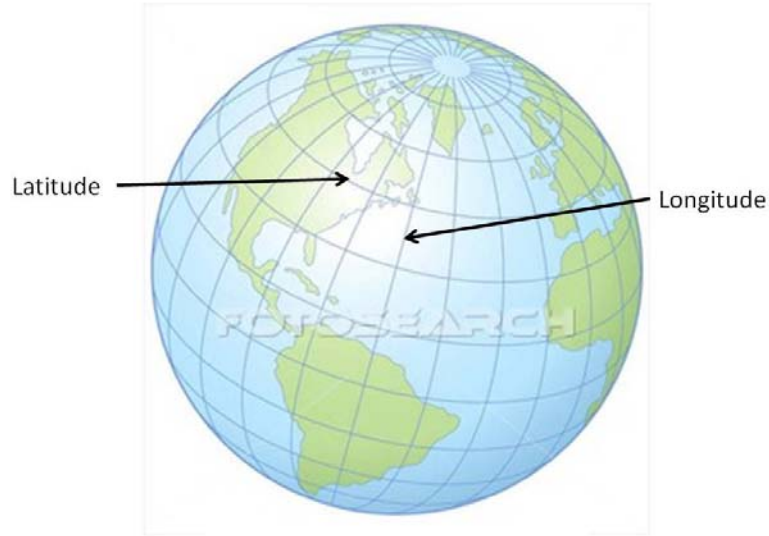


Having trouble with those reef coordinates?

When using GPS unit it's important to know which format your GPS is using. Please read the following carefully.

Latitude

When looking at a map, latitude lines run east-west. Latitude lines are also known as parallels since they are parallel and are an equal distant from each other. Each degree of latitude is approximately 69 miles apart. Degrees latitude are numbered from 0° to 90° north and south. Zero degrees is the equator, the imaginary line which divides our planet into the northern and southern hemispheres. 90° north is the North Pole and 90° south is the South Pole.



Longitude

When looking at a map, the north-south lines are longitude lines, also known as meridians. They converge at the poles and are widest at the equator (about 69 miles or 111 km apart). Zero degrees longitude is located at Greenwich, England (0°). The degrees continue 180° east and 180° west where they meet and form the International Date Line in the Pacific Ocean. Several formats use negative degrees (e.g. -90°) to represents lines of longitude west of Greenwich, England, while positive values represent east of Greenwich.

Using Latitude and Longitude

Degrees longitude and latitude have been divided into minutes (') and seconds ("). There are 60 minutes in each degree. Each minute is divided into 60 seconds. Seconds can be further divided into tenths, hundredths, or even thousandths.

For example, the U.S. Capitol is located at 38° 53' 23" N , -77° 00' 27" W (38 degrees, 53 minutes, and 23 seconds north of the equator and -77 degrees, no minutes and 27 seconds west of the meridian passing through Greenwich, England).

Either latitude or longitude can be expressed three ways. (See map for example)

Format in degrees, minutes, and decimal seconds: 30° 32' 15.275"

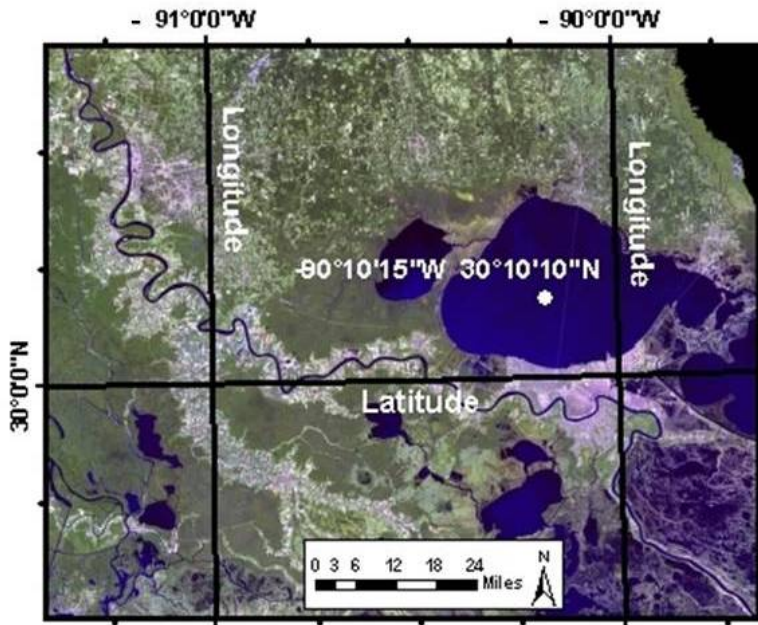
Same as:

Most common- Format in degrees and decimal minutes: 30° 32.25'

Same as:

Format in decimal degrees: 30.5375

Your GPS is probably set for one of these formats and so it is expecting coordinates to be input in that format. If you are inputting the incorrect format, the location will be incorrect. It likely your unit will allow you to select a new format. Most units have a default setting of "degrees and decimal minutes".



Example of one location with three different GPS formats:

Longitude Latitude
 -90° 10' 15" 30° 10' 10"

Is the same location as

-90° 10.25" 30° 10.166

Is the same location as

-90.17083° 30.16943°

Go here <<http://www.fcc.gov/mb/audio/bickel/DDDMSS-decimal.html>> to convert latitude and longitude between decimal degrees and degrees, minutes, and seconds.

Converting can also be done simply with a calculator. In the map example below

Longitude Latitude
 -90° 10' 15" 30° 10' 10"

Is the same location by 15" divided by 60" (15/60 = 0.25' and 10"/60" = 0.166') with these values added to the whole number minutes.

-90° 10.25" 30° 10.166

Geodetic Datum

A datum is a set of reference points on the earth's surface against which position measurements are made, and (often) an associated model of the shape of the earth to define a coordinate system. For the highest accuracy the datums should be defined in your GPS for the specific coordinates used.

Common datums used in GPS systems are

- * World Geodetic System 1984 (WGS 84) (default datum for your GPS System)
- * North American Datum 1927 (NAD 27)
- * North American Datum 1983 (NAD 83)