2010 Orange County Cactus Wren Data Sheet

Investigator(s) (last names):_____

Site Name (e.g., Starr Ranch): _____

Grid Number (from aerial): _____ Polygon Numeric ID: ___ Site Lowercase Alpha ID: ___

Survey Round: _____ Date (mm/dd/yy): _____
Start Time: _____ End Time:_____

New or Previously Unnoticed Cactus Wren Nest(s): Yes_____ No_____

How Many Newly Found: Current/Fresh Nests: ____ Old/Disused Nests: ____

Nests of Unknown Freshness: ____

Cactus Wren(s) Detected (specify numbers): Adults ____ Juv's ____ Unknown ____

California Gnatcatcher Detected On/Near Site: Yes No (map with "g" and specify survey round on map)

Comments: (you may also use back of sheet):

_____
_____
_____
_____

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Comments: (you may also use back of sheet):

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In 2006 and 2007, I developed methods in conjunction with Milan Mitrovich, then of the Nature Reserve of Orange County (NROC), and Will Miller of the U.S. Fish & Wildlife Service (USFWS), to map and characterize cactus resources in and around the NROC's coastal reserve, and to survey for Cactus Wrens in areas judged to comprise potentially suitable nesting habitat. These methods were further refined after the 2009 survey effort, as we discovered what did and did not work well for the volunteers.

Although playback of digital recordings works well to help detect Cactus Wrens, this method is not allowed by the California Department of Fish & Game except through a Memorandum of Understanding (MOU). Therefore, this methodology does not include the use of playback.

In addition to mapping the boundaries of cactus scrub, these methods identify different types of scrub and document habitat composition at each site, thereby allowing reserve managers to build models of habitat suitability for the Cactus Wren by correlating the species' presence with relevant habitat features.

Identification of Planning Areas

As an initial step, identify the Planning Area you are surveying on the data sheet (Starr Ranch, Riley Park, or Caspers Park).

Data Recording and Archiving Methods

All field data are recorded on data sheets and the information then entered into an Excel spreadsheet by Study Coordinators. You must keep a backup copy of any data sheets you transmit to the Study Coordinators.

Classification of Cactus Resources

Cactus resources are classified as follows:

- **Cactus scrub:** Expanses of mature cactus scrub judged as capable of supporting a Cactus Wren nest.
- **Proto cactus scrub:** Other cactus-containing habitats judged as likely incapable of supporting a Cactus Wren nest.
- **Satellites:** Individual cactus plants growing outside the boundaries of cactus scrub or proto cactus scrub.

Surveyors will be trained to judge the potential of habitat to support a Cactus Wren nest in accordance with the species' known nesting requirements in the region. In general,

nesting Cactus Wrens require cactus at least 1 meter tall growing in a patch expansive enough to protect the nest against predation or disturbance. An isolated, meter-tall cactus plant does not meet this criterion, and in general a large area of cactus that does not include any meter-tall plants would not meet this criterion. A large patch of low-growing cactus may be suitable for nesting if it contains even one larger cactus plant that is afforded protection by the surrounding cactus.

Maps and Mapping

Albert Lucero at the County of Orange (County) has created a 1 km × 1 km numbered grid system covering the survey areas. Mr. Lucero can provide these maps at an approximate scale of one inch equals 100 feet (one km^2 grid per sheet). You will also receive a master aerial photo of the wider region, including the grid system, which will help you to orient to the field maps.

Before the start of the survey, overlay the paper aerials with clear acetate. Then draw the mapping Polygons using fine-point *Sharpies*. Use a blue *Sharpie* to map cactus scrub Polygons, a green *Sharpie* to map proto cactus scrub, a red *Sharpie* to map *all* cholla plants (either inside or outside of cactus scrub Polygons) using a small "c", and a black *Sharpie* to map prickly-pear "satellites" outside of cactus scrub or proto cactus scrub using a small "p".

You will use this same map for all of your surveys. At the end of the season, the map will be transmitted to Mr. Lucero for digitizing.

Mapping Cactus Scrub

In this study, each contiguous patch of cactus scrub (i.e., scrub with potential to hold a Cactus Wren nest) is referred to as a "polygon." Each polygon consists of at least one "site," and each site receives a unique code. The first part of this code is the Planning Area (i.e., Starr Ranch, Riley Park, or Caspers Park); next is a number corresponding to the grid; third is the number corresponding to the polygon; and fourth is the lowercase letter corresponding to the site. For example, a large polygon situated in the Starr Ranch Planning Area might be divided into two sites with codes "Starr 10-1-a" and "Starr 10-1-b."

Cactus scrub is mapped according to the following procedure:

- Map the Polygon perimeter, erring on the side of making larger polygons rather than dividing them into multiple smaller Polygons.
- If the polygon appears to be large enough to potentially support more than one pair of Cactus Wrens, it should be divided into two or more sites. The dividing line between sites should be ridges, streambeds, other topographic features, or breaks in the cactus scrub. To the extent possible, site boundaries should separate one potential Cactus Wren territory from the next potential territory.

- Finally, indicate the locations of any and all cholla plants within the polygon. Use a small "c" to note a cholla plant (as opposed to "p" which should be used to denote a "satellite" prickly-pear outside of polygons).

Mapping Other Cactus Resources

For cactus resources that do not have potential as nesting substrate (i.e., all areas of proto cactus scrub and satellites), you will map the resources but will not give the resources an Alpha-numeric-alpha identifier, will not record data, and will not survey for Cactus Wrens. These other cactus resources are regarded as having very low potential for occupancy by Cactus Wrens.

You should, however, check any marginal areas that are on the borderline between proto cactus scrub and cactus scrub. If you find a Cactus Wren or the nest of one, the area should normally be classified as cactus scrub (unless it appears that the wren is simply foraging in the area but nesting somewhere else).

Characterizing Cactus Scrub

Four basic cactus scrub "types" are defined for the purposes of this study:

- **Cactus Scrub Type 1:** Highest quality. Site includes at least 1.0 *contiguous* acre with ≥ 20% estimated areal cover of mature cactus (generally ≥ 1 meter tall). Site may also include habitat with sparser cactus cover.
- **Cactus Scrub Type 2:** Site covers ≥ 1.0 acre. Well-developed cactus patches may be present, but site does not include 1.0 *contiguous* acre with ≥ 20% estimated areal cover of mature cactus (generally ≥ 1 meter tall).
- **Cactus Scrub Type 3:** Small, isolated stands of mature cactus *with* cholla. Polygon (a) covers less than 1.0 acre, *and* (b) includes at least one cholla plant ≥ 1 meter tall. Density of cactus within the Polygon is irrelevant.
- **Cactus Scrub Type 4:** Small, isolated stands of mature cactus *without* cholla. Polygon (a) covers less than an acre, *and* (b) does *not* include at least one cholla plant ≥ 1 m tall. Density of cactus within the Polygon is irrelevant.

Scrub is then further characterized by the presence or absence of cholla. For sites that include cholla, three "cholla types" are defined:

- **Cholla Type 1:** High quality. At least one cluster is fully developed, standing ≥ 1.3 meters tall and in good health with extensive branching.
- **Cholla Type 2:** Medium quality. At least one plant/cluster is ≥ 1.0 meter tall, in good health, with branching extensive enough to readily hold a nest.
- **Cholla Type 3:** Poor quality. Cholla ≥ 1.0 meter tall is present, but no plants or clusters appear to have branching extensive enough to readily hold a nest.

Other data on vegetation recorded at each site:

- Specification of presence/absence of prickly-pear (*Platyopuntia littoralis, P. oricola*).
- Specification of presence/absence of Coast Cholla (*Cylindropuntia prolifera*).
- Specification of presence/absence of Mexican Elderberry (*Sambucus mexicana*).
- Specification of what fraction of site, if any, is affected by fuel modification.
- Specification of up to four dominant non-cactus overstory plant species in descending order of abundance.

Methods for Surveying for Cactus Wren Presence or Absence

The following survey method is used:

- Surveys should be conducted primarily during the morning hours, but may extend into the early afternoon (typically no later than 2:00 p.m.).
- Surveys must be conducted in fair weather. Wind speed should not exceed 8 mph and surveys should be suspended during periods of rain or drizzle. When surveying in the afternoon, temperatures should not exceed 85°F.
- Survey all potentially suitable nesting habitat (generally with meter-tall cactus). First search for Cactus Wren nests. Indicate on data sheet the number of fresh nests and old/disused nests.
- Do not visit the sites in the same order, but rather reverse or otherwise vary the order you visit the sites from one round to the next.
- At very small sites where you are sure no nests are present, an abbreviated survey of a few minutes may be adequate. At other sites, spend at least 10 minutes walking through or around the site, looking for nests and wrens from various angles.
- At most sites, you will spend at least 10 minutes walking through or around the site, looking for nests and wrens from various angles. At very small sites where no nests are present, an abbreviated survey of a few minutes may be adequate.
- "Spish" loudly and frequently, mostly during the first 5 minutes. Allow at least 5 minutes for Cactus Wrens to respond. Fresh nest(s) mean that wrens are in the area—survey until you find them (or they could possibly be on a nearby site).
- This study identifies "likely territories" as the basic unit of measurement for the Cactus Wren population. A "likely territory" is indicated by the presence of at least one *adult* Cactus Wren. Independent juveniles (i.e., those without adults nearby) should be recorded and mapped, but do not count as representing "likely territories" since they may be dispersing birds.
- All Cactus Wren sightings are recorded on the data sheet and entered into the Excel spreadsheet, but in cases where an adult is seen moving between sites the surveyor identifies only one "likely territory." The "likely territory" is credited to the first site

where an adult Cactus Wren is detected. In all cases where you see a wren moving between sites, you must note this on the field data sheet and enter the information into the "notes" section of the Excel spreadsheet (for all sites involved).

- If only one adult is detected at Site "A" and a second lone adult, with or without young, is detected at an adjacent Site "B" during the same round of surveys, you must search for additional adults at both sites. If no second adult can be found at either site within several minutes, you normally should conclude that the two adults probably represent a single pair foraging apart, and thus should recognize only one "likely territory" (at Site "A"). You may recognize two "likely territories" in this situation, but only if evidence suggests that the two adults are not paired. In any case, relevant observations should be recorded in the field and entered into the "notes" section of the data sheet (for both Site "A" and Site "B").
- You must watch and listen for California Gnatcatchers, which shall be counted if detected during the six-minute survey period, either on or near the site.

Conducting multiple rounds of surveys is necessary in order to estimate detection probabilities. These surveys are best conducted between 1 March and 30 June. A benefit of surveying into June is that more data on productivity can be gathered.

Conducting multiple rounds of surveys increases the potential for recording a Cactus Wren adult, pair, or family group at more than one site. In cases where Round 1 yields a wren detection at Site "X" but not at nearby Site "Y," and these results are reversed during Round 2, the surveyor normally should recognize only one "likely territory" (at Site "X"). The surveyor may recognize two "likely territories" in this situation, but only if he/she uncovers evidence suggesting that more than one pair of wrens is involved. In any case, the relevant observations should be recorded in the field and entered in the "notes" section of the Excel spreadsheet (for both Site "X" and Site "Y").

The situation of one pair of Cactus Wrens being probably or definitely detected on multiple sites, either during a single survey day or on different days, should be uncommon in a typical year, but may be much more common during periods of severe drought. For example, in the very dry year of 2007, adult Cactus Wrens were observed to move up to several hundred meters in a single morning. Food resources presumably were scarce in 2007, and many Cactus Wrens appeared not to nest, thus conserving their resources and leaving them free to wander widely in search of food. It is appropriate for surveyors to take these types of considerations into account when making judgment calls regarding the number of "likely territories" represented by a cluster of sightings in a given area during a given season.