

MISSING CATS, STRAY COYOTES: ONE CITIZEN'S PERSPECTIVE

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Abstract: The author explores the issue of urban coyotes (*Canis latrans*) and coyote management from a cat owner's perspective, with specific examples from Vancouver, B.C., Canada. Following a personal encounter with two coyotes in July 2005 that led to the death of a cat, the author has delved into the history of Vancouver's "Co-existing with Coyotes", a government-funded program run by a non-profit ecological society. The policy's roots in conservation biology, the environmental movement, and the human dimensions branch of wildlife management are documented. The author contends that "Co-existing with Coyotes" puts people and pets at greater risk of attack by its inadequate response to aggressive coyotes, and by an educational component that misrepresents real dangers and offers unworkable advice. The environmental impact of domestic cats is addressed. The author makes the case that generalized opinions about the negative effects of cats on songbird populations and other wildlife, and assertions that urban coyotes are beneficial, are unsupported by objective experimental data. When environmentalists, who predominantly hold these views, also research, promote, and oversee urban wildlife policy, there is a consequent lack of interest in restricting coyote populations in cities, along with little concern for the fate of outdoor cats and even a desire for their depredation.

Key words: Canada, *Canis latrans*, cats, Co-existing with Coyotes, conservation biology, coyotes, ecology, *Felis catus*, human dimensions, pets, predation, Stanley Park Ecology Society, urban wildlife, Vancouver B.C.

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A COYOTE NUISANCE REPORT, VANCOUVER, B.C.

I intervened in an attack by two coyotes (*Canis latrans*) on a 22-pound cat. At 1:07 a.m. on July 1, 2005, I was alerted that something was very wrong by one of my three outdoor cats crashing through the cat door. I jumped up and looked out the kitchen window. Under the sickly yellow light from the street-lamp across the road, I saw the coyotes standing together. One had a cat by the neck, limp as a rag doll, shaking it back and forth. Its body rippled as though the skin was being detached from the underlying tissue. It was either Neutron or Donovan.

My brain virtually short-circuited. Seconds seemed like hours. I exploded out the back door and side gate onto the street, barely dressed, and unarmed. I ran at the coyotes. They looked like young adults, with salt and pepper coats, German shepherd-sized but longer-legged. They were startled and dropped the cat. I charged down the street after them, but my top speed under ideal circumstances is 9 miles per hour compared to their 40. They bounded off. I returned to the cat; it was Neutron. He was suffocating, gurgling, unable to move, with minimal blood visible in his neck fur. Before I could lift him, the coyotes were back and running around

beside me. If they were dogs, they would seem almost playful. I could not risk stooping down. I charged at them again at full speed, and once more they seemed to be gone.

I removed the dying animal to the kitchen floor and started to call an emergency vet number stored in my cell phone, with the land line in my other hand to call a cab. Out the window, I saw that the coyotes had returned. Again I tore out and ran full speed at them. By this time, the coyotes had learned I was no threat. They moved just fast enough to keep ahead of me. A third of the way down the block, the larger one whirled around and froze, facing me down from no more than 6 or 7 feet. If I hadn't screeched to a stop, I would have slammed into it. We held eye contact as the slighter coyote trotted in a semi-circle into the street to my right and out of peripheral vision.

As these events transpired, all the things I had been told about coyotes 4 years earlier in a conversation with former "Co-existing with Coyotes" coordinator Robert Boelens went through my head. One by one, like a checklist, I was going, "THIS isn't true; THIS isn't true; okay, THIS isn't true either." Size. Weight. Timid. Exhibit natural fear toward humans. Children shaking a can with pennies will scare them away. Cats not a primary food item. Usually solo. Considered a nuisance animal like squirrels or raccoons. As I stood transfixed, fear for myself was added to the horror over Neutron. I wasn't going to get out of this unscathed. I hissed.

At the far end of the block, behind the lead coyote, a man walking a small white dog rounded the corner. The coyote behind me bolted on a diagonal, the one in front turned and followed. They disappeared through the schoolyard across the street. I heard the dog man, now cradling his own pet tightly, offer me

firecrackers. I made my way back to the house in slo-mo. The taxi came as quickly as I could ready Neutron and myself for the journey, but the ride to the clinic was endless. Every stop or bump in the road seemed to drain the last breath out of this creature in my lap, my friend, who just a short time ago was so content on a beautiful summer evening. I kicked the door open before the cab could pull to a stop at our destination, and within a minute Neutron was receiving emergency care.

When I got home at 4 a.m., I searched the back alleys for Donovan, but he hid until well past daybreak. I came back inside and called the police. At first, the 911 operator treated me like I was the criminal. Why would I wait over 3 hours to report aggressive coyotes? Then he gave me the choice of "Co-existing with Coyotes" or the B.C. 24-hour Wildlife-Human Conflict Call Centre. I had already figured out in the conversation years ago that "Co-existing with Coyotes" were not "cat people", so I took the other number.

The provincial call centre operator told me that I was wrong to suggest the coyotes were aggressive toward me, that they were "just looking for their cat." I called again the next day. The new operator told me he had been surprised by the number of complaints received since spring from the Commercial Drive area, and almost seemed apologetic about his co-worker's cat comment. He said he would have Conservation Officer Mike Peters contact me. Later, Peters confirmed that by B.C. standards, the coyotes indeed were not aggressive. The example he gave was of a coyote that snatched a cat off its owner's lap in a private yard in daylight hours, bumping away the gentleman's hand in the process; this was considered no more than a "nuisance" animal.

Neutron's condition went from critical to stable, his prognosis from guarded

to more than good. But on day 8 the feeding tube detached from his stomach. By the time the vets noticed, it was too late to reverse the damage; Neutron rapidly declined, went into septic shock, and died.

I quit my previous job. I developed post-traumatic stress. I started to read. I now run a half-marathon to Burnaby and back twice a week to pick up work in an environmentally friendly way that I can do at home, close to my pets.

I disagree with people who say cats are bad for the environment, and that any cat can be humanely confined. Neutron did no harm; he couldn't even catch a moth. He needed fresh air; a trial of indoor living with others had caused dangerous behavioural problems (electric wire-chewing). I disagree that coyotes are good for the "urban ecosystem" or that the "thrill" they give some people justifies the danger they pose to others.

My opponents will use a *Catch-22*-type argument to say that my opinions have no weight because I suffered loss¹ (the "vocal few" veto) and I don't even hold a university degree. But do these things blind me, or do they make me see more clearly?

TAKE BACK THE NIGHT

As far back as 1994, when coyotes were still new to Vancouver, the then-Ministry of Environment, Fish and Wildlife Branch said its staff would "respond to situations where there is a threat to human safety, but they are not prepared to deal with nuisance calls" (City of Vancouver 1994b). Since then, there has been a "dramatic increase in conflicts of all kinds [reflecting] the growth in the human population, the growing interest in and access to the

outdoors and the growth of some wildlife populations adjacent to or within communities" (MWLAP 2003:4).

Urban coyotes fall within the final point, and the city's pet owners have everything to lose by accepting inaction and government support for the "Co-existing with Coyotes" strategy. The British Columbia Conservation Officer Service receives on the order of 17,000 wildlife-human conflict complaints per year, and 4,300 are considered serious enough to require attendance (Ministry of Environment 2002, MWLAP 2003:3). Pet incidents don't matter, and thousands will continue to die needlessly each year until the province takes responsibility for its coyotes.² The role of governments in contributing to the well-being of pets is gaining recognition. In the aftermath of Hurricane Katrina, for instance, the U.S. Government suggested federal funding would be cut to states that did not include pets in future emergency evacuation plans (Fargen 2006). But the Province of B.C. has nothing to fear by refusing to implement an effective response to coyote predation on pets. It even legislates for its own protection in a way that other bad dog owners could only dream:

"...no right of action lies, and no right of compensation exists, against the government for death, personal injury or property damage caused by...wildlife." (B.C. Wildlife Act 1996, Sect. 2.5.a)

One person is powerless against the environmentalists in charge. But wildlife managers are supposed to care what normal people think, so I urge others to consider my views. Ideologies are not written in stone. If enough people agree, then the management strategy of "Co-existing with Coyotes" warrants critical re-evaluation.

¹ To be interested enough to comment, you must understand the threat; but if you experience the threat, you aren't disinterested enough to comment. Though as a female, my opinions are supposed to matter very much (see Kellert and Berry 1987).

² "Ownership in all wildlife in British Columbia is vested in the government" (B.C. Wildlife Act 1996:Sect. 2.1).

With a little effort, people could take back the night for pets.

THE URBAN COYOTE – A POSTMODERN BAMBI

“Humans are expendable –
two world wars proved that
– but wildlife is not.”
(Rundgren 2001)³

In the mid-1990s, 52% of 184 randomly sampled Greater Vancouver Regional District (GVRD) residents (from a population of 2 million) were “neutral” about coyotes. Their attitudes were based on “a lack of knowledge, experience, or concerns about coyotes.”⁴ Another 27% had “positive” attitudes toward coyotes based on emotions and misconceptions.⁵ The other 21% were “negative” toward coyotes based on emotions intermingled with accurate perceptions⁶ (Webber 1997). Two other groups (veterinary clients and naturalists) showed a higher percentage of

³ This letter to the editor in January 2001 was one of many that capped a high-profile year in Vancouver during which 3 children and 1 adult were bitten by urban coyotes.

⁴ “When asked to expand on their reasons, neutral attitudes were often associated with a lack of knowledge or experience with coyotes; people said they ‘hadn’t had a problem’, they felt that coyotes were too costly to remove, or it was the individual’s own responsibility for their pet’s safety.” People “were often insistent that coyotes were not present in their respective neighbourhoods” (Webber 1997:28, 39, 48).

⁵ “Positive attitudes were associated with particular perceptions about coyotes such as: coyotes being a natural part of the ecosystem; being important for rodent control; improving the quality of life for GVRD residents; and ‘deserving’ to be in cities because humans have taken over their natural habitat” and being an “esthetic resource” (Webber 1997:28, 39)

⁶ “Those with negative attitudes expressed concerns for pets, concerns about human safety, suspected the loss of a pet, perceived that coyote populations were ‘out of control’, that coyotes were ‘savage killers’ or that coyotes ‘don’t belong’ in an urban environment.” (Webber 1997:28)

“positive” feelings, but their responses were obtained by voluntary sampling, devaluing meaningful interpretation. All groups failed or barely passed a basic-knowledge “Coyote Awareness Index” (Webber 1997:17,20,40); respondents were more or less empty vessels primed for “education”.

Pet owners complaining about coyotes are referred to as “a vocal few” (Webber 1997:10), yet the people who formulate urban wildlife policy are a vocal few claiming to represent the desires of the public at large. Some have stature as professors and scientists; some gain credibility through official titles like wildlife biologist or wildlife manager; others move up the ranks as dedicated volunteers. They work within governments and private organizations. Unofficially, most are hard-core environmentalists; and in the years since Vancouver’s surveys were used to justify the “Co-existing with Coyotes” strategy, these “experts” all over the continent have promoted coyotes as never before.

Indoctrination works. As seen from the quote at the beginning of this section, it is possible for a grandmother to value coyotes over humans, though perhaps not her own family. Rundgren’s conclusion is a hybridization of two ideas that flow from Deep Ecology principles: that wild animals are more important than domestic ones, and that people who embrace primitive ways/population control are superior to industrial humankind (see Devall and Sessions 1985, Taylor 2001, Noske 2004).

Before “coexistence” became a dominant ideology, journalists focused on extensive predation on pets, or at least gave conflicting information on the issue. “Co-existing with Coyotes” founder Kristine Webber (Lampa), while Executive Director of the Stanley Park Ecology Society, actually told an Edmonton, Alberta reporter that “as long as people continue to let their

cats roam free, cats will be easy pickings for coyotes" (Page 2000). Local environmentalist Dee Walmsley (2000) wrote of the discovery of a den containing 55 cat collars but then assured people that coyotes "feast on rats, rabbits and other rodents considered pests by humans."⁷ Now, the media minimizes predation on pets, with coyotes killing "the occasional house cat" (Blanchard 2004), residents telling "tales" of coyotes that attack their dogs and cats (Davis 2005), or pets being the subject of "several coyote attacks" in Calgary in 2004 (Proudfoot 2006). BCSPCA representative Marcie Moriarty appears in a TV report about missing cats in a South Granville, Vancouver neighborhood, saying, "It happens once in a while, we'll get a call from a certain neighborhood that's concerned," and that the SPCA gets "several cases" of coyote attacks on pets a year (Adams 2007).

Far from a threat, coyotes in the news today are "misunderstood heroes" and "well-mannered, responsible predators" (Downes 2005). Coyotes are "amazingly intelligent" (Proudfoot 2006); they are "surprisingly docile" according to Dr. Stan Gehrt (Berger 2005). "Professor Gehrt says with confidence that the sensible suburban toddler has little to fear from the suburban coyote" (Downes 2005); the same Chicago coyotologist tells another reporter that he "would never be subordinate to a coyote,

ever," though he adds, "I'm 200 pounds" (Battiatia 2006). After coyotes charge at leashed dogs on a walking path in San Francisco's Golden Gate Park, one biting a large Rhodesian ridgeback, the director of a wildlife rescue shelter says, "[Coyotes] are so timid. If you give them five seconds, they will usually run," and speculates that the dogs were at fault (Zamora 2007); the coyote pair's later control kills are described as "executions" (Anonymous 2007a).

While overseeing Vancouver's "Co-existing with Coyotes" program, Robert Boelens did his best to direct interviews toward the animals' low risk to humans. Coyote advocates are in a much stronger position when they successfully keep the focus on people and away from pets. And on the subject of pets, minimizing coyote predation is far less confrontational than the second-line defence used when someone disputes "coexistence" outright; that is, openly belittling the value of cats and dogs and ridiculing their owners (see Page 2000, Lott 2005). If a specific situation required it, former coordinator Boelens admitted that "sightings – and even attacks on outdoor cats – aren't out of the ordinary" but denied being "inundated with calls" (O'Connor 2005a). Just two months after that particular assertion, Gail Telfer of the Wildlife Rescue Association of B.C. told another reporter, "It's really remarkable how many cats they kill" (Anonymous 2005). Both statements are political. No one ever says how they arrive at their estimates. Wildlife rescue groups have an interest in emphasizing coyote predation to encourage people to take their cats out of the "urban ecosystem." In the United States, "Each year rehabilitators report cat predation as the most common reason for animal admission, accounting for almost 20% of cases" (Burton and Doblar 2004).⁸ On the other hand, "Co-existing

⁷ Walmsley, a wildlife rehabilitator and member of the Board of Directors of the Stanley Park Ecology Society and Urban Wildlife Committee (see section entitled "Vancouver's Co-existing with Coyotes – An Annotated History"), is acknowledged in Webber 1997:ix for guidance in making the Urban Coyote Project video (Delta Cable Communications, Ltd. 5381 48th Ave., Delta, B.C., Canada V4K 1W7) – an emotion-laden video for children and adults, complete with old newsreel-style voice-over footage of aerial killing of coyotes, presumably in the American Midwest, as in most of North America the technique is not even used (see Fox and Papouchis 2005:13-14).

⁸ Cats' reputations no doubt suffer thanks to the diligence of their owners.

with Coyotes” has information that indicates coyotes consume between 1 and 2 thousand cats per year just within the City of Vancouver (adapted from Kirsch 1996),⁹ but publicizing it would diminish the value of a program that is supposed to protect both people and pets. Of interest, before moving over to “Co-existing with Coyotes” in 2001, Robert Boelens worked for the Wildlife Rescue Association of B.C. Along with coyotes, he has a passion for birds.

CONSERVATION BIOLOGY – COYOTES ARE FOR THE BIRDS

“And coyotes killing cats is the best thing that could happen ecologically, as cats kill thousands of birds and other animals each year on the Cape (and this comes from an indoor cat owner).”¹⁰ (Way 2005)

One cannot address the issue of urban coyotes adequately without talking about cats and songbirds. For many environmentalists, the killing of cats by coyotes is not the collateral damage of *laissez-faire* management but a desired result. In fact, exaggeration of the environmental impact of domestic and feral cats is a key weapon in the war chest of pro-

predator activists. The aim is to create the kind of negative perceptions about cats that will sustain public tolerance for coyote predation. Feelings of guilt and shame will hobble owners from angry protest when their cats are killed.

Promoters of urban coyotes follow the views of American Conservation Biology. Scientists in this discipline

“...profess to be experts on an array of economic, ecological, and even aesthetic and spiritual values of biodiversity that would seem to stretch the limits of what we normally consider to lie within scientists’ expertise... In so doing, biologists jeopardize the societal trust that allows them to speak for nature in the first place” (Takacs 1996:4).

Dr. Michael Soulé, the Father of Conservation Biology (Hanscom 1999), studied under unfulfilled eco-doomsday predictor Paul Ehrlich of *Population Bomb* fame. Both scientists willingly associate themselves with what Ehrlich calls the “quasi-religious movement” of Deep Ecology (Takacs 1996:268-269).

By the late 1980s, Soulé felt he “could not sit back and be an ‘objective’ scientist” in the face of a human-race driven extinction crisis “on par with the disappearance of the dinosaurs and Pleistocene creatures” (Hanscom 1999), a highly debatable interpretation of the current situation on the planet (see Takacs 1996:52-53, Lomborg 2001). Soulé, who acknowledges that the tears in his eyes during lectures have more impact than an hour of logical argumentation (see Jones 2003), speaks of the tactics conservation biologists must use:

“Though it may sound heretical, our primary objective as conservationists (not as educators) should be to motivate children and citizens, not

⁹ Coyotes need about 2 lb of food per day. In Webber (1997:52), the most conservative estimate for cats eaten is 11%, obtained by combining GVRD scat and stomach analysis. In 2001, the City of Vancouver coyote population was estimated at 200-250 (City of Vancouver 2001). Therefore, 11% of 2 lb = 0.22 lb × 365 days/year = 80.3 lb of cat per coyote per year × 200 coyotes = 16,060 lb divided by an average outdoor cat weight of 12 lb = 1,338 cats/year eaten. For the 250 coyotes, it is 80.3 × 250 divided by 12 = 1,673 cats/year. By scat analysis alone, cats represent about 15% of the diet and results increase accordingly. The Vancouver diet analysis is similar to findings in Quinn (1992:65) based on far more extensive scat collection at two urban sites in northwestern Washington.

¹⁰ To be clear, the indoor cat was not necessarily his. In a field update for his coyote study, Way writes, “I am not a do-gooder or tree-hugger. My family has had cats and dogs and I love them” (Way 2005).

necessarily to inform them. Research may show that the two objectives are incompatible...the new motivators for nature might take a page from the advertiser's book... We must learn from the experts – politicians and advertising consultants who have mastered the art of motivation. They will tell us that facts are often irrelevant" (Takacs 1996:129)

Sophisticated eco-marketing techniques were emerging concurrently in a complementary field of study called Human Dimensions.

Conservation Biology "...derives its theoretical basis from the pure sciences, such as population genetics, demography, biogeography, and community ecology. It uses these principles to address applied problems in the maintenance of biodiversity" (Knight 1990). The word "biodiversity" was coined in the mid-1980s to provide a broader strategy than defending individual endangered species (Takacs 1996:37,41,45). The term

"...stands for the biological wealth and complexity whose depths biologists have scarcely begun to plumb... When they employ the concept of biodiversity, biologists mean to turn the depth of their ignorance from a seeming weakness into a unique strength. They seek to use this ignorance as a lever, not only to promote their conservation goals, but to advance the privileged position from which they speak for those goals." (Takacs 1996:83)

Scientists in less politico-religious disciplines simply say that while much research is devoted to the study of urbanization and its effects on wildlife, "studies only begin to identify the missing links between human activities and patterns of population densities and species

diversity" (Shochat et al. 2006). conservation biologists, however, invoke the precautionary principle to hedge against current ignorance (Lovejoy 1989). Thus, unlike normal applied sciences that rely on proven laws of nature, conservation biology applies speculation about biotic mechanisms to support its recommendations. A space shuttle or a bridge built on guesses and leaps of faith would be predictably disastrous.

One Less Cat – The "Mesopredator Release Hypothesis"

Kevin Crooks and Michael Soulé (1999) studied coyotes, cats, and songbirds in canyon "habitat islands" in highly urbanized San Diego, California to test the "mesopredator release hypothesis". This hypothesis was proposed by Soulé in 1988

"...as a possible mechanism to explain the rapid disappearance of scrub-breeding birds... It predicted that the decline of the most common large predator (coyote) would result in the ecological release of native (striped skunk, raccoon, grey fox) and exotic (domestic cat, opossum) mesopredators, and that increased predation by these effective predators would result in higher mortality and local extinction rates of scrub-breeding birds." (Crooks and Soulé 1999:563)

What constitutes a "mesopredator", a "superpredator", or "keystone predator" is itself subjective:

"...the role of keystones might still be categorized as a hypothesis, its validity depending on the ecological context and the degree to which large carnivores and herbivores persist in the particular ecosystem. In any case, the keystone species hypothesis is central to the rewilding argument" (Soulé and Noss 1998).

In the mathematical models of Courchamp et al. (1999) and Fan et al. (2005), cats are the "superpredator" protecting birds, with rats being the "mesopredator" that shares the prey.

The "mesopredator release hypothesis", though unproven, offers a justification for coyote preservation in cities. This is only a small step towards attaining the goals of the Wildlands Project, the brainchild of Soulé and ex-Earth First! leader/eco-felon Dave Foreman.¹¹ The Wildlands Project embodies an evolution in environmental theory from protecting "islands" to protecting "networks" (Wildlands Project *no date*), a radical extension of the idea of conserving "biodiversity" to "rewilding" (Soulé and Noss 1998). The aim of the Wildlands Project is to saturate the continent with pre-Columbian levels of large predators. "Where there were islands of wilderness surrounded by a sea of humanity, [Soulé] wanted to see human islands in a sea of wilderness"; in Foreman's words, it's all about "big cats and blood" (Hanscom 1999). For a full understanding of the population control and anti-technology ambitions behind "rewilding," read anything by Dave Foreman or better yet, visit anarcho-primitivist or green anarchy websites.¹²

In their study, Crooks and Soulé (1999) found, as predicted, that coyote presence and/or abundance in habitat fragments was associated with lower total

"mesopredator" abundance. However, the most important predictor of house cat abundance was not coyotes but fragment size: smaller canyons were surrounded by proportionately more houses, where people and cats reside. Larger fragment size was a positive predictor for mean coyote abundance. Crooks and Soulé teased out additional statistical correlations (beyond the big ones relating to habitat fragment age and size) between decreased scrub bird diversity and cat and raccoon abundance; increased scrub bird diversity and coyote presence.

"Statistics aren't science" and do not prove cause-and-effect (Milloy 2001); but the weak associations combined with observations that cats bordering the study sites did indeed kill native species and that coyotes killed cats led to the conclusion, "The interactions between coyotes, cats and birds probably have the strongest impact on the decline and extinction of scrub-breeding birds" (Crooks and Soulé 1999). The extent that coyotes shared the same prey as cats or ate the non-cat "mesopredators" was not provided, nor was a diet breakdown attempted for any of the other "mesopredators" that others have found through direct experimentation to be more important than cats as predators of eggs and nestlings.

In addition to the Crooks and Soulé (1999) study published in the "Letters" section of the mainstream journal *Science*, Crooks elaborated on coyotes and cats for *Wild Earth*, a Deep Ecology magazine formerly published by the Wildlands Project. In the article "Tabby Go Home" (Crooks 1998), Crooks advocates in plain English purposely populating cities with coyotes to eradicate outdoor cats through direct killing or terrorizing owners into keeping them inside:

"Coyotes certainly kill domestic cats, as evidenced by cat remains both in the canyons and in the scat of

¹¹ Former Earth First! leader and co-editor of the eco-sabotage manual *Ecodefense: A Field Guide to Monkeywrenching*, in 1991 Foreman pled guilty to conspiracy to damage the property of an energy facility and bargained his way out of serving time in jail. Others in the group received from 30 days to 6 years' imprisonment. (<http://www.tkb.org/CaseHome.jsp?caseid=295>).

Around that time, Foreman co-founded the Wildlands Project with Michael Soulé (see Hanscom 1999).

¹² Foreman's "Around the Campfire" columns are archived at <http://rewilding.org/rewildit/tag/around-the-campfire>.

coyotes... Although coyotes directly affect cats, perhaps the strongest impact of the presence of coyotes is on the behavior of cat owners...just the threat of native predators in the neighborhood is enough for some people to restrict their cats' wanderings.

"Consequently, the presence of coyotes in urban natural areas may benefit small, native species by reducing the numbers and activity of these non-native and super-abundant felines. Coyotes may act as a 'keystone predator' in such regions. The disappearance of top predators can cause an ecological unbalance that ripples down the food web through small predators to smaller prey... Unless strong reasons exist to do otherwise (such as coyote predation on threatened or endangered species), conservationists should oppose the control of large carnivores in these systems. It is also essential that urban habitat fragments maintain connectivity to larger natural areas that currently support source populations of coyotes and other large predators. Where functional movement corridors are not retained across the urban landscape, many wildlife populations, particularly carnivores, will eventually disappear." (Crooks 1998)

Leading bird scientist John M. Marzluff (Marzluff et al. 2001) discusses the shortcomings of these typical 1- to 2-year correlation-type studies and suggests that experimental, mechanistic research, though rare, is more rigorous and compelling. It is also important, according to Marzluff et al. (2001:x,xii), to remember indirect effects that are less obvious than predation, and to determine how these "bottom-up" factors affect birds.

Patten and Bolger (2003) reiterate others' findings that the chief determinant of reproductive success in birds is the rate of nest failure and the major cause of nest failure predation. They remark that Conservation Biology textbooks prominently feature certain studies that result in the impression of a general relationship between nest predator abundance and fragmentation, but that the generality of the relationship is questionable. These researchers also studied coastal sage scrub fragments of similar size and location to those of Crooks and Soulé but did not find evidence to support the "mesopredator release hypothesis":

"The rich predator community in coastal sage scrub has a diversity of responses to habitat edges and fragments and this prevents the linear top-down trophic cascade proposed by Crooks and Soulé (1999). In addition to mesocarnivores, avian predators and snakes are significant predators of nests and of adult and juvenile birds. These predator groups have divergent responses to fragmentation in coastal sage scrub. Also, predator guilds may interact with each other in complex ways, including intraguild predation (Polis et al. 1989). For example, snakes may consume avian predators, mesopredators may consume snakes, and raptors may consume small mammals... In our system, snakes appear to be the most potent predator on nests, but raptors and mesocarnivores may be the most potent predators of adults and fledglings. If a cascade does occur it is therefore more likely caused by increases in mortality of fledglings and adults rather than predation of eggs and nestlings... It seems unlikely to us that control would be exerted from only one direction. Our data

show, for example, that top-down control (by snakes) largely determines the fate of ground nests in an average year, but bottom-up control determines the fate of all breeders in a bad year (Patten and Bolger, unpublished data; Morrison and Bolger 2002). Indeed, because the ground-nesting species we studied do not persist on fragments, where the top-down control is removed, there must be additional control exerted elsewhere" (Patten and Bolger 2003).

Sorting out the "bottom-up" impact of the October 2007 San Diego wildfires on these canyon fragment birds will almost certainly be the subject of much future study.

The word "extinction" is thrown around carelessly by Crooks and Soulé, making their study more provocative. "Local extinction" does not mean extinction or even extirpation; "locally extinct" birds can be abundant a short distance away. In fact, of the 8 bird species studied by Crooks and Soulé, only the California gnatcatcher (*Polioptila californica*) is listed (as "threatened") under the Endangered Species Act (USFWS 1993). Scientists in fields of study less politically charged than conservation biology use words like "disappeared" (see Shochat et al. 2006); "decolonization" would be even better, fitting well with the term "recolonization" that is used to describe "extinct" populations that later fly back into a study (for example, see Crooks et al. 2001).

The "mesopredator release hypothesis" gives an example of the relaxed standards needed for the "applied science" of Conservation Biology. Crooks and Soulé write:

"Although the mesopredator release hypothesis has received only limited critical evaluation and remains controversial, it has become the basis for conservation programmes

justifying the protection of carnivores" (Crooks and Soulé 1999:563).

Recently, Miller (2006) completed a 5-year review of bird studies conducted in an urban or suburban context to assess the extent to which the goal of avian conservationists to provide sound advice to land managers is being met. One of the criteria used was whether recommendations are actually supported by the data at hand.

The Coke-Machine Effect

Crooks (1998) poorly interpreted survey results when he suggested that coyotes helped birds by effectively changing cat owner behaviour (the figurative part of "keystone predator"). Although 71% of residents bordering the study sites realized that coyotes were a threat to their cats and 46% of cat owners restricted their cats' outdoor activity when they believed coyotes were in the fragments, 77% of owners still let their cats outdoors (Crooks and Soulé 1999). This percentage is well above estimates given by Winter (1999) for owned cats that go outside.¹³ Methods of restriction were "letting the cat out only during the day, restricting the cat to a patio or fenced yard, and even leashing the cat when out" (Crooks 1998). Probably the most used method was the first on the list; but restricting cats at night would "have little, if any effect on predation on birds" (Fitzgerald and Turner 2000:171) which are mainly caught by cats during the daytime (RSPB 2007).

As for the literal part of "keystone predator," actual coyote predation on cats was also affecting overall cat abundance poorly, if at all. Crooks and Soulé (1999) observed that, "Cat remains were found in most fragments with coyotes, and 21% of 219 coyote scats collected in these sites contained cat remains." Forty-two percent of all cat owners in areas with coyotes

¹³ According to Winter (1999), only 35% of owned cats never go outside.

reported that coyotes had attacked or killed their cats – and, they were still cat owners. In fact, 32% of residents bordering the San Diego fragments owned cats (Crooks and Soulé 1999), slightly above the national average (APPMA 2002); likewise, the 1.7 cats per owner seems to match national data of the time.¹⁴ This part of the system is as “natural” as a Coke machine: if you are a Coke drinker and someone takes away your Coke, before long you go get another one. It has never been the American way to let terrorists dictate lifestyle choices, even if the terrorism is only vaguely recognized as such.

The research of Crooks and Soulé is cited by organizations like the American Bird Conservancy, particularly their Cats Indoors! wing. To anyone who believes cats are an important environmental hazard, the coyote as “keystone predator” is tantalizing, especially in light of the “troubling” indifference and/or resistance, even by educated people, to messages about voluntary confinement of cats (see Lepczyk et al. 2003) and the reluctance of cities to enact mandatory control and restraint laws.¹⁵ Though not in the official materials, a Cats Indoors or Else! philosophy also underlies Vancouver’s “Co-existing with Coyotes” – recall founder Webber’s “easy pickings” warning; and from this author’s experience with two program coordinators, the part

about your cat being a songbird-killing alien species is only a phone call away.

Even if the “mesopredator release hypothesis” worked in cities, coyote introductions to kill pets for supposed marginal reductions in cat predation on birds would be unforgiveable. But it doesn’t work and only causes danger, death, and grief, adding all the more disgrace to this arbitrary and capricious management.

Catastrophic Cats? Or The Mother of all Tails

In “Tabby Go Home”, Crooks (1998) transports the reader through a house of horrors of the havoc wreaked by cats. Cats are maintained by humans at numbers up to 100 times the abundance of other mid-sized predators and “are recreational hunters that kill for fun.” The latter two qualities, while specifically studied in cats, might be found in all predators. Leyhausen (1988) believes predatory behaviour spontaneously activates itself in the non-hungry animal and that “games” with prey teach about manipulation and physical properties, experience that could be gained in no other way.

Crooks (1998) refers to a number of “studies” commonly cited by conservation biologists. Three of the American reports make generalizations from observations of 5 or fewer cats. Mitchell and Beck (1992) recorded kills brought home by a single rural and 4 urban cats, in order to estimate possible devastation to Virginia wildlife. The rural cat in particular was prolific, atypical, and distinctly precocious, killing almost as many birds as mammals and also seen stalking grey fox (*Urocyon cinereoargenteus*), raccoon (*Procyon lotor*), and opossum (*Didelphis marsupialis*). At the end of the study, the authors state that the primary purpose of presenting and extrapolating from such a small data set was not to be accurate but to stimulate more careful and detailed studies in the future.

¹⁴ 49% of cat-owning households own one cat; the remaining 51% own two or more (APPMA 2002).

¹⁵ Places that do have such legislation include Overland Park, KS (neighbor must complain to owner); Muscle Shoals, AL (aggrieved party must swear an affidavit before a judge or magistrate); Aurora, CO (violators are subject to fines of \$15 to \$1,000 and up to 1 year in jail (HSUS 2002:9-11); Albuquerque, NM (Dave Foreman’s hometown) (mayor admits no ability to enforce) (Animal Law Coalition 2006); Calgary, AB, Canada (complainant must rent a humane trap from Calgary Animal Services to personally catch and transfer trespassing cat to them) (City of Calgary 2006).

George (1974) was concerned that if all the cats in America were catching as many rodents as the 3 he observed at his farmland home in the Illinois Ozarks, there might be winter shortages of raptor prey: "I am not suggesting a cause-and-effect relationship exists between the historical increase of cats and the historical decrease of raptors; however, cats, which are as efficient in their way as guns and DDT, accompany and add another dimension to man's encroachment into wildlife areas" (George 1974:384). A cause-and-effect relationship, however, is exactly what was inferred. This has nothing to do with urban cats though, and it apparently has little to do with raptors either: although American cats have almost tripled in the 30 years since this study, the Canadian and U.S. populations of the hawks of concern to George are considered secure (Hawk Mountain 2007) and none are listed as endangered or threatened (Environment Canada 2006a, USFWS 2007).

To support the claim that actual predation rates attributed to cats are surely underestimates, Crooks (1998) misquoted George (1974), as did Churcher and Lawton (1987), as having said that cats bring home only 50% of prey kills. This idea has been repeated widely, though it is unfounded (Fitzgerald and Turner 2000). In fact, George (1974) doubled total prey figures from those logged based on a test comparison of prey recorded when his "delivery area" was under continuous observation and when scrutinized for lesser amounts of time; reasons offered for underestimating prey were if the cats quickly swallowed it before observation, if it was scavenged by other animals, or if it was hidden under leaves and grass.

Crooks described the cat studied by Bradt (1949) as having "killed over 1,600 mammals and 60 birds in 18 months" (Crooks 1998). Conservation biologists and

Cats Indoors! people always say this; but the study itself describes the cat in question as retriever more than killer, with his keepers deciding the fate of most prey. Dr. Bradt began the study at a Michigan Department of Conservation Wildlife Experiment Station where he resided, after a young cat, one of a litter at his residence there, showed a tendency to bring all prey, except for shrews, into the house through a small swinging door. The cat would announce its arrival by loud meows and was always praised and petted regardless of the hour of day or night or species caught:

"The cat is remarkably gentle with his prey, and most of his captures, even the small birds, are apparently uninjured. In fact, many of these have been released by us, and have flown away at once" (Bradt 1949).

Gentle handling of live prey is not astonishing: a cat may perceive his human as a "deputy kitten" or may be in conflict about what to do with a catch (Turner and Meister 1988); it is also debated that early in domestication, cats were used by hunters to retrieve game (Serpell 2000). However, the point Bradt (1949) wanted to make was that his cat's hunting record, when considered with the few authentic food studies on cats then available, cast doubt on the belief among sportsmen and wildlife technicians that cats were vicious predators of songbirds and game. Bradt knew his cat was not characteristic, and the need of anti-cat people to rely on this 60-year-old impromptu single-cat study solely for its inflammatory numbers reveals much about the frequency of such major-league kittens. Individual cats, of course, vary widely in their hunting skills:

"Hunting effort of house cats declines with age (Churcher and Lawton, 1987; Barrat 1998), and records of prey brought in by individual young cats (e.g. George 1974; Carss 1995) are not

representative of the total population of cats. There is also a risk that findings from large surveys of prey brought home by house cats will be biased if people with cats that bring home many prey are more likely to participate than those whose cats bring home few prey. Also, as Barrat (1998) found in his large survey, most cats brought home few prey and just a few cats brought home many prey. With a highly positively skewed distribution such as this the median number of prey brought home per year is about half the mean value and better represents the predation by house cats" (Fitzgerald and Turner 2000:171).

Certainly, no deep ecologist would take seriously the duly recorded observations of a small sample of lazy, ineffective hunting cats, let alone apply such results to a whole continent.

Crooks (1998) also referred to Coleman and Temple (1996). These researchers used a simple mathematical formula to come up with "best guesses" of how bad cat predation could be. They gave three possibilities by multiplying rural Wisconsin cat population estimates by yearly kill rates per cat (taken from unreferenced "other studies" or unpublished data) by percentages of kills that are birds between 20% and 30%. The result was a rather inexact predation spread of 7.8 to 219 million birds in Wisconsin alone. In an attempt to have Wisconsin's free-roaming cats reclassified as an unprotected, huntable species, advocates relied in part on these projections (von Sternberg 2005). Problems with this research are discussed thoroughly by Goldstein et al. (2003).

Churcher and Lawton (1987) studied 78 cats in Felmersham, a 173-house English village. The researchers deserve praise for studying more than 5 cats, but the sample

was still not worthy of extrapolation to all the cats in Britain, as was done a year later by May (1988). Among other things, Felmersham is, or was, situated in an area of "intensive arable farming" (Churcher and Lawton 1987:440) so kittens were likely adopted from barn-cat stock. In that environment, they would learn to hunt from their mothers (Martin and Bateson 1988) and become better predators than many city kittens born and/or pampered indoors over important formative months of life.

Other problems can arise from surveys. They may encompass one or two seasons, and then apply results to the entire year (e.g., Woods et al. 2003, Lepczyk et al. 2003). Owners may be asked to estimate from memory their cats' past kills (e.g., Reark 1994). If interviews are done by telephone, a surveyor cannot verify that the respondent really has a cat (see O'Keefe 2003).

Before moving on to a description of his San Diego study, Crooks (1998) discussed the negative impact of cats in isolated oceanic islands, ending with the Conservation Biology version of the extinction of the Stephens Island wren:

"In the most infamous and perhaps most extreme example known, the lighthouse-keeper's pet cat on Stephens Island, off the coast of New Zealand, arrived in 1894 and within one year completely exterminated the Stephen Island Wren" (Crooks 1998).

Crooks leaves out important details. Stephens Island comprises an area of approximately 1 square mile. The Stephens Island wren (*Traversia lyalli*) was atypical, even for an oceanic island bird, being completely flightless (Millener 1989). It was semi-nocturnal, small, quick, and mouse-like (Galbreath and Brown 2004). Stephens Island held the last remnant of this species, which was widespread on the New Zealand mainland before being wiped out

hundreds of years earlier by Pacific rats that probably came with the Maori people (Olliver 2005). A maximum of 17 specimens were ever collected on Stephens Island, and it is plausible that all of them were brought in by the lighthouse-keeper's cat, but by 1895 there were also feral cats multiplying rapidly on the island. Predation by cats was probably the main factor in the extinction but was less dramatic or "classic" than is usually claimed, occurring over several years, possibly up to 1899 (Galbreath and Brown 2004).

Fitzgerald and Turner (2000) summarize the differences between island and continental ecosystems:

"Any bird populations on the continents that could not withstand these levels of predation from cats and other predators would have disappeared long ago but populations of birds on oceanic islands have evolved in circumstances in which predation from mammalian predators was negligible and they, and other island vertebrates, are therefore particularly vulnerable to predation when cats have been introduced... In these circumstances, cats have had severe effects, that were often combined with the effects of other introduced mammals and habitat modification... Birds (both landbirds and seabirds) have been affected most by the introduction of cats to islands, but the impact is rarely well documented" (Fitzgerald and Turner 2000:170).

"In many cases the bird populations were not well described before cats were established and the possible role of other factors in changes in the bird populations are treated inadequately" (Fitzgerald 1988:142).

"There are few, if any studies apart from island ones, that actually demonstrate that cats have reduced bird populations" (Fitzgerald and Turner 2000:171).

"Tabby" Tabloids – Sample Studies Post-Crooks and Soulé

Scientists can manipulate their raw data in ways that may or may not make a study more accurate. In Lepczyk et al. (2003), the researchers felt that predation numbers provided by respondents living along breeding bird survey routes under-reported actual predation by outdoor cats. Therefore, they chose to generate a wider range of estimated predation, which they did by assuming survey non-respondents had as many as 1.5 times the number of outdoor cats as survey respondents. Further, they assumed that respondents who reported their outdoor cats did not kill birds might have been mistaken, so they applied predation rates reported by other cat owners to the entire cat population.

Like surveys, "natural experiments" can be difficult to interpret. Hawkins et al. (2004) conducted an investigation into the impact of managed feral cat colonies on wildlife. The researchers felt differences in their cat and no-cat site were unimportant, but human garbage sources and significantly more humans in the cat area of the park (53% versus 17% on major trails) may have undermined the experimental design. Nonetheless, they concluded that fed feral cats change species composition of rodents by selective predation on native species, allowing competitive release of the house mouse (*Mus musculus*). Over a period of several years, such cats may function as "keystone modifiers" and cause substantial long-term changes in the entire biotic community. Incidentally, as with human park user impacts, the cats probably lowered bird presence more by scaring them over to

the non-colony area than by predation as only 4% of the feral scat contained feathers.

Cats and Creative Economics

The twin fields of conservation biology and population control attract a number of high-profile bug specialists.¹⁶ Entomologist David Pimentel¹⁷ uses creative economics to demonstrate environmental damage of \$14 billion (Pimentel et al. 1999) or \$17 billion (Pimentel et al. 2000) per year caused by cats. In contrast, USDA APHIS Wildlife Services listed reported actual damage by feral cats from complaints this agency received in 46 states as totalling \$54,192 for 8 years from fiscal 1990 to 1997 (Bergman et al. 2002), but they recognize this to be an underestimate of actual feral cat damage to natural resources, particularly to native birds. To achieve his results, Pimentel assigned a value of \$30 to every bird in the United States "based on the facts that a bird watcher spends \$0.40 per bird observed, a hunter spends \$216 per bird shot (USFWS 1988), and ornithologists spend \$800 per bird reared for release (Tinney 1981)" (Pimentel et al. 2000). He then multiplied the \$30 by 465 million or 568 million songbirds that American cats might kill per year. The birds killed were presumably only good native species, since Pimentel gave the cats no rebate for doing away with any of the non-native birds he

also listed as causing billions in damage. In addition, there is evidence that when cats kill birds, they take the weak and sick (Møller and Erritzøe 2000) and that urban areas are filled with songbirds of inferior body condition (Shochat 2004). Accordingly, and especially since most domestic and North American feral cats are urban (Hartwell 2003, Shochat 2004), a sizeable discount off the \$30 for a huge percentage of Pimentel's hypothetically depredated birds is in order.

Cats did not receive credit for extensive predation on rodents, either. Cat predation on small mammals, birds, and other prey averages out at a ratio of about 7:2:1.¹⁸ Rats are the only invasive species Pimentel found to cause more damage than cats, and probably more harmful to birds by eating eggs and nestlings. Whisson et al. (2004), for example, showed roof rats (*Rattus rattus*) to be abundant and the most common predators of songbird nests in riparian forests in California's Central Valley. If cats were present at Whisson's sites, they might improve overall nest success by suppressing rats, as Fitzgerald and Karl (1979) and others have suggested of feral cats in New Zealand.

Science or Superstition?

Responsible scientists acknowledge the weaknesses of surveying over experimental techniques. These limitations also apply to the other types of studies highlighted above. They include the impossibility of knowing if cats sampled match behaviors of the general cat population; the inappropriateness of

¹⁶ High profile entomologists/population control advocates include Paul Ehrlich of *Population Bomb* fame; Edward O. Wilson, who introduced the "biophilia hypothesis" (later popularized by Human Dimensions expert S. R. Kellert); Thomas Lovejoy, early president, Society for Conservation Biology; and David Pimentel, prolific author of books and papers on a wide variety of non-bug-related topics.

¹⁷ David Pimentel is perhaps most famous for his part in the 2004 attempted takeover of the Sierra Club board of directors on an anti-immigration platform so close to positions held by white supremacists that racist organizations encouraged their members to join the Sierra Club en masse in order to vote for the Pimentel team (see Rosenfeld 2004).

¹⁸ Dietary studies of cats show on average 69% frequency of occurrence of mammal remains in guts or scats and 21% bird remains. Studies of prey brought home show mammals to form 64-85% of vertebrate prey and birds 15-36%. Reptiles can be important prey in some places. Invertebrates, mainly insects, are recorded frequently (Fitzgerald and Turner 2000).

applying domestic cat findings to feral cats; and most importantly, results not equating to the actual impact of cats on wildlife populations (Woods et al. 2003). An additional proviso is that the dynamics of feral cats in North America are not the same as those of more remotely dispersed "bush cats" of Australia (Hartwell 2003). Nevertheless, in a process called "reification," deep-ecology-driven "science" publicized over and over solidifies anti-cat sentiment in a modern incarnation of superstition-based persecution throughout history.¹⁹ Catastrophic claims have sensation value in the popular media; even science and medical journals publish studies that report a risk more than studies that report no risk (publication bias), and scientists frequently cite studies with strong results over more rigorous ones with less interesting conclusions (citation bias) (Milloy 2001). A lone voice in a sea of cataclysm is largely ignored, like a Vancouver columnist quoting the Royal Society for the Protection of Birds that "threatened species are not the ones hunted [by cats] and the ones hunted are not decreasing in number" (Milstein 2005).

Much objective experimentation fails to implicate cats, especially in cities where they are densest, in negative impacts on birds. According to Arizona research:

"Compared with adjacent wildlands, cities are characterized by higher bird population densities and lower species diversity (Marzluff 2001). Two major factors have been

suggested to explain the increase in densities: a bottom-up effect (the increase in food abundance) and a top-down effect (a decrease in predation). Interestingly, both factors are paradoxical. While food may be more abundant at the population level (Marzluff 2001), it may be scarce at the individual level due to high competition (Sol et al. 1998). While domestic predators may be highly abundant in cities (Sorace 2002), their effects on prey behaviour or nest mortality may be negligible (Bowers and Breland 1996, Gering and Blair 1999)... I suggest that the high predictability of food availability changes foraging behaviour and consequently decision making on trade-offs between clutch size and nestling body condition. This, in turn, results in an increase in bird densities and may change not only population dynamics, but also community structure and species diversity" (Shochat 2004:622).

"The inflated densities and tame behavior of urban birds suggest that there is little empirical support for the hypothesis that predation pressure in the urban environment is high and that estimating predation risk based on predator density alone can be misleading" (Shochat et al. 2006).

Shochat et al. (2006) speculate that contemporary urban bird communities might represent the "ghost of predation past" where species unaffected by predation from "cats and corvids" thrive and others have disappeared, yet cats are not a primary threat even to metrophobic birds of concern (see Canada's species at risk discussion below).

In Tennessee, Haskell et al. (2001) found that the total number of predators rose

¹⁹ Some early persecution of cats is linked to the rise of Christianity and political need of the Church to crush all remaining pagan religions and cults, some of which were accused of engaging in rituals of devil worship and other dark associations with cats (Serpell 2000:186-188). So it is curious that Deep Ecology, itself described as a "neo-pagan" nature religion (for example, see Taylor 2001), has taken over from the mediaeval Church as purveyor of the still politically motivated anti-cat message.

with housing density, but the probability of predation on artificial nests baited with quail eggs did not change and was correlated with raccoon and American crow presence, but not cats. The researchers then concluded that quail eggs might not be appropriate for studying rates of predation on eggs and nestlings, but that management recommendations based on tentative assumptions that urbanization does increase predation should be interpreted cautiously. In a Florida scrub jay study, Bowman and Woolfenden (2001) discovered that egg predation decreased but nestling predation increased in suburban compared to wildland areas (earlier urban egg-hatching coincided with increased predator activity) with no change in nest success overall; however, several bird species (including other scrub jays), foxes, raccoons, and black rats were singled out as egg and nestling killers. Six out of 8 recent studies using miniature video camera monitoring have identified snakes (relative to groups such as mammals or birds) as the most important "edge effect" of New World open-nesting passerine birds, accounting for up to 90% of all nest predation (Weatherhead and Blouin-Demers 2004).

Assuming cats to have negative impacts can be disastrous: on Macquarie Island, Australia, where feral cats were eliminated in 2000, the number of rabbits and rats continued to grow in their absence. An initial improvement in survivability of some bird species has been followed by further declines as rabbits, which the cats used to control, destroy vegetation causing landslides and rodents feed on chicks in their nests (WWF 2007, Anonymous 2007b). Courchamp et al. (1999) and Fan et al. (2005) predicted such effects.

Some human factors in bird mortality are collisions with human structures and equipment, poisoning by pesticides and contaminants, electrocution,

introduced diseases, poorly maintained backyard feeders that concentrate birds and increase the opportunity for disease transmission, entrapment, entanglement, shooting, children playing in yards, and dogs (USFWS 2002, Burton and Doblar 2004). The highest estimates by the U.S. Fish and Wildlife Service of birds lost to human causes, excluding cats and habitat loss/degradation for which no national estimates are attempted, add up to over 1.334 billion birds per year. In 1956, only 5.6 billion birds were estimated to live in the U.S. in the summer and 3.75 billion in the winter (Terres 1995), but the U.S. Fish and Wildlife Service now gives estimates of 10 to 20 billion birds that breed in North America (USFWS 2002). In Canada "the number of songbirds is estimated to be in the billions" (CWF 2004). Canada has a tenth of the human population of the U.S., and thus a tenth the density of human-associated cats. Therefore, it would be fair to divide Pimentel's top cat predation number, which is extraordinarily high (see Clifton 2003)²⁰ by 10, for 56.8 million songbirds killed per year by Canadian cats. If "in the billions" means Canada has at least 2 billion songbirds, then the worst-case scenario for Canada is that cats kill 2.84% of the total songbird population per year. For added context, it is normal for songbird species to undergo excessive mortality and still maintain healthy populations. Only an estimated 25% of juvenile American robins survive six months after hatching (Canadian Wildlife Service 2005) yet populations are stable or increasing across most of the continent; there are more robins in North America today than when colonists first arrived (Annenberg Media 2007). For other birds, in spite of profound nest failure

²⁰ For some of the problems of estimating cat predation on birds, see the sections entitled *How Many Cats?*, *How Many Birds?*, *Ferals Kill Fewer*, and *Temple & Barns*.

caused by the brown-headed cowbird, there is often little net loss in host reproductive success over an entire breeding season (Muehter 2005).

Notwithstanding deep ecology, abstracts on urban bird ecology from the North American Ornithological Conference, 2006 do not even mention cats. In the conference's entire 392-page book of all abstracts (see http://www.naoc2006.org/files/naoc2006_abstracts.pdf), the word "cats" appears twice: once to say they weren't present in a Mexican study site, and once in relation to the use of landbird population estimates for, among other purposes, assessment of the impacts of various mortality factors (including cats) on populations.

A review of Canada's Species at Risk website (Environment Canada 2006a) and Public Registry (see http://www.sararegistry.gc.ca/species/default_e.cfm) shows predation to be the primary threat to only 1 of this country's 70 birds of concern; that is, Northern Great Plains populations of the *circumcinctus* subspecies of piping plover (*Charadrius melodus*). Coyotes are among confirmed egg predators (along with domestic dogs, minks, raccoons, and many birds); coyotes, minks, and birds of prey are confirmed chick predators; and coyotes are potential predators of adults (along with foxes, raccoons, badgers, skunks, owls, crows, and hawks). Predator control techniques include "exclosures," electric predator fences, and strobe lights to reduce egg predation; direct predator removal; raptor nest removal to reduce adult plover mortality; and predator deterrents to discourage breeding gulls (Environment Canada 2006b:9, 10,11,20). In short, Canada's recovery strategy for *Charadrius melodus circumcinctus* does not speak of cats at all.

The other subspecies of piping plover (*Charadrius melodus melodus*)

breeds along the Atlantic coast where the most important limiting factor is loss of habitat, caused mostly by human disturbance around nests. One part of human disturbance is the garbage of beach-going picnickers attracting predators including crows, gulls, foxes, raccoons, and feral dogs and cats (Environment Canada 2006a). A U.S. Fish and Wildlife Service publication (USFWS 2006) informs the public about the dangers of dogs and cats on beaches and directs readers to the American Bird Conservancy's Cats Indoors! website where literature (see especially Winter and Wallace 2006) gives the distorted impression that cats are the most serious predator of the piping plover and other ground-nesting birds. However, as in Canada, the United States piping plover recovery plan is not obsessed with dogs and cats. It stresses leashing of dogs on plover nesting beaches, and feral cats have been trapped and removed at some locations. Redressing environmental and human-abetted factors that change/increase types/numbers of predators is encouraged where feasible; but this relates, again, to the whole range of mostly wild predators, bird and mammal, that benefit from the presence of humans. Moreover, the U.S. program states that "policies that prohibit management of native predator populations even when human-abetted factors have caused substantial increases in their natural abundance may be counter-productive to the overall goal of protecting 'natural' ecosystems" (USFWS 1996).

Of note, while well-fed cats may hunt, perhaps hunger determines an animal's perseverance: in U.S. predator deterrent assessments regarding piping plovers, "Foxes or coyotes systematically depredated 5-10 exclosures at each of three widely separated sites in 1995 (USFWS files)" (USFWS 1996) although the method used to identify these canids is not disclosed.

Winter and Wallace (2006) cite numerous reports of cat tracks found near or around piping plover exclosures in various parks and recreation areas as confirmation that cats are the cause of piping plover nest predation/abandonment/failure, but inferring predator identity from such circumstantial evidence is not always a reliable approach (Larivière 1999, cited in Environment Canada 2006b). In one case described by Winter and Wallace (2006), a cat and kittens were caught red-handed in New York with the remains of 17 common terns, but most of the accounts of nest remains seem as or more consistent with predation by other animals.

Primary limiting factors for the other Canadian birds at risk range from loss of habitat to loss of traditional chimneys; but cats, dogs, and coyotes sometimes receive attention as secondary threats. The species subject to coyote predation are almost always vulnerable to the other "mesopredators" that coyotes are supposed to be so good at controlling according to Crooks and Soulé (1999). One wonders if this is further lack of proof for the "mesopredator release hypothesis" and the coyote as beneficial "keystone species." At the very least, coyote predation on endangered birds and eggs in these systems raises the "strong reasons" given by Crooks (1998) for conservationists to support, not oppose, the control of large carnivores.

The 6 birds in Canada, other than piping plovers, for which coyotes and cats together are suspected or known predators, are: a subspecies of the greater sage-grouse (*Centrocercus urophasianus phaios*) (a game bird extirpated from British Columbia; other named predators are golden eagles, bobcats, and weasels); the northern bobwhite (*Colinus virginianus*) (endangered in Canada but globally secure; skunks, foxes, owls, raccoons, dogs, and snakes are also noted as predators); a subspecies of the

horned lark (*Eremophila alpestris strigata*) (endangered, though it was never abundant; studies cited in support of the cat's inclusion are George (1974) and Coleman and Temple, unpublished data, this time teaming up with S. R. Craven, a Human Dimensions guy) (Coleman et al. 1997); the endangered burrowing owl (*Athene cunicularia*) (known heavy predation in B.C. by coyotes, northern harriers, and great horned owls; elsewhere by raptors and badgers, and cats and dogs are reported as a threat in human areas); the endangered roseate tern (*Sterna dougallii*) (also vulnerable to numerous avian predators; dogs, foxes, and other mammals; and ants); the threatened common nighthawk (*Chordeiles minor*) (also having numerous avian predators from hawks to crows; other listed predators are striped skunks, raccoons, dogs, foxes, and snakes).

Coyotes, without cats, are singled out as a threat to 3 birds: the whooping crane (*Grus americana*) (endangered though historically never common to Canada); the endangered greater sage-grouse (*Centrocercus urophasianus urophasianus*) (predator contribution unknown, but in Alberta, coyote numbers increased 135% between 1977-1989 and 1995-1996); the long-billed curlew (*Numenius americanus*) (a bird of special concern; habitat fragmentation creates easier access by predators, primarily increasing numbers of coyotes).

The 4 birds for which descriptions specifically mention cats, but not coyotes, among predators are: an endangered subspecies of the Vesper sparrow (*Pooecetes gramineus affinis*) (its only Canadian population consists of about 5 pairs at the Nanaimo Airport, where domestic and feral cats have been observed; proven nest predators, however, are American crows and garter snakes – there are no coyotes on Vancouver Island); the threatened short-tailed albatross

(*Phoebastria albatrus*) (cats used to live on its Japanese island breeding grounds, rats still do; but volcanic eruptions and longline fishing are its known primary threats); the yellow rail (*Coturnicops noveboracensis*) (a bird of special concern; in 1980 a radio-tracked yellow rail was caught by a house cat in Indiana); and the Bicknell's thrush (*Catharus bicknelli*) (a bird of special concern not in decline presently, but an unpublished manuscript in 1939 suggests the Seal Island population, off the coast of Nova Scotia, may have been devastated by ravens and crows, feral cats, and introduced squirrels).

Urban pet owners, like most animal lovers, would probably go out of their way to assist an endangered bird that somehow found its way into a private yard. But based on the habitat locations and known threats to Canada's birds at risk, there is no justification for a Cats Indoors! agenda. If anything, the coyote population explosion in some of these ecosystems deserves far more attention than predictable pet demographics/dynamics.

ARBITRARY AND CAPRICIOUS MANAGEMENT

Cats and coyotes have some things in common. Cats have survived persecution throughout millennia, as now. The coyote has been killed by humans for over a century because of its predation on livestock, and still thrives. In fact, it is one of the few North American mammals to have survived extinctions that occurred after the last Ice Age (Geist and McTaggart-Cowan 1995). Both species are predators – “mesopredators” even, depending on whom you listen to, because researchers frequently refer to coyotes as “large carnivores” while public education on “coexistence” always stresses their small size and weight. Both are opportunistic hunters and will exhibit predatory behaviour in the absence of

hunger (Leyhausen 1988:58, Baker and Timm 1998). Beyond their native western plains habitat, coyotes are as “invasive” to the rest of the continent as “exotic” housecats brought by European settlers on ships in their lifesaving capacity as mousers. Both can breed “with the fecundity of a prey species” (Clifton 2003). But the similarities end there. People fix cats, owned and feral, to check unwanted expansion; whereas coyotes should be slowed by their short lifespans²¹ but still proliferate. Coyotes flourish differently than cats because they can survive anywhere, while cats live almost exclusively in close association with humans.

Environmentalists contend that a coyote killing a cat is no worse than a cat killing a songbird. This ignores the fact that pets are not wildlife. Pets, like people, are family members, unique and individual. Coyotes, and songbirds, are wildlife for which most ecologists say the health of populations, not individuals, matters. Using the environmentalist proposition above, coyotes killing children would be no worse than little boys with pellet guns killing songbirds. It is a mistake to be deluded by those who speak of coyotes, birds, and family members using the terminology of environmentalism. It doesn't matter how “natural” coyote predation on small or furry family members might be. Rape is “natural” too, according to some anthropologists (see Thornhill and Palmer 2000, Wrangham and

²¹ For example, Chicago coyotes “generally have a 60% chance of surviving 1 year. This is higher than most rural studies where coyotes are exposed to hunting and trapping. Nevertheless, most coyotes die before reaching their second year. This is because many pups die from a variety of causes during their first few months outside the den... By far the most frequent cause of death for urban coyotes has been collisions with vehicles (50 to 70 percent of deaths each year). Other causes of death included shootings, malnutrition, and disease such as sarcoptic mange and parvo virus (four coyotes died from unknown causes).” (Gehrt 2006)

Peterson 1996), but even they do not conclude that offenders should be exonerated and all the daughters locked indoors.

Deep ecologists and animal rights activists might respond that the whole pet-as-family-member idea is a biophilically misdirected Western normative aberration arising from an equally tragic transformation of hunter-gatherer societies to farming from the Neolithic onwards. But even if it is bad to adore pets, environmentalists still cannot explain why predation is "natural" by coyotes on cats but not by humans on coyotes; human predation to protect one's own is surely part of our desirable Stone-Age birthright.

Beyond the boundaries and ethical debates of suburbia, there is nothing controversial about shooting and trapping coyotes. In most of North America it is a free-for-all, but hunters cannot possibly keep up with burgeoning coyote populations and a decline in the demand for fur makes trapping less lucrative. In B.C., with the exception of Skeena Region where only 10 coyotes can be taken per hunter per year, there are no bag limits, long open seasons, and no reporting conditions to make it even easier (Ministry of Environment 2005). The provincial government wants to recruit an additional 20,000 registered hunters to reverse the "dramatic downturn" in hunting of the past 20 years (Payton and Carrigg 2007) that has coincided with the growth of wildlife populations and dramatic increase in their conflicts with humans (MWLAP 2003). Killing of wildlife for self-defence and the protection of property, which includes pets and livestock, is one of the basic tenets of the Roosevelt Doctrine, the highly successful North American wildlife conservation model of the past century (Geist 2004a).

The controversy arises because even one coyote living within a high-density

human habitat exposes the most vulnerable of human community members – young children – to the risk of attack and ensures the ongoing death of many pets, especially the outdoor-allowed cats specifically targeted for eradication by Soulé, Crooks, and their followers. Protection of "dangerous wildlife" (the classification of coyotes in the B.C. Wildlife Act 1996) in cities at the expense of pets and children who, unlike Professor Gehrt, rarely weigh 200 pounds, is reckless, arbitrary and capricious management that caters to the unfounded whims of deep ecologists.²² The policy is arguably an infringement of Section 7 of the *Canadian Charter of Rights and Freedoms*.²³

VANCOUVER'S "CO-EXISTING WITH COYOTES" – AN ANNOTATED HISTORY

Between 1985 and 1995, there was a 315% increase in coyote-related complaints within the GVRD (City of Vancouver 1995a) mostly from urban and suburban residents (Webber 1997). In September 1993, Vancouver City Councillor Price (a leader in environmentally efficient urban planning) (Lloyd 2003) requested a report on what could be done to address the coyote problem in the Southlands area. City staff had also received complaints about other animals, such as skunks and raccoons, and concluded that many different government departments and private agencies that worked with urban wildlife needed to be involved:

"It is increasingly important that all groups be effectively coordinated,

²² Pets aside, Gehrt's preferences for wildlife over people can be surmised from a paper he wrote earlier in his career on population control (see Gehrt 1996).

²³ "Everyone has the right to life, liberty, and security of the person and the right not to be deprived thereof except in accordance with the principles of fundamental justice." (Section 7, Canadian Charter of Rights and Freedoms)

especially when dealing with problem situations. New information needs to be shared so that all groups may work cooperatively. In September, 1993, an introductory urban wildlife meeting was held at Stanley Park to identify interested participants and consider a coordinated approach" (City of Vancouver 1994a).

There is no indication of any private citizens whose stake was the safety of pets attending the initial meeting. It does not appear that the City of Vancouver or Park Board extended public invitations. From this meeting, the Urban Wildlife Management Committee was formed. Its members consisted of representatives from three levels of government: the Canadian Wildlife Service, B.C. Ministry of Environment, and the City of Vancouver. The rest of the members were from NGOs (non-governmental organizations) seemingly as diverse as the BC Society for the Prevention of Cruelty to Animals (BCSPCA) and BC Humane Education Society, Stanley Park Zoological Society, Vancouver Aquarium, Wildlife Rescue Association, Monika's Wildlife Shelter, Critter Care, Urban Pest Management Association, and Urban Wildlife Management Inc. The co-chairs of the new committee were Stephen Huddart of the BC Humane Education Society and Mike Mackintosh of the Vancouver Park Board. Mike Mackintosh, a career urban environmentalist, had affiliations with several of the other groups and the government bodies.²⁴ The BC Humane Education Society was an offshoot body formed by the BCSPCA in 1983.

²⁴ Mike Mackintosh, Vancouver Park Board employee and oft-quoted Vancouver wildlife advocate, was a founder of the Stanley Park Ecology Society and Stanley Park Zoological Society and ran the Stanley Park Zoo with a new wildlife conservation focus before its dismantling (SPES no date).

"The committee's main purposes are to develop an effective education program promoting better understanding and appreciation of urban wildlife. The Committee recognizes the fundamental value and enjoyment of living with wildlife" (City of Vancouver 1994a).

If this was about coyotes, the "enjoyment" of seeing a cat being strangled during a round of golf or a walk to nursery school could be worthy only of the hardest-core environmentalist.

"There are many ways to encourage and provide for species to enable them to live harmoniously with city dwellers. (Backyard sanctuary programs, creative landscaping are examples.) The Committee will be a source of public information and advice [and] review existing urban wildlife control measures and explore new methods of working with problem wildlife. Problem wildlife can be defined as species that are over-abundant and threaten the existence of sensitive native species, cause habitat destruction or degradation, threaten human health by transmission of disease or parasites and cause property destruction" (City of Vancouver 1994a).

The Committee would review programs in other cities and districts and examine innovative approaches to "enhancement and control". Four subcommittees were formed: Health, to examine "human medical hazards"; Education, to develop "programs stressing responsible attitudes and appreciation of local wildlife"; Media Relations, to provide "effective public information about urban wildlife"; and Legislative, to examine "issues of wildlife and the law". The Committee was to meet every 4 to 6 weeks,

with specialists in wildlife management to present their findings at upcoming sessions.

"The primary objective of the Committee is to convey positive messages about the roles wildlife can play in our lives. The Committee is well qualified to make recommendations regarding urban wildlife issues, and can be considered as a source of information, should Council require assistance. The problems related to coyotes, raccoons and skunks will be reviewed, and a more extensive report on the Committee's activities will be prepared for 1995" (City of Vancouver 1994a).

The issue at hand of the peril of coyotes to people and pets was suddenly downsized, with dangerous wildlife now in the same category as skunks and raccoons. The committee's own preferences, in the absence of urban pet owners, the "vocal few", allowed this shift in objectives.

The BCSPCA was on the committee, and it seems logical that it would have served as the defender of pets. However, cats are a tremendous drain on the resources of animal shelters (Basrur 1998). Though the SPCA does much that is good, it is unlikely its Vancouver representative was oblivious to the potential benefits of coyote predation. Fewer lost or stray cats would be brought to the shelter together with higher adoption rates to replace owned cats that disappeared. The coyote presence in Vancouver could not but help out the SPCA, both financially and from the public relations angle, by furtively doing the dirty work of cat extermination for them. Urban coyotes may partly explain how the SPCA was able to convert to a no-kill, or at least limited-kill, philosophy in 2002 after previously needing to euthanize thousands of pets yearly in the Lower Mainland (O'Connor 2004), though in 2004 two

workers still described their respective BCSPCA shelters as "Auschwitz" (Yaffe 2004a).²⁵

Some on City Council were apparently irritated by the relaxed pace of the Urban Wildlife Management Committee:

"At the July 19, 1994 Council meeting, Councillor Puil requested the City Manager expedite the report he had requested on what steps could be taken to capture coyotes in the city for release in a wilderness area; who would be responsible and what resources would be required to do this" (City of Vancouver 1994b).

A Committee presentation that had been given at a May 1994 Council meeting was therefore summarized in the Vancouver City Council report of September 2, 1994 (City of Vancouver 1994b). The committee reaffirmed their original pro-coyote position by rejecting all ideas for removal as impossible; or if possible, not feasible or too expensive; or if feasible and inexpensive, then unsafe in urban settings. Puil would later be described by Webber (1997:38-39) as having attitudes that "should be seen as educational opportunities, underscoring the need for 'environmental literacy'."²⁶ The presentation waffled back and forth between statements about the difficulty of removing coyotes and the undesirability of doing so anyway:

"Programs to control coyotes may be difficult to carry out in large urban areas. Some of the techniques considered are hazardous to public safety and can be dangerous to domestic animals."

²⁵ The BCSPCA is now in the wildlife rehabilitation business too (BCSPCA 2005a), potentially a conflict of interest with the historical purpose of protecting pets.

²⁶ Webber went on to portray Puil as grey and ignorant in the Urban Coyote Project video (Delta Cable Communications, Ltd. 5381 48th Ave., Delta, B.C., Canada V4K 1W7).

Not surprisingly, poison was not a good option. Shooting also presented additional public hazards and had "met with extremely negative reaction" (City of Vancouver 1994b). Live trapping didn't work, but:

"One effective method of capture may involve the use of soft leg-hold traps which are designed to catch animals without physical injury. Leg-hold traps, safe or not, are likely to be opposed publicly. Domestic animals may also be caught if the traps are not closely observed. Even if successful, the translocation of coyotes is not considered by experts to be a viable solution. Therefore, any live trapped animals would likely be euthanized" (City of Vancouver 1994b).

As just stated, though, these traps would not physically injure the animals caught. The tension pans are set so they do not trigger for lighter animals (Baker and Timm 1998), and traps can be placed at appropriate sites to minimize domestic dog trapping. At this early date, the Committee may have been making assumptions about public opposition based, again, on their own preferences.

"Presently there are no organizations in Vancouver capable of dealing with coyote removals other than in extreme circumstances. The Urban Wildlife Committee has been reviewing the procedures used in other cities and districts for coyote control. At this point, no city has successfully resolved the urban coyote situation" (City of Vancouver 1994b).

The committee had just talked about the traps and techniques used in the Glendale, California program, where, in spite of regulations that severely restrict hunting in that region, a fair job of dealing with urban coyotes has been ongoing since a 3-year-old was killed in 1981 (Baker and Timm 1998). Organizations capable of dealing with non-

extreme coyote removals included the B.C. Trappers Association that had been around since 1945, and the B.C. Wildlife Federation, founded in 1951.²⁷

"Some local wildlife contractors would provide assistance to the public where possible" (City of Vancouver 1994b), but public use of such services would be environmentally and socially perilous:

"In their role as efficient predators of rats and other rodents, coyotes can be beneficial to the human environment. A program of systematic removal of these animals will be controversial as many city residents perceive coyotes as urban wildlife which occupy an important natural role" (City of Vancouver 1994b).

The "many city residents" referred to may have consisted of few more than the group members themselves. The "natural role" was perception only in an area previously coyote-free, and the idea of a balance of nature has been out of dominance among ecologists for half a century (Cronon 1996, Barbour 1996). It was also premature to suggest that Vancouver coyotes were eating lots of rats. Timothy Quinn's thesis on urban coyotes, just across the border in northwestern Washington, was published in 1992. His scat analysis had shown that squirrels made up about 12% of prey occurring in scat at one urban-adjacent site and 6% at the other. Few other rodents were identified beyond the 4.4% voles (field mice) at urban site 1 and 2.9% at urban site 2. Rats were not noted at all; and mice at <1% did not merit a bar on the graph, being included instead in the assorted small mammal category that was made up mostly of beaver, a little bit of raccoon and dog, and about 2% unknown mammals.

²⁷ See B.C. Trappers Association, *Who Are We?* (<http://www.bctrappers.bc.ca/who.html>), and B.C. Wildlife Federation, *About Us*, (<http://www.bcwfb.bc.ca/about/>).

Quinn found cat to be the most important coyote food at urban site 1 (22.7% frequency of occurrence) and well represented at urban site 2 (9.2%). Apples were the second highest item found after cat at urban site 1 (15%) but were consumed much more at urban site 2 (34.6%). All fruit combined edged out the consumption of cats at urban site 1 (Quinn 1992).

The findings in Quinn (1992) were supported by other studies then available but conducted in less similar climes (e.g., Shargo 1988). So it was sheer unsubstantiated hunch on the part of the Urban Wildlife Management Committee to suggest displacing cats, valued since antiquity for their rodent-catching abilities (Serpell 2000), with coyotes for rat control; and the results of the experiment are unconvincing: "Co-existing with Coyotes" describes Vancouver's current mouse and rat populations as "immense" (SPES 2007b).

Even if coyotes did eat a lot of rats, they could not be expected to reduce their populations. Controlled experimentation in New Zealand mixed forests with introduced predator assemblages (which exist at lower and erratic concentrations more analogous to coyotes than domestic cats) has shown that food availability drives the early stages of mouse and rat eruptions and that predators can slow but not prevent such upsurges, cannot truncate peak prey population size, do not significantly hasten the rate of decline in prey populations during a crash phase, and have an unclear effect on limiting low-phase prey populations (Blackwell et al. 2003). In Vancouver, even squirrels, the rodents that Quinn did find to be a frequent urban prey item for coyotes, are now all-pervading, further corroborating the New Zealand findings.²⁸

²⁸ In addition, Vancouverites can attest that there are now more, not fewer, "mesopredators" like skunks and raccoons than ever before. While the computer analysis in Crooks and Soulé (1999) showed coyotes

Environmentalists can't have it both ways. They complain about high numbers of cats, but density is part of effective mousing. If the bird-catching projections for cats by so many conservation biologists are true, and free-range cats also catch 3.5 small mammals for every bird (the 7:2:1 ratio), then it would take one coyote spending its life within three or four residential blocks to match the rodent-control potential of outdoor cats allowed to work safely at night instead of coaxed by coyote-fearing owners into the daytime activity that optimizes bird-catching (using Quinn 1992 for urban coyote diet; see APPMA 2002, O'Keefe 2003, and Winter 1999 to calculate outdoor hunting cats in your neighborhood). Even people currently neutral would find such tightly packed home ranges of coyotes untenable for the inevitable increase in disease transmission to dogs and direct conflict with people and pets.

If "natural" rodent control really mattered to the Urban Wildlife Committee, then more cats were in order, not more coyotes. An outdoor cat for every one or two households would be ideal: Elton (1953) found that the effect of cats on Norway rat control was usually restricted to areas within about 50 metres of buildings where the cat dwelt. In the heavily populated areas of Vancouver where rats are truly abundant, like SkyTrain stations, Granville Island, and the basements of 5-star hotels, other traditional methods recommended by experts in public health remain more

to have a negative effect on raccoon abundance, their field tests showed that raccoons did not avoid coyotes. Controlled experimentation has indicated that raccoons do not avoid coyotes and, if anything, increase their activity in areas scented with coyote urine. Also, in radio-telemetry studies, coyote predation consistently made up <3% of known-cause mortalities of raccoons; and skunks, because of their omnivory, may also have reduced competition with coyotes (Gehrt and Prange 2007).

practical and effective, and safer, than coyotes.

Of note, Quinn (1992) viewed as beneficial the high dietary frequency of cats he did discover. He referenced Soulé et al. (1988) in his thesis and, as is the custom among many coyote researchers, dogmatically suggested that predation on people's cats might help the songbirds.

The Urban Wildlife Management Committee then moved beyond biology to economics and expressed concern over the price tag to the city for coyote removal:

"The City does not employ staff that deal with problems related to coyotes. A program of coyote removal would require a substantial investment of time" (City of Vancouver 1994b).

No cost-benefit analysis was presented. Glendale, California could have provided the committee with an estimate based on their program. If quick action on removal had occurred at these early stages of coyote establishment in Vancouver, the city's overall investment in time and money on coyote management might be far lower than it is today. The Committee felt that understanding coyote behavior was the best course of action:

"From all that is known to this point, the most effective way to avoid conflict is to increase public awareness of coyote behaviour... There are a few simple suggestions for people in order to discourage coyotes from their property. If possible, perimeter fencing can be regularly 'scent marked' with bleach which tends to discourage the animals. Tying two shiny tin cans together and throwing them in the direction of the animals creates a bright and noisy scare technique which may also act as a deterrent. It is very important to be consistent with any techniques employed to discourage coyote

presence. Proper care and control of small pets and removal of edible waste are still the most effective ways of reducing coyote/human interactions. Further information on coyote deterrence may be obtained from the Wildlife Rescue Association..." (City of Vancouver 1994b).

If the "proper care and control of small pets" was going to mean house imprisonment of cats, there was already a problem. In a plebiscite just two years earlier, Vancouverites had expressed a strong aversion to animal captivity, with a majority voting to close the Stanley Park Zoo (see Wilson 1993a,b; Kinghorn 2001).

Anyone left who was still not convinced of the benefits of urban coyotes must have been relieved at least to learn how easy it was to discourage them, but the Urban Wildlife Management Committee concluded with resignation:

"The response to urban coyote problems is limited due mainly to the difficulty of dealing with them in a densely populated urban area" (City of Vancouver 1994b).

The "Urban Coyote Project" – Human Dimensions and Eco-Marketing

Human Dimensions is the "...acquisition and application of social science data to wildlife and natural resource issues. It can be divided into two parts: acquiring information on human thought and actions through the application of social science methodologies; and the application of that information to developing suitable approaches to wildlife problems or issues" (Manfredo et al. 1995). Practitioners describe it as a tool to "manage people," to "influence beliefs, attitudes, and behaviors to promote stewardship of natural resources" (Wise and Minnis 1998). In this form, it takes on the clear role of eco-marketing. Since a chosen goal may be specious, as

with the plan to get rid of cats on environmental hazard grounds, the field is very open to abuse. A textbook example of Human Dimensions as a means to a predetermined end is as follows:

"The first step in planning and designing human dimension programs is to define specific goals and set measurable objectives. Goals define the management philosophies within which objectives will be pursued... One goal of a raptor education project may be 'To increase the percentage of Virginians from 50 percent to 75 percent by 1992 who think money spent by state government on urban peregrine falcon releases should be increased'" (Duda and Schaefer 1990).

In the September 2, 1994 report to Vancouver City Council, the first reference to the "Urban Coyote Project" was made:

"The Urban Wildlife Committee is currently seeking support for a two-year urban coyote research project, which is scheduled to commence at UBC in September 1994. Material support and physical assistance for the study has already been arranged with groups involved in the Committee, including the Ministry of Environment, Stanley Park Conservation Committee and B.C. SPCA. The research is contingent upon additional funding being obtained through government and private sources" (City of Vancouver 1994b).

The Urban Coyote Project played an integral role in formation of today's "Co-existing with Coyotes" strategy. Its results, contained in the thesis *Urban Coyotes in the Lower Mainland, BC: Public Perceptions and Education* (Webber 1997), seemed to reinforce the anti-urban-coyote people as "a vocal few" with the rest happy to "coexist." Human Dimensions pre-marketing surveys

provided clues for the creation of educational materials that would reinforce positive beliefs, even if erroneous, and defuse concerns and negative perceptions, even if accurate.

The Urban Wildlife Management Committee obtained funding of \$10,820 for the Urban Coyote Project through a City of Vancouver Environmental Grant. The grant application was discussed in a December 1995 Administrative Report:

"Based on the information available, it was the General Manager of Parks and Recreation's opinion that the most effective way to avoid conflict with coyotes was to enhance our understanding of the animal and increase public awareness of coyote behaviour. The Urban Coyote Project seeks to target the coyote problem based on this philosophy and has the support of the Urban Wildlife Committee" (City of Vancouver 1995a).

But the philosophy attributed to the General Manager of Parks and Recreation was transformed by the Urban Coyote Project and Urban Wildlife Management Committee. The potentially impartial concept of "enhancing understanding" became the makeover-oriented "fostering an appreciation"; "increasing awareness" became the romantic notion of "coexistence":

"The proposed program aims at fostering an appreciation of urban wildlife and will emphasize the coexistence between humans and coyotes in the City of Vancouver" (City of Vancouver 1995a).

"Coexistence" with dangerous wildlife was an untried approach. There was no particular reason to believe it would be an effective strategy, especially when Soulé (1995) had made it clear that convivial

coexistence between animals is rare, that "the much more common kinds of interactions are competition, predation, parasitism, and disease."²⁹ As in the textbook eco-marketing example, "coexistence" was the management philosophy goal, and the objective was to get the public on-side through "education" based on "science". The three components of the study were:

"...to determine more about the local habits and biology of urban coyotes; to identify the specific concerns the public has with respect to urban coyotes; and to produce educational materials and programs that address the public's fears and concerns. The funding requested from the City of Vancouver is to finance the survey and educational component of the Urban Coyote Project. The initiative is sponsored by the Stanley Park Ecology Society (SPES) with the work to be conducted by Kristine Webber with input from the Urban Wildlife Committee and other agencies" (City of Vancouver 1995a).

In the Acknowledgments to her thesis, Webber (1997:x) describes herself and her associates as "eco-freaks". Researchers, like everyone, have views. Still, the description raises concerns cited earlier about deep ecology tendencies among conservation biologists and the redefinition of a scientist's role from truth-

seeker to advocate and marketer of nature. Webber did not really have enough money, resources, coyote cadavers, or scat collectors to do in-depth field work on coyotes. She was most interested in the human dimensions part, but again had cost and time constraints.

Looking back, it is hard to say whether Webber's thesis proved Vancouverites ever had their hearts set on "coexistence." As noted earlier, all surveyed groups fared so badly on the "Coyote Awareness Index" (Webber 1997) that their opinions might be likened to a jury asked to render its verdict without the inconvenience of sitting through evidence and submissions at trial. Certainly, Webber complicated things further by misrepresenting the data obtained. For example, she asked her non-randomly sampled veterinary clients and naturalists a question on acceptable circumstances for destroying "problem wildlife" they had just identified from a list that included rats, raccoons, mice, coyotes, Canada geese, crows, skunks, pigeons, starlings, squirrels, and seagulls, then erroneously charted their answers in her thesis as if asked exclusively about coyotes (see Webber 1997). The question itself was of poor design and probably confused respondents, because people's norms for destroying an animal in a given situation vary by individual species (Wittman et al. 1998). Indeed, when the randomly sampled GVRD respondents were asked the same question but specifically about coyotes, they gave much higher responses for pet safety (almost 20% compared to about 5%), even though only 44% had pets compared to 96% of the vet clients and 62% of the naturalists (Webber 1997).

One question allowed Webber to dispose of core preferences that went against "coexistence." Respondents were asked to choose from a list the method most

²⁹ However, Soulé's Wildlands Project website has a more optimistic message for the general public: "People can coexist with wolves, bears and other wildlife, just as they have for thousands of years and continue to do in many parts of the world, including North America. In most cases, humans can easily learn to safely coexist with wildlife by making minimal lifestyle changes" (Wildlands Project *no date*). For practical purposes, Soulé must trust that people have the same susceptibility as wild prey to losing fear of predators after prolonged lack of exposure (see Gittleman and Gompper 2001).

appropriate to address "problem wildlife" (vet client/naturalist survey) or the method(s) most appropriate for dealing with urban coyote complaints/concerns (GVRD survey). "Relocation" turned out to be popular with everyone and the most preferred solution of the random GVRD sample (again the only group asked explicitly about coyotes) (Webber 1997). Webber knew from her involvement with the Urban Wildlife Management Committee that relocation was not a viable strategy (City of Vancouver 1994b, Webber 1997). However, its inclusion in the list of choices may have diverted opponents to "coexistence" from selecting the only other removal-type option of "humane destruction." When the red-herring of "relocation" was disqualified, "education", and hence "coexistence", won by default.

By environmental grant standards, the Urban Coyote Project was considered a "somewhat atypical project that does not have easily measurable environmental benefits," but it targeted an unmet need of producing and distributing coyote-specific education pertaining to the City of Vancouver.

"It is hoped that by working with all the affected agencies a formal coyote management protocol can be developed for responding to coyote problems. At present, without any formal guidelines for addressing coyote complaints, agencies are seen as doing nothing to alleviate the public's concerns.

The staff review committee feels that the Urban Coyote Project has merit in that it will help to alleviate residents fears and the frustration they feel regarding nothing being done to address the current coyote problems... Notwithstanding the above comments, the review committee questioned the severity of the problem and the benefit

to be achieved but felt on balance, the project should be endorsed given the increasing coyote incidences/complaints trend." (City of Vancouver 1995).

2000-2001: "Co-existing with Coyotes" gets Added Bite

While all these efforts were going on to solidify the Vancouver-as-wildlife-preserve vision, the coyote population was continuing to grow and pets were, as now, being eaten. Several agencies met in April 2000 to "develop a cooperative strategy for local coyote management in response to an increasing number of incidents involving coyote interactions with humans in Vancouver" (City of Vancouver 2001). Many of the same groups involved in the Urban Wildlife Management Committee were back. "The lead agencies were the Vancouver Park Board, the (then) Ministry of Environment, Lands and Parks, and the Stanley Park Ecology Society. Other groups included in meetings were the GVRD, SPCA and other local wildlife groups" (City of Vancouver 2001).

Meanwhile, in a postmodern version of *The Boy Who Cried Wolf*, "dozens and dozens" of legitimate complaints to city and provincial authorities about a habituated coyote were ignored until it attacked a 12-year-old girl (Bailey 2000). The public was probably questioning the effectiveness of a prevention strategy that translated into a coyote's removal only after it bit someone, thereby conclusively proving its aggressiveness. Even after the attack, Mike Mackintosh held firm:

"There are roughly 200 coyotes in Vancouver and 2,000 to 3,000 in the Fraser Valley. But despite the large numbers, according to MacIntosh [sic], there are only three or four aggressive coyotes around the city and they reside only in selected

areas...despite some aggression, there are currently no plans to destroy this small contingent" (Bailey 2000).

The provincial government reaffirmed its mandate: "The Ministry of Air, Land, and Water Protection staff will respond when an individual aggressive animal poses a hazard to human safety" (City of Vancouver 2001).

There is some evidence of public input on behalf of pets around this time:

"At a public round table on urban coyotes, a Vancouver hypnotherapist, who'd been stalked on a number of occasions as she walked her dainty and diminutive Lhasa Apso, Beaugard, called for the population to be culled. She'd collected a number of harrowing tales about coyotes to support her complaints. One elderly woman was traumatized after four coyotes carried off the tiny dog she was walking in Stanley Park. In another case, a \$500 Bijon Frise was grabbed off its leash by a coyote near Davie Street. She challenged the park board's claim that coyotes and humans could co-habitate with little problem" (Page 2000).

This journalist's mocking tone in describing pets and their owners is a remarkable early example of the way objective reporting is discarded to assist predator advocates in silencing people who disagree with "coexistence".

By 2000, the 24-hour Wildlife-Human Conflict Call Centre was available for the public to report incidents involving dangerous wildlife. Sightings and incidents were also reported to various other agencies like the Vancouver Park Board, Stanley Park Ecology Society, Vancouver/Richmond Health Board, and Vancouver Police. Serious reports to these agencies were to be forwarded, again, to the Ministry of Environment, Lands and Parks for "action".

"The long term approach with the greatest value is public education and increased public awareness. The Co-existing with Coyotes Program, developed by the Stanley Park Ecology Society, is endorsed and financially supported by the agencies. The program creates understanding and empowers residents to deal with coyotes. It includes a Coyote information hotline (604) 681-WILD, information brochures, and staff led education sessions at schools and community centres. The principal sponsors for the program have included the Ministry of Water, Land and Air Protection, and the Vancouver Park Board. Endorsement and sponsorship funds have also been provided by the Vancouver Foundation and the Vancouver School Board" (City of Vancouver 2001).

Urban coyote advocates jumped another hurdle in 2001 after more coyote attacks on humans. The problem was expanded upon in the report to Vancouver City Council from Community Services and the Board of Parks and Recreation:

"In urban areas, coyotes are increasingly losing their natural distrust and fear of humans. Wildlife experts maintain that this habituation process mainly occurs because of human feeding, both intentional and unintentional. Individual animals become increasingly bold in the presence of humans. They learn quickly and pass this information along to their offspring" (City of Vancouver 2001).

This information was probably derived from a report by Baker and Timm (1998) entitled "Management of Conflicts between Urban Coyotes and Humans in Southern California". However, these authors emphasized,

"The motive for predatory behavior of coyotes is not always hunger (Connolly et al. 1976) or protection of dens, as demonstrated by many of the attacks discussed in this review. While the availability of food from humans in urban and park settings contributes to the attractiveness of the habitat to coyotes, their loss of fear of humans would not occur without a lack of aggression by people. Human activities, including organized trapping programs, sport hunting, and other activities that resulted in scaring coyotes away, reinforced the coyote's inherent wariness of people. But, changes in human attitudes toward the protection of all wildlife have resulted in coyotes taking advantage of their opportunity to frequent prey-rich, human-created environments without harassment. Authorities and citizens must act responsibly to correct coyote behavior problems before they become a public safety hazard. *It is the experience of the senior author, and of persons interviewed, that when action is taken before pet attacks are a common occurrence, further problems can be avoided. However, this requires that aggressive actions and use of scaring devices be initiated promptly when coyotes are seen or heard close to residences. If pets are being taken frequently, or if other food sources have been used for a long period of time, leghold trap use is the best and longest-lasting behavior modification tool*" (Baker and Timm 1998:311, emphasis added).

Vancouver's fostering-an-appreciation-of-coyotes philosophy and teachings had entailed years of perseverance by environmentalists in discrediting residents' claims about pets being killed and wilful blindness by the provincial and

municipal authorities. This had likely contributed to current situation. Vancouver's advisors continued:

"It is a growing problem in urban coyote populations throughout North America. In cases where there is a threat to human safety the provincial wildlife authorities will investigate. Where possible the animal will be located and destroyed" (City of Vancouver 2001).

The usual "facts" were given to help explain the difficulty of dealing with coyotes in an urban environment, but by now the Ministry of Environment had access to enough independent information and actual experience with urban coyotes to prove these were just excuses. Mike Peters told this author in 2005 that the Conservation Officer Service spends most of its time in North Vancouver dealing with bears, that there has not been a new conservation officer job posted in many years, that they would have no problem removing coyotes but it would be an "uphill battle" getting the public to agree to it, and that "Robert Boelens knows more about coyotes than we do" (M. Peters, pers. comm.).

An escalation in protest by the "vocal few" was not about to reverse years of work by pro-coyote activists:

"The 'Coexistence with Coyotes' strategy has been developed by the principal agencies working in the wildlife field in Vancouver. The strategy recognizes both the short term need to deal with problem wildlife and the longer term program of assisting residents of the City to understand the issues and find the solutions to co-existence with the coyote" (City of Vancouver 2001).

The advisors clung to the beneficial rat-eating function, even though by now there had been 10 years to take another look at Quinn's (1992) Washington State study

showing minimal rodents beyond squirrels were consumed by coyotes in urban sites within King and Snohomish County. Webber's Vancouver-area thesis had been out for 4 years and showed that cat and dog comprised more than double the proportion of small mammals in urban coyote scat (Webber 1997), suggesting that even if rats were within her small mammal category (Webber implied they were in a news interview, but she did not specify rats at all in her thesis diet analysis) (see Webber 1997:2000), this novel method of pest control was exacting too great a price on families.³⁰

The inappropriateness of live trapping, translocation, shooting with tranquillizer rifles, snares, kill traps, and poisons was reiterated much as the Urban Wildlife Management Committee had done seven years before. The local wildlife contractors reluctantly identified earlier for private hire were now officially excused from further participation; the government was going to try to keep all the action to itself:

"The most effective but controversial method for removal of coyotes is to shoot them. Even this is difficult as coyotes learn very quickly to identify people and situations to avoid. For this reason the only people that remove problem coyotes are highly experienced and trained wildlife control personnel" (City of Vancouver 2001).

By acknowledging shooting as a solution, the experts were in effect discounting the safety concerns that had been lodged against it back in September 1994. But a lethal response would be overkill:

"Media stories this summer have focused attention on proposals for the culling or translocation of coyotes. Research, however, has shown that a large scale removal (cull) of coyotes is not an effective or reasonable strategy for the following reasons: Records of coyote incidents demonstrate convincingly that most coyote problems are related to individual problem animals, not entire populations. The removal of individuals usually resolves the problem" (City of Vancouver 2001).

This assertion would put to rest offers of help from organizations with extensive coyote experience. In a news story earlier that summer, B.C. Wildlife Federation executive director Doug Walker had stated, "Basically, you need to cull the herd, cull the population... The only practical way to do that is to have trappers selectively trap coyotes" (Bohn 2001). The city's proposed solution would also allow all those coyotes considered non-dangerous to humans to continue their culling of cats. Vancouver's advisors continued:

"Biological information shows that coyote populations are resilient. Where numbers decline coyotes often increase their birth rate as compensation" (City of Vancouver 2001).

This argument is not about the efficacy of lethal control. Instead, it indicates that culls should not be viewed as a one-time event but an annual undertaking like a flu shot or spring cleaning. Each successive year would become easier, though, both by the behaviour modification effect of lethal control (Baker and Timm 1998) and by the math that fewer coyotes, even if producing an extra pup in their litters, would result in fewer coyotes overall. Further, in fragmented urban landscapes, coyotes can take years to recolonize after small-scale

³⁰ Webber could be smug; she apparently owned an indoor-only cat (possibly acquired in less enlightened days before coyotes altered her career plan to become a vet) (Page 2000).

control measures are undertaken (Quinn 1992). Therefore, removal could prove very effective in some parts of Vancouver like Stanley Park and other coastal green spaces. As is, those coyote populations probably attempt expansion by bouncing back eastward, helping to explain the disproportionate number of sightings on the west side of Vancouver compared to the east (see SPES 2007g).

"There are significant liability issues [to coyote removal] for people and pets in heavily populated urban areas" (City of Vancouver 2001), the advisors reported, but the comment was insensitive to the non-removal liability issues for pets. It is unlikely that a serious trapping or shooting program would ever need to be done in Vancouver's busiest spots. Still, a large dog accidentally springing the tension pan of a padded leg-hold trap, requiring its owner to release it, is incomparable to that of wild predators approaching children and living off a diet heavily supplemented by pets.

"Attempted culls in other cities have been expensive, have met with limited success and the benefits of reduced populations have only lasted for short periods of time. In Glendale, California the impacts were only noted for a six - twelve month period, after which the coyote population rebounded to previous levels" (City of Vancouver 2001).

Again, this was an excuse based on the idea that culling should be a one-time occurrence. Also, Glendale's program had evolved, but Vancouver liked to focus on its earliest stages (Lee and Bohn 2001). Baker and Timm (1998) described the program, with its removal element and more realistic focus for the "education" component than "fostering an appreciation", as successful in preventing attacks on humans and, importantly, also limiting predation on pets:

"Of all techniques, trapping has the greatest observed effect of re-instilling the fear of humans in coyotes. *When coyote attacks on pets have begun to occur in an area, it is imperative that the problem be corrected by use of trapping, so as to prevent escalating human-coyote problems including attacks on people.* A seven- to ten-day trapping period using careful, selective trap placement in areas frequented by the offending coyotes is usually sufficient to re-instill their fear of humans. Eradication of all coyotes in the area is neither attempted nor necessary. The coyotes using the area often disperse after trapping and euthanasia of two to five coyotes; this is partially dependent on the size of the area, the number of coyote family units using the area, and the existing level of fear in the behavior imprint of the coyotes. It is harder to modify the behavior of coyotes that have been using urban areas for generations. Often this requires taking coyotes in greater numbers, and sometimes a second trapping phase is needed" (Baker and Timm 1998:310 emphasis added).

"The City of Glendale demonstrates what a responsible and effective program can do. People are educated to better coexist with wildlife. When necessary, coyote behavior is modified by institution of a limited trapping program. Before the education and trapping control program was initiated, numerous human attacks from coyotes had occurred, including the tragic death of a child in 1981. Reports of humans being harassed within the city are now uncommon, and no bite cases have been recorded for more than 10 years due to the success of the program. *Pet attacks*

were also very common, and pets were shown to comprise a measurable portion of the coyote diet (Wirtz et al. 1982). Over the last four years, a low incidence of pet attacks has been reported, averaging slightly more than four cats and one dog lost per year. This compares to much smaller communities that report 20 to 50 pet losses per year (Capt. Michael Post and Lenae Dunn, City of Glendale Police Dept., pers. comm.)" (Baker and Timm 1998:311 emphasis added).

If the Glendale pet numbers are true, it was wrong that Vancouver dismissed their program. In 2001, Vancouver chose to increase funding to continue the types of short-term solutions that had been implemented after the two attacks on children that summer. The "coyote hotline" hours of operation would be increased from 3 to 7 days a week. Additional education would include coyote awareness lectures to elementary school children, development and facilitation of neighbourhood coyote safety programs, and printing of additional brochures. Warning signs would go up in parks. A Park Board Wildlife Ranger would visit Vancouver neighborhoods that coyotes had entered to alert the community, provide information and support (grief counselling?), and investigate incidents of aggression. The ranger would inform provincial wildlife personnel of aggressive coyote behaviour. No-feeding-of-wildlife bylaw enforcement would be difficult and have limited impact but was feebly recommended.

City Councillor Sandy McCormick supported these proactive non-lethal initiatives to avert the need for reactive steps that would ultimately cost more (O'Connor 2001), suddenly losing momentum from prior anti-"coexistence" views (Page 2000, Culbert 2001, Lee 2001, Lee and Bohn 2001). The "Co-existing with Coyotes"

funding increased by \$33,000, and ongoing support for the enhanced program would require \$60,000 to \$75,000 annually (O'Connor 2001, City of Vancouver 2001); yet Glendale's budget for behavior modification through selective trapping, even when doubled in 2004 after a Baker-Timm prodrome was identified, was only \$24,000 US (Anonymous 2004), less than half the cost of Vancouver's new strategy.

McCormick might have been more concerned about the "cost" of culling to the city's prestige. The Urban Wildlife Management Committee had warned about public protest from the beginning (City of Vancouver 1994b). Vancouver animal rights activist/Park Board commissioner Roslyn Cassells had mobilized a letter-writing campaign in 2001 at the first mention of "cull" (Cassells 2001). Glendale, in population the third largest city in Los Angeles County, faces the wrath of animal rights activists and bad PR as a result of their stance on coyotes (Boghossian 2004). Vancouver is much more high-profile than Glendale by world standards, consistently winning or ranking in the top few as the World's Most Liveable City (Mercer 2007). The last thing wanted is some animal rights celebrity like Vancouver Island-born PETA poster-girl Pamela Anderson, maybe Britain's Linda McCartney, flying in to accuse the city of the urban equivalent of clubbing baby seals.³¹ By comparison, 10 stitches on a baby girl's face (Lee 2001, SPES 2007e) or the low-key sacrifice of 1 or 2 thousand cats per year is a small price to pay for "coexistence".

³¹ Canada might do better to have Norway's confidence in the face of activism against animal culling practices. Norway is ranked the best country in the world by the United Nations in spite of not only clubbing baby seals but creating a tourist industry around it. See Anonymous (2006a), Jowit and Soldal (2004).

The Iron Triangle – No Pet Lovers Allowed

Meetings leading to establishment of the 2003 "B.C. Wildlife-Human Conflict Prevention Strategy" further solidified "iron triangle" relationships between government and the pro-predator activists and environmentalists who have powerfully replaced hunters as "consumptive wildlife recreationists":

"Wildlife management agencies are biased toward consumptive wildlife recreation (Kennedy 1985; Phillips et al. 1998). Over time, the relationships between the regulator and the regulated form what political scientists call 'iron triangle' relationships which '...tend to develop coincident values and perceptions to the point where neither needs to manipulate the other overtly. The confident relationships that develop uniquely favor the interest groups involved... Once molded, the triangle sets with the rigidity of iron' (Adams 2001). When public officials advocate, it is likely they will advocate for professional values that are remarkably consonant with constituent values and dissonant with public values (Wagner, 1989; Yaffee, 1994, 1995" [Gill 2001:24]).

The 5-year "B.C. Wildlife-Human Conflict Prevention Strategy" pilot project focuses on B.C.-wide prevention, rather than the "reactionary" removal of animals. The Ministry of Water, Land and Air Protection adopted a strategic shift "from the ministry as sole protector of the environment to sharing responsibility for the environment with others as appropriate." There will be "clear roles for the ministry, industry and other stakeholders in the gathering and reporting of environmental information and achieving environmental objectives" (MWLAP 2003:6).

The new direction is needed in light of the persistent refusal of the provincial government to properly fund an effective response to the wildlife issues increasing in cities and elsewhere. "The traditional response to all types of conflicts has consumed an increasing amount of government resources." In the face of dramatically increasing wildlife-human conflict, (MWLAP 2003:4), there is to be a dramatic reduction in the province's already inadequate response:

"The public and industry are going to have to accept a greater role and responsibility for the environment. We are working to change the emphasis of our work and broaden the level of responsibility. It is not reasonable to expect provincial staff to have the capacity to deal with every human-caused or wildlife-related situation that arises in the province" (Ministry of Environment 2002).

The B.C. Conservation Officer Service will "no longer respond to reports when there is no threat to human safety or to livestock, or when there is minor property damage" (Ministry of Environment 2002). Nothing new there.

"Wildlife-human conflicts also have social impacts. One such impact is the loss of pets to predatory wildlife. Another is public reaction to methods of dealing with conflicts. Often the only way to remove a habituated and therefore potentially dangerous animal is to destroy it humanely, before someone is injured. Methods used by government staff to defuse dangerous wildlife situations are never popular and can be upsetting to witness. The public demands alternative mechanisms to resolve these issues. Preventing conflicts is the best solution. People must realize, however, that it is not possible to

eliminate all risks to human or animal health and safety associated with wildlife-human conflicts" (MWLAP 2003:5).

A "targeted consultation" process was undertaken as part of the B.C. policy formation,

"...with selected communities, First Nations, NGOs and other jurisdictions...between December 2002 and February 2003. The ministry invited these stakeholders to participate in the strategy's development by giving their input at face-to-face meetings. The working group considered all of this input in developing the strategy" (MWLAP 2003:2).

Again, urban pet owners, those with a lot more at stake both emotionally and financially than people upset by "methods used by government staff to defuse dangerous wildlife situations", were not invited to the proceedings, despite recognition of the social impact of predation on pets and the greater role in managing the environment to be given the public. From commentary in Appendix 3 ("Wildlife-Human Conflict Prevention Strategy—Stakeholder Consultation Summary") in MWLAP (2003:20-30), it appears that Vancouver was represented by the Vancouver Park Board and "Co-existing with Coyotes".

"CO-EXISTING WITH COYOTES" TODAY

"One can reasonably expect public attitudes to assume greater importance in various management and policy decisions as efforts to protect wildlife and natural habitats increasingly require major land-use decisions affecting large numbers of people and having broad social and economic impacts. As the public often bears the

lion's share of such trade-offs, it stands only to reason that their sentiments and perceptions be somehow considered. On the other hand, professionals often encounter a public with views dependent as much on bias and misunderstanding as on an adequate comprehension of an issue's complexity. Thus, it behooves managers to assess existing levels of public understanding and, in circumstances where wildlife knowledge is judged insufficient, to provide information which, hopefully, will render people more capable of forming intelligent perceptions. *Of course, a thin and ethically difficult line will often distinguish public awareness and educational efforts from manipulative attempts to influence people toward pre-established viewpoints*" (Kellert and Berry 1980 emphasis added).

"Co-existing with Coyotes" is now a firmly-entrenched program in the City of Vancouver. It is cited as a model program worthy of emulation in cities where coyote migration is new (for example, see Battiatia 2006, Prois 2006). The program is run by the non-profit Stanley Park Ecology Society, which "encourages stewardship of our natural world through environmental education and action, and builds awareness of the fragile balance that exists between urban populations and nature" (SPES 2002).

As an NGO, the Stanley Park Ecology Society has a built-in lack of accountability. It is governed by the *B.C. Society Act and Regulations*. It is not required to report its financial statements. More importantly, its actions are not subject to public scrutiny and the "transparency" that is required and demanded (especially by environmentalist groups) of government bodies. Conversely, a B.C. government body is held in check by the *Freedom of*

Information Act and cannot get away with cutting a person off just because they feel like it. Robert Boelens did this to the author after an email exchange in November-December 2005. Boelens did not answer the last of a series of cordial, but disagreeing, emails. A couple of months later, he ignored my coyote sighting emailed to the program.

Currently, the Ministry of Environment contributes a "visionary" (more than \$10,000) yearly grant (SPES 2006). In return, the program buffers the province's staff from urban complaints that would otherwise reach them directly. (In a 1-year period, "Co-existing with Coyotes" "responded to more than 900 individual requests for information and help concerning urban wildlife" (SPES 2006:10). The Vancouver Board of Parks and Recreation also supplies a "visionary" grant. The 2005-2006 Stanley Park Ecology Society annual general report lists no private donations specifically to "Co-existing with Coyotes" that might suggest a large base of avid coyote supporters in Vancouver.

The "Co-existing with Coyotes" program has a staff of one. The coordinator spends half the time visiting elementary schools and teaching about 12,000 children per year how to identify a coyote and what to do to if they see one (SPES 2006, Battiatia 2006). Any teacher could do this, of course. The advice is fairly simple and straightforward and perhaps set out more sensibly on the SPCA website (BCSPCA 2007). The SPCA does not confuse its readers with recommendations (as found in SPES guidelines; SPES 2007a) to throw awkward and heavy "can clangers", "coyote shakers", and basketballs, which certainly travel less than 40 miles per hour, but rather suggests only easy-to-wield readily available items.

The rest of the coordinator's time is taken up with investigating nuisance reports,

answering calls from homeowners (Battiatia 2006), and providing media interviews (SPES 2006). Former program coordinator Boelens also took it upon himself to personally scare unwelcome coyotes into less-visible night-time hunting schedules (Battiatia 2006).

The Website

"Co-existing with Coyotes" also runs an elaborate website (<http://www.stanleyparkecology.ca/programs/urbanWildlife/coyotes/>). People from more than 300 North American cities and towns have contacted the program seeking urban coyote information and advice (SPES 2007g), including most recently Audubon Portland, supporters of the American Bird Conservancy's "Cats Indoors!" campaign, and the coyote rights California-based Animal Protection Institute (SPES 2006).

The information on the website is of two types. The first gives the same basic information available on the BCSPCA and City of Vancouver websites in their respective coyote sections. The second comprises the effort to alter public attitudes by reducing the perception of risk and marketing respect and admiration of coyotes, just as Kristine Webber's (1997) foundational thesis outlined:

"When particular levels of damage are exceeded, tolerance to wildlife declines (Decker and Brown 1982, Craven et al. 1992, Liggins 1995); thus *educational materials which reduce the risk (or perceived risk) of conflict, such as the depredation of pets, may improve attitudes toward wildlife and increase residents' tolerance to wildlife.* Decker and Purdy (1988) described a concept called Wildlife Acceptance Capacity (WAC) which is analogous to biological carrying capacity or social carrying capacity, but describes how

human preference and beliefs affect management decisions. Wildlife acceptance capacity reflects the acceptance of a given constituency for particular species at a given time and depends on the attitudes and beliefs of people that comprise that constituency. *Changing how people perceive a species and the damage or risk caused by that species, is integral to increasing the WAC.* Attitudes are determined by peoples' beliefs (perceived knowledge) about an object and their beliefs about the consequences of their actions toward that object (Morgan and Gramann 1989). Other studies have shown that attitudes (Kellert and Berry 1980) and preference (Dagg 1974, Schauman et al. 1987) are related to an individual's knowledge about wildlife and habitats. Thus if someone believes that coyotes are large, dangerous carnivores, they will likely feel fearful and negative toward coyotes. If, on the other hand, the public is well-informed about the size, likelihood of attack, or the chance of contracting rabies, their attitudes will likely reflect this...raising public awareness about coyotes and eliminating common misconceptions, should be an effective way to change underlying beliefs and improve the attitude and increase the WAC of the general public toward the presence of coyotes in the GVRD" (Webber 1997:39-40; emphasis added)

With this as the basis for "education", it is not surprising that the "Co-existing with Coyotes" site approaches the matter of pets gingerly. In fact, "Co-existing with Coyotes" hesitates to admit that coyotes are a "problem" at all, as evidenced by the alert quotes placed around the word on the website:

"The agencies involved in Co-existing

with Coyotes believe that the only successful long term solution to the 'problem' of coyotes in urban areas is through public education" (SPES 2007a).

Coyotes and Cats – Under-reporting Predation, an Egregious Necessity

One way to lower the "perceived risk" of coyotes is to minimize the extent of predation on cats. Unfortunately, this also eliminates the ability of pet owners to accurately assess their options and the more basic question of whether "Co-existing with Coyotes" can be called a successful, and thereby acceptable, strategy. Most egregiously, the coyote diet is not presented honestly to allow meaningful risk assessment. The website reports:

"Coyotes can eat almost anything (rodents, fruit, insects, fish, garbage). Urban coyotes primarily prey on the immense city rat and mouse population as well as squirrels, raccoons and other small mammals. They also eat apples, berries and other fruit, leftovers from composts and garbage, fish, snails, birds, eggs and outdoor cats and small dogs" (SPES 2007b).

It starts to sound like coyotes are almost vegetarian, until the punch line at the end of the paragraph. The order of coyote diet items as a function of percentage incidence would more accurately portray the extent of cats that coyotes eat. This information, as mentioned earlier, is available in the program's foundational science (Webber 1997). Former coordinator Boelens praises Webber's thesis but rejects this one inconvenient section on diet (R. Boelens, pers. comm., Nov. - Dec. 2005) due to the small number of scats and stomachs used for the analysis. It is true the data set is small for a scientific study, but the results are compelling in light of Quinn's

(1992) extensive scat analysis nearby in northwestern Washington and are supported by anecdotal evidence.³²

Both Webber (1997) and Quinn (1992) found cat to be a significant, if not the largest, food item in the urban coyote diet. Quinn's results, discussed earlier and based on a total of 854 urban scats, bode slightly worse for cats than Webber's. The 22 scat samples Webber collected were likely close to residential areas within Vancouver, as opposed to the majority of the 11 cadavers from which stomach analysis was obtained (Webber 1997).³³ Webber does not say what time of year she collected

³² In 2005, Conservation Officer Mike Peters told the author that the "number one food" for urban coyotes is cats. Some people report lost cats to the SPCA. Of 700 cats within the City of Vancouver reported lost to this organization from October 2005 to October 2006, only 212 were reported found or returned. Before removing lost cat notices posted at their shelter, the Vancouver SPCA follows up with owners to see if the cat was found. The SPCA's computerized database is new, precluding a trend search.

³³ Webber tells the reader, "It was difficult to distinguish between domestic dog and coyote faeces", and that scat was "collected only in the vicinity of known den sites and along frequently used coyote travel routes" (Webber 1997:49). This indicates the scat was collected in well-monitored areas and where dogs were regularly walked. The cadavers came from Langley, Richmond, Surrey, Burnaby, and Vancouver and were "collected at motor vehicle accidents, donated by private citizens, and provided by conservation officers" (Webber 1997:49, Appendix A). How many cadavers came from each area is not given; probably most were from the less urbanized outlying municipalities. To utilize all of the few coyote cadavers available, the Urban Coyote Project would have had to expand its research area from the City of Vancouver, as originally proposed in the Environmental Grant application, to the entire GVRD. It is unfortunate Webber leaves the reader to speculate on this important issue; Quinn (1992:72) says, "Coyote diets can vary dramatically on relatively small spatial scales" and that he "would have wrongly concluded that rural coyote diet (for all items) was significantly different from urban diet by comparing any combination of one rural and one urban site."

scat, but Quinn (1992) states, "The risk of cats being killed [by coyotes] is the same regardless of season." In Webber's scat, cat was the third-highest diet item after grass and coyote, two items which may not even be "food".³⁴ In decreasing order, cat at about 15% was followed by fruit at about 12%, small mammals at about 10%, dogs at about 7%, and birds at about 2% (Webber 1997:52). In her 11 cadaver stomachs, many or most from outlying municipalities (Webber 1997, Appendix A), a typical diet of non-residential coyotes was confirmed, with small mammals followed by coyotes, grass, birds, opossums, garbage, fruit, and no dogs or cats. Notwithstanding the above, Webber (1997) had the audacity to suggest that "domestic pets were not a primary food item" and that coyotes may simply be scavenging rather than killing pets.

A Note on Cat and Scat

Recent studies are coming up with low consumption of pets. Researchers can skew coyote diet analysis by collecting scat well away from residential areas, even when doing suburban research. Dr. Gehrt's research team found no dog and only 1% cat in 1,429 metropolitan Chicago scats (Morey 2004, Gehrt 2006), even though pet-coyote incidents are a problem in Chicago (Lyons 2004) and the Gehrt study was in fact "driven by the county's animal and rabies control program and the Max McGraw Wildlife Foundation due, which were responding to an increase in the number of complaints and incidents about coyotes and pets" (Berger 2005). The study area, Cook County, Illinois, is unique for one of the highest human densities in the United States

³⁴ In the author's email exchange with "Co-existing with Coyotes" in November-December 2005, Boelens denied that coyotes eat each other; but Link (2007) says they do. Shargo (1988:48) did not count grass and leaves as food, as they appeared undigested.

plus an extensive system of forest preserves (Gehrt 2007). The coyotes Gehrt studied formed packs and had small home ranges to meet their daily needs; many had territories of 3 square miles, often within the parkland and forest preserve boundaries where food was abundant. Gehrt found that coyotes "usually deposit scats in the middle of trails or near the borders of their territories where they are easily seen" (Gehrt 2006). If these parkland/forest-preserve coyotes were the easiest to study and collect scat from, it would partly explain why there was such a high frequency of voles and white-tailed deer in the diet analysis (Gehrt 2006). Other coyotes did not belong to a pack and travelled through home ranges up to 25 square miles. Scat from these marathon coyotes would be hard to find, it could land anywhere; but these would be incriminating scats since such coyotes would come into contact with many residential pets over time. The scat of the third type of Chicago coyotes, packs utilizing patches of habitat right downtown, was probably also under-represented because their habits were harder to figure out; Gehrt notes, "We still have much to learn about how coyotes maintain packs in downtown areas" (Gehrt 2006).

Another recent Chicago scat analysis also detected no dogs and negligible cat in scat samples collected from 13 publicly-owned natural areas and one Nature Conservancy preserve in the 6 counties of metropolitan Chicago (Buck and Kitts 2004).³⁵ Again, these are areas where

coyotes could eat locally and avoid wasting energy on urban pet-hunting sorties. Of great importance in these two studies is the fact that intensive culling goes on in Chicago:

"The number of nuisance coyotes removed annually from the Chicago metropolitan area increased from typically less than 20 coyotes in the early 1990s to more than 350 coyotes each year during the late 1990s... These coyotes were either trapped or shot by wildlife control professionals. The numbers are likely underestimates of the actual number of coyotes removed from the area because some control efforts are not reported" (Gehrt 2006).

By 2004, the number of coyotes removed in the Chicago metropolitan area in response to nuisance complaints had increased by over 1,000% (Gehrt 2004). As a result, the coyotes from which scat was easily obtainable may have been experiencing serious behaviour modification effects, as set out by Baker and Timm (1998). They may have been much more stressed than the average Vancouver coyote, for instance, about leaving their forest preserve to enter a residential area looking for nutritional supplements. Chicago's lone coyotes without territories to defend and enigmatic downtown coyotes probably have little choice about being in the public eye, even in anticipation of traps and guns, explaining both ongoing complaints and non-scat-confirmed pet losses.

Graduate student Kristi Robinson collected scat at Quantico Marine Corps Base in Virginia, a 60,205-acre "*de facto* wildlife preserve" and also found negligible pets (Battiata 2006), probably because negligible pets compared to wildlife were living there.

observations of many local environmentalists" (Starks 1999).

³⁵ The California-based Animal Protection Institute posted an article, on the New Jersey Garden State EnviroNet website, about Buck's graduate research to disprove the notion of predation on urban pets.

"Buck's analysis of coyote scat, which was recently published by the University of Minnesota, concluded that coyotes living in urban environments continue to feed on animals such as rabbit and deer, and for the most part do not change their diets to include pets or curbside refuse. These conclusions substantiate the

More on Cats

The "Co-existing with Coyotes" website's presentation of things that can befall cats, other than a coyote, echoes the pro-urban-coyote piece "Tabby Go Home" (Crooks 1998), excluding its additional remark about "sadistic humans."

"The more time your cat is outdoors the greater the risk it faces, not only from coyotes, but from raccoons, cars, domestic dogs, feline AIDS, leukemia, parasites and other illnesses and diseases as well" (SPES 2007c).

This is not meaningful for risk assessment, though. There are no data given on the number of cats killed per year by any of the things listed and, as above, there is no attempt to estimate cats killed by coyotes based on Webber (1997). Vaccinations and veterinary care protect against viral diseases and parasites. Dogs are supposed to be leashed, but the fact that many households now keep both a dog and cat might contribute to the vulnerability of the latter when confronted by a stray coyote. Likely there are hotspots in Vancouver where cats are at higher-than-normal risk of being hit by a car. A car, however, does not purposely "prey" on cats, unless being driven by a deep ecologist or maybe a bird activist from Wisconsin. Helping out the coyotes this year, Menu Foods could be added to the list of risks. Certainly a landlord's right to prohibit pets as part of a tenancy agreement contributes to heartbreaking animal shelter surrenders on moving day; and animal shelter euthanasia is the leading cause of death of U.S. cats, though it is said to have accounted for mortality of only 5% of the total American cat population in the 1990s (Rochlitz 2000) (an era preceding predation on pets as a widespread consideration).

There is no best time suggested to let cats out. Webber's thesis (Webber 1997)

showed that 56% of coyotes were seen in the daytime, 26% at night, 10% at dawn, and 9% at dusk. The SPCA website (BCSPCA 2007) advises keeping cats in from dusk to dawn. Shargo (1988) found his Malibu coyotes to be primarily nocturnal but to move through home ranges randomly, possibly to prevent prey from anticipating and planning ahead for their arrival. A YouTube video filmed in September 2006 shows a coyote carrying off a Point Grey, Vancouver cat in broad daylight (Anonymous 2006b); a local animal welfare video shows a coyote eating what could be a cat or small dog at MacDonald Street and 16th Avenue, Kitsilano, during afternoon rush hour (VOKRA 2007). If Robert Boelens was going around to the problem neighborhoods he learned about through his position at "Co-existing with Coyotes" and single-handedly scaring bold Vancouver coyotes into less-visible night-time hunting schedules, he should have warned cat owners of the implications.

"The only way of ensuring that your cat is safe from coyotes is to keep it indoors permanently," the website concludes (SPES 2007c). Such a practice, of course, is highly contentious; and supporters of the Cats Indoors! philosophy ruthlessly ignore behavioral differences between cats, their varying needs in terms of quantity and quality of space, and the characteristics and lifestyles of owners. Researchers specifically caution against imposing a permanent switch from outdoor to indoor in the life of an adult cat (see Mertens and Schär 1988). Behavioral disorders are reported more commonly in indoor cats (Rochlitz 2000). Sedentary indoor cats are also at risk for weakened immune systems; serious obesity-related diseases including diabetes, fatty liver syndrome, heart disease, and arthritis; and respiratory difficulties, constipation, and skin conditions (Craig 2001). The BCSPCA's fifth essential

freedom "to express behaviours that promote well-being" (BCSPCA 2005b) would seem to include going outside. A cat lacking outdoor experience is also a fish out of water when it does slip out the door or an open window or jump the balcony and, like a small dog that runs off, even more at risk of becoming coyote prey.³⁶

Coyotes and Dogs – Walk Tall and Carry a Big Stick

The "Co-existing with Coyotes" website candidly mentions that small dogs have been taken directly from the leash. This is an improvement from Webber's thesis where, "Tales of coyotes snatching small dogs off the ends of leashes remain unconfirmed and likely fall into the realm of urban mythology." (Webber 1997:56)

There is actually plenty of advice for dog owners. A suggestion to the effect that dogs should be kept permanently indoors to protect them from coyotes would be considered absurd and heartless. Supervision, enclosures, and leashes are recommended.

"If you notice a coyote when walking your dog, either gather your dog in your arms if possible, or keep it as close to you as possible while using...deterrents...and move towards an active area" (SPES 2007c).

For neighborhoods with regular-coyote sightings, additional dog-walking precautions begin to take on a siege mentality tone:

"1. If you are uncomfortable making aggressive gestures or throwing objects at a coyote keep a shrill whistle handy when walking your dog. The whistle may not scare the coyote

directly (coyotes hear the same daily sirens, car alarms, horns etc. as we do), but it will alert other pedestrians in the area of your need for help.

2. Walk your dog (on leash) in high pedestrian traffic areas such as relatively busy streets, jogging trails and park paths where help is nearby.

3. Coincide the walks with times and locations of activity such as around schools at arrival, dismissal, break or lunch periods, along transit routes or transit connection routes as the work day begins or ends or around parks when activities/sporting events (nightly softball or soccer games) are held.

4. Dog walk with friends and family.

5. Avoid long stretches of bushy areas or paths and roads along abandoned properties.

6. Make sure your dog is ahead of you while walking. If it stops to sniff or scratch behind you while on an extendable leash, keep an eye on it" (SPES 2007c).

In the event that these ideas do not work, there is no description of what to do when the coyote is attacking the pet (or a child). This is increasingly important as people "uncomfortable making aggressive gestures," or those simply physically unable to perform effective hazing, assist coyotes in losing their fear of humans. Although predation is quick and small pets can be carried off at great speed, people can look forward to more chances to intervene. Even coyote sympathizers, when confronted with something beyond theoretical musings, may find it difficult emotionally to "let nature take its course," at which time the timid coyote story no longer applies. As Baker and Timm (1998) describe:

"When prey is located, coyotes appear to 'lock' onto the target, switching from a foraging or ranging (travel)

³⁶ Crooks (1998) aptly points out in "Tabby Go Home", "It seems that experienced cats learn to avoid canyons when coyotes are present, whereas naive pets who do venture into the canyons where coyotes occur often meet a violent end.

mode to a kill mode. It seems during this kill mode, when they are 'locked-on,' it is difficult to break the attention of a coyote or to dissuade it from attack. Researchers who have observed coyotes preying upon domestic animals have noted this singular focus on a selected prey, almost to the exclusion of extraneous stimuli (G. E. Connolly and F. F. Knowlton, pers. comm.). Those coyotes having less than the usual fear of humans would likely be even more difficult to chase away from prey. In the cases previously discussed, several coyotes that attacked humans were noted to remain close to the victim after being pulled or beaten off. When later shot by police, they were a few yards away and still in sight of the person who was attacked." (Baker and Timm 1998:308)

The handicapped person on a scooter, the elderly, the high-heeled designer-dog walker, and children should be aware that athleticism is required and injuries are to be expected.

More on Dogs

On the "Co-existing with Coyotes" website, there is no identification of coyote diseases that are transmissible to dogs. Parvo is of particular concern because it can kill puppies before vaccinations take effect. It is spread through contact with feces of an infected animal, and the virus can persist in the environment for months (Miller et al. 2003). In Washington State, parvo and distemper are found in coyote populations (Link 2007). It is unreasonable to suppose that B.C. coyotes are free of parvo. Distemper affected Vancouver coyotes, raccoons, and skunks in 1998, killing an estimated 90% of the Stanley Park raccoon population (SPES 2007d); in North America, coyotes and wolves are the most

common hosts of this disease (Miller et al. 2003). Deadly heartworm is transferred via mosquitoes and can be under-detected in B.C. coyotes (MacKenzie and Waldie 1991, Zimmerman et al. 1992, Klotins et al. 2000, Webber 1997). Fortunately, protection of dogs is possible with careful attention to annual prophylactic medication.

Despite endearing photographs of pups and adult coyotes, there is no picture or description of their scat. Identification of scat is important for dog walkers on the parvo issue. It would also forewarn cat owners of new or increased coyote presence in a neighbourhood while waiting for citizen sightings to be posted on the website.³⁷ Currently people blame all uncollected feces on irresponsible dog owners.

Coyotes and People – Fear Reduction

On the "Co-existing with Coyotes" website, the "Causes of Child Hospitalizations in B.C." section (SPES 2007e) is somewhat relevant for coyote risk assessment purposes. However, the rationale of listing all the things more likely to befall a child than a coyote is akin to a health researcher saying, "Heart disease is the leading cause of death for Americans, so let's not try to cure anything else."

The Fatal Dog Attacks section provides a breakdown by breed of fatal dog

³⁷ Sightings are often posted in an untimely and incomplete fashion. In 2006 after emailing my March 19 sighting, I waited well over a month to see any March listings go up (mine not included). In 2005 after the attack on Neutron, Robert Boelens did not post the "sighting" either, even though he was interviewed for the same news article (O'Connor 2005) as I was and therefore knew the necessary details. A check of the website in early July 2007 revealed the last sighting posted for Vancouver to be March 24, 2007 in "Charleston Park" (SPES 2007g). "Co-existing with Coyotes" told the author this was not because of a lack of sightings since that date but because the section had not been updated (Robyn Worcester, pers. comm.). Eventually, many sightings filled the gap, but the pattern continues.

attacks on humans in the U.S.A. from 1979 to 1998. Like the dog bite data included in Child Hospitalizations, it is an attempt to defuse fear of coyotes by showing that other dogs are a lot worse. This information does not take into account the nature of dog bites and the voluntariness that normally distinguishes them from coyote bites. According to Basrur (1998), "(a) More than half of all dog bites occur on the dog owner's property; (b) More than two-thirds of biting incidents on public property occur while the biting dog is on a leash; (c) More than 85% of the victims know the dog that bites them; (d) More than two-thirds of all bite victims are adults; and (e) Nearly two-thirds of all children get bitten as a result of playing with a dog or as a result of teasing the dog, or disturbing it while it is eating."

The important point is the very real damage that canids are capable of inflicting. The valid fear people have of dogs is one of the reasons for leash laws. But while the city's well-socialized dogs are all tied up, the nice dogs who dutifully sit for a treat rather than become nasty when fed, the government makes special rules for its stray coyotes. The website gives an average of 88 hospitalization-inducing dog bites per year in B.C. for "all ages" (SPES 2007e). The City of Vancouver has more than 50,000 dogs (City of Vancouver 2005) compared to the 200 to 250 coyotes estimated in 2001 (City of Vancouver 2001). Therefore, it takes 0.35 to 0.44 density-adjusted coyote bites per year to match the dog rate supplied, but there is no guarantee people bitten by coyotes fit the willingness profile for dog bites noted by Basrur (1998) above. And in fairness to domestic dogs, coyotes should be included in the "Fatal Dog Attacks" section since readers are entitled to know that coyotes too are capable of killing humans; toddler Kelly Keen of Glendale, California died within the time period covered.

Discussion of the size of coyotes is intended to reduce fear. The website states that adult coyotes weigh 9 to 16 kilograms (20 to 35 pounds) and that "adult raccoons and beavers often weigh more" (SPES 2007b). This is much better than comparing a coyote to a pit bull, for instance, or any breed of similar size in the Fatal Dog Attacks list. The range of weights itself is misleadingly low for the Vancouver area. Coyotes trapped in the GVRD are between 30 and 50 pounds (A. Starkey, Lower Mainland Trappers Association, pers. comm.). The beaver, a herbivore not found wandering Vancouver streets yet, is Canada's national animal and brings happy thoughts to all but those who may have experienced the negative effects of a beaver dam. Coyotes typically weigh twice as much as raccoons, at least in Chicago; and raccoons are less carnivorous than coyotes (Gehrt and Prange 2007). Nevertheless, raccoons are undeniably dangerous³⁸ despite public perceptions to the contrary that the website counts on in making these comparisons.

Further contributing to fear reduction, the "Co-existing with Coyotes" website avoids reports of aggression short of actual attacks. The website's "Sightings" section could be upgraded to solve this problem. Currently sightings are logged innocuously, recording date and location only. Additional information would clarify the number of coyotes exhibiting the

³⁸ Aside from aggression, the diseases raccoons carry of relevance in B.C. are raccoon roundworm (*Baylisacaris procyonis*, a recent study in southwestern B.C. indicated that the number of raccoons infected was 61%), distemper, parvo, and even anthrax and rabies (Miller et al. 2003). Though confirmed cases are rare, *Baylisacaris* infection in humans is probably under-recognized and is typically not even considered by clinicians in a differential diagnosis (Sorvillo et al. 2002). Symptoms are nausea, fatigue, loss of coordination and muscle control, inability to focus attention, enlargement of the liver, blindness, coma, and death (BCCDC 2006).

escalating warning signs of habituation. Important inclusions would be whether the coyote was seen in the daytime or at night, chasing or taking free-roaming or leashed pets, chasing joggers or cyclists, or seen in and around children's play areas and parks (see Baker and Timm 1998). To further correct the under-reporting of aggression on humans and pets, all "nuisance" coyote reports received by the B.C. 24-hour Wildlife-Human Conflict Call Centre could be transferred and posted for public review.

Coyotes and People – Guilt and Blame

The Coyote Conflict History section (SPES 2007e) reports that 7 bite/attack incidents on humans have occurred in the Lower Mainland since coyotes were first spotted in the 1980s. However, the 6 attacks described all occurred in 2000 and 2001. Webber (1997) refers to 2 additional instances, one on July 11, 1995 and the other on May 8, 1997, for a total of at least 8 attacks since 1995. "Co-existing with Coyotes" gets all the credit for no human attacks since 2001, but the Lower Mainland Trappers Association slips under the media radar to remove about 50 coyotes per year from the City of Vancouver and another hundred from the rest of the GVRD, and trapper Al Starkey claims that bites go unreported (A. Starkey, pers. comm.).

The attack descriptions try to highlight the point that humans are to blame for coyote-human conflicts because of improper child care and not following the scare-and-starve rules correctly. Improper scaring accounts for 2 cases. In one, a man confronted a coyote in a confined space where its only escape route was to run by him. In the other, a 4-year-old tried to run away from a coyote.

Three of the attack descriptions imply that parents improperly supervised children. The 4-year-old who ran from the coyote was playing outside unsupervised by

an adult, though fortunately some teenage boys were 80 to 100 feet away. A 17-month-old toddler was allowed to watch his big brother's soccer practice sitting 20 feet away from his parents. A coyote attacked a 1-year-old girl in a private front yard while her mother's attention was diverted by gardening.

In 4 of the cases, feeding by humans is implied or alleged. The coyote that bit the 4-year-old was chewing a bone nearby before the attack. After the attack on the baby, area residents told conservation officers about a local who regularly fed coyotes in a nearby park, and soup bones were found on a trail four blocks away. However, neither the feeder nor the coyote were ever retrieved. A coyote that nipped a girl was found and killed, revealing chicken strips in its stomach. "There had been frequent reports of the coyote approaching people and being hand fed" (SPES 2007e). This was the coyote that had prompted dozens and dozens of complaints to authorities beforehand with no action taken; but feeding, not the government, was solely to blame. Lastly, a coyote that attacked a 6-year-old was found and killed, its stomach revealing "a large amount of a stew or soup type substance comprised of meat chunks, animal fat, corn and celery" (SPES 2007e). Most food, raided garbage included, probably has the tendency to look like stew once it sits in a stomach for a short time, but the implication is that someone was dishing out meals to this coyote.

Although predator advocates associate both purposeful and incidental³⁹ feeding with aggression when convenient, wildlife rescue shelters rehabilitate and re-release coyotes right back into the same human-dominated settings they came from

³⁹ In Kerslake and Zakreski (2006), see the garbage dump defence offered for the wolves that killed (scavenged?) student Kenton Carnegie in Saskatchewan in November 2005.

with no apparent concern about the effects of human care and food supplied (City of Toronto 2004; also see Moneo 2006).⁴⁰ Nonetheless, the stomach contents of 4 of the 6 coyotes described in the "Co-existing with Coyotes" Conflict History are unknown, since the conservation officers never found them. The culprits should have continued to hang around the neighbourhoods in question if they were being regularly fed there.

No one has announced that the website's common-sense suggestions for presumably starving coyotes down to a lower "natural" level have succeeded, and that Vancouver has bucked the B.C. trend in increasing wildlife populations adjacent to or within communities. Some of the ideas like securing garbage are fairly standard urban practices; and no one in Vancouver leaves uneaten pet food outside, or even inside if the house is cat-door-equipped, after one turf war with a family of raccoons. Setting aside for the moment the abundance of cats and small dogs in the city, tourists and residents enjoy feeding squirrels, birds, and other future coyote-food, if not the coyotes themselves. Finally, Environment Canada, the Ministry of Environment, and the Province of British Columbia officially facilitate the free flow of coyotes into urban areas by funding Naturescape. This program (the Urban Wildlife Committee is a supporting partner in Vancouver) encourages people to start the "rewilding" process in their own backyards:

"Naturescape British Columbia empowers private citizens to end the loss of habitat and to create green

spaces for wild creatures in urban and rural communities. Imagine the transformation of urban and populated rural areas as private yards and community areas are naturalized by you, neighbors, friends, and community groups. Habitat yards will link together and areas of wildlife habitat in adjacent neighbourhoods will become connected. Over the years, a patchwork quilt of wildlife habitat will extend across entire communities" (Naturescape 2007).

As for scaring, in nature, wolves "feed" coyotes too, by supplying scavengeable leftovers after a kill, but coyotes retain their fear of wolves because wolves will rip them to pieces if they get too close. The dynamics of habituation are political and biological, and a "coexistence" program cannot address them adequately. The phenomena Timm et al. (2004) discuss apply here. Reduced lethal control efforts and a decline in hunting at the periphery of cities are thought to have the same effect on coyotes as on other dangerous wildlife:

"McCullough (1982) has noted that over time bears and other wild animals can habituate to stimuli (e.g., attempts at hazing) in the absence of a punishment. That is, the animal will, after repeated exposure to the stimulus, cease responses that are inappropriate or not adaptive (i.e., the animal will not expend time and energy in escape behavior). This concept would seem to apply to coyotes. Bears can make complex evaluations of benefits and risks. For example, instead of simply fleeing from an encounter [with a human], a bear may back off and wait and, by persistence, obtain the food reward. Thus persistence and a variety of strategies for obtaining food in the face of risks are learned because they

⁴⁰ "Where a coyote is injured, sick or debilitated, an investigation by TAS will determine whether the coyote can recover without assistance or whether it should be captured and brought to a wildlife rehabilitation and treatment facility or be euthanized for humane reasons. In accordance with the Fish and Wildlife Act, the recovered coyote will be located back into the area from which it was captured."

are rewarded. Indeed, ingenuity is fostered. In the absence of punishment, the bear becomes habituated to the human, and its declining perception of risk leads to a greater frequency of obtaining the reward, a self-reinforcing process” (McCullough 1982:29).

“McCullough goes on to state that when habituated bears become a problem, negative conditioning is needed: ‘...successful negative conditioning must involve fear, perhaps pain...’ However, ‘...it would be difficult to punish bears severely enough to overcome behavior positively reinforced for long periods of time... Bears in long contact with humans are likely to remain incorrigible and will likely have to be removed in most cases’ (McCullough 1982). While Jonkel (1994) describes successful efforts in Montana to re-instill fear of humans into problem grizzly bears (*Ursus horribilis*), the cost of such treatments— involving capture, treatment, and release— can reach \$6,000 per animal and therefore would be prohibitive to apply to suburban coyotes” (Timm et al. 2004).

Coyotes and People – Fostering an Appreciation

Other areas of the website are intended to inspire empathy in children. The website’s “Through Coyote Eyes: A Game of Urban Coyote Survival” (SPES 2007f) is an anthropomorphic mind-bender. A psychologist’s expertise would be needed to determine the effects of this game on a child’s analytical powers, but commentary available on movies like *Bambi* could give an idea of its influence.

The Indian Myths section within the website is evidently intended to support the positive, though erroneous, attitudes

identified in the foundational study about coyotes “deserving to be here” and “being a natural part of the ecosystem” (Webber 1997:28,39). The Indian myths would lead one to believe that coyotes are native to Vancouver. On second look, though, the stories are attributed to Plains Indians, not B.C. Indians.

Positive messages and fostering an appreciation may increase the “WAC” for this “ideal ‘flagship’ species”, “bold, curious, and wild”, with a “captivating urban personality” (Webber 1997:39-40,57), but what effect do they have on the unified effort crucial to maintaining in coyotes a fear of humans? The messages are confusing. Every news article quoting an expert saying people, even children, have nothing to fear from coyotes helps to cultivate a benign response upon sightings. “Co-existing with Coyotes” does warn that “an indifferent attitude towards a coyote in your yard has a similar effect as feeding” (SPES 2007c) but does not clarify a need to scare coyotes anywhere they are seen, whatever they are doing, whether in trespass mode, attack mode, or napping in a park or other public place. Pelting balls and rocks, “waving” hockey sticks, and the firing of bear spray are all fair hazing methods suggested on the website and downloadable “Parent Advisory Committee Kit” (SPES 2007a,c). Should one match force with force, as in the self-defence sections of the *Criminal Code of Canada* (Criminal Code 1985)? The research cited on the ready habituation of dangerous wildlife in the absence of lethal control and hunting would indicate that the most violent method allowable in a city should be used upon any coyote sighting. If so, “coexistence” practised correctly promotes cruel behaviors that could cause prolonged suffering to the target animals. Civilized people go to considerable efforts to suppress such conduct in themselves and their children.

Coyotes and People – Legalities

The B.C. Government 24-hour Wildlife-Human Conflict Call Centre number is on the “Co-existing with Coyotes” website and the program’s recorded phone message, as expected through the partnership. However, there is no link to the B.C. Trappers Association website. There is no mention of the fact that trapping coyotes is legal in Vancouver, even out of season (B.C. Wildlife Act 1996:Sects. 26.1,2; 41.c,d; Ministry of Environment 2005).

Keep Them Stupid – Simple

“Kellert et al. (1996) provide general recommendations to increase public acceptance of carnivores. They emphasize that rather than simply providing more factual information on a species, education should directly target negative attitudes or perceptions concerning carnivores. For instance, in southern California we could focus on the public’s negative, and often exaggerated, beliefs concerning the threat of predators to humans and pets. Potential educational options include information dispersed through the local media, distribution of pamphlets and flyers to residents bordering natural areas, and the development of local school programs. Kellert et al. (1996) also stress that education must emphasize all values represented by these species. Although the importance of predators is often couched in terms of their presumed ecological or economic significance, we must emphasize also the many aesthetic, visceral, and even spiritual values provided by these charismatic animals” (Crooks 1998).

A rural version of “coexistence” has been pushed on this province’s farmers and

ranchers. However, the more familiar pro-predator and environmental groups behind that initiative (BCAC 2004)⁴¹ are at least forced to contend with stakeholders like the politically aware B.C. Cattleman’s Association. As a result, the government still considers threats to livestock a valid concern (Ministry of Environment 2002). Pets might be considered the urban equivalent of livestock. Ranchers have struggled with the effects of predators for many decades; but in most cities, coyotes are novel enough that public “education” can keep the extent of their damage to “urban livestock” under-recognized. Pet owners have never identified the need to be properly organized and to demand inclusion in policy-making that is currently formulated “to protect the predator populations rather than to protect livestock or game” (BCAC 2004:7).

Coyotologists are aware that in wildlife management, knowledge is important and spinning people’s perceptions more important still. All the officially recognized stakeholders are also aware that the urban pet could be the urban coyote’s downfall. Obviously, pets can never coexist with wild predators; and people always did like cats and dogs a lot more than coyotes (Kellert and Berry 1980). In spite of their bad rap by conservation biologists, cats are America’s most popular pet. There are 90.5 million owned cats in the United States and 73.9 million of the also-maligned dogs⁴²

⁴¹ Non-governmental environmental interests include the Sierra Club of BC/Canadianwolves.net, Defenders of Wildlife, East Kootenay Environmental Society, Bear Trust International, and World Wildlife Fund Canada.

⁴² The pet-as-disease-vector biohazard takes over where predation on songbirds leaves off. For a dog example, see Read (2006): Viral diseases are claimed to move from dogs to northern coastal B.C. wolves, even though Zarnke et al. (2004), in a 16-year survey of canid infectious diseases in wolves in nearby Alaska and Yukon, found a high prevalence of canine distemper virus antibodies in wolves

(APPMA 2005a). Collectively, that is more than 5 times the human population of Canada. Furthermore, affection for pets has increased tremendously in the years since Kellert and Berry (1980:7) found humanistic attitudes toward animals to be strong and pervasive: "In 2002, *American*

despite no known disease outbreaks in domestic dogs; a prevalence of canine parvovirus antibodies in wolves that was high near human settlements where dogs were found but even higher in remote areas; and a prevalence of infectious canine hepatitis virus that had been high in northern wolf populations for many years with minor increases that could not be explained by either introduction of the agent into an immunologically naive population or increases and decreases in prevalence related to acute epizootics. Environmentalists also hold cats responsible for directing disease to wildlife, with similar disputable assertions regarding the spread of feline leukemia to mountain lions and feline panleukopenia to the endangered Florida panther. Some reports that make these claims simultaneously blame cats for receiving the very vaccinations that prevent the spread of these diseases because this, and other veterinary care, gives them an unfair advantage over wildlife (see Coleman and Temple 1996, Coleman et al. 1997). For another view on disease vectors, according to Canada's National Wildlife Disease Strategy, "Canada's capacity to manage important disease issues has been challenged in recent years by the number, complexity and magnitude of high-impact disease occurrences and the threat of bioterrorism... Approximately 70% of new or newly important diseases affecting human health and human economies worldwide are believed to have a wild animal source... The vast majority of emerging diseases of the past 50 years are infectious diseases of wild animals that have been transmitted to humans (termed zoonotic diseases or zoonoses), to domestic and zoo animals, or to both..." (Canadian Wildlife Service 2004:1,2,16). Winter and Wallace (2006) warn of (hope for?) the possibility of a mutation of the avian flu (H5N1) virus to a form transmissible from cats to humans as further support for Cats Indoors!; but unlike true urban wildlife, both feral and domestic cats can be easily monitored and contained due to cat colony management in most metropolitan areas and direct ownership. Given the predominant direction of emerging diseases and the high densities of people and pets in cities, it would be prudent to consider urban buffer zones between wildlife and humans/pets to guard against a public health or national security crisis.

Demographics reported that 83 percent of American pet owners call themselves their animal's 'Mommy' or 'Daddy', up from 55 percent in 1995" (Schaffer 2006); three-quarters of dog owners and more than half of cat owners consider their pet like a child or family member (APPMA 2005b).

Son of Soulé

There is an intriguing piece of information in Crooks and Soulé (1999). It refers to a separate experiment Crooks did in the same California canyon fragments amid urbanization that he was studying with Soulé, whereby "25% of radio-collared cats were killed by coyotes (K.C., manuscript in preparation)." When I read this, I was shocked. There are other studies with ominous coyote diet implications, but this wasn't scats, this was cats. Scat can leave some breathing space: hypothetically, at least, several scats could contain the same pet. At first I had the paranoid vision of San Diego animal shelter cats being purchased, radio-collared and dumped into unfamiliar and hostile coyote territory; but in "Tabby Go Home," Crooks (1998) confirms that indeed he radio-tracked "pet cats".

Personally, I would never put a collar of any sort on my cats, unless it was a choco-bladder (see later), let alone allow a university student who had just handed me a cat predation survey to attach one; but cat owners residing along the edges of these study canyons were very cooperative with Crooks. A total of 636 of them completed his surveys, and some even kept their cats' prey returns so he could check for native species (Crooks 1998, Crooks and Soulé 1999).

Crooks completed a detailed dissertation about these canyons (Crooks 1999), leading to the "Doctor of Philosophy in Biology" degree he now holds, but the thesis is all but silent on the radio-collars. In order to make sense of the 25% killed, a

reader would need to know things like whose cats they were, how they were recruited, and how many cats took part in the experiment.

The most logical reason this manuscript has never been published is that Crooks had second thoughts about the advisability of pursuing a matter that, as in the excerpt introducing this section, would simply provide "more factual information" and do nothing to reverse Californians' "negative, and often exaggerated, beliefs concerning the threat of predators to humans and pets" (Crooks 1998). The "keystone predator" concept might not work very well if people actually knew the odds were 1 in 4 that their outdoor cats would be killed by urban coyotes, even though it was a good thing for the environment. Instead of embracing the predator as a "focal" or "flagship" species (Webber 1997:57, Crooks 1999:138), urbanites, not just in California but everywhere, might revert to the old way of thinking about coyotes and insist on their removal from cities forthwith.

Nowadays, as previously discussed, coyote diet analyses show negligible consumption of pets. Quinn even re-crunched the urban scat data from his 1992 thesis, presenting it in a way that looks a little less gloomy for cats (see Quinn 1997). After the near disaster of the Crooks cat study, conservation biologists and experts in human dimensions must have vowed it would never happen again. Experiments would be designed and interpreted more thoughtfully to highlight some other "pest" as a major prey item. Gehrt's research is a good example. His coyotes received much media attention over their desirable Canada-goose-egg-sucking ability (e.g., Berger 2005, Downes 2005)⁴³ (though this is not as

good as it first seems, since the predilection does not stop at non-endangered urban ground-nesters); but if Gehrt and his team really wanted to document the extent of dogs, cats, and even rats in the diet of urban and suburban Chicago coyotes, they would focus on the problem coyotes. There is probably no better place in North America right now than Cook County for researchers to work with wildlife control officers, private trappers, and even the University of Illinois College of Veterinary Medicine to obtain and analyze the enormous cache of nuisance coyote stomachs that arise there because of the ongoing cull.

Pets First!

The average citizen does not think about the radical mission behind a staid-sounding group like the Society for Conservation Biology that abuses science as a tool of war, not of impartial knowledge, and gives graduates of the Earth First! / Deep Ecology movement a legitimized home. Yet this organization's influence trickles down to the heart of cities, activating the ticking time-bomb of wildlife-human conflicts. Urban coyotes merely herald the Malthusian and anti-civilization goals of the Wildlands Project⁴⁴ and Rewilding Institute.⁴⁵

2,000, but Mike Mackintosh contended that the Vancouver Park Board was responsible for the decline through use of a "benign birth control" program of shaking eggs to kill embryos (Inwood 2000).

⁴⁴ Other Earth First! alumni other than Dave Foreman involved at the project's early stages included Reed Noss (also an early president of the Society for Conservation Biology), Barbara Dugelby, Mitch Friedman, and Kieran Suckling (Hanscom 1999).

⁴⁵ Dave Foreman and the Board of Directors of the Wildlands Project established the Rewilding Institute (see website <http://www.rewilding.org/>) in August 2003 as an independent think tank. Foreman is the executive director and senior conservation fellow. "Science fellows" who do outreach and are "experienced and knowledgeable leaders of the

⁴³ Vancouver's former Canada goose problem also ended after the coyotes came. Only 388 Canada geese were relocated from Vancouver to the Fraser Valley in 1999, down from previous highs of up to

The "Co-existing with Coyotes" strategy will prevail and be implemented in new jurisdictions unless people protest in an organized manner. When normal citizens start to understand the dishonesty and calculated marketing that leads to the creation of ecologically irrelevant policies that literally rip the heart out of the things they hold dear, they could lash back like Stockholm syndrome victims suddenly freed from their captors' spell.

There could be a non-profit society called "Pets First!" with branches across North America. The organization would encourage people to read, observe, and think critically. This may be the only way to solve the paradox that arises from the "new paradigm" (Curtis et al. 1997) of wildlife management: wherein the most-emphasized human dimensions part cares more about feelings and perceptions than facts, but ecological understanding is broadened by rigorous application of the scientific method, not the democratic process.

Cat predation research would be reviewed in detail to assist people in challenging false claims by pro-urban-coyote and anti-cat activists. Pet owners could offer feedback to conservation biologists, whose speculation sometimes reveals a sorry understanding of domestic cats. Even though cat predation on birds shows little to no ecological impact, Pets First! would actively participate in experiments aimed at reducing bird depredation levels even further. Good leads include promoting mild obesity in outdoor cats,⁴⁶ encouraging outdoor access at night (in certified no-coyote zones), and the

strategic placement of no-spill bird feeders in yards to distract fit daytime cats from effective bird-hunting opportunities. Coyote-free cities in conjunction with early spay/neuter programs would select for desirable aging cat populations instead of coyote-induced high replacement rates that result in a greater ratio of the young cats identified as better bird-catchers.⁴⁷

Given the higher purpose of the Wildlands Project, reduced cat predation on birds is still unlikely to make deep ecologists abandon covert wars on cats using urban coyotes. Therefore, Pets First! would be forced to support fast-tracking of death-by-chocolate predator toxicant technology. Then all outdoor cats would be fitted with the choco-bladder cat-collar device to teach stray coyotes fatal aversion therapy lessons about the acceptability of pets as urban food choices (an idea based on findings in Johnston 2005).

Creative submissions for solving the urban coyote problem would be welcomed. One person suggested to this author that coyotes be fostered and fed by volunteer guardians after humane dental extractions, vaccinations, and neutering. Urban coyotes may want nothing more than domestication, but it would displease animal rights activists (who disagree with all human use of animals, including pet ownership/domestication) and environmentalists alike.

A section of the website would post quotes of the week from people gloating over pets killed by urban coyotes. Cat-hater discussion boards are easily found by doing an Internet search using the keywords "coyotes" and "Fluffy".⁴⁸ It is this

citizen conservation movement" include Kevin Crooks, Michael Soulé, and prominent Canadian biologist/wolf attack defender/garbage-dump and dog-disease-vector theorist Paul Paquet.

⁴⁶ While today's trends in pet obesity are currently viewed as a problem, stocks will skyrocket for the first company to create and market the higher-calorie Pro-Bird Formula cat food.

⁴⁷ All these ideas flow from the results in Woods et al. (2003).

⁴⁸ "Fluffy" has become the animal world equivalent to a racial slur in humans, and journalists and others who use the epithet are almost universally anti-cat and pro-coyote.

malicious and sadistic streak that most differentiates the attitudes of hard-core environmentalists from those of pet owners, because the latter struggle with tough decisions that mean wild animals will die, while the former take delight in coyote predation on house cats and the devastation to families it causes. Of concern, if governments were to decide to cull the coyotes they currently sanction in cities to cull our cats, deep ecologists might be enraged enough to retaliate against cats more directly, at least until some get caught.⁴⁹ There may not be as many Earth First!ers as coyotes in any given city, but eco-marketing has been honed to a fine art in the years since Michael Soulé first spoke of its "heretical" use to recruit children and citizens to the cause.

In North America, purposeful harm to cats beyond the general category of disturbed humans is blamed on freak events like extraterrestrial visitations (mutilation) (Howe 2007)⁵⁰ and, closer to home, the occasional art-school anti-meat political statement (torture) (Cinemuerte VII 2005); but in Australia, cruelty has been directly linked to organized cat-demonizing campaigns backed by faulty science (see Hartwell 2003).

The Vancouver branch of Pets First! would demand a grant to match that given to "Co-existing with Coyotes." We would aim for complete disbanding of "Co-existing with Coyotes" through a citywide vote. In the mean time, changes to city bylaws to benefit homeowners would be requested. In Vancouver, a development permit is needed to build a residential fence higher than 4 feet in the front and 6 feet at the side or back

(City of Vancouver 2003), still low enough for even a sick coyote to scale (Barron 2006); and Coyote Rollers are recommended only for structurally-sound fences 6 feet or taller (see <http://www.coyoteroller.com/faq>).

To complement the taxpayer-funded coyote art around the City of Vancouver (City of Vancouver 1996),⁵¹ a special grant would be requested for construction of a memorial wall inscribed with the names of pets killed by "coexistence".

Pets First! would insist on inclusion in future urban wildlife negotiations. It would push for a conservation officer dedicated exclusively to the City of Vancouver. According to BCAC (2004), the B.C. Cattlemen's Association hires retired conservation officers through Big Red Consulting to do control kills, which is 41% more cost-effective than government delivery of the same service. The haphazard trapping now done by the Lower Mainland Trappers Association for individual property owners and businesses is not strategic or sufficient, judging by the unrelenting citywide flutter of missing cat posters. Planned-out trapping for maximum benefit to people and pets requires formal government cooperation and access to public lands, things incompatible with current policy. As for a "rebound effect," this is always present, with or without trapping, because most coyotes, even those in cities, die young (see footnote 21). However, padded leg-hold trapping/euthanasia is probably more humane and less painful to urban coyotes than the collisions with motor vehicles and infectious diseases than normally kill them. Further, it is dangerous and cruel to car drivers to be placed in the position of conducting coyote culls for a city informally.

⁴⁹ We learn from Dave Foreman's example that some Earth First!ers will do whatever the prosecutor tells them to avoid the Cons Indoors! program (see footnote 11).

⁵⁰ But most "mutilations" are probably caused by coyotes (see Timm et al. 2007).

⁵¹ See also the new black metal coyotes on poles at Slocan Street and North Grandview Highway on the Central Valley Bicycle Trail.

Because all animals matter and the killing of wildlife is not taken lightly, Pets First! in B.C. would ensure that humane euthanization of stray coyotes never exceeds the BCSPCA's annual harvest of "unadoptable" cats and dogs by the same method.

To delay re-establishment of coyotes, Vancouver could become a city of guard llamas; sweet-smelling neighborhoods and electric lawnmowers would be things of the past. Alternatively, Pets First! might enlist a team of working dogs socialized from birth to adore cats, children, and other domestic dogs to patrol the streets between trapping periods. Their presence would aggressively discourage coyotes, as dogs used to do before leash laws (Clifton 2003).

CONCLUSION

Lack of government responsibility toward the protection of pets demonstrated by underfunding of the B.C. Conservation Officer Service and exclusion of pet-owner input in evolving urban wildlife policy are important factors leading to Vancouver's "Co-existing with Coyotes" strategy. Increasingly, "coexistence" advocates across North America are working within governments and alongside them to dominate the direction of policy by capitalizing on and perpetuating the lag in citizens' knowledge of urban wildlife, its impact on pets, and its management, all the while assisting coyote establishment and saturation in new locations. As coyote populations become entrenched in cities, advocates easily introduce the idea that "coyotes...are here to stay" (Battiata 2006) and solidify public perceptions about the difficulty or impossibility of removal. The "coexistence" alternative, however, necessitates an otherwise avoidable risk of attacks on humans, especially children, and assures above all the ongoing killing of outdoor cats desired by most or all of the

pro-predator environmentalists who oversee policy.

While the prestige of a city like Vancouver, at least until a deadly accident takes place, and the British Columbia government's budget are best served by insisting "the public" wants *laissez-faire* management, the interests of the huge pet-owning public are diametrically opposed to increasing levels of predators in urban areas. In this sense, although historically cities have been hubs for the anti-hunting movement (Threlfall 1995) and are well endowed with environmental and animal rights activists, urban pet owners have interests more realistically allied with the ranchers, trappers, and hunters everyone loves to hate. Ironically, ranchers are no more than the hit-men hired by city dwellers to raise meat for slaughter (only 2.3% of Americans are vegetarian) (Stahler 2006). With this disconnection, urbanites then exhibit the high moralistic and low utilitarian attitudes toward animals found by Kellert and Berry (1980) and are susceptible to unceasing eco-marketing strategies and guilt campaigns that pass for "education" and lead to the protection of coyotes in cities. As further irony, North America's hunters and trappers are among the truest conservationists of all (Geist 2004a,b; Geist and McTaggart-Cowan 1995).

Only 5.3% of B.C. is private land (Anonymous 2006c). British Columbia's population is 85% urban (Statistics Canada 2007). The City of Vancouver (11,467 hectares), where this author lives, takes up 0.012% of the total area of B.C. (94,780,000 hectares) (City of Vancouver 2003, Anonymous 2006c) and contains a full 14.05% of the province's population. The entire GVRD (329,202 hectares) takes up 0.35% of the area of B.C. and contains 51.45% of its population (B.C. Stats 2006).⁵²

⁵² British Columbia Municipal and Regional District 2006 Census Total Population Results: City of

The GVRD itself is underdeveloped.⁵³ There are a few other well-populated regions in B.C. The rest of the province provides plenty of space for wildlife, especially proliferating coyote populations, to thrive.

B.C. is not unusual. As with trends in the United States, Canada is 80% urban and has a low rate of population growth⁵⁴ (Statistics Canada 2007). Only 5% of the land in the U.S. is developed, three-quarters of the population lives on 3.5% of the land, and the most rapid rate of suburbanization occurred before 1950 and had moderated by the 1970s and 1980s (NCPA 1999). Urban sprawl then may not be as harmful or rampant as environmentalists claim. And urban sprawl is a city planning issue, not a population issue. In places like Vancouver that "embrace density" (see Lloyd 2003, Punter 2003, City of Vancouver 2007), development occurs within existing city limits, stacking upwards as much as sprawling out; in a sense imploding, not exploding.

Arbitrary and capricious urban wildlife management policies that degrade human values and cause pointless danger, loss, pain, and fear do nothing to improve the environment. Cities are not for primitivism but for the technology and human ingenuity that offer the best chance of solving the world's many challenges. As part of that, cities can and should be places

where families matter – where people have safe streets and comfort for themselves, for aging parents, for the disabled, for children, and for the pets that give and receive a unique and exceptional form of companionship and love.

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Vancouver population of 578,041; B.C. population of 4,113,487; GVRD population of 2,116,581.

⁵³ "Urban land makes up about 30% or 87,500 hectares of Greater Vancouver's base. About two-thirds of this has residential, commercial, industrial, institutional, transportation and communications or utilities uses. The remainder is vacant. The non-urban land includes forested areas, agricultural land, watersheds, parks and open space. Agricultural land is identified as occupying about 46,500 hectares" (Maple Ridge 2007).

⁵⁴ Canada's population growth rate is about 4%; immigration, not births, accounted for more than 66% of population growth from 2001 to 2004. http://www41.statcan.ca/3867/ceb3867_000_e.htm.

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