

## Field and Data Recording Protocols for Area-Constrained Searches of Reptiles and Amphibians at Spears Ranch

1. Single or multiple observers will conduct a complete survey for reptiles and amphibians of each 7.8-acre circular plot where point counts are done for breeding landbirds. The goal for the survey is to completely search the entire 7.8-acre plot for reptiles and amphibians. **ALL AREAS WITHIN THE 7.8-ACRE MUST BE COMPLETELY SEARCHED.** Observers must completely survey the entire plot (100-m radius from point count station) while focusing their searches around key habitat elements where reptiles and amphibians are most likely to be found. Survey duration for the entire plot will vary depending on habitat complexity.
2. There is one 7.8-acre point count circle at each sample location.
3. Observers are generally to begin their area-constrained searches (ACS) after landbird point counts are done because of the expediency of saving on travel area. Starting ACS's after point counts are done ensures that searches are conducted during the later morning hours when animals are more active. Two ACS's will be conducted at each point count location with singles visit during two time periods: (1) between late March and April; and (2) late April to early May. Try to complete the ACS in 1 visit; multiple observers may be used but the total ACS area for the combined observers must completely survey the entire 7.8-acre (100-m radius) circular plot.
4. Observers must bring the following items with them for the point counts:
  1. Binoculars
  2. leather gloves and a handheld potato rake
  3. A watch with a countdown timer and/or stopwatch that beeps; fresh batteries should be recently installed
  4. A spare watch in case the watch with a countdown timer is lost
  5. A clipboard with taped code sheets for species codes and weather
  6. 10 copies of data sheets for each sample location
  7. A reptile and amphibian field guide
  8. 3-4 pencils that are sharp and/or fully stocked with lead
  9. Mosquito headnet, insect repellent, gaiters, etc.
  10. Extra flagging
  11. GPS unit if needed to locate each point
  12. Laser rangefinder, compass, and 50-m tape
  13. Field vest (optional)
  14. Field notebook
  15. Dell handheld computer with area-constrained search form
5. Habitat elements likely to support reptiles and amphibians include rocks, logs, talus, cliffs, building debris (sheet metal, wood, etc.), wetlands, shorelines of

- rivers and streams, and shallow water areas. Observers should concentrate their searches on, in, and under these elements and search them thoroughly. Logs, rocks, and debris can be turned over but must be returned to their original position. Observers must be extremely careful because of rattlesnakes, scorpions, and spiders so leather gloves and potato rakes should be used. Observers should also completely search open grassy areas, bare soil, and trees for reptiles and amphibians, and these areas can be easily searched when walking to various habitat elements found in the plot. Transects with flagging to indicate areas already surveyed will be used in open, homogeneous habitat areas that are searched.
6. Observers shall record the time duration needed to completely search the entire circular plot by recording the starting and ending of the survey. Timing stops upon an encounter with an animal. Observers may take as much area as reasonable to capture, handle, and process the animal but expediency is needed. Once the animal is put back where it was originally captured and/or the data have been entered, timing begins again. Observers should be extremely careful when handling an animal.
  7. Data sheets and/or handheld data forms shall be fully completed for each ACS. Paper pages shall be numbered in order of survey. Study area refers to the name of the Spears Ranch study area. Sample # - sample area #from GIS; Visit # - refers to whether this is the first or second visit to the point; Observers - two or three letter code for the observer(s) doing the ACS. Start and end date – starting and ending date for the ACS. Date is the date of the count using the MM/DD/YYYY format. Start/end time: Starting and ending time for the ACS (includes stoppage time for processing animals). Weather measures represent the temperature (°F) and sky at the start and end of the ACS. Indicate weather changes during the ACS on the weather line only if a substantial change occurs during the count period.
  8. In the tabular sections: Species Code – 4 letter code for species common name (use the table of codes); Time Detected – time (military time) of initial detection. GPS Waypoint Alphanumeric – GPS all detections of reptiles and amphibians; gps'ed locations can include detections with single and multiple individuals so the alphanumeric can be replicated on the data sheet. Use the 4-character alpha code for all herps except western fence lizard plus a sequential number from 1-99 for all detections of the same species (refer to the waypoint list in the GPS to determine the appropriate number for the detection); thus the 5<sup>th</sup> detection of a Pacific treefrog would be named “PCFR05” in the gps; western fence lizards are given a 3-character code with up to 3 digits for the detections; thus the 99<sup>th</sup> observation of a western fence lizard would be named “WFL099”. Number individuals – number of individuals detected. Sex/Age Class – refers to sex and age class of animal; Detection Location – use numeric code to represent habitat element where animal first detected; CWHR Habitat Type – use alpha-code for CWHR habitat type where animal first detected. The distance and compass

bearing from each animal encounter to the plot's center point shall be measured with the laser rangefinder and compass. A 50-m tape can also be used for distance measurements when the location is too close for the rangefinder.

9. Finally, observers should be extremely careful with identification errors. A misidentification of a species is a double error because errors are made for species missed and the species incorrectly tallied. It is better to list an animal as "UNID" if the observer is not completely confident in their identification than it is to guess incorrectly. The same logic applies to errors in counting individuals. Be certain of the number of individuals counted and the species identification – don't guess.

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