Le Conte's Thrasher Survey Protocol

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Overall Objectives: To help the BLM ensure the persistence of Le Conte's Thrashers on the National Monument we will: 1) Track changes in distribution and abundance on the BLM's Carrizo Plain National Monument; 2) Gather information on habitat associations of thrashers via vegetation surveys within study plots and around LCTH sightings; 3) Opportunistically gather other information on the ecology and life history of LCTH (such as habitat preferences, detectability, territory and home range size, and nest site characteristics) that may aid in understanding the species' population size and health; 4) Inventory other breeding songbirds within the Monument

Specific Objectives (for 2016):

1) Continue monitoring established priority 1 & 2 Le Conte's Thrasher area search plots for occupancy and detectability estimates within the Carrizo NM;
2) Expand monitoring within BLM lands between Maricopa and McKittrick;
3) Determine the composition (percent cover) of saltbush, ephedra, and other vegetation and estimate % dead within survey plots and around LCTH sightings;
4) Record aspect and slope at survey plots and around LCTH sightings;
5) Opportunistically collect behavioral and nesting data;

Survey Protocol:

Materials Needed: Pens, clipboard, GPS with tracking function, data forms, binoculars, 2-meter measuring tape with decimeter marks, clinometer, compass, food, water, sunscreen, and hat.

Survey Plot: Each plot is 6.25 ha (250 x 250 m), which is approximately the size of a LCTH territory (Sheppard 1996). All survey plots are oriented along a UTM northing and easting.

Recording Data: Before arriving at a site, record the following on your survey forms: observer's name, date, the plot ID, the plot's UTM boundaries (north, east, south, and west), and the coordinates of the center point (add 125 m to the south and west boundaries). Before entering a plot, record the weather condition (wind = Beaufort scale, Cloud cover = % cover, Precipitation = none or light), record temperature if you have a thermometer. The surveyor will spend exactly 20 min in the plot searching for and recording all birds seen, but focusing particularly on Le Conte's Thrashers; record the begin time and end time. To record data, write the species' 4-letter Alpha Code (or full name if uncertain of code) in the Species column. Then record a letter to indicate how you detected the bird: S (song), V (visual), C (call), or F (flyover). Write one letter for each solitary individual seen. For groups of birds $\geq$ 2, write the letter followed by the number of individuals in parentheses. If V or C is recorded first, but the bird later sings, circle the code to indicate that it later sang. All singing individuals should receive an S or have a circled code. If a bird, or flock of birds, flies directly over the plot without stopping and is in obvious transit to somewhere beyond the plot, record an F to indicate flyover; if $\geq$ 2 record the number in parentheses following the F. Be sure to note any breeding behavior in the appropriate data sheet columns. Secondarily, any mammals encountered within the plot should be recorded. If time allows, record other species detected outside the plot, especially thrashers and raptors of any species, and estimate their distance to the plot in the notes section.

GPS Usage: Before heading out to the field, enter the four corners of each plot as waypoints. Be sure your GPS is in UTMs, not Lat/Long. To get to the edge of your plot, use the Navigation page to take you to one of the corners; when the distance to the corner equals zero, you are at the corner. Be sure the plot boundaries are written on your datasheet in UTMs. To figure out the plot boundaries in the field, select the SW corner waypoint and then the NE corner waypoint. The Northing is a 7-digit number, while the Easting is a 6-digit number. The Northing is measured from the south and increases south to north, while the Easting is measured from the west and increases west to east. The plot boundaries should be in multiples of 250 meters, but occasionally Garmin GPSs change the numbers by a meter, so please round the boundary to the nearest 250 meter. If you are rounding by more than 1-2 meters, then you are probably looking at the wrong waypoint. As you begin a survey, keep your GPS on the Map page so that you can see the four corners of the plot. Your GPS should be set up so that it leaves a trail to show where you have surveyed. This is very helpful to ensure that you cover the plot as thoroughly as possible. If you see a bird near the edge of the plot, you will need to determine whether the bird is in or out of the plot by comparing the bird's position to the plot boundary. With your GPS, walk up to where you saw the bird and look at your position on the Satellite page. If the bird was not within the plot boundaries, record the bird in the notes section and its distance to the plot.

Survey Strategy and Time Management: To ensure that the detection probability is as high as possible, the surveyor will walk through the plot in ≥ 3 transects (more is better) so that the maximum possible distance between a surveyor and a thrasher is only 50 m (figure 2). The surveyor may deviate from the transect line if it is felt that suitable habitat will not be adequately searched from the prescribed route. If only part of the plot has suitable habitat, focus your effort in that area. Use a GPS to determine your position relative to the plot boundaries. Only record birds and mammals in the main data section that were detected during the first 20 minutes of your survey. If birds or mammals are detected before or after the 20 minute period, you may record them in the Notes section only, but not with the other data. Thoroughly covering the plot in exactly 20 minutes will require that you manage your time as you survey; this is easier if you have a timer on your wrist watch set to 20 minutes. If the plot has too much suitable habitat (or the terrain is too difficult) to thoroughly survey within the 20 minute period, you will need to prioritize your search so that the best habitat (flat areas with large saltbush or ephedra) is surveyed first. After the best habitat is surveyed, move on to areas with less suitable habitat. Survey these areas in transects spaced 20-50 meters apart. If the plot has little suitable habitat, and you are able to completely survey it in under 20 minutes, you must stay on the plot for the entire 20 minutes to complete the survey. If you need to leave the plot momentarily or take a break, you may pause the survey and resume it once you reenter; record this break in the Notes section.

Vegetation and Plot Measurements: As a plot is surveyed, visually estimate the percent cover of common saltbush, spiny saltbush, ephedra, other shrubs, grass, barren ground, and trees (oak, juniper, etc.). This should be a combination of both live and dead shrubs and trees, so long as the dead vegetation is identifiable. If the dead vegetation is so decomposed that it is no longer identifiable, then do not include it in the cover estimate. The sum of the coverage must equal 100%. After estimating total cover, quantify the percent of the shrubs and trees that are dead for each species. If a single shrub is 60% dead and 40% live, use the whole shrub in your estimate of total cover, and then add the 60% dead to the total percent dead. In addition, use the 2-meter measuring tape to record the maximum and minimum heights (~0.1

m) of each species observed. **High**: Estimate to the nearest 0.1 meter the *average* height of the upper 90% of the live vegetation. This is not usually the height of the tallest plant: if a single shrub, which takes up a very small area, is much higher than the average high layer, this is NOT the height that is recorded. Another way to think of this is the height above which only 10% of individuals reach. **Low**: Estimate to the nearest 0.1 m the average height of the lower 90% of the tree and shrub live vegetation. This should be the average height of the low living *branches* for each species. If a cell has 0% of any veg type, record a 0 for % cover and dashes for Max ht and Min ht. Do not leave any blanks. While surveying, you must pass the plot's center point where you need to record the average plot aspect (with a compass) and slope (with a clinometer). These two measurements should take you no more than 30 sec, so continue looking and listening while you are collecting these data and do not bother to stop your timer unless you need to take considerably more time.

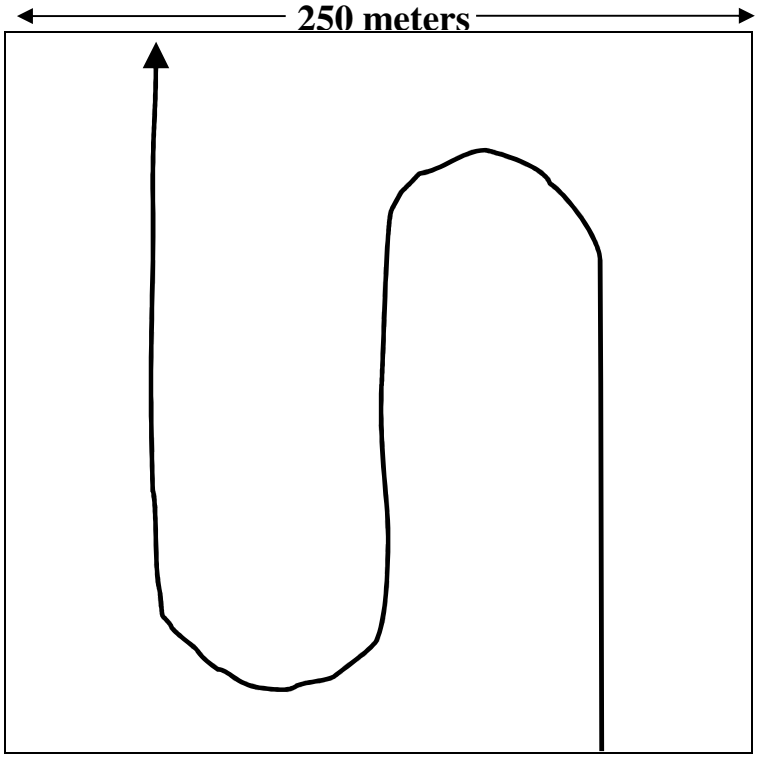
Le Conte's Thrasher Sighting & Nest Data: If a Le Conte's Thrasher or its nest is found in a plot, use the "sighting form" to record behavioral and habitat data. Immediately after finding a thrasher or its nest, record the time, and then use your GPS to plot a waypoint at the exact location of the bird or nest. For a thrasher sighting, also record the substrate that the bird was initially standing on and the bird's activity (singing, calling, foraging, flying, flushing, running, perching, or unknown). If an active nest is found, be careful not to disturb the nest or elicit distress calls from the parents. Quickly record the substrate supporting the nest, the stage of the nest (building, egg, or chick), the nest height above ground (~0.1 m using the 2-meter measuring tape), and the height of the nest bush (~0.1 m). Once you have finished the 20-min survey, return to the waypoint and record its aspect and slope (if a nest, do not walk back up to the nest as you may flush the adult). Within a 50 m radius of the bird or nest location (use GPS to measure distance), visually estimate percent cover of vegetation as described above and record these data on the sighting form. If a LCTH is detected outside of the plot being surveyed, make a mental note of its location and record this information in the notes section; after the survey, return to where the thrasher was seen and record the UTM and vegetation data on a sighting form. Use a new sighting form for each bird or nest found.

Survey Conditions: Surveys start at least 30 min after sunrise and end at least 30 min before sunset. Moderate to heavy precipitation will cancel a survey. Light precipitation may be fine for surveys. If precipitation is showery, then wait for showers to end before resuming the area search. Heavy winds > Beaufort 5 will cancel the survey. Consider your ability to hear and see birds clearly when deciding whether or not to survey.

Data Entry: Data will be entered online if feasible. Otherwise we will enter it into a computer database.

Beaufort Scale			
Force	**Wind (Mph)**	**WMO Classification**	**On Land**
0	Less than 1	Calm	Calm, smoke rises vertically
1	1-3	Light Air	Smoke drift indicates wind direction, still wind vanes
2	4-7	Light Breeze	Wind felt on face, leaves rustle, vanes begin to move
3	8-12	Gentle Breeze	Leaves and small twigs constantly moving, light flags extended
4	13-17	Moderate Breeze	Dust, leaves, and loose paper lifted, small tree branches move
5	18-24	Fresh Breeze	Small trees in leaf begin to sway. Branches of a moderate size move.
6	25-30	Strong Breeze	Larger tree branches moving, whistling in wires
7	31-38	Near Gale	Whole trees moving, resistance felt walking against wind
8	39-46	Gale	Whole trees in motion, resistance felt walking against wind
9	47-54	Strong Gale	Slight structural damage occurs, slate blows off roofs

Figure 2. Survey route through plot. Route will deviate from this if suitable habitat lies off transect.



- Northing increases south to north
- Easting increases west to east
- To locate the center point, add 125 m to south and west boundaries