

## 2019 Prairie Dog Colony Mapping Protocols: Active Areas

Watch for rattlesnakes, etc., do not reach into burrows, do not pick up dead animals, no pets (risk of transfer of infected fleas).

\*Please report all sightings of burrowing owls, mountain plovers, and swift fox to [REDACTED] (provide Universal Transverse Mercator (UTM) coordinates in North American Datum (NAD) 83 for your location and general direction and distance of sighting from there).

### Mapping Target Areas

- Mapping target areas should be identified each year.
- Map at time of initial visit to each site (versus preliminary check and later mapping).
- Complete mapping efforts late August or early September to meet various interests' needs.

### Protocols – Mapping Active Colony Boundaries

- Map on foot (small colonies) or using all-terrain vehicles or utility task vehicles (larger, clearly active colonies); may be most efficient to work as a team in most cases.
- Do not map on private surface unless access is confirmed. Just map a straight line along the boundary (for example, fenceline) until the colony pulls away from the boundary again and make a note that the straight line mapped represents a boundary between National Forest System land and private surface.
- Base-level mapping:
  - ◆ Visit all assigned colonies and additional active areas.
  - ◆ Larger colonies: Take 10 to 15 minutes to crisscross colony and gauge activity to:
    - Help gauge the level of accuracy needed during mapping (examine each burrow or map with 10-meter leeway around active perimeter).
    - Determine if islands of inactivity are present that need to be mapped around (only map active burrows).
    - Remember to keep yourself oriented in the colony while mapping to avoid back-tracking over previously mapped areas; watch global positioning system (GPS) screen to prevent overlap.
    - Keep at least 10 meters between parallel mapping paths to ensure tracks are clearly discernable.
  - ◆ Smaller colonies:
    - Check every burrow within 50 meters of each designated grid or additional sighting point to determine if it is active.
  - ◆ Watch for and record a waypoint for, or map, additional active burrows or colonies, respectively, encountered within target area(s) when moving among points.
- Scan each colony area with binoculars upon arrival prior to exploring the area to scout for prairie dogs, burrowing owls, swift fox, and mountain plovers. Report all sightings of the latter three species to [REDACTED] with UTM's, date, number of individuals, etc.

- Map all active burrows or areas within and overlapping each target area boundary.
  - ◆ Use 2018 grid sampling protocols to determine activity at each burrow (dogs seen or heard, fresh sign, or both) (see end of document).
- Map areas identified as “colonies” using handheld or Trimble GPS unit by driving around perimeter of active burrows (larger colonies) or marking each active burrow with a pin flag or other method and walking around the outer perimeter of the flags (smaller colonies): Trimble data may need to be corrected prior to submittal to the coordinator.
  - ◆ Focus mapping on the outer boundary of confirmed active burrows and minimize mapping of inactive burrows.
  - ◆ Record all data in Universal Transverse Mercator (UTM) coordinates in North American Datum (NAD) 83 only.
  - ◆ GPS units should be set to automatically record waypoints at 10-meter intervals (for consistency with recent [2016 to 2018] mapping efforts).
  - ◆ Make sure GPS unit has connected with enough satellites to have at least 8-meter accuracy (5 meters or less is better).
  - ◆ Make sure GPS unit has antenna always facing the sky to remain connected to satellites; keep screen visible during tracks to follow progress and avoid overlaps.
  - ◆ Maintain at least 10-meter separation between parallel tracks in the field to avoid overlap.
  - ◆ Remember to turn off the “Record,” “Go To,” and other mapping functions between colonies or you will create a line connecting them that will have to be eliminated during data management later.
    - Map an area with multiple active burrows found within 50 meters of each other as a single active area (including those extending outside the target boundary perimeter); consistent with recent (2016 to 2018) mapping. To count as a colony, an area with multiple active burrows must have either:
      - a) 5 or more live prairie dogs seen or heard in that location on the day of mapping or
      - b) At least 5 active burrows (fresh scat, etc.) within 50 meters of one another (5 is arbitrary, but 5 active burrows suggests at least 1 and most likely 2 or more prairie dogs inhabiting the locality).
  - ◆ For areas where fewer than 5 prairie dogs and active burrows are detected or identified, map as a single waypoint and make a notation to buffer the point by 50 meters via GIS rather than attempting to map a polygon (because 1 prairie dog is not a colony).
- Map burrows greater than 50 meters apart but within or overlapping each target boundary perimeter as separate active areas within perimeter.
- Do not map active burrows greater than 50 meters beyond target boundary perimeters unless they are connected (within 50 meters) to burrows within the boundary.
- Record exactly what was seen at each sample point and whether the area was mapped or should be buffered by 50 meters via GIS either in field notes or directly into a Trimble unit (in the comments section for that point).
- Wait at least 1 hour following rain to allow prairie dogs to resurface, assuming ground conditions allow travel.

## Other Important Factors

- Plan check-in schedules and locations for the work area each day prior to heading out.
- Perform walk-around on all vehicles to check for flat or low tires, gas supplies, oil, etc. prior to heading out each day.
- Check for prairie dog shooters or other potential conflict activities prior to beginning work in each area.
  - ◆ If no shooters present, proceed with work plan
  - ◆ If shooters are present:
    - Approach from a safe direction
    - Explain your activity and politely ask about their timeframe for being there (number of days, etc.)
    - Work somewhere else if possible until they leave; coordinate with supervisor if unsure what to do
  - ◆ Do not drive off road during muddy conditions; change target area or walk to points.
  - ◆ Forest Service teams will only work on National Forest System lands; others may work on National Forest System or private or State lands (project coordinator will assist with assignments).

## Determining Presence or Absence of Prairie Dogs

Note: prairie dogs may be less active during cooler temperatures or immediately following precipitation, and generally are most active in early morning and later afternoon (especially on hot days).

- Look and listen for prairie dogs, or fresh sign (make complete circle):
- If prairie dogs are seen, heard, or both, proceed with mapping.
- If prairie dogs are not seen or heard:
  - ◆ Examine burrows within 50 meters of each other or the former grid point for evidence of recent use (look at as many burrows as possible for about 5 minutes). Predetermine 50 meter spacing via GPS or paces or steps (identify number of steps or paces prior to field work); refine distance as needed based on burrow spacing.
  - ◆ Examine burrow entrances and nearby vegetation for the following (2 signs preferable):
    - Fresh digging (loose dirt) at or near burrow entrance
    - Scat color and condition: darker brown and moister (fresh) = present
    - Scat color and condition: lighter brown or whitish and drier = likely absent (\*Note: recent rain can affect scat color and condition)
    - Clipped vegetation, especially with fresh digging of roots = present
    - Vegetation growing in the burrow entrance = likely absent
    - Multiple spider webs (a defined, denser web versus just 1 or 2 thin lines across entrance) = absent
- Complete the data sheet for that site and move to the next area

- Watch for and record waypoint and UTMs of prairie dogs, fresh sign, or both encountered while traveling to and from target area. Map colony upon discovery or as soon as possible afterward.
- Please do not **work in areas not assigned to you to avoid duplication**.
  - ◆ Complete “Additional Sightings” portion of data sheet for each observation outside of target area
  - ◆ Use your initials in waypoint number to help identify for duplicate numbers among GPS units
  - ◆ Include a reference point (for example, nearest grid point) in “Comments” to help identify the new point location
  - ◆ Note areas with continuous activity throughout grid area in “Comments” section of data sheet (for example, “prairie dogs present between point P-X and point P-XX”)
- At the end of each day, check memory on GPS to determine whether you will need to download any newly added tracks or waypoints.
- At the end of each week, submit the following data to the project coordinator via email:
  - ◆ Scanned field data sheets or updated Excel file for that week (preferably)
    - Name files as follows: TBNG-PDC\_Track (or Wpt)\_mmddyyyy\_XX (your initials)
  - ◆ A shapefile containing a download of all new tracks and waypoints recorded in the field (get guidance for downloading from individual GPS units from supervisor, as needed).
    - Save the file as follows: Recorder’s initials\_2019TBNG-PDC\_Date\_Waypoints (or \_Tracks).
    - Use the following format for date: mmddyyyy (for example, 06042019).
- At the end of each assigned area, drop original completed field sheets at [REDACTED]

### Tips for Mapping Colonies

- Place 2 pin flags at the start point when mapping large colonies to help ensure that you end at the same point to close the polygon.
- If two people map the same colony, start at the same point and move in opposite directions until you meet.
- If mapping at a given colony had to be conducted over multiple days due to weather or timing issues, record a waypoint at the temporary stop point and place 2 pin flags to ensure that efforts resume at exactly the same location.
- Keep burrows on the same side of the surveyor, all-terrain vehicle, or utility task vehicle while mapping individual colonies.
- Shift view from side to side while mapping to watch for burrows and to help stay oriented within colony while mapping.
- In areas where burrows extend into adjacent shrubland habitats, map by walking through the shrubs and outlining the boundary with pin flags prior to mapping with the GPS via the all-terrain vehicle or on foot. Collect flags as the all-terrain vehicle follows the flagged boundary through the shrubland area.

- A threshold of 50 meters is used to determine whether clusters of intact burrows are proximate enough to be included within the same colony boundary.
  - ◆ Burrows beyond that threshold are considered as part of a separate colony.
  - ◆ In some instances, burrows are investigated on foot to determine their condition and/or whether the spacing met this threshold prior to traveling toward them with the GPS to avoid exaggerating boundary edges (leave GPS behind when exploring!).
- When fencelines without gates are encountered, pause the GPS or leave at the fence until access to the same spot on the other side of the fence is acquired and mapping can resume. Fence points, the GPS, or both are flagged to ensure the same spot is identified to resume mapping on the opposite side of the fence once a gate opening is found.
- Colony perimeters are delineated by proceeding from each burrow to the next closest active burrow on the outermost edge of the colony. If a series of active burrows terminates without any clear presence of additional active burrows in that same direction, immediately turn 90 degrees back into the interior of the colony until an active burrow is recognized and the perimeter can again be followed.
- When drainages are encountered, they are only crossed if burrows are present in the channel bottom or on both immediate sides of the channel and the banks of the drainage are less than 4 feet high and safe to cross on an all-terrain vehicle.
  - ◆ If burrows are in the channel or clearly connected on both sides but banks are more than 4 feet high or less than 4 feet but too steep to safely cross with an all-terrain vehicle, personnel should walk the GPS unit across and leave it in a visible spot (flagged) on the opposite bank, then drive around the drainage to pick up the GPS and resume mapping, just like the process for fences when gates are not present at the crossing point.
  - ◆ If burrows are not in the channel or the banks are impassable, map along the edge of the drainage to a point where crossing is safe, then map along the opposite side of the channel (map both sides of the channel boundary, excluding the deeper channel itself).
- Note that, when deciding to cross drainages, the next burrow in sequence across or in the drainage may not always be the next closest burrow. Always consider that the primary objective in crossing the drainage is to maintain the outer perimeter of the active colony based on the next nearest burrow versus mapping “islands” within it.

## Required Equipment

- Ear plugs, gloves, sturdy boots, sunglasses or other protective eyewear, hat, other appropriate field attire (helmets optional)
- Florescent safety vest (for safety and public awareness for authorized off-road travel)
- Off-road travel authorization from Forest Service and corresponding permit
- Clipboard, pencils, field maps, data sheets
- Binoculars
- Cell phone (fully charged) and/or two-way radio or satellite phone for emergency contacts
- Spare batteries for GPS

- Backpack, water, snacks, small fuel can (optional), sunscreen and bug spray, etc. (standard field gear)
- Pin flags