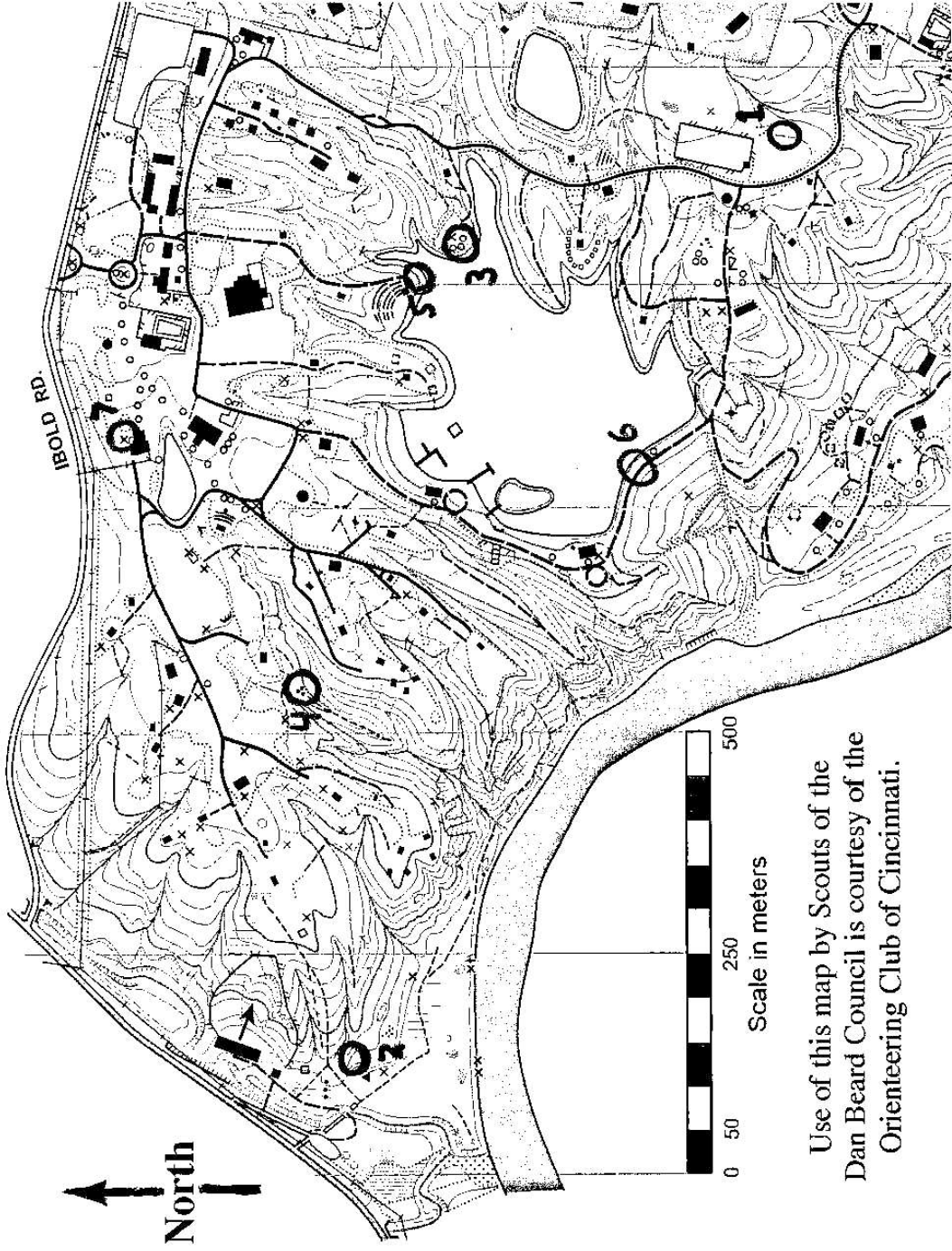


Camp Friedlander Geocaches

Scout Instructions

- 1) Read the Geocaching FAQ document attached to learn about the sport of Geocaching. Read this whole sheet before starting – it will save you time by helping you to avoid common beginner errors. Visit www.geocaching.com also.
- 2) Read the instruction manual for your GPS unit. Focus on how to set your device to the proper datum (**WGS84**), use latitude / longitude in degrees and **decimal minutes** (hdd° mm.mmm; NOT seconds) or **UTM** (Universal Transverse Mercator, a meter-based system – see www.maptools.com), how to “enter waypoints” (Garmin) / “mark points of interest (POI)” (Magellan), and how to set the GPS to “go to” a waypoint/POI.
- 3) Make sure that your GPS unit has fresh batteries. Rayovac 15 minute rechargeable NiMH batteries work very well in GPS units, but alkalines will do fine.
- 4) Set (or check) your GPS unit’s datum and latitude / longitude preferences. This is **CRITICAL** since all data entered into your GPS unit depends on these settings.
- 5) Gather your Ten Scout Outdoor Essentials as you would for any hike. To follow the rules of Geocaching, bring something to leave in the cache that a fellow scout can use. Put this instruction sheet and map in a 1 gallon zip-top bag for protection. Bring along a pencil to sign logbooks, some extra batteries, and the instruction manual for your GPS unit. Make sure that you have a compass with you in case that the GPS unit malfunctions - remember the Scout Motto.
- 6) Turn on your GPS unit outdoors and give it time to lock onto the satellites. Set a waypoint / POI at your current location as a point to navigate back to. Set a second waypoint / POI at your current location and edit it to match the coordinates of your first desired cache site (see end of document). Next, set the unit to go to this waypoint / POI.
- 7) You can use the “Compass” screen or the “Map” screen to find the cache. If you use the Compass screen, be aware that it is only accurate when you are moving. GPS units don’t generally function as a compass while standing still. If you use the Map screen, make sure to zoom in close to take advantage of the “go to” line to follow. Common problems with the Map view can be fixed by setting the unit preferences to “track up” (not “north up”), turning “lock on road” off, and zooming in.
- 8) Note the type of cache that you are looking for. Friedlander’s, traditional caches are green ammo boxes, microcaches are plastic film cans, and virtual caches have no logbook placed – they are just a place to find and either answer a question or do a task.
- 9) Use common sense and the map to plan a route to the cache that uses roads and trails as much as possible. This minimizes your impact on the camp by not “crashing” thru the woods on a direct bearing. Smart geocachers plan a safe, easy trail route to get as close to a cache as possible before heading into the woods.
- 10) Be aware that GPS units can become sluggish and unreliable under heavy tree cover where they may lose the satellite signal lock. You sometimes have to get to clear sky, and use the direction indicated from there to find the cache. The unit will only get you within about 20 feet of the cache under ideal conditions.

Camp Friedlander Geocaches



Use of this map by Scouts of the Dan Beard Council is courtesy of the Orienteering Club of Cincinnati.

Geocache locations are marked by circles.
The cache number corresponds with the Scout Instruction sheet coordinates.

Frequently Asked Questions About Geocaching

(Edited from Geocaching.com)

What is Geocaching?

Geocaching is an entertaining adventure game for GPS users. Participating in a cache hunt is a good way to take advantage of the wonderful features and capability of a GPS unit. The basic idea is to have individuals and organizations set up caches all over the world and share the locations of these caches on the internet. GPS users can then use the location coordinates to find the caches. Once found, a cache may provide the visitor with a wide variety of rewards. All the visitor is asked to do is if they get something they should try to leave something for the cache.

How do you pronounce Geocaching?

You pronounce it Geo-cashing, like cashing a check. The word "Geocaching" broken out is GEO for geography, and CACHING for the process of hiding a cache. The term "cache" is also used in hiking/camping as a hiding place for concealing and preserving provisions.

So what's the big deal? You gave me the coordinates so I know where it is. This seems pretty easy.

It is deceptively easy. It's one thing to know where a cache is - it's a totally different story to actually get there on the ground and find the cache.

What is a GPS device?

A GPS unit is an electronic device that can determine your approximate location (within around 20 to 30 feet) anywhere on the planet. Coordinates are normally given in Longitude and Latitude. You can use the unit to navigate from your current location to another location. Some units have their own maps, built-in electronic compasses, or voice navigation, depending on the complexity of the device. You don't need to know all the technical mumbo jumbo about GPS units to do Geocaching. All you need to do is be able to enter what is called a "waypoint" where the geocache is hidden.

How do GPS devices work?

The Global Positioning System (GPS) is a satellite-based navigation system made up of a network of 24 satellites placed into orbit by the U.S. Department of Defense. GPS was originally intended for military applications, but in the 1980s, the government made the system available for civilian use. GPS works in any weather conditions, anywhere in the world, 24 hours a day. There are no subscription fees or setup charges to use GPS since you already paid for the system with your tax dollars.

GPS satellites circle the earth twice a day in a very precise orbit and transmit atomic clock signal information to earth. GPS receivers take this information and use simple triangulation to calculate the user's exact location. Essentially, the GPS receiver compares the time a signal was transmitted by a satellite with the time it was received. The time difference tells the GPS receiver how far away the satellite is. With distance measurements from multiple satellites, the receiver can determine the user's position and display it on the unit's electronic map.

A GPS receiver must be locked on to the signal of at least three satellites to calculate a 2D position (latitude and longitude) and track movement. With four or more satellites in view, the receiver can determine the user's 3D position (latitude, longitude and altitude). Once the user's position has been determined, the GPS unit can calculate other information, such as speed, bearing, track, trip distance, distance to destination, sunrise and sunset time, and more.

How accurate is GPS?

Today's GPS receivers are extremely accurate, thanks to their parallel multi-channel design. Twelve parallel channel receivers are quick to lock onto satellites when first turned on and they maintain strong locks, even in dense foliage or urban settings with tall buildings. Certain atmospheric factors and other sources of error can affect the accuracy of GPS receivers. Most GPS receivers are accurate to within 15 meters on average. Newer GPS receivers with WAAS (Wide Area Augmentation System) capability can improve accuracy to less than three meters on average. No additional equipment or fees are required to take advantage of WAAS.

Tell me about the GPS satellite system.

The 24 satellites that make up the GPS space segment are circling the earth in a very high orbit about 12,000 miles above us. They are constantly moving, making two complete orbits in less than 24 hours. These satellites are traveling at speeds of roughly 7,000 miles an hour. GPS satellites are powered by solar energy. They have backup batteries onboard to keep them running in the event of a solar eclipse, when there's no solar power. Small rocket boosters on each satellite keep them flying on the correct path.

Here are some other interesting facts about the GPS satellites (also called NAVSTAR, the official U.S. Department of Defense name for GPS):

- * The first GPS satellite was launched in 1978.
- * A full constellation of 24 satellites was achieved in 1994.
- * Each satellite is built to last about 10 years.
- * Replacements are constantly being built and launched into orbit.
- * A GPS satellite weighs approximately 2,000 pounds and is about 17 feet across with the solar panels extended.
- * Transmitter power is only 50 watts or less.

What's in the signal from the GPS satellites?

GPS satellites transmit two low power radio signals, designated L1 and L2. Civilian GPS uses the L1 frequency of 1575.42 MHz in the UHF band. The L2 signal is an encrypted band used by the military. The signals travel by line of sight, meaning they will pass through clouds, glass and plastic but will not go through most solid objects such as buildings and mountains.

A GPS signal contains three different bits of information — a pseudorandom code, ephemeris data and almanac data. The pseudorandom code is simply an I.D. code that identifies which satellite is transmitting information. You can view this number on your GPS unit's satellite page, as it identifies which satellites it's receiving. Ephemeris data tells the GPS receiver where each GPS satellite should be at any time throughout the day. Each satellite transmits ephemeris data showing the orbital information for that satellite and for every other satellite in the system. Almanac data, which is constantly transmitted by each satellite, contains important information about the status of

the satellite (healthy or unhealthy), and the current date and time. This part of the signal is essential for determining your position.

So if I have a GPS unit, someone can track where I am?

No! GPS devices do not broadcast your location (but your cell phone might).

How much does a GPS unit cost, and where can I get one?

GPS Units can range from \$100 to \$1000 depending on the kind of capabilities you are looking for. The author uses a Garmin eTrex , which runs for around \$100, and can get you to within 20 to 30 feet of any geocache (depending on the location). For more money, units will come with a built-in electronic compass, topographic maps, more memory, etc. You can usually find GPS units at any boating or camping supply store. You can also purchase them online. Good basic GPS units are the Garmin eTrex, or Magellan GPS 315.

How do I use a GPS unit for Geocaching?

If you need to get a basic instruction on how to use a GPS unit, try the book GPS Made Easy: Using Global Positioning Systems in the Outdoors. To geocache, you'll need to know how to enter waypoints into your GPS unit. Your GPS should come with instructions on how to enter a waypoint, and how to set the unit to go to a waypoint.

What are the rules in Geocaching?

The rules of Geocaching are very simple:

1. Take something from the cache once you find it
2. Leave something in the cache
3. Write about it in the logbook, (and possibly tell about it on the Geocaching.com website).

Where you place a cache is up to you, but basic guidelines are on Geocaching.com.

What is usually in a cache?

A cache can come in many forms but the first item should always be a logbook. In its simplest form, a cache can be just a logbook and nothing else. The logbook contains information from the founder of the cache and notes from the cache's visitors. A logbook might contain info about nearby attractions, coordinates to other unpublished caches, and even jokes written by visitors.

Traditional caches may consist of a waterproof plastic bucket or ammo box placed tastefully within the local terrain. The cache will contain the logbook and any number of more or less valuable items. These items turn the cache into a true treasure hunt. Remember, if you take something, it's only fair for you to leave something in return. Items in a cache could be: maps, books, software, hardware, CD's, videos, pictures, money, jewelry, tickets, antiques, tools, games, etc. Items in a cache should be individually packaged in a clear zip top plastic bag to protect them.

A *microcache* is much smaller – often only a film can or pill bottle just containing a log.

A *virtual cache* is just coordinates – go there to discover something that the owner wants to show you, to answer a question, or to do a small task like take a picture of the site.

What shouldn't be in a cache?

Use your common sense in most cases. Explosives, ammo, knives, drugs, and alcohol shouldn't be placed in a cache. Respect the local laws. All ages of people hide and seek caches, so use some thought before placing an item into a cache. Food items are ALWAYS a BAD IDEA. Animals have better noses than humans, and in some cases caches have been chewed through and destroyed because of food items in a cache. Please do not put food in a cache.

Where are caches found?

The location of a cache can be very entertaining indeed. As many say, location, location, location! The location of a cache demonstrates the founder's skill and possibly even daring. A cache located on the side of a rocky cliff accessible only by rock climbing equipment may be hard to find. An underwater cache may only be accessed by scuba. Other caches may require long difficult hiking, orienteering, and special equipment to get to. Caches may be located in cities both above and below ground, inside and outside buildings. The skillful placement of a small logbook in an urban environment may be quite challenging to find even with the accuracy of a GPS. That little logbook may have a hundred dollar bill in it or a map to greater treasure. It could even contain clues or riddles to solve that may lead to other caches.

Can I move a cache once I find it?

Unless there's a note in the cache containing instructions on moving it to a new location, don't move the cache! Responsible cache owners check on their caches occasionally and would be alarmed to find theirs missing.

An alternative would be to have a hitchiker, which is an item that you can move from cache to cache. An example of this is a candle that has traveled from Australia to Arizona, and a Mr. Potato head that leaps from cache to cache. All you need to do to create a hitchiker is to attach a note to it for folks to move it to a new place.

You can also purchase a Groundspeak Travel Bug, which is a hitchiker you can track through the Geocaching.com website. (Please don't place hitchhikers or travel bugs in the Camp Friedlander caches since they are not public caches and are not listed on the Geocaching website.)

How long do caches exist?

It all depends on the location of the cache and its impact on the environment and the surrounding areas. Caches could be permanent, or temporary. It's up to the cache owner to periodically inspect the cache and the area to ensure that impact is minimal, if not nonexistent. When you find a cache, it's always a good idea to let the cache owner know the condition as well.

Does Geocaching.com (or a volunteer) physically check the cache before publishing it?

They wish! They'd love to head out to all those countries and states to check on each and every cache to ensure that they are placed properly. Based on the growth of the sport, however, this would be impossible. Before a cache is posted, volunteers check the page for inaccuracies, bad coordinates, and appropriateness before posting the cache to the website.

Camp Friedlander Geocaches

Leader Notes

- 1) Camp Friedlander is private property of the Dan Beard Council. You **MUST** submit a Camp Usage Permit (see the council website for this form) and have permission to enter the property to do this activity, unless you are already there for another approved activity such as summer camp.
- 2) Consider following the scout instructions yourself and go find the caches before helping your scouts to find them.
- 3) Geocaching is an advanced map and compass skill with the hook of a high tech treasure hunt. Your scouts **MUST** have good map and compass skills before attempting to find the caches. It is a good idea to insist that they have completed the First Class orienteering requirement before doing this exercise.
- 4) Make sure that the GPS unit is properly set to **WGS84 datum** and to use degree and **decimal minute** (hdd° mm.mmm; NOT seconds) latitude / longitude or **UTM**. Check this yourself by looking at the unit's preferences on-screen.
- 5) Consider using UTM coordinates, a meter based grid system that many consider to be easier to use and understand than the decimal minute system. Learn more about this system at www.maptools.com.
- 6) Remember to use two-deep leadership for this outing.
- 7) Do a Ten Scout Essentials check before heading into the woods to make sure that your scouts are properly prepared for the activity. Confirm that they have a map and compass with them.
- 8) Unless you are an expert at GPS, you will find the GPS unit's instruction manual invaluable during the hike. Make sure that it is brought along.
- 9) Teach your scouts about safety in the woods by using the buddy system, setting a waypoint / point of interest at the start point to navigate back to, and planning ahead for the GPS unit to fail in the woods. The scouts should have a plan to get back with only map and compass. Discussing in advance where to head ("safe bearing") if lost is a good exercise in safe hiking.
- 10) Teach **Leave No Trace**. Insist that trails be followed to as close to the cache as possible. It'll be a lot more fun if you avoid most of the poison ivy, picker bushes and honeysuckle by NOT bushwacking along a straight bearing from the start point.
- 11) Consider confiscating the GPS unit at the cache site to make sure that your scouts can navigate back to the start point with only map and compass.
- 12) This activity can be done year round. GPS units work better when there are no leaves on the trees to block the satellite signal.
- 13) It is unusual to have a nice trail map for most geocaches. The closest thing to the map provided here is to click the "Topozone map" link found on a geocaching.com cache page. This will lead you to a free interactive USGS topographical map with a red target at the cache site, but trails are often not shown.
- 14) If you find any problems with the caches (missing, wet, etc.) please notify Ron Reynolds at (513) 553-3114.

Camp Friedlander Geocache Answers

SPOILERS BELOW!!!

(Reading further may reduce your fun.)

- 1) Treed cache is up about 6 feet in a tree, leaning on two poles of a lean-to shelter. It is a green ammo box.
- 2) Watertank cache is just over the ridge to the south of the very bottom of the rifle range trail. It is a green ammo box hidden under the concrete support of an old watertank that supplied water to the original Camp Friedlander. Just down the hill from the tank you can still see a few boards from the wooden tank, and a number of the old steel rings that held the tank together.
- 3) WWW cache is a film can with a paper log inside, placed at the OA Ring. It is on the ground in the rocks behind the masonry wall. “WWW” refers to an Indian phrase that the Order of the Arrow uses in their name and ceremonies.
- 4) 12th Law cache is a film can with a paper log inside, placed at the old forest chapel. It is at waist level tucked under the masonry rock of one of the old lecterns. The twelfth law is “A Scout is Reverent” – this is the old chapel.
- 5) Clever name to get you to find the pine tree and memorial plaque for Marge Unnewher Schott. Marge gave the Dan Beard Council 1 million dollars to pay for the dam to make the lake that was later named after her. Unnewher is Marge’s maiden name.
- 6) Find the bench on the middle of the dam, note the “mark” on it – denoting it’s donor, and take a picture of the beautiful view. If you know benchmarks, you know that they were all placed many years ago by the USGS as reference points to survey from. There would not be a USGS benchmark on a 6 year old dam.
- 7) The flagpole behind the Handicraft Building is the oldest flagpole on the Dan Beard Scout Reservation. As the plaque on it says, it was placed by the Sons and Daughters of the American Revolution in 1933. Do the math to figure out the “pole age”.