

Navigation technology

As we become more reliant on technology in all walks of life, it's important that we understand the benefits and limitations of GPS devices and maintain 'traditional' navigation skills, using technology as a helpful complement to a map and compass.

Increasingly **technology** is used to assist us navigate when we are out walking. Technology can be helpful so long as you know how to use it and understand its limitations.

There are a wide range of **GPS devices** designed for walkers and a growing number of **smartphone apps** that provide detailed digital maps and route finders. GPS devices and smartphone apps can be helpful navigation tools when used in conjunction with a traditional map and compass.

Some things to bear in mind when using Smartphone apps:

- You should assume that you will not always have mobile reception while on your walk.
- How **weatherproof** and **shockproof** is your phone? You may need to purchase a water and/or shockproof **case**.
- How reliable is the **battery life** of your phone, especially in cold weather? Do you have a back-up power supply? How can you limit the use of your phone when walking to conserve battery life?
- Do you have a **back-up phone** to use in an emergency?
- When you are wearing **gloves** will the touchscreen still work? Some gloves are made with fabric designed to work with touchscreens.
- Will the touchscreen work if it is **wet**?
- How will you cope if you **lose phone signal**, the **app fails** or your **phone fails**?

Related factsheets

Use this factsheet alongside

- **Navigation skills introduction**
- **Navigation skills learning and development**

These are also available on the Assemble document hub.



Pos and cons

There are a wide range of **GPS devices** designed for walkers and a growing number of **smartphone apps** that provide detailed digital maps and route finders. GPS devices and smartphone apps can be helpful navigation tools when used in conjunction with a traditional map and compass.

There are some **key limitations** that all walkers should bear in mind, but despite their limitations, technology offers some **key benefits** for navigation and is a valuable back up to competent navigation skills.

It can:

- ✓ Provide a very useful tool in the **planning** stages
- ✓ Help to clarify **current position**
- ✓ Provide **data** on your pace, elevation and distance travelled
- ✓ Provide a tool to **track and record** your walk to use again later
- ✓ Offer a tool to **share your route** with other walkers
- ✓ Provide **up-to-date mapped features** that may have changed since a physical map was printed (e.g. changed woodland, new built features etc)
- ✓ Mobile phone apps offer very **high-resolution** map quality
- ✓ Some apps offer a desk-top version so you can plan your walk on your computer



You can watch a helpful summary of using technology to navigate [here](#):

Walkers are increasingly using smartphones with more detailed **map apps** (such as Ordnance Survey or ViewRanger). These apps offer similar functions to a GPS device, but **should not be relied on** as a substitute to traditional maps and compasses. This is because:

- ➖ Your **signal may fail** in particular conditions, the device may fail, or the batteries may run flat, particularly if you're unexpectedly delayed
- ➖ Constant use of these apps can **drain battery life**, leaving you unable to use your phone in an emergency
- ➖ The battery power on some phones can be compromised or lost altogether in **cold weather**
- ➖ Most smartphones are **not weather-proof** and **vulnerable to damage** if they are dropped



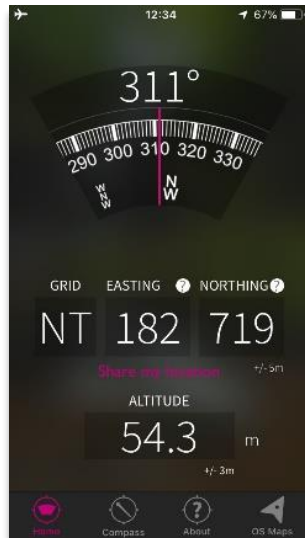
Always carry a map and compass, even if you use them primarily as a back-up.

OS Locate

www.ordnancesurvey.co.uk/shop/os-locate/

OS Locate is an **electronic compass** for your smartphone that also gives you an accurate longitude and latitude reading and your current elevation.

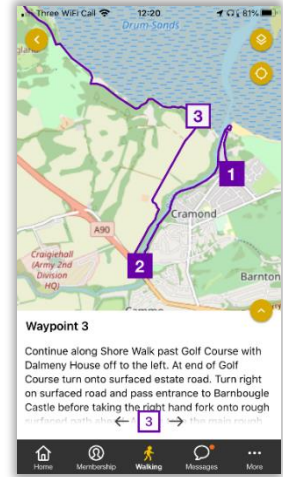
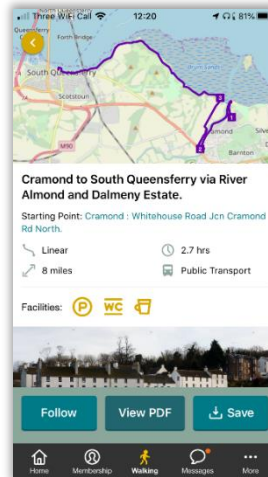
Apps such as OS Locate are designed to provide basic information that is a very useful addition to a map. It may help to confirm your current location or help you relocate when you are lost or if visibility becomes poor. OS locate relies on GPS satellite signals so is not reliant on your phone network signal.



We strongly recommend that all walk leaders have access to **OS locate** on their walks.

The Ramblers App

One of the many benefits of members of the Ramblers is our membership app. This app gives you access to thousands of led walks each year as well as a library of thousands more walks to enjoy at your leisure.



The library of routes features descriptions and waymarks to guide you along the route. Your smart phone can track your progress on the digital map against your chosen route. Photos and waymarks also help to keep you on track. You can save routes to your phone so that they work even if you are out of mobile phone range.



Never store your phone near a magnetic compass as your phone can damage the magnetic charge on your compass needle.

GPS devices

A **GPS (Global Positioning System)** device is a hand-held receiver that picks up signals from satellites circling the earth, enabling you to locate your current position to an accuracy of 10-20m. Most modern GPS devices can then show that position on a map and, if you have stored a pre-programmed route, help you navigate along it.

Many walkers find GPS devices a useful gadget, but they aren't a substitute for traditional maps and compasses in outdoor navigation. This is because:

- To use a GPS successfully you will already need to have a reasonable **understanding and experience** of map reading and navigation.
- **GPS can't always be relied upon**, especially in remote areas where accurate navigation is safety critical:
 - The signal may fail in particular conditions (tunnels, gorges for example)
 - the device may fail
 - the batteries may run flat, particularly if you're unexpectedly delayed

Some things to bear in mind when buying a GPS device:

- The more channels a receiver has the more chance the unit will find enough satellites to pinpoint your location accurately
- An external power socket is a useful feature, for example if you want to save power when using your GPS in a car connected to a mobile charger or cigarette lighter or use it with a solar powered charger
- Good battery life is essential – and make sure you pack some spares
- A good screen that displays quality colour will make the map more readable.



Large screens are easier to read but are likely to use more battery power.

- Will the buttons work if you're wearing gloves? Will they be pushed accidentally when you put the unit in your pocket?
- If you want to store lots of routes, then you will need plenty of memory space
- Will your GPS connect to your computer (most will by using USB connections), and will it integrate with any electronic maps and mapping packages you want to use? Will it accept routes from your favourite online sites?
- Is it also equipped with a magnetic compass? This is a useful feature to have as a failsafe if connection with the satellite fails