

## MCZ Guidelines for Recording Locality Data in the Field

Complete locality data should accompany all collected materials. The following locality guidelines promote data quality and fitness, and describe required information from collectors submitting specimens:

- **Localities** should consist of a combination of geographic coordinates and descriptive text. Although coordinates may accurately express the position of a collecting site, a written description allows for the validation of these points, in which errors are otherwise difficult to detect. Descriptions should be succinct but precise to avoid ambiguity. Good specific localities typically include a distance along a path from a well-defined heading (i.e., bridge, intersection), or by two orthogonal distances from a named place/feature, and avoid vague terminology such as “near.” Reference points should be stable in position over time, small in extent, and easy to locate on a map. [Examples provided on next page]
- **Coordinates** should be recorded in decimal degrees when possible, and should include all decimals of precision. When coordinates have been converted to decimal degrees from a different system (i.e., degrees minutes seconds), provide the original data points for posterity. When coordinates are read from a map, maintain the original units used on the map.
- The **Datum** is an essential part of a coordinate description, and provides the frame of reference for the measured points. Reporting the wrong datum or none at all can result in positional errors of hundreds of meters. The datum WGS84 should be used if locality coordinates are not based on a paper map.
- Record **GPS Accuracy** with coordinates. Accuracy is calculated based on local conditions at the time of reading, and can make a non-trivial contribution to the overall uncertainty of a locality. Most GPS units do not record accuracy with waypoint data, and therefore it is essential to note it in the accompanying fieldnotes or journals.
- Specify the spatial **Extent** of the locality, measured as the distance from the point where coordinates are read to the furthest possible point where collecting occurred (length of transect/quadrat, city block, tide pool, etc.). Extent measurements convey how specific a named locality is (0.5 miles vs. 0.5 feet), and also bound uncertainty by eliminating areas outside of the stated extent.
- **Elevation** data reported by GPS units are much less reliable than horizontal distances. If elevation is a defining piece of a locality description, use an instrument such as a calibrated barometric altimeter for accurate measurements.
- Fully document any **References** or tools used to describe localities as follows:
  - Gazetteers or Road Atlases: record complete citation
  - Maps: Title, Publisher, Scale, Year, Sheet Number
  - GPS device or Altimeter: record make and model

Remember that data have the potential to be used in ways unforeseen than when originally collected, and capturing complete data is essential to both current and future research endeavors.

## Locality Description Examples of Common Problems & Tips to Correct:

### Localities that give a large area without more specific detail:

- **BAD:** 4 mi N of Tyngsborough/Nashua border [Why: Could mean anywhere 4 miles north along the common border]
- **GOOD:** 4 mi N of Tyngsborough/Nashua border on Route 3, Hillsborough County, New Hampshire
- **BAD:** Pond along Chatahoochee River, Fulton Co., Georgia [Why: Which pond?]
- **GOOD:** Pond, 0.43 mi SW of intersection of Nancy and Ridgewood Roads, Chattahoochee River National Recreation Area, Fulton Co., Georgia

### Names of Roads without additional points of reference:

- **BAD:** Highway 9, Alajuela Province, Costa Rica [Why: Could be anywhere along the highway]
- **GOOD:** Intersection of Hwy 9 and Rio Cariblanco, Cariblanco (town), Alajuela Province, Costa Rica

### Directions given with no distances, road or air miles noted:

- **BAD:** S Berkeley, Alameda County, California [Why: Could be anywhere south of Berkeley]
- **GOOD:** Oakland, 1 mi S Berkeley on Telegraph Ave. (1 mi S of intersection of 66th St and Telegraph Ave), Alameda Co., California

### Multiple cities described by the same name within the same administrative unit:

- **BAD:** San Marcos, Intibuca Province, Honduras [Why: There are at least five San Marcos in Intibuca Province]
- **GOOD:** San Marcos, ca 7.5 km south of Los Chaguites, Intibuca Province, Honduras

### Cities and geographic features that share the same name [in this case, note which locality is intended]:

- **BAD:** Battle Mountain, Lander Co., Nevada [Why: Unclear if reference is the city or mountain]
- **GOOD:** Battle Mountain (city), Lander Co., Nevada

### Highway mi/km markers are difficult to georeference retrospectively without additional information:

- **BAD:** Km 58 Pan American Highway [Why: Markers are not permanent, may be moved over time]
- **GOOD:** Km 58 Pan American Highway, 6 km S of Cartago on Pan American Highway, Cartago Province, Costa Rica

### Keep in Mind:

- Be aware when crossing county/state/country lines while collecting. Be sure to record the correct names and specify clearly if using a town in a different county/state as an offset (e.g., 10 mi below Ehrenberg [La Paz Co, Arizona] on the Colorado River, Imperial Co., California).
- Correctly spell foreign localities (include all diacritic marks) – misspellings in familiar place names are easily corrected, but may cause confusion in other languages (e.g. Turrubares vs. Turrucare, Barra Blanca vs. Vara Blanca).
- Descriptive localities lacking coordinate data recorded as a city name are georeferenced as the centroid of the city. Note instead if the specimen is collected on the outskirts of the city, and provide as much specific detail as possible (such as an exact intersection or feature, e.g., Ann Arbor, 0.5 mi. N of Dolph Lake).