

Converting Coordinates

Latitude and longitude coordinates can be presented in a variety of formats. Converting from one format to another mostly involves dividing or multiplying by 60, which is the number of minutes in a degree, and seconds in a minute. GPS units and most software programs can be set to display the following position formats:

DMS degrees:minutes:seconds
DM (DM.m) degrees:minutes
DD (D.d) decimal degrees

Where D=Degrees
 M=Minutes
 S=Seconds
 .m=decimal minutes
 .s=decimal seconds

To convert from DD to DMS:

Starting coordinate: 121.135°
The whole units of degrees will remain the same (121°).
Multiply the decimal by 60 ($0.135 * 60 = 8.1$).
The whole number becomes the minutes (8').
The decimal can remain as a decimal minutes (.m), or multiply by 60 to become seconds (6") ($0.1 * 60 = 6$).
Result: $121^\circ 8' 6''$

To convert from DMS to DMM:

Starting coordinate: $121^\circ 8' 6''$
Divide seconds by 60 ($6/60=0.1$)
Add this decimal to the minutes ($8+0.1=8.1$)
Result: $121^\circ 8.1'$

To convert from DM to DD:

Starting coordinate: $121^\circ 8.1'$
Divide minutes by 60 ($8.1/60=0.135$)
Result: 121.135°

Information sources:

<http://geography.about.com/library/howto/htdegrees.htm>
www.gypsymoth.ento.vt.edu/sts97/htmls/dms.html