

UNIVERSITY OF PRINCE EDWARD ISLAND

The Relationship Between Humans and Urban Foxes on Prince Edward Island

by

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## Abstract

This study examines the relationship between humans and urban foxes living in Charlottetown, Prince Edward Island. In recent years colloquial evidence suggests that there has been an increase in foxes living in urban areas of Prince Edward Island, which may eventually lead to an increase in negative interactions. An online questionnaire was administered to 456 residents of Prince Edward Island, in order to explore their attitudes and interactions towards foxes. The survey results were examined using thematic analysis in order to identify common attitudes towards foxes in residents of Charlottetown. The themes identified were: positive attitudes towards urban foxes, negative attitudes towards urban foxes, concern for the safety of foxes, concern for the safety of humans, concern about loss of wildlife habitat, and concerns about humans feeding foxes. Our findings showed that most respondents on Prince Edward Island have positive attitudes and feelings towards foxes. In order to explore the relationship between humans and urban foxes, the histories of foxes in England and Prince Edward Island were documented and compared. Foxes began entering urban areas in England during the 1940s, and were initially received well. Due to a large population of bold urban foxes, as well as outbreaks of disease in the fox population, foxes are now less welcome in urban areas of England. By comparing human attitudes regarding foxes between Prince Edward Island and England, we hope to obtain insights into future attitudes towards foxes on Prince Edward Island.

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## 1. Introduction

During the early parts of the 20<sup>th</sup> century, the red fox (*Vulpes vulpes*) was part of an important and lucrative business on Prince Edward Island. Foxes were farmed on Prince Edward Island for their fur, and the products of these farms were known worldwide for their quality and the new strains of colour and variety ("The Fox Industry" n.d.). After two world wars, an economic depression and changes to fashion, worldwide demand for fox fur declined and the golden age of fox fur farming on Prince Edward Island ended.

Up until the 1980s, foxes had been the largest carnivore on Prince Edward Island for almost two centuries. Although no research has been conducted to examine this issue, anecdotal evidence supports the idea that the distribution of foxes on Prince Edward Island has changed over the past decades. These changes have commonly been associated with the arrival of coyotes (*Canis latrans*) to Prince Edward Island.

Since the arrival of coyotes, it has been suggested that foxes are now more present, and possibly more abundant, in the urban areas of the province (Silva, 2009). Home ranges of coyotes (~40 km<sup>2</sup>) tend to be about 5-6 times larger than those of foxes (4-8 km<sup>2</sup>) Where the home ranges of these two species overlap, it usually the fox that is displaced to a different area ("When Red Foxes Become a Problem.", 2007).

Although foxes are not particularly harmful to humans or pets on Prince Edward Island, the movement of foxes into human inhabited areas has lately been causing some concern among residents of the island. Ironically, it appears that the problem of foxes in areas used by humans may be accentuated by the good intentions of people who purposely feed the foxes. This has

become a major concern in the Prince Edward Island National Park where tourists and residents of cottages and houses feed the foxes, despite the fact that they may be fined ("Fox Feeders Warned", 2012). According to Kim Gamble, a resource management officer for Parks Canada, tourists in the Cavendish often feed foxes from their cars in order to photograph the animals up close. Because a major road runs through the area, foxes are accustomed to being fed near the road, and many are killed by vehicles each year (Silva, 2009).

Charlottetown is the largest urban center in Prince Edward Island, with a population of 35,000 ("Charlottetown Census", 2011). Although the interactions between foxes and humans in the Charlottetown area are generally positive, a number of residents have indicated their concerns regarding the safety of pets and children. Over the last few years, the number of complaints regarding negative interactions between foxes and both pets and humans, have increased in some areas of Charlottetown. It is believed that the main reason behind this is an increase in the abundance of foxes inhabiting the Charlottetown area. We do not know the population of foxes in Charlottetown, but there is concern that if the population increases in the future, there will be more interactions between humans and foxes. An increase in interactions could potentially lead to more negative interactions, which could create negative attitudes. In the context of this study, attitudes refer to the way a person views or thinks about something or someone, and which is often reflected in a persons behaviour.

Although foxes are the most widely distributed carnivore species worldwide (Statham, 2011), the way that local people react to them varies greatly from place to place. On Prince Edward Island people are very fond of foxes. In comparison, the people's reactions to the foxes in urban areas of England are generally different than the ones observed in Prince Edward Island. Urban foxes are perceived as a pest and potential menace, and there appears to be a great deal of

apprehension and fear towards them. A survey of English newspapers (see Appendix D) indicated that attitudes towards urban foxes have changed during the past 50 years. Citizens of English cities were not initially concerned or fearful of foxes, but their attitudes changed as the urban fox population and the number of negative interactions between humans and foxes increased. Based on this survey, we can hypothesize that human attitudes regarding foxes may change with time if foxes become more abundant in urban areas of Prince Edward Island.

In this study, we investigated attitudes towards foxes in Charlottetown through a survey of residents of Prince Edward Island. In addition, we also compared the history and reactions to urban foxes between Charlottetown and England. Because of the cultural similarities between England and Prince Edward Island, a comparison of the two islands may help us to identify changes in attitudes towards foxes that may develop in Prince Edward Island. Very few studies (Curley 1983, Silva 2005, Silva 2009) have examined the status of foxes on Prince Edward Island, especially in urban areas. Understanding the nature of interactions between humans and foxes is taking on increasing importance as the animal's numbers are increasing in urban settings of Prince Edward Island.

## 1.2 Purpose

The main goal of this study is to explore the ways in which humans and foxes are interacting in Charlottetown. The first objective of the survey was to gather information regarding the feelings, opinions and attitudes of residents of Charlottetown regarding the presence of foxes in urban areas. For instance, we were interested to know whether or not citizens of Charlottetown presently view urban foxes as a problem. A second objective of this

survey was to explore the role played by cultural background on human attitudes regarding foxes in urban areas. Specifically, we wanted to know which childhood experiences and belief systems have influenced or determined the relationship that Charlottetown residents have with foxes. Belief systems refer to a set of assumptions, beliefs and knowledge which influences a persons world view. If we can understand which attitudes dictate human reactions to foxes, we may ultimately be able to understand human-fox interactions better. For instance, if feeding foxes is a common activity in Charlottetown documenting and investigating the reasons behind this human behaviour may contribute to our overall understanding of the interactions between human and foxes. This study also draws comparisons to the attitudes towards foxes from residents of England.

The first section of this paper will describe the cultural significance of foxes throughout the world. Chapters three and four explore the historical backgrounds of human-fox interactions on Prince Edward Island and in England. Chapter five discusses the media portrayals of foxes in English and Prince Edward Island newspapers, and draws comparisons between attitudes towards foxes in the two areas. Chapter six consists of the methodology applied to the survey which was conducted as part of this study. Chapter seven discusses the analysis and results of the survey, and is followed by a conclusion.

## 2. Foxes in Culture

### 2.1 Biophilia/Biophobia

Anthrozoology is the study of the interactions between humans and animals, or between living things with other living things (Wilson,1984). The term biophilia or the “biophilia

hypothesis” was popularized by Wilson (1984) who defined it as the natural instinct of most humans to love living things. Wilson (1984) suggested that biophilia describes the innate desire that humans have to connect with nature and other living things. This tendency, Wilson (1984) argued, is inherited and is part of our evolutionary history. Historical data suggest that biophilia or something close to it was woven throughout the myths, religions, and mindset of early humans who saw themselves belonging to nature (Orr 2004). In Owen Barfield’s words, people once felt “*integrated or mortised into*” the world in ways that we do not, and perhaps cannot today (Barfield, 1957). The most powerful evidence for biophilia comes from what can be considered its counterpart, biophobia or the fear for nature (Herzog, 2010). Biophobia deals with fears related to natural hazards or life forms such as snakes and spiders that have threatened humans throughout evolution.

Humans often act based on emotion and the way in which we react to certain animals is no exception. For example, most North Americans love dogs, and fear snakes, but we are more likely to be injured by a dog than by a snake (Herzog, 2010). The culture to which we belong often determines how we feel about certain animals. We often judge animals based on our emotions, and the perceived utility or harmfulness of the animal. For instance, in Saudi Arabia dogs are disliked and viewed as useless and even harmful. On the other hand, in North America dogs are loved and considered useful (Herzog, 2010). Anthropologist Marshall Sahlins, through his model of edibility tried to explain why some animals are liked while others are reviled by categorizing animals by their usefulness to humans in a certain culture (Horn, 2012). For instance, animals such as horses are very useful to humans and are held in high esteem and rarely eaten, holding the highest position in the model. Next are companion animals, such as dogs and cats, that are considered to be inedible in most cultures. Animals raised for consumption are still

well-liked, and are held in higher esteem than animals that are hunted for their meat. The last category is animals that are hunted, but not eaten as well as animals that are considered vermin, such as foxes. According to this model, foxes are transgressive animals and are located in the outer circles of the model, because they are neither companion animals nor edible ones (Horn, 2012).

## 2.2 Foxes in folktales and myth

Documented interactions between humans and animals go back at least 35,000 years. Detailed cave drawings found in many parts of the world suggest the great importance of animals to early humans. *“The animals are depicted in great detail, in stark contrast to the accompanying match-stick style human hunters, and such contrast is suggestive of the reverence with which humans once regarded the animals on whose lives, and deaths their own survival depended”* (Horn, 2012, pg. 7). Animals seem to have not only been important for practical reasons, but also for cultural and spiritual reasons. Many ancient and contemporary religions feature deities that take the forms of animals. Even many of the oldest artifacts assumed to be toys are shaped as animals, including foxes (Melson, 2001).

Animals are present in stories and folk tales from all over the world, and because foxes are also found on most continents and widely throughout the world, they are often the focus of these stories. In folk tales, animals are often anthropomorphized, i.e., given human traits and behaviours and assigned characteristics (Uther, 2006). Historically foxes have been assigned both negative (e.g., sly, devious, cunning) and positive (e.g., ingenious, quick, helpful) qualities. In Europe, the oldest mentions of foxes date back to 650 BCE, in the poems of Archilochus.

References to foxes are also found in the writings of Elder Pliny, Aristotle, Claudius Aelianus, and Aristophanes (Uther, 2006)

### 2.3 Aesop's Fables

The most famous Greek writer of fox stories was Aesop, who penned many fables with foxes as the central character (Uther, 2006). Foxes in Aesop's fables are most often portrayed with negative characteristics, such as greed or deceptiveness. In "The Fox and the Crow", a hungry fox is wandering through a field and sees a crow holding a piece of cheese in her beak. Wanting the cheese for himself the fox starts to praise the crow for her beauty, and begs her to sing for him. The crow is flattered and opens her beak to sing, allowing the cheese to fall into the mouth of the fox who runs away with it (Kent, 1991). In a different story, another hungry fox wandering through a field sees some shepherds hiding their lunches in the hollow of a tree. When the shepherds have gone, the fox sneaks into the hollow and eats the shepherds' lunches. Having eaten so much food, the fox is then unable to escape from the tree hollow, and is found by the shepherds (Kent, 1991). Aesop's fables are still very popular today, having been translated into many languages, and some collections have been published containing only fox fables.

### 2.4 Foxes in European Culture

During the Middle ages the image of the fox changed and was further developed, as new scientific information about nature was discovered and explored. Scientific facts about foxes became mixed with fables, and different body parts of the fox were used in folk medicine. The negative associations with foxes continued, and the bestiaries of the 2<sup>nd</sup> century even began to portray foxes as demonic (Uther, 2006). Early Christians considered the fox to be a demonic

animal and used foxes in stories to represent the devil, while in other stories the fox would represent a heretic (Uther, 2006). Foxes would be portrayed in stories as sly and clever and would often pretend to be dead in order to attract birds, an allusion to the way the devil would attempt to attract sinners. In other stories, foxes would try to trick saints such as Saint Colette and Saint Brigit of Kildore (Uther, 2006).

Animal epics became very popular between the 12<sup>th</sup> and 15<sup>th</sup> centuries in Europe, often containing allusions to current political events or simply representing satirical attacks (Uther, 2006). Foxes continued to be popular in stories into the modern period with such examples as the stories of Beatrix Potter, Roald Dahl's *Fantastic Mr. Fox* and the fairy tales of Charles Perrault.

From a young age, children from various areas of the world are exposed to foxes in many different ways. Foxes are often the main character of children books, drawings, television shows or movies. For example, animals in Disney movies are usually drawn in order to garner a positive or a "cute" response from people. Foxes have been featured as protagonists in several Disney movies, such as *Robin Hood* (1973) and *The Fox and the Hound* (1981).

### 2.5 Foxes in worldwide myths

Foxes are not only popular in European stories, but are also very present in myths and stories from other parts of the world. In some stories, the fox is considered to be a hero. The Toba tribe of South America have myths about the fox giving fire to humans, and even curing snake poison. To the Achomawi of north-eastern California the fox was sometimes said to be the creator of the earth and people. In Mesopotamia, foxes were associated with the god Enlil, and were used to symbolized him. Egyptians associated foxes with musicians, the guardians of geese,

or as servant figures. According to the Greeks and Romans, the god Dionysus disliked the fox because it stole and ate grapes from vineyards (Uther, 2006). Myths in China and Japan tell of foxes who can transform into beautiful women who seduce men, and also of fox spirits that cause sickness and death (Uther, 2006). Many stories of foxes around the world explain how the red fox got its colour. In Romanian lore, foxes have red skin that shines through their fur, and to the Athapascan, the fox was coloured red from rage because a goose escaped from his grasp (Uther, 2006).

### 3. Historical Background – Prince Edward Island

#### 3.1 Fur Trade

When European explorers began to travel to North American they discovered a vast abundance of wildlife that could be hunted for meat and fur. Overhunting and development in England had led to shrinking native wildlife populations and the exciting discovery of new land led to the development of various successful wildlife-based industries in North America, including the fur-trade (Manfredo, 2009). Several fox species are native to Canada, and the red fox (*Vulpes vulpes*) is found in all areas of the country. Some non-native red foxes (herein called foxes) were released during the mid-1700s in order to expand fox colonies for fur-hunting and sporting purposes, a practice that continued for the next 150 years (Kamler, 2002). Wild foxes were plentiful in the natural habitats of Prince Edward Island, but eventually over-hunting and loss of forest habitats led to their decline. Original fox populations had most likely reached the island on ice flows over the Northumberland Strait, or were already present before Prince Edward Island became separated from the mainland (Stilenbauer, 1927).

The fur-trade began in Canada during the 1600s, and the early trade was developed by Samuel de Champlain. Later the successful Hudson's Bay and Northwest Trading Companies held a monopoly over the fur trade, and made up a major part of the economy of early Canadian colonies. At that time, there was a high demand for fur coats among the upper classes of Europe, and the Canadian wilderness offered a wide variety of animals to choose from (e.g., beaver, deer, buffalo, fox, mink, otter and seal) ("The Fox Industry" n.d.).

Towards the end of the 19<sup>th</sup> century the population of foxes throughout Canada could not support the demand for furs. It became necessary to reintroduce foxes to natural habitats through breeding on farms in order to maintain the fur industry. Prince Edward Island became the center of fox farming and fox pelts from the island were traded throughout the world ("The Fox Industry" n.d.).

### 3.2 The Beginnings of Fox Ranching

Although fox ranching has played an important role in the history of Prince Edward Island, there are very few modern sources of information regarding this industry. Most information is provided by government and heritage websites. In Summerside (Prince Edward Island), Charles Dalton began to collect live wild fox stock in 1883 in order to domesticate and breed them. Dalton began a fox-fur ranch the next year with the help of Robert Oulton on Cherry Island, off of the coast of Alberton, Prince Edward Island. Cherry Island later became known as Oulton Island. It has been suggested that Dalton and Oulton quickly became successful at breeding foxes because their ranches adequately simulated natural habitats. It was important to provide the foxes with a quiet and natural setting to minimize the stress that could lead the vixens kill their own offspring ("The Fox Industry" n.d.). Dalton and Oulton believed that it was

important to provide the foxes with separate pens in order to prevent them from feeling threatened ("The Fox Industry" n.d.). Pens used in these ranches were made from English wire which became colloquially called "fox wire" because of its strength and resistance to rust. Foxes were kept in pairs because of their monogamous nature and also because communal pens had previously been associated with fox deaths. In order to prevent the foxes from escaping, the pens had wire buried beneath their dirt floors while the walls were slanted inward to prevent climbing. A guard fence surrounded the entire farm area to further prevent foxes from escaping as well as to discourage theft. In order to prevent the foxes from being stressed by human presence, hidden watchtowers allowed the farmers and attendants to observe the foxes without being noticed ("The Fox Industry" n.d.). If a fox did manage to escape, local boys would be paid 25 cents per fox to catch and return them unharmed ("The Fox Industry" n.d.).

During the early years of fox ranching on Prince Edward Island, Dalton and Oulton kept their breeding techniques a secret in order to maintain a monopoly and control over the fox fur market. The ranch produced silver coated foxes that quickly became very popular in the market ("Silver Fox History." n.d.). After having sold one pelt for \$1807, however, Dalton and Oulton experienced a difficult time maintaining their secret. In 1900, Dalton sold a pair of breeding silver foxes for \$340 to Robert Tuplin who began working on fox ranching in partnership with Captain James Gordon ("The Fox Industry" n.d.). Next, Benjamin and Silar Raynor from Kildore, Prince Edward Island were able to establish their own silver stock by crossbreeding red foxes with black foxes. These six ranchers (Dalton, Oulton, Tuplin, Gordon, Raynor and Raynor) became known as the Big Six Combine. The businesses of the Big Six Combine became very successful between 1900 and 1910. They held a monopoly on the fox fur industry on Prince

Edward Island and became very wealthy and influential on the island ("Silver Fox History." n.d.).

### 3.3 Golden Age of Fur on Prince Edward Island

By the 1910s, the fox-fur industry had exploded on Prince Edward Island, and other ranchers had begun to arrive on the scene. As a result, the Big Six lost control of their monopoly over the industry. By 1913, Prince Edward Island had over 3300 captive foxes, and the popularity of fox ranching began to spill over into other Atlantic Provinces and New England states ("Silver Fox History." n.d.). The Silver Black Fox Breeders Association of Prince Edward Island was formed in 1915 in order to regulate the industry. According to the Prince Edward Island Public Archives, *"As early as 1910, pelts were being sold on Prince Edward Island. The pelts were often of second quality as fox breeders sold their best foxes alive to gain a sizable profit. Prices for pelts continually varied as breeders went from buyer to buyer in search of the highest price. In November 1915, the Sales Board of the Silver Black Fox Breeders' Association was established to abolish this practice. The Board acted as a liaison between breeders and buyers, taking the breeder's pelts and selling them at a reasonable, yet still profitable, price."* ("Fox Farming", 2014).

During the 1920s fox shows became popular, and over 500 foxes were entered into shows during the first year. Judging of live fox pelts occurred at many fox shows. Judges were well known experts from within the industry and specialists in the appraisal of fine furs and animals. ("Fox Farming", 2014). Winners received a \$5 reward, alongside trophies and ribbons ("Silver Fox History." n.d.). In 1926, 855 live silver foxes were shipped from Summerside to the United

States for a cost of \$900 each. This was the most valuable shipment ever sent from Prince Edward Island, and is known as the Million Dollar Trade ("The Fox Industry" n.d.).

Fur trade within North America continued to be very important after the beginning of World War I. Very few pelts were shipped to Europe during this time because of the possibility of boats being sunk and the cargo lost. The industry continued to grow however, valuing millions of dollars by 1920. Fox ranchers on Prince Edward Island did not appear to be too concerned about the effects that the war might have on their industry, and on October 30, 1914, The Charlottetown Guardian ran an advertisement that boasted "*Can any industry under the sun equal the same dividends named below under the same adverse conditions? Where is the business that can pay anything like the same dividends that the silver black fox industry is paying in the face of the most devastating war in the world's history? Where large industrial concerns are passing their dividends - when others are assessing their stockholders - when industrial stock exchanges the world over have closed their doors and commercial failures are the order of the day, is it not remarkable -- is it not phenomenal that the Silver Black Fox Industry stands out silhouetted in the horizon as the most prominent and the most profitable investment in times of war as well as peace.*" (The Guardian, October 30, 1914).

Seeing the success of fox farming on Prince Edward Island, the federal government decided to get involved. In 1925, the federal government started The Dominion Experimental Fox Ranch in Summerside. In partnership with local ranchers the ranch attempted to improve fox raising methods and conduct scientific research into fox ranching ("The Harvests of Prince Edward Island " n.d.) Although prices of pelts and breeding pairs declined during the Great Depression, they continued to bring in high profits, and helped many ranchers of Prince Edward Island to survive the era.

### 3.4 Environmental Factors

During the golden age of fox ranching on Prince Edward Island, many farmers found a great deal of success and wealth that spilled over into other industries, benefitting the general economy of the island. Part of their success can be attributed to the favourable environmental conditions of the island for farming. It was suggested that the winter conditions of the island were ideal for fur farming because the foxes grew long and heavy coats that were kept clean by the snow covering the ground of their pens (Stilgenbauer, 1927). Cold weather during a large part of the year reduced the chances of fox food spoiling, saving farmers from losing money invested in the industry. Because many ranches were located near the coasts of Prince Edward Island, they had constant access to fresh seafood, an important component of a fox's diet. Almost all fox food was produced on the island, minimizing shipping costs and benefitting other farmers. Some fox meal contained parts of farm animals unfit for human consumption, preventing waste and creating extra income for the farmers. Easy access to food meant that more time and money could be spent caring for the foxes (Stilgenbauer, 1927). Another benefit of Prince Edward Island's natural environment was the loose stony topsoil that allowed the foxes to engage in the natural activity of digging, while the stones prevented them from digging far enough to escape. The tougher earth beneath the topsoil prevented the foxes from digging dens which might collapse and cause them to suffocate. Another benefit of the loose and sandy topsoil was that it was easy to clean and disinfect, reducing the spread of diseases amongst foxes (Stilgenbauer, 1927).

The isolated geographical location of Prince Edward Island had sometimes been a disadvantage in the past, but was an advantage for fox ranching. For islands it is important to be able to import and export products, which can be expensive, and was harder during the winter

months. The production of a lightweight yet valuable item such as fur is ideal on a small island. Small quantities carry a high value which reduces shipping costs while bringing in a high profit (Stilgenbauer, 1927). It was also easier to start a ranch in partnership with someone else, reducing financial costs. The necessity of cooperation and partnership between ranchers led to innovations. Although some ranchers owned a few breeding pairs and a small ranch, many more ran large ranches in partnership with other farmers, and even boarded foxes for owners without their own fox ranch (Stilgenbauer, 1926).

### 3.5 Benefits to the Community

Fox ranching had enormous economic benefits for Prince Edward Island. Farmers required a great deal of equipment to raise their foxes, and because it was mostly bought locally, farmers helped to support other industries on the island as well. From 1920 onwards, most fox farms on Prince Edward Island, and many others around the world, used Runway Redimade Fox Pens made by the Hall Manufacturing Company of Summerside. Other necessary equipment was purchased from local manufacturers. Fox ranching also created business for veterinarians, as foxes were frequently checked for health and treated for various parasites. Adult foxes required 6-8 ounces of food a day and many ranchers purchased food from the International Fox and Animal Food Ltd of Summerside, or created their own food mixtures from ingredients purchased from other local farms ("The Fox Industry" n.d.). Because many ranchers became financially successful, they were able to afford luxuries such as large houses, creating business for local people such as construction workers and business such as manufacturing companies. Ranchers tended to have a high ranking in society, possessing the disposable income to organize community leisure and social activities ("Silver Fox History." n.d.).

### 3.6 Decline of the Industry

The fox industry on Prince Edward Island began to decline with the onset of World War II. During the war there was no market for fur in Europe, so the industry focused entirely on selling furs within North America. The early success of the industry had encouraged many people to start ranches which eventually resulted in overproduction of fox pelts, with a small market remaining to purchase them. Anecdotal evidence suggests that many ranchers set their foxes loose as the industry declined. However, interviews conducted by Rosemary Curley with former fox ranchers suggest that this was untrue (Curley, 1986)

Low prices and low demand for fox fur led to many ranches going out of business. In 1948, only 20% of available pelts were sold and prices had dropped drastically. In 1946, the average price per pelt was \$25, to \$7 per pelt in 1955. In 1946, there were 3729 ranches on Prince Edward Island, with 99,269 foxes. By 1955 there were only 189 ranches remaining, with 3293 foxes ("Silver Fox History." n.d.).

During the 1960s some farmers tried to revive the fox ranching industry. However, after having bought breeding stock and supplies, they were unable to make their money back. The market for fox fur had been oversaturated and fashions had changed, leading to less stocky furs (e.g., mink fur). In the past fox furs had been used for warmth during the winter, but changes such as improvements to home heating and heated cars made thick furs less necessary for staying warm ("Silver Fox History." n.d.).

Today there are few fox ranches left on Prince Edward Island, and those that continue to breed foxes do so mainly as a hobby, or in order to carry on a family tradition. Fox shows are still held as well, to maintain ties to the important past of fox ranching on the island.

### 3.7 Fox Hunting

Although fox hunting exists on Prince Edward Island, it has far less cultural significance than fox hunting in England. The earliest known reference to fox hunting on Prince Edward Island was recorded in 1899. The fox hunting and trapping seasons on Prince Edward Island last from the beginning of November until the end of January (Hunting and Trapping Summary, 2013). There is no limit to how many foxes can be bagged and hunting with dogs is permitted (Hunting and Trapping Summary, 2013). Fox hunting/trapping on Prince Edward Island is carried out mainly for the purpose of fur harvest. During the 2012/2013 season 1000 pelts were harvested (Hunting and Trapping Summary, 2013). It is not likely that foxes were imported to the island to supplement the population for hunt (Curley, 1983).

## 4. Historical Background - England

### 4.1 Early Hunting in England

For the last 300 years, fox hunting has been a popular activity in England both in the name of sport and for pest control. Many methods have been used to capture and kill foxes, including hunting with hounds, guns only, snares, gases and poisoning. The latter two methods are the least popular (Baker, 2000). Although it is legal in England to gas foxes, according to the Control of Pesticides Regulations act of 1986, no gases or poisons have been approved to be used (Baker, 2000). In England, debates on whether fox hunting and culling should be legal have attracted lot of attention in the past few decades, and new technologies have made it easier to hunt foxes in large numbers. During the late 1980s, it was estimated that 22,000 foxes were being killed each year. By the year 2000, that number had risen to 300,000 foxes a year (Baker, 2000).

Originally fox hunting involved a mixture of social classes, although it was generally considered to be a low-status sport, especially when there were still sufficient quantities of deer to hunt. During the 16<sup>th</sup> and early 17<sup>th</sup> centuries in England, fox hunting was an unglamorous sport, mostly carried out by farm labourers to cull fox populations (Taylor, 2004). The situation changed when Aristocrats began to hunt foxes, and by the early 1700s hunters began to train the first dogs bred specifically for fox hunting (Carr, 1976). The standard foxhounds that are still used today emerged during the early 1800s. Foxhunting became a high status sport, as is reflected in the art and sports journalism of the time (Carr, 1976).

From the 19<sup>th</sup> century and into the current era, fox hunting in England has been considered to be somewhat of a noble sport, since many participants are from the upper class. Originally however, fox hunting was established to reduce vermin which foxes were considered to be (Carr, 1976). Deer were originally hunted for sport in England, but by the late 1600s few remained. Because of the scarcity of deer, hunters needed something else to target (Carr, 1976). The most common wild mammals left in England were foxes and hare. But as hare were considered to be moral creatures, people chose to hunt foxes which were thought to be disgusting and immoral (Carr, 1976).

#### 4.2 Fox Hunting as Elite Pastime

During the 19<sup>th</sup> century fox hunting became a pastime for the elite, and the lower classes were for the most part pushed away from participating. It became very expensive to hunt foxes, with large hunting organizations that required subscription fees, specialized equipment, and expensive trained dogs and horses (Taylor, 2004). The elite hunters also favoured the use of

seemingly military tactics in hunting that traditional hunters disliked. The new tactics were seen by many to be a military attack on nature (Taylor, 2004).

By the 1900s the sport became more public, and no longer the domain of only wealthy landowners and aristocrats. Many farmers already had experience in hunting foxes that they felt were a threat to their livestock. The development of trains and train routes made it easier for people from urban areas such as London to reach the countryside in order to engage in the activity (Carr, 1976). As with the deer, the increased popularity of fox hunting eventually led to a decline in the number of foxes to hunt. In some cases this problem was solved by importing foxes from areas where fox hunting was not popular. Other foxes would be stolen from one landowner's territory and sold to another landowner for use on their own land, and others were captured and bred in order to produce more hunting stock. Foxes imported from France were considered to be inferior to English foxes, and were described as "*mongrel-bred vermin; plethoric looking little brutes, who would scarcely run at all, dodging about like rabbits, their degeneracy ruining the blood of the stout British fox*" (Carr, 1976). Perhaps because of this shortage of British foxes, it was considered to be immoral to kill a fox any other way than by hunting it with hounds. Many landlords introduced a clause into their leases which forbid the killing for foxes on their land because they wanted foxes to be preserved for the hunt (Carr, 1976).

From the 1700s on, fox hunting in England has represented the hierarchy of society and has long been connected to the royal family. During the 1870s, anti-hunting campaigns were aimed at portraying the royal family in a negative light (Taylor, 2004). Members of the royal family were criticized for leading lives of excess that included the hunting and killing of docile animals. The masculinity of several monarchs was measured by the amount of animals they

killed, and several had portraits created in which they were surrounded by dead game. Conversely, unpopular monarchs (e.g., Edward VIII) were rumoured to be bad at hunting (Taylor, 2004). Critics of the monarchy “*saw the process of hunting and killing large numbers of animals as dysfunctional behaviour prompted by idleness and boredom*” (Taylor, 2004, pg. 36). They also pointed to inconsistencies, such as the involvement of Queen Victoria in hunting while she was also a patron of the RSPCA (Royal Society for the Prevention of Cruelty to Animals) (Taylor, 2004).

#### 4.3 The origins of Animal Rights in England

Today a significant part of the discourse regarding fox hunting in England revolves around animal rights and what is considered to be humane or cruel. Although the debates regarding the status of foxes and other animals have increased during the past few decades, the discussion has a long historical past.

Life in pre-modern England was difficult, and most people did not have the time to worry about the welfare of animals. During the 1800s, evangelical Christian churches in England began to encourage benevolence and compassion to other people, and this also affected the relationship between humans and animals (Turner, 1980). Most interactions between people and animals were for practical purposes (e.g., use of animals for farm work or as livestock) and whether or not these interactions were cruel was not an issue at the time. Some animals were kept for entertainment or as pets, but for the most part people who did not work with animals on a daily basis had no interest in them (Turner, 1980). Most people believed that there were fundamental differences between humans and animals. Beliefs such as one proposed by Aristotle which

suggested that humans possessed “*rational souls denied to animals*” were still current in pre-modern England (Turner, 1980).

Things began to change during the 1700s, when sports such as fox hunting and horse racing became popular. Dogs and horses received more prestige, but still were not treated with the affection and care that modern day people like to give to their pets. Another reason for the increased attention given to animals was the move away from country life into more urban areas. Because many people who had previously lived in rural areas largely became confined to urban areas, they developed an enthusiasm for country life which they believed was largely represented by animals (Milbourne, 2003). However, there was still the belief that the similarities between animals and humans were merely physical. During the second half of the 18<sup>th</sup> century, scientific studies came to rely more and more on the use of animal experimentation. Scientists began to discover just how many physical resemblances animals and humans shared. For the first time, humans began to discover that we share many psychological similarities with animals and that animals possess feelings and psychological reactions similar to ours (Turner, 2004).

The Society for the Protection of Animals was formed in 1824, by Arthur Broome, an Anglican clergyman. The main two goals of the Society were to educate the public about animal rights and to fight for prosecutions of those who were cruel to animals according to the Bill of 1822 ("Our History." n.d.). The SPCA attracted the attention of many great patrons, including the Princess Victoria, and did very well financially and in status. In 1840 Victoria, then the Queen, made it into the Royal Society for the Protection of Animals. (Turner, 2004).

#### 4.4 Campaigns Against the Hunt

The modern fight against fox-hunting began to develop during the late 1980s, when several campaigns against fox hunting were carried out. The League Against Cruel Sport that was originally founded in 1924 ("A Brief History of the League." n.d.) carried out campaigns encouraging the banning of hunting with dogs (Milbourne, 2003a.). Although activists were trying to pass bills banning fox hunting since the 1920s, it was not until the late 20<sup>th</sup> century that it began to seem possible (Toke, 2010). A poll conducted in 1992 revealed that 45% of the population of England were against fox hunting and by 1995 that number had increased to 70% (Milbourne, 2003a).

#### 4.5 Countryside Alliance

In 1997 during the lead up to an election, the New Labour Party campaigned with a promise of a parliamentary vote on banning fox hunting. Upon winning the election, the party began the process of voting on a bill to ban fox hunting. During the first term of the New Labour Government there was much support in the House of Commons for a ban (Milbourne, 2003a). In response, pro-hunting groups merged to form the Countryside Alliance during the same year (Anderson, 2006). Anti-hunting discourse had historically taken the approach of promoting animal welfare, while pro-hunters countered with arguments that the hunt was necessary for pest control. The Countryside Alliance changed the discourse into a campaign to bring awareness to rural issues (Milbourne, 2003a). Since the industrial revolution, the concept of nature in England has been associated with the countryside. Milbourne explains that "*it has been argued that nature has become constructed as the antithesis of the urban and the industrial, and firmly located within the spaces of the countryside*" (Milbourne, 2003a). A movement began that

sought to highlight the purity of the countryside, presenting it as vulnerable to the invasion of urban growth. The government had already enacted several laws in order to preserve the countryside, including the 1947 Town and Country Planning Act (Milbourne, 2003a). The idea of urban versus countryside was not new and the issue of a ban on hunting often seemed to be divided between urban and rural people. With the increased occurrences of people moving from urban areas into the countryside, conflicts arose between those in favour of, and those opposed to the hunt (Milbourne, 2003b).

The Countryside Alliance promoted the idea that the needs and traditions of rural communities were ignored, and asked that the government let them handle their own affairs (Milbourne, 2003b). The Alliance argued that hunting benefited rural economies, and tied communities together and that hunting rights needed to be protected. By 2006, the Countryside Alliance had gained 105,000 full members and 250,000 associate members (Anderson, 2006). In September 2002, the Countryside Alliance Organized a march in London that gathered 400,000 people who supported fox hunting (Milbourne, 2003b). Despite this, 'The Hunting Act' was passed on November 18<sup>th</sup>, 2004, banning the hunting of foxes with dogs ("The Hunting Act", 2004).

#### 4.6 Effectiveness of Culling

Aside from being a rural tradition and way of life, another argument that has been used in favour of fox hunting is the need to maintain the fox population through culling. There seems to be little evidence that a cull is necessary to keep the fox population under control (Baker, 2000). However, the idea of hunting as population control seems to be popular in rural areas. In 1997, Baker and Macdonald carried out a survey of 220 farmers in the County of Wiltshire to study

perceptions of the residents about foxes. They found that 72.8% of the respondents believe that there were too many foxes in the county, and 53% believe that foxes were a threat to their livestock. According to this study, only a few farmers reported personal losses of livestock to foxes (Baker, 2000).

Another study carried out by Baker in 2002 explored the effects of a one year hunting ban during the 2001 outbreak of Foot and Mouth disease (*Aphthae epizooticae*). The ban set in place by the Foot and Mouth Disease Declaration lasted between February 23<sup>rd</sup> and December 17<sup>th</sup> 2001. In order to explore the effects of a hunting ban on the fox population, Baker studied the population of foxes in a 160 km<sup>2</sup> section of land before, during, and after the ban. Baker estimated that there are 240,000 adult foxes in England with 425,000 births per year. He suggested that a 64% mortality rate would be required for the population to remain stable, and that a one year hunting ban should make a difference in fox numbers if the cull was necessary. By monitoring the faecal density in the area, Baker saw no change in the number of foxes, except for a slight decline, concluding that a hunting ban would not negatively affect the fox population (Baker, 2000).

Another study carried out by Rushton et al. (2006) used computer models to investigate the effects of a fox cull. Using a variety of controlled factors (e.g., human and natural culling methods), they found no significant population changes when only natural culling factors (e.g., disease) were applied (Rushton, 2006). Based on studies (Rushton 2006, Baker 2000), it does not appear that a cull is necessary to maintain a stable fox population. In fact, the studies have concluded that when foxes in an area are culled, it can lead to increased breeding in that area in order to compensate for the losses (Baker, 2000)

## 5. Foxes in Urban Areas

### Methods

A media survey was conducted using content analysis to examine newspaper articles from both English and Prince Edward Island newspapers. Articles were examined using content analysis in order to track changes in human attitudes towards foxes from their entrance into urban areas to the present. Online newspaper archives were searched using the terms "foxes" and "urban foxes" in order to find news items related to interactions between humans and foxes. The search term "fox" was not used, due to the large number of articles related to fox fur, and individuals with the surname Fox. The initial results were filtered to include only news articles, removing advertisements and social announcements. The remaining articles were examined for any connection relating to human and fox interactions. These articles were examined for common topics, from which themes were identified. In the context of this paper, a theme can be defined as a reoccurring idea or subject found within the dataset. Foxes have a longer history in English urban areas than they do in urban areas of Prince Edward Island. By examining the history of attitudes to British urban foxes, we want to learn about the reasons behind the changes, hoping that this information would help us identify factors that may result in changes of human attitudes regarding foxes on Prince Edward Island.

The Times, published in London, was chosen as the main source for English news due to accessibility on an online database, The Times Digital Archive. Because foxes have been present in urban areas of England for a much longer time period than they have been on Prince Edward Island, I chose to examine articles from a older time period in England. This database contains searchable scans of daily newspapers from 1785-1985. A search for the term "foxes" yielded

8383 results, which I filtered to 773 results, using the "news" category. 36 of these articles were analyzed, and themes discovered were: positive interactions with foxes, negative interactions with foxes, and disease amongst foxes.

Other newspaper archives were used to examine more recent articles relating to foxes in England. The Evening Standard, which is also published in London, hosts an online archive containing news articles dating back to 2010. This database was searched using the term "urban foxes", which yielded 112 results. 22 articles were examined, revealing the themes: foxes as pests, foxes attacking humans, and debates about culling foxes. The Telegraph, published in London, hosts an online archive containing articles dating back to 2000. This database was also searched using the term "urban foxes", which yielded 196 results, 35 of which were analyzed. Themes found within these articles were: positive interactions with foxes, foxes as pests, disease amongst foxes, culling foxes, and foxes attacking humans.

The Guardian, published in Charlottetown, and the Journal Pioneer, published in Summerside, PEI, are the two primary daily newspapers published on Prince Edward Island. The websites of both newspaper host online archives with articles dating back to 1999. These databases were searched using the term "urban foxes". The Journal Pioneer yielded 14 results, 9 of which were analyzed, revealing the themes: feeding urban foxes, and positive interactions with foxes. The Guardian yielded 29 results, 16 of which were analyzed, revealing the themes: positive interactions with foxes, urban fox population studies, and feeding foxes.

### 5.1 Media Survey: England

The first relevant article that I collected during my survey reported a familiarity between a fox and human that occurred on August 8<sup>th</sup>, 1818. The article described the story of a maid

servant who noticed a fox trying to run away with an old turkey. The maidservant wrestled the turkey away from the fox that then followed her all the way to the farmhouse before giving up (Issue 10430). This story suggests that by the early 19<sup>th</sup> century some foxes may have been familiar enough with humans to approach them.

Other stories from the same time period suggested that some people were attempting to domesticate foxes and keep them as pets. One instance from 1835 told of an escaped tame fox that was recaptured and returned to its owner (Issue 15948). In 1938, two boys were accused of cruelty to animals when they captured a fox and her four cubs and tied them up inside a shed, neglecting to care for them (Issue 47995).

## 5.2 Foxes as friends

The idea of domesticating foxes persisted into the 20<sup>th</sup> century. An article published in 1957 told of a man campaigning to restrict the hunting of foxes, because he believed that they could make good pets. The man claimed to have captured 40 foxes and to have released them into a safe area, although the author of the article seemed to be skeptical (Issue 53936). In 1962, another article told of a man named Mr. Grahame Dangerfield who had been ordered by local authorities to get rid of foxes that he was keeping in pens in his garden. Dangerfield was in possession of a private zoo where he kept 30 foxes. Neighbours complained about the smell from the yard and worried that it may be a menace to public health. Dangerfield was given 28 days to remove the foxes, but he was reluctant because letting the foxes free would mean putting them in danger of being hunted. He instead decided to improve the pens in order to cut down the smell (Issue 55452).

### 5.3 Disease

Articles in The Times regarding foxes remained mostly anecdotal until the 1960s, when a disease began to spread through the fox population of East Anglia. The first mention of the disease was in January 1960 when an article title “*Disease Killing Many Foxes in East Anglia*” stated “*Hundreds of foxes in East Anglia are dying from a disease that attacks their liver and brains and which they may be catching from dogs. Hunts in the region are finding their meets severely restricted by the resultant scarcity of animals to chase. A reliable observer had a conservative estimate that well over 200 foxes had been found dead in recent weeks*”. Hunters seemed to be concerned that the virus may be spread through hunting, and that hounds may be at risk for catching it. Early studies of the virus “*had succeeded in isolating the virus in some of them (the foxes), and it was recognized as the one causing canine virus hepatitis in dogs*”. Researchers suggested that foxes had contracted the virus from dogs or from scavenging in dustbins (Issue 54637).

By February 1960, the disease was being called hepatitis and it was suggested that it may have come from American foxes that had been imported into England. The disease had also originated near an American military base in East Anglia, further suggesting that it was of American origin (Issue 54686). The disease spread to the south and west, resulting in many fox hunts being cancelled. Many people continued to believe that the virus had American origins, and that it may also have been related to encephalitis because of the similarity of the symptoms. An alternate theory was proposed by a veterinary surgeon who suggested that “*the disease might have originated from a vaccine used against hepatitis and distemper in dogs, and which contains live virus*” (Issue 54718). By April 1960, the disease was still shrouded in mystery and scientists

were not sure where it had originated. Another proposed hypothesis was that the virus had originated from pigeons because many of the birds had been dying as well (Issue 54748).

After the outbreak of the hepatitis-like virus amongst foxes, the tone of the articles about them in *The Times* changed and became more negative. In June 1958, in an article titled “*Just Nine Miles from London – A skulk of foxes*” featured a photograph of juvenile foxes playing together. Future articles would often feature photographs portraying foxes in a less positive light. Later articles would often focus on foxes scavenging through dustbins and fear that they were a danger to cats. The situation worsened in 1966, when rabies broke out in Europe and in several other continents. The World Health organization suggested that countries that were free from the virus prohibit the import of dogs and cats, or enforce a quarantine period on imported animals (Issue 56568). England legislated strict importation laws that are still in place today, and managed to remain free from rabies. The threat of rabies and the possibility of contracting it from foxes seemed to increase negative feelings towards what seemed to be growing numbers of foxes in urban areas (Issue 57026).

#### 5.4 Media Survey – Prince Edward Island

In order to compare my findings from England with the situation on Prince Edward Island, I searched the digitally archived articles from the islands two most widely read newspapers, *The Charlottetown Guardian* and *The Journal Pioneer* (based in Summerside). Early mentions of foxes on these newspapers focus almost exclusively on the fur industry. These include advertisements, articles about fox shows as well as advice for fox ranchers on how to best care for their animals.

Fox ranching continued to be the focus of fox references in the two newspapers, until the 21<sup>st</sup> century. Even as late as 2000, fox fur seems to have been an important subject in the Guardian or The Journal Pioneer. One article from October of 2000 described attempts to revive the fur industry (The Guardian, Oct.25<sup>th</sup> 2000). Another article published in The Journal Pioneer in 2002 spoke of the high demand that fur breeders were experiencing mostly from Chinese buyers (Journal Pioneer, Nov. 5<sup>th</sup>, 2002). A common theme that I encountered in the newspapers was nostalgic remembrances of the golden age of fox ranching. Frequently, these articles would include biographies of Charles Dalton and the lists of his contributions to the island (The Guardian, August 29<sup>th</sup> 2002).

### 5.5 Interactions with foxes

On March 27<sup>th</sup> 2002, a fox caused a commotion in Charlottetown by choosing a sunny spot to sleep on the side of the Hillsborough Bridge. The fox attracted a great deal of attention and Fish and Wildlife officers were sent to assess the situation. Upon their arrival, the fox moved away to find another place to sleep (The Guardian, March 27<sup>th</sup>, 2002). An editorial letter from 2006 described how common fox sightings had become in Borden-Carleton. The foxes were described as very accustomed to people and to receiving food from humans. The writer claimed that the foxes were not considered a pest at all, but were a source of amusement and good company for the residents (Journal Pioneer, June 28<sup>th</sup> 2006).

### 5.6 Feeding the Foxes

Borden-Carleton is an area that sees frequent tourist traffic, and it is possible that foxes are fed by visitors to the province. The same situation was also occurring in Prince Edward Island National Park. In 2003, The Guardian published an article titled “*Soft-hearted humans*

*contribute to fox deaths: National Park officials say nature lovers feeding predators inadvertently teaching habits that lead fox to death*". Foxes had become accustomed to receiving food from visitors to the parks, often beside roadways, and even from food tossed from cars. Many foxes were killed on roads while searching for food. Parks officials also warned that foxes could become reliant on humans, and lose the skills to find their own food (The Guardian, Sept 5<sup>th</sup>, 2003).

Another article from 2008 warned that because coyotes were competing for space with foxes, foxes were increasingly being seen in human-use areas. Residents were warned not to feed the foxes because it would encourage them to move further into urban areas, and lose their fear of humans (Journal Pioneer, May 30<sup>th</sup> 2008). In 2012, the city of Summerside considered passing a bylaw that would make it illegal to feed foxes (Guardian, June 26<sup>th</sup> 2012). This may have been in response to the reportedly increasing amount of foxes living in Summerside. The local police had been receiving frequent complaints regarding foxes in neighbourhoods. The city mayor reported that he was looking for solutions that would prevent further problems without harming the foxes because "*we certainly can't go around shooting them*"(Journal Pioneer, June 16<sup>th</sup> 2012).

As of March 2014, no bylaw regarding foxes had been passed in Summerside. However, the city of Charlottetown had been seeking to legislate a province-wide ban on feeding foxes. It is already illegal to feed foxes in the national park, and can result in a minimum fine of \$220. The city has been receiving weekly complaints about foxes in the area, and people have started to show concern over the safety of pets (The Guardian, March 12<sup>th</sup> 2014). During the Fall of 2014 there were efforts made by the city of Charlottetown to educate the public about foxes (R.

Doyle, personal communication, April 24 2015.) Educational advertisements and pamphlets were used in order to deter people from feeding foxes.

### 5.7 Prince Edward Island Wildlife Conservation Fund

Recently Prince Edward Island has issued new license plates that feature wildlife native to the island. The special plates are available for an extra fee. Money collected via these plates is supposed to go to the Wildlife Conservation Fund (PEIWCF). Plates featuring a red fox have been the most popular so far (Journal Pioneer, Oct. 5<sup>th</sup> 2013). The licence plates are not without controversy and in an editorial a woman described her disdain at discovering where the profits are going. She had learned that The Prince Edward Island Wildlife Conservation Fund had allocated money to 150 trappers in order to kill foxes for their fur. As an animal lover, the woman did not want to help financially support trappers (The Guardian, February 22<sup>th</sup> 2014). The Prince Edward Island Wildlife Conservation Fund responded later that week in order to defend the allocation of their funds. The writer explained that one million dollars have been distributed to different wildlife projects since 2006, and that 75% of the money had gone to projects that focused on habitat enhancement (The Guardian, February 26<sup>th</sup> 2014).

### 5.8 Comparison of Newspaper Surveys

Based on news articles published on Prince Edward Island, it appears that residents of Charlottetown have only minor safety concerns regarding urban foxes. Most concerns seem to be directed towards the possibility of outdoor cats being attacked by foxes, and there has been very little concern about the spread of disease. Instead, it appears that most concern is directed at the welfare of the foxes themselves. In England there is more concern about the welfare of children and fear that instances of foxes attacking humans will increase. During the past 15 years, there

have been five highly publicized cases of foxes biting children in England. Each case has been covered by multiple sensationalized accounts that feature images of snarling foxes (The Telegraph, Feb 9<sup>th</sup> 2013, London Evening Standard, July 1<sup>st</sup> 2002, The Guardian, June 7<sup>th</sup> 2010). In Prince Edward Island there have been no publicized instances of a fox attacking a human.

Another difference between the fox population of England and Prince Edward Island is health. There did not appear to be a great deal of fear towards English foxes until after the outbreak of hepatitis amongst foxes. After the spread of this disease, there was an increase of newspaper reports of foxes causing a nuisance in urban areas, and concern about disease being spread to pets. Although rabies did not reach England during the European outbreak, it did seem to cause somewhat of a panic and demands for increased culls (The Times, Issue 61320). Another disease which is common amongst foxes in England is sarcoptic mange, which is species specific, but because of its prevalence might also lead to a perception that foxes are disease ridden and dangerous ("Sarcoptic Mange", n.d.). There have been no major outbreaks of disease amongst Prince Edward Island foxes, contributing possibly to the islander's fondness rather than fear of foxes.

Foxes are the largest wild mammal living in England while in Prince Edward Island the coyote has developed a strong presence. The first coyotes appeared in Prince Edward Island in 1983, and are believed to have walked across the ice from mainland Canada to the island. The territory of coyotes usually spans around 50km<sup>2</sup>. As coyotes spread around Prince Edward Island, the fox population was pushed into areas closer to humans (Canada, 2003). Because foxes are native to the island and have been pushed out of their territories, it is possible that the citizens of Prince Edward Island feel more protective of foxes than citizens of England. Foxes in England have no predator other than humans. While foxes are the largest mammal for the English to

worry about, islanders are more concerned about coyotes. Coyotes are omnivores that typically hunt and scavenge for small prey, but that also consume berries and other plants. However, there is a common notion that coyotes primarily seek out livestock and are eager to steal lambs and chickens, along with cats and dogs. In England there is a lot of fear of foxes attacking children, but on Prince Edward Island that fear is directed towards coyotes instead. However, attacks of coyotes on humans are extremely rare and mostly occur in situations where coyotes have been fed by humans and have lost their fear of them (Canada, 2003). It is also rare for a coyote to steal livestock. This is more common in areas where coyote culls are undertaken, but this is not the case of Prince Edward Island. Coyotes in cull areas tend to compensate with increased breeding which drives females to seek out the extra food sources (Canada, 2003). Clearly, the fears that are typically directed towards foxes in England appear to be directed towards coyotes on Prince Edward Island.

Examining the discourses common to the newspapers and media of a certain area can reveal common attitudes and concerns particular to that area. At the same time, it is important to consider the role of that media plays in shaping our attitudes and concerns. In larger areas of England, such as London, there is a wide number of newspapers to choose from. This means that each fox attack is written about many times, potentially giving the appearance that fox attacks are more common than they are. On Prince Edward Island there are two major local newspapers to choose from. These newspapers mainly portray foxes using pleasant images, which may contribute to the way locals think and feel about foxes.

## 6. Methodology

### 6.1 Purpose

In order to explore human attitudes and habits regarding urban foxes on Prince Edward Island, we conducted an online survey that targeted particularly the citizens of Charlottetown. Due to a large participation from those living outside of Charlottetown, we also decided to compare the responses of those living inside and outside of Charlottetown.

## 6.2 Survey Design

In order to learn about the attitudes of the citizens of Charlottetown regarding urban foxes, we designed an online survey with the main goal of gathering the opinions of a large sample of Charlottetown residents (Appendix B). The survey was designed using Google Drive, which offers templates for creating different types of documents. In this case, we used the application Google Form, which gives the option to create a survey with several different forms of questions. The survey was hosted on Google Drive, and was distributed using a web address provided by the application. In order to make the website address more accessible, it was shortened using tinyurl.com, which shortens addresses. We chose to conduct the survey online in order to utilize social media and to reach a large group of people. Because the online survey was distributed mainly through social media and online, an even representation of all age groups was not obtained. Those over the age of 61 only represented 7% of all respondents. The first objective of the survey was to gather information regarding the feelings, opinions and attitudes of residents of Charlottetown regarding the presence of foxes in urban areas. For instance, we were interested to know whether or not citizens of Charlottetown presently view urban foxes as a problem. A second objective of this survey was to explore the role played by cultural background on human attitudes regarding foxes in urban areas. Specifically, we wanted to know which childhood experiences and belief systems have influenced or determined the relationship that Charlottetown residents have with foxes. This objective was explored through questions

about foxes in popular culture, and words associated with foxes. Anecdotal information and historical data indicates that the most common interaction between humans and foxes in Charlottetown and other areas of the province is feeding foxes. Thus, the last objective of our survey was to quantify the number of respondents that were feeding foxes as well as the reasons that motivated them to feed these animals.

### 6.3 Questions and Purposes

#### Opening Questions

The opening questions established the age and location of the respondents in order to determine whether these factors played a role in people's attitudes towards foxes. Determining the location of the respondents aids in seeking to explore attitudes to foxes in urban areas, versus the more rural areas of Prince Edward Island. Respondents were asked which age group they belonged to, in order to compare results, although no data was found suggesting that this was an important comparison from English surveys.

#### Attitudes towards Wildlife

Respondents were next asked to describe their attitudes towards urban wildlife, in order to compare attitudes towards urban foxes with attitudes with respect to other urban wildlife.

#### Interactions with Foxes

The following question asked how often respondents see foxes in their neighbourhood. The format of these questions allowed them to respond with specific numbers, or with qualitative

answers such as “often” or “occasionally”. Respondents were then asked if they had ever fed foxes, or if they would be willing to feed them. Those that had fed foxes were then asked how the feeding had occurred. The question included extra information such as: had food been left out accidentally or thrown towards the fox. The purpose of this question was to examine whether fox feedings were planned or spontaneous, as well as how close respondents were willing to get to the foxes in order to feed them. Respondents were asked if they feed any other outdoor animals, in order to look for any relations between feeding other outdoor animals and foxes. The purpose of this question was to determine whether or not those who feed other outdoor animals are more likely to feed foxes. Unfortunately, the majority of respondents who fed birds also fed other animals, so it was impossible to distinguish whether this was significant. In order to examine whether those who cared for domestic animals might transfer the caring approach to their pets, we also asked respondents whether or not they possessed any pet. Respondents were also asked if they owned any pets.. This question also sought to determine whether respondents felt that foxes pose a danger to pets.

### Foxes and culture

The next section of the survey asked respondents to provide characteristics or words that they associated with foxes. To examine this question, I separated the answers into positive responses, negative responses and neutral responses. In order to determine which references were positive or negative, I studied each fox reference in order to determine whether the fox character could be identified as either the antagonist or the protagonist in the story. Neutral references include mentions of songs, sayings such as “*fox on the run*”, and/or other non-story related references. The purpose of this question was to identify what characteristics the respondents

associated with foxes in order to understand how feelings and cultural background influence people's attitudes toward foxes in urban settings. Respondents were asked to provide words which they associate with foxes.

### Urban Foxes

The final section of the survey sought to further examine the feelings of respondents towards foxes living in urban areas. Respondents were asked to what degree they agreed or disagreed with several statements, including "*Foxes are a natural part of urban and suburban areas*", or "*Foxes pose a danger to pets*". Respondents were then asked if they believe that anything needs to be done to control the fox population, and whether they believe that foxes may become a problem in the future. The purpose of these questions was to examine attitudes towards sharing urban spaces with foxes, and to learn whether respondents have any fears towards foxes.

### 6.4 Procedure

After receiving approval from the Research Ethics Board, I began to circulate my survey on various websites (Appendix 1). A consent form preceding the survey explained the nature of the survey to the respondent.

The link of the online survey was circulated via various Facebook groups in order to reach as many people as possible. Community Facebook groups invited to participate included focuses such as environmental awareness, parenting groups, hunting groups, and other general PEI-related groups. Group members were invited through an introductory post to take part in the survey and to share the survey with others. The link of the survey was also circulated in websites that are known to be used or visited by residents of Charlottetown, including Kijiji-PEI,

PEI forums, and other social media networks. The survey was also advertised on community billboards around Charlottetown. Efforts were made to include a large variety and sample of respondents. Because respondents chose to fill out the survey, rather than having been selected randomly, it is possible that participants were likely to have strong feelings towards foxes, either negative or positive.

### 6.5 Data Analysis

Thematic analysis was used to examine the data from the open-ended survey questions. Thematic analysis is "a method for identifying, analysing, and reporting patterns (themes) within data" (Braun, 2006). This method was chosen for its suitability in analysing large data sets. Thematic analysis has been used in other studies of human-wildlife interactions. A study conducted by Abell (2013) surveyed volunteers working with endangered species in several different countries. The survey used open-ended questions in order to encourage participants to respond with as much or as little detail as desired (Abell, 2013). Other studies have used thematic or content analysis to survey media related to human-wildlife interactions. These studies use thematic analysis in order to identify common themes and discourse among media and newspaper coverage of human-wildlife interactions. A study of newspaper coverage of Florida panthers (*puma concolor*) (Jacobson, 2011) used content analysis to examine the portrayal of Florida panthers within media, and how media coverage can affect public opinion. A similar study was conducted in Mumbai in 2011, which used content analysis to understand the nature of media reporting on human-leopard interactions between 2001 and 2011 (Bahtia, 2013).

The analysis followed the process outlined by Braun and Clarke (2006). This process begins with a familiarisation with the data in order to identify general codes. From these codes

common themes within the data were identified. I began by reading over the surveys in order to become familiar with the data and to identify reoccurring ideas and topics. The answers from each question were then printed out, and were coded manually. As reoccurring topics began to emerge, they were identified using different colours to highlight the response they belonged to. A single response to a question could contain multiple topics. The topics were then clustered together by colour, and counted. These groups were defined as a theme.

Themes identified were:

- Positive attitudes towards urban foxes: Responses indicating that the respondent enjoys the presence of urban foxes, and those that believe foxes belong in urban areas.
- Negative attitudes towards urban foxes: Responses indicating that the respondent finds the presence of foxes in urban areas unpleasant, and those that believe foxes do not belong in urban areas.
- Concern for the safety of foxes: Responses that indicate a concern that foxes may not be safe in urban areas. For example, that foxes may be injured or killed by humans or traffic.
- Concern for the safety of humans: Responses that indicate a fear that foxes may pose a threat to humans, especially children. These responses include the threat of disease and of fox attacks.
- Loss of wildlife habitat: Responses that indicate that the respondent believes foxes are losing their natural territory, either to human encroachment, or to coyotes.
- Concerns about humans feeding foxes: Responses indicating a concern that humans feeding foxes is harmful to the fox, either because the food is not proper for the foxes, or because foxes will forget how to feed themselves.

Once themes were identified, we compared responses based on age class (age of respondent) and geographic location (address/region indicated by respondent). For the purpose of this study, we used two geographic locations: inside Charlottetown area and other areas of the province. We used graphical representations (bar graphs) to examine the answers provided by respondents. Closed ended questions were analyzed using an online calculator(<http://www.socscistatistics.com/tests/Default.aspx>) to conduct Fisher Exact test and Chi Square Test. These tests were used to determine the statistical significance in some responses between the two geographic locations, and between age groups.

#### 6.6 Study Limitations

Because the online survey was distributed mainly through social media and online, an even representation of all age groups was not obtained. Those over the age of 61 only represented 7% of all respondents. Survey results suggested that respondents in this age group may be more likely to feed foxes. However larger sample size of the population over the age of 61 may have yielded different results. Circulating paper copies of the survey would have provided access to people who may not be comfortable using computers, or who do not have internet access. Survey questions did not provide any insight into why this age group may be more likely to feed foxes.

This survey was conducted during the fall and winter. It is possible the opinions and attitudes of some respondents may have been different during other seasons, depending on the visibility of foxes. For example, some respondents mentioned that the noises created by foxes during breeding seasons are unpleasant. However, if the survey had been conducted during the

summer, respondents may have recently seen more baby foxes, which could lead to positive feelings towards foxes due to a "cute response". Because this survey sought to explore the attitudes and feelings of the respondents, the results are subjective to different influences.

## 7. Results and Discussion

Through an online survey, a total of 16 questions were answered by 456 people. Of these people, 286 reside in Charlottetown, and 152 live in other areas of Prince Edward Island. The breakdown of the ages and locations of respondents is presented in Table 1.

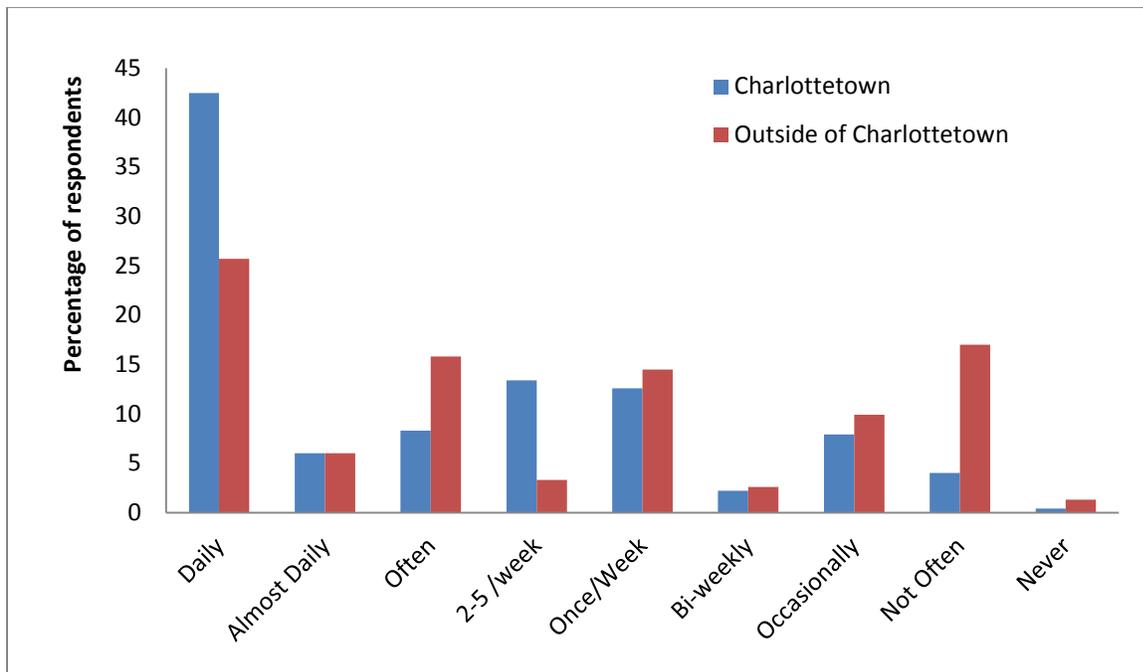
Table 1 – Demographics of respondents: the number of respondents in each age category, and their location in Prince Edward Island

<b>Age of respondents (years)</b>	<b>Total # of respondents</b>	<b>Respondents inside Charlottetown</b>	<b>Respondents outside Charlottetown</b>
18-24	85	66	19
25-30	68	43	25
31-40	92	55	37
41-50	89	58	26
51-60	84	51	33
61+	31	23	8

### 7.1 Frequency of fox sightings – Question 3: “How Often do you see foxes in your neighbourhood?”

Fox sightings in Charlottetown and surrounding areas were high, with 50% of respondents indicating seeing foxes daily (n=145). Fox sightings occurred less frequently outside the Charlottetown area with only 26% (n = 46) of respondents reporting daily sightings of foxes (Figure 1). However, the difference between sightings in Charlottetown and other areas of the province is not significant (Fisher T; p = 0.34).

Figure 1. Frequency (%) of fox-sightings of foxes in the Charlottetown area (n=296) and other areas (n=144). Charlottetown area includes Charlottetown and surrounding areas.



### 7.2 Attitudes towards urban wildlife other than foxes

There was only a marginally significant difference (Fisher Exact Test, p = 0.06) between the residents of Charlottetown and other areas of Prince Edward Island in terms of their attitudes towards wildlife in urban areas. Generally, residents of Charlottetown and surrounding areas appeared to enjoy the presence of wildlife. Concerns of residents of Charlottetown were usually directed towards the welfare of the animals themselves. In general, people did not view wildlife

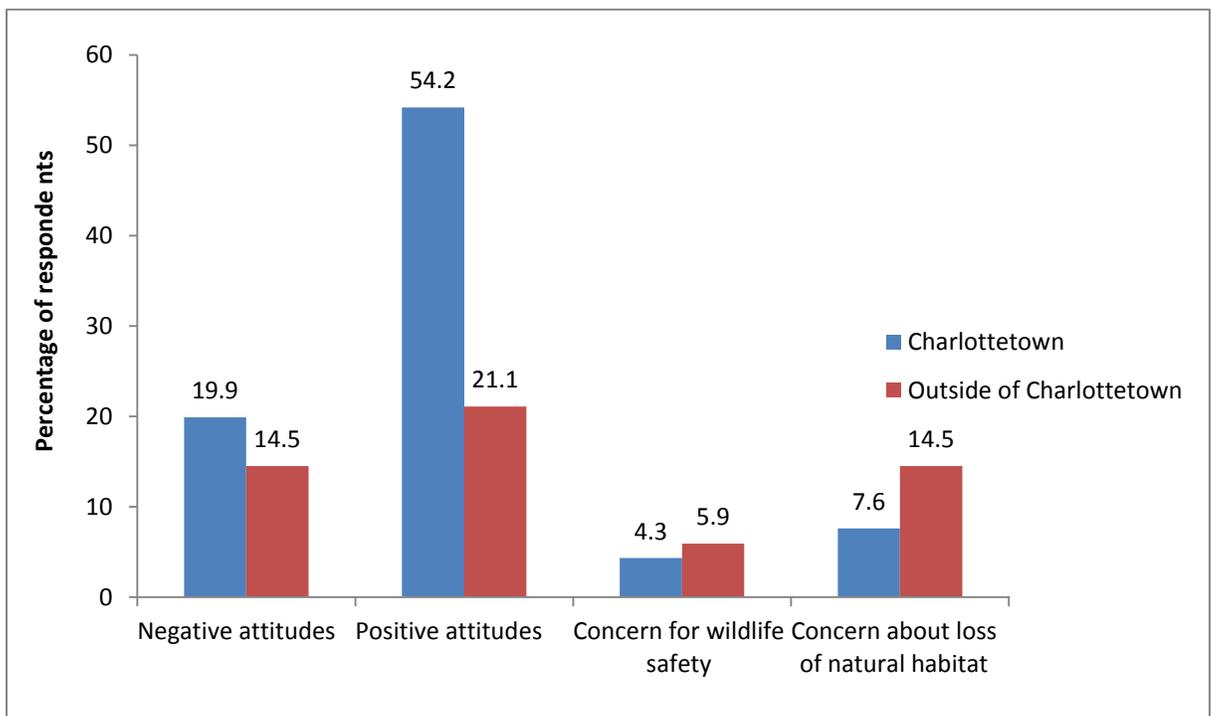
as a threat to their own safety. However some people were concerned that they may be sprayed by skunks, or that their pets may be attacked by either skunks or raccoons. The general sentiment expressed within these responses was a desire to coexist peacefully with wildlife. One response that exemplifies people's attitude towards wildlife is: "*They live here too, and belong as much as we do*". Most of the people who responded positively seem to share the belief that wild animals are a normal part of urban areas, and they are happy to share areas such as Charlottetown with them.

The responses towards other wildlife living in urban areas, including birds, squirrels, and skunks can be divided into three main themes.

- a) Negativity: Based on written comments, people who responded that they have negative feelings regarding wildlife were generally referring to skunks and raccoons that they considered to be destructive and pests. For instance, several respondents complained about skunks or raccoons digging through garbage bins and destroying lawns. These people were concerned about being sprayed by skunks while walking outdoors during the early morning or evenings. Other people were concerned about the safety of their pets, particularly dogs. Interestingly, people who expressed concerns about skunks and raccoons also indicated that they were still willing to share their environment with other wildlife such as birds or squirrels. The only animal other than skunks and raccoons that people expressed dislike towards were crows.
- b) Positivity: These respondents expressed enthusiasm for smaller animals, such as birds and squirrels, while some did mention that they would prefer not to see skunks.
- c) Animal Safety: A small portion of the respondents from both Charlottetown (4%) and outside (6%) were concerned or worried about the safety of wild animals in urban areas

for various reasons. Concerns included the possibility of foxes being struck by cars and being unable to find enough natural food in urban areas (Figure 2). Many of these people indicated that they would prefer to see animals living far away from humans, who they felt are detrimental to the safety of animals. Associated with this, 8% of Charlottetown respondents believed that animals are forced to live in urban areas because humans have taken their land. About 14% of respondents living outside of Charlottetown seemed more concerned that natural habitats are being destroyed (Figure 2). One respondent who represents this type of response answered *“I think that it is horrible that us humans have torn apart so much of their habitats that they have to come into the city. Though they are able to survive in the city they weren’t meant to be here”*

Figure 2. Comparison of attitudes towards urban wildlife by respondents (%) in Charlottetown (n=246) and other areas of Prince Edward Island (n=148)

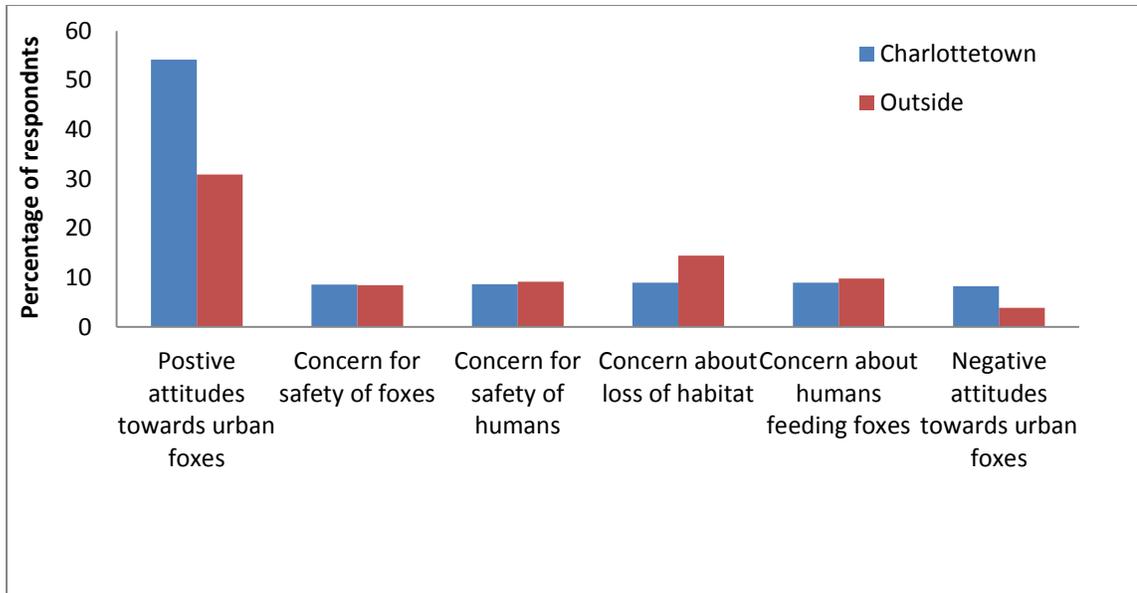


### 7.3 Attitudes towards foxes living in Charlottetown

Overall, most respondents living both inside Charlottetown and surrounding areas of Prince Edward Island were positive about the presence of foxes or were not perturbed by their presence (n =150) . These respondents did not express concerns about foxes living in urban areas, either regarding the safety of the foxes or their own safety. Many of these people found foxes to be aesthetically pleasing, and believed that they add agreeable nature to the urban environment. Five people even believed that foxes are helpful in urban areas because they keep down the rodent population. In contrast, positive attitudes towards urban foxes in other areas of Prince Edward Island were less common (n=39). This difference is statistically significant (Fisher Exact Test,  $p = 0.025$ ) and suggests that although respondents living in all areas of Prince Edward Island generally appreciated the presence of wildlife, there are differences in attitudes towards foxes based on the location of the respondent.

Another interesting finding from our survey was that 9% of all respondents expressed concern for the safety and health of foxes living in Charlottetown (Figure 3).

Figure 3: Comparison of attitudes towards urban foxes by respondents (%) in Charlottetown (n=246) and other areas of Prince Edward Island (n=148).



The main concerns expressed by these respondents were that foxes could not find enough food in their natural environments, and that they are forced to forage in urban areas. Respondents were concerned that foxes are scavenging for, and being freely given, unhealthy foods unnatural to their diets. Respondents were worried that it will lead to an unhealthy fox population. Some respondents were also concerned that foxes will forget how to hunt and find natural food for themselves which will force them to rely exclusively on anthropogenic food sources. Another common apprehension expressed by people was that foxes will be struck by vehicles and killed while crossing roads. Several individuals were worried that the growing population of foxes living in Charlottetown will eventually lead to a cull, something that very few people would like to see happen.

Only 9% of respondents living in Charlottetown and 9% living in other areas of PEI expressed their concerns regarding people feeding foxes. Many of those who expressed this concern were also worried about the wellbeing of the foxes (Figure 3). For instance, one respondent answered that *“it makes me sad because humans feed them and they keep coming*

*back, cities are dangerous for animals because humans feed them and they keep coming back”.*

Other respondents were concerned that foxes are becoming bolder because they are accustomed to humans, and that it may create more problems in the future.

While most of these respondents blame humans, eight respondents believe that foxes have been chased from their natural habitats by coyotes (Figure 3). Respondents living in other areas of Prince Edward Island expressed more concern regarding loss of natural fox habitats due to human activities than those residents living inside of Charlottetown.

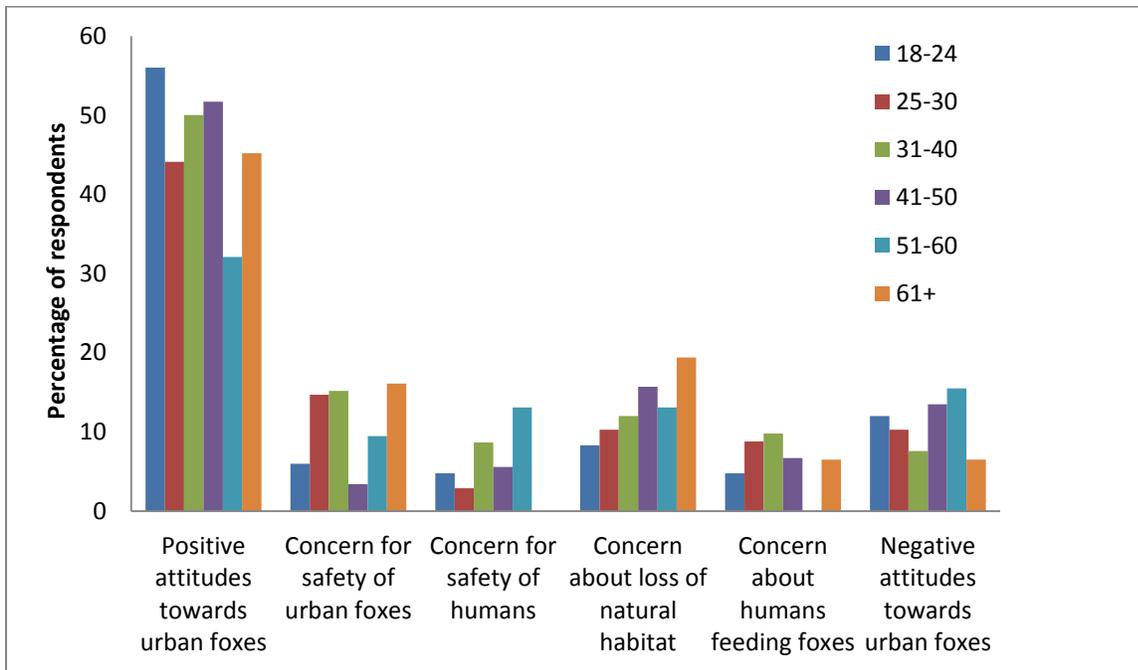
Only 9% of respondents from both Charlottetown and other areas of PEI were concerned that foxes pose a danger to themselves or their pets. Some respondents were specifically worried that foxes might attack small children, while most others believed that foxes are a danger to cats and other small animals. Only one person expressed concern regarding disease such as rabies.

Approximately 8% of respondents from Charlottetown and 6% from other areas of PEI had negative feelings about the presence of foxes in urban areas, preferring these animals to stay outside urban environments. Several respondents suggested that urban foxes should be hunted or trapped, either by other people (e.g., hunters, trappers, etc) or that they would like to hunt the foxes themselves. Many of the negative responses seemed to be based on the fear that the foxes will become bold and more aggressive with time. Other people were worried that foxes will become more numerous in urban environments and that this would result in negative interactions between humans and foxes. One respondent replied with a story: *“The foxes in my neighbourhood are very aggressive they try to take the groceries from your hands as you unload the car I (h)ave had the shoe pulled off my foot getting out of the car”.* However, the majority of people enjoy seeing foxes in any urban area (Figure 3).

### 7.4 Attitudes towards urban foxes by age group

Respondents aged 51-60 years old appeared to have less positive attitudes towards urban foxes than other age groups. Respondents over the age of 60 years have the fewest number of negative responses, and are also the most concerned about the wellbeing of urban foxes (Figure 4)

Figure 4. Comparison of attitudes towards urban wildlife inside and outside of Charlottetown based on age group of respondents (%)



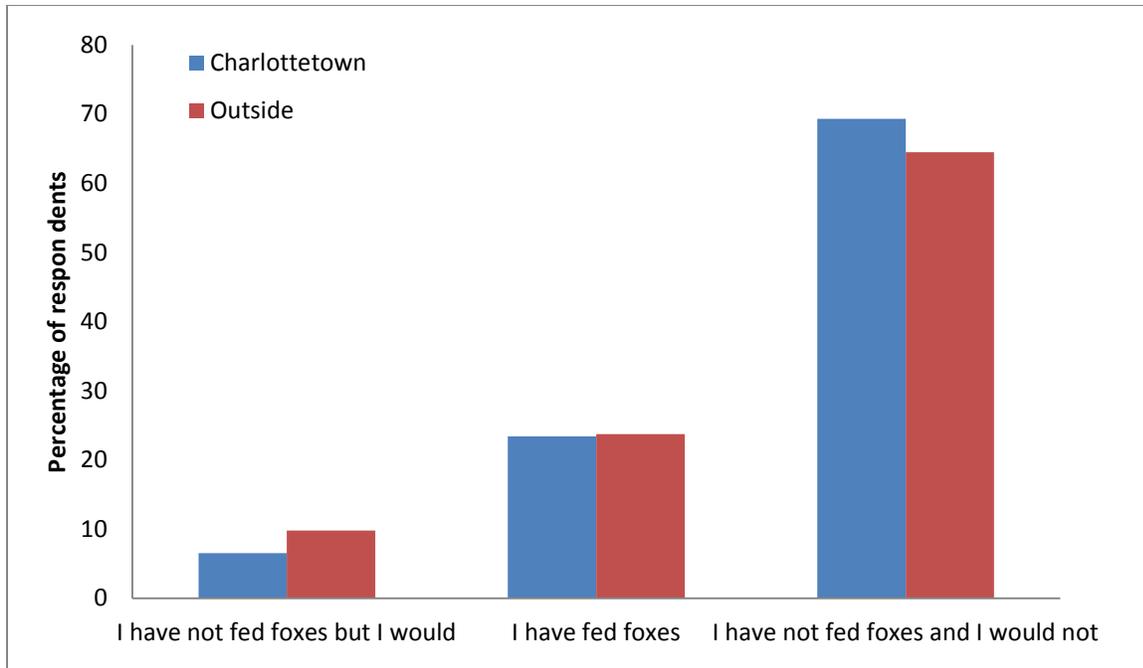
### 7.5 Feeding foxes – Question 6: “Have you ever, or would you consider, feeding a fox?”

In general, we found that the responses of people living in Charlottetown and other areas of the province were very similar with respect to the issue of feeding foxes. Based on our survey, 32% of all respondents have fed, or would be willing to feed foxes given the opportunity (Figure 5). There was more variation in responses among age classes than between locations

(i.e., inside vs outside Charlottetown area). Our findings suggest that the respondents from age classes 18-24 and 61+ are the most likely to feed foxes (Figure 5). This suggests that the age of respondents play a more important role in determining attitudes towards foxes (e.g., feeding) than whether or not the respondent lives inside or outside the Charlottetown area. It is important to note that the age category 61+ had less respondents to the survey, representing only 7% (n = 31) of the total number of people who responded to the survey. A larger sample size of the population over the age of 61 may have yielded different results. Future studies should consider using a combination of online and paper surveys to make certain more people of this age class are reached, as well as those who do not have access to computers.

It is important to note that responses to this question may not be entirely accurate. Based on many anecdotes told to me relating to individuals feeding foxes, it may be possible that more than 32% of the population are willing to feed foxes. This survey was carried out at the same time as Charlottetown's efforts to dissuade residents from feeding foxes. This may have influenced how respondents answered this question, because they may have not wanted to admit to feeding foxes.

Figure 5. Response to question: “Have you ever, or would you consider feeding a fox?” based on location of respondents



### 7.6 Question 8: "Would you ever attempt to touch a fox?"

Out of 456 survey respondents, only 6% admitted that they would try to touch a fox. Out of these people, 43 also fed foxes. 5% of respondents chose not to answer this question. Although 89% of respondents were not willing to touch foxes, only four people mentioned that they are afraid of catching diseases. Three respondents worried that touching a fox may have a negative effect on the animal itself. For example, one respondent said: *"No, as I wouldn't want to scare it"*. Ten people also indicated that they would only touch a fox after they had shot or trapped it.

### 7.7 Foxes in Popular Culture

When asked what place foxes have in culture, responses from all areas of Charlottetown shared several themes that can be separated into three categories: neutral, positive, and negative

references to foxes. Positive responses were references to stories where foxes can be identified as the protagonist, and negative responses were references to foxes as antagonists. Neutral responses include references in which foxes were neither protagonist nor antagonist.

Out of the 132 neutral responses (i.e., responses that do not refer to a particular positive or negative fox character), 61% respondents referred to the song “*The Fox (What Does The Fox Say?)*” by the Norwegian band Ylvis. This song had reached a viral level of popularity during the time that the survey was being carried out. The song does not seem to have an effect on the way people view foxes, since it is a novelty song and only remained popular for a short period of time.

The most popular positive reference to foxes in popular culture was the animated Disney movie “*The Fox and the Hound*” which was referenced 57 times in the survey. The movie evokes a great deal of sympathy for the fox character. Since many people have watched the movie as children, it is possible that it has influenced their perception of foxes. The second most popular reference to foxes indicated by respondents was “*Fantastic Mr. Fox*” which was mentioned 26 times. This is a book written by Roald Dahl in 1970 which has since been adapted into a movie by director Wes Anderson. Other positive associations with foxes mentioned by our respondents included children’s stories such as “*The Mitten*” by Jan Brett, “*Fox in Socks*” by Dr. Seuss, and “*The Little Prince*” by Antoine St-Exupery. Nine people also mentioned the phrase “*foxy lady*” which could either refer to the common saying describing an attractive woman or the song by Jimi Hendrix.

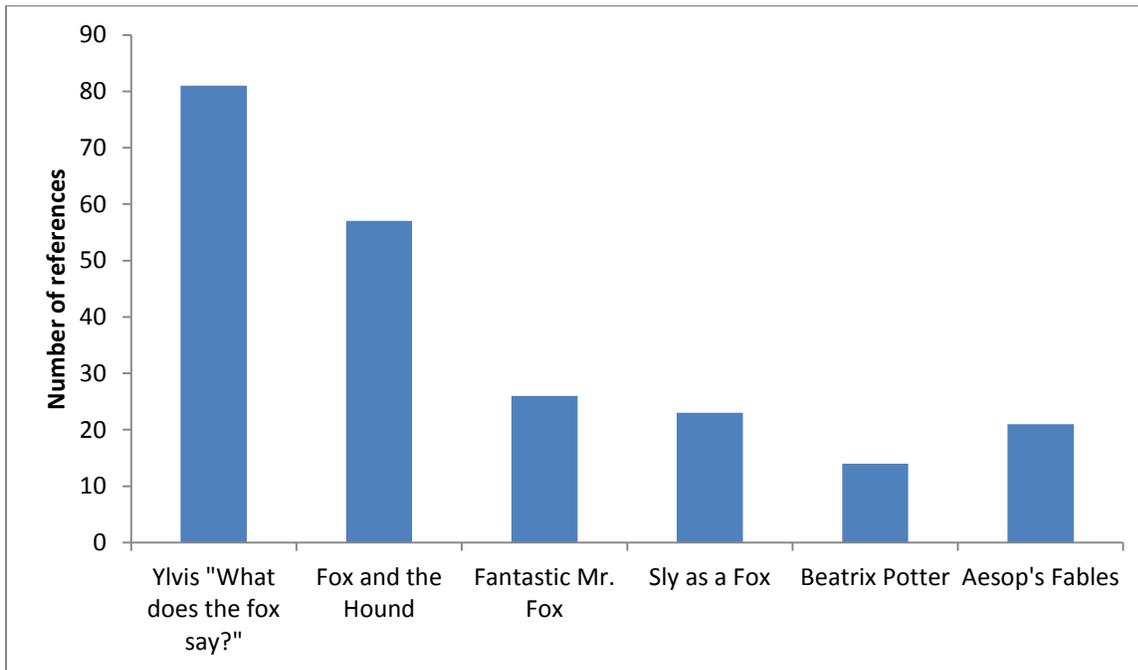
Of the 62 negative references, Aesop’s fables were mentioned 21 times, with “*The Fox and the Crow*” being the only specific fable mentioned. Beatrix Potter was the second most

popular reference and was mentioned 14 times. In Beatrix Potter stories, fox characters are often villains. One of Beatrix Potter's main characters is a fox named Mr. Tod who is often the antagonist. In the "*Tale of Jemima puddle-Duck*", the title character is upset because the farmer keeps taking her eggs, so she goes off in search of a safe place to lay them. She meets Mr. Tod who invites her to use his den, secretly plotting to kill and eat her. Luckily for Jemima, she is saved by a fox-hound before Mr. Tod can carry out his plan. These types of references may lead people to feel that foxes are untrustworthy creatures who are willing to betray others for their own benefit.

Six people mentioned that foxes are often villains in stories, but did not mention any specific examples. Two respondents mentioned the phrase "*fox in the hen house*". Other stories featuring foxes as villains that were mentioned include "*Henny Penny*" and "*Foxy Loxy*" both of which feature foxes as a trickster character. The Children's television show "*Dora the Explorer*" features a fox character as a villain and was mentioned three times. Five respondents mentioned the "*Gingerbread man*" in which a fox character tricks the Gingerbread man and eats him. Similarly, three respondents mentioned "*Pinocchio*" in which a fox character tricks Pinocchio into joining a puppets show whose owner keeps him captive.

A common theme amongst the negative examples of foxes in popular culture is that the foxes are often tricksters, villainous characters who take advantage of others for their own benefit. This trend continues in the 13 answers that contain references to stories with no foxes. For instance, "*Peter and the Wolf*" was mentioned once, "*The Three Little Pigs*" three times and "*Little Red Riding Hood*" nine times. Although these stories are about wolves and not foxes they are still very interesting to consider, as the wolves are the villains of the stories, and people associate foxes with these characters.

Figure 6. Most common cultural references to foxes indicated by respondents when asked “*What place do foxes have in culture?*”



### 7.8 Words Associated with Foxes

Table 2: Sample size of most common terms provided by respondents from all areas of Prince Edward Island when asked “*What are some characteristics or words that you associate with foxes?*”

<b>Popular Positive Terms</b>	<b>Popular Negative Terms</b>
Curious: (n = 15)	Cunning: (n = 15)
Fast: (n = 16)	Noisy:(n = 7)
Playful: (n = 16)	Sly: (n = 55)
Smart: (n = 38)	Sneaky: (n = 7)

It is interesting to note that three most common negative characteristic traits mentioned by respondents are those often found in fables and other stories about foxes. By contrast, the positive terms are more diverse representing a wide variety of positive characteristics.

Table 3. Sample size of most common appearance and neutral terms provided by respondents

<b>Popular appearance references</b>	<b>Popular neutral references</b>
Beautiful: (n = 52)	Catlike: (n = 2)
Cute: (n = 36)	Hunter: (n = 3)
Fluffy: (n = 6)	Incognito: (n = 3)
Majestic: (n = 3)	Mysterious: (n = 2)
Red: (n = 9)	Wild: (n = 19)

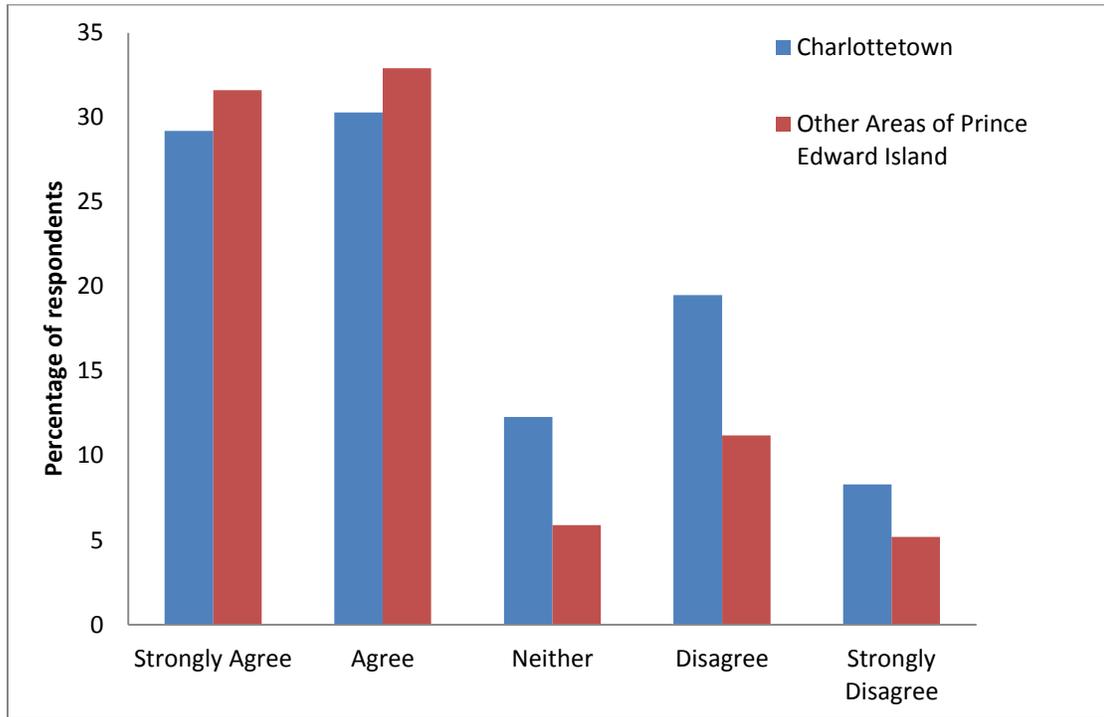
When asked to provide terms related to foxes, most people provided words that can be categorized as positive traits or terms describing the physical appearance of foxes. When negative terms were provided, they were most commonly character traits that can be found in popular fox-related stories such as Beatrix Potter or Aesop’s Fables.

### 7.9 Foxes in Urban Areas

Results of our survey indicated that 28% of respondents considered that foxes were natural part of urban areas, while only 25% of respondents disagreed, or disagreed strongly with this idea (Figure 7). This is interesting because in other sections of the survey a large number of respondents indicated that they believe that foxes have been forced out of their natural habitats and into urban areas. A common theme in previous answers had been a concern over whether or not foxes are able to eat a natural diet in urban areas. Many respondents believed that an urban diet is unhealthy and unnatural for foxes. In question 14(a) however, the majority of respondents agreed that foxes are a natural part of urban environments (Figure 7). There is no significant

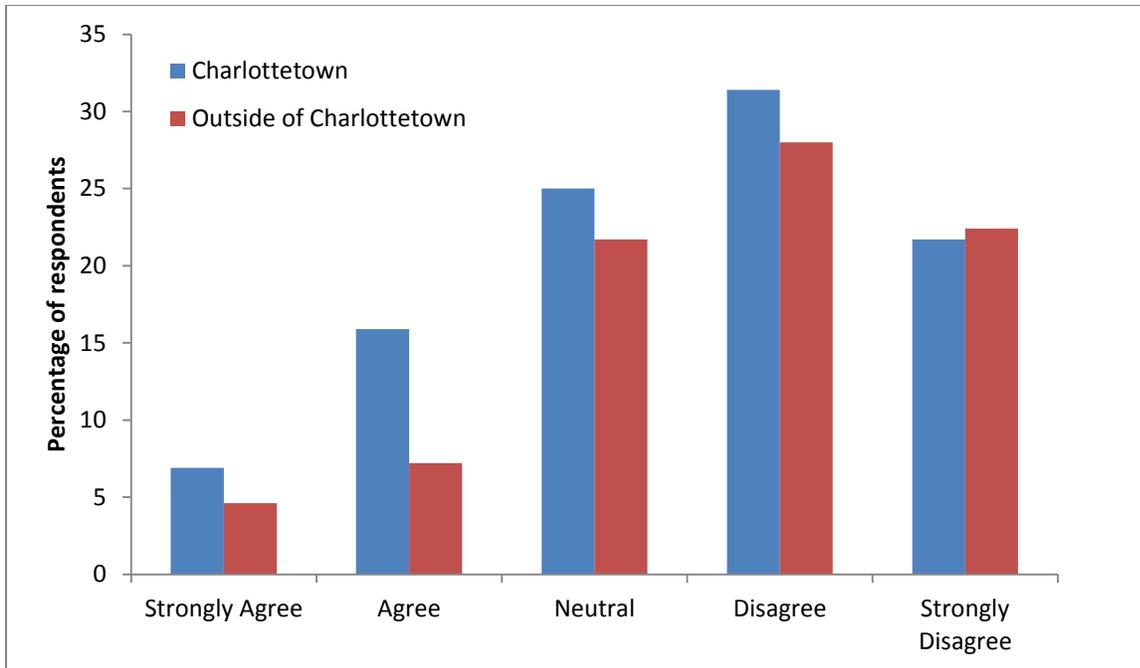
difference (Chi Square Test,  $P=0.4$ ) between the responses of those living inside Charlottetown, and those from other areas of Prince Edward Island.

Figure 7. Responses (%) to the statement “*Foxes are a natural part of urban areas*”, organized by area of Prince Edward Island



Respondents were also asked if they agreed with the statement “*Foxes are becoming a problem in my town/city*”. Although figure 3 suggests that respondents living in other areas of Prince Edward Island had less positive attitudes towards urban foxes than those living in Charlottetown, this difference was not significant (Chi Square Test,  $P=0.9$ ).

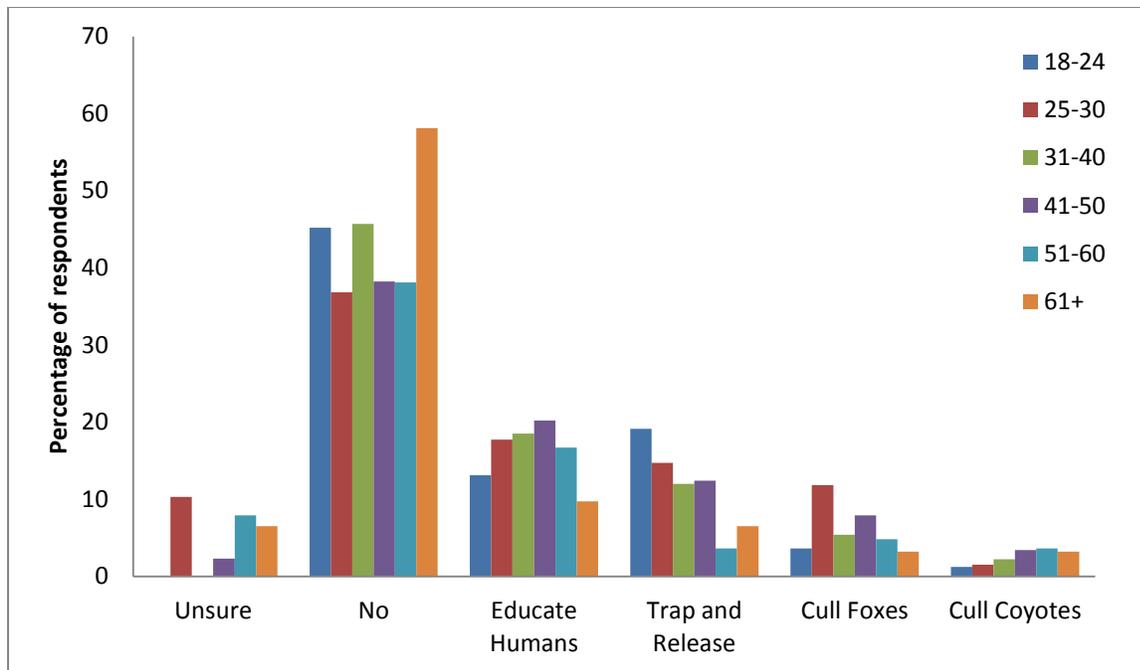
Figure 8. Responses (%) to the statement “*Foxes are becoming a problem in my town/city*”, organized by area of Prince Edward Island



### 7.10 Population Control

According to our survey, most people living in Charlottetown and other areas of Prince Edward Island were not concerned about the abundance of the fox population. The majority of the respondents believed that the urban fox population should be left alone. Respondents aged 61+ were again the most concerned about the welfare of urban foxes (Figure 9). Many of these people believed that nature will take care of balancing the population and that people should not intervene. Others believed that foxes have a right to live in urban areas because they have lost their own habitats to coyote and humans.

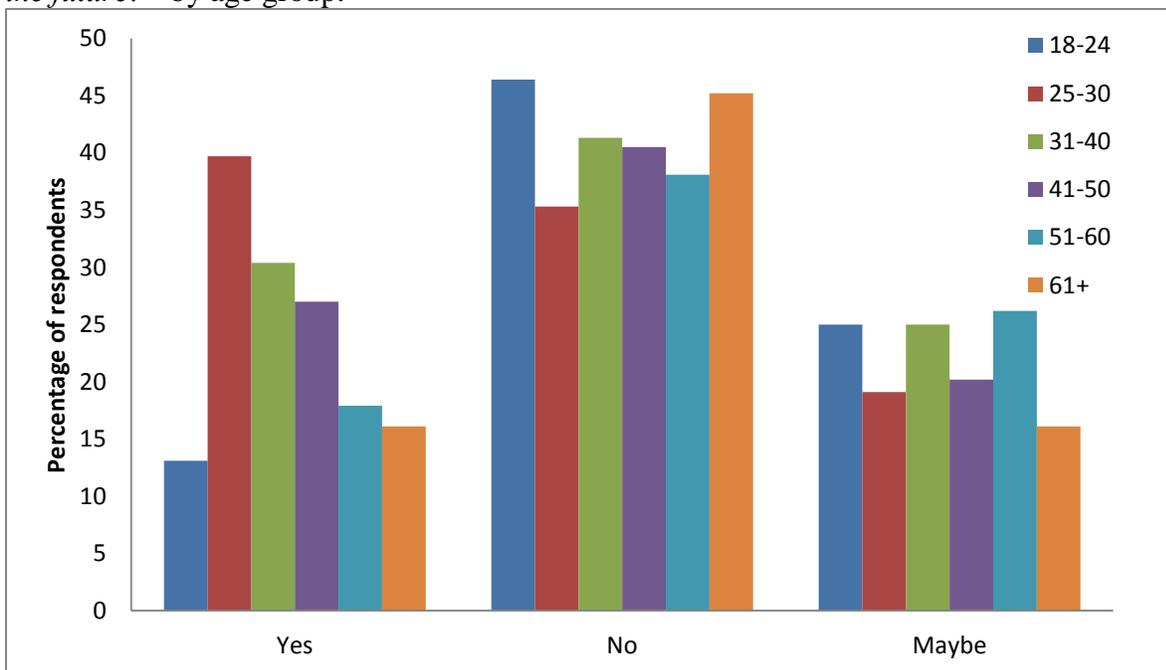
Figure 9. Responses (%) to the question “*Do you think that anything needs to be done to control the fox population? If so, what methods should be used?*” by age groups.



Several respondents seemed very concerned about this question and feared that in the future urban foxes will be culled. Twenty-four percent of respondents thought that education (Figure 9) is the most important solution for dealing with urban foxes in Prince Edward Island. Many of these responses indicated that the real cause behind any problem with urban foxes is people and not the animals. For example “*Yes, people need to stop feeding them. This creates too much interaction between wild animals and people, and increases the likelihood of people being bitten, which always ends badly for the fox*”. Answers such as this were very common amongst the responses. Many respondents seemed more concerned about the welfare of the foxes, rather than any potential harm to humans caused by urban fox populations. Most people did not believe that the fox population in urban areas needs to be controlled. However, many people did believe that if people are not educated and continue to feed and interact with the foxes something may need to be done in the future.

Fourteen percent of people suggested starting programs to trap urban foxes and relocate them to rural areas. However, several of these respondents acknowledged that the foxes were likely to return to urban areas. Six people suggested spaying or neutering the foxes in addition to trapping and releasing them, possibly to prevent population increase. Only 7% of respondents suggested hunting and culling urban foxes. Some of these respondents were amongst the few that were concerned about foxes spreading diseases. Six percent more respondents suggested culling the coyote population rather than the foxes. Clearly, these respondents believed that foxes may return to rural areas if the coyotes were not present there.

Figure 10. Responses (%) to the question “Do you believe that foxes may be a problem in the future?” by age group.



Forty-one percent of respondents were unsure if foxes will become a problem in the future (Figure 10). Again, many people indicated that problems would most likely occur if humans keep feeding the foxes. Several people argued that it is not the foxes that are the

problem, but rather the humans would keep acting in irresponsible ways towards the foxes. The 34% of respondents who believed that foxes will be a problem had similar responses. Many believe that humans are the root of problems related to urban foxes. Others, however, are considered that foxes prey on outdoor pets, particularly cats. Only three people mentioned that foxes could become dangerous to children. Five respondents mentioned the possibility of disease. Two of the five were concerned that rabies might spread to PEI and through the fox population. The other three specifically mentioned that foxes can spread diseases and parasites to pets, particularly dogs. Thirty-four percent of the total number of respondents believe foxes will become a problem in the future. However 40% of respondents aged 18-24 believed that they will become a problem, while only 14% of respondents over the age of 61 believed that foxes will become a problem. The majority of the respondents who did not think that foxes will become a problem believed that the fox population will balance out naturally.

## 8. Conclusion

Overall, our findings showed that most residents of Prince Edward Island have positive attitudes and feelings towards foxes. The majority of residents of Prince Edward Island do not feel that foxes are a threat to the safety and wellbeing of humans. In this study, we found that the external appearance of foxes is particularly important to residents of Charlottetown and surrounding areas. When asked to provide characteristics and words associated with foxes, the most common answers related to the pleasing physical appearance of foxes. This suggests that any disease such as mange that could negatively affect the external appearance of foxes could have a negative effect on humans who may be less interested in sharing urban spaces with these animals.

Although most people place a high importance to the external appearance of foxes, our findings indicated that very few people are concerned about diseases that could affect the health or physical appearance of foxes. Furthermore, respondents did not seem to be concerned by the possibility of foxes transmitting disease to pets or humans. One exception to this finding was rabies which was the only specific disease mentioned by respondents. There are currently no known diseases present among the island fox population that may be passed to humans exclusively from foxes (gov.pe.ca, 2007). The situation is, however, different in England where the presence of sarcoptic mange has resulted in many people seeing unhealthy looking foxes (foxproject.org.uk). Although sarcoptic mange cannot be transmitted from foxes to humans or other animals, the physical appearance of infected foxes may cause humans to fear them. The physical appearance of foxes seems to be important in both England and Charlottetown, but for different reasons. On Prince Edward Island the physical appearance of foxes has been important

since the days of fox ranching, when beautiful pelts were vital for the industry. This importance could have been passed on culturally, but now applied to urban foxes.

Interestingly, 15% of residents of Charlottetown seem to share a sense of concern that the natural habitats of foxes have been altered and developed into suburban and urban areas. A similar percentage of all residents are concerned about the natural habitats of other wild animals. This sentiment of concern may explain why most islanders are willing to share urban spaces with foxes and other wildlife. These feelings are less prevalent among English citizens, particularly those living in urban areas. This may be because of the clearer divide in England between urban and suburban spaces. Furthermore, English urban areas are much larger than those found on PEI. (Milbourne, 2003a, pg. 160). As a result, it is possible that residents of PEI are more accustomed to living in close proximity to wild animals than English residents living in larger urban centers.

Residents of Prince Edward Island and Charlottetown are much more concerned about the presence of coyotes than they are towards foxes. Coyotes are often vilified, and are believed to be dangerous towards humans and pets. Survey responses indicated that many people see coyotes as a threat to foxes, which may add to feelings of sympathy towards foxes. In this way, foxes and humans are seen to have a common enemy, the coyote. In England foxes are the largest predator, and only have humans as a natural enemy. There is no common enemy linking foxes and humans together in England, which would otherwise garner more sympathy towards the foxes.

There are only marginal differences between the attitudes of respondents living in Charlottetown and in other areas towards wildlife in general. However, there is a significant difference in attitudes towards foxes between our two geographic areas. In Charlottetown, people

are generally more positive about foxes than in other areas of the province. Because foxes are only became common to Charlottetown during the past decade, residents of Charlottetown may still view urban foxes as a novelty, and enjoy being able to view wildlife in an urban area. For people who are too busy to spend much time outside and in more non-urbanized areas, seeing a fox may be one of the few times that they are able to see wild animals. Most people do not like skunks, and raccoons are not common in Charlottetown, so foxes are one of the only wild mammals which we see often.

Although 32% of survey respondents admitted that they would feed foxes, a large number of respondents recognize that it is harmful to feed foxes. Respondents suggested frequently throughout the survey that education is the key to preventing future problems with urban foxes. Those who feed foxes in Charlottetown often do so because they believe they are helping the fox. Education regarding the welfare of foxes in urban areas, and the best ways in which to interact with them may be successful as a deterrent for harmful human behaviour such as feeding, as 55% of residents feel positively towards foxes. This positivity may lead to a willingness to interact with foxes in ways that will have no negative effects. Any education efforts must emphasize that foxes are wild animals, and efforts should be made to avoid interacting with foxes and treating them like companion animals. This is important because of the observed connection between pet ownership and feeding foxes. Many respondents provided anecdotes that suggest that people who feed foxes feel responsible for the wellbeing of the animals, and refer to them as "*our fox*". The respondents to the survey often indicated that they believe others are trying to turn foxes into pets.

In Charlottetown, education efforts regarding urban foxes and the proper way to deal with them have consisted of newspaper articles and local news segments that have recommended

discouraging close interactions between humans and foxes. Because respondents between the ages of 18-24 are amongst the most likely to feed and try to interact with foxes, education programs directed towards students may help to discourage the feeding of foxes in the future.

At this time, foxes and humans are living together in Charlottetown with few problems. It is important to educate the public regarding helpful and harmful human-fox interactions now, before residents' well-meaning fox feeding jeopardizes foxes' health and safety and results in possible fox attacks. These negative outcomes would likely lead to the development of negative attitudes towards foxes, and our relationship with foxes would deteriorate.

Master's Thesis Research: "The Relationship between Foxes and Humans on Prince Edward Island" conducted by researcher Kristine Martin under the supervision of Dr. Marina Silva-Opps. We can be contacted at: [knmartin@upei.ca](mailto:knmartin@upei.ca) or (902) 628-1920 or [msilva@upei.ca](mailto:msilva@upei.ca)

Thank you for your interest in participating in this study. The purpose of this research is to better understand the ways in which humans and foxes interact on Prince Edward Island.

This survey will take up no more than ten minutes of your time, and participation of completely optional. The survey is anonymous, and no harm will come to you. You may stop participating in the project at any time, or refuse to answer any question. All information gathered during this survey will remain confidential, and you will not be identified.

If you have any questions or concerns about this project, please contact Kristine Martin at [knmartin@upei.ca](mailto:knmartin@upei.ca).

The Research Ethics Board of UPEI has approved this research project. If you have any difficulties, or wish to voice concern about, any aspect of your participation in this study, you may contact the UPEI Research Ethics Board for assistance at (902)566-0637.

*Thank you for your participation in this study.*

1. Which age group do you belong to?
  - 18-24
  - 25-30
  - 31-40
  - 41-50
  - 51-60
  - 60+
  
2. Which area do you live in:
  - Charlottetown - city center
  - Charlottetown – surrounding suburb
  - Outside of Charlottetown
  
3. How often do you see foxes in your neighbourhood?
4. Do you consider foxes to be a problem in Charlottetown or in your neighbourhood?
5. Do you consider any animals to be a pest in Charlottetown or in your neighbourhood?
6. Have you ever, or would you consider, feeding a fox?
7. If you have fed foxes, have you:
  - a -left food out specifically for foxes
  - b -seen a fox near your home and gone to get food to offer to it
  - c - seen a fox nearby and offered it food that you already had with you
  - d - thrown food towards a fox

e - offered food by hand to a fox

8. Would you ever attempt to touch a fox?

9. Do you feed any other outdoor animals: -stray cats

- stray dogs

- Your own outdoor cat

- Your own outdoor dog

- birds

- other wildlife

10. Do you own any companion animals? If so, what kinds do you have, and how many?

11. Do you consider any species of animal to be a pest in your area?

12. What are some characteristics or words that you associate with foxes?

13. What place do foxes have in culture? For example, what stories, poems or songs have you noticed which mention foxes?

14. Do you consider foxes to be cute?

15. Do you consider coyotes to be cute?

16. Please describe your feelings towards the following statements by choosing from the options above:

Strongly Agree / Agree / Neither / Disagree/ Strongly Disagree

- a. Foxes are a natural part of urban and suburban areas
- b. Foxes pose a danger to humans
- c. Foxes pose a danger to pets
- d. I enjoy seeing foxes in my neighbourhood
- e. I enjoy seeing foxes in other urban or suburban areas
- f. Foxes are becoming a problem in my city/town

17. Do you think that anything needs to be done to control the fox population? If so, what methods should be used?

Thank you for participating in this survey. Your responses will help to understand the relationship between humans and urban foxes living together in Charlottetown. Information collected through this survey will remain confidential and your identity will not be shared, nor will any identifying information be used in the final analysis. If you have any question or concerns do not hesitate to contact the researcher at [knmartin@upei.ca](mailto:knmartin@upei.ca), or [msilva@upei.ca](mailto:msilva@upei.ca).

Thank you once again for completing the survey.

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## Newspapers Surveyed

## Appendix D

### Prince Edward Island Sources:

The Guardian

The Journal Pioneer

### English Sources:

The Evening Standard

The Guardian

The Telegraph

The Times

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