

Geocaching Buddy

V8 Quick Start Guide



April, 2015

Introduction	3
Getting caches in the app	4
Adding waypoint formulas	5
Edit using a browser	6
More about formulas	8
All set, let's go caching!	10
Remembering your answers (clues)	11
Navigating to a waypoint	12
Taking photo's	13
Finally, the cache location	14
Log on geocaching.com	15
Safeguard the information	16

Introduction



Geocaching Buddy is a tool to assist you in finding a multi-cache. During your trip it **remembers** the answers you obtained at the various waypoints. From these numeric answers **new waypoints** can be **calculated** using formulas. These **formulas** can be entered at home or entered while caching depending on when they are given to you.

Once solved you can send an **e-mail** containing all found information to yourself but you can also keep a (write protected) record in the app yourself in case you like to keep things around. This way you can help others when they get stuck on the cache you have already solved!

GCBuddy has some convenience methods to **find nearby caches** and **import** specific caches from geocaching.com into the app so you can prepare such a multi-cache at home before you head out. This includes the caching of images on your device so you can always read it even without Internet available. But also make sure to read the description in advance to **prepare** any waypoint formula at home.

Keep in mind that this app is **NOT** a typical “import 1000’s of caches and filter/sort them” kind of app. Other apps handle this quite well (for instance GeoSphere and iGeocacher). You typically only store a list of **‘todo’** caches and if you prefer, also keep a list of the completed caches.

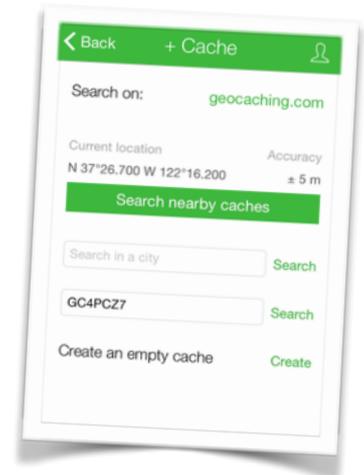
Now that’s said let’s dive into the **details** of this geocaching buddy app!

Getting caches in the app

Search and import

When you start the app for the first time, it contains no caches. In order to get some more caches in the main list use the + button to add a cache. This gives you four possible ways to add a cache to the main list:

- **Search** for nearby caches
- **Search** for caches around a loc /city / address
- Add a cache for which you **know** the code
- Add an **empty** cache you can edit yourself



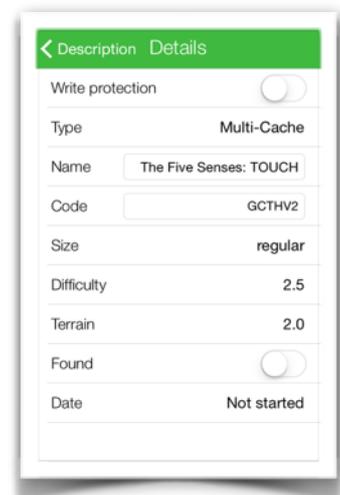
The first three methods are the most convenient. Depending on your membership level (Premium member or not) at geocaching.com you can:

- Filter the search (Basic members have a fixed filter on Traditionals)
- Download the full description of a cache (Basic members 3/24 hr)
- Include/exclude caches you already found.

opencaching.de and other opencaching sites do not set a limit to the number of caches you can download.

Modifying the cache properties

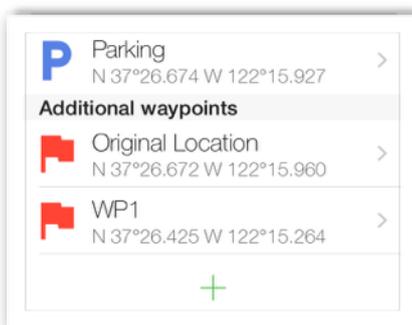
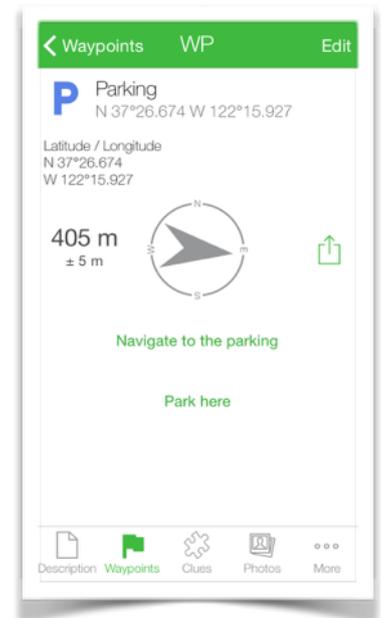
Once a cache is added to the main list you can change any property of it. Maybe you want to modify the name or maybe you've added a cache manually and want to specify the name, code, type, size, difficulty and terrain. Just select the cache and select the top part of the description of that cache to edit any property.



Adding waypoint formulas

A special waypoint: The parking!

No matter how you travel (walk, bike, car), you first must get to the start of a multi-cache! For traditional and earth caches the cache location and parking are often the same as given for the cache itself but sometimes another parking location is given in the description. For multi-caches the given location is typically the start (the parking) instead of the cache itself. So the parking is handled as a special first waypoint which you can enter/edit on it's own special page. Once arrived you can also remember the exact parking location using the "Park here" button.

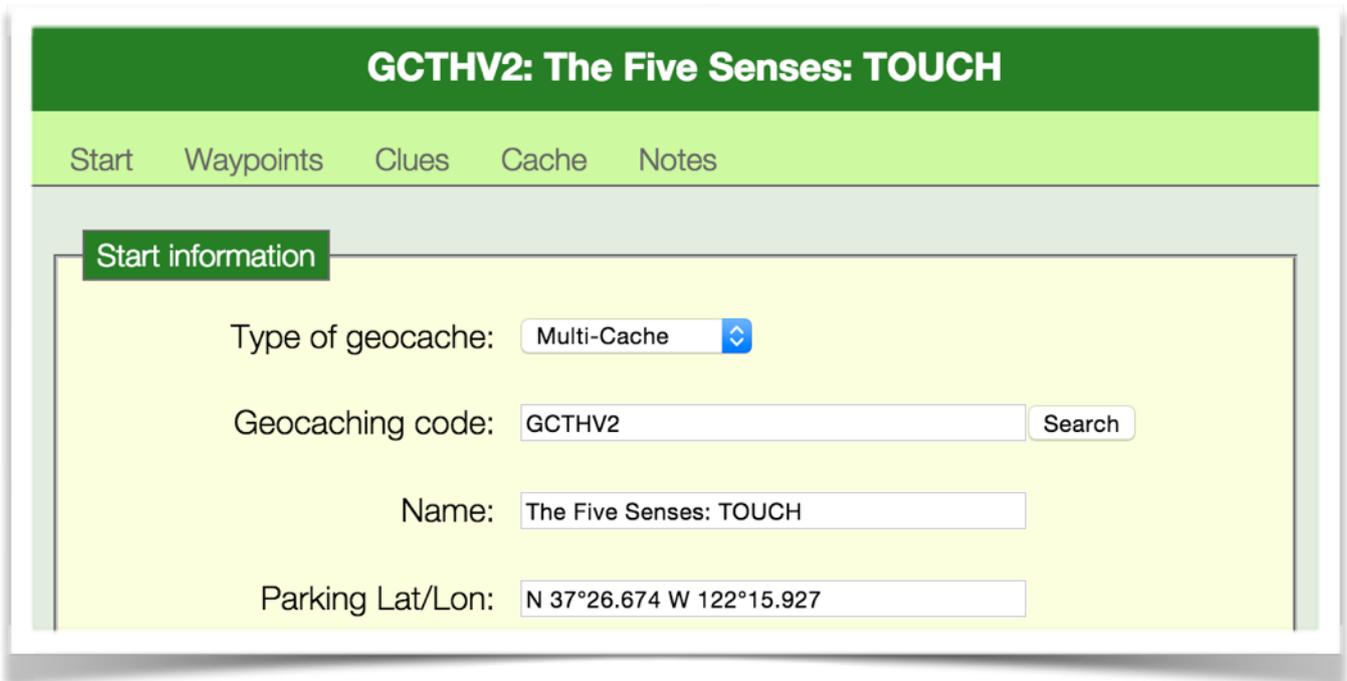


Adding other waypoints

Multi-caches can contain a lot of waypoints. Sometimes these waypoints are given in advance, sometimes you discover them during the multi-cache. When given in advance (known latitude and longitude) they are often also present in the cache import so no manual

entry is necessary. However, in most cases the new waypoints are not known unless some clues (A,B,C etc.) are known. In these cases the new waypoint's latitude and longitude are given as formulas involving these clue values. Most of the time these formulas are given in the description, sometimes the formulas have to be discovered out in the field. GCBuddy enables **inputting these formulas** both at home and out in the field.

Edit using a browser



The screenshot shows the GCBuddy web interface for editing a geocache. At the top, there is a green header with the text "GCTHV2: The Five Senses: TOUCH". Below the header is a navigation bar with tabs for "Start", "Waypoints", "Clues", "Cache", and "Notes". The "Start" tab is selected. The main content area is titled "Start information" and contains several input fields: "Type of geocache:" with a dropdown menu set to "Multi-Cache"; "Geocaching code:" with a text input field containing "GCTHV2" and a "Search" button; "Name:" with a text input field containing "The Five Senses: TOUCH"; and "Parking Lat/Lon:" with a text input field containing "N 37°26.674 W 122°15.927".

A dedicated **Web Server** built into GCBuddy can be enabled for the current cache, allowing editing that cache using a browser on a normal PC or Mac. Your iPhone/iPod/iPad must be connected to your local WiFi network at home so it can be seen by other computers on that network. **Editing a cache** this way is very convenient: you can copy/paste formulas between the cache description and the browser and also enter the puzzles to solve at each waypoint as additional waypoint information. Good preparation at home is a great way to assist you when solving that multi-cache in the field!

Note that there is no difference here between premium membership and basic membership on geocaching.com.

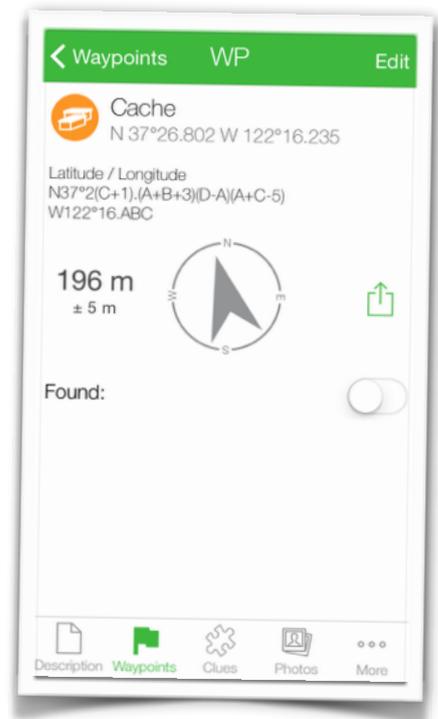
Currently no provisions exist to transfer the waypoint formulas in a standardised way to a geocaching app. So **human intelligence** when reading the cache description and manual entry into the waypoints is necessary for both types of memberships!

The cache location

The cache location is typically also given in the form of a formula for the latitude and longitude involving complex calculations on all clues you've discovered during the trip.

So the same techniques as the ones used for entering a new waypoint are available to enter the final cache location.

Also the same navigation possibilities are present. So the cache is basically just “the last waypoint” with the only exception you cannot change its name and type.



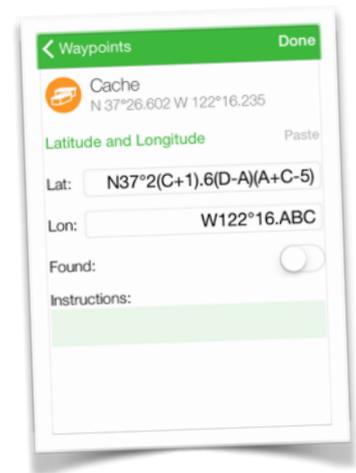
More about formulas

It just works!

The formula interpreter contains some non-standard behaviour so it “**understands**” what the cache creator meant.

Formulas for the latitude and longitude typically are written in the **WGS84** format:

N 51° 23.123' E 004°12.345'



but all digits and/or the part before and after the decimal dot in the minutes section can be replaced by simple or more complex formulas with the numeric outcome of A,B,C...Z as **variables**:

So it is allowed to enter formulas such as:

N 5A° BC.(C-D)(B/2)(1958-C*B*0.25) E (A*4)°(A+B+C).(A*B*C/3)

Normal operator precedence is used (^, +, *, /)

Keep in mind that if **one decimal dot** is present at the highest level (so not within brackets), the parts before that decimal dot and after that decimal dot are evaluated separately before the minutes are calculated.

Take for instance a latitude formula: **N 51°12.345 + A** with **A = 5**

The expression evaluator understands what a **human** geocacher expects: It adds 5 to 345 resulting in **N 51°12.350'**

A pure mathematical approach would have led to **N 51°17. 345** which would bring you to a completely wrong spot, far away from the correct one! If you instead indeed wanted to add A to the minutes, you should have written:

N 51°(12+A).345 or alternative **N 51°(12.345+A)** which would handle the part between brackets mathematically correct.



Projection and Offset

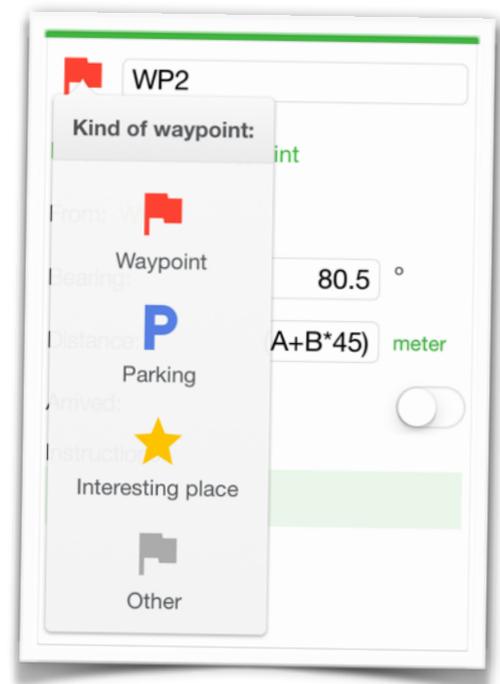
Two projection modes are supported:

1. By specifying a **distance** and a **bearing** from another waypoint.
2. By adding an **offset** to both the latitude and the longitude of another waypoint.

Waypoint types

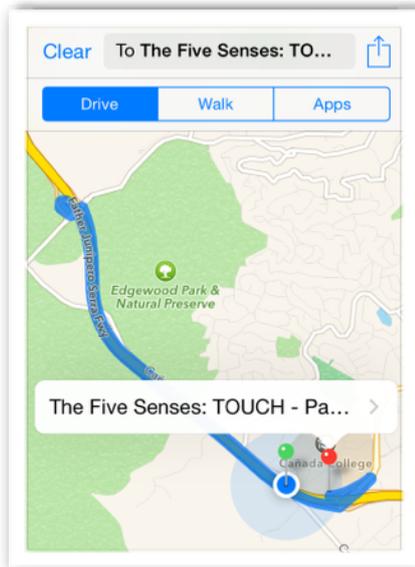
Most waypoints will simply be a **stage** of a multi-cache. But maybe you receive the location of a special **Point Of Interest**, an alternative **parking** location or a **via** point (additional waypoint for determining the route to walk).

When editing a waypoint you can change this waypoint type by clicking on its icon. Each waypoint type also has its own color on the waypoints overview map.



All set, let's go caching!

Navigation to the parking



Apple Maps

You can transfer the parking location to **Apple Maps** in once click.

Using the Route option you can subsequently navigate to the parking. Apple Maps also allows you to select another app for navigation.

Internal Navigation

The internal navigation is done using a rotating compass in the waypoint details screen.

This shows the distance together with an **arrow** pointing in the direction of the destination.

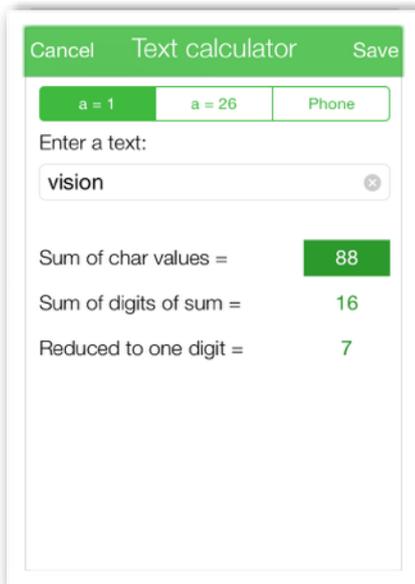
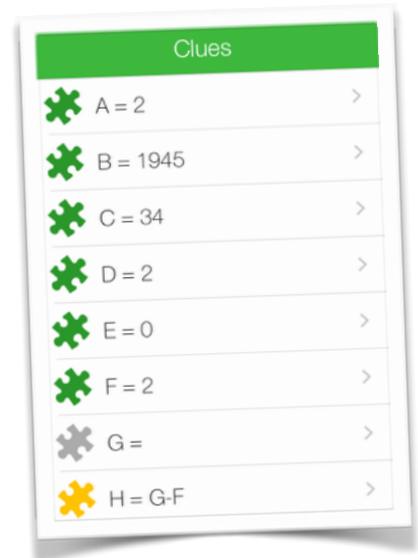


Remembering your answers (clues)

Solve the puzzle / answer a question

Multi-caches are characterised by the way each new waypoint is calculated from numbers found earlier during that trail. These numbers are stored in variables named A, B, C ... Z

So GCBuddy contains a list of these clues named A ... Z with the possibility to input a number, calculate a formula or enter the result of one of the built in conversion tools for each entry.



Text conversion

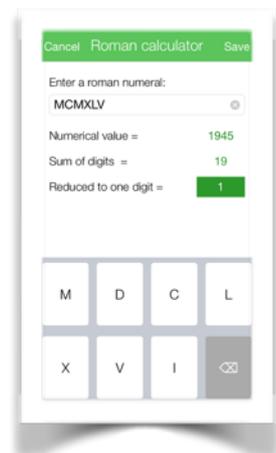
Some questions result in a word instead of a number. The text conversion tool supports that: enter the text and the tool will calculate the outcome of the sum of all character values. Options are:

- a=1, b=2, ... z=26 etc.
- a=26, b=25, ... z=1
- abc=2, def = 3, ... wxyz = 9 (phonepad)
- Sum of digits and sum of digits until 1 digit remains are all supported.

Roman numerals

Often a roman number on a building has to be converted to the decimal system.

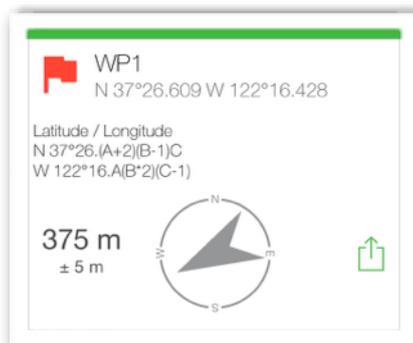
The Roman number calculator does just that so the result can be saved in one of the clue entries.



Navigating to a waypoint

Automatic formula evaluation

Formulas for the latitude, longitude, distance, bearing or offset are evaluated the moment the clue values involved are known. So answering the questions reveal one or more new waypoints.



Use the compass

For navigation between waypoints the built-in navigation screen works best. It shows the distance and bearing to the destination. A simple compass face with an arrow pointing you in the right direction will guide you to the next waypoint.

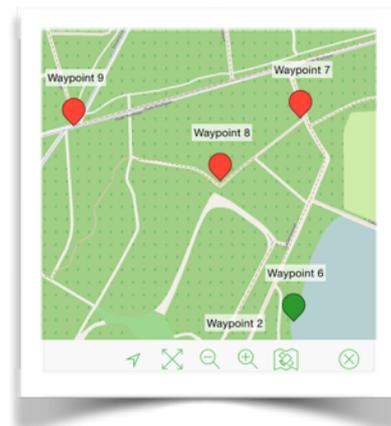
Use an external map

In some circumstances (e.g. in a town or when a lot of small rivers are present) it is better to see the next waypoint on a map. This can be the standard Apple map app or one of the alternative maps (e.g. Google maps, Maps.me,...). You can set your preferred external map in the app settings. When internet access is restricted one of the offline Map apps can be convenient. Don't forget to preload them with the necessary map information when you still had internet access!



Internal waypoint overview map

GCBuddy also contains a map view in order to show all waypoints on an internal openstreetmap powered map. Click the map icon in the waypoints screen. Coloured icons show the visited and still unvisited waypoints.



Taking photo's

Document the waypoint info

In some cases you absolutely want to be sure you caught all information from a waypoint. A built in camera can be used to store high resolution photo's from the things found on a specific waypoint.

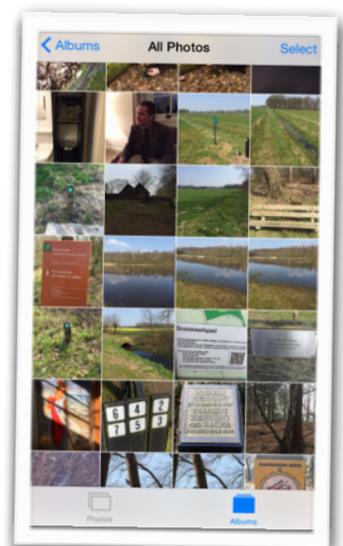


Looking back

Each photo taken from GCBuddy is added to a list of photo's you can investigate later. **Ultra-deep zooming** and panning is supported so you can read that small detail you missed earlier! The overview window shows all pictures taken sorted by each waypoint and other pictures taken along the way.

A copy in the camera roll

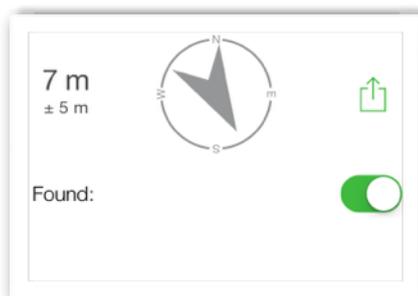
When walking towards a waypoint some snapshots may be taken of beautiful places or other interesting things. **All** pictures taken from within the app are also copied to the camera roll so they can easily be retrieved from your phone. These copies are still available after removal of the geocache entry from the list.



Finally, the cache location

The final waypoint

The cache location is 'just another waypoint' although typically the last one you will visit. So all features available for finding a waypoint are also present for the cache location itself.



Mark the cache found

Each time you arrive at a waypoint with the waypoint details screen active, that waypoint will be marked as visited (you can manually control that also).

For the cache this is somewhat different, you first have to find the hidden cache so here you specify whether you have found it or not manually. The status and date is shown in the main cache list.

Write some notes

The Notes section can be used at any time to write something about the cache. It is an extra memo field to jot down anything you might want to remember for this cache.

You can also use it to remember the text you might want to add to the log once you have completed this cache.



Log on geocaching.com

Add a new log

This screen allows you to specify the log type (Found it, Didn't find it etc.) and log date/time.

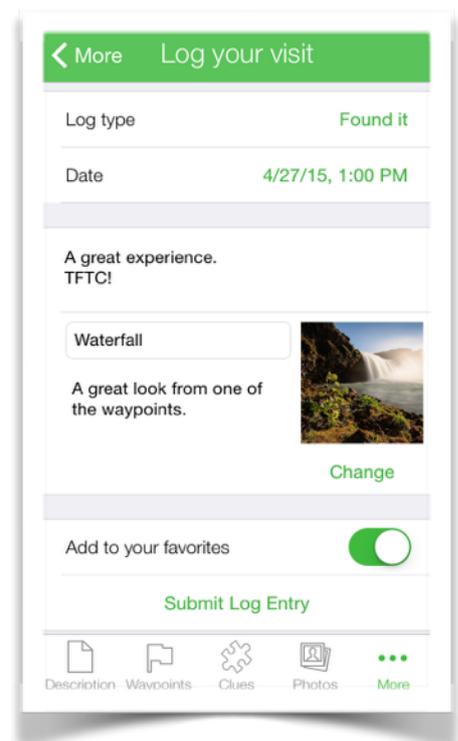
If you want to send a photo with the log, you can select one from the photo library on your device or choose to take a new picture. Title and description can be entered as well.

The switch labeled Add to your favorites gives you the opportunity to show your appreciation for this cache.

Submitting the log

The "Submit Log Entry" button will store the log on the device and once an internet connection is available this log will be transferred to geocaching.com.

The app's badge reminds you when there are one or more logs pending for upload to geocaching.com. Uploading will be done at a later moment when internet is available again.



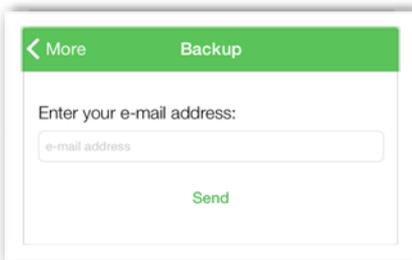
Safeguard the information

Autosave

Every minute an autosave is performed to minimize the chance of data loss, even in the case of an (unlikely) crash of the app or the iPhone. Also when closing the app all information is written to the phone's permanent storage.

Write protect

If you want to prevent any further changes to a cache, go into the cache properties screen and switch on the write protection switch. This will safeguard that cache against any further changes and deletion.



Mail yourself a backup

GCBuddy is meant to keep only the currently active caches around. Having more as a few hundred of caches makes the app slower and less convenient to use. But in order not to lose the information you've gathered you can e-mail a backup to a mail account. You can organise these mails using the standard tools available in your mail program. The mails contain user readable text with all clues, waypoints and cache location. Also some convenience links are present which allow you to quickly jump to the geocaching.com site for logging your cache.

Restoring a backup from an e-mail

A special link is present in the sent mail which allows you to restore all information in GCBuddy for that cache. View the mail in a mail program on your phone and click the restore link. GCBuddy will be started and all information (except the photo's) will be restored in GCBuddy. This e-mail information transfer is also a great way to transfer a prepared multi-cache to your partner's phone!

