

## **Feral Cat Predation and Its Effects on Wildlife- Searching For the Truth.**

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One topic that has become intimately intertwined with the question of how to manage feral cat populations is that of feline predation and the effects on wildlife populations. It is a simple fact, cats are obligate carnivores. For cats, predation is a natural part of life; they must eat meat in order to survive. As Ellen Perry Berkeley so eloquently put it, "It is we who bring emotion to this activity of the cat." (Berkeley, 2001)

This topic has become a battleground of competing studies and experts. A study supporting any stance can be found, and are often cited and quoted without seriously analyzing the actual study. However, some conclusions can be reached regarding feline predation and its effect on wildlife:

1. There is no strong support for the viewpoint that cats are a serious threat to wildlife, except perhaps for fragile populations in isolated or fragmented ecosystems;
2. The role of other predators, including foxes, feral dogs, and some bird species has not been adequately addressed;
3. The role of feral cats in a healthy ecosystem has not been studied;
4. Finally, the effect of humans on sensitive ecosystems and disappearing species is often ignored.

Studies into cat predation have been done for almost a century. These studies fall into three main classes (Slater, 2002):

1. Island ecosystems
2. Owned cats with access to the outdoors
3. Feral cats.

### **THE METHODOLOGY**

Many techniques have been used in these studies. Owner-reported rates of predation are obtained through randomized phone calls or mailed surveys which rely on the memory of the owner (Robertson, 1998; Reark, 1994), or by long-term follow-up studies, in which the owners record the predation behavior of their cats as it happens for a defined period of time (Churcher and Lawton, 1987). Observations of predation by scientists include direct observation, analyzing stomach or fecal/scat contents of cats (Bell and Sim, 2000), radio collaring and observation, or analysis of dead or injured prey species (Bell and Sim, 2000). As in any scientific study, each of these techniques has potential drawbacks that may skew the findings.

Many potential problems exist within one time owner-reported rates of predation. As a rule, for any survey, a low rate of response renders the study meaningless. A study that is performed in a small area (say one city instead of many cities across a nation) will not be applicable to a larger region. Studies of urban cats are most likely not applicable to cats that live in a suburban or rural environment. In studies that are not performed face-to-

face, there is no way to verify that the respondent even has a cat. Owner bias also plays a large role (Hartwell, 1997). For those who do own cats, the way they think of their cat could distort their response. As an example, someone who keeps a cat as a “mouser” may be more willing to report or over-report predation than someone who thinks of their cat as a well-tended (and well-fed) housecat. The general view of the culture that they live in regarding cats may also influence an owner’s response. Finally, these sorts of reports come from memory alone, which may also distort owner response.

Long-term follow up studies are much more robust in many ways. They do not rely on an owner’s memory of predation by their cat. Owners instead record predation events as they happen. However, there are still drawbacks to long-term follow up studies. There is no way to prove that the prey brought home was actually killed by the cat. Cats, as opportunistic feeders, will feed on carrion (already-dead animals) as well as those they killed themselves, so predation rates may be over-reported. Often, a cat will consume its’ prey at the site of the kill, so predation rates may be under-reported. Finally, all types of owner-reported predation studies rely greatly on the cats being studied, including their age, their natural territory and what food sources they have access to.

Studies of cat predation undertaken by research scientists often use direct observation of feline kills; these studies have the same drawbacks as explained above of owner-reported long term studies. Alternatively, feline predation is determined by killing cats and studying their stomach contents. For many, studies of this type are ethically and morally repugnant (Garcia, Diez and Alvarez, 2001). Stomach analysis can also be performed on cats that die of natural causes; alternatively feline scat can be studied. One of the drawbacks of these types of studies are that they are restricted to a limited number of meals. Also, dead or injured prey animals found and/or taken to refuges can be studied to determine if their injuries are similar to that of a “typical” cat kill. However, this presupposes that a “typical” cat kill is well defined and is distinctive enough to warrant that conclusion.

## **THE FINDINGS**

The findings of cat predation studies are often extrapolated to determine the number of prey killed by the cats of a state or a nation. For example, the American Bird Conservancy reported that a study in England found that the British cat population was killing at least 300 million prey animals a year (American Bird Conservancy). However, the original study does not support these claims. In the study, the catches and kills of 986 cats across Great Britain (except Ireland and the Channel Islands) were compiled over a 5 month period, and it was determined that the mean number of prey caught and killed was 11.3 during the study period (Woods, McDonald, and Harris). This study, like many of its kind, has several potential problems. First, study participants were recruited in part from members of the Mammal Society. Since this is a conservation organization, a portion of the respondents most likely were concerned with conservation and extinction, a fact the authors of the study readily admit. The study recorded the number of prey brought home by the cats assuming that these equaled kills by the cats. However, cats are opportunistic feeders and a portion of the prey brought home may have been already

dead, which was not taken into account in the final analysis. Of 696 cats, 91% brought home at least one prey animal. This is contradictory to many other studies, which found that 35-56% of cats hunt (Fougere, 2000; Perry 1999; Reark, 1994). Once again, the authors acknowledge this point. Additionally, feline predation is not constant during the course of the year. Since the study was limited to only 5 months, the findings may have been skewed by studying the cats during their most active hunting period during the year. But most striking, and most important for the discussion of extrapolation, is a comment the authors themselves made: “Our estimates of the total numbers of animals brought home by cats throughout Britain should be treated with requisite caution and these figures do not equate to an assessment of the impact of cats on wildlife populations.” Sadly, comments like these made by the researchers themselves are often ignored by groups who use and abuse these studies to prove cats are the major cause of prey species decline.

## **OTHER FACTORS**

Besides the inherent problems of the studies as discussed above, there are numerous other factors other than feral and domestic cat predation which affect wildlife populations. These are not often addressed in studies of cat predation, although they can greatly influence any conclusions made by the studies. The presence (or absence) and effect of other predator species must also be taken into consideration. Feral dogs can and do have a large impact on wildlife. Other small predators, such as foxes, minks and skunks are often more efficient predators than cats. Perhaps most surprisingly, birds can and do kill other birds. Even in isolated ecosystems where domestic cats are not a factor and cats must hunt to survive, feral cats are not the sole predators but exist in a complex relationship with the prey species and other predators. The absence of larger mammalian carnivores can lead to what is known as “mesopredator release”, in which smaller carnivores are free to fill the ecological niche left by the larger predator and prey on smaller vertebrates. “Mesopredator release” has been suggested as the cause of decline and extinction of some prey species, and has been studied in coastal California (Crooks and Soule 1999).

Feral cats, as all animals, live in a complex ecological web. As the above mesopredator study demonstrated, if one part of the system is removed, normal predator/prey interactions are disrupted. However, we know little if any about the normal role feral cats play in the environment. It is important to note that cats and their prey species have coexisted for hundreds if not thousands of years. If feline predation has such a negative impact, as the British study suggests, then birds and other small vertebrates would have become extinct long ago (CJ Meade, 1982).

We must also take into consideration the effect humans have on the environment, as well as their direct impact on feline prey species. Feline predation has been shown to be detrimental in isolated environments as well as fragmented ecosystems. This fragmentation is often due to human action, such as urban sprawl and road construction. Indiscriminate poisoning by humans to kill a specific pest species frequently kills a large percentage of other species.

## CONCLUSIONS

So, what has been learned from all the conflicting studies of cat predation? What do we know now about cat predation in general? First, multiple studies have found that 36-56% of owned cats hunt (Fougere, 2000; Perry 1999; Reark, 1994). The amount of prey caught varies widely between individual cats. In one study 70% of cats caught less than 10 prey animals, while 6% caught over 50 prey animals (Barrat, D.G., 1998, 1997). What do cats eat? Primarily, cats are opportunistic feeders, and will utilize whatever food source is most prevalent, including supplemental feeding by humans, garbage and carrion (Berkely, 2001; Winograd, 2003). Of the cats that rely on hunting, the majority of their diet consists of mammals (Berkely, 2001; Fitzgerald, 1988). The feline hunting style of wait and pounce is unsuitable for flying birds. Frequently, the flying birds consumed are injured or already dead (Berkely, 2001).

It is an undeniable fact that cats are carnivores; their physiology demands this. However, the debate on cat predation focuses on the impact on the other species in their ecosystem. While it is clear that cats can and do have a large impact in exceptional situations (isolated ecosystems being the primary example), it is much more apparent that in our normal, everyday environments the actions of humans have a much greater effect on vulnerable and threatened species. Urban sprawl, fragmentation of forested ecosystems, the increase in motor vehicles and the related increase in roads, and the use of pesticides, fertilizers and poisons do much more damage to bird and small vertebrate species than do domestic and/or feral cats. However, feral cat predation, and its' supposed effect on vulnerable species, is frequently used as an argument against trap/neuter/return (TNR) programs. As cats are opportunistic feeders, providing them with a readily available food source as a part of a TNR program will reduce any effect they have on their traditional prey species. All cats, and feral cats in particular, have become convenient scapegoats for the loss of many species, especially songbirds. However, we can no longer ignore the role that we humans have played in this process. Before we can sentence cats to death for being carnivores, we need to take a hard look at ourselves and what we have done to our ecosystem.

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