

Species at Risk
Voluntary Stewardship Practices for:

*Reducing the Impact of
Cats on Birds and Wildlife*

© Jennifer Barnard, Wikipedia Commons



STEWARDSHIP CENTRE
FOR BRITISH COLUMBIA

ACKNOWLEDGEMENTS

Funding was provided for this report by the Real Estate Foundation of BC, Environment Canada - Habitat Stewardship Program, and the Agricultural Environment Initiative of the Agriculture Investment Foundation of BC, with in-kind support by the organizations represented in the project's Advisory Committee. This committee provided assistance with quality assurance, relevancy, and consistency with other species at risk initiatives, collaboration, and outreach to key audiences. Thanks are extended to the following organizations for their contribution to the project: BC Cattlemen's Association, South Coast Conservation Program, BC Ministry of Environment, Fisheries and Oceans Canada, Canadian Wildlife Service, Environment Canada, BC Dairy Association, BC Ministry of Agriculture, and the Ecological Services Initiative. Thanks also to reviewers from the BC Society for the Prevention of Cruelty to Animals, GC Group, BC Ministry of Forests, Lands, and Natural Resource Operations, Alley Cats Alliance, Okanagan Similkameen Conservation Alliance, and BC Nature. This document does not necessarily represent the views of all individual members of the advisory committee, or the official positions of the organizations with which the individual committee members are associated. This report was written by **Mike Pearson**, PhD, RPBio; **DG Blair**, M.Sc (2013) and edited by **Margaret Holm** (2016). The report was produced by the Stewardship Centre for British Columbia 2016 ©.

THE STEWARDSHIP CENTRE FOR BC

The Stewardship Centre for BC (SCBC) was created to assist governments, businesses, conservation, and environmental organizations, and citizens carry out stewardship activities in the most efficient, effective, and rewarding ways. A leader in promoting stewardship values as the foundation for sustainability, the SCBC wants to help make "shared stewardship" – the voluntary adoption of environmentally sustainable practices by all sectors of society – a reality in British Columbia. As good stewardship relies on good decision-making, we work closely with our partners to develop innovative technical, educational, and capacity building resources. For further information go to www.stewardshipcentrebc.ca

Funding provided by:

Canada



This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :



Environment
Canada

Environnement
Canada

Disclaimer The Stewardship Centre for BC provides the information in this report for educational purposes only. Material contained within it carries no guarantee of any kind, express or implied. The Stewardship Centre for BC accepts no liability for damages to any person or business entity because of using this report, its information or any website linked to it. This report is meant to complement but not replace other existing resources. This report is based on research and interpretation by the SCBC. It does not represent a legal opinion. This guide is meant to complement but not replace other existing resources, including the BC Ministry of Environment's Develop with Care series and Best Management Practices (BMPs) that have been developed for individual species. Following the guide also does not replace the need for due diligence regarding the legislative and regulatory requirements for projects involving species at risk.

THE CURRENT SITUATION

The house cat was domesticated from the wildcat, *Felis catus*, likely to help control rodents during the rise of agriculture. Although cats have become one of the world's most common pets, their hunting instincts are very much intact. Even well-fed cats like to hunt and range away from home. Slightly more than one in three Canadian households keeps cats. As well, there are colonies of lost, abandoned and feral cats established in most areas near human settlement.



There are about 8.5 million pet cats and between 1.4 and 4.2 million feral cats in Canada. In total, these cats are estimated to kill between 105 - 348 million birds and destroy 2 million bird nests in Canada every year.¹ Bird species that nest or feed on or near the ground are especially vulnerable to cat predation. Impacts are highest in densely settled areas of BC like the Fraser Valley, the South Okanagan, and Southern Vancouver Island.

These estimates are consistent with those made for other countries. **Cat predation is the largest single source of human-caused mortality for birds and mammals in North America:** an estimated 1.4 -3.7 billion birds and 6.9-20.7

billion small mammals are killed by cats in the United States each year.²

Cats have caused the extinction of native species on numerous islands around the world and evidence is accumulating that cat predation is causing declines in global bird populations. Recent studies support a precautionary approach to manage this situation, where best management practices like those described in this guide will help minimize bird mortality.

Although the domestic cat was introduced in North America only a few hundred years ago, their dramatic increase in population during this time has been devastating to native wildlife. Virtually all cats will hunt if given the opportunity, although individual cats vary in the amount they kill and types of prey they target. Being fed by humans has little or no impact on the desire to hunt. Most cat owners have little idea of the extent of the problem because only a small proportion, less than 25%, of prey are brought home.³

Predator Stress or fear of cats also impacts native wildlife. A recent study⁴ showed that after seeing a cat, parent birds reduced food delivered to nestlings for more than 90 minutes. So even the sight of cats in nesting areas can reduce survival rates of the young and produce population declines over time. Since 2009, cats have been labelled as an invasive species by the International Union for Conservation of Nature, placing free-roaming cats in the same conservation-threat category as rats. This marks a significant turning point as to how cats are viewed regarding native wildlife populations.



© Remi Jouan

Studies of domestic cats tell us that less than 25% of prey are brought home

DOMESTIC AND FERAL CATS

There are two types of cats that impact birds and wildlife: pets that are allowed to roam freely and feral cats. They differ in their habitat use and behaviour and consequently different stewardship practices are needed to help protect wildlife.

FREE-ROAMING DOMESTIC CATS

Many companion cats have access to food supplied by humans but are allowed outside while unsupervised. **Reported predation rates of free-roaming cats vary from 14 to 100 prey items per year.** These numbers only include prey brought to human residences or found by researchers.

Urban cats:

- roam primarily in neighbouring properties and nearby natural areas, rarely going more than 10 meters into forested areas.
- can occur in a high density - often over 200 cats per square kilometre
- have a tremendous impact on wildlife in their neighbourhoods and in local parks and protected areas since they bring home about the same number of prey items as cats who live near forested areas.

Rural cats:

- generally kill a broader range of species and have a larger impact on wildlife mortality per cat than urban cats
- typically range much further
- may have a greater impact on wildlife than native predators

FERAL CATS

A sad reality is the number of homeless and abandoned cats that live together in colonies. Their offspring, born out of captivity without human interaction, are called feral cats. Homeless, abandoned and feral cats are commonly all termed feral cats and are found in rural, urban and industrial areas.

About 25% of Canadian cats are feral. Every major Canadian city is estimated to contain between 20,000 and 200,000 feral cats. Feral cat populations may be larger in areas where there are low-income or transient human populations. Because they depend on food from the wild, **feral cat home ranges are much larger and they are believed to kill many more birds than domestic cats.**



In natural systems, when prey populations decline, predator numbers typically follow. This is in contrast to feral cat colonies that may grow as people drop off unwanted cats or feed colony members. Livestock farms tend to have more feral cats than other farms since the cats are used for rodent or pigeon control.

Cats and human health

Feral cats can pose a health risk since they have been found to be more likely to carry diseases that can be passed on to domestic pets and people. Cat scratch disease, rabies, toxoplasmosis, and intestinal parasites are examples of serious conditions which can be transferred from cats to humans.

Look what the cat brought in!



Illustration by Manda Maggs

WHICH SPECIES ARE MOST VULNERABLE AND WHY?

Domestic and feral cats are opportunistic hunters that will take whatever suitably sized prey is available. Cats may take prey as large as ducks and rabbits.

SMALL MAMMALS

Small mammals are the most common prey of cats. Although cats do catch house mice they also kill hundreds of millions of native wildlife including shrews, voles, rabbits and bats.



The Snowshoe Hare might seem too large to be vulnerable but cats can kill animals up to their own body weight in size.

BIRDS

After small mammals, songbirds are the next most common prey. Species that nest on or near the ground are most vulnerable. Bird predation is highest in spring and summer when nestlings and fledglings are abundant and young birds are learning to fly. A lesser peak occurs in mid-winter when birds gather at bird feeders. Birds that feed on the ground during all seasons of the year are especially vulnerable. The number of birds killed by cats annually in urban areas is often greater than the number of young hatched and can add up to 40% of the total population in the area. With such high death rates these urban areas can reduce rather than contribute to regional bird populations.

Island-nesting seabirds and songbirds have been devastated by feral cats in many countries including Canada. British Columbia has a critical conservation and stewardship responsibility for birds since over 300 species breed in BC each year, which is more than any other province in Canada. BC is also host to many migratory birds that arrive in our communities over the course of the year. These birds all depend on suitable and safe habitat to maintain their population numbers.



Species at risk are especially vulnerable to cat predation. A cat in the Okanagan killed a bird with a leg band. It was a Yellow-breasted Chat, one of the rarest species in Canada and part of a small, struggling local population.

SOME B.C. BIRDS IMPACTED BY CAT PREDATION:

- Common songbirds, such as the Spotted Towhee and Dark-eyed Junco
- Long-distance migrants such as the Lazuli Bunting and Western Tanager
- Rare and Threatened species, such as the Band-tailed Pigeon, Yellow-breasted Chat and Western Screech-Owl
- Birds that nest or feed on the ground, such as the Song Sparrow.



The Band-tailed Pigeon (left) and Barn Swallow young (right) are two species at risk susceptible to cat predation. Pigeons are susceptible when visiting feeders and swallow young are vulnerable when leaving the nest.

REPTILES AND AMPHIBIANS

Reptiles and amphibians are reported as prey in almost all studies of free-roaming and feral cats. They are rarely brought home therefore more commonly killed than most owners realize.

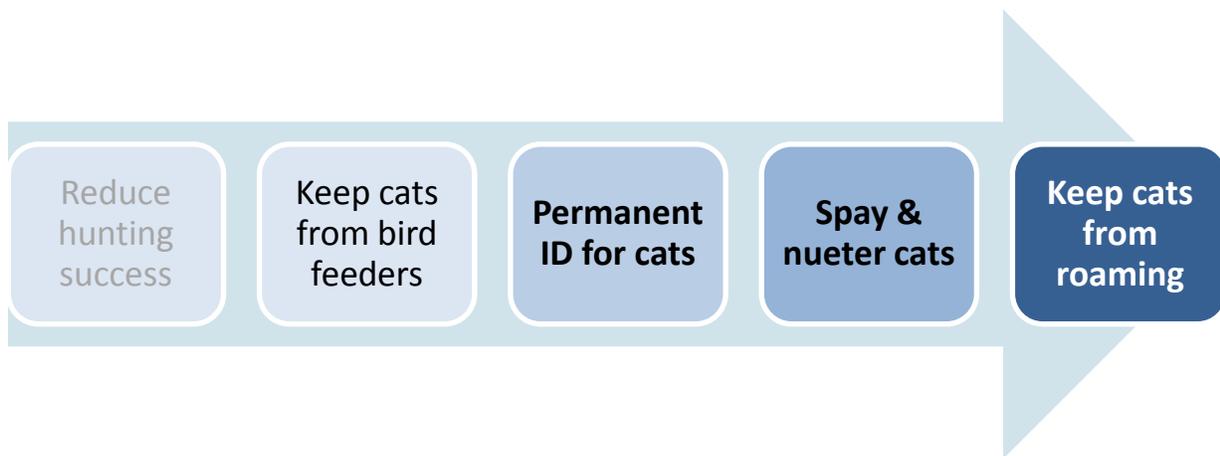


The Sharp-tailed Snake (left) and the Red legged Frog (right) are both small, land dwelling species found near urban and suburban areas and consequently vulnerable to cat predation.

STEWARDSHIP PRACTICES FOR CAT OWNERS

The following Stewardship Practices will help to protect species at risk and wildlife habitat impacted by cat predation. Limiting the number of free roaming cats is best approached through responsible pet ownership education and the adoption of cat control bylaws. Addressing the feral cat problems is achievable through education and population management.

The illustration below shows the least effective to most effective stewardship practices to reduce cat predation. **The easiest way to protect birds and wildlife is to keep cats from roaming freely.**



KEEP CATS FROM ROAMING FREELY

Pet owners can prevent the deaths of birds and mammals and their cats will likely live much longer by keeping their pet indoors. Cats live an average of 15-17 years when kept inside, but just 4-5 when allowed to roam freely. **Having an indoor cat is the most effective stewardship practice to limit cat predation on wildlife and species at risk.**



Keeping a cat indoors during the day but allowing it outside at night may reduce predation, but the cat is still at risk of getting lost or being injured by vehicles and other animals. Free roaming cats are also free to mate resulting in unwanted litters. For safe outdoor access, install a screened cat run or “catio” where cats can watch wildlife. Another option is to supervise or leash cats when they are outside. Advice on keeping cats happy indoors can be found at www.abcbirds.org and www.catsandbirds.ca and the “Web Resources” section at the end of this guide.

SPAY & NEUTER CATS

Cats can breed at just 4 months and produce up to four litters of kittens annually. **Neutering cats early will reduce unwanted cats that are abandoned or given up to shelters.** Three-quarters of all animals brought to BC animal shelters are unwanted cats and kittens. Neutered animals also range over smaller areas.



Adopting cats and kittens from animal welfare groups helps find homes for unwanted and lost pets.

There are about 8.5 million pet cats in Canada. Allowing pets to breed freely contributes to the feral cat problem and increases cat predation on vulnerable wildlife.

PERMANENTLY IDENTIFY CATS

Veterinarians can easily implant microchips that will help to identify cats that end up in shelters. It is a sad fact that very few stray cats are returned to their owners.

KEEP CATS AWAY FROM BIRD FEEDERS



Creative Commons

Place feeders on high poles and away from trees and shrubbery where cats have cover to hide. If cats are a problem, avoid providing bird seed on the ground. If it is not possible to keep cats away from bird feeders, then do not put bird feeders out. Do not employ ultra-sonic cat deterrent devices. Their effectiveness is questionable and the impacts on native species are uncertain.

REDUCE HUNTING SUCCESS



Cat Goods Inc.

Attaching warning bells to collars is ineffective since most cats hunt by waiting quietly to pounce on prey. Bibs can reduce predation success by making cats more visible and by interfering with pouncing on prey. Bibs are typically attached to collars and made of coloured neoprene. For further information see www.catgoods.com. To be effective, these devices should only be used outdoors **under supervision** by the pet owner.

Feral Cats in Our Communities

BE A RESPONSIBLE PET OWNER

The cat over-population problem around the world is a direct result of cats being allowed to roam freely and unwanted cats being abandoned. People leave cats and kittens in parks or rural areas hoping the cats will fend for themselves. This is extremely cruel as many do not survive, and those that do survive lead short, unhealthy lives. **Unwanted cats should be dropped off at a local animal shelter to give them the best possible chance to be adopted.**

DON'T FEED STRAYS

Many kind-hearted people feed stray cats in the belief they are helping. In fact, it may only increase the feral population. Outdoor feeding also attracts rats and other unwanted wildlife. Instead of feeding feral cats, contact and **offer support to local animal welfare groups who trap, neuter and rehome feral cats.**

KEEP ONLY NEUTERED FEMALE BARN CATS



Cats are used on farms to help control rodent populations. Farmers can reduce their impact by keeping only enough cats to control the rodents. Well-fed neutered females are best, as they will hunt close to farm buildings where rodent control is required. Pet and barn cats should be fed indoors to avoid inadvertently feeding feral animals.

Feeding feral cats may increase their numbers without improving their overall welfare.

SUPPORT MUNICIPAL 'NO ROAMING' BYLAWS

The BC SPCA states, "For cat welfare to be improved in any community, regulatory and educational initiatives are needed."⁵ Bylaws and policies can be adopted by local and regional governments to address the serious impact of free-roaming and feral cats on birds and other small wildlife. The Stewardship Centre for BC has published suggested bylaws and background notes that can be used to encourage elected officials to adopt pet bylaws that include cats and well as dogs.⁶ For further information see the "Web Resources" section.

CONCLUSION

It's imperative that we improve the treatment of cats, birds and wildlife by adopting the stewardship practices outlined in this guide. By taking action as responsible pet owners, we can save millions of wildlife and birds' lives and protect species populations for years to come.

ENDNOTES

¹ Blancher, 2013.

² Loss, Will and Mara, 2013.

³ Loyd et al, 2013.

⁴ Bonnington et al, 2013.

⁵ BC SPCA, 2015

⁶ Stewardship Centre for BC, 2016.

REFERENCES

BC SPCA. (2015) Model Animal Responsibility Bylaws.

Blancher, P. (2013). Estimated Number of Birds Killed by House Cats (*Felis catus*) in Canada. *Avian Conservation and Ecology*, 8(2), 3.

Bonnington, C., Gaston, K. J., & Evans, K. L. (2013). Fearing the feline: domestic cats reduce avian fecundity through trait-mediated indirect effects that increase nest predation by other species. (M. Whittingham, Ed.) *Journal of Applied Ecology*, 50(1), 15–24. doi:10.1111/1365-2664.12025.

Loss, S. R., Will, T., & Marra, P. P. (2013). The impact of free-ranging domestic cats on wildlife of the United States. *Nature communications*, 4, 1396. doi:10.1038/ncomms2380.

Loyd, K. A. T., Hernandez, S. M., Carroll, J. P., Abernathy, K. J., & Marshall, G. J. (2013). Quantifying free-roaming domestic cat predation using animal-borne video cameras. *Biological Conservation*, 160, 183–189. doi:10.1016/j.biocon.2013.01.008. Available at www.stewardshipcentrebc.ca.

Stewardship Centre for BC (2015). Recommended Local Government Policies and Bylaws to Reduce the Impact of Cats on Birds and Wildlife.

Stewardship Centre for BC (2016). Reducing the Impact of Cats on Birds and Wildlife: a briefing note for local governments.

WEB RESOURCES

Cats and Birds <http://catsandbirds.ca/>

Nature Canada invites Canadians to consider what they can do to make Canada a safer place for both cats and birds. See tips on caring for cats, research on cat and wildlife issues, information for municipalities, and ideas on how to take action. Cat owners can “Take the pledge” to keep cats safe and save bird lives.

Stewardship Centre for BC <http://www.stewardshipcentrebc.ca>

SCBC has produced a series of documents encouraging individuals, communities and local governments to adopt practices that can reduce the impact of cats on birds and wildlife. “The Happy Cat” brochure offers tips on responsible pet ownership.

American Bird Conservancy <http://www.abcbirds.org/abcprograms/policy/cats/index.html>

Information and educational resources on cat predation and how to transform outdoor cats into contented indoor cats. ABC has public educational brochures which are available to order.

Cornell Lab of Ornithology <http://www.allaboutbirds.org/Page.aspx?pid=2656>

“View from Sapsucker Woods”, an excellent short essay on the impacts of cats on bird populations.

BC SPCA <http://www.sPCA.bc.ca/animal-issues/professional-resources/model-bylaw.html>

Recommended local government bylaws for all animals.

Rithets Bog Conservation Society <http://www.rithetsbog.org/>

Videos of domestic cat predation on songbirds in a Victoria Conservation Area

Cat Bib Information <http://catgoods.com/>



“Vince on a walk” Wikimedia Commons

APPENDIX 1: SPECIES AT RISK POTENTIALLY IMPACTED BY CAT PREDATION

BC List: BC Ministry of Environment Conservation Data Centre
COSEWIC (Committee on the Status of Endangered Wildlife in Canada)
SARA (Species at Risk Act) Schedule: List of Wildlife Species at Risk

English Name	Scientific Name	BC List	COSEWIC	SARA Schedule
Amphibians				
Blotched Tiger Salamander	<i>Ambystoma mavortium</i>	Red	E	1
Western Toad	<i>Anaxyrus boreas</i>	Blue	S	1
Wandering Salamander	<i>Aneides vagrans</i>	Blue		
Coastal Tailed Frog	<i>Ascaphus truei</i>	Blue	S	1
Coastal Giant Salamander	<i>Dicamptodon tenebrosus</i>	Red	T	1
Northern Leopard Frog	<i>Lithobates pipiens</i>	Red	E	1
Northern Red-legged Frog	<i>Rana aurora</i>	Blue	S	1
Great Basin Spadefoot	<i>Spea intermontana</i>	Blue	T	1
Reptiles				
North American Racer	<i>Coluber constrictor</i>	Blue	S	1
Sharp-tailed Snake	<i>Contia tenuis</i>	Red	E	1
Desert Nightsnake	<i>Hypsiglena chlorophaea</i>	Red	E	1
Gopher Snake <i>deserticola</i> subspecies	<i>Pituophis catenifer deserticola</i>	Blue	T	1
Western Skink	<i>Plestiodon skiltonianus</i>	Blue	S	1
Northern Rubber Boa	<i>Charina bottae</i>	Yellow	S	1
Small Mammals				
Snowshoe Hare <i>washingtonii</i> subspecies	<i>Lepus americanus washingtonii</i>	Red		
Southern Red-backed Vole <i>occidentalis</i> subspecies	<i>Myodes gapperi occidentalis</i>	Red		
Great Basin Pocket Mouse	<i>Perognathus parvus</i>	Red		
Western Harvest Mouse	<i>Reithrodontomys megalotis</i>	Blue	S	1
Pacific Water Shrew	<i>Sorex bendirii</i>	Red	E	1
American Water Shrew <i>brooksi</i> subspecies	<i>Sorex palustris brooksi</i>	Red		
Olympic Shrew	<i>Sorex rohweri</i>	Red		
Trowbridge's Shrew	<i>Sorex trowbridgii</i>	Blue		
Nuttall's Cottontail	<i>Sylvilagus nuttallii</i>	Blue	S	1
Northern Bog Lemming <i>artemisiae</i> subspecies	<i>Synaptomys borealis artemisiae</i>	Blue		
Northern Pocket Gopher <i>segregatus</i> subspecies	<i>Thomomys talpoides segregatus</i>	Red		

Stewardship Practices for Reducing the Impact of Cats on Birds and Wildlife

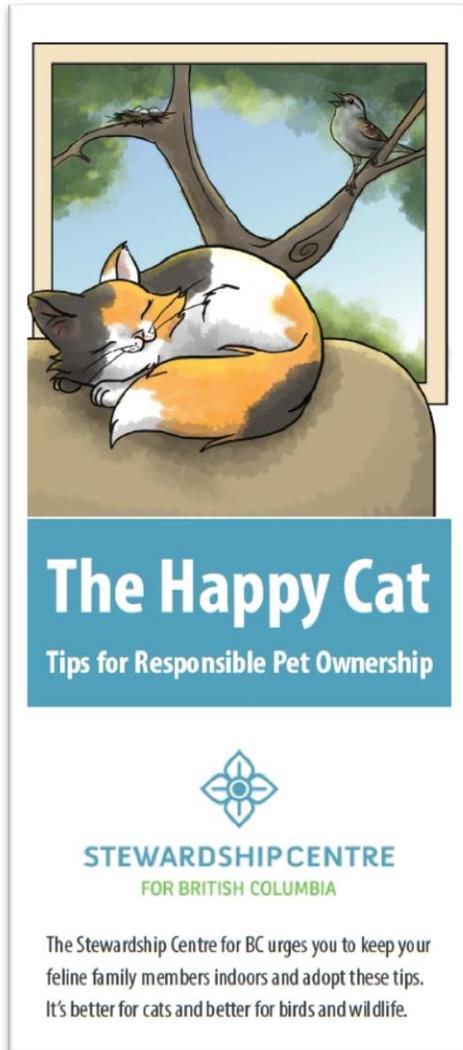
Birds				
Le Conte's Sparrow	<i>Ammodramus leconteii</i>	Blue		
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	Red		
Upland Sandpiper	<i>Bartramia longicauda</i>	Red		
Smith's Longspur	<i>Calcarius pictus</i>	Blue		
Canada Warbler	<i>Cardellina canadensis</i>	Blue	T	1
Canyon Wren	<i>Catherpes mexicanus</i>	Blue	N	
Lark Sparrow	<i>Chondestes grammacus</i>	Red		
Olive-sided Flycatcher	<i>Contopus cooperi</i>	Blue	T	1
Sooty Grouse	<i>Dendragapus fuliginosus</i>	Blue		
Bobolink	<i>Dolichonyx oryzivorus</i>	Blue	T	
Gray Flycatcher	<i>Empidonax wrightii</i>	Blue	N	
Horned Lark, <i>merrilli</i> subspecies	<i>Eremophila alpestris merrilli</i>	Blue		
Rusty Blackbird	<i>Euphagus carolinus</i>	Blue	S	1
Barn Swallow	<i>Hirundo rustica</i>	Blue	T	
Yellow-breasted Chat	<i>Icteria virens</i>	Red	E	1
Western Screech-Owl, <i>kennicottii</i> subspecies	<i>Megascops kennicottii kennicottii</i>	Blue	T	1
Western Screech-Owl, <i>macfarlanei</i> subspecies	<i>Megascops kennicottii macfarlanei</i>	Red	T	1
Lewis's Woodpecker	<i>Melanerpes lewis</i>	Red	T	1
Long-billed Curlew	<i>Numenius americanus</i>	Blue	S	1
Sage Thrasher	<i>Oreoscoptes montanus</i>	Red	E	1
Band-tailed Pigeon	<i>Patagioenas fasciata</i>	Blue	S	1
Hairy Woodpecker, <i>picoideus</i> subspecies	<i>Picoides villosus picoideus</i>	Blue		
Bay-breasted Warbler	<i>Setophaga castanea</i>	Red		
Cape May Warbler	<i>Setophaga tigrina</i>	Red		
Black-throated Green Warbler	<i>Setophaga virens</i>	Blue		
Western Bluebird (Georgia Depression population)	<i>Sialia mexicana</i> pop. 1	Red		
Brewer's Sparrow, <i>breweri</i> subspecies	<i>Spizella breweri breweri</i>	Red		
Sharp-tailed Grouse, <i>columbianus</i> subspecies	<i>Tympanuchus phasianellus columbianus</i>	Blue		
Common Nighthawk	<i>Chordeiles minor</i>	Yellow	T	1

ABOUT THIS GUIDE

“Species at Risk Voluntary Stewardship Practices for Reducing the Impact of Cats on Birds and Wildlife” presents options and examples of good stewardship practices to reduce impacts by domestic and feral cats. It provides cat owners with information they can use to inform their actions to conserve wildlife.

Stewardship can be broadly defined as an ethic that promotes the responsible use, protection, and management of the natural environment through conservation and sustainable best practices. The guide addresses the threat of predation by domestic and feral cats. Following an overview of this threat, various actions are described to reduce the impacts of cat predation. To help implement these stewardship practices additional information resources are provided at the end of the guide.

This guide is one of a series developed by the Stewardship Centre to address threats to wildlife and species at risk. See www.stewardshipcentrebc.ca



The brochure ***“The Happy Cat: Tips for Responsible Pet Ownership”*** can be downloaded from www.stewardshipcentrebc.ca.