

**Dog Recreation in South Burlington:
Strategies for Natural Resources Protection & Management
while Sharing Outdoor Spaces with Dogs**

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**Proposal to the South Burlington Recreation & Parks,
Natural Resources & Conservation, and Dog Park Committees
Prepared by the following City Staff:**

Ashley Parker, City Project Manager
Holly Rees, Director of Recreation & Parks
Justin Rabidoux, Director of Public Works
Paul Conner, Director of Planning & Zoning

Introduction

In the spring of 2020, City staff began having internal conversations focused on solving a recurring issue in City-owned natural areas and parks. Over time, two main issues have become prominent – 1) dog impacts on natural resources and wildlife habitat and 2) conflicts between users of the City’s park system and dogs. These issues have been represented by reports of dog bites, off-leash dogs, creation of new social trails in parks that increase erosion and disturb wildlife habitat, and the collection of dog waste or dog waste bags found left in City parks. As a result, City staff found it necessary to begin looking into potential management strategies that may alleviate some of the conflicts that are stemming from an increase in the number of dogs in the South Burlington community and an increase in the number of dogs utilizing City-owned natural areas and parks.

History of Dog Recreation & Management in South Burlington

When first looking into these issues regarding dog management in the City, staff decided to differentiate between the terms “Dog Recreation” and “Dog Park” to help guide the conversation and provide consistent framework for communicating with the community. For this discussion, dog recreation refers to the desire for land and/or space that would accommodate natural and instinctive exploration for dogs. It usually includes acres of land and, ideally, a varied landscape where dogs can be off leash and explore freely. A dog park (often called a bark park) is generally a smaller, fenced in recreation play area. One could also look at thinking of these spaces as a cross country trail running versus playing on a playground. We felt that the term “Dog Recreation” is better suited for this conversation, as the concerns being discussed are focused on those experiences that occur in the larger landscape context, and that none of these immediate concerns are currently stemming from experiences at our “Dog Park” locations.

Before looking at how the City is currently managing dogs, it is important to have some understanding of the kind of presence dogs have in the community. According to data provided by Donna Kinville, the South Burlington City Clerk, there has been a 29% increase in dog registration between 2011 and 2019; and this increase could be greater at the close of 2020. Data provided by the clerk’s office shows that dog registration numbers are on pace this year to eclipse 2019. This increase could be the result of increased outreach efforts by the Clerk’s office to get the word out about registering dogs with the City, as well as the fact that 1,350 new households were constructed in South Burlington during the same time period. About 2/3rds of these additional households are multifamily units that do not have access to a backyard. The increase in dog ownership has the potential to impact the number of dogs that visit our City-owned natural areas and parks. The Recreation & Parks Department has recently discussed collecting data on the number of people and pets that are visiting our parks, especially as City parks have seen an increase in usage during the COVID-19 pandemic.

In addition to an increase in dog ownership, the City has also seen an increase in the number of complaints related to dogs. Justin Rabidoux, the appointed City Health Officer, receives an average of three complaints a week during nice weather and one complaint a week in the winter. In total, these complaints encompass a total of 100 dog or cat bites a year, with about 90% of those being dog bites. About 50% of these bites are from the owner’s own pet; and the other half is split between an incident

resulting from a general encounter in a neighborhood or an encounter in a City park. Red Rocks is the most common City-owned property where dog bites occur.

The City is also starting to gather data on the amount of dog waste being left in parks. In April 2019, the Lake Champlain Committee and Magic Hat held April Stools Day at Red Rocks Park. This event is aimed at working with local communities to clean up dog waste from parks, trails and sidewalks in order to reduce the flow of bacteria and nutrients to waterways. During this event, the volunteers removed 170 pounds of dog waste from Red Rocks alone. This event was not conducted at other City owned natural areas or parks, but City staff have observed numerous dog waste bags scattered along and off trails.

To get a historical perspective of dog recreation and dog management in the City, one should begin by looking at City Ordinances that regulate these things. The City currently manages dogs using guidance from two existing City Ordinances: “Regulating Conduct in South Burlington Parks”, the most recent amendment was recorded in the City Clerk’s Office on March 19, 2019; and “Care and Control of Dogs and Cats”, the most recent amendment was recorded in the City Clerk’s Office on January 4, 2017. The park specific ordinance focuses on setting expectation for how dogs should be kept under control in identified parks, while the other sets expectations for general management of dogs in public.

The park specific ordinance discusses the requirement of leashing dogs on a six-foot leash in parks and natural areas and the removal of dog waste. In addition to this guidance, domestic animals are prohibited from the beach area and adjacent water of Lake Champlain at Red Rocks Park at all times; and dogs must be under owner control by a six-foot leash at all times in Red Rocks Park, Jaycee Park, Veterans Memorial Park, or on recreation/bike paths. There currently are no rules or regulations for other City parks aimed at dog management. Violations of this ordinance is subject to a civil penalty of up to \$800 for each violation.

The ordinance reads that the ordinance can be enforced by authorized Issuing Municipal Officials and are noted as the following individuals: the Director of Recreation & Parks, Police Officers, Animal Control Officers, and Park Attendants of the City of South Burlington. Currently, the only authorized enforcement for noncompliance with the City ordinance lives within the South Burlington Police Department. Within that Department, both Police Officers and contractual Animal Control Officers have been deputized to write tickets; though it is very rare for either to do so. The Animal Control Officers look at noncompliance through the lens of building positive relationships with animal guardians and shy away from any punitive action for noncompliance. While Police Officers can write tickets for noncompliance of City ordinances that relate to dogs, there are not sufficient staff resources to support consistent management of this issue, nor is it necessarily consistent with the prioritization of needs within the City for policing. Full time and seasonal staff often provide friendly reminders when needed, however, these have led to little change in dog culture within many of our parks.

The “Care and Control” ordinance discusses the following as a nuisance and shall not be allowed: dogs running at large in the City; a dog that disturbs the quiet, comfort, and repose of others; dogs defecating in a public area or on private property that is not immediately removed by the owner. Each dog shall be licensed and wear a collar or harness with the current license attached. Enforcement of this ordinance is done by an Enforcement Official in the Vermont Judicial Bureau in accordance with 24 V.S.A §§ 1974a et seq. Complaints may be submitted to an Enforcement Official or the City Health Officer. The ordinance defines Enforcement Official as any City Police Officer, Animal Control Officer, or any other person designated by the City Council to enforce the provisions of this Ordinance.

Research: Dogs & Impacts to Natural Areas

There is no question that dogs serve vital functions for many in our society. They provide care, act as a lifeline, serve as friends, and truly become part of one's family. There is no question that most dog owners relish the time they spend with their pet in the great outdoors.

According to the Leave No Trace Center for Outdoor Ethics (2020), there are over 63 million households across the United States with a dog, meaning that millions of dogs are visiting our shared spaces every year, and often leave behind remnants from their visit, whether directly (dog waste) or indirectly (disturbance of natural resources and wildlife habitat). Many municipalities across the world have looked into how dogs impact our natural areas and parks as there is an increase in the number of domestic dogs worldwide. This research has also looked at whether there is a difference in impact to these spaces when a dog is on- or off-leash.

The research overwhelmingly indicates that dogs do have an impact on natural areas and parks (including both wildlife and wildlife habitat), and these impacts increase when dogs are off-leash (Hennings, 2016). When Metro Regional Center in Oregon conducted their own literature review (2016) to better understand their own dog management policies and whether those policies were based on the most up-to-date science, they identified four types of impacts that dogs have on wildlife and natural resources:

1. Physical & Temporal Displacement:

This is when wildlife move away from a natural area permanently or temporarily as a result of more frequent visitation by dogs, thereby reducing habitat availability. This kind of displacement is also observed when animals become less active during the day to avoid the time periods when dogs are more likely to be present. The scent of a dog can linger well after they are gone and this can disturb wildlife and their behavior. Dogs are in the family *Canidae*, which also includes wolves, and as a result, they have behavioral characteristics similar to carnivores. This is likely the reason why all different species of wildlife are affected by dogs in the manner described above.

2. Disturbance & Stress Response:

Wildlife do see an increase to their disturbance and stress response due to the presence of dogs. This is exhibited when they become alarmed and cease routine activities. An increase in this type of response also increases the amount of energy that is used by wildlife. As with any stress, repeated stress can cause long-term impacts to wildlife populations.

3. Indirect & Direct Mortality:

There are two distinct issues associated with the indirect and direct mortality impacts related to dogs in natural areas. Dogs are able to transmit diseases that can affect wildlife populations. Due to their connection to the *Canidae* family, loose dogs can kill wildlife, an impact that has been reported in South Burlington natural areas.

4. Human Disease & Water Quality Impacts:

Impacts related to human disease and water quality include pollution from dog waste and the transmission of parasites and disease to humans. The Leave No Trace Center for Outdoor Ethics (2020) estimates that the average dog produces $\frac{1}{2}$ - $\frac{3}{4}$ pound of waste a day; and about 100 dogs can produce more than 500 pounds of waste a week. The City's Stormwater Department monitors for *E. coli*, and in 2016, Fitzgerald Environmental Associates, LLC, submitted a report analyzing 2015 water quality data from Potash Brook. Their report noted that *E. coli* counts have been variable throughout their many years of sampling, however those sites that typically have elevated values are near areas that contain pet waste or beavers. They also stated that it would be worthwhile for the City to consider a process known as ribotyping which would further identify whether the *E. coli* in Potash Brook comes from pet waste, manure, or wildlife. To date, this has not happened, therefore it is difficult to conclude the level of impact dog waste is directly having on waterways found within the City limits. Leave No Trace (2020) also shares that pet waste is considered an environmental pollutant and health hazard. Dog waste is not like wildlife waste, and often contains things that are not a natural part of the ecosystem. Most ingredients in dog food are not found in the natural environment (Leave No Trace, 2020). In addition to the pet waste itself being left behind in natural areas, City staff commonly find pet waste bags scattered along and off trails. This adds to the pollution concerns by adding plastic to the mix.

Research: Human Safety & Dog Recreation Management

In addition to those impacts focused on the natural environment and wildlife, dogs also have an impact on other users of our public open spaces. The City regularly receives complaints related to dog bites and dogs that are off-leash in leash regulated spaces. There are many residents that do not like dogs and feel uncomfortable when they are approached on a trail or sidewalk by a dog that is running at them off leash. The well-being of all users should be a consideration for any dog management strategy that is implemented, and has been the impetus for existing ordinance language.

Research related to how other entities work on managing dogs in natural areas to improve the health and safety of other park users showed a consistent attempt to create various takes on a "park user code of conduct". In the book titled, *Best Hikes with Dogs: New Hampshire and Vermont* (Densmore, 2005), the author states that, "It is a privilege, not a right, to be able to hike with your dog. Every time you step onto a trail, you are both ambassadors for everyone else who hikes with dogs." She goes on to elaborate on her own "Ten Canons of Canine Trail Etiquette", including the following recommendations:

- Keep the dog-to-human ration 1:1. If dogs outnumber people, it can be difficult to control your dogs. That means putting a leash on them if they get on an animal scent or if other hikers approach. Trying to control 2+ dogs, even well behaved dogs, is nearly impossible and could raise the chance for injury to you/your dog/others.
- Limit the total number of dogs in your hiking group to two, regardless of the number of humans. Three or more dogs hiking together become a pack of dogs, which can be intimidating to other hikers. A group of dogs is also less likely to mind their masters, and it increases the impact to the trail and surrounding environment.

- Put your dog on a leash whenever you meet others on the trail. It is a courtesy to your fellow hikers to put your dog on a leash whenever you are close to each other. You never know when the other person is fond of dogs or dog-phobic. It is a dog's nature to establish dominance or subservience when they meet other dogs, so watch your dog. They can pick up the scent of others on the trail before you see or hear them.
- Dog-less hikers have the right-of-way. You should put your dog on a leash and step aside until they pass. Command your dog to sit as the other hikers pass. This will show that you are in complete control of your pet.
- Do not let your dog jump up, sniff, lick, growl, or bark. Delay taking your dog on the trail until they are able to break these habits.
- Shout a friendly hello to others approaching to let your dog know that they are a friend, and not a foe. Most dogs are naturally protective of their masters. Saying hello will tell your dog that the approaching person is not a threat and puts them at ease.

Other municipalities and regional authorities around the country have also created rules and recommendations at their dog recreation areas. These are parks where dogs are allowed to be off-leash. The Dane County Parks Division created a "Dog Park Etiquette" brochure for users of any park in their regional system. They focused on some of the same themes as that seen in the book written by Densmore (2005), but there are also some additional outreach and regulatory strategies they utilize. While the subsequent rules and recommendations are targeting Dane County's off-leash specific parks, they may be useful in understanding how South Burlington could craft an outreach campaign for leash usage that will improve user experience and mitigate negative dog recreation interactions at City-owned natural area parks.

As a reminder, the following Rules and Recommendations are those that were crafted for implementation throughout the Dane County Wisconsin Dog Park system; and are for reference only. Also, they may not incorporate all of the recommendations noted throughout this report, as every entity that examines this type of management makes their decisions based upon what makes the most sense for their user community.

Rules –

- Dog owners are legally and financially liable for injuries/damages caused by their dogs.
- Aggressive dogs are prohibited from the park. Any dog exhibiting aggressive behavior must be removed from the park immediately.
- Female dogs in heat are not allowed in a dog park.
- The owner/handler must be in control of their dog(s) at all times. The dog must be within view and under voice control of the owner/handler.
- Dogs must be leashed with a six-foot static leash when entering and leaving off-leash area. The owner/handler must have a leash in their possession at all times.

Recommendations –

- Limit treats and toys brought into a dog park as it may attract other dogs or lead to possession aggression.
- Make sure your dog is healthy. It is possible for your dog to pass on an infection or parasite to other dogs. Sharing water can also lead to disease transmission.

- Children should be supervised when in the Dog Park.
- DO not bring more dogs than you can effectively restrain. It is recommended that you bring no more than three dogs at one time.
- You are responsible for all actions of your dog and must stay with your dog. A dog park is not the place to work on behavioral problems with your dog.
- Do not let your dog come into contact with wild animals.

Research: Strategies for Managing Dog Recreation in Natural Areas

Staff looked into various strategies that other municipalities and organizations are utilizing to manage the impacts dogs have on natural areas. There are two overarching management strategies – 1) determining whether there are natural areas or open spaces that should be closed to dogs; 2) reinforcement and expansion of the leash ordinance.

The research is clear that dogs do have impacts on these spaces and that these impacts increase when they are off-leash (Hennings, 2016). The first strategy that many entities first consider is deciding how to enforce any leash ordinances. This is generally done via education strategies that can include signage, an educational campaign, and trainings for residents.

The City of Madison, Wisconsin, went a step further by delineating which parks and open spaces dogs would be allowed to recreate in and creating a permit system that requires pet owners to purchase a Dog Park Permit in order to utilize any of the allowed spaces with their dog. This includes those parks and open spaces where dogs are allowed on- and off-leash. Madison collects permit fees from this which are then used to maintain and operate the parks. Anyone that purchases a Dog Park Permit is also allowed to use spaces that have been designated at any of the specified parks within Dane County, Wisconsin, and includes surrounding Cities. This county-wide partnership provides additional space for pet owners to take their dogs and also provides maintenance and operation dollars to other municipalities. Enforcement of Madison's dog recreation management regulations is done through Park Rangers. Users that observe a violation are encouraged by the City to report the incident to the Park Ranger.

In early 2020, the City of Madison revisited their ordinance that identifies those parks that are open to dogs, whether it be on- or off-leash or not at all; and their Common Council approved a revised ordinance allowing dogs on-leash in most Madison parks. This revision happened due to an increase in dog ownership, which led to an increase in demand for park space where dogs are allowed, whether on- or off-leash. During their review of the previous ordinance language, they noted that their identified "Conservation Parks" would remain closed to dogs.

One strategy that seems consistent across the board, is the delineation of those natural areas and open spaces that should be open or closed to dogs. This generally means that a community needs to decide what site characteristics are sensitive enough to warrant preservation and protection from dogs, and whether there is a reason not to allow them due to the use of the space. This could include native plants, animals, landscapes, and type of user. It could also include the identification of those sites where dogs might be allowed, but further specified to include leash or no leash. This kind of evaluation has not been done in South Burlington to date.

Staff Recommendations to the Committees: South Burlington Dog Park Committee, Recreation & Parks Committee, and the Natural Resources & Conservation Committee

Based on the research and the history of dog recreation in South Burlington, staff believes that a bigger conversation about how dog recreation and management looks in the City is needed and that this conversation requires a solution with public input. Staff intends on presenting this concept to a joint meeting of the Dog Park Committee, Recreation & Parks Committee, and the Natural Resources & Conservation Committee. The objective is to gain support from these Committees and work with them to provide a recommendation to Council as to how to proceed.

Staff is also recommending that the Committees support a Council review of the original resolution forming the Dog Park Committee, which would include a review of the composition of the Committee membership and potential change in broadening their scope to be more inclusive of this work. This review would be in consideration of the tasks associated with the work described in this report, as well as confirmation that the makeup of the Dog Park Committee matches with the expectations set forth in the original Council resolution. Staff would like to see current representation from both the Recreation & Parks and Natural Resources & Conservation Committees be included in the membership of the current Dog Park Committee, especially if they are tasked with the work describe herein.

Below is a potential schedule that Staff and Committee representatives will present to Council if supported by the Committees noted above. This include Council's charge to take on this project, as well as an expectation for when the project should be completed.

1. Council reviews a recommendation presented by the Dog Park Committee, Recreation & Parks Committee, and the Natural Resources & Conservation Committee that includes the identification of which Committee should take the lead for this project, or whether a Task Force composed of members of each Committee would be better suited for this work.
2. Council to establish a new charge for the Dog Park Committee or Task Force that would include a review of the dog recreation issues pertaining to South Burlington, any potential dog recreation management strategies, and a final recommendation for management strategies the City should implement. This charge would also include guidance on the makeup of either the Committee or Task Force.
 - a) The assigned Committee or Task Force should be asked to consider issues associated with public health and safety, as well as those associated with natural resource conservation.
 - b) Consider phasing strategies for any implementation recommendations.
 - c) Work with City staff to consider available resources for any proposed recommendation.
3. Establish a timeframe for this work. Staff recommends a five month project that would include the tasks described below:
 - a) Assigned Committee or Task Force initiate project.
 - b) Report back to Council with proposed objectives.
 - c) Draft report of recommendations for action.
 - d) Public Meeting to review draft report of recommendations.
 - e) Preparation of a final report.
 - f) Final report to Council.
4. Council can choose to adopt the final report provided by either the assigned Committee or the Task Force, which would serve as a guide for City staff to implement.

The recommended process allows for a public dialogue to take place around the needs for the community, the use and management of City-owned natural areas and parks, and how to manage dog recreation in the City. It also ensures the voices of relevant Committees are heard and represented in the final product.

Staff have attached some potential strategies that the assigned Committee or Task Force could consider when starting their work as an appendix. These strategies focus on ways the City could better manage dogs and their impacts to natural areas that would also improve user experience. City staff is already working to implement various elements outlined in Strategy 1.1 – Education Campaign (Appendix 1). This includes creating a brochure regarding best management practices that can be handed out to dog owners when they come to register their pet with the Clerk’s office, as well as the consideration of additional park signage and data collection that will better assess impacts to our natural areas in real time. These educational initiatives will help staff begin the process of cultural change in the community that will help pave the way for other structural changes. The assigned Committee or Task Force can then elaborate on any educational strategy that City staff are not able to implement right away, especially as it pertains to Strategy 1.1 (Appendix 1).

APPENDIX 1: Potential Future South Burlington Dog Recreation Management Strategies

Strategy 1.1: Education Campaign – “SoBu Dog Recreation Etiquette”

Consider the creation of an education campaign that would pair with the City’s existing dog licensing program. Pet owners would need to participate in a free training opportunity offered by the Recreation & Parks Department. This training would review best practices for walking dogs in natural areas/parks/open spaces around South Burlington, and include reminders related to the leash law, removal of pet waste, and sharing spaces with other users and wildlife. Additional informational materials related to dog recreation etiquette in City natural areas, parks, and open spaces should be created and provided during the licensing process. The City should also consider giving away dog waste carriers that can be attached to a dog’s collar to promote the removal of pet waste from natural areas at the time of licensing to promote best practices. The education campaign should also take signage into consideration, public messaging, articles in The Other Paper, The South Burlington Times, and other City publications and website. The City should consider gathering additional data related to the number of pet owners using natural areas and parks, how many pets are utilizing our natural areas and parks, how many pet owners are abiding by the leash law, and how much pet waste is being removed from natural areas and parks. A survey should be contemplated to get a sense of how all users are experiencing these sites and whether or not additional considerations should be made.

Strategy 2.1: Evaluate City-Owned Natural Areas and Open Spaces for Dog Recreation

Develop criteria for City-owned natural areas and open spaces to determine whether there are any sites that dogs should not be allowed to recreate in. Any criteria that is developed should be used to evaluate all existing City-owned land that would fit the category of dog recreation. Consideration should include existing user needs, how a site is currently used, impacts of dog recreation on wildlife and habitat, determination of leash requirements, and potential fees for management of a site for dog recreation. Review data collected during the education campaign to determine existing impacts of dogs on City-owned natural areas and parks. As the needs of the community change, it is likely that this criteria may also change.

Strategy 3.1: Changes to Existing City Ordinances

Utilize information from surveys conducted during the education campaign to review and discuss whether there is a need to increase the number of natural areas and parks with leash requirements. Conduct public forums to further the conversation and determine whether there is any public interest in this. Create criteria that can be used to determine which natural areas and parks might be worth considering for inclusion into existing ordinances. Share information related to this process and any discussion with the public on the City website, in articles for The Other Paper and The South Burlington Times, and through other City platforms.

Strategy 4.1: Creation of a Dog Park Permit Program

Development of a permit program that would be aimed at increasing leash law compliance by requiring the purchase of daily or annual permits that would allow pet owners the ability to take their dogs to City-owned parks or natural areas that are designated appropriately. This program could cover sites that require leashes and those that don't. The permit could be purchased in association with dog licensing, and any fees collected from the purchase of a permit would go towards the maintenance and operation of parks and natural areas that allow dogs. It is recommended that a conversation be had with the City Clerk to confirm where current licensing fees go once collected to help develop future guidance around any additional fees that might be collected for dog recreation management. This program should also look to create a set of rules and recommendations for any space where dogs are allowed. This could be called "SoBu Dog Park Etiquette".

Strategy 5.1: Coordinate Regional Messaging and Dog Recreation Opportunities with the Champlain Valley Conservation Partnership

Based on the model used in Wisconsin, it might make sense to utilize the Champlain Valley Conservation Partnership (CVCP) to coordinate dog recreation management strategies throughout the region. There are opportunities to create messaging associated with keeping dogs on leash or picking up after your pet. If municipalities within the partnership are sharing the same message about dogs and recreation, it may have a stronger impact. There may also be the opportunity for long-term partnerships through a dog permit system that could provide dog owners with other natural areas and parks to take their dog and recreate together. By purchasing a Dog Park Permit in one municipality, the user would have access to the other designated spaces in other municipalities. The CVCP could also be used to help define those spaces that should prohibit dogs. The CVCP did discuss this idea in July 2020, and the group agreed that a consistent communications and messaging strategy would be a good place to start.

Resources

- Dane County Parks. Dane County Dog Parks Brochure [Website]. Retrieved from <https://parks-lwrд.сountyofdane.com/documents/PDFs/DOG-PARK-BROCHURE.pdf>
- City of Madison Parks Division. (2020). Dogs in Parks [Website]. Retrieved from <https://www.cityofmadison.com/parks/dogparks>
- Dane County Parks. (2020). History of Dane County Dog Parks [Website]. Retrieved from <https://parks-lwrд.сountyofdane.com/parks/dogs/history>
- Densmore, L. (2005). Best Hikes with Dogs: New Hampshire and Vermont. United Kingdom: Mountaineers Books.
- Fitzgerald Environmental Associates, LLC. Potash Brook Water Quality Monitoring Plan: 2015 Annual Performance Report. (2016, June 27).
- Hennings, L. (2016, April). The impacts of dogs on wildlife and water quality: A literature Review. Metro Parks and Nature. Retrieved from <https://www.oregonmetro.gov/sites/default/files/2017/09/28/impacts-of-dogs-on-wildlife-water-quality-science-review.pdf>
- Leave No Trace Center for Outdoor Ethics. (2020, April 29). 5 Leave no Trace DIYs [Blog post]. Retrieved from <https://lnt.org/5-leave-no-trace-diys/>
- Leave No Trace Center for Outdoor Ethics. (2020, May 22). How to be a responsible Pet Owner [Blog post]. Retrieved from <https://lnt.org/3-ways-you-and-your-pet-can-minimize-environmental-and-social-impacts/>
- Lenth, B., Knight, R., and Brennan, M. (2008). The Effects of Dogs on Wildlife Communities. Natural Areas Journal, 28(3), 218-227.
- Ted Labbe. (2017, March 22). Four-legged friends in our natural areas? [Blog post]. Retrieved from <https://www.theintertwine.org/outside-voice/doggies-our-natural-areas>