



OVERVIEW: As Dog Scouts, we already know the fun of taking our dogs with us as we look for hidden Geocaches. What could be more fun than searching for a cache with our ever-faithful companion nearby? How about, instead, letting our dogs search while THEIR ever-faithful companion is nearby!

There are few things that a dog loves more than searching. That is one of the reasons that multiple dog sport venues have made nose work competitions a huge industry. The downside of these competitions is that it takes a village to hold a trial, and it can be costly traveling from city to city in search of trials. GeoScenting is for you and your dog. You don't need anyone else. It's inexpensive, simple, and fun. If you are a serious competitor looking for something to do to hone your skills between competitions, or simply someone looking for another fun thing to do with your dog, this is your sport.

HOW DOES GEOSCENTING WORK? GeoScenting is a sport that combines geocaching and scent discrimination, using clove oil to scent a geocache. Once in the vicinity of the cache, the dog makes the find by acquiring the odor and reporting the find with a trained indication. Since your GPS already gives you the general location, you can control the size of the search area based on your dog's ability. It's very simple and fun.

IMPRINTING ODOR: It is often beneficial to imprint in a shotgun approach...using multiple methods creates built in generalization. Generalization makes the imprinted odor, and even behaviors for that matter, stronger. Imprinting odor is traditionally done by pairing odor with food or a toy.

- Place a clove scented sticker on the convex side of a wooden spoon. If you use clove instead, you must allow it to dry overnight. Only allow your dog to touch the side (using and operant conditioned target touch) WITHOUT the oil, so the dog does not saturate their nose with target odor. That's a quick way to poison this behavior.
- Another method is to place Q-Tip half with a single drop of oil inside a Mason (type) Jar with a hole in the sealed lid. (Use a second sealed lid without any hole to be placed over the lid with the hole when storing.) Teach your dog to target the jar lid with the hole, marking the moment they touch the lid.
- A third method would be to tape a small container with a scented Q-Tip half on the bottom of a colander. Feed the dog in the colander and let their olfactory do its thing.
- There are many more ways to do this. Experiment and have fun!!!

Teach targeting by holding the spoon or jar parallel to the ground at nose level to your dog. Your dog will naturally want to explore the spoon by sniffing it. As your dog targets the object, click and treat. In the case of the spoon, again, **do NOT let your dog touch the side with the oil on it!** Repeat. Most clicker savvy dogs will pick it up very quickly. If you present it and the dog does not move toward the object, put it behind your back, re-present, and slowly move back from you dog, drawing it in. Reinforce the touch with a click and treat. You can even reset, tossing the cookie away, so the dog repeats the behavior with increased drive.



There is no need to put this behavior on cue. You can certainly add a sit or down, after the nose touch, and before the click/treat, but it is not necessary. You can extend the length of time for the touch or require multiple nose touches before marking the behavior. Once the dog is offering the trained behavior, you can add a “Show Me” cue, to get your dog to re-engage or pinpoint source.

Here are some other exercises to develop your dog’s ability to search.

- Place the handle of the spoon in the ground, and have your dog indicate the scent at its source, gradually varying the distance from the point you release. Then ask the dog to search. Increase the difficulty of the exercise by placing multiple unscented dummy sticks and ask the dog to discriminate which stick is hot. Once you achieve success with this exercise, remove the hot stick from the field and place a random scented object out so the dog relates to the significance of the odor, not just a scented stick.
- Do the same exercise with jars.
- For toy motivated dogs, tie a knot at the end of a small rope. Then feed the un-knotted end into a Kong toy from the small end. Tie a second knot in the end of the rope hanging out of the big end. Scent the second knot before using the first knot to pull at the Kong’s small end to pull the scented knot inside the big end of the Kong. Throw it into tall grass, or if you are in an open field spin your dog once, before releasing them to hunt for the Kong and scented rope.

Remember, progression should not be made as a stairstep, but on a variable schedule. Continuing to require the dog to do something harder with each repetition will push the dog to failure.

BUILDING CONFIDENCE IN THE ENVIRONMENT: Not all dogs respond to environmental obstacles with the same level of confidence. We can build confidence by using training puzzles. Puzzles are usually done indoors where the leash can be removed, and the dog can move unencumbered. A puzzle is an obstacle or series of obstacles that require the dog to climb, over, go around, run through, crawl under, and/or knock down, to get to food, first, and then (as the dog becomes more comfortable) target odor.

Puzzles should be simple enough for success and easy to change if you need to alter difficulty in the middle of the exercise. At the same time, they must be hard enough to create “good” stress (see Glossary of Terms, below). Items used for creating puzzles could be small cones that the dog must knock over to get to source, stackable platforms that the dog has to climb on, or that can have a foldable tabletop (legs retracted) set across so a dog has to crawl under to get to source. How about piles of newspaper that are spread out over scent source or food, so a dog must dig through them?

Puzzles can be done before imprinting has even been completed. Use a box with food in the bottom and a drop under a couple of folded flaps inside the box. (This prevents your dog from actually touching the oil. Scented stickers can be used, also.) If your dog has a trained indication when working, require an indication as your criteria to reinforce. Sitting or even focusing on source can be a challenge on a wobbly surface, when the source is out of reach, etc. Guess what...the outdoor geocaching arena is full of environmental challenges. The more you prepare, the more comfortable your dog will be.



Something to consider; all dogs are not created equal. The cool part about GeoScenting, is you can control the difficulty of the terrain you choose to challenge and the size of your search area. Who is the search for, anyway? Your joy will come in watching your dog be the best that he can be.

PREPARING THE CACHE: Since the sport is new most caches are unscented, but by completing this badge with your dog you are helping to increase the number of scented caches. Clove oil is used for scenting since it does not attract insects as anise and birch do. **IT DOES NOT TAKE MUCH OIL TO SCENT A CACHE! TWO TO THREE DROPS IS ENOUGH. IT WILL LAST A LONG TIME.**

One of the original scented caches still maintained detectable odor for well over a year after it was scented.

New caches that you or your fellow Dog Scouts place should be scented using a wooden “GeoScent” tag made from a small piece of a tongue depressor. The oil is placed on the tag, and the tag is then placed in a small tin or plastic container that is affixed to the cache. Scented stickers are also an option. They can be ordered at Print-A-Scent, Inc. 6804 Harrison Park Dr. Suite 106 Harrison, TN 37341. PH: 423-698-1770. The email address is missy@print-a-scent.com.

If you don't have a scented cache available, set something up for your dog first, and then run your dog. The experience will be brand new for your dog. Let your fellow Scout GeoScenting handlers know that you have scented a new cache location. Be sure to use the naming convention for scented caches (GSC: <name of cache>) so that others can easily run a search to find them.

PROPAGATION OF SCENT: The word, “propagation”, is a very purposeful description of what odor does. Odor spreads, moves, grows, saturates, migrates. The environment, from geological formation, to temperature, to wind, to barometric pressure, ALL, play a role in scent propagation. The properties of the scent source itself plays a role in its own propagation process. A very good reference for understanding the propagation of odor is, Scent and the Scenting Dog, by William Syrotuck. This book is often used as a primer for SAR handlers, across the country. Since we have the GPS coordinates for the cache, we already know there is a source, and we know its general location. This is not a blind search, by any means. We can plot a search plan if we know what scent is likely to do.

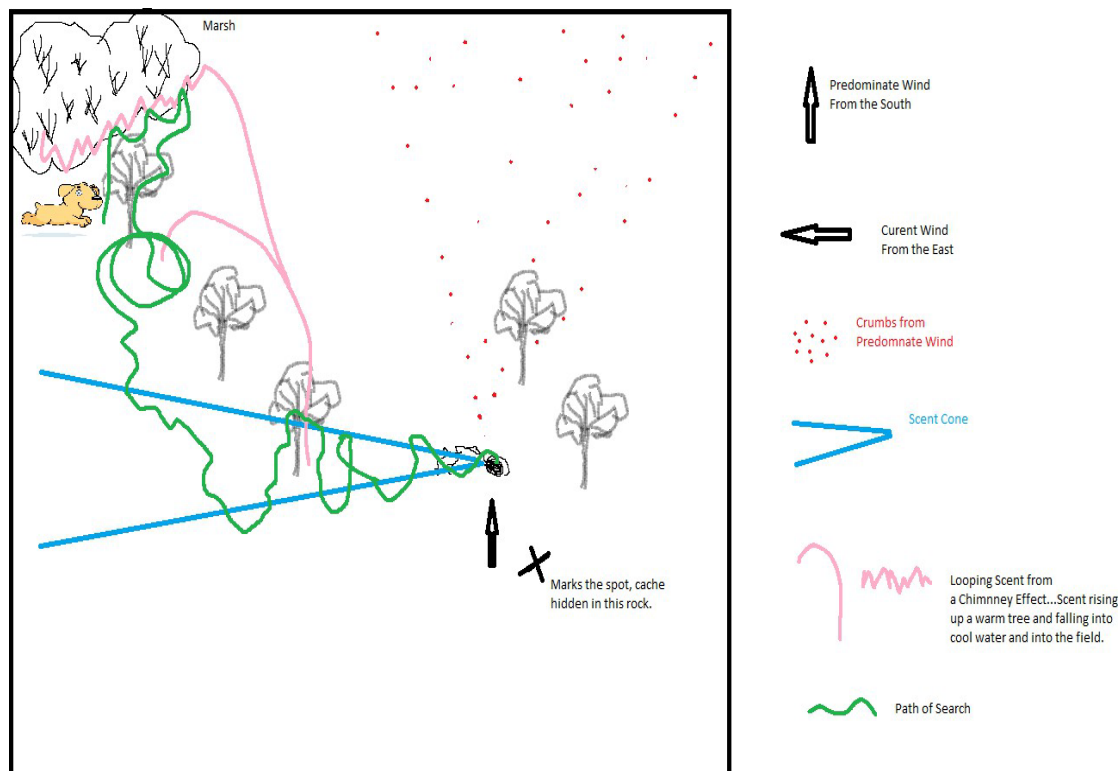
The first consideration in any area we search is the predominant wind direction. What is the direction that the wind blows from most of the year? In north Texas, for example, the wind primarily blows from the south/southwest. This is important because sources that are out for a long time often leave breadcrumbs that will allow a dog to work to source moving with the wind, even on a day when the current wind comes from a different direction than the predominant wind. This can certainly be of benefit when weighing wind direction vs terrain challenges for determining how to approach a cache. Current wind direction will often be your best bet, but if 10-inch-tall Corgi, has trouble approaching source in 20-inch-tall grass working into the wind, then considerations must be analyzed. Your Mastiff, however, may find that grass height is never an issue.

Temperature affects odor by causing it to rise or drop, but when temperature interacts with geological formations, it can literally make those formations become odor “super highways”, making odor move



faster or slower, or even change directions.

Think of this scenario: the scented cache is in the middle of a one-acre field in north Texas. The predominant wind comes from the south, but this is a cloudy spring day, bringing winds from the east. Cloudy skies make for more stable air. The sunnier it is, the more the air moves because heat from the sun energizes molecules in the air, creating turbulence. Easterly winds in north Texas, often means rain is coming. The air is heavy with moisture. The geocache coordinates show our search area is a mowed field, populated with a few clumps of Mesquite trees, and a couple of big Oak trees. There is a low-lying marshy area in the NW corner of the search area. The terrain is very manageable for our 4-year-old yellow lab. The cache was scented about 9 months prior to the search, so it has been out for multiple seasons.



When the wind pushes the scent against a warm tree, the scent rises as if it were smoke rising from a chimney (the “chimney effect”). Water is cooler and that moisture cools the soil around it, creating a scent trap and holding scent close to the earth. Where scent falls to the earth, in the field’s damp grass, pooling occurs. As the wind carries that scent, it eddies about stretching out tendrils of odor. In this scenario, the dog gets hung up a little in the eddying scent, scent trap, and pool, but because of your great handling, she works her way perpendicular to the wind until she reaches the scent cone, then zig-zags her way in to the find. You’ve both done a great job on the search, and you happily log the find at geocaching.com.



GLOSSARY OF TERMS:

Alert – A natural behavior that your dog exhibits that lets you know that it has caught scent, often called, “Interest”. An alert may be a trained indication and/or another behavior that is a behavioral “clue” that the dog is in odor.

Aggressive Indication – “Trained” bark or scratch to indicate the location of the scent source. Note, scratching is not a good indication for GeoScenting since it could damage the cache or the environment.

Back-chaining – The process of chaining in reverse order, teaching the last behavior first.

Behavioral Momentum – This is the increased productive pace of behavior development through effective continuity in training. It is much easier to keep a behavior going when it is already progressing.

Classical Conditioning – “The process of associating a neutral stimulus with an involuntary response until the stimulus elicits the response.”¹

Chaining – “The process of combining multiple behaviors into a continuous sequence linked together by cues and maintained by reinforcement at the end of the chain. Each cue serves as the marker and the reinforcement for the previous behavior, and the cue for the next behavior.”²

Chimney Effect – Scent travels along the ground coming in contact with a warm tree or rock, then rises, spurred on by the warm surface, only to loop and fall later as it cools.

Crumbs – Small particles of scent, still in place from predominant winds, even after current wind has changed direction. The longer a scent source is in place, the more likely it is for crumbs to be present.

Current Wind – What wind is doing in real time.

Drive – “Drive” is the physiological response to instinct. That’s why one dog will chase a ball, and another will look at you wondering why in the world you threw it. Understanding drive gives us the ability to use reinforcement properly and to understand when a dog is properly motivated.

Distress – Any mental, physical or emotional pressure the dog experiences that demotivates the dog to continue working. Distress diminishes drive!

Eddying – Tendrils of odor that snake along the ground, sometimes as part of the scent cone, sometimes away from pools, at the mercy of air movement.

Eustress – Also called “Good Stress”. It’s the stress that encourages work and is motivating. It comes with building confidence that a problem can be solved. Eustress can quickly become distress if the handler is not focused on what the dog is experiencing.

Imprinting – For our purposes, it is the rapid learning process that establishes the relationship of scent with reinforcement through classical and operant conditioning.

Leeching – When scent soaks into its surroundings. This can be carried by saturated tree roots or damp soil. It can also happen when you spill your oil on the seat of your car, so be careful!

Looping – Rising scent, usually being carried by warmer air, eventually cooling and falling back to earth,



sometimes creating large gaps between pools and a source. Looping can occur from a chimney effect or rising temps can make it happen in volatile air.

Nose Time – Period of which the dogs’ ability to detect scent is effective. Over-saturation, stress, and conditioning can affect this.

Operant Conditioning – “The process of changing an animal’s response to a certain stimulus by manipulating the consequences that immediately follow the response. The five principles of operant conditioning were developed by B.F. Skinner. Clicker training is a subset of operant conditioning, using only positive reinforcement, extinction, and, to a lesser extent, negative punishment.”³

Passive Indication – Trained sit, down, or nose poke, or focus to indicate scent source.

Passive/Aggressive Indication – Trained sit, down, or nose poke along with a trained bark or scratch to indicate scent source.

Predominant Wind – The wind direction at source location for most of the year.

Scent Cone – As the wind blows by source, particles of odor are pushed away. The further these particles go, they tend to spread. Stronger winds will keep the cone width smaller. Gentler winds will allow scent particle patterns to widen, as it moves farther from source.

Scent Pool – When scent is concentrated in an area away from source. A scent trap can be an example. Even dry tall grass will often hold onto scent, creating a pool.

Scent Source – The breathable vessel which contains an absorbent material to hold scent.

Scent Stick – Wooden spoon, stir stick, or dowel, impregnated with scent used for target imprinting.

Scent Trap – When environmental factors cause scent to stick to an area, such as water, mud, or damp grass.

Targeting – Teaching a dog to touch a stationary object with a part of its body.

HELPFUL LINKS:

[Scent Discrimination Badge](#), [Geocaching 1 Badge](#), [Getting started in scent detection](#), [“Leave No Trace” Principles](#), [Building, finding and recording a geocache](#)

Dave Kroyer’s, “Training Through Pictures – Nosework 1 & 2”

<https://www.youtube.com/watch?v=d5fBeXCBINA>
https://www.youtube.com/watch?v=_DBAR_Dnnzs

[Map and Compass Navigating](#)

[Hiking and Backpacking Safety](#)

¹ This Classical Conditioning definition was taken from Karen Pryor’s, www.clickertraining.com.

² This Chaining definition was taken from Karen Pryor’s, www.clickertraining.com.

³ This Operant Conditioning definition was taken from Karen Pryor’s, www.clickertraining.com.