



## California Natural Diversity Database

<https://www.wildlife.ca.gov/Data/CNDDDB>

1416 9th Street, Suite 1266

Sacramento, CA 95814

Voice: (916) 322-2493

Fax: (916) 324-0475

## State of California

Department of Fish and Wildlife

Biogeographic Data Branch

[bdb@wildlife.ca.gov](mailto:bdb@wildlife.ca.gov)



# Instructions for Reporting Coordinates to the CNDDB

Coordinates collected with Global Positioning Systems (GPS) or identified with mapping software are welcomed, but cannot be used in the CNDDB Geographic Information System (GIS) unless the datum and coordinate system are reported with the coordinates.

## CNDDB Preferred Settings

The CNDDB can work with any stated coordinate system, but prefers:

- UTM or Decimal Degrees because they are single values in the same unit (meters or degrees).
- The NAD83 datum.

## Definitions

Coordinate system: Measurements that describe a position on the Earth's surface. Some examples are:

- Universal Transverse Mercator (UTM)
  - Written format: UTM zone 10, 631256E, 4270862N
  - Eastings are meters on the x-axis (6 numbers), and northings are meters on the y-axis (7 numbers).
  - California is in UTM zones 10 and 11 in the northern hemisphere.
- Decimal Degrees (DD)
  - Written format: 38.5765323°N, 121.4931772°W; or 38.5765323, -121.4931772
  - DD should have 5 or more decimal places to be accurate.
- Degrees Minutes Seconds (DMS)
  - Written format: 38° 34' 35"N, 121° 29' 35"W; or 38° 34' 35", -121° 29' 35" (where negative indicates direction of meridian), or simply 38 34 35, -121 29 35.
  - Longitude is the x-axis and latitude is the y-axis. For this reason, some write longitude before latitude (software programs). The absolute value of longitude is greater than latitude in CA.
- Degrees Decimal Minutes (DDM)
  - Written format: 38° 34.59194', -121° 29.59063'; or 38 34.59194N, 121 29.59063W
  - DDM should have 2 or more decimal places to be accurate.

Datum: Defines the origin and orientation of the latitude and longitude lines with respect to the Earth's center. Common examples: North American Datum of 1927 (NAD27), North American Datum of 1983 (NAD83), and World Geodetic System of 1984 (WGS84). Google products use the WGS84 datum. The datum should be identified for all coordinates reported to the CNDDB.

## Recording GPS Information on the [California Native Species Field Survey Form](#)

GPS Make and Model:

- Example: Garmin 12XL

Horizontal Accuracy: This will be displayed on your GPS unit and is dependent on the number of satellite signals your unit is detecting. Please include the units (meters, feet).

- Example: 15 meters

## Things to remember

- Record the datum and coordinates on the Field Survey Form.
- Include a written description of the location in case there is a typo in a coordinate.
- Obtain GPS readings from evenly distributed satellites (see your user manual).
- Acquire 3-Dimensional GPS location, if possible (4+ satellites).
- Receiving four signals in a canyon or under tree canopy may be difficult.
- Record location and horizontal accuracy even if you are unable to acquire 4 satellites.

## Further information

Consult your GPS user manual to program coordinate system and datum.

Biogeographic Data Branch. 2015. [GIS/GPS Support Documents](#).

United States Geological Survey. 2006. [Map Projections](#).

Federal Aviation Administration. 2014. [Satellite Navigation - Global Positioning System \(GPS\)](#).