3 weeks in February - March 2005 just on my land". Several interviewees from different regions believed that wolf predation was particularly severe in deep snow conditions and that multiple kills in small locales occur under those conditions.

Sightings of cougars have been increasing in recent years, which could be an indication that deer populations are increasing. Cougar sightings and evidence of cougar predation on deer were mentioned by interviewees from Watson Lake, Carmacks, Destruction Bay, and Whitehorse.

Deer killed by collisions with vehicles

There are between 25 and 35 deer reported killed in motor vehicle collisions, primarily along the following road sections. Collisions with deer on other roads are very rare. The estimates of kills include:

- Alaska Highway south of Whitehorse (Whitehorse to Jakes Corner), 2–3 deer killed per year;
- Alaska Highway east of Haines Junction (Whitehorse to Haines Junction), 5–6 deer killed per year;
- Klondike Highway km 80 – 156 (BC Yukon Boundary to Carcross cut-off), 8–12 deer killed per year;
- Klondike Highway near Carmacks, 3–4 deer killed per year south of town, 1–2 killed north of town;
- Klondike Highway km 192–256 (McPherson subdivision to north end Fox Lake), 5–6 deer killed per year; and
- Alaska Highway from Teslin to Jakes Corner, 1–2 deer killed per year.

Recommendations from interviewed individuals, groups and the contractor

Interviewees recommendations fell into 6 themes, listed in order of frequency.

1. The number of permits should be increased and allocated geographically to ensure the dispersion of hunting effort.
2. No change is required to the deer hunt season or permit hunt administration system.
3. The problem of deer hunters' difficulty of finding a place to hunt in areas of high residential density (mostly around Whitehorse) can be addressed by issuing bow hunting permits in conjunction with modifying the hunting regulations to allow bow hunting (as opposed to firearms hunting) in close proximity to occupied dwellings.
4. Steps need to be taken to ensure that permission to hunt deer on First Nation settlement land can be granted.
5. A mule deer population study needs to be done in order to develop harvest allocations based on scientifically based population estimates.
6. Reliable estimates of First Nation deer harvests must be obtained.

Based on the information on deer distribution and population trends, the contractor, George Calef, suggested the following number of permits in different areas:

- 5–7 permits in the Haines Junction-Kluane Lake region;
- 4 permits in the Kusawa Lake area;
- 10 permits in the Whitehorse-Takhini Valley area north to Braeburn;
- 5 permits south of Whitehorse, including the roads connecting Teslin, Atlin, Carcross, and Tagish;
- 5–7 permits in the Minto - Carmacks - Faro region;
- 0–5 permits in the Watson Lake area, to be determined after discussion with the community; and
- an unlimited number of permits be available over-the-counter for bow hunting in the Whitehorse area.

The Yukon Fish and Game Association, based on the consultation with their members and review of a draft of this document, believe that the population of mule deer warrants some additional permits being issued. It is the Association's wish that youth be provided a certain number of the additional permits as their first entry into big game hunting. In addition, the Association believes there is an opportunity for increased bow hunting opportunities closer to residences. Most members were quite happy with the hunt and seasons but in view of the number of mule deer observed, recommended more consideration of additional permits.

One reviewer recommended a program to count pellet groups along transects in a few different areas each spring to inexpensively monitor trends. Funds for deer density monitoring could be obtained from a draw for a deer permit given to the Yukon Fish and Game Association. This reviewer noted the precarious status of white-tailed deer (outside of the Watson Lake area) and recommended changes in hunt administration to prevent harvesting white-tailed deer.

Assessment

The Fish and Wildlife Branch did not identify any concerns raised in this assessment that warrant cancelling the hunt or altering any of the rules or procedures administering the hunt that would reduce opportunities. This means that there will be no proposals from the Department to reduce deer hunting opportunities, and the same hunt administrative arrangements will continue unless proposals from other sources are recommended by the Yukon Fish and Wildlife Management Board and accepted by the Minister.

Deer population studies involving airplanes, helicopters, and radio collars do not yet rank highly enough on the Fish and Wildlife Branch priorities to warrant dropping or delaying studies on other species, habitats or systems. As long as the hunt is small, the risks are assumed to be small, and the need for technical studies is not acute.

Because the need for information will become more acute as the harvest and the associated risk of unintentional over harvest increases, the Department will need to balance the benefit of the increased opportunity to hunters with the cost of the technical studies to provide information to ensure the deer hunt is sustainable. The increase in hunting opportunities is not without cost.

There is a prevailing view among many interviewees and biologists that the numbers and range of both deer species will continue to expand with expected increases in rainfall and temperature, and as landscapes change with wildfires, farming, forestry and right of ways. Adaptation to these changes may mean that we respond to new harvest opportunities. This small trial hunt and this assessment demonstrate that many Yukon hunters are interested in an opportunity to hunt deer, and that this hunt can occur adjacent to farmed areas with minimum conflict. It also appears that more First Nation families are harvesting deer than had been expected.

The interview-based research method yielded generally credible, useful, and relevant information, even if the sample sizes were small. The Department will secure comments on the design of this study from a range of audiences, and will apply a similar study design to future hunt reviews. Some of the variations in questions and topics between groups identified in Table 1 probably need scrutiny and adjustment. Greater standardization of interview guides and prompts will increase the consistency of questioning between interviewers, and will encourage more complete examination of concerns. Greater attention to informed consent is needed.

Next steps - 2008

The Department will continue the requirement for hunters to submit the antlers and skull plate and incisor bar for inspection, so this provides an on-going opportunity to discuss sightings with most of the hunters.

The 2008 package of information and other orientation for deer permit holders should include 3 additions that reflect concerns raised in the study.

1. Hunters should be requested to avoid taking white-tailed deer. Numbers are

certainly small.

2. Hunters should be requested to obtain permission to hunt on private lands, and written permission to hunt within one kilometre of a dwelling. (This seems simple, but often it is hard to know if there is a dwelling nearby, if a structure is a 'dwelling', if there is a second and third dwelling within a kilometre, and where a person could locate the owner(s) to get the letter of permission.) There is no legislation in the *Wildlife Act* or other acts or regulations that we are aware of in the Yukon that deal with trespassing, so there is no option to regulate this. The Hunter Ethics and Educational Development program for new hunters already includes content related to acquiring permission to cross fences and hunt on private lands, and excluding hunting within a kilometre of dwellings without permission of the occupants.
3. Deer hunters should submit sighting reports so that the Department can track buck to other deer ratios at a minimum, and hopefully buck: doe: fawn ratios in order to have some information on composition in particular areas.

Issues raised that require further discussion

Increases to the number of permits that would distribute the harvest to areas outside the Takhini River Road and the road beside Lake Laberge proposed by the contractor will be discussed with First Nation governments, renewable resources councils and other groups. If these groups support these changes the Department and the Yukon Fish and Wildlife Management Board could consider some alterations to the schedule of permit numbers in the schedule in the regulations. However, it is not likely that the discussions will be completed in time for the 2008 hunt. Hunters applied for the permits before June 20.

Proposals to expand bow hunting opportunities for deer and to have special permits or no permits for bow hunters in some areas will need some discussion. There is already a distinct sheep permit area exclusively for hunters who wish to use bows, and about a dozen hunters apply for these annually. The Department collects no information on whether hunters kill animals they submit with a bow or rifle except for GMS 9-03 which is bow hunting only. The Department and Board have not considered promoting bow hunting but the reduced risk of stray rifle fire in or near developed areas is an important consideration, particularly in the deer hunt.

Interviews with the First Nation government resource managers indicate there is a continuing need to develop awareness of subsistence deer hunting rules for First Nation hunters. It may be unwise to increase deer hunting in areas where there is known but unreported harvest by First Nation hunters, until First Nation resource managers have reliable estimates of this hunting.

The ratio of antlered to non-antlered deer based on hunter sightings (as generated in this study) may be a useful statistic to monitor each year. Options for other inexpensive monitoring options need to be discussed.