Our Wildlife

News from the Wildlife Division

Photos: Mike McGrath

Department of Environment & Conservation, Natural Heritage Branch

Autumn 2010 Issue 6

Harvest providing valuable insight into coyote ecology

The consistently high percentage of pups in the harvest relative to other stable coyote populations; the high percentage of pups and yearlings producing litters relative to other stable coyote populations; the increasing snowshoe hare population; and the relatively large amount of moose carrion available to coyotes all indicate the coyote population in Newfoundland will likely continue to increase. ***By Mike McGrath, Marlene Dredge, Rick Curran & John Reynolds***

Since their arrival in the mid-1980s, eastern coyotes have expanded their range and distribution so that they now occupy all parts of insular Newfoundland and all habitats including forests, heathlands, and subalpine areas. They have also occasionally been reported from Labrador.

The ecology of coyotes and their impact on native wildlife is an area of primary interest, and a number of avenues of research are currently being explored to shed light on this topic.

Newfoundland is unique from other parts of North America in that coyotes have access to high densities of moose (carrion) and caribou in the absence of wolves. Predicting the role of coyotes in the ecosystems of Newfoundland therefore requires additional research, including eliciting the support of hunters and trappers to provide coyote specimens for analysis.

These specimens are being thoroughly analyzed in order to evaluate the diet, age structure, sex, body condition, and reproductive output from an eco-regional perspective.

Coyotes are not as large as you think

Coyotes have thick, long coats and relatively long legs, which makes it easy to significantly overestimate their weight. While it is true that eastern coyotes are about 10 lb heavier than their western cousins, they are still only about half the weight of wolves.

The Wildlife Division has carefully analyzed the whole weights of almost 300 adult coyotes submitted by hunters and trappers. Another 2,000 animals (not whole) that were greater than 2.5 years old were excluded from this analysis.

The whole weights of adult coyotes averaged 12.8 kg (28.2 lb) and 15.0 kg (33.0 lb) for females and males respectively. The heaviest coyote on record was 22.9 kg (52.6 lb), with only four out of 290 (1.4%) adult coyotes weighing more than 20 kg (44 lb). These weights are similar to other eastern coyote populations.

High potential for reproductive output

The Wildlife Division monitors coyote litter size by counting placental scars in the reproductive tracts of harvested females. Each placental scar indicates where a fetus was attached. The number of placental scars indicates the number of pups produced.

Litter size tends to increase with the age of the female with the average litter size peaking at eight pups for the four-year-old females. The size of individual litters can range between two and 12.

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Reproductive tract showing placental scars

Placental scar and fetus counts

Photos: Mike McGrath

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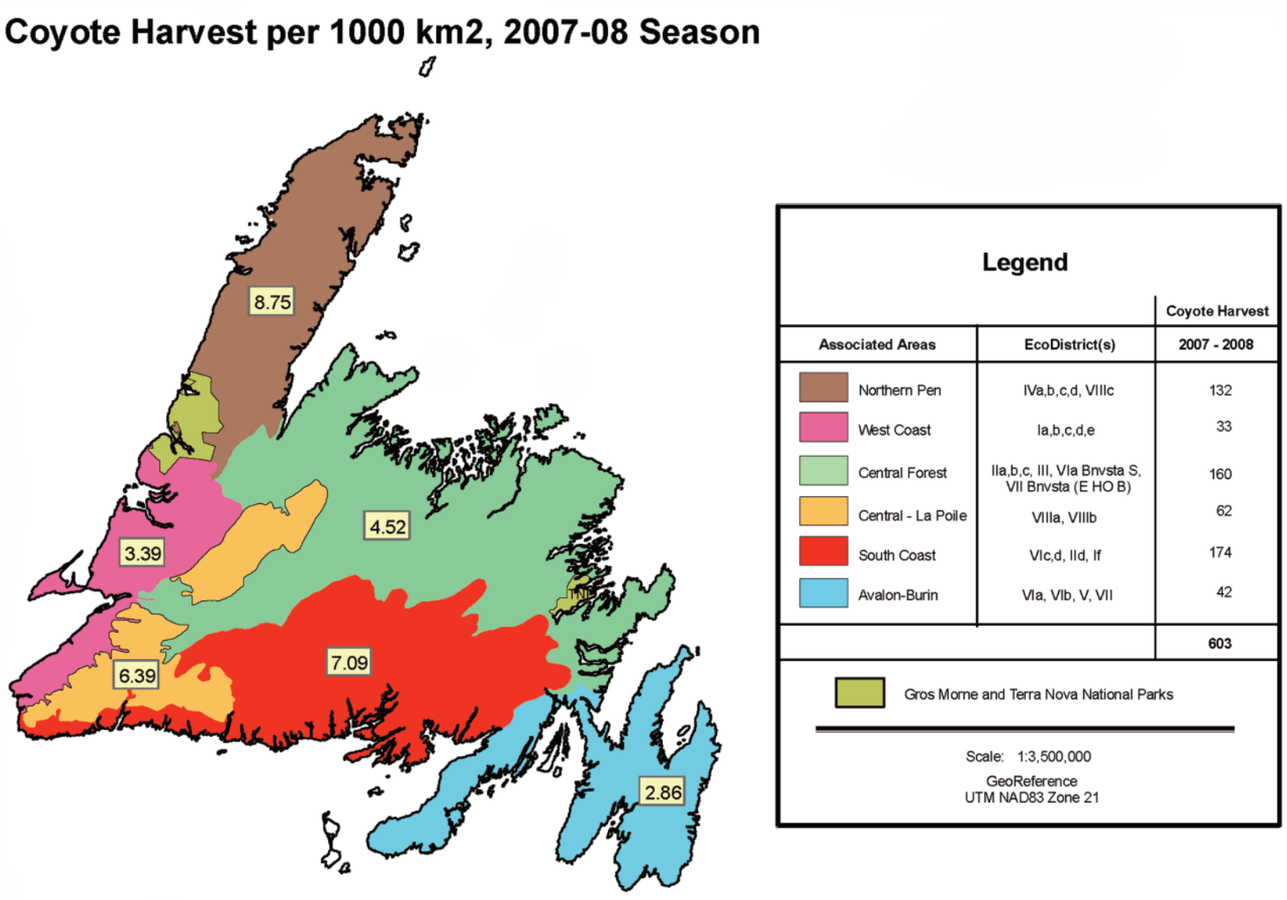
Not all females reproduce. Our information suggests that in Newfoundland, on average 60-70% of all adult females produce litters in any given year. Of particular note is the fact that 10% of our female pups and 31% of our female yearlings are being bred and having litters on their first and second birthdays respectively. In other areas where coyote reproduction is studied, reproductive output increases dramatically as the harvest rate and/or prey abundance increases. The Wildlife Division is continuing to monitor litter sizes to track any long-term changes in reproductive output.

Where are coyotes being harvested?

Hunters and trappers have been providing valuable information about where they are harvesting their animals. An important aspect of this analysis is to categorize the harvest from an eco-regional perspective. The island is divided into broad categories: Northern Peninsula, West Coast Forest, Central Forest, Central-La Poile (Southern Long Range Barrens), Southcoast Barrens and Avalon-Burin. The harvest per 1,000 km^2 indicates a tendency for a higher harvest on the Southcoast Barrens. In addition the number of coyotes harvested in the forested eco-regions, especially on the Northern Peninsula, is increasing, likely as a result of recent increases in snowshoe hare abundance in these areas. The lowest harvest densities occur in the Avalon-Burin; however it is expected harvest will increase as coyote numbers increase in this area.



How many coyotes are harvested?

Accurate harvest data is very important in the development of harvest management strategies.

Although the coyote harvest has increased dramatically in recent years, our harvest numbers are modest compared to other jurisdictions. Provinces in central Canada measure their harvest in the tens of thousands; in Newfoundland, we still measure our harvest in the hundreds.

Prince Edward Island has a similar harvest to Newfoundland, even though that province is 1/20th the size of Newfoundland. Our relatively low harvest is likely a result of low coyote densities compared to other jurisdictions.

Photos: Mike McGrath

Who is harvesting coyotes?

Trappers are responsible for most of the coyote harvest. Although coyotes can be harvested on Big Game and Small Game licenses, very few animals are taken on these licenses. An increasing number of coyotes are being harvested by coyote-specific license holders.

How old are harvested coyotes?

The ages of all harvested coyotes are estimated by counting cementum anuli layers on sections of their teeth, as one would age a tree by counting growth rings.

Although they can live to be 15 years or more in this province, the age structure of the harvest indicates about 90% of our coyotes are 3.5 years or less.Most coyotes harvested consist of pups less than one year old, indicating a relatively high reproductive output in combination with the higher vulnerability of young coyotes to harvest.

Photo: John Neville

Coyotes are primarily surviving on moose (carrion), snowshoe hare, and caribou

Studying the coyote's diet is important to understanding the ecology of this species in Newfoundland and Labrador. More than 2,000 coyote specimens were submitted by hunters and trappers over the past seven years, providing much information about their diet.

A wide variety of food items have been identified in the stomachs of coyotes, including voles, shrews, red squirrel, berries, various birds, insects, farm animals, seal, fox, black bear, and garbage, to name a few. Of particular interest is the fact that approximately 80% of their fall and winter diet consistently consists of various combinations of just three species: moose (carrion); snowshoe hare; and caribou.

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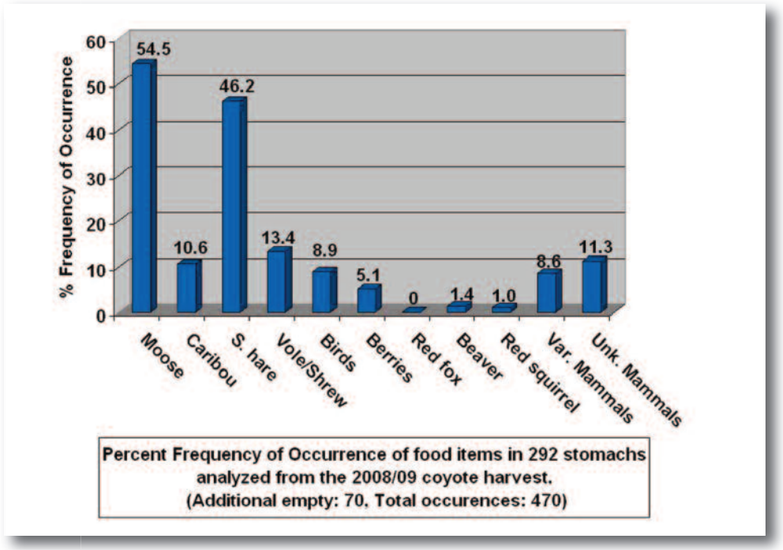
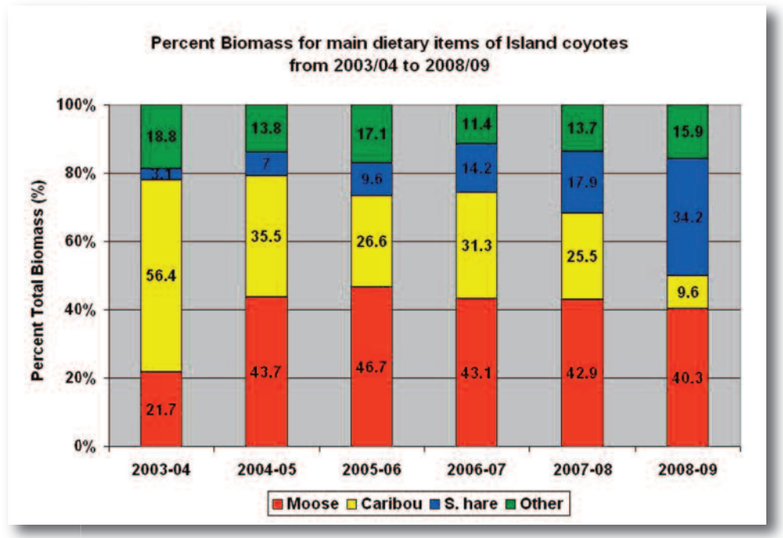
The following trends have been identified in the dietary analysis:

• The importance of caribou in the diet increases from fall to winter, likely as a result of their increasing vulnerability to predation in winter. The importance of caribou is declining in recent years and is being replaced primarily by an increase in the importance of snowshoe hares. Coyotes are thus adapting to changes in prey abundance in recent years by shifting away from caribou as that species' numbers decline, and focusing more on snowshoe hares as hare numbers are increasing.

• Moose carrion is consistently important in all areas and all years, and makes up more than half the fall diet and about 25% of the winter diet. Moose is primarily being consumed as carrion, judging by the type and condition of the body parts found in the stomachs of coyotes. Moose are important due to the high biomass of carrion available through hunting and natural mortalities.

As snowshoe hare populations are likely to continue to increase over the next few years, their importance as prey for coyotes, as well as the number of coyotes inhabiting primarily forested eco-regions, are also expected to continue to increase.





Top: Percent frequency of occurrence of food items in 292 stomachs analyzed from the 2008-09 coyote harvest. (Additional empty: 70, total occurrences: 470). Bottom: Per cent biomass for main dietary items of Island coyotes from 2003-04 to 2008-09. Left: Stomach contents are identified by species and weighed separately. Prey items are identified through macroscopic and microscopic analysis. Mammalian prey identified to species through microscopic hair. ***Photo: Mike McGrath***

The Wildlife Division would like to thank the hunters and trappers of this province for their continued support in providing important information about coyotes. This information is actively being used to develop effective management strategies for this species.

Living with coyotes in Newfoundland & Labrador

Our forests and barrens are home to many animals. Unless we intentionally seek them out, some people can go a lifetime without being aware of their presence. As long as humans and wildlife respect each others' boundaries, conflicts can be avoided – but we all have to do our part to make sure we don't encourage behaviour that could cause problems for wildlife.

Are coyotes dangerous?
Like most animals, coyotes usually have a natural fear of people, but they also possess natural intelligence and can quickly get used to life in residential areas as long as they have access to food that's free for the taking. Although attacks on humans are extremely rare, they can occur if a coyote becomes too comfortable around people and starts associating humans with food.

Coyotes near your home, cabin or campsite:
• Never leave edible garbage or pet food outside.
• Limit use of birdseed, and pick up fallen fruit.
• Keep pets indoors, or under supervision when outside.
• Have pets spayed or neutered.
• Never attempt to tame a coyote by feeding it.
• Contact a Conservation Officer or other authority if you are having a problem with a coyote.

Photo: Jim Robertson

Coyotes in the woods:
• Watch for signs of coyote such as tracks or scat.
• Make your presence known; make noise as you walk: talk, sing, blow a whistle or call out.
• Keep dogs leashed. Dogs running loose can lead a coyote back to you or provoke an attack.

If a coyote approaches you:
• Stop, remain calm and assess your situation.
• Never approach or crowd the coyote — give it an escape route.
• If the coyote seems unaware of you, move away quietly.
• If the coyote is aware of you, respond aggressively: wave your arms, shout, and maintain eye contact. Carry a whistle and blow it to startle the animal.
• Throw rocks or sticks at the coyote.
• Carry a walking stick for protection.
• If the coyote continues to approach, back away slowly and move toward buildings or human activity. Do not turn away or run.
• If the coyote attacks you, fight back.

For more information, please contact:
Environment & Conservation
(709) 637-2025
www.env.gov.nl.ca

Ursus americanus

BLACK BEAR

Black bears are native to Newfoundland & Labrador. *They are part of the Ursidae family, which includes grizzly and polar bears. Black bears were once widely distributed across North America, but now occupy only 60 per cent of their former range, and in Canada, have been extirpated from the most southern parts of the country.*

Photo: Gerard Leonard

Facts About Black Bears

Description

Adults are approximately 150 cm (5′) long, with shoulder height varying from 100 to 120 cm (3-4′). Males weigh about 90 to 135 kg (200-300 lb), although weights of more than 290 kg (640 lb) have been recorded. Females are much smaller than males, averaging 50-80 kg (110-180 lb).

Black bears have bulky bodies with a moderate-sized head; tapered, brownish muzzle and long nostrils; rounded ears; small eyes; and short tails. Coats are usually black, occasionally with a white patch on the throat or chest. Feet are furry with five curved, non-retractable claws used for digging and tearing out stumps or roots.

Black bears have poor eyesight, but keen senses of smell and hearing. Though they appear to shuffle when they walk, black bears are fast runners, able to reach speeds of 55 km/hour. They are also good swimmers and climbers.

Range & Population

Newfoundland and Labrador's black bears roam large territories, though they do not vigorously defend these areas from other bears. Males have traditionally had home ranges upwards of 200 km^2 or more, while female black bears have home ranges of approximately 60 km^2. New studies indicate these ranges may be even larger.

Black bears prefer heavily wooded areas and dense bush. Bears in wilderness areas are usually most active from dawn until dark, while bears living in closer proximity to humans are more nocturnal.

There are no reliable estimates of the total black bear population in North America because of the animals' secretive nature, but populations are believed to be about 600,000, with more than 380,000 in Canada.

Research is underway in Newfoundland and Labrador to create a Black Bear Population Index that would give a better understanding of the province's black bear numbers.

Denning

Black bears make their dens in caves, burrows, brush piles, or other sheltered spots.

Dens can accommodate one adult male bear, or an adult female and her cubs. Black bears are not true hibernators, but spend the winter dormant in their dens. When inactive, their heart and breathing rates are reduced; they do not need to eliminate waste; and they are able to survive on fat reserves. Males may lose 15-30% of their body weight, while reproductive females may lose up to 40%.

Photo: Jason Foster

Bears may wake up during this period, especially if outdoor temperatures rise, and have been observed outside their dens in winter.

Breeding

Black bears are generally solitary animals. Breeding occurs in June or early July. Bears experience delayed implantation: embryos stop growing a few days after fertilization and do not implant in the uterus or begin to develop until the beginning of the denning period in early November. Female bears usually only breed every second year, and cubs are born in a mother's winter den in mid-winter.

Cubs are 15 to 20 cm (6-8″) long and weigh slightly more than 225 g (0.5 lb) at birth. Young bears grow rapidly and are quite active by the time they leave the den with their mother in the spring.

At one year old they weigh from 13 to 27 kg (28-60 lb). Cubs remain with their mother until they are about 16 months old. Young bears reach sexual maturity between the ages of three and five. Cubs have an 80 percent chance of surviving to adulthood, but only a 30 per cent chance if orphaned.

Diet

Bears emerge from dens in early spring and begin searching for food such as grasses and succulent plants, carrion, berries, fish, small mammals, birds, and garbage. Bears are often attracted to garbage dumps, campsites, or homes where food is readily available. In spring they are known to prey on moose and caribou calves.

With adequate food availability, a bear's weight may more than double between August and November. Adults may gain as much as one to two pounds per day, with a daily calorie intake requirement of approximately 20,000 calories - the equivalent of 60 hamburgers.

Lifespan

Bears have been known to live for up to 30 years, but their lifespan is usually less than 10 years. The main cause of black bear mortality in Newfoundland and Labrador is regulated hunting.

Outdoor Safety & Survival

Knowing how to be safe and to cope with emergencies is essential for hunters and trappers. Before you head out this fall and winter, take some time to refresh your knowledge on these subjects and examine your field gear to make sure it is in good working condition. ***By Jason Foster***

Hunting & Trapping Tips & Reminders

Survival refers to the ability to cope with an emergency situation that occurs in the outdoors. Basic survival techniques should be learned and practiced by every outdoorsperson, including hunters and trappers before exploring our woods and waters.

Planning an outdoor adventure from start to finish is essential. Keep in mind the three "P's" of outdoor safety:

1) Plan your trip. Good planning ensures you will be safe and productive. What will the terrain be like? What is the weather going to be? What if a storm sets in? Plan for contingencies.

2) Prepare yourself. Ensure you are mentally and physically prepared for the hunt. Know your health and fitness level, take a first aid course, prepare a first aid and survival kit and know how to use the items in them. Bring along medications you may need should you end up in the country longer than you expected.

3) Practice safe behaviour. Consider the possible effects your field activities can have on others. Ensure equipment is in good working order. Travel with a dependable partner.

Leave a trip plan with a responsible individual that contains the following information:

- Departure and arrival times
- Destination
- Vehicle description
- Who is going
- Method of travel
- Cell phone number
- Gear you will be taking

Should you become lost, remember the **STOP** principle. It will help you to respond to the situation appropriately. Getting lost can be a frightening experience, but remembering this principle will help you get through it unscathed.

STOP as soon as it is apparent that you have become separated from your group, are lost, or are in trouble. Further attempts at travel usually reduce your chances of survival.

THINK things over carefully. Survival depends upon rational behaviour and the will to survive. The natural response to being lost is fear verging on panic. Anxiety is the greatest danger!

OBSERVE and assess your gear and clothing carefully. Make noise and make it easy for people to see you. Three signals such as mirror flashes, yells or whistle blasts constitute the equivalent of "SOS". Blaze orange or other bright clothing can be used as a signal.

PLAN and prepare a shelter at least three hours before dark. Staying warm and dry is essential to avoid hypothermia. Build a shelter, gather insulation and collect fuel for a fire.

Ensure you have enough fuel for your fire to last the night. Know how to build emergency shelters and how to use the materials in your survival kit. Find a source of water and keep yourself hydrated.

Chances are if you head into the field well-prepared, know how to use your equipment, and leave a trip plan with someone who will be watching for your return, you will return safe and sound should you run into unexpected emergencies.

As hunters and trappers head out for the 2010-11 season, these tips will help ensure a safe and enjoyable autumn, as well as ethical conduct in the woods:

- Familiarize yourself with municipal, provincial and federal regulations that apply to trapping, hunting and firearms. Always practice safe gun handling.
- Be sure of your target before you shoot. Never shoot at private property such as electrical equipment, which can result in power outages, personal injury, or even death to yourself or others.
- Access private property only with the landowner's permission.
- Respect other outdoor users in areas you may be hunting, i.e. other hunters, hikers, berry-pickers or cabin owners.
- Cooperate with resource management agencies by completing licence returns and participating in other surveys when requested.
- Report illegal activity to your nearest Conservation Officer.
- Practice good stewardship by encouraging others to become ethical hunters and to care for the countryside in which they hunt.
- Ensure traps are set away from towns and recreational areas to avoid possible interaction with pets or humans.
- Only harvest the amount of game that you can use, and within legal limits..
- Take all garbage out for proper disposal, including empty cartridges and shells.
- Practiceshooting before heading into the field. Ensure your rifle is properly sighted in, and pattern your shotgun for different chokes and ammunition types. Know the effective range of your firearm.
- Shoot only when you have correctly identified your target and are confident of a quick, humane kill. Make every effort to retrieve wounded game.
- Ensure animal remains are disposed of out of sight of the traveling public, and avoid hunting from roads.
- Always wear bright clothing so others can see you while hunting, or if you become lost.
- Encourage others to take up the tradition of hunting.
- Always retrieve all traps and snares at the end of the season.
- Overall, avoid creating a negative image of trappers, hunters and firearm users.

Take some time to introduce someone new to hunting and trapping this year. Often people who are very interested in trying out these pastimes may not have someone to show them. You will find the experience of teaching them the skills you have learned to be rich and rewarding.

Have a fun and safe hunting and trapping season!

Photo: Wildlife Division

Youth Hunter Skills Event 2010

Promoting Youth Involvement in Conservation

Photos: Linda Skinner

By Jason Foster

Hunting and trapping are outdoor activities that have tremendous benefit to society and to long-term wildlife conservation management objectives. Encouraging youth participation and involvement in hunting and trapping is also important because it can help ensure people will continue to be involved in these activities in the future. Hunters and trappers play a key role in helping to assist in the management of hyper-abundant wildlife populations through regulated hunting and trapping.

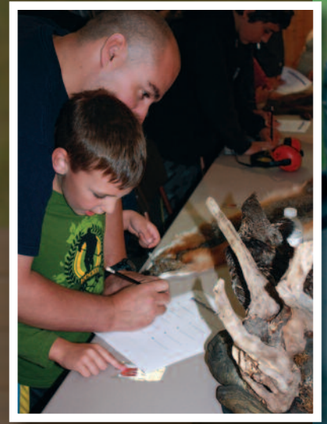
Information provided by hunters and trappers from annual licence returns provides valuable understanding of the health and status of many wildlife species and is used by wildlife managers to make many important decisions that affect other wildlife and the general public. By encouraging parents and their children to become involved in programs like the Youth Hunter Skills Event, it is hoped more opportunities will be created to contribute to wildlife conservation management objectives and to participate in the many wonderful experiences that our outdoors has to offer.

In 2010, the Wildlife Division hosted several youth events in partnership with provincial Rod and Gun Clubs. Each event was well attended and participants took part in activities including rifle and shotgun (trap and sporting clays) shooting, archery, conservation presentations, outdoor safety, wildlife ID challenges, and other fun games. Professional instruction was provided to all participants before beginning the events, and all were closely monitored throughout the day. There were also lots of prizes to be won courtesy of the many sponsors.

The first event of the 2010 season took place at the Gander Rod and Gun Club on May 1 and was very successful despite the snow, rain and wind, with 20 youth attending along with their parents or guardians (lots of hot chocolate and soup helped!) Stewardship biologists from the Division were on hand to give a presentation on the Town of Gander's involvement in the Municipal Wetland Stewardship Program.

The second event went ahead on May 29 at the Notre Dame Rod and Gun Club in Lewisporte. A mixture of rain, drizzle, wind and fog didn't hamper the enthusiasm of 30 youth who braved the elements and had a great day. Waterfowl conservation was a major topic at this event, and supported the Town of Lewisporte's efforts to become a wetland stewardship community.

The third event of the summer took place at the St. John's Rod and Gun Club, and again interest was high with 27 young people attending. This event has typically been held simultaneously with the Newfoundland Sportsman Trap Shoot, but for 2010 it was decided to hold it the day before because of growing interest and a desire by Club members and sponsors to spend more time with the participants, thus ensuring a top-notch educational experience.



Finally, the fourth event was held at the Upper Humber Rod and Gun Club on Aug. 7. Twenty-eight youth participated in four scheduled events, including archery, rifle, shotgun, and a presentation coordinated by the Bay of Islands Volunteer Ground Search and Rescue Team, with assistance from the Deer Lake and Bonne Bay Volunteer Ground Search and Rescue Teams.

Very special thanks go out to all the sponsors who made these events possible, as well as the youth who attended – we hope to see you out again next year!

More photos on Page 7

CBC's West Coast Morning Show paid a visit to the Upper Humber Rod and Gun Club to cover the Aug. 7, 2010 Youth Event in Deer Lake. **Click the links below** to listen to a report from each of the four stations:

Archery
Rifle Range
Bay of Islands Search and Rescue
Shotgun

Learning new skills in a safe, fun environment

Photos: Linda Skinner

FIRST SHOT! Devon Murrin, 10, trap shooting for the first time.

Youth Shoot 2010








Photos: Linda Skinner, Nathan Spence, Charmaine Barney

Garter Snake population confirmed in insular Newfoundland

Recent reports of snakes being seen from Robinsons to Maidstone in western Newfoundland were followed by the capture of a gravid female Common Garter Snake (Thamnophis sirtalis) this August in St. David's. The snake measured about two feet in length and, after being transferred to Salmonier Nature Park, gave birth to numerous young. No population of snakes had been previously documented in Newfoundland and Labrador. ***By Bruce Rodrigues***

Native to Canada, the garter snake occurs naturally in all other provinces and the southern portion of the Northwest Territories. Any individuals found in insular Newfoundland would have been directly or indirectly brought to the island by people. Some indirect pathways of introduction include imported timber, building material, animal feed, soil, and other material. A small population of these animals has survived in St. David's and surrounding areas through at least one winter and likely more.

Garter snakes can be extremely variable in colouration and pattern. Spots or stripes can be the predominant pattern. Colour can vary from brown, grey or yellowish, and some individuals can be all black. Adults are typically 46-70 cm long. Newborn garter snakes are generally greenish-grey and average about 10 cm long.

Garter snakes mate shortly after leaving denning spots in the spring. Gestation is two to three months, and six to 40 young are born sometime between early August and mid-September. Young are independent upon birth.

Garter Snake captured in St. David's in August. *Photo: Bruce Rodrigues*

This snake eats a variety of animals, particularly earthworms, small fish, frogs, and rodents, but their diet can also include birds, bird eggs, and insects. In some areas the Meadow Vole (*Microtus pennsylvanicus*) can be important prey.

If disturbed a garter snake may try to bite or, if handled, smear a predator or person with an unpleasant smelling secretion from a gland near the anus. Garter snakes do produce a mild neurotoxic venom, but the bite is considered harmless to humans. No serious injury has ever been reported from garter snake bites, and symptoms usually are no worse than mild swelling or an itching sensation.

Garter snakes can be found in a variety of habitats including woodlands, meadows, marshes, along streams and waterbodies, gravel pits, farmland and abandoned buildings. They are also excellent swimmers.

Garter snakes are more active during the day and may be seen basking in the sun to regulate body temperature. In winter, the snakes often den up in rock outcroppings or fissures in the ground beneath the frost line, sometimes by the thousands. Road embankments, mammal burrows and basements of old buildings are also common hibernacula.

The garter snake is certainly not the first species to be introduced to the province. In recent years individuals of another non-native species, the Common Snapping Turtle (*Chelydra serpentine*), have shown up near a few communities in Newfoundland and Labrador. Likely these were picked up in the wild from elsewhere in Canada and kept for pets. When too big or no longer wanted, they were released. Snapping Turtles are considered invasive in some places and are capable of altering natural ecosystems. Luckily, at this time, we have no indication that any populations of these turtles have established.

There are a number of risks associated with the introduction of a new species to an area where it does not naturally occur. Exotic animals and plants can introduce disease, prey upon or out compete native species, dilute native gene pools, lead to economic losses and result in ecosystem changes that only become evident years after the initial introduction. For these reasons, both importing and releasing animals into the province are illegal under the Provincial Wildlife Regulations (as under section 83 and 84 of the Wildlife Regulations, Consolidated Newfoundland and Labrador Regulation 1156/96), unless the animal is listed under Schedule B of these regulations.

The Wildlife Division will continue to work with the Department of Natural Resources in St. Georges office and local community to monitor for snakes in the area. The captured snake will remain on display at Salmonier Nature Park.

Sightings of unusual species can be reported directly to the Wildlife Division at (709) 637-2025 or to the nearest Department of Natural Resources forestry office.

Running with Stewardship

The small town of Hawke's Bay on the Northern Peninsula is doing big things in stewardship. By signing a Municipal Wetlands Stewardship Agreement with the Province of Newfoundland and Labrador in 2008, they have secured 1,880 acres of land from development and will influence activity on 3,675 acres within the town boundaries. **By Heather Chaffey**

Hawke's Bay residents are well on their way to implementing stewardship in their community. From taking part in workshops offered by the Department of Environment and Conservation, to organizing their own children's camp about wetlands, they are taking stewardship and running with it.

The Wildlife Division, on behalf of the Eastern Habitat Joint Venture (EHJV), presented a Habitat Conservation Plan to the town of Hawke's Bay in March 2010 to help the town implement its stewardship agreement. After the town signed the plan, stewardship and wildlife biologists Charmaine Barney and Heather Chaffey returned to Hawke's Bay for a full day wetlands workshop.

Regina Rumbolt, site manager for the town's Torrent River Salmon Interpretation Centre, helped organize the successful event, which also included 12 participants from Parks Canada, the Town of Hawke's Bay, the RED Ochre Regional Board Inc., the Torrent River Nature Park, and the Salmon Interpretation Centre. The interactive workshop included an overview of wetlands and why they are important, habitat enhancement strategies, bird identification, waterfowl monitoring, and a demonstration of educational resources.

Participants took part in running the activities using the resources provided to practice teaching wetland concepts. The workshop was enjoyed by all, and participants found what they had learned to be very useful for their own workplaces.

Stemming from this, Regina planned a children's summer program focussed on wetlands run out of the Salmon Interpretation Centre. The centre applied for funds from Nalcor Energy to help with this endeavour, and received $300. Summer students Ashley Baker and Nikita Penney keenly and wholeheartedly developed a fun, educational program called "Get Wild with Wetlands" which ran every Thursday afternoon from July 8-Aug. 14 for children aged 5-10 from Hawke's Bay.

In "Get Wild with Wetlands," children learned a wetland pledge they rehearsed every day; explored the outdoors, learning about living and non-living components of wetlands; built a model of a wetland; and learned why and how to protect wetlands. The children began the program as "Junior Conservation Officers" and graduated at the end of the program to "Certified Wetland Protectors."

"It is very important to educate children at a young age on the importance of protecting and preserving the environment," said Regina. "By taking part in this program, they have a great foundation to build upon as they grow and develop into young adults."

Each afternoon was structured with an opening game, a field excursion, a lesson, and then an application activity. All activities were based on the lesson of the day, including the snacks: a lesson on "Worms in Dirt" resulted in a delicious treat of gummy worms in chocolate pudding with crushed Oreo cookies.

Parents, relatives, representatives from Parks Canada, the Town of Hawke's Bay and the Wildlife Division joined the children on the last day of the program to celebrate their achievement in being promoted from Junior Conservation Officers to Certified Wetland Protectors. The children received certificates and hats from the Department of Environment and Conservation, and posters of a Stewardship Bus that they all boarded by signing their names. They also received T-shirts from the Salmon Interpretation Centre displaying a logo they created, reminding them to "Observe, Conserve and Preserve Wetlands."

The goal of the summer "Get Wild with Wetlands" program was to work with children to increase public awareness of Hawke's Bay's Municipal Wetlands Stewardship Agreement. Hawke's Bay has achieved this goal and reached beyond by educating the future of the town. Responsibility to future generations is among the most compelling reasons a town has for signing a Stewardship Agreement and carrying out a Conservation Plan. Next year the Salmon Interpretation Centre plans to run a similar program, perhaps aimed at children a little older.

Twenty-five other communities in Newfoundland and Labrador have signed Stewardship Agreements with the province. All are implementing their own Conservation Plans and are working to increase stewardship within their communities. Hawke's Bay is an example of a model community moving forward in conserving wetlands that benefits their community now and for the future.

Observe, Conserve and Preserve Wetlands

Get Wild with Wetlands

Top left: Children making their own "take home version" of a model wetland. Right: Hawke's Bay Stewardship Sign displayed outside of the Torrent River Nature Park Information Centre. Centre, left: Environment and Conservation Minister Charlene Johnson signing Hawke's Bay's Stewardship Agreement with Mayor Lloyd Bennett and Don Brown. Right: Abigail Caines, a "Get Wild with Wetlands" participant, proudly displays her wetland creation. Bottom: The group in front of the Stewardship Bus with their T-shirts and hats. Front: Lauren Lowe, Angel Mitchelmore, Caitlyn Lowe, Cole Rumbolt. Centre: Kalan Mitchelmore, Abigail Caines, Chloe Roberts. Back: Regina Rumbolt, Nikita Penny, Ashley Baker, Charmaine Barney. *Photos: Charmaine Barney and eather Chaffey.*

Unforgettable! "If I could only use one word to describe my summer job, it would be:"

By Glenda Bateman

Photos by Emily Herdman & Susan Squires

This summer, I worked for the Endangered Species & Biodiversity section of the Wildlife Division. Although this was my first time working with members of the section, it was not my first encounter with them. The previous summer I assisted in a study conducted on *Myotis septentrionalis* (Northern long-eared bats) on the Great Northern Peninsula. This summer, I was fortunate to work directly with the members of this section. It took me about 20 minutes on the job to realize I was in for an experience that I couldn't have gotten anywhere else.

Boreal Felt Lichen Monitoring: My 12 weeks were filled with countless new and exciting learning experiences. My first field project was monitoring boreal felt lichen, a vulnerable species, near Conne River with one of the Wildlife Division's biodiversity ecologists. We first found a tree that had been surveyed in 2009, then catalogued all the lichen on each tree. For each lichen spotted, we recorded its developmental stage, size, how well it was attached, if it had any mite damage, and its apothecia rank. The size of the lichens ranged from as small as a pen point to the size of your pinky finger. After five days of assisting, I still found it difficult to spot the lichen! Regular monitoring of boreal felt lichen will allow biologists to identify population trends for this vulnerable species.

American Marten Live Captures: The following week, I was involved with live captures of American marten in the George's Lake area. Up until this summer, I had only seen one live marten, and hadn't had the opportunity to touch one. The first day involved baiting and setting 26 tomahawk live traps with canned sardines. The real excitement began the next day around lunch time when the ecologist and I came upon the first capture. I was extremely excited; a kid at Christmas morning would be the best description for how I was feeling. This young male was a new capture, which we knew for sure because he did not have a PIT (Passive Integrated Transponder) tag. PIT tags are injected just below the skin to allow individual identification of animals and are commonly used to permanently mark pets in case they are ever lost.

After weighing, tagging and taking samples from the marten, I got to name him. Because it was a male, I didn't get to name him after myself: instead I chose to name him Matthew. Later that week, we captured a young female, which I did name after myself. In the four days of trapping, five marten were captured, with four new captures. Despite how ecstatic handling the marten made me feel, I think releasing them made me feel even better. The research in the George's Lake area will help us to better understand how forest harvest and hare snaring impact marten, and how we can support their on-going recovery.

Short-eared Owl Surveys: The next week I headed off to southern Labrador to conduct visual surveys for Short-eared Owls, a vulnerable species. Unfortunately, we only had one owl sighting and it was while driving between survey routes! The weather was uncooperative; foggy, rainy and windy, which can keep owls from being active.

Limestone Barrens Restoration & Surveys: In July, I traveled to the Great Northern Peninsula to work on restoration of the limestone barrens in Sandy Cove with two of the Conservation Corps Green Teams and a member of the Parks and Natural Areas Division. This involved taking unnatural piles of rock that were dug in previous years by machinery, and placing them back in the pits from which they were dug. This restoration will allow endangered Long's braya to re-colonize the area. The actual process of throwing rock after rock wasn't a great deal of fun, but stepping back and viewing the restored area where a pile of rock once stood gave me a great feeling of accomplishment.

During my trip up the coast, we were also involved in removing an invasive species, coltsfoot, in Anchor Point. This species is becoming more common on the barrens area and may out-compete native species, which are already rare.

Close to the end of the summer, I helped another endangered species ecologist conduct plant surveys for Low Northern rockcress, an endangered species found on Table Mountain near Stephenville. All these rare plants are very small, and finding them require lots of time crawling around on your knees!

Piping Plover Surveys: Throughout the summer I took part in two Piping Plover surveys in the Big Barasway Wildlife Reserve in Burgeo. It was my first time ever on the reserve, and it was quite beautiful. It was also my first time seeing a Piping Plover and I thought it was amazing how much they blend in with the sand from a distance. Piping Plover surveys provide the Wildlife Division with information on the long-term population trends for this species and help to understand what may be influencing the survival of both adults and chicks.

Marten Hair Snagging: One of my final projects was marten hair snagging on the Northern Peninsula. We set a total of 29 snags: 18 near Squid Cove and 21 near Portland Creek. Each snag is a simple triangle made of wood. The marten is attracted to the hair snag by a can of sardines. Once they enter the snag, the marten rubs against several pieces of mouse trap glue boards mounted inside the wooden snag, leaving a hair sample behind. Hair snags allow us to measure distribution and population size in areas across the province without the time and effort required for live-trapping.

I consider myself lucky to have had the chance to experience so much in such a short period of time. I would not have to think twice about returning to work with such a great group of people and for such an important line of work: species at risk.

Glenda Bateman is studying Conservation Law Enforcement at College of the North Atlantic in Stephenville, and is a graduate of CNA's Fish and Wildlife program.

Northern Bog Aster, Rattlesnakeroot, and Mackenzie's Sweetvetch listed under Newfoundland and Labrador's *Endangered Species Act*

Northern Bog Aster. *Photo: John Maunder*

Rattlesnakeroot. *Photo:Nathalie Djan-Chekar*

Mackenzie's Sweetvetch. *Photo: Nathalie Djan-Chekar*

Northern Bog Aster (*Symphyotrichum boreale*) and **Rattlesnakeroot** (*Prenanthes racemosa*) are both perennial plants, and members of the Composite (Aster) family. The only known location for these species in the Province of Newfoundland and Labrador is a fen at Wild Cove, near Corner Brook.

Their habitat is within a municipal boundary and is surrounded by gravel pits and other development. Northern Bog Aster has a slender, creeping rootstock, and erect stems up to 80 centimetres tall that may be branched.

Leaves are linear and clasp the stem. Up to 20 flower heads are arranged in short, usually broad clusters. Ray flowers are white to pale bluish. Fruit is similar to that of a dandelion, but much smaller, with a white parachute.

The population of Northern Bog Aster is estimated to be between several hundred and several thousand individuals. Trends in the population are unknown. These species are also considered rare in Québec.

Rattlesnakeroot has a tuberous root, an erect stem up to 1.5 metres high, and secretes a milky juice. Leaves are widest near the end and have small teeth.

Flower heads are arranged in elongate clusters and are often drooping, with pink, purplish or white flowers. Fruit is similar to that of a dandelion, with a creamy-coloured parachute.

The total population of Rattlesnakeroot is estimated at several hundred to several thousand individuals. Trends in the population are unknown.

Mackenzie's Sweetvetch (*Hedysarum boreale subsp. mackenzii*) is a perennial plant and a member of the pea family. It has a deep taproot, and several spreading to erect stems up to 30 centimetres high. Stems bear pinnately compound leaves. Irregular shaped, pea-like purple flowers are sweet scented and occur in small clusters. Fruit is an elongate pod with constrictions between the seeds.

In Newfoundland and Labrador, Mackenzie's Sweetvetch is only found at two sites about seven kilometres apart on the west coast of the Port au Port Peninsula. It is restricted to open limestone barrens, and is one of a unique set of species adapted to the harsh climatic conditions and natural processes that characterize the coastal limestone barrens of western Newfoundland. This species is also considered rare in Québec.

A total of approximately 300 to 1,000 individuals plants is estimated to occur at the two sites. Trends in these populations is unknown.

The Newfoundland and Labrador *Endangered Species Act* requires the development of recovery plans by recovery teams for these species within one year.

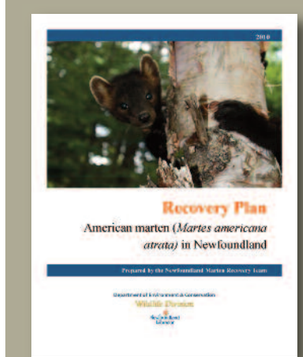
Updated plan released for American Marten

An updated recovery plan that identifies habitat and actions critical to the continued survival of the Newfoundland population of American marten (*Martes americana atrata*) has been released. The American marten, a small carnivorous mammal in the weasel family, is often referred to as Newfoundland marten because of its unique genetic and physical characteristics.

Marten in Newfoundland appear to be recovering since the province began protecting habitat critical to marten survival in the 1970s. The Newfoundland population of the American marten was first assessed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as at risk in 1986 and a national recovery plan was released in 1995. The marten was listed under the province's *Endangered Species Act* in 2002 as endangered, but its population distribution and stability improved and, in 2007, its status was changed to threatened.

Resident marten have been confirmed in western Newfoundland, the Main River Watershed on the Northern Peninsula, and in the Terra Nova National Park and Bay du Nord wilderness areas. On-going work will continue to monitor marten population size and distribution.

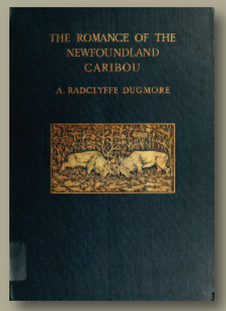
Today, more than 75 per cent of marten habitat is closed to commercial forest harvesting, snaring or trapping, or any combination of these activities. Additionally, six-strand picture cord and 22-gauge brass wires have replaced stainless steel wire for snaring across the island of Newfoundland, encompassing all habitat critical to marten recovery, in an effort to reduce the incidental mortality of marten and other non-target species in snares. This habitat is also protected through the environmental assessment process, which takes the potential impact of activities within habitat critical to marten recovery into account during the decision-making process.

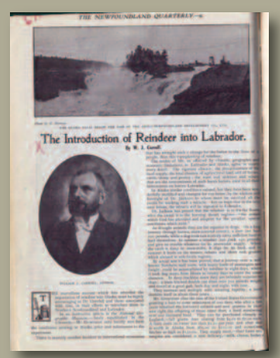


The updated recovery plan for the American marten can be found at www.gov.nl.ca/env/wildlife/endangeredspecies/mammals.html#p2

Hindsight

by Gerry Yetman





I have always enjoyed reading accounts of what Newfoundland and Labrador was like in the past, especially of the outdoor environment and associated activities.

In the early seventies I was fortunate to come across in a local bookstore an original 1913 edition of *The Romance of the Newfoundland Caribou* by A. Radcliffe Dugmore, which of course I purchased and still cherish.

More recently there have been reprints of some of the more popular titles such as *Newfoundland and its Untrodden Ways* by J.G. Millais (1907), *Captain Cartwright and his Labrador Journal* edited by C. W. Townsend (1911) and *The Lure of the Labrador Wild* by D. Wallace (1905) to name but a few.

Recently, I have discovered *The Newfoundland Quarterly*, a journal first published in 1901 that continues to be published today. *The Newfoundland Quarterly* consisted of an eclectic collection of articles about mostly Newfoundland topics with a healthy smattering of recollections of hunting and fishing trips and opinions on wildlife and the environment. The full collection is housed at the Memorial University Library Centre for Newfoundland Studies, but the early editions have been digitized and are available on their website.

One interesting topic that has had major implications for the Wildlife Division was Sir Wilfred Grenfell's attempt to involve Newfoundlanders in reindeer husbandry. A strong proponent of this initiative was W. J. Carroll, who became vice president of the Game and Inland Fisheries Board (est. 1910). Mr. Carroll was an avid outdoorsman and a prolific writer contributing regularly to *The Newfoundland Quarterly*, and to *Field and Stream*, published in New York.

Mr. Carroll's article "The Introduction of Reindeer into Labrador" was published in Volume 7, Number 4, March 1908 (page 6-7) of *The Newfoundland Quarterly.* A PDF of the article is reproduced at the end of our newsletter for your reading pleasure.

Our Wildlife

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Thank you to everyone who contributed to the content of **Our Wildlife.** This newsletter would not be possible without the extensive field work, data analysis, mapping and other tasks performed by our very dedicated staff.

The mandate of the Wildlife Division is to protect and conserve Newfoundland and Labrador's biodiversity and manage its wildlife and inland fish resources for the benefit of present and future generations. To deliver on this mandate requires an incredible amount of work, both in the field and at the office. It is our hope that these newsletters will provide a snapshot into the work of the professionals who are striving to fulfill this mandate, and to highlight the complex nature of wildlife research and management.

- Gerry Yetman (Editor)
Senior Manager, Stewardship and Education

Photo: Jessica Humber

Department of Environment & Conservation

Wildlife Division

Newfoundland Labrador

Photo by G. Harvey.

THE GRAND FALLS BELOW THE DAM OF THE ANGLO NEWFOUNDLAND DEVELOPMENT CO., LTD.

The Introduction of Reindeer into Labrador.

By W. J. Carroll.

WILLIAM J. CARROLL, AUTHOR.

THE marvellous success which has attended the importation of reindeer into Alaska, must be highly encouraging to Dr. Grenfell and those associated with him, in their efforts to introduce them in Northern Newfoundland and Labrador.

In an instructive article in the *National Geographic Magazine*,—lately republished in the *Chronicle*,—Mr. Grosvenor very lucidly sets forth the conditions existing in Alaska, prior and subsequent to the experiment.

There is scarcely another incident in international economics that has wrought such a change for the better in the lives of a people, than this transplanting of reindeer.

The modes of life, as affected by climatic, geographic and economic limitations, in Labrador and Alaska, agree in nearly every detail. The rigorous climate; the precariousness of the food supply, the total absence of agricultural land and of horses, cattle, sheep and poultry; the want and sickness and misery that are the concomitants of such harsh factors, exist in all their hideousness on barren Labrador.

In Alaska similar conditions existed, but they have been wonderfully modified and changed for the better, by the wisdom and foresight of Dr. Jackson, to whom must be ascribed all the credit for working such a miracle. Let us hope that in the very near future, the miracle will be repeated in Labrador.

Dr. Jackson has proved that the reindeer is to the far North, what the camel is to the burning desert regions—"the animal which God has provided and adapted for the peculiar, special conditions which exist."

As draught animals they are far superior to dogs. On a long journey through barren, snow-covered country, a deer can haul 200 pounds, while a dog team can scarcely carry sufficient food to feed themselves. In summer a reindeer can pack 150 pounds, and give no trouble whatever for its provender supply. When the earth is deep in snow-drifts, it digs for its food, and in summer it feeds on the mosses, lichens and short rich grasses which abound in sub-Arctic regions.

By actual test it has been proved, that a journey over a well known Northern mail route, with heavy loads of passengers and freight, could be accomplished by reindeer in eight days, where it took dog teams from fifteen to twenty days to cover the same distance. In deep trackless snow they are infinitely superior to dogs; a team hitched double can draw over 700 pounds weight and travel at a good gait, both day and night, with ease.

They increase and multiply with amazing rapidity; a herd doubles itself in about three years.

Mr. Grosvenor cites the case of the United States Government granting a loan to some missioners of 100 deer, who after a few years returned the borrowed animals and now possess in their own right, the offspring of those same deer, a herd numbering over one thousand head. They can be purchased cheaply in Lapland,—full grown deer costing from $4.00 to $7.00 each. A fawn costs its owner less than $1.00 per year, and after that is worth in Alaska from $60.00 to $100.00 and sometimes fetches as high as $150.00. They supply meat,—their hams and tongues are considered a rare delicacy,—milk, cheese, butter

clothing and shelter to their owners.

It is estimated that within twenty-five years, there will be at least one million domesticated reindeer in Alaska, and that within thirty-five the number may reach the enormous total of ten millions. Long before that period elapses, economists figure that Alaska will be supplying annually to the United States markets from five hundred thousand to one million carcasses of venison, besides thousands of tons of delicious hams and tongues.

If these figures were dreams of theorists, the reader would be pardoned, if he had his doubts; but the project has long gone out of the experimental stage and has arrived to where the results may be surely computed, by simple arithmetical calculation.

The people of the United States have proved that they can do large things well. The gigantic scale on which they are preserving their large forest areas; securing immense tracts in all parts of the Union for National Parks; their complete system of game preservation; their vast meteorological and geological systems, and the success attending all these huge undertakings are sufficient guarantees that the Alaska reindeer project will be one of the best investments of the century.

What applies to the successful experiment in Alaska, applies equally to Labrador.

In Alaska there are about 40,000 square miles of country which appear to have been laid out expressly for the sustenanceof deer.

In Newfoundland and Labrador we have a greater area supplied with waterways, and millions of tons of lichens, mosses and sweet juicy grasses, suited to the requirements of a vast herd of deer, and further we have the deer right at hand.

Our own caribou and the Lapland reindeer, if they are not identical, are very nearly so. They are superior to the Lapland variety in as much as they are on their native heath, and consequently are better adapted to the clime and food supply available; they are somewhat larger and heavier than the others; ought to be very much cheaper and easier to secure, and when in captivity are as kind and docile and as capable of being trained, as their congeners.

They roam the waste places in the interior in vast herds, and after three centuries of settlement we have made no more progress in utilizing this untold wealth, than did our predecessors the aboriginal Beothics.

Mr. Moulton. M.H.A., from his own experience and from information gleaned from Micmac and other hunters and trappers, estimates the number of caribou in the Island at two hundred and fifty thousand. Mr. Jas. P. Howley, F.R.G.S., is more conservative and is quoted by Mr. Millais, F.Z.S., as placing them at about one hundred thousand; while Mr. Millais, who spent several seasons in the interior and who claims to have penetrated where no white man ever before trod, thinks that two hundred thousand is a very fair estimate.

Millais in his book on Newfoundland quotes the game warden at Long Harbour who in 1906 saw a grand trek, caused by a fall of glitter in that country:—"As far as the eye could reach there were millions and millions of caribou, and he stood in astonishment the whole day as the pageant rolled by," and further:—"Several Indians saw the trails made by the mass of deer and described them to me as at least ten miles wide, with few intervals between."

Surely here is a problem worthy the serious attention of our local political economists.

If from the small beginning of the reindeer in Alaska, it will be possible in a few years, to supply millions of carcasses of meat annually to the markets of America,—leaving out of the question, the benefits derivable by the Alaskans in the meanwhile,—what are the value and possibilities of the hundreds of thousands of caribou, roaming to-day unused, unthought of, and neglected, at our very doors. Put them to their lowest use, as an inducement for sportsmen to visit us, and at the present time they are worth millions of dollars. Utilize them intelligently as a substitute for horses, cattle and sheep, and in years to come as a toothsome delicious fresh meat, for the clamouring multitudes who are willing to pay high for it as a commercial commodity,—and say what is their approximate value?

The man who solves this problem, will demonstrate how our 40,000 square miles of marsh and barren land, can be changed into smiling homesteads for a large and prosperous population.

If we ever hope to get people to settle in the interior of the Island, it is not upon our timber mineral or agricultural resources we must depend, but upon our caribou ranches, which are capable of being developed as fully as the cattle ranches of United States and Canada, or as the reindeer ranches in Lapland, Siberia, and Alaska.

With the five or six months of inclement weather preventing cattle from grazing in the open, and with hay ranging from $20 to $30 per ton; and further the enormous expense of housing and hand-feeding a large stock in this country during the winter months, cattle and sheep raising to any considerable extent, will prove to be a proposition neither attractive nor profitable enough now, or in the near future, to compel the serious attention of either capital or labour.

That the caribou can raise and support themselves without the aid of human agency, is proved by the fact, that they are increasing in numbers, (allowing for deaths caused by hunters, trappers, wolves, and accidents), by, at the very lowest figure, ten thousand, each year. Snow, sleet and glitter, and the hardships resulting from exposure in the woods or on the barrens, through the long dark, stormy nights of Newfoundland winter, do not appear to decrease their numbers to any appreciable extent. They live and thrive, despite hardships that would kill the hardiest cattle and ruin the wealthiest stock raiser. They have been caught and tamed in isolated cases, and have proved to be easily handled and cared for. Ten thousand fawns are born every spring. If systematic efforts were made a very large percentage of these could be easily captured and domesticated.

Mr. R. B. Stroud, one of our oldest, most experienced and most reliable guides, stated lately in a letter to a local paper, that he has successfully caught and domesticated caribou. He believes that it is easy of accomplishment, and offers, with the aid of another man, to round up the whole herd now roaming the interior of the Island.

Centuries ago the Bœthics proved this to be practicable. Their fences by which they controlled large deer drives, are still visible in some parts.

The wild zebra of Central Africa which for centuries defied isolated attempts to domesticate them, have within the last few years been trained to rival the best horses in usefulness and docility.

Captain Nys, of the Belgian Grenadiers who, was commissioned to secure some for draught purposes for the Congo, to replace the numbers of horses and mules killed by the deadly tzeste fly, built a large stockade, and drove thousands of zebras into it. After a fortnight they were so tame, that they allowed themselves to be harnessed. They are now doing duty as beasts of burden throughout the vast territory of the Congo.

If a similar effort were made to capture a large number of caribou and domesticate them, in one year it would repay thousand-fold the money and labour involved in the scheme.

The United States Government for some years past have devoted $25,000 annually for the preservation and increase of the deer herds in their northern territory. They have proved the investment a good one.

It is a proposition worth considering whether it would not pay us, to import a few Lapp families to settle in the interior and capture and train some of our native caribou. Our guides, hunters and trappers, would take very little time to learn the secret, once their attention was turned thereto, and then the fisherman and farmer could easily and cheaply acquire his own herd that would mean meat and money for him even if his crops and the season's fishery proved a blank failure.

The rate of living is so high in this country at present, and the taxes and cost of administering the Government have so increased, that we will need in the near future to quadruple our present population, and augment our earning power at the same time, in order that the ordinary workman will be able to exist on his average earnings. The time has arrived when the economic utilization of these great natural riches must be considered seriously. Their conversion into a prolific and neverfailing source of wealth and revenue seems insistent and imperative.

If we lack initiative, it is to be hoped that we have the imitative faculty sufficiently developed to emulate the Lapps and Alaskans, when Dr. Grenfell points the way.