

Bobbie Walthall

From: Eric Kirkendall <kirkendall1@gmail.com>
Sent: Tuesday, February 19, 2019 2:56 PM
To: Lisa Larsen; Jennifer Ananda; Leslie Soden; Matthew Herbert; Stuart Boley; Diane Stoddard; Bobbie Walthall
Cc: Chad Lawhorn
Subject: Request that you ask questions, review background material on TNR programs, and bring Jayhawk Audubon into the conversation
Attachments: Questions about the proposed program to release unwanted cats in Lawrence, Kansas.gdoc; Biologists denounce 'science denialism' about outdoor cats -- BirdWatching.pdf; Jayhawk Audubon Society Position on Free-Roaming Feral, Stray, and Domestic Cats.pdf; Mind-Altering Cat Parasite Linked to Schizophrenia in Largest Study Yet.pdf; Critical Assessment of Claims Regarding Management of Feral Cats by Trap-Neuter-Return.pdf

Dear Lawrence City Commissioners,

In my research on the Lawrence TNR proposal, I have been unable to find any specifics of what is being proposed, but have found indications that, (1) The claimed science showing the efficacy of TNR programs is hotly disputed by biologists and others, (2) There is evidence TNR programs are inhumane to released cats, (3) TNR programs result in the death of many times more songbirds than the number of cat lives they save, and (4) Because of the diseases untreated cats carry, they present a serious health risk to both pet cats and humans, including the risk of schizophrenia and other mental illnesses.

I request that you review the attachments I have included that document the points above, and find out more about what the TNR proponents have in mind by asking them the attached questions.

I have also attached the position paper of the Jayhawk Audubon Society, which opposes this proposed TNR program, and respectfully request that you bring them into the conversation.

Thank you,

Eric Kirkendall
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Lawrence KS 66044

Frequently Asked Questions (FAQ)
Regarding the proposed program to release unwanted cats in Lawrence, Kansas
<http://bit.ly/lfkcats>



Food

1. Will the Humane Society ensure the cats the release are fed twice daily?

Bird Predation

1. What measures will the Humane Society take to prevent the cats they release from killing migratory and native songbirds?

Vaccinations

1. Upon capture, will cats receive the recommended initial two doses of vaccines 3-4 weeks apart for rabies, Feline Distemper, Feline Herpesvirus, Feline Leukemia Virus (FeLV), and Calicivirus?
2. Will the released cats be given the recommended re-vaccination of Feline Distemper vaccine one year after the initial two doses?
3. Will the released cats be vaccinated every three years after the initial doses for rabies, feline distemper, Feline Herpesvirus, and Calicivirus, as recommended?
4. Will the released cats be vaccinated annually after the initial doses for rabies, Feline Leukemia Virus, and Bordetella, as recommended?

Treatment of injuries and illnesses

1. Will the cats released by the Humane Society be examined by a veterinarian annually?
2. Will the Humane Society regularly check the released cats to ensure they have not been wounded or hurt by other cats, dogs, cars, etc?
3. Will the Humane Society provide timely medical care for cats with wounds and other injuries?
4. If not, who is responsible for ensuring these cats have decent lives? Who will pay the bills for their medical care?

Prevention of disease transmission to humans

1. Infection by *Toxoplasma gondii*, Toxoplasmosis, is the leading cause of death by foodborne illness in the United States. What will the Humane Society do to ensure that the cats they release don't spread the disease to community and private gardens, and to Lawrence residents? [The Truth About The Mind-Controlling Parasite You Can Get From Your Cat](#)
2. Will the Humane Society test the cats upon capture and annually for the brain parasite they spread to humans, *Toxoplasma gondii*, and euthanize infected cats?

Prevention of disease transmission to cats

1. Will the Humane Society test the cats upon capture and annually after release for the diseases they can spread to pet cats, including rabies, **Feline Distemper**, Feline Herpesvirus, Feline Leukemia Virus (FeLV), and Calicivirus and as appropriate, treat or euthanize infected cats?

Private property

1. Will the Humane Society release unwanted cats onto private property?
2. Will the Humane society acquire written permission from property owners before releasing cats onto private property?
3. Will the cats be equipped with GPS trackers to monitor their movements and identify problem cats who have moved onto private property where they are not wanted?

Ownership and Insurance

1. Will the Humane Society maintain legal ownership of these cats? Will these cats be chipped with microchips indicating they are Human Society property? Will the Humane Society maintain a photographic database of these cats so problem cats they own or release can be identified by property owners?
2. Will the Humane Society maintain insurance to pay for damages, such as from cat bites and scratches, or people catching diseases like rabies and infection by brain parasite *Toxoplasma gondii* from these cats?
3. If the humane society does not wish to maintain ownership of and legal responsibility for the cats they release, who do they believe will have legal ownership and responsibility for these cats?

Jayhawk Audubon Society Position Statement on Free-Roaming Feral, Stray, and Owned Domestic Cats



JAYHAWK AUDUBON SOCIETY · WEDNESDAY, JANUARY 30, 2019

Jayhawk Audubon Society is the chapter of the National Audubon Society serving Lawrence, Douglas County, and surrounding communities in eastern Kansas.

Our mission is to provide opportunities for greater understanding and appreciation of birds and other wildlife, to encourage sustainable practices, and to advocate for actions and policies which result in protection and preservation of intact ecological ecosystems.

Summary of Position

- Because free-roaming domestic cats prey on birds and other wildlife, Jayhawk Audubon Society opposes programs and practices that allow cats to roam freely, whether they are feral, stray, or owned pets.
- Trap/Neuter/Vaccinate/Release (TNVR) programs targeted at feral cats in the city are unlawful according to the Lawrence city code. Jayhawk Audubon Society opposes changing that code to allow Trap/Neuter/Vaccinate/Release programs in the city.

Overview of the Problem

Free-roaming cats include feral cats, stray cats, and owned cats--pets. Feral cats are domestic cats that are wild--they live without human contact and human habitation. Stray cats are domestic cats that have been abandoned by humans and are living on their own. Other free-roaming cats include cats that are owned--pets--but allowed by humans outside of contained yards and off leashes and harnesses.

Free-roaming domestic cats, whether they are feral, stray, or owned, prey on small animals, including native mammals, reptiles, amphibians, and birds.[1] It is estimated that in the United States, outdoor cats (feral, stray, and owned) kill 1.3 to 4 billion birds per year and 6.3 to 22.3 billion mammals per year.[2] 40% of the world's bird species are in decline, and of those species, 39% of them are threatened by invasive animals, including domestic cats.[3] In addition feral and stray cats are reservoirs of disease for both pet cats and wildlife as well as humans. Diseases with high prevalence include feline leukemia virus, feline immunodeficiency virus, feline infectious anemia (hemobartonellosis) and significantly the

domestic cat is the definitive host for the protozoan parasite *Toxoplasma gondii* which can be transmitted to humans and is a significant concern for susceptible pregnant women in regard to in utero transmission of the infection to the fetus with possible resulting birth defects.

Trap/Neuter/Vaccinate/Release (TNVR) programs attempt to reduce the population size of free-roaming feral cats by trapping, neutering, and releasing them to their original environments. While these programs are considered humane in approach, models have estimated that more than 70 percent of a population of feral cats must be spayed or neutered before the population will decline. Nor do they address the predation done to birds and other animals.

Recommendations

1. We urge all cat owners to keep all cats indoors, in a safe enclosed outdoor structure, or on harness or leash if accompanied by a human.
2. We support programs to neuter or spay cats before reproductive age and to vaccinate and register cats.
3. We oppose “managed” outdoor cat colonies and TNVR programs.
4. We oppose the release of unwanted pet cats and feral cats into the wild.

Notes

[1] Hildreth et al. (2010).

[2] Loss et al. (2013).

[3] BirdLife International (2018).

References

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We would be happy to provide city staff with research data and reports from other cities about this issue. We urge the city to use its voice to encourage responsible cat ownership in Lawrence.

James F. Bresnahan, D.V.M., President, and the Board of Jayhawk Audubon Society

Critical Assessment of Claims Regarding Management of Feral Cats by Trap–Neuter–Return

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Abstract: *Many jurisdictions have adopted programs to manage feral cats by trap–neuter–return (TNR), in which cats are trapped and sterilized, then returned to the environment to be fed and cared for by volunteer caretakers. Most conservation biologists probably do not realize the extent and growth of this practice and that the goal of some leading TNR advocates is that cats ultimately be recognized and treated as “protected wildlife.” We compared the arguments put forth in support of TNR by many feral cat advocates with the scientific literature. Advocates promoting TNR often claim that feral cats harm wildlife only on islands and not on continents; fill a natural or realized niche; do not contribute to the decline of native species; and are insignificant vectors or reservoirs of disease. Advocates also frequently make claims about the effectiveness of TNR, including claims that colonies of feral cats are eventually eliminated by TNR and that managed colonies resist invasion by other cats. The scientific literature contradicts each of these claims. TNR of feral cats is primarily viewed and regulated as an animal welfare issue, but it should be seen as an environmental issue, and decisions to implement it should receive formal environmental assessment. Conservation scientists have a role to play by conducting additional research on the effects of feral cats on wildlife and by communicating sound scientific information about this problem to policy makers.*

Keywords: exotic species, *Felis catus*, no kill, predation, TNR, trap–neuter–release, urban ecology

Evaluación Crítica de las Demandas Relacionadas con el Manejo de Gatos Ferales en Programas de Captura–Esterilización–Liberación

Resumen: *Muchas jurisdicciones han adoptado programas para el manejo de gatos ferales mediante la captura–esterilización–liberación (CEL), en los que los gatos son atrapados y esterilizados y devueltos al ambiente para ser alimentados y cuidados por voluntarios. La mayoría de los biólogos de la conservación probablemente no comprenden la extensión y crecimiento de esta práctica y que la meta de los defensores de CEL es que los gatos sean reconocidos y tratados como “vida silvestre protegida.” Comparamos los argumentos en apoyo a CEL por muchos defensores de gatos ferales con la literatura científica. Los defensores que promueven el CEL sostienen que los gatos ferales solo dañan a la vida silvestre en islas y no en los continentes; ocupan un nicho natural o realizado; no contribuyen a la declinación de especies nativas y son vectores o reservorios de enfermedad insignificantes. Los defensores frecuentemente también sostienen que la efectividad de CEL, incluyendo argumentos que las colonias de gatos ferales eventualmente son eliminadas por CEL y que las colonias manejadas resisten la invasión de otros gatos. La literatura científica contradice cada uno de esos argumentos. CEL de gatos ferales es vista y regulada principalmente como un asunto de bienestar animal, pero debería verse como un tema ambiental, y las decisiones para su implementación deberían recibir una evaluación ambiental formal. Los científicos de la conservación tienen un papel importante al realizar investigaciones adicionales sobre los efectos de los gatos ferales sobre la vida silvestre y en la comunicación de información científica sólida a los tomadores de decisiones.*

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[Correction added after publication 24 February 2009: A capitalization error in the keywords was amended.]

Palabras Clave: captura–esterilización–liberación, CEL, depredación, ecología urbana, especies exóticas, no muerte

Introduction

Exotic and subsidized predators pose a grave threat to native species (Wilcove et al. 1998; Crooks & Soulé 1999), and feral domestic cats (*Felis catus*) are particularly harmful (Nogales et al. 2004). Domestic cats are on the list of the 100 worst invasive species globally (Lowe et al. 2000). In North America, however, advocates for feral cats have gained political strength and have influenced legislation, the funding agendas of foundations, and the policies of major animal-oriented nonprofit organizations. For example, in 2008 a coalition of organizations successfully blocked federal legislation that would have funded removal of exotic species from national wildlife refuges because feral cats might be targeted. Feral cat advocates usually promote trap–neuter–return (TNR) as a management approach (Berkeley 2004). Almost universally these advocates claim that TNR is the only proven, humane method to manage feral cats (Berkeley 2004; No Kill Advocacy Center 2006a,b; Winograd 2007).

Trap–neuter–return (or any number of similarly named variants) is an approach to feral cat management in which cats are surgically sterilized and returned to the environment, usually where they were captured (Barrows 2004; Berkeley 2004; Levy & Crawford 2004). The course of action after neutering varies, although advocates promote ongoing care of the cats in managed colonies (Slater 2002; Levy & Crawford 2004). Cats may be tested and vaccinated for some diseases and an ear tip may be removed before release to identify treated cats. Managers generally feed cats daily and seek to capture and sterilize any new cats (Slater 2004).

Animal advocates have increasingly called for shelters to avoid euthanasia of any healthy animals, an approach described as “no kill” (Levy & Crawford 2004; Winograd 2007). Although the effort to reduce euthanasia is long established and has widespread appeal, the generic no kill approach has been formalized by the No Kill Advocacy Center, a leading proponent of TNR, as the so-called no kill equation, the first element of which is a TNR program for feral cats (No Kill Advocacy Center 2006b; Winograd 2007). The stated goal of this program is for feral cats to be recognized as “protected healthy wildlife [that] should not enter shelters in the first place.” This group believes “it is inevitable that the No Kill paradigm will eventually lead to laws that make it illegal for people to trap and kill healthy feral cats” (No Kill Advocacy Center 2006a). TNR approaches have been adopted in at least 10 large metropolitan areas in the United States (Berkeley 2004; The Humane Society of the United States 2008).

Unfortunately, TNR does not eliminate feral cat colonies under prevailing conditions (Jessup 2004; Winter 2004, 2006) and many false claims used to support the approach go unchallenged. Published research has been distorted by TNR proponents with little response from the scientific community, perhaps in part because TNR has been approached largely as an animal welfare issue instead of being recognized as a broad environmental issue with a range of impacts on species conservation, the physical environment, and human health. Conservation scientists and advocates must properly identify the environmental implications of feral cat management and actively engage this issue to bring scientific information to the attention of policy makers.

Environmental Effects of Feral and Free-Roaming Cats

Trap–neuter–return advocates use a series of arguments to justify the return of cats to places where they have adverse environmental consequences. Conservation scientists should be aware of these arguments because they are often presented to jurisdictions considering actions pertaining to feral cats.

Claim: Feral Cats Harm Wildlife Only on Islands and Not on Continents

Trap–neuter–return advocates argue that studies showing adverse effects of feral cats on islands do not apply to continents (Gorman & Levy 2004; Alley Cat Allies 2005). Cats are implicated in species declines and extinctions on islands (Nogales et al. 2004). The Stephens Island Wren (*Traversia lyalli*) was infamously driven to extinction by predation from feral cats, although not by a single cat as often reported (Galbreath & Brown 2004). Feral and free-roaming cats also affect wildlife on continents (Soulé et al. 1988; Hawkins 1998; Crooks & Soulé 1999; Jessup 2004). In urban and suburban areas, natural habitats resemble islands, where fragments are surrounded by an inhospitable matrix, but unlike on islands, the inhospitable areas serve as an ongoing source of subsidized predators (Walter 2004). In California, for example, increased predation is likely to occur in fragments <1.4 km², where probability of cat presence is higher. Larger areas are likely to have fewer cats because of the presence of larger predators (Soulé et al. 1988; Crooks 2002). Urban and suburban habitats, including yards, serve as valuable habitat for migratory and resident birds

(Pennington et al. 2008; Seewagen & Slayton 2008) and support local and regional biodiversity (Angold et al. 2006; Tratalos et al. 2007), so concerns about predation by feral cats should extend to these environments.

Claim: Feral Cats Fill a Natural or Realized Niche

Feral cats are exotic and do not fill an existing niche, but TNR advocates often argue that their long presence in ecosystems diminishes their impact (Gorman & Levy 2004). The sheer abundance of feral cats subsidized by humans, however, makes them an unnatural element of any ecosystem. Feral cats are generally found at densities 10–100 times higher than similarly sized native predators (Nowell & Jackson 1996; Liberg et al. 2000).

Cats managed in TNR colonies can continue to prey on species whose populations have declined to such levels that they would not support native predators (Soulé et al. 1988). This is a form of hyperpredation, similar to what occurs on oceanic islands where an exotic prey species (e.g., rats) supports an exotic predator (e.g., cats) that then devastates native prey (Courchamp et al. 2000; Woods et al. 2003). Owned cats also threaten native prey populations when they are allowed to roam outdoors, although this effect decreases (as it does for feral cats) with the presence of larger predators and harsh weather (Crooks & Soulé 1999; Kays & DeWan 2004). Feeding by humans reduces the average range size of free-roaming cats, but increases densities, concentrating predation on wildlife where feeding occurs (Schmidt et al. 2007).

Contrary to claims that well-fed cats pose little threat to wildlife, hunting and hunger are not linked in domestic cats (Adamec 1976). Even well-fed cats hunt and kill lizards, small mammals, birds, and insects (Liberg 1984; Castillo & Clarke 2003; Hutchings 2003). A classic study documented continuous kills by the same 3 well-fed house cats over 4 years (George 1974).

Claim: Feral Cats Do Not Contribute to the Declines of Native Species

Trap-neuter-return advocates frequently imply that because cats are not singled out in reviews of the causes of bird declines, cats must have no influence on bird populations (Alley Cat Allies 2005). Habitat loss and resulting fragmentation are indeed leading causes of species decline, but this does not mean that sources of direct mortality are not important to species dynamics. Furthermore, one of the adverse effects of fragmentation is increased predation by cats supported by humans (Wilcove 1985; Askins 1995) and evidence indicates that cats can play an important role in fluctuations of bird populations (Lepczyk et al. 2003; Woods et al. 2003).

Trap-neuter-return advocates cite the work of John Terborgh as vindicating cats as a cause of decline of North American birds because he did not specifically mention them in his paper on the decline of American songbirds

(Terborgh 1992; Alley Cat Allies 2005). When informed of this by telephone, Terborgh said that this argument is “a preposterous extrapolation and grotesque distortion of something I didn’t say” (personal communication). Nevertheless, variations on the claim that the decline of bird species is due to other factors and, by implication, not by cats, has been proffered by cat advocacy groups and has appeared in peer-reviewed veterinary journals (Slater 2004).

Comparative field studies and population measurements illustrate the adverse effects of feral and free-roaming cats on birds and other wildlife. In canyons in San Diego native bird diversity declined significantly with density of domestic cats (Crooks & Soulé 1999). In a comparative study in Alameda County, California, a site with a colony of feral cats had significantly fewer resident birds, fewer migrant birds, and fewer breeding birds than a control site without cats (Hawkins 1998). Ground-foraging species, notably California Quail (*Calipepla californica*) and California Thrashers (*Toxostoma redivivum*), were present at the control site but never observed at the site with cats. Native rodent density was drastically reduced at the site with cats, whereas exotic house mice (*Mus musculus*) were more common (Hawkins 1998). In Bristol, United Kingdom Baker et al. (2005) calculated that the predation rates by cats on 3 bird species in an urban area is high relative to annual productivity, which led the authors to suggest that the area under study may be a habitat sink. The fear of cats exhibited by birds can result in population declines even if predation is low or absent (Beckerman et al. 2007).

Most discussion of the effects of feral cats on wildlife concentrates on birds. Cat advocates correctly argue that birds are secondary prey items for cats under most (but not all) circumstances (Gillies & Clout 2003; Hutchings 2003). But even as a secondary prey item, the number of birds killed is vast, and evaluation of the importance of such mortality requires species-by-species consideration (Baker et al. 2005). Cat predation on mammals (Hawkins 1998; Baker et al. 2003; Meckstroth et al. 2007), reptiles (Iverson 1978), and even invertebrates (Gillies & Clout 2003) is also cause for concern because of direct impacts to native species and competition with native predators (George 1974). Rare and endangered species of birds, mammals, and reptiles are documented victims of feral cats (Winter 2004, 2006).

Feral and free-roaming cats are efficient predators, and their abundance results in substantial annual mortality of wildlife. Churcher and Lawton (1987) concluded that cats were responsible for 30% of the mortality of House Sparrows (*Passer domesticus*) in an English village. May (1988) extrapolated their results to an estimated 100 million birds and small mammals killed per year in England. Although this extrapolation is often criticized for the limited geographic scope and number of cats studied, Woods et al. (2003) confirmed and refined this result with a

larger sample size and geographic area that included England, Scotland, and Wales. From a survey of cat owners that documented prey returned by 696 cats, Woods et al. (2003) estimated that the 9 million cats in Britain kill at least 52–63 million mammals, 25–29 million birds, and 4–6 million reptiles each summer. In North America Coleman and Temple (1996) developed estimates of cat densities in Wisconsin and associated mortality of 8–217 million birds per year.

The focus in discussions of predation by feral cats on birds is usually whether the predation is significant at the population level (Lepczyk et al. 2003; Woods et al. 2003; Baker et al. 2005). We argue that it is philosophically inappropriate for population-level impacts to be the only criteria by which the effects of cats are judged. People who notice and care about birds are just as attuned to the loss of an individual bird in a backyard, or the decline of local populations of birds, as are feral cat advocates to the loss of individual feral cats. We see no justification for valuing birds and other wildlife only as populations while valuing cats as individuals.

Claim: Feral Cats Are Not Vectors or Reservoirs of Disease

Cats in TNR programs have infection rates of 5–12% for either feline leukemia virus (FeLV) or feline immunodeficiency virus (FIV) or both (Gibson et al. 2002; Lee et al. 2002; Wallace & Levy 2006). Only 2 of 7 TNR programs surveyed in the United States test for FeLV or FIV before releasing cats, and these tests are optional (Wallace & Levy 2006). Some programs vaccinate for these diseases without testing (Wallace & Levy 2006), but the vaccine is ineffective on infected animals. These diseases can be transmitted to owned domestic cats and to wildlife (Jes-sup et al. 1993; Roelke et al. 1993).

High densities of feral cats increase the prevalence of ectoparasites in the environment. For example, at a site in Florida, 93% of feral cats had fleas and 37% had ear mites (Akucewich et al. 2002). Fleas transmit disease-causing bacteria such as *Bartonella*, *Rickettsia*, and *Coxiella* between animals and humans (Chomel et al. 1996; Shaw et al. 2001), and arthropod vectors cause a high rate of disease transfer between feral cats (Chomel et al. 1996). A study of feral cats in Florida shows that 75% were infected with hookworms (Anderson et al. 2003). Cats infected with hookworms or roundworms shed the eggs of the parasite, which then accumulate in the soil where they can be transmitted to humans and wildlife (Uga et al. 1996). In backyards with feral cats in Prague, prevalence of roundworm eggs in soil reached 45% of all samples (Dubná et al. 2007). Anderson et al. (2003) conclude that feral cats may be reservoirs of hookworm infection for wild canids and felids in Florida.

Felids, including free-roaming and feral cats, are vectors of the protozoan *Toxoplasma gondii* (Dubey 1973), which can infect other wildlife and humans through con-

tact with oocysts in soil, vegetation, or water (Afonso et al. 2006). Feral cats are vectors for transmission of rabies to humans (Patronek 1998). Over 80% of the prophylactic treatments administered to humans in the United States for possible exposure to rabies resulted from contact with stray or feral cats (Moore et al. 2000). Laboratory studies show that cats exposed to avian flu (H5N1) contract the disease and shed the virus extensively, raising concerns about cats as vectors for a pandemic (Rimmelzwaan et al. 2006).

Some TNR advocates argue that feral cats are infected with a variety of pathogens at the same rate as free-roaming owned cats (Levy & Crawford 2004; Luria et al. 2004). The correct comparison should be with indoor-only cats, which are healthier and live longer (Barrows 2004). Even so, other studies show elevated infection rates of disease-causing pathogens in stray and feral cats compared with owned cats as a whole, including those that roam (Dubey 1973; Nutter et al. 2004; Norris et al. 2007).

Fecal matter from feral and free-roaming cats degrades water quality (Dabritz et al. 2006). In an urban watershed in Michigan, Ram et al. (2007) showed that cats and dogs contribute more to fecal coliform bacteria contamination than other sources and that cats are 2 times more likely than dogs to be the source of bacteria. Runoff contaminated by cat feces also threatens sea mammals. Felids, including feral and free-roaming cats, shed *Toxoplasma* oocysts that infect southern sea otters (*Enhydra lutris nereis*) (Miller et al. 2002; Conrad et al. 2005), Pacific harbor seals (*Phoca vitulina richardsi*), and California sea lions (*Zalophus californianus*) (Conrad et al. 2005). The large quantity of waste from feral and free-roaming cats containing *Toxoplasma* oocysts (Dabritz et al. 2006, 2007) and the correlation between freshwater runoff and toxoplasmosis in marine mammals (Miller et al. 2002) has led researchers to suspect domestic cats as the source of the infections, although further research is needed to determine the relative importance of native versus exotic felids as sources of this parasite (Miller et al. 2008).

In terrestrial ecosystems *Toxoplasma* oocysts accumulate in the soil (Dabritz et al. 2007), where they can infect other species. For example, feral cats are implicated in *T. gondii* infection in the endangered island fox (*Urocyon littoralis*) on the California Channel Islands (Clifford et al. 2006).

Efficacy of TNR

Feral cat advocates regularly assert that TNR “works” and is proven effective. They support this claim with anecdotes of success and reference to selected peer-reviewed studies (Zaunbrecher & Smith 1993; Centonze & Levy 2002; Hughes & Slater 2002; Levy et al. 2003).

Nevertheless, the definition of a successful TNR program for feral cat advocates is almost always different from what a conservation biologist or policy maker might view as a successful feral cat management program. Reduced adverse effects on wildlife and rapid colony elimination are almost never included in the definition of success used by advocates (e.g., No Kill Advocacy Center 2006a). For many TNR advocates, success is not defined by elimination of feral cats in an area, but rather by the welfare of the cats. For example, one study concluded, "The effectiveness of the program was demonstrated by the low turnover and improved health of the colony over the 3-year period," but the colony size only decreased from 40 to 36 (Zaubrecher & Smith 1993). Another seminal study used to support the notion that TNR works was based on the assumption that feral cats were desired at a location, in which case TNR would produce a "stable, healthy, and manageable colony" (Neville 1983). Similarly, a Florida county implemented TNR "to decrease the number of healthy cats euthanized, decrease the costs to the county, and decrease complaints" (Hughes et al. 2002). In contrast, conservation scientists and wildlife veterinarians measure success of a feral cat management program by the decline and elimination of free-roaming cats (e.g., Jessup 2004; Nogales et al. 2004).

Claim: Trap–Neuter–Return Eliminates Colonies under Prevailing Conditions

Supporters of TNR assert that managed colonies slowly shrink through attrition. Mathematical models of feral cat populations indicate that 71–94% of a population must be neutered for the population to decline, assuming there is no immigration (Andersen et al. 2004; Foley et al. 2005). This level of neutering and exclusion of additional cats has not been consistently documented in practice. A study of TNR implemented countywide in San Diego showed that feral cat populations had not decreased after 10 years, and a similar result was found after 7 years in Alachua County, Florida, where feral cat populations increased (Foley et al. 2005). Four years of TNR at a colony in London saw the population fluctuate between 19 and 17 with no indication of further decline (Neville 1989). Ten years of TNR in Rome showed a 16–32% decrease in population size across 103 colonies but concluded that TNR was "a waste of time, energy, and money" if abandonment of owned cats could not be stopped (Natoli et al. 2006). Two colonies subject to TNR in Florida were tracked for over a year and population size of both colonies increased owing to the influx of new cats dumped at the highly visible sites (Castillo & Clarke 2003).

Peer-reviewed reports of TNR decreasing the size of feral colonies (e.g., Levy et al. 2003) derive in part from intensive efforts to remove cats for adoption as part of the TNR program. In a TNR program on a Florida uni-

versity campus, 73 of 155 cats (47%) were removed for adoption during the study period (Levy et al. 2003). In another program, during 2–3 years of TNR, 270 of 814 cats (33%) were captured and adopted, without which the number of cats at the 64 sites would have increased as a result of 87 cats joining the colonies while 50 died (Stull 2007). If adoption is sufficiently high, it may offset immigration to colonies and even reach the 50% removal threshold necessary for population decline (Andersen et al. 2004). Documented examples of dramatic population declines at TNR sites are from programs in limited geographic areas that were implemented with participation of the researchers themselves (e.g., Hughes & Slater 2002; Levy et al. 2003). Programs implemented by researchers are likely to be much more thorough than programs implemented exclusively by volunteers (see also examples in Jessup 2004).

Assertions of colony declines often are supported only by reference to Web sites, even in peer-reviewed articles (Gibson et al. 2002). Few published scientific studies document the actual disappearance of a colony through TNR and then only after many years of constant effort (e.g., Levy et al. 2003; Stoskopf & Nutter 2004).

Claim: Trap–Neuter–Return Colonies Resist Invasion

Feral cat advocates usually argue that managed colonies are stable and resist invasion by cats from surrounding areas (Berkeley 2004), but this assertion is not consistent with scientific literature or reports from TNR colonies (Stull 2007). For example, Levy et al. (2003) documented cats moving between identified colonies and to and from the surrounding woods. Cats do not defend territories when a constant food source is available (Levy & Crawford 2004) and can therefore reach high densities (Liberg et al. 2000; Schmidt et al. 2007). Populations can be limited by lack of shelter from the environment (Calhoun & Haspel 1989). Advocates also refer to a so-called vacuum effect in which new cats are said to immigrate to a location after removal programs (Patronek 1998; Gibson et al. 2002), but fail to provide evidence that such a phenomenon does not also occur when TNR colonies decrease in size.

Conclusions

Management of feral cats is usually governed by laws about pets and domestic animals, which vary by the patchwork of jurisdictions that control land uses. Although some entities in the U.S. federal government have banned TNR, most notably the U.S. Navy (Jessup 2004), it is largely local jurisdictions that are adopting TNR policies (The Humane Society of the United States 2008). These local policies typically do not receive the formal environmental review that projects with potential adverse

environmental effects normally require (Glasson et al. 1999). This probably results from the perception of TNR as an animal welfare, rather than environmental, measure.

The lack of formal environmental review of TNR makes it difficult for scientists, trustee agencies, and conservationists to give input. We urge greater engagement from conservation scientists at local to national levels to communicate that management of feral cats is not just an animal welfare issue. Scientists and conservationists have an important role to play by conducting research on feral cats and providing credible scientific information to resource managers, funding agencies, foundations, and policy makers about the adverse ecological consequences of condoning the indefinite maintenance of feral cat colonies through adoption of TNR as a preferred management scheme.

Acknowledgments

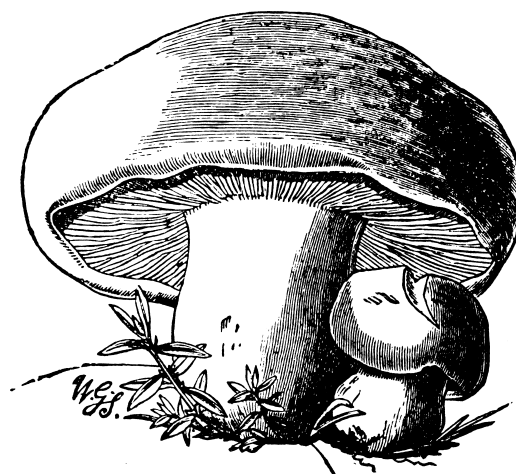
We thank D. A. Jessup, H. S. Walter, and four anonymous reviewers for constructive critiques of this manuscript.

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HEALTH

Mind-Altering Cat Parasite Linked to Schizophrenia in Largest Study Yet

PETER DOCKRILL 30 JAN 2019

In what researchers describe as the largest study of its kind, scientists have found new evidence of a link between infection with the [protozoan parasite, *Toxoplasma gondii*](#), and [schizophrenia](#).

T. gondii, a [brain-dwelling parasite](#) estimated to be hosted by at least [2 billion people](#) around the world, doesn't create symptoms in most people who become infected – but acute cases of toxoplasmosis can be dangerous.

Healthy adults are generally thought to not be at risk from *T. gondii* infections, but children or people with suppressed immune systems can develop [severe flu-like symptoms](#), in addition to blurred vision and brain inflammation.

Pregnant women need to be careful too, as the parasite can cause [foetal abnormalities or even miscarriage](#).

Aside from the known physiological dangers, however, the [stranger and more ambiguous risks](#) associated with the parasite remain largely

hypothetical – although a huge body of research suggests something weird is going on.

Causation remains very much disputable, but the brain-dwelling parasite – commonly carried by cats and present in their faeces – has been linked to a huge host of [behaviour-altering effects](#).

Virtually all warm-blooded animals are capable of being infected, and when *T. gondii* gets inside them, unusual things happen.

In rodents, animals [seemingly lose their inhibitions](#), becoming more exploratory and losing their aversion to cat odours.

The same kind of risky behaviour has been seen observed in human studies, where links have been documented between *T. gondii* infections and everything [from car crashes](#) to [entrepreneurial activity](#).

Other research suggests the parasite could boost suicide rates, and numerous studies have drawn associations to conditions including [a range of neurological disorders](#), including epilepsy, [Alzheimer's](#), and Parkinson's, [among others](#).

Many scientists are at pains to point out [we can't yet show](#) that the mind-altering cat parasite is actually producing these psychological changes itself – as opposed to merely being associated with them – but while the debate goes on, still more evidence of these alarming coincidences turns up.

In that vein, the new study, led by researchers from Copenhagen University Hospital in Denmark, analysed data from over 80,000 individuals who took part in the [Danish Blood Donor Study](#) – a giant cohort, providing the basis for what the team calls the ["largest to date serological study"](#) in this area.

To ascertain links between mental disorders and infections with *T. gondii* and another common pathogen, the herpes virus [cytomegalovirus](#) (CMV), the researchers identified 2,591 individuals in the blood study who were registered with psychiatric conditions, and analysed their samples to look for traces of immunoglobulin antibodies indicative of the two infections.

In terms of *T. gondii*, compared to a control group, the blood work revealed individuals with the infection were almost 50 percent more likely (odds ratio 1.47) to be diagnosed with schizophrenia disorders compared to those without an infection.

As the researchers explain, the link became even more evident when they filtered the data to account for '[temporality](#)' - which meant only looking at participants who hadn't yet been diagnosed with schizophrenia when *T. gondii* was found in their blood.

"The association was even stronger when accounting for temporality and considering only the 28 cases who were diagnosed with a schizophrenia disorder after the date of blood collection," the [authors write](#).

[According](#) to the researchers, this "corroborates that *Toxoplasma* has a positive effect on the rate of schizophrenia and that *T. gondii* infection might be a contributing causal factor for schizophrenia."

While the link between the parasite and schizophrenia has been [observed in previous research](#), the researchers claim their study is the first to examine temporality of pathogen exposure like this.

Still, it's important to note, despite this new data, the researchers still aren't claiming to have definitive proof of causation, and they also [acknowledge](#) their study "did not control for socio-economic factors, which may influence the probability of pathogen infection [and] development of psychiatric disorders".

Despite these limitations, the researchers say their findings add to the growing scientific evidence linking pathogenic *T. gondii* infection with serious psychiatric disorders.

With researchers examining the [microscopic mechanisms](#) that may explain how these [disturbing associations could come about](#), the picture is slowly becoming clearer, bit by bit.

In the meantime, to minimise your exposure to toxoplasmosis – let alone its hypothetical ramifications – always cook food to safe

temperatures, wash fruit and vegetables thoroughly, wear gloves while gardening, and be really careful around kitty litter.

The [CDC's official rundown on the parasite](#) is a good resource for more information.

The findings are reported in [*Brain, Behavior, and Immunity*](#).



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BirdWatching (<https://www.birdwatchingdaily.com/>) • News & Features (<https://www.birdwatchingdaily.com/news/>) • Conservation (<https://www.birdwatchingdaily.com/news/conservation/>) • Biologists denounce 'science denialism' about outdoor cats

Biologists denounce 'science denialism' about outdoor cats

By American Bird Conservancy (<https://www.birdwatchingdaily.com/author/american-bird-conservancy/>)

Published January 15, 2019



A cat sits next to dead Hooded Warbler. Photo by forestpath/Shutterstock (<https://www.shutterstock.com/g/forestpath>)

An open-access study (<https://doi.org/10.1007/s10530-018-1796-y>) published in December by leading scientists rebuts unfounded criticisms and reaffirms the need for effective control of outdoor cats. According to researchers, coordinated critics have mounted a “misinformation campaign designed to purposefully fabricate doubt regarding the harmful impacts of outdoor cats and stymie policies that would remove outdoor cats from the landscape.”

The conflict stems from a groundbreaking study (https://abcbirds.org/wp-content/uploads/2015/09/Loss_et_al._2013-Impacts_Outdoor_Cats.pdf) published in 2013 by scientists from the Smithsonian Conservation Biology Institute and the U.S. Fish and Wildlife Service. That study evaluated the combined impact of the tens of millions of outdoor cats in the United States. The authors found that roaming outdoor cats kill approximately 2.4 billion birds every year and are the leading source of direct, human-caused mortality to birds in the country. Similar results have since been confirmed in Canada (<http://www.ace-eco.org/vol8/iss2/art3/>) and Australia (<https://www.sciencedirect.com/science/article/pii/S0006320717302719>).

Several cat advocacy groups have consistently criticized the 2013 cat predation study as “junk science.” Researchers, however, contend that such criticisms are an attempt to manufacture uncertainty and deny scientific findings for political purposes.

Lead author Scott Loss of Oklahoma State University says, “In this era of unprecedented information, facts are often mis-portrayed, but the fact is that free-ranging pet cats and feral cats kill a tremendous number of U.S. birds.”

The study’s authors provide a point-by-point analysis of cat predation claims and opposing viewpoints, backed by peer-reviewed scientific research. They conclude that the errors and misrepresentations of cat predation data constitutes science denialism. In fact, as the paper points out, “Overwhelming scientific consensus supports that cats are an invasive species; they have caused dozens of extinctions (Doherty et al. 2016), impact native wildlife populations (Loss and Marra 2017), and carry multiple zoonotic diseases (Gerhold and Jessup 2013).”

Outside of the U.S., the International Union for the Conservation of Nature lists cats among the world’s most harmful invasive species

(<https://3pktan2l5dp043gw5f49lvhc-wpengine.netdna-ssl.com/wp-content/uploads/2015/06/Lowe-et-al.-2004-IUCN-top-100-invasives.pdf>). The introduction of cats to new environments around the world has resulted in the extinction of 63 species (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5056110/>) in the wild and also contributes to the spread of parasites and diseases that are harmful to people and animals.

“What is overwhelmingly evident based on the science is that maintaining cats on the landscape is harmful for cats, wildlife, and people,” said Grant Sizemore, Director of Invasive Species Programs for American Bird Conservancy. “It’s time to treat cats like dogs and to safely remove stray and feral animals from our parks and neighborhoods.”

Canadian and U.S. studies agree: Cats are the most lethal threat to birds

(<https://www.birdwatchingdaily.com/news/science/canadian-u-s-studies-agree-cats-lethal-threat-birds/>)

'Cat Wars' is a well-written summary of a complicated problem

(<https://www.birdwatchingdaily.com/gear/books/cat-wars-well-written-summary-complicated-problem/>)



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Bobbie Walthall

To: Tom Markus
Subject: RE: Feral cats

From: Stuart Boley <sboley@lawrenceks.org>
Sent: Thursday, February 14, 2019 2:35 PM
To: Tom Markus <tmarkus@lawrenceks.org>
Subject: Fwd: Feral cats

Sent from my iPad

Begin forwarded message:

From: "Dr. Christi Jarrett" <jsac@sunflower.com>
Date: February 1, 2019 at 12:46:05 PM CST
To: <letters@ljworld.com>
Cc: <llarsen@lawrenceks.org>, <jananda@lawrenceks.org>, <lsoden@lawrenceks.org>, <sboley@lawrenceks.org>, <matthewjherbert@gmail.com>
Subject: Feral cats

Recent articles regarding changes to animal control laws have been somewhat misleading, or at least unclear, I believe. I keep seeing references to 'allowing feral cat colonies' in Lawrence. The reality is, feral cat colonies already exist here, and will continue to exist regardless of how we respond to them. The new ordinances do not 'allow' these colonies; what is being discussed is how best to handle them.

Trap/Neuter/Vaccinate/Release (TNVR) has been shown to be an effective way to control and minimize these colonies. Many communities have successfully adopted these policies with gradual, but significant results.

These changes will allow good people to feed a hungry cat without the risk of stiff fines. It will also relieve the compassionate people who work for the Lawrence Humane Society and Animal Control of the emotional burden of mass euthanasia of healthy cats.

Cats do kill birds, but are not responsible for driving some species to extinction, as some have suggested. We humans corner the market on that one, I'm afraid. Cats kill FAR more rodents (especially mice) and insects; when they do hunt birds they generally catch common and plentiful species.

Cat colonies exist in Lawrence and anywhere else humans and their companions reside. There are many reasons why cats and humans share habitat; the reality is they share our homes and our lives. They are members of our families. The feral cats that we are so concerned about are the exact same species, and many of us have dear pets who were once a part of these colonies. Let's teach our children compassion and rationality by adopting humane, effective and financially responsible animal control policies.

Christi J. Jarrett, D.V.M.
2036 Ohio
Lawrence, KS 66046
785-766-2657

Bobbie Walthall

From: Eric Kirkendall <kirkendall1@gmail.com>
Sent: Thursday, February 14, 2019 1:02 PM
To: Diane Stoddard; Bobbie Walthall; Jennifer Ananda; Leslie Soden; Stuart Boley; Matthew Herbert; Lisa Larsen
Cc: Chad Lawhorn; Daniel Poull; East Lawrence Neighborhood Association
Subject: Requested change to draft revision Ordinance 9615, Regulation of Animals

Dear City leaders and staff,

Upon review of the subject draft ordinance, I see that it includes a section (see below, emphasis mine) that says it is permissible for a person to take their dog into another person's yard to urinate and defecate as long as they remove the excrement.

As someone whose front yard is a garden with plants that have been killed by thoughtless pet owners having their dogs urinate on them, I request that the ordinance disallow letting pets defecate or urinate on other people's private property.

3-110 ANIMAL OWNER RESPONSIBILITY FOR REMOVAL OF ANIMAL EXCREMENT.

(A) It shall be unlawful for any person to appear with an animal upon the public right-of-way, within public places or ***upon the property of another***, absent that person's consent, without some means for removal of excrement that may be deposited by the animal. (B) It shall be unlawful for any person who is an owner or possessor of an animal in their care to fail to remove any excrement deposited by the animal upon any public or private property, absent the property owner's consent, other than the property of the owner of the animal.

Thank you,

Eric Kirkendall
714 Mississippi Street
Lawrence KS 66044

Bobbie Walthall

To: Casey Toomay
Subject: RE: Citizen complaint about the community cats discussion

From: Ryan E. Halsted <Halsted@lkpd.org>
Sent: Tuesday, December 18, 2018 10:36 AM
To: Trent McKinley <tmckinley@lkpd.org>
Cc: Casey Toomay <ctoomay@lawrenceks.org>
Subject: Citizen complaint about the community cats discussion

Captain McKinley,

I just got a call from an Andrew Weygint who lives at 2821 Atchinson Avenue. Mr. Weygint is very opposed to the community cat discussion that has been brought up by the Lawrence Humane Society. He detailed that over the past twenty five years he has found approximately forty cats/dogs that have been killed or maimed by the coyotes that roam the area and feels that if the community cat program was put into place this would only increase the problem. He also is concerned that if someone happens to pick up a community cat and gets bitten, then who is to blame for the medical costs of that cat bite or scratch (I.e. a child picking up a cat and getting bit or their eye scratched). Mr. Weygint theorized that if he was a parent that since it is considered a "community" cat than as a parent (or in his case a grandparent) he would seek recourse from the City for medical reimbursement. He stated that as a taxpayer he did not want the City to have that liability. I informed him that he made some good points and that if he wanted his opinion to matter to make sure to attend the City Commission meeting when this was brought up to have his points heard. He has had some dealings with ACO Ruiz and ACO Hornsby for loose cats in the area and was very complimentary of them and of the City in general.

Respectfully,

Sergeant Ryan Halsted L19/9610
Technical Services Division
Lawrence Police Department
#785-832-7580 (w)
#785-764-1684 (c)

Bobbie Walthall

From: Marilyn Ritchie <grooveto@live.com>
Sent: Thursday, January 10, 2019 4:07 PM
To: Bobbie Walthall
Subject: Feral cats

Hello,

I would like to make my thoughts and concerns known in regard to the catch and release of feral cats. It does at first seem like a good idea. I suppose that eventually they would die out naturally without being able to breed. I am an avid animal lover and truly am against ending their lives, but there are many points to consider in this.

First, what kind of life do they have in the wild? They are subject to suffering from disease, cold, heat and injury without any human assistance. No one should ever be allowed to “put the cat out” as it’s said. It would be great if the city would bring this to the attention of the public more. Vets will mention it in passing to owners, but no one ever really stresses the importance of it. The city could put an article in the monthly newsletter that comes with the water bill a few times a year. I think it’s called the “Flame”? Perhaps then the message would get to more people that it really just isn’t a good idea for the cat or the neighborhood.

Another reason to not have cats out is that they are natural killers. They are one of the top killers of birds and there are statistics now that show our bird numbers have been greatly diminished due to cats. I for one want to feed the birds and squirrels, but I have recently had to stop something I enjoy because of cats coming in my yard and killing them, leaving the remains for us to clean up and a terrible feeling that I lured the poor birds to their death simply because they were hungry. Cats also get in fights a lot and I’m sure that pet cats get into these fights with feral cats so that is another problem with this.

I know that cats are hungry too, but the city does have an ordinance that says they are not supposed to be out running loose in our neighborhoods. Does the city plan to drop that ordinance so that we won’t have any recourse when a cat comes into our yard? I would rather not have to see them suffer and I for sure don’t want them killing the sweet little birds I love to listen to and watch and to feed.

Perhaps a solution would be to take them far from any city? I hate the thought of that too because they get mutilated by larger wild animals. I do care about these animals as I care about all animals, but there doesn’t seem to be any really good solution.

I ask that you try to enforce the rules about the loose cats that people own by letting them know that there actually is an ordinance. I've talked to people about it and they didn't even think there was such a thing. Most people think it's perfectly ok to "let the cat out".

Well, I know I don't have a solution to the problem, but I hope you will take my thoughts on the subject into consideration.

Thank you very much for the opportunity to have a voice,
~Marilyn Ritchie

Sent from [Mail](#) for Windows 10

Bobbie Walthall

From: Tom Markus
Sent: Friday, February 8, 2019 12:41 PM
To: City Commissioners Email; Executive Staff
Subject: FW: animal control ordinance

-----Original Message-----

From: Trent E. McKinley <tmckinley@lkpd.org>
Sent: Friday, February 08, 2019 12:40 PM
To: Elizabeth Patton <pattondogs@gmail.com>
Cc: Tom Markus <tmarkus@lawrenceks.org>; Stuart Boley <sboley@lawrenceks.org>
Subject: RE: animal control ordinance

Ms. Patton,

Thank you again for reaching out for an update. Regarding proposed changes to the code, Animal Control and city legal staff are not recommending changes to that provision of code. There was discussion brought forth by the Humane Society to propose new restrictions on the use of electronic collars, though I do not believe that is the current direction we are moving with the draft code.

It is my understanding updates to the City Code will have a first reading, Commission discussion, and public comment on February 19th.

I hope this information helps.

Trent

Captain Trent McKinley
Technical Services Division
Lawrence Police Department
111 E. 11th Street
Lawrence, Kansas 66044
office: 785.832.7596
email: tmckinley@lkpd.org
tmckinley@mocic.riss.net
web: LawrenceKS.org/Police
FBI NA Session 272

-----Original Message-----

From: Elizabeth Patton <pattondogs@gmail.com>
Sent: Thursday, February 7, 2019 1:41 PM
To: Tom Markus <tmarkus@lawrenceks.org>; Stuart Boley <sboley@lawrenceks.org>; Trent E. McKinley <tmckinley@lkpd.org>
Subject: animal control ordinance

I believe I was told the new animal control ordinance will be taken up at the Feb. 19 City Commission meeting. I wasn't sure to whom the following questions should go:

I am interested in the electronic collar portion. What progress has been made on this issue? Is there some way I should prepare for the meeting?

Thank you.

Bitsey Patton

1321 Jana Drive
Lawrence, KS 66049
January 17, 2019

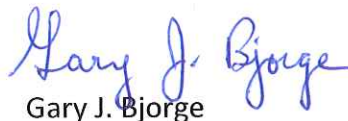
Mayor Lisa Larsen
6th East 6th Street
Lawrence, KS 66044

Dear Mayor Larsen,

I am writing to express my hope that you will oppose the Lawrence Humane Society's (LHS) request to change the Lawrence city code so that the LHS can release feral cats from its animal shelter into the community. Reasons for rejecting this request include the following: 1) feral cats are virtual bird-killing machines; 2) feral cats are reservoirs of diseases and parasites that humans can contract from the cat feces that are deposited everywhere; 3) feral cats are non-native, invasive species that damage the natural environment in many ways, including the killing of many animals other than birds; 4) feral cats cause many problems for Lawrence residents (humans); 5) the LHS has itself to blame for the high cost (According to the LHS, this is over \$500,000 per year.) of providing room, board and medical care for feral cats; 6) the LHS should not be allowed to shift blame for the results of its financial irresponsibility to the Lawrence city code; 7) information about the Topeka "community cats" program that has been provided to the Lawrence City Commission is vague and unverifiable; and 8) giving bird-killing reservoirs of diseases and parasites official recognition and status as part of our "community" sends the wrong message about Lawrence values.

The material I'm enclosing shows how much people in Lawrence, in Kansas, in the United States, and around the world care about birds. I hope that reading this information and using the beautiful winter-bird stamps issued a few weeks ago by the United States Postal Service will cause you to take a stand on the side of our birds against the feral cats that would instinctively hunt and kill them. Please vote against the LHS's request to change the city code so the LHS can set its feral cats free to kill our feathered friends.

Sincerely,


Gary J. Bjorge



📍 Mexico

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Activity Level Outdoor: Spirited

Hiking up to three miles daily in hot and humid conditions. This program requires standing for long periods of time.

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Highlights:

- Bird Maya ruins in Cozumel, Uxmal, and Palenque.
- Enjoy birding in the Usumacinta Marshes.
- Explore the 1.9 million-acre Calakmul Biosphere Reserve.

Meals: 41 total (14B, 13L, 14D)

Lodging: Cozumel: Ocean front hotel. Chetumal: Modern hotel. Xpujil: Eco-friendly resort. Uxmal: Comfortable hotel located near ruins. Celestun: Ocean front hotel. Palenque: Charming hotel with thatched cabanas. Villahermosa: Comfortable hotel.

Program Particulars: All Road Scholar birding programs have a maximum participant-to-instructor ratio of 14:1 in the field. We adhere to the American Birding Association's Code of Ethics. Learn more at www.aba.org/about/ethics.html

Educational Itinerary:

Arrival Cozumel 2 nights
 Coach to Chetumal 2 nights
 Learn about Maya culture and history while birding at two different ancient Maya sites in Cozumel. Journey to Sian

Ka'an Biosphere Reserve. The park, which encompasses the main ecosystems found throughout the Yucatán Peninsula, has recorded 339 species of birds, 103 species of mammals and 42 species of amphibians and reptiles. Explore the ecology of Chetumal during a boat ride on the Bacalar Lagoon in search of endemics.

Coach to Xpujil 2 nights
 Coach to Uxmal. 2 nights
 Journey to Xpujil, "the Place of the Cattails" in the language of the Maya for birding at the 1.9 million-acre Calakmul Biosphere Reserve. Xpujil houses the largest pyramid in the Mayan world and an exceptional diversity of bird species. Admire the Chenes style of architecture at the Hochob ruins. Explore Uxmal, one of the largest Maya cities from the Classic Period (600-1000 C.E.) while birding. Head out for a nocturnal bird walk on the San Simon road.

Coach to Celestun 2 nights
 Flight and coach to Palenque . . . 3 nights
 Explore the coast, forests and river banks in search of the local species in Celestun. In Villahermosa, comb the Catazaja marshes for birds. Walk among the ruins of Palenque and Yaxchilan. Uncover their significance in the Maya world while birding.

Coach to Villahermosa 1 night
 Independent departure
 Continue to explore the humid lowlands and the Usumacinta Marshes with its impressive numbers of water birds not found on the drier Yucatán Peninsula. Visit to La Venta Museum to learn about the Olmec culture.

2019 Dates: Apr 1-15, Oct 11-25, Nov 4-18, Nov 20-Dec 4

2020 Dates: Jan 8-22, Feb 10-24, Mar 9-23, Apr 13-27

Per-person, double-occupancy prices (may vary by date):
 \$3,599 (program only)
 Single rooms starting at: +\$700



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The National Geographic Guide to Birding in North America

Birding Expert James Currie | *Birding Adventures TV*

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tion; bird behavior; and methods for observing birds in the field. You'll also devote six lectures to a panoramic view of the bird species of North America, using vivid photos of our incredible range of birdlife. Finally, you'll visit 23 of the top North American birding spots, locations which host many hundreds of species. This is your doorway to the delightful world of birds and birding; an endlessly rewarding pursuit which offers you a lifetime of enjoyment and discovery.



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| 2 Basic Bird Anatomy | 7 Tactics for Better Birding | 12 Birding at Night | 17 Passerines: From Flycatchers to Thrushes | 22 Birding Sites in Western North America |
| 3 Size, Shape, and Color as Birding Tools | 8 Using Bird Behavior to Identify Birds | 13 Pelagic Birding | 18 Passerines: From Thrashers to Warblers | 23 Birds and People |
| 4 Bird Distribution, Status, and Endemism | 9 Understanding Variations in Plumage | 14 Waterbirds, Shorebirds, and Game Birds | 19 Passerines: From Tanagers to Finches | 24 Birding Ethics and Conservation |
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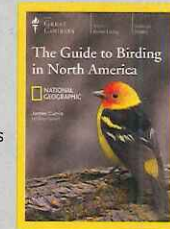
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In 1903, Winston Churchill, then 28, warned (this is from Andrew Roberts' magnificent new biography) that by embracing protectionism the Conservative Party would "cause the lobbies to be crowded with the touts of protected industries." The Trump administration's protectionism has turned the Commerce Department — it is now an impediment to the activity that its name denotes — into

no president did so until 1927), and that congressional-executive agreements decisively resemble treaties because presidential initiative is paramount. However, the president's power in foreign relations is plenary except regarding commerce, where the president has no independent power and where the Constitution's Commerce Clause establishes Congress' primacy. Presidents can make trade

Dictator model is displayed in South Bend's Studebaker Museum. Although today's swollen presidency will not soon be a museum piece, it is encouraging that a few legislators want to claw back some of their branch's powers, thereby reducing the executive to a dimension more compatible with our constitutional architecture.

— George Will is a columnist for Washington Post Writers Group.

PUBLIC FORUM

Journal-World 12/16/2018

Shoe on other foot

aps in reac- climate, we ler, gentler" lies many of Dec. 11 letter ck's of Dec. s record on nly claimed every piece), which he e Bush fam- \$50 million, million dol- at President as a white ally by the s. civil rights trous. Even trongly op- state statute x relations s. As presi- hts act that protections ig based on edicare was s, President : "fear and campaign- :ampaign is ians as one erican his- are paying n who mel- ertainly not

To the editor:

Part of Trump's recently announced trade-war truce is an agreement by China to limit the flow of Fentanyl from Chinese manufacturers into the U.S. Does anyone catch the whiff of irony? It takes a little remembering, but between 1800 and 1880 exports of opium into China, mostly by European and American traders who controlled decadent Chinese Mandarins, increased more than 3,200 percent. Many Chinese became addicted, leading to efforts by responsible elements of Chinese society to end the opium trade. In the First Opium War (1842) the British used military force to extract reparations for opium destroyed by a virtuous Chinese official attempting to protect his people. At the point of a bayonet Britain, France and the United States entered into what became known as the Unequal Treaties protecting "free trade." The problem persisted into the 1950s. By the way, there's an interesting connection between the 19th century China trade, the Abolition movement and Free State Lawrence. Boston Brahmins who helped fund the New England Immigrant Aid Society were heavily involved in the China trade and made enormous profits from the sale of opium in China that were used, in turn, to capitalize industry in New England.

Now, the shoe is on the other foot, and lacking a sufficient political will of our own to protect Americans from drug addiction we're asking China to help save us from ourselves. A good moment for looking back to find ourselves.

William Skepnek,
Lawrence

Cat concerns

To the editor:

While trap-neuter-release (TNR) ends reproduction by those cats who are caught, the following negative impacts are not addressed by TNR.

Free-roaming cats live shorter, harder lives. Predation by larger animals, poisons, antifreeze, rat bait and being killed by cars are serious threats. Exposure to extremes of temperature and unreliable food and water sources all conspire to dispel the myth that a free-roaming cat is living its best life. Dog owners would be considered negligent by subjecting their dogs to the same risk-filled life faced by "community cats." TNR is not a very humane solution.

Estimates of numbers of birds killed by cats in the U.S. annually range from 1 billion to 2.4 billion, according to various studies. Cats are not a co-evolving part of an ecosystem, and the damage they inflict causes great environmental harm. TNR does not ameliorate the damage to ecosystems by cats.

Community cats use yards, gardens and landscaping as their litter box. Contact with cat feces exposes humans to toxoplasmosis and parasitic roundworms and hookworms. What recourse would property owners have to permanently remove cats that are causing damage to property if the current ordinance is changed? TNR does not protect property rights.

Free-roaming cats are a problem that humans have created. Looking at the wider negative impact, TNR is not a good solution for the cats, the ecosystem or our neighborhoods.

Denise Pettengill,
Lawrence

Feeding Birds *Without* Feeding Birds *to Cats!*

**A Bird Feeding Strategy
that Deters Stalking
Cats, Marauding
Raccoons, and Messy
Opossums**



All cats want to
eat birds ↓

All those cedars in a savannah-like landscape provided extensive nesting habitat, and we were generous with black oil sunflower seeds in multiple feeders and in thickets on the ground. The landscape has since changed to a housing development, with a forest of large cedars crowded into a closed canopy beyond. But we still have twenty or more Cardinals at prime times just prior to evening light. Our then-five-year-old granddaughter Olympia, visiting for Thanksgiving a year ago, said, "Grandpa, I think you have all the Card-in-als in Man-hat-tan." They are accompanied throughout the day by a few Black-capped Chickadees, Dark-eyed Juncos and a Tufted Titmouse or two as winter regulars.

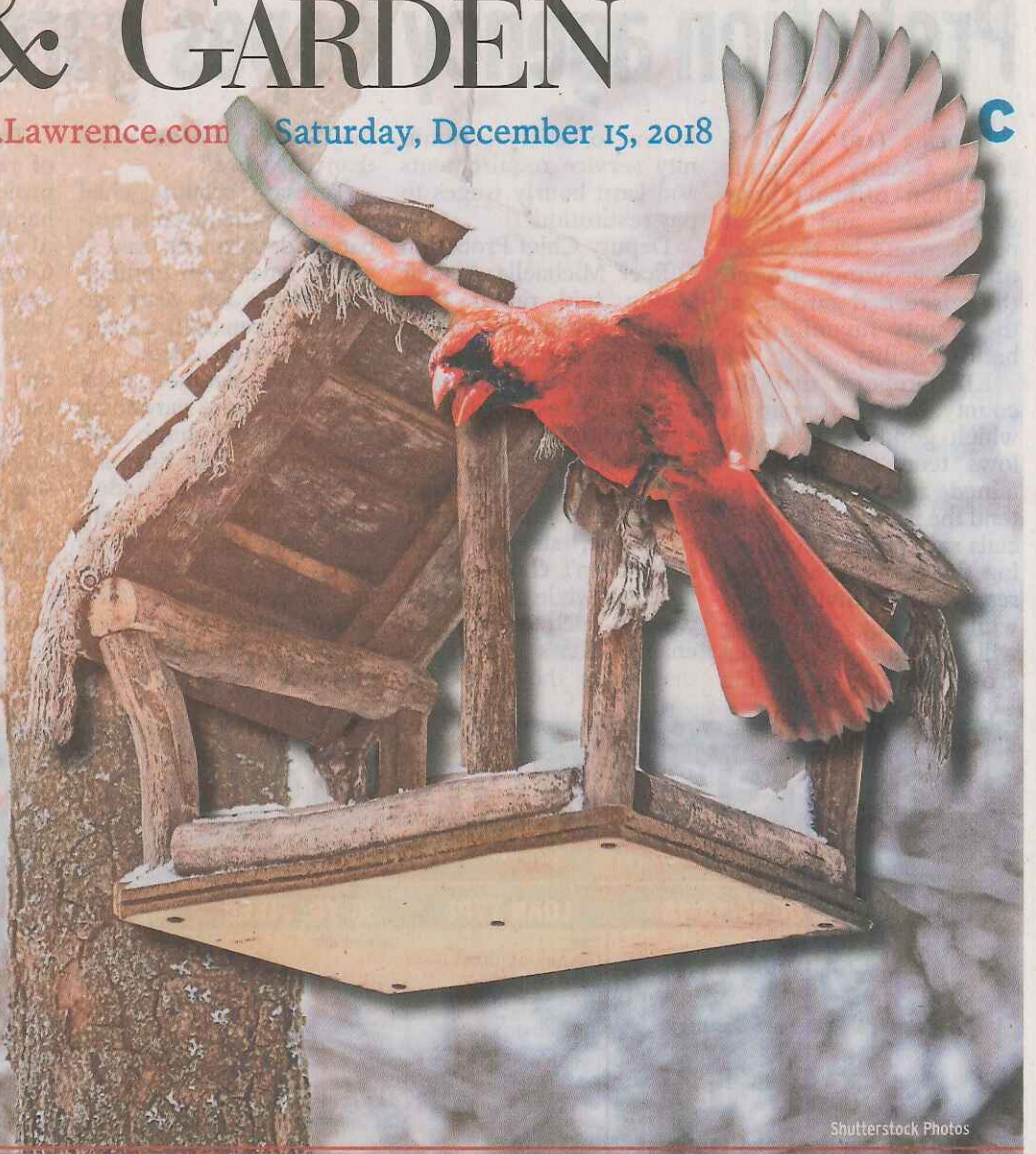
Although it is not easy to train cats whether they are pets or feral, one can deter them from capturing birds at a feeder. Domestic cats still have a natural instinct to hunt birds, mice or whatever moves (except dogs). I tried and gave up. I haven't seen our cat, Hazel, with a bird and seldom found sufficient evidence to convict her of the charge. Still she would sometimes crouch in a hunting posture partially concealed among rocks near the feeders. That, combined with the fact that

HOME & GARDEN

LAWRENCE JOURNAL-WORLD • Homes.Lawrence.com Saturday, December 15, 2018

A WINTER WELCOME

Getting started feeding birds during cold months



Shutterstock Photos

Feeding birds is a fun way to benefit wildlife and attract these creatures to your yard for your viewing pleasure. Winter is an especially good time to get started by feeding the cardinals, chickadees, titmice, finches, juncos, woodpeckers and other species that are year-round or winter residents in Kansas.

GARDEN VARIETY

By Jennifer Smith



Food type, feeder type, and placement of food and feeders are all important for success in feeding birds, but the options can be overwhelming. Also, many guides to feeding birds are defined by the species and fail to account for seasonality. Novices are unlikely to know what birds they want to feed and when to put out specific types of food for them.

Fortunately, birds are less picky than experts sometimes make them out to be, and a few simple tips can get you headed in the right direction. Here's how to get started feeding birds in winter easily and effectively: Start with black oil sunflower



Shutterstock Photo

A BLUE TIT AND A GREAT SPOTTED WOODPECKER perch on a bird feeder.

seeds as they appeal to a wide range of bird species. Black oil sunflower seeds have a solid black shell as opposed to striped-shell sunflower seeds that are preferable to humans. Black oil sunflower seeds have a higher fat content than striped sunflower seeds and are more attractive to most birds.

After you get more experience feeding birds, you may wish to venture into safflower seeds, niger thistle seeds, or seed mixes. The birds that feed on these will also feed on black oil sunflower seeds, but it add to the experience. Avoid

inexpensive mixes that contain milo, wheat, and oats, as few birds like these grains and you will end up with a lot of waste.

For feeders, start with a tray feeder that sits on or just above the ground, or build something similar with a piece of plywood or other scraps. When there is snow cover, sunflower seeds can simply be tossed onto the ground. Juncos, chickadees, nuthatches, red-winged blackbirds, mourning doves, sparrows and other species will be most attracted to ground feeders. The only time when ground feeders should be

avoided is if outdoor cats are present or prevalent, as it can make birds easy prey.

Next, try a tube feeder. There are several styles. For greatest durability, use one with metal parts over plastic. Use black oil sunflower seeds to fill it. This should attract cardinals, finches, titmice, nuthatches, chickadees and other species. Use a shepherd's hook to hang the feeder, or hang it from a tree branch, post or other available structure. You may wish to hang two tube feeders at different heights to see the difference in birds that visit them.

Placement of tube feeders is important, especially starting out. Put the feeder(s) near a shrub or protected area, so birds are less vulnerable. You can move them to an area for better viewing once the birds have gotten used to the feeders and are using them. If placing near a window, put it within a few feet to keep birds from flying into the window at takeoff.

A squirrel baffle — a contraption that looks like a lampshade — can be placed on the upright portion of a post of shepherd's hook to keep squirrels from climbing and robbing feeders. If feeders are hung in trees, opt for squirrel-proof models.

Next on the list to try are suet feeders. These are little cages that hold suet cakes, which you can purchase or make yourself. Suet feeders attract woodpeckers and northern flickers primarily, although nuthatches, chickadees and other species may feed on them also. Suet feeders may only be utilized in the coldest weather, especially when natural food sources are available. Place suet feeders at least five feet off the ground and near a tree for best results.

Feeding birds comes with a little bit of maintenance. Feeders should be cleaned periodically to avoid buildup of pathogens and disease. If only feeding in the winter, clean feeders when you take them down at the onset of spring. Wash with soap and water and allow to completely dry before storing. If feeding year-round, clean feeders about once every three months.

Seed waste should also be cleaned from the ground periodically. Seeds will mold and can contribute to the spread of disease.

— Jennifer Smith is a former horticulture extension agent for K-State Research and Extension and horticulturist for Lawrence Parks and Recreation.



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BIRD-WATCHING

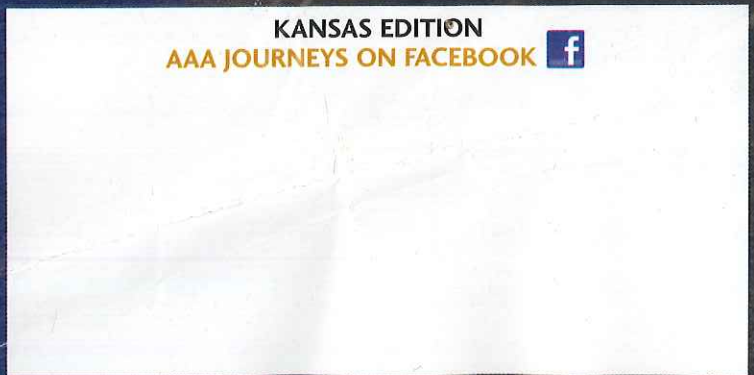
BECKONS IN KANSAS

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FLIGHTS of Fancy

Birdwatching beckons in Kansas.

By Richelle Tremaine

"I never for a day gave up listening to the songs of our birds, or watching their habitats, or delineating them in the best way I could." – John James Audubon.

Audubon was a pioneer in birding and no doubt, he would've found delight in the birds found here in Kansas.

Novices and notables alike look up enviously at the inborn talent birds possess for soaring through the skies, for their knowledge of the winds and the invisible highways they navigate season to season in migration.

Birds inhabit a mysterious world that provides an ongoing attraction here, whether in one of the many destinations across the state, or in a backyard bird feeder.

Several factors combine to attract the immense diversity of birds found within Kansas. In fact, several hundred species of birds live and take flight here throughout the year.

Kansas' wide-open space is one contributing factor for birds. The state's 81,000 square miles lands Kansas as the 13th largest state in the country, and the large population centers are clustered around a handful of cities – leaving plenty of room for life to go to the birds.

Another factor is the diversity of the landscape, with habitats ranging from the expansive prairie to forests and the ever-present rivers, lakes and natural basins.

Perhaps the broadest reason for such a variety of species lies in simple geography. Kansas is situated smack in the center of the greatest bird migration corridor in the Western Hemisphere.

A significant amount of bird species spend their winters feeding on the grasslands of South America and then head north, migrating thousands of miles to nest on North American lands. Kansas is a rest stop of sorts for many migrating birds, and provides permanent residence for several species.

Bird-watching can be appealing by all ages – from 8-year-olds to 80-year-olds. As well, there's a timeless nature to the activity and Kansas proudly obliges, offering a few of the best places to view birds in the country.

Perhaps the premier destination in the state is the Wetlands & Wildlife National Scenic Byway – one of only two National Scenic Byways in the state, encompassing seven Kansas towns. It is noted as one of the best places in the state and the region for birding.

The 77-mile byway connects a few of the world's most

significant natural wetlands, encompassing more than 60,000 acres of wetlands providing habitat for millions of migrating birds. Three key destinations on the byway include the Nature Conservancy Preserve at Cheyenne Bottoms, Cheyenne Bottoms Wildlife Area and Quivira National Wildlife Refuge.

According to the pros at the Kansas Wetlands Education Center in Great Bend, the only other state with more than two is Florida. Kansas really has something here.

Additionally, the area is elevated due to the sheer vastness of the diversity of birds spending time here. This special part of the world boasts 320 species of birds which are right at home here, or make Kansas part of their migration journey.

What's perhaps most surprising to people is to find these enormous, extensive prairie wetlands, snuggled in the middle of Kansas.

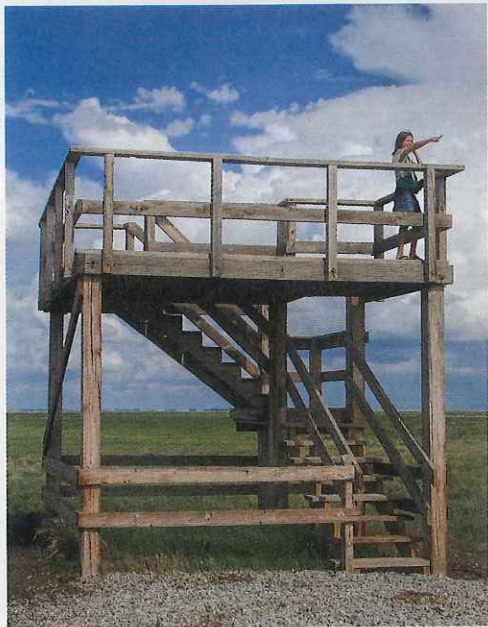
While Cheyenne Bottoms is a freshwater marsh, Quivira National Wildlife Refuge is a saltwater marsh – it is on a salt flat. A saltwater marsh in the middle of the



Seeing the Magic and Mystery of Birding

It's noted, in order to see birds, it is necessary to become a part of the silence. Kansas offers plenty of options to get out there and feel united with nature and the birds. Here's a quick peek at many of the state's notable birding hot spots and sanctuaries:

- Wetlands & Wildlife National Scenic Byway encompasses the Nature Conservancy Preserve at Cheyenne Bottoms, Cheyenne Bottoms Wildlife Area and Quivira National Wildlife Refuge.
- Cimarron National Grasslands
- Pratt Sand Hills Wildlife Area
- Byron Walker Wildlife Area
- Dillon Nature Center
- Chaplin Nature Center
- Chisholm Creek Park
- Maxwell Wildlife Area
- El Dorado Reservoir
- Prairie Chicken Viewing Blinds
- Flint Hills National Wildlife Refuge
- John Redmond Reservoir
- Elk City Reservoir
- Neosho Wildlife Area
- Dingus Natural Area
- Marais des Cygnes Wildlife Area
- Baker Wetlands
- Weston Bend Bottomlands
- Konza Prairie
- Tuttle Creek Reservoir
- Jamestown Wildlife Area
- Glen Elder Reservoir
- Wilson State Park
- Scott State Park
- Kirwin National Wildlife Refuge
- Norton Wildlife Area



BOB GRAHAM



MICHAEL PEACE



JAY D. MILLER

nation often surprises visitors. And, the Nature Conservancy Preserve is noted as one of the most pristine destinations, courtesy of management practices of the Nature Conservancy.

Vast amounts of birds make way through here during the migratory seasons. Of course, the spring migration, in April and May, are good times to see the shore birds and there are thousands to view. During the fall migration, spanning October and November, the numbers jump to literally hundreds of thousands of birds.

The experts say for the full experience, plan on two to three days in the area. The Kansas Wetlands Education Center is a good place to get started in exploring birding. Here, visitors discover insight to the area and the wildlife inhabiting the region. The center is a great place to begin a self-guided driving tour or register for a van tour.

Regardless of where a Kansas birder is, the bounty of birds can be relatively easy to identify, with a few simple strategies and a good guidebook.

The first thing to note when spotting a new bird is the coloring. Males of the species are typically more colorful with more distinctive markings.

Note the size of the bird. For instance, a



TED EUBANKS

robin is considered a medium sized bird, measuring about 10 inches from the tip of the bill to the tip of the tail. A sparrow is recognized as a small bird, about six inches from bill to tail tip. And, an American Crow, considered large, is about 18 inches.

What is the size, shape and color of the bill? Straight, curved, long, short, pointed or blunt?

What is the habitat of the creature? Perched high in the trees, wading along the shore, or poking along the prairie fields? ■



WETLANDS & WILDLIFE NATIONAL SCENIC BYWAY AREAS

Did You Know?

The Western Meadowlark is the official state bird of Kansas, earning the designation in 1937. The songbirds are recognized for their distinct seven-to-10-note melody and a flute-like song, which typically ends with three descending notes.



How to Get Started with Bird Watching at AAAJourneys.com/WebExtras

Did You Know?

A signature event among birdwatchers in the state, the Wings N Wetland Festival is held every other year in the spring. This year the festival is set for April 24 to 25, during the height of the spring migration. For more information, visit: www.wetlandscenter.fhsu.edu/events.

CRANES CALLING

Take flight to Central Nebraska for the annual sandhill crane migration.

By Karen A. Avitabile

It is 6 a.m. in Kearney, Neb., and a crowd of people are waiting quietly – and patiently – for the sun to rise in the Central Platte River Valley. It's well below freezing and the blind that is supposed to provide protection from the wind isn't helping – it is not heated. No lights are allowed. No cameras can flash. Everyone must remain still and silent in the darkness.

From a distance, though, a guttural call can be heard. As the sun comes up and the cold begins to subside, the crescendo gets louder as Mother Nature reveals a seemingly endless number of river-wading sandhill cranes.

All night, the cranes have been wading on sandbars in the river and its outskirts, for refuge. But it is daybreak now, signaling the cranes short flight to nearby fields to eat corn leftover from last fall's harvest.

Beginning in mid-February through March, the cranes arrive from Texas, New Mexico and Mexico to spend up to four weeks bulking up in Central Nebraska. The cranes must

gain up to 20 percent of their body weight before making the long journey to their spring breeding grounds – in Canada and Alaska, and some in Siberia. Annually, 80 percent of the world's half-million sandhill crane population roost on the islands in Central Platte River Valley. It is an impress sight to behold.

Rowe Sanctuary on the Platte River in Gibbon (an Audubon Society location) and the Crane Trust property near Grand Island are two of the best viewing spots for sandhill cranes during their annual spring migration. Rowe Sanctuary alone includes some 1,300 acres of river habitat and wetlands, and woodlands and mixed-grass prairie. Both places have



American white pelican watching at the Harlan County Reservoir.

Blinds and sandhill crane viewing at Rowe Sanctuary.

KAREN A. AVITABILE

observation blinds for viewing the cranes early morning, as they leave the Platte River, and dusk, as they return for the night.

Daytime, passers-by stop on the roadside to watch the cranes feed in the fields. Fort Kearny State Historical Park (built in the mid-1800s along the Oregon Trail) has blinds set up in nearby fields for viewers to be close to the cranes as they are feeding.

Roughly a 90-mile stretch from Lexington to Chapman, the Central Platte River Valley is a key resting spot not only for the cranes but whooping cranes, Canada goose, eagles, ducks and other species



Numerous species of wildlife and waterfowl enjoy nature's abundance at Calamus Reservoir State Recreation Area near Burwell.

NEBRASKA TOURISM



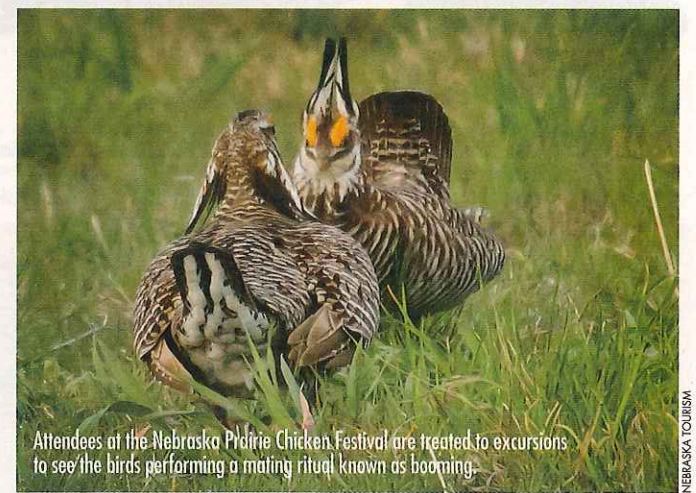
The annual sandhill crane migration is a rare feathered phenomenon.

NEBRASKA TOURISM

during their migrations. This area, part of the Central Flyway, is one of four North American flyways: the other three are the Mississippi, the Atlantic and the Pacific flyways.

Pelicans and Prairie Chickens

To view the mating dances of prairie chickens (yep, you read correctly, dancing chickens), drive to Switzer Ranch and Nature Reserve, a contiguous area of 48,800 acres of largely intact Eastern Sandhills, in north central Nebraska, and the first privately owned ranch land designated as an Important Bird Area by Audubon Nebraska.



Attendees at the Nebraska Prairie Chicken Festival are treated to excursions to see the birds performing a mating ritual known as booming.

NEBRASKA TOURISM

Arrive while it's still dark and Calamus Outfitters (which operates the ranch) will drive you to blinds (yep, you guessed it – unheated) to see the prairie chicken courtship before sunrise. All the males in a grouse population meet each spring to establish territories and dominance ranks. One by one, the chickens jump up and down. Later, return to the ranch for breakfast and a question-answer about the prairie chickens.

Another migratory bird in Nebraska during March and April is the American white pelican on Harlan County Reservoir, Lake McConaughy and the Calamus Reservoir. After wintering along the Gulf Coast, April is the prime time to see the pelicans eating shad here. They breed in North Dakota, South Dakota and Canada. They will migrate again through Nebraska in the fall. Blue heron, geese and ducks make their home in Nebraska year-round. Bald eagles can be seen late fall through spring. ■



Editor's Pick:

You can view the American White Pelican Spring Migration at the Harlan County Reservoir on a free birding boat tour sponsored by the Harlan County Lake Association. For more information, call 1-800-762-5498 or visit www.harlantourism.org.

Beyond the Birds

The **Great Platte River Road Archway** commemorates the importance of the Platte River Valley – which joins the Missouri between Omaha and Nebraska City – in the settlement of the American West. The unique Archway resembling a covered bridge spans Interstate 80. Inside, 15 vignettes (exhibits) tell the story of 150 years of transportation along the Great Platte River Road, beginning with Fort Kearny in 1848 and ending with a circa-1960 Roadside Café.



Spanning across Interstate 80, the Great Platte River Road Archway Monument near Kearney delivers a one-of-a-kind interactive experience.

Visit the **Boyhood Home of Wright Morris**, once regarded as one of the best American novelists, in Central City. He authored 19 novels, short stories and essays and also is admired for his photography. The home is on the National Register of Historic Places. In Red Cloud, visit **Willa Cather's childhood home**. She is known for her novels of American frontier life on the Great Plains.



Wright Morris Boyhood Home.

Grand Island's **Fonner Park** is the home of the Nebraska State Fair. Its Heartland Events Center is a thoroughbred race track (racing season runs February through May) exhibition building for trade shows and various livestock arenas.

Visit the original **Seedling Mile** in Grand Island; a historic piece of pavement, along the 3,400-mile Lincoln Highway. The national road, conceived in 1912, was the first automobile road across the country, passing through 13 states including Nebraska. The 1937 Kensinger service station, still in operation, is in front of the Seedling Mile.



Kensinger Service Station.

Want to learn how to race? **MPH Motorsport Park Hastings** (in Hastings) operates a driving school for those who want to learn to race. The track also is open to motorcycle and truck enthusiasts. Go-cart rides can be arranged too. The 2.15-mile-long track is a road course rather than an oval.

The **Nebraska Wild Horse and Burro Facility** in Elm Creek is a resting facility for animals removed off the range in the West and are on their way to adoption.

Check out artwork by local artists at the **Museum of Nebraska Art** in Kearney.



Enter to Win a Free Sandhill Crane Display Dictionary at AAAJourneys.com/Prizes

Editor's Pick:

If time allows, pick up a pizza (Thursdays only) at the Danish Baker in Dannebrog. Bread, cookies and other baked goods also are made here.



Editor's Sandhill Crane Photos at AAAJourneys.com/SlideShow

Did You Know?

To view the crane cam at Rowe Sanctuary, go to: <http://rowe.audubon.org/crane-cam>.



To See and Hear Sandhills at Dusk, Visit AAAJourneys.com/Videos

Did You Know?

The Stuhr Museum of the Prairie Pioneer in Grand Island is one of the top living history museums in the United States.



APRIL 24 TO 26, GREAT BEND

Both experienced and novice birders will enjoy this weekend at Wetlands & Wildlife National Scenic Byway which includes guided tours of two internationally important wetlands, wildlife education and a chance to socialize with other enthusiasts. For more information, call (620) 792-2750.

Exhibit

THROUGH MARCH 14, TOPEKA

Mulvane Art Museum is presenting "Drift and Drag: Reflections on Water." The exhibit displays works of 14 artists illuminating water issues from a humanities perspective, addressing the practical, spiritual, historical, philosophical and political import of this essential resource. It includes an installation, a dance, an interactive game, photographs, videos and a community engagement project. These presentations will increase awareness and understanding of the many meanings of water. Water scarcity is an important issue today in Kansas, the Great Plains and beyond, and it is being investigated by state governments and many scientists. The museum is located on the campus of Washburn University. Hours: Tuesdays, 10 a.m. to 7 p.m.; Wednesdays through Fridays, 10 a.m. to 5 p.m. Wednesday through Friday; and Saturdays, 1 to 4 p.m. Saturday. Admission: free. For more information, call (785) 670-1010 or visit: www.washburn.edu/mulvane.

Central Kansas Spring Expo

MARCH 28 TO 29, GREAT BEND

Central Kansas Spring Expo will take place at the Great Bend Expo Complex. Local businesses will promote their products and services, everything from home improvement to personal fashions. For more information, call (620) 792-2750.

APRIL 24 TO 26, GEM AND MINERAL SHOW, WICHITA

The 62nd annual Wichita Gem & Mineral Show will be held at the Cessna Activity Center. Hours: Friday, 9 a.m. to 7 p.m.; Saturday, 10 a.m. to 7 p.m.; and Sunday, 10 a.m. to 5 p.m. Admission charged, but free for children under 12. For more information, call (316) 685-0101.

APRIL 24 TO 26; MAY 1 TO 3, PLAY, LEAVENWORTH

The River City Community Players will perform the "Belles." This is a play in two acts and 45 phone calls. Times: Fridays and Saturdays, 8 p.m.; and Sundays, 2 p.m. For tickets, call (913) 651-0027 or visit: www.rccply.com.

APRIL 25 TO MAY 17, DESIGNERS' SHOWHOUSE TOPEKA

The Designers' Showhouse opens will be open for public tours Tuesdays through Fridays, 11 a.m. to 7 p.m.; and Saturdays and Sundays, 10 a.m. to 5 p.m. The Showhouse is located at 3130 SW Shadow Lane. The event is a fundraiser benefitting children by supporting child-care options for families and supporting ERC Resource & Referral doing business as Child Care Aware® of Eastern Kansas. Purchase tickets in advance at ticket outlet locations or at the door. For more information, call 1-877-678-2548 or visit: <http://east.ks.childcareaware.org>.

THROUGH MAY 17, EXHIBIT, MANHATTAN

The dance of North American grassland grouse, from the impressive courtship of prairie chickens to the bizarre behaviors of sage grouse, are known to nature lovers as one of the most impressive wildlife displays in North America. "Save the Last Dance" at Flint Hills Discovery Center shares images by award-winning photographer, Noppadol Paoithong, from his book, "Save the Last Dance – A Story of North American Grassland Grouse." The exhibition fosters knowledge and understanding of these birds and their diminishing habitats so future generations, too, can marvel at their grace and beauty. Admission charged. For more information, call (785) 587-2726 or visit: www.flinthillsdiscovery.org.



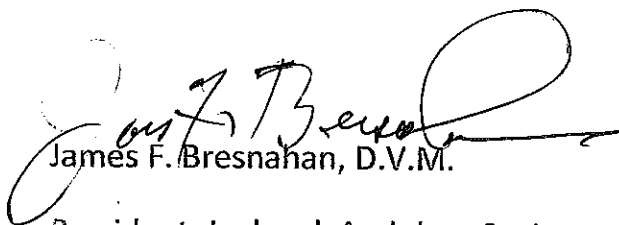
>> E-mail events and photographs to: journyseditor@AAA-alliedgroup.com.



January 23, 2019

Mayor and Commissioners:

Attached is the Jayhawk Audubon Society position statement on the issue of the trap, neuter, spay release proposal being considered by the city of Lawrence, Kansas. I, the board and the membership of Jayhawk Audubon Society urge you to consider the ramifications and repercussions of such a policy on both the cats, the community and our wildlife and local ecosystems and deny implementation of such a tragic program. Trap, neuter, spay and release is an admission of failure to control the free roaming cat population in our city. The failure is not a failure of the Lawrence Human Society but a failure of human responsibility. We demand that dog owners be responsible and would not consider allowing a "community" dog program. While it may appear that such a proposal solves the problem of free-roaming cats in our local area, it does not. Instead, it shifts responsibility for these animals to the "community". The community, including our municipal administrators, will now need to accept responsibility for the suffering of the cats, the damage to wildlife and ecosystems and the problems caused to the people of our community.



James F. Bresnahan, D.V.M.

President, Jayhawk Audubon Society

Jayhawk Audubon Society, P.O. Box 3741, Lawrence, Kansas 66046-3741

Jayhawk Audubon Society Position Statement on Free-Roaming Feral, Stray, and Owned Domestic Cats

Jayhawk Audubon Society is the chapter of the National Audubon Society serving Lawrence, Douglas County, and surrounding communities in eastern Kansas.

Our mission is to provide opportunities for greater understanding and appreciation of birds and other wildlife, to encourage sustainable practices, and to advocate for actions and policies which result in protection and preservation of intact ecological ecosystems.

Summary of Position

- Because free-roaming domestic cats prey on birds and other wildlife, Jayhawk Audubon Society opposes programs and practices that allow cats to roam freely, whether they are feral, stray, or owned pets.
- Trap/Neuter/Vaccinate/Release (TNVR) programs targeted at feral cats in the city are unlawful according to the Lawrence city code. Jayhawk Audubon Society opposes changing that code to allow Trap/Neuter/Vaccinate/Release programs in the city.

Overview of the Problem

Free-roaming cats include feral cats, stray cats, and owned cats--pets. Feral cats are domestic cats that are wild--they live without human contact and human habitation. Stray cats are domestic cats that have been abandoned by humans and are living on their own. Other free-roaming cats include cats that are owned--pets--but allowed by humans outside of contained yards and off leashes and harnesses.

Free-roaming domestic cats, whether they are feral, stray, or owned, prey on small animals, including native mammals, reptiles, amphibians, and birds.¹ It is estimated that in the United States, outdoor cats (feral, stray, and owned) kill 1.3 to 4 billion birds per year and 6.3 to 22.3 billion mammals per year.² 40% of the world's bird species are in decline, and of those species, 39% of them are threatened by invasive animals, including domestic cats.³ In addition feral and stray cats are reservoirs of disease for both pet cats and wildlife as well as humans. Diseases with high prevalence include feline leukemia virus, feline immunodeficiency virus, feline infectious anemia (hemobartonellosis) and significantly the domestic cat is the definitive host for the protozoan parasite *Toxoplasma gondii* which can be transmitted to humans and is a significant concern for susceptible pregnant women in regard to in utero transmission of the infection to the fetus with possible resulting birth defects.

¹ Hildreth et al. (2010).

² Loss et al. (2013).

³ BirdLife International (2018).

Trap/Neuter/Vaccinate/Release (TNVR) programs attempt to reduce the population size of free-roaming feral cats by trapping, neutering, and releasing them to their original environments. While these programs are considered humane in approach, models have estimated that more than 70 percent of a population of feral cats must be spayed or neutered before the population will decline. Nor do they address the predation done to birds and other animals.

Recommendations

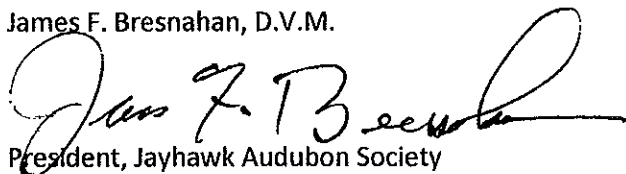
1. We urge all cat owners to keep all cats indoors, in a safe enclosed outdoor structure, or on harness or leash if accompanied by a human.
2. We support programs to neuter or spay cats before reproductive age and to vaccinate and register cats.
3. We oppose “managed” outdoor cat colonies and TNVR programs.
4. We oppose the release of unwanted pet cats and feral cats into the wild.

References

- Audubon Society of Greater Denver. 2018. “Audubon Society of Greater Denver Policy on Free-Roaming Domestic and Feral Cats.” Littleton, Colorado: Audubon Society of Greater Denver. <http://www.denveraudubon.org/wp-content/uploads/2018/02/ASGD-Policy-on-Free-Roaming-Cats-1.pdf>.
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- Loss, Scott R., Tom Will, and Peter P. Marra. 2013. “The Impact of Free-Ranging Domestic Cats on Wildlife of the United States.” Smithsonian Conservation Biology Institute and U.S. Fish and Wildlife Service report. Nature Communications 4:1396. doi: 10.1038/ncomms2380.

We would be happy to provide city staff with research data and reports from other cities about this issue. We urge the city to use its voice to encourage responsible cat ownership in Lawrence.

James F. Bresnahan, D.V.M.



President, Jayhawk Audubon Society

Use of matrix population models to estimate the efficacy of euthanasia versus trap-neuter-return for management of free-roaming cats

Mark C. Andersen, PhD; Brent J. Martin, DVM, DACLAM; Gary W. Roemer, PhD

Objective—To evaluate the efficacy of trap-neuter-return and trap-euthanate management strategies for controlling urban free-roaming cat populations by use of matrix population models.

Design—Prospective study.

Sample Population—Estimates of free-roaming cat populations in urban environments.

Procedure—Data from the literature describing the biology of free-roaming cat populations in urban environments were gathered. A matrix population model was developed with a range of high and low survival and fecundity values and all combinations of those values. The response of population growth rate to a range of management actions was assessed with an elasticity analysis.

Results—All possible combinations of survival and fecundity values of free-roaming cats led to predictions of rapid, exponential population growth. The model predicted effective cat population control by use of annual euthanasia of $\geq 50\%$ of the population or by annual neutering of $> 75\%$ of the fertile population. Elasticity analyses revealed that the modeled population was most susceptible to control through euthanasia.

Conclusions and Clinical Relevance—Free-roaming cat populations have a high intrinsic growth rate, and euthanasia is estimated to be more effective at reducing cat populations than trap-neuter-return programs. (*J Am Vet Med Assoc* 2004;225:1871–1876)

Free-roaming cats represent challenges to the veterinary profession and society. Free-roaming cats contribute to a public health hazard through the risk of transmitting rabies and other zoonotic agents.^{1,6} These cats may be infected with a variety of feline pathogens and function as a reservoir of infection for owned cats.^{1,2,7,8} The welfare of free-roaming cats concerns society because they are frequent victims of vehicular collisions and fights between themselves and other animals.^{1,3,5,6,9,10} Cats also are efficient predators, and results of numerous studies^{2,3,5,11,12} indicate their detrimental

impacts on native wildlife. For example, the British population of 9 million cats has been estimated to be responsible for the deaths of 57 million mammals, 27 million birds, and 5 million reptiles and amphibians per year¹¹; because the US cat population has been estimated at 100 million,¹² the potential impact of domestic cats on American wildlife is high. There also are emotional and financial costs to society caused by concern for these cats, their prey, and the attempts to mitigate the perceived and real damages caused by unmanaged populations of free-roaming cats.^{6,9,10,15} Despite recognition of the problems, there is no consensus on how such populations should be managed.

Two management schemes predominate. Traditional animal control plans manage free-roaming cats through capture and removal. Whereas some captured cats are returned to their owners or adopted as pets, most are euthanized as unwanted, excess cats. Traditional animal control is often constrained by resources and rarely sustains active cat population management on a broad scale. A more recently proposed management alternative is to maintain stable, nonbreeding populations. These programs are founded on capturing, neutering, and releasing cats with additional management processes of disease testing, vaccination, feeding, adoptions, and monitoring being components of some programs. Although trap-neuter-return (TNR) programs are presented as an alternative to euthanasia and an effective means of population management,^{1,4,6,10,14,15} these programs have not been developed on a large scale, limiting their assessment as a tool for decreasing cat populations. Further, TNR programs are often instituted because of society's aversion to euthanasia as a method of control. Thus, much of the debate surrounding the use of euthanasia or TNR has a substantial emotional component. Therefore, an objective evaluation of TNR and alternative strategies for managing cat populations would make a valuable contribution toward sound management.

Matrix population models are a primary tool used in wildlife management to set annual guidelines on hunting, trapping, and fishing; explore population dynamics; and develop management plans for endangered species.¹⁶⁻²⁹ These models use estimates of age- or stage-specific vital rates (reproduction and survival) to project future population structure. Analysis of these models allows objective comparison of the efficacy of different management actions and permits identification of key factors influencing population dynamics.^{18,29,30}

For our study, published data from studies of urban, free-roaming cat populations were used to parameterize

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Partially funded by the New Mexico Agricultural Experiment Station.

The authors thank D. Kallakuri for assistance with the matrix population projection model.

Address correspondence to Dr. Andersen.

a matrix population model¹⁷ and explore how cat populations may respond to various forms of control. The primary objective was to compare the efficacy of TNR programs versus euthanasia programs as methods of cat population management. Because TNR programs affect reproduction and euthanasia programs affect survival, these 2 approaches should be fundamentally different with respect to their impact on the growth rate of cat populations. To address this hypothesis, an elasticity analysis of the matrix population models was conducted to explore how alterations in the estimates of stage-specific vital rates would influence population growth rate. Elasticity analysis is a form of perturbation analysis that allows determination of the rate of change of population growth rate in response to changes in individual vital rates.¹⁷ This allows vital rates to be ranked in order of their influence on population growth.

Materials and Methods

Model description and construction—The matrix population model^{31,32} allows classification of the population either by age or stage classes (eg, larva, juvenile, adult). The model advances a given population structure ahead through 1 time interval to a new projected population structure. Through that time interval, reproduction and survival occur within each age or stage class in the population at rates specific to that age or stage class. For instance, young animals, such as juveniles, have a probability of surviving (usually < 1) to the reproductive adult stage, thereby increasing the numbers in the adult stage and decreasing the numbers in the juvenile stage. Similarly, reproduction by different stages at time t would contribute to the number of young present at time $t + 1$. Thus, the survival probabilities and reproductive rates of each age or stage class would contribute to a new population structure at time $t + 1$.

Under this model, changes in population structure are denoted by the equation $n(t + 1) = An(t)$, where n represents a vector of age or stage classes describing the population structure at times $t + 1$ and t , respectively, and the population projection matrix A contains the survival probabilities and reproductive rates acting on the population through each time interval. The dominant eigenvalue of the population projection matrix, denoted by λ , is the intrinsic or asymptotic growth rate of the population. If $\lambda = 1$ there is no net change in the population size. Values > 1 mean that the population is increasing; values < 1 mean that the population is decreasing.¹⁷

Model parameter estimation—Vital rate data were gathered from published studies of free-roaming cats in urban environments; preference was given to studies of unmanipulated populations. Given the variability of the vital rate data, low and high extremes of parameter estimates and all combinations of those extremes were used in the analysis. The available data were insufficient for an age-structured classification but amenable to a stage-structured model with 2 stages: individuals ≤ 1 year old, called juveniles, and individuals > 1 year old, called adults. This classification of the population model conformed to the level of detail of the management actions that were evaluated. The model time step was 1 year. The model considered only the female population; this is appropriate if the population is not mate-limited or if the vital rates of the 2 sexes are identical.¹⁷

Reproduction in cats is relatively well documented, and values from the literature were used to develop the model. Fetus number has been reported as mean \pm SD of 3.6 ± 0.2 kittens/dam in a program to spay free-roaming cats.¹⁵ This can be conservatively considered a typical litter size and is comparable to values found in other studies.²⁹ Mean number of litters per female per year has been reported to be from 1.1 to

2.1.^{10,15} Puberty in female cats varies with time of year of their birth, but first conception has been reported to be at a mean of 212 days of age.² Sex ratios are consistently near 50:50.¹⁵

Based on these values, the fecundity of adult female cats was estimated as a product of kittens per litter, litters per year, and sex ratio at birth. Thus, our low estimate of fecundity was $3.6 \times 1.1 \times 0.5 = 1.98$ female offspring/y; our corresponding high estimate was $3.6 \times 2.1 \times 0.5 = 3.78$ female offspring/y. Juvenile females have reduced mean fecundity because most are prepubertal. This reduction is equal to the factor $(365 - 212)/365$, which yielded 0.83 female offspring/y to 1.58 female offspring/y for the low and high estimates of juvenile fecundity, respectively.

Survival probabilities have not been as thoroughly documented. In a long-term study,² annual juvenile survival was reported as approximately 75%. In another report,³³ it was suggested that annual survival is closer to 50%. Published figures for survival rates of adults include 33% survival over a 42-month period³⁴ and 67% survival over an 18-month period.⁴ Anecdotal reports estimate adult life span of feral cats at 2 to 3 years.

Survival rates were computed under the assumption that the juvenile and adult classes reported in the various studies were consistent with this model's juvenile and adult classes. The low estimate of survival for juveniles was therefore 0.5, and the high estimate was 0.75. Reported survival rates for adults were determined over periods longer than 1 year; annual survival rates were estimated by use of the geometric probability distribution as an approximate discrete lifetime distribution.³⁵ This method assumes that survival probabilities remain constant over the entire period for which they are being estimated. This assumption may not be true if there are age-dependent effects on survival. For example, if younger adults learn as they age, survival may be enhanced with time, whereas senescence may cause the opposite effect in older adults, reducing survival over time. It is likely that both processes occur, but the available data did not allow us to address this issue. The distribution function for the geometric distribution was $P = 1 - S^t$, where S is the per-time-unit survival rate, and P is the probability that an individual will die by time t . Thus, the expression for S given t and P was $S = \exp(\ln[1 - P]/t)$.

This expression was used to obtain 4 estimates of annual survival rates for the adult class based on 3 values of P . Calculations based on a 2-year and 3-year life span, assuming that $P = 0.50$, yielded annual survival rates of 0.707 and 0.794, respectively. A monthly survival rate of 0.974 was calculated from a survival probability of 0.33 over 42 months (ie, $P = 0.67$ and $n = 42$), and this monthly rate was converted to an annual rate of 0.729 (ie, 0.974 to the 12th power). Similarly, a monthly survival rate of 0.978 results from a survival probability of 0.67 over 18 months ($P = 0.33$ and $n = 18$). This monthly rate converts to an annual survival rate of 0.766 (0.978 to the 12th power). Thus, by use of 4 reported estimates of adult survival, the estimated annual rate of adult survival varied from 0.707 to 0.794. Therefore, the low and high values for adult survival rates used in the model were 0.7 and 0.8, respectively.

Although breeding is skewed towards the first half of the year and only a few litters are born during the months of October through December, cats essentially can breed throughout the year.^{2,9,15} Continuously breeding populations are most easily modeled by assuming that all births take place at the midpoint of the time interval.¹⁷ Under this assumption, parental individuals must survive to that midpoint and the resultant offspring must survive through the remaining half of the time interval. Half-year survival rates are equal to the square root of the annual rate. Thus, the matrix elements are as follows:

$$\begin{bmatrix} S_0 \cdot F_0 & \sqrt{S_0} \cdot F_1 \cdot \sqrt{S_1} \\ S_0 & S_1 \end{bmatrix}$$

Table 3—Elasticity of λ in free-roaming cat populations for mean vital rates and random matrices derived from a range of values for each vital rate.

| Vital rate | Elasticity of λ for mean vital rates | Elasticity of random matrices | | |
|--------------------|--|-------------------------------|---------|--------------|
| | | Minimum | Maximum | Mean (SD) |
| Juvenile fecundity | 0.34 | 0.12 | 0.33 | 0.20 (0.045) |
| Adult fecundity | 0.28 | 0.26 | 0.33 | 0.30 (0.016) |
| Juvenile survival | 0.76 | 0.55 | 0.72 | 0.65 (0.034) |
| Adult survival | 0.24 | 0.28 | 0.45 | 0.36 (0.035) |

reduction in fecundity of the cat population led to a growth rate of 1.59, whereas a 25% reduction in survival reduced growth rate to 1.36 (Table 2). Fifty percent and 75% reductions in survival similarly led to greater reductions in population growth than did the 50% and 75% reductions in fecundity. Elasticity values ranged from as high as 0.73 for juvenile survival in 1 scenario to as low as 0.11 for juvenile fecundity in another scenario. Elasticity for the survival rates ranged from 0.27 to 0.73, whereas elasticity for the fecundities remained < 0.30 . This result was mirrored by the stochastic analyses of λ (Table 3). Elasticity values for the mean vital rates ranged from 0.24 to 0.76, and the mean elasticity values for the random matrices ranged from 0.20 to 0.65. The highest elasticity values were for juvenile survival, suggesting that population growth is most sensitive to this vital rate, followed by adult survival. Control strategies that target survival of free-roaming cats should be more effective at reducing cat populations than those that target fecundity.

Discussion

Matrix population models have been used successfully in many population management strategies.^{18,20,22,23,29,36} Such models have been used to assess the viability of populations of endangered plants^{19,26} and animals,^{21,22} to assess the impacts of wildfires²⁴ and pollutants on natural populations,^{25,27,28} and to study the pathogenicity of an external parasite.³⁷ Matrix models are often preferred in management applications because of the degree of development of the underlying mathematics, the level of realism of the models, and the ease of parameter estimation.³⁸

The geometric mean growth rate rather than the arithmetic mean is the appropriate measure of the most likely growth rate of a stochastic population growth process. The geometric mean best represents the expected rate of growth of a population in which one of the possible population matrices is randomly chosen at each time step. In other words, if one of the different possible population projection matrices considered was randomly selected and a population was to grow according to that matrix for that time step, and another matrix was randomly selected for the following time step, then over time, the population's long-term growth rate would be the geometric mean, not the arithmetic mean, of the set of possible growth rates.^{17,30} Thus, the use of the geometric mean of λ as the summary measure directly and explicitly recognizes the uncertainty in the parameter estimates.

Demographic elasticity analysis is a way of calculating the effect of small changes in the vital rates of a

population on the population's rate of growth. Analytically, this can be computed as the partial derivative of λ with respect to each individual vital rate, holding the others constant. These partial derivatives are referred to as sensitivity values; when these values are multiplied by the ratio of the vital rate in question to λ (to scale for differences in the vital rates themselves), they are referred to as elasticity values.¹⁷ The elasticity of λ can be calculated with respect to particular vital rates or with respect to the matrix elements themselves. In this analysis, the elasticity of λ was calculated with respect to each vital rate (ie, stage-specific fecundity and survival) because the matrix element for fertility was a composite of several vital rates.

Examination of elasticity values is valuable in assessing management strategies for free-ranging populations. Such strategies nearly always have age-specific effects, representing a perturbation in a particular vital rate, and are aimed at either increasing or reducing the target population's growth rate. Management strategies intended to alter vital rates with particularly high elasticity values are more likely to achieve their goal than strategies that target vital rates with low elasticity.³⁰

Management programs for free-roaming cat populations typically focus on either survival (euthanasia programs) or fecundity (TNR programs). Because these 2 approaches target different vital rates, they may have fundamentally different outcomes with respect to their influence on cat population growth rate. Under scenarios lacking control, feral cat populations were predicted to grow rapidly because all values of λ are substantially > 1 . The model results further suggested that a reduction in survival might have a more profound effect on cat population growth rate than a reduction in fecundity. A 50% reduction in annual survival rate was predicted to result in a cat population that declined by approximately 10% per annum, whereas a large reduction in annual fecundity (75%) in both the juvenile and adult stages was predicted to result in an increasing population. The interpretation that survival had a greater predicted influence on population growth rate also was supported by results of the elasticity analyses; cat population growth rate was more sensitive to survival regardless of the control scenario.

Juvenile survival has been identified as a key population management target in matrix-modeling studies of other species.^{18,21} Given the uncertainty of the vital rate estimates, the sensitivity of urban cat populations to changes in adult and juvenile survival cannot be confidently distinguished. Nevertheless, changes in survival are always predicted to have a greater influence on population growth than changes in fecundity.

Matrix population models have also been applied to owned populations of pet dogs and cats.³⁹⁻⁴¹ An age-structured matrix of pet cats yielded a λ of 1.21 for cats through the first 5 years of life.³⁹ This value is lower than any growth rate calculated for the unmanaged population structures used here; however, those authors were modeling pet populations in which responsible owners had a substantial number of cats neutered or prevented breeding by fertile cats. A spay

where S_0 and S_1 are annual rates of survival for the juvenile and adult stage classes, and F_0 and F_1 are the estimates of fecundity for those same stage classes. The composite matrix elements in the top row of the matrix are equal to the stage-specific reproductive rates (R_0 and R_1) for juveniles and adults, respectively.

Model analyses—Analyses were performed with software written in a standard programming language.⁴ Intrinsic rates of increase (λ) were calculated with all combinations of high and low fecundity and survival rates. Fecundity was reduced by 10%, 25%, 50%, and 75% to simulate TNR programs of increasing rigor. Trap-euthanazie programs were modeled through several combinations of reductions of juvenile and adult survival by 10%, 25%, 50%, and 75%.

The geometric mean of λ , computed across all combinations of fecundity and survival rates, was used as a summary statistic in assessment of population management strategies. Elasticity analysis was used to provide a broader view of the demographic basis of the effects of the different management strategies. All elasticity values were calculated with a computer program.^{30,a}

Uncertainty in vital rate estimates may influence the outcome of computations of the elasticity values. These possible effects may be accounted for by computing elasticity values for a large number of simulated population projection matrices, in which the vital rate values are randomly chosen to lie between predetermined limits. The upper and lower bounds chosen for the vital rates were the high and low estimates, respectively, for each rate.

Results

The high and low vital rate values resulted in 8 possible matrices that each yielded $\lambda > 1$ (Table 1). Population growth rate ranged from a high of 2.49 for the highest estimates of fecundity and survival for both juvenile and adult classes to a low of 1.34 for the lowest combinations. All remaining combinations of parameters led

Table 1—Baseline population projection matrices used in simulations of free-roaming cat populations and their intrinsic rates of increase (λ). Each scenario corresponds to a different estimate of fecundity and survival.

| Scenario | Fecundity | Juvenile survival | Adult survival | Matrix | λ |
|----------|-----------|-------------------|----------------|---|-----------|
| 1 | High | High | High | $\begin{bmatrix} 1.189 & 2.928 \\ 0.75 & 0.8 \end{bmatrix}$ | 2.49 |
| 2 | High | High | Low | $\begin{bmatrix} 1.189 & 2.739 \\ 0.75 & 0.7 \end{bmatrix}$ | 2.40 |
| 3 | High | Low | High | $\begin{bmatrix} 0.792 & 2.391 \\ 0.5 & 0.8 \end{bmatrix}$ | 1.89 |
| 4 | High | Low | Low | $\begin{bmatrix} 0.792 & 2.236 \\ 0.5 & 0.7 \end{bmatrix}$ | 1.80 |
| 5 | Low | High | High | $\begin{bmatrix} 0.622 & 1.534 \\ 0.75 & 0.8 \end{bmatrix}$ | 1.79 |
| 6 | Low | High | Low | $\begin{bmatrix} 0.622 & 1.435 \\ 0.75 & 0.7 \end{bmatrix}$ | 1.70 |
| 7 | Low | Low | High | $\begin{bmatrix} 0.83 & 1.252 \\ 0.5 & 0.8 \end{bmatrix}$ | 1.61 |
| 8 | Low | Low | Low | $\begin{bmatrix} 0.415 & 1.171 \\ 0.5 & 0.7 \end{bmatrix}$ | 1.34 |

For juvenile fecundity, low = 0.83 female offspring/female per year, high = 1.58 female offspring/female per year; for adult fecundity, low = 1.98 female offspring/female per year, high = 3.78 female offspring/female per year. For juvenile survival, low = 0.5, high = 0.75; for adult survival, low = 0.7, high = 0.8.

For each matrix, upper left value represents juvenile reproductive rate, upper right value represents adult reproductive rate, lower left value represents juvenile survival, and lower right value represents adult survival.

to intermediate intrinsic rates of population increase. The geometric mean of these 8 baseline values of λ was 1.84.

The geometric mean intrinsic rates of increase for the matrices simulating a TNR (ie, with reduced fecundity values), even for quite large reductions in fecundity, were still > 1 (Table 2). A 75% reduction in fecundity for all reproductive females (corresponding to ongoing spaying 75% of the female population) yielded $\lambda = 1.08$.

The geometric mean intrinsic rates of increase for the matrices simulating a euthanasia program (ie, with reduced survival values) revealed that reductions of $\leq 25\%$ were not sufficient to lead to predictions of declining cat populations (Table 2). However, reductions in both juvenile and adult survival by $\geq 50\%$ yielded a geometric mean intrinsic rate of increase < 1 . A 75% reduction in both adult and juvenile survival led to $\lambda = 0.47$, meaning that a cat population subjected to such a program would be approximately halved every year.

In nearly all scenarios, λ was more sensitive to changes in survival than fecundity (Figure 1). A 25%

Table 2—Geometric mean λ for free-roaming cat populations with either reduced fecundity, simulating the effects of a trap-neuter-return program, or reduced survival, simulating the effects of a euthanasia control program. Geometric means were calculated over the 8 baseline matrix models in Table 1 with fecundity or survival reduced by the percentage indicated.

| Fecundity | Juvenile survival (%) | Adult survival (%) | λ |
|-----------|-----------------------|--------------------|-----------|
| Baseline | Baseline | Baseline | 1.84 |
| 10 | NC | NC | 1.73 |
| 25 | NC | NC | 1.59 |
| 50 | NC | NC | 1.35 |
| 75 | NC | NC | 1.08 |
| NC | 10 | 10 | 1.63 |
| NC | 10 | 25 | 1.53 |
| NC | 25 | 10 | 1.46 |
| NC | 25 | 25 | 1.36 |
| NC | 50 | 50 | 0.91 |
| NC | 50 | 75 | 0.73 |
| NC | 75 | 50 | 0.62 |
| NC | 75 | 75 | 0.47 |

NC = No change in the vital rate from the baseline values.

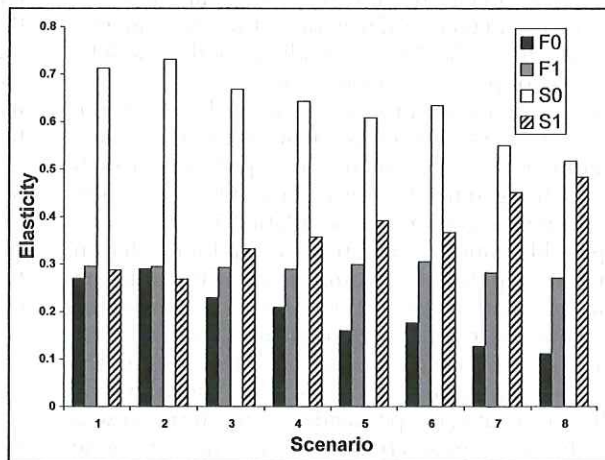


Figure 1—Elasticity of the intrinsic rate of population increase in response to changes in survival and fecundity rates of free-roaming cats under 8 scenarios corresponding to the matrices in Table 1. Survival and fecundity rates that yield larger elasticity values are expected to have a greater influence on the intrinsic rate of population increase. F_0 = Juvenile fecundity. F_1 = Adult fecundity. S_0 = Juvenile survival. S_1 = Adult survival.

rate of 88% would be needed to stabilize population growth if all fertile cats were free to breed.³⁹ In a separate study,⁴¹ a growth rate of 1.02 was calculated for a citywide pet cat population with a spay rate of 85.7%. This result is similar to the most intensive fecundity reduction used in this study, in which a 75% reduction in fecundity yielded a geometric mean λ of 1.08. These results suggest that management actions that reduce fecundity in excess of 75% of the fertile population would need to be maintained, on an ongoing basis, to cause a population decrease in a TNR program. Thus, TNR programs are not likely to convert increasing cat populations into declining populations or even stable populations until the neutering rate is quite high.

Nevertheless, population decreases under TNR programs have been recorded. In 1 study,⁴ a 26% population reduction over an 18-month period with an approximately 70% neuter rate was reported. This reduction also included a population reduction of 25% through a concurrent adoption program. Another study^{6b} revealed profound population reduction in a managed cat population with essentially a 100% neuter rate and adoptions occurring at a high rate (approx 47% of the population). Adoption programs are similar in effect to euthanasia because these cats are permanently removed from the free-roaming population.

Feral or free-roaming cat populations are subject to additional population processes that were not considered here. The survival rates used may account for extrinsic factors that would be expected to cause death (eg, intraspecific aggression or disease), but the estimates of fecundity used did not incorporate a measure of density dependence, which might be expected to lower reproductive rates at high population densities. Density dependence was omitted for 2 reasons. First, there are no reliable estimates of the reduction in fecundity that would be expected at high population densities; second, small populations would not be influenced by density dependence to any great degree. Emigration also is apt to be a substantial population factor that was not considered. Emigration between cat colonies has been reported,^{1,4,10} and a substantial number of owned cats are reported to be adopted strays.^{5,33,41} Evaluating the efficacy of euthanasia versus TNR programs would benefit from additional field studies that estimate other population processes and from well-designed monitoring programs run in parallel with control programs.

^aMATLAB, The MathWorks Inc, Natick, Mass.

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Aliza Bidinger

To: Bobbie Walthall
Subject: RE: Community cats

From: Linda Wheeler <lwheeler1909@gmail.com>
Sent: Sunday, February 17, 2019 11:06 AM
To: Bobbie Walthall
Subject: Community cats

Maybe I have not read it correctly, if so I apologize, but one aspect of the designation of community cats really bothers me! There has to be a way of removing said cat from running at large, if said cat is causing a nuisance. If a cat comes on my property and tries to fight with my cats (through window screens) or is killing birds in my yard, they need to be able to be removed even if a community cat! The language of this ordinance, suggests that they would not be removed under any condition. Please fix this issue.

Sincerely,
Linda Wheeler
1909 E 30th Street, Lawrence, KS

Aliza Bidinger

Subject: RE: Neighborhood Association Supports Community Cats/TNR

From: Hilary Edwards <hil1018@yahoo.com>

Sent: Tuesday, February 19, 2019 10:02 AM

To: Jennifer Ananda <jananda@lawrenceks.org>; Lisa Larsen <llarsen@lawrenceks.org>; Leslie Soden <lsoden@lawrenceks.org>; Stuart Boley <sboley@lawrenceks.org>; Matthew Herbert <matthewjherbert@gmail.com>;
City Hall email <CityHallemail@lawrenceks.org>

Subject: Neighborhood Association Supports Community Cats/TNR

To the City Commission of Lawrence, KS -

We are a neighborhood association in East Lawrence, The Woods on 19th Street. We are writing to express we are in favor of and support the Lawrence Humane Society and their efforts with Community Cats through a Trap-Vaccinate-Neuter-Release (TNR) Program.

We are in favor and support all of the updates and modifications proposed by the Lawrence Humane Society that are to be presented and discussed at the February 19th City Commission Meeting.

Please reach out and let me know if you need any additional information or clarification regarding our support of ordinance changes concerning the welfare of animals as proposed by the Lawrence Humane Society.

Thank you,
Hilary

Hilary C. Edwards
President, The Woods on 19th Homeowner's Association
(785) 766.8726

Aliza Bidinger

To: Maria Garcia
Subject: RE: TNR Response

From: Andrew Stull <astull@ldchealth.org>
Sent: Tuesday, February 19, 2019 10:28 AM
To: Maria Garcia <mgarcia@lawrenceks.org>
Subject: TNR Response

Maria,

Sorry for the delay in this response. I wrote it two weeks ago but it was not forwarded to you.

In examining the data and research on Trap, Neuter, Return (TNR) programs, Lawrence could benefit from implementing such a program. The Humane Society of Lawrence has tried both euthanizing and re-homing community cats as working cats for rodent control as methods for controlling community cat populations, neither of which have aided in reducing the intake numbers to the shelter. TNR programs have proven effective across the United States, including Topeka, KS, for reducing community cat populations. Topeka implemented their TNR program in 2014 and has since seen an over 20 percent decrease in the intake numbers for kittens and cats.

As community cats currently exist in Lawrence, the TNR approach would be to sterilize and provide vaccinations for captured cats, in order to both decrease intake numbers as well as the disease burden on the existing community cat population, stray cats, as well as free-roaming pets. I was not able to uncover much data on the disease burden of community cats as a vector to humans. The meat of this program would revolve around the involvement of the community. The program would help provide traps and hopefully a lot of training to those willing to help capture these cats and either call animal control or bring them to the Humane Society to vaccination and sterilization. If the program was not implemented then the status quo would continue and the number of community cats would remain static. If the TNR is implemented then it could reduce the number of community cats over time if enough volunteers are helping to help implement the program.

My main concern is the training of the public on how to use the traps and their possible exposure in dealing with a captured cat. The same people that would volunteer for the program could also be the same folks that help bring in sick or injured stray cats to the Humane Society currently. According to the survey online that was in the LJW there is about a 80-20 split in favor of the program and a willingness to assist with it in some way (about 180 responses).

The TNR program is a proactive vs. reactive response to the community cat issue that could decrease their numbers over time (based on available data from other communities).

Andrew Stull, MPH, REHS
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Aliza Bidinger

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Subject: RE: TNR Response

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My main concern is the training of the public on how to use the traps and their possible exposure in dealing with a captured cat. The same people that would volunteer for the program could also be the same folks that help bring in sick or injured stray cats to the Humane Society currently. According to the survey online that was in the LJW there is about a 80-20 split in favor of the program and a willingness to assist with it in some way (about 180 responses).

The TNR program is a proactive vs. reactive response to the community cat issue that could decrease their numbers over time (based on available data from other communities).

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2/17/19

To: City Commission, City Manager

From: N. Dangerfield • 3700 Overland Drive • 785-832-8637

cc: Humane Society
Lawrence Journal-World

Re: **Opposed to proposal to release feral Domestic Cats to run at large**

I deeply value life in all its forms, and am as fond of cats as any cat-lover you know. I have made difficult but caring choices related to the lives and deaths of numerous cats which have shared time with me. I never once would have chosen to “free” them into a life with no guarantee of sustenance or shelter, no remedy for their ailments, no relief from their pains.

I hope you will not choose this for trapped feral cats, either. Domestic cats are not “wild animals,” whether they live with humans or without them.

Surely you will have heard from many persons concerning the legal and health implications of deliberately inserting feral cats back into the community.

Obviously the numerous sections of City Code pertaining to the obligations of cat “owners” (see below*) would have to be vacated to equalize the roaming-cat playing field, unless the Humane Society or the City itself were to be deemed the “owner” of released cats and assume those responsibilities and fines.

Obviously feral cats expand the reservoir for many potentially fatal or chronic diseases and parasites communicable to other cats, especially as they are never treated for these. Some types of all three are communicable to humans. Rabies is, of course, fatal. If released cats are to be given rabies vaccine, is it presumed they will die in the unknown number of years before its effectiveness wanes?

I would instead like to speak on behalf of the cats which would be released.

If the fact of their lives matters, how is the quality of their lives and deaths of no consequence?

Like every living thing, including you and me, they are all going to die of something – and must live with it first, however long it takes death to conclude the matter. Does anyone imagine that wild creatures simply die of old age in their sleep?

What life and death shall we choose for them? After we catch them, we are inescapably doing the choosing, one way or another. Releasing them to unknown lives and deaths we don’t witness is a kindness to ourselves, not to the cats. We may occasionally see them frisking, hunting, basking, or peeing on our front doors. We don’t know if they’re hungry or thirsty. We don’t see them hiding when they are sick, injured, or dying.

If a brief, relatively painless, premature death for them is unacceptable to some persons, how is a “natural” life whose length includes inevitable suffering and a lingering painful death (unless killed by vehicle or predator) a more ethical or compassionate choice?

And it will not be a “natural” life or death, except for the human involved. The local Domestic Cat is a *creation of humans*, centuries and continents removed from its legitimately-wild ancestors. Feral cats exist *because of human purpose or negligence*, not by choice or nature. Trapped cats will pass through the hands of *humans who have the power to decide their future for them*. What is natural about any of that?

↓

The notion that feral cats are naturally adapted to living wild or lead a pleasant existence for the duration of it, and that it is ethically responsible or benevolent to discharge them to that life, is a fantasy of persons who have not themselves lived for even a moment by their instincts without care or shelter available to them if they needed it.

► Basic requirements for life are food, water, and shelter from the elements.

Food – According to legitimate sources on the internet, the average cat weighing 8-9 pounds needs 160-180 calories per day. The average mouse provides about 30 calories. A dove (larger than most songbirds), about 300 calories.

On the low rather than optimal end, that's 5-6 mice, half a dove, or about 1 small bird per day – 1,800 mice or 150-300 songbirds per year. Released cats will find these where?

Water – According to veterinary sources on the internet, the average cat needs about 3/4 cup of water per day to avoid chronic dehydration leading to debilities.

During our sweltering drought summers, released cats will find this where?

Shelter – Feral domestic cats do not instinctively build insulated nests, like squirrels, or dig burrows, like foxes.

During our sub-zero winter episodes, released cats will shelter where?

► Requirements for a *healthy* life also include prevention/treatment of diseases, conditions, parasites, and injuries.

Veterinarians make a fine living not because the public must comply with vaccination laws, but because most persons who acquire animal companions wish to keep them in good health and repair, and to alleviate their suffering throughout life and at the end of it.

Feral cats are susceptible to all the same diseases, conditions, injuries, and causes of death as companion cats, and have no avenue of remedy available. Palliative care in extremity is an option only humans can offer, if they have opportunity and means to do so.

Is a longer life with an unknown but inevitable amount of unalleviated suffering preferable to a shorter life ended mercifully?

Is that the choice we shall make for an animal which has no choice in the matter? Would you choose that for yourself? Ask the elderly and terminally ill among your acquaintance what they think about that. They may have thought about it more than you have yet.

If you think the suffering may not be inevitable:

An English study of ranked the leading causes of *eventual* death (i.e., endured during life) of over 100,000 *pet cats attended by veterinarians* as listed. No cats died of nothing at all. All these conditions entail suffering.

- trauma (47% of deaths for cats less than 5 years old)
- kidney disorders (#1 cause for cats older than 5)
- cancer
- neurologic disorders
- respiratory disorders
- heart disease
- endocrine disorders (diabetes)
- urinary tract infections
- respiratory infections
- inflammatory bowel disease
- feline immunodeficiency disease
- feline leukemia
- liver disease
- dental and oral cavity disease



Consuming things that were poisonous or blocked their bowels was not on the cause-of-death list for pet cats.

Starvation (in good health, from simple shortage; in poor health, from inability to capture prey) was not on the cause-of-death list for pet cats.

Cats are also susceptible to:

- hyperthyroidism
- arthritis
- abscesses
- inflammations
- eye conditions including conjunctivitis, corneal ulcers, cataracts, glaucoma, inflammation, viruses, and retinal disease

Potential parasites that may lead to debilities and illnesses include:

- gastrointestinal parasites (prevalence in *pet* cats as high as 45%) – tapeworms, roundworms, hookworms, and one-celled organisms (e.g., Isospora, Giardia, Toxoplasma)
- heartworms
- lungworms
- fleas – can cause anemia; may carry tapeworms or bartonella bacteria (leading to mouth and gum disease, eye inflammation, heart disease in cats; to cat-scratch disease if passed by bite saliva to humans)

Which combinations of these would you choose for released feral cats?

*Addendum for those who haven't read them recently:

3-107 ANIMAL OWNER RESPONSIBILITY FOR REMOVAL OF ANIMAL EXCREMENT

3-201 IMMUNIZATION OF DOGS, CATS AND FERRETS

3-202 ANIMALS PROHIBITED TO RUN AT LARGE; FINES.

3-202A HABITUAL VIOLATOR; ANIMAL AT-LARGE.

3-204 IMPOUNDING, REDEMPTION AND DISPOSITION.

3-205 FILING COMPLAINT; ENFORCEMENT

3-207 DAMAGE TO PRIVATE PROPERTY.

3-208 ANIMAL BITES; QUARANTINE. (C) OWNER UNKNOWN.

3-107 ANIMAL OWNER RESPONSIBILITY FOR REMOVAL OF ANIMAL EXCREMENT. (A) It shall be unlawful for any person to appear with an animal upon the public right-of-way, within public places or upon the property of another, absent that person's consent, without some means for removal of excrement that may be deposited by the animal. (Ord. 7125) (B) It shall be unlawful for any person who is an owner or possessor of an animal in their care to fail to remove any excrement deposited by the animal upon any public or private property, other than the property of the owner of the animal. (Ord. 7125)

3-201 IMMUNIZATION OF DOGS, CATS AND FERRETS. No person shall own any dog, cat or ferret, four (4) months of age or older, within the city limits if such animal is not currently vaccinated against rabies. Any person owning a dog within the City shall cause such dog to wear a collar or harness at all times to which shall be attached a current tag reflecting that the dog is vaccinated against rabies. The tag shall be situated on the collar or harness in such a manner that it may be easily visible at all times. Owners of cats and ferrets may retain proof of current rabies vaccination on their person or premises. (1990 Code 3-201; Ord. 6389)

3-202 ANIMALS PROHIBITED TO RUN AT LARGE; FINES.

(A) It shall be unlawful for any person to own or keep a dog or cat or other animal which runs at large in the City. Knowledge or acquiescence by the owner or keeper is not an element of the offense. (Ord. 7690)

(B) Any animal on property without the permission of the property owner shall be deemed to be an animal at large and the owner of such animal shall be in violation of this Section. (Ord. 7113) (C) Any cat that is on the property of its owner or keeper shall not be deemed to be running at large in the City. (Ord. 7113)

(C) Any cat that is on the property of its owner or keeper shall not be deemed to be running at large in the City. (Ord. 7113)

(E) Any person found guilty of animal at large as defined herein shall be fined as follows: \$30.00 for the first offense within a twelve (12) month period; \$40.00 for the second offense within a twelve (12) month period; \$60.00 for the third offense within a twelve (12) month period; and \$100.00 for the fourth and subsequent offense(s) within a twelve (12) month period. The Municipal Judge shall have no authority to suspend the fine or any portion thereof of fine established by this Section. The fine shall be in addition to any applicable court costs or impoundment fees. The Humane Society or other impoundment facility shall not release an animal to an owner if the owner has failed to pay a fine or has failed to appear in municipal court for the adjudication of a violation of this Section. (Ord. 7113, Ord. 7690)

3-202A HABITUAL VIOLATOR; ANIMAL AT-LARGE. It shall be a separate municipal offense for any person to receive four (4) or more citations for violation of Section 3-202 within a twenty-four (24) month consecutive CODE OF THE CITY OF LAWRENCE, KANSAS 3-9 period. Such person shall be cited as a habitual violator. Any person found guilty of violation of this Section shall be fined a minimum of \$100.00 and a maximum of \$500.00 for each habitual violator citation. The Municipal Judge shall have no authority to suspend the minimum fine or any portion thereof. A person cited for violation of this Section shall be required to appear in municipal court. In addition thereto, the Municipal Judge shall have the authority to sentence the individual to up to six (6) months in jail. It shall be a defense to an alleged violation of this Section for the defendant to have been adjudged not guilty, or the charge dismissed, of Section 3-202 for a specific citation issued under Section 3-202. (Ord. 7113)

3-204 IMPOUNDING, REDEMPTION AND DISPOSITION. A dog, cat or other animal found running at large within the corporate limits of the city, contrary to the provisions of Section 3-202 may be taken up by the officer or brought in by a member of the public and may be impounded at the Lawrence Humane Society. The officer shall make a record of all dogs or cats so impounded with their description, date of impoundment and rabies vaccination number. If, within seventy-two (72) hours from the date any dog or cat is impounded and the owner of such dog or cat shall appear and claim his or her dog or cat, said dog or cat may be released upon payment of the following fees: (A) Impoundment fee for the first twenty-four (24) hour period or any part thereof in any consecutive twelve (12) months: (1) First pickup and release - \$10.00; (2) Second pickup and release - \$20.00; plus an additional fee of \$10.00 if the animal is not spayed or neutered. (3) Third pickup and release - \$30.00; plus an additional fee of \$15.00 if the animal is not spayed or neutered. (4) Each subsequent pickup and release - \$40.00; plus an additional fee of \$20.00 if the animal is not spayed or neutered. Owners may seek a refund of the additional fee if proof that the animal was spayed or neutered is presented to the City within thirty (30) days of release of the animal. (B) Board Fee: Five dollars (\$5.00) for each additional twenty-four (24) hour period up to a maximum of forty-eight (48) hours to pay the cost of keeping the animal. If any animal so impounded is not claimed by the owner thereof within three (3) business days of the date of such impounding, such animal shall become the property of the Lawrence Humane Society. The above described costs for impounding and keeping such animal will be due and payable to the City for any animal claimed by an owner after the three (3) business day period. All impounding fees shall be paid to the City and no animal shall be released until the owner proves the animal, if a dog, cat or ferret, is currently immunized against rabies. (1990 Code 3-204; Ord. 6389; Ord. 6704)

3-205 FILING COMPLAINT; ENFORCEMENT. It is hereby made the duty of the animal control officer, or anyone having the authority of animal control officer, including but not limited to law enforcement officers, to enforce the terms and provisions of this chapter.

3-207 DAMAGE TO PRIVATE PROPERTY. The owner of any animal shall be in violation of this Article and subject to the penalties prescribed herein if any such animal damages private property not belonging to the owner. (1990 Code 3-208; Ord. 6389)

3-208 ANIMAL BITES; QUARANTINE.

(C) **OWNER UNKNOWN.** Biting animals for which an owner cannot be located shall be taken into custody by the animal control officer and confined for observation. If the bite to the victim is on the neck or head, or if the animal is behaving strangely or is ill, the animal shall be held for twenty-four (24) hours before euthanized. If the bite to the victim is not on the neck or head, and if the animal is not behaving strangely or is not ill, the animal shall be held for three days before euthanized. If the owner seeks to claim the animal, the provisions of Subsection (A) shall govern the confinement of the animal. Should such animal become ill, die or is euthanized within the confinement period, the bite victim or victim's representative shall be notified and the City shall direct further management of the animal or animal remains. If the animal is alive and well at the end of the confinement period, the bite victim or victim's representative shall be notified, and the animal shall become the property of the Lawrence Humane Society. (D) **STATE LAW.** Kansas Administrative Regulations (K.A.R.) 28-1-13, and amendments thereto, shall be followed concerning the isolation of biting animals for observation, examination and quarantine, unless the provisions of this Chapter require more stringent procedures. (1990 Code 3-209; Ord. 6389)

Aliza Bidinger

To: chris f
Subject: RE: animal regulation

From: chris f <wpcorner@gmail.com>
Sent: Tuesday, February 19, 2019 11:48 AM
To: Aliza Bidinger <abidinger@lawrenceks.org>
Subject: animal regulation

Dear City Staff and Commission

I am very much against animal cruelty, but I am a bit concerned about the part that says "The cruelty to animals section is updated, including adding a new crime for possession of depiction of animal cruelty. This will primarily target videos/photographs of dog fighting but can apply to other situations in which a person possesses an image, in any form, of animal cruelty."

First of all, the part about "in any form" is very troubling. Does that mean even a video or photograph where it looks like an animal is abused but really isn't? For example, what about the classic 1990 movie "The Willies"? There is a scene in the movie where an old lady puts her toy poodle in the microwave to dry it, only she puts it in too long and when the timer hits 0 the dog explodes blowing open the microwave door and getting gore all over the lady. Could someone be prosecuted for owning a movie like this, where it appears an animal is killed for comedic effect but no actual animals are harmed?

What about a movie where an animal actually is harmed, such as the critically acclaimed masterpiece "Cannibal Holocaust"? In this movie there are scenes in which actual animals were actually killed, like a monkey being decapitated with a machete. Would anyone in Lawrence owning this piece of cinematic history be prosecuted for possessing footage of animal cruelty?

Now you may say the city would never prosecute someone for owning an artistic piece of cinema that tells a great story like either "The Willies" or "Cannibal Holocaust", but what if the movie is just exploitative trash? One such example would be "Apocalypse Now". Now granted, I have never seen this movie since I am a man with discerning tastes when it comes to cinema, but apparently a water buffalo was actually hacked to death on screen in this piece of trash. While the scene may not have been allowed had it been shot in America, it was filmed in the Philippines so the sleazy director was able to get away with it. Now granted there are probably degenerates out there that like that sort of stuff and think this garbage is art, but who should be able to dictate what is and isn't art? So maybe doing away with video of animal cruelty in any form might be ok if all we lost was filth like "Apocalypse Now", but do we really want to risk losing art like "Cannibal Holocaust"?

As the commission considers this issue, it reminds me of another group of people that considered this issue...the Supreme Court with the case of United States v. Stevens. In 2010 the Supreme Court ruled that 18 U.S.C. § 48, a federal statute criminalizing the commercial production, sale, or possession of depictions of cruelty to animals, was an unconstitutional abridgment of the First Amendment right to freedom of speech. My question to the commission is this; if in 2010 the Supreme Court ruled 8-1 that a law signed by Bill Clinton in 1999 targeting dog fighting videos was too broad to be deemed constitutional, then what are the chances of a law passed by a college town in Kansas that states a person in possession of video/image of animal cruelty in ANY form would be upheld in court? I have never been to law school, and my legal expertise comes from watching Judge Judy and listening to Handel on the Law. My legal expertise is very iffy, so I may have no idea what I am talking about. Also, when looking further into this issue I came across articles detailing some of the animal cruelty involved with the case which I have decided I would rather not read about. So I am

copping out now. It is the city staff and commission's job to look into this stuff, not mine. It's very depressing, but that's why you all get paid the big bucks :-)

One issue I will not cop out on however is community cats. The issue of a trap, neuter, and release seems like a no brainer to me, but apparently there are some in town with no brains. That brings me to some of the correspondence to ordinance 9615. First off let's start with the argument that cats are non native animals that kill birds that are native to our area. That is true, but let's look at the bird situation. One of the correspondence came from someone who said she wants to feed the birds, but has had to stop due to cats killing them and her feeling guilty about luring the birds to potential death by feeding them. To this I ask, are bird baths and bird feeders natural to Kansas or were they introduced to this area by man, just like cats are? Seriously, people are going to complain about cat's involvement with nature while at the same time influencing nature with their human made structures designed to attract the animals they prefer to their yards? Let's also talk about those yards. The same people bitching about cats not belonging here because they were introduced into Kansas nature by humans, are the same ones complaining that the cats dig up their gardens. I ask this, were their gardens created by a human digging up the native grass that was growing there and planting non native flowers such as petunias and marigolds? There is also the correspondence that asks who is responsible if a kid picks up a community cat and gets bitten? Here's an idea, how about the parents for letting their kid handle an animal that doesn't belong to them to begin with! My god, how stupid do you have to be to even ask that question?! It's very rare for a cat to just attack a human unless the human is messing with it. If your kid is messing with a cat and gets scratched, maybe the problem isn't with the cat but rather parental supervision. Then there is editorial in LJ World that states dog owners would be considered negligent if they subjected them to the same risk filled life of community cats. Yes, but community cats don't have actual owners! They are cats that live in the wild that people feed, the same way that birds and squirrels live in the wild yet people are allowed to feed. So the way I see it, it comes down to this. Would the majority of Lawrence (that being 51%) rather have cats being killed or mice and birds being killed? I asked that question where I work, and everyone said they would rather have the mice and birds killed than cats. A couple of my coworkers even looked at me as if I was a complete idiot for even asking such a question. Seriously, birds being killed by other animals, or cats being killed by humans. That's what this really boils down to. I trust the commission will make the right decision.

Thank you for your time and consideration Chris Flowers