**TRLT Crane Survey Protocol Summary**

**(Metadata for Shapefile)**

**Monitoring**

1. Purpose of fall cranes surveys is to document the foraging location and habitat and number of pre-migration staging Sandhill Cranes.
2. Survey dates are typically during September and sometimes into early October. Number of surveys per year vary year to year depending on weather and capacity.
3. Two separate driving routes, monitored simultaneously are used to capture Sandhill Crane foraging locations throughout the North (Horseshoe) and South (Cedron) portions of Teton Valley.
4. Starting and ending the survey:  surveys start approximately 30 minutes after sunrise, approximately between 7:00 and 7:30am, and both routes should be ransimultaneously so cranes are not double counted if they start to move around. Surveys start when the driving route is reached.
   1. Surveyors should start at a random location along the route (Do not start the route at the same location every time you drive it.).
   2. Surveys end when the entire route is completed (typically between 10:00 to 10:30am, sooner if there aren’t a lot of cranes).

**Surveyor and Route Details**

1. Two surveyors in the same vehicle are normally required for each survey route (one driver/observer and another observer/data collector). The Northern (Horseshoe Route) can be done by one surveyor, if needed.
2. Driver should not go over 35 miles per hour during course of route. If backtracking to get to other portions of survey route, 35 miles per hour can be exceeded if permitted by the legal speed limit.

**Data Collection**

1. Use the comment section on the data form to account for significant changes in weather conditions throughout the survey or applicable road conditions. For example, if roads are closed or are not driven because of muddy or otherwise impassible conditions, please record this information.
   1. Please note that N 5000 W (on the Horseshoe route) requires a 4WD, high-clearance vehicle and may be impassable when muddy due to rutted-out conditions. This segment is optional- please indicate if it is driven or not on the data sheet.)
2. Also in the comment section, for the overall route, note the approximate percentage of grain harvested (cut down), the percentage of grain not-harvested (standing), and percentage of grain fields that have been tilled. Please note if a significant amount of grain is in the process of being harvested. Note any major habitat disturbances or oddities.
3. Record time of observation, Section Number and ¼ ¼ Section Description (using the provided route map). Record Habitat Code (according to codes at the bottom of survey sheet), Number of Sandhill Cranes, and any notes pertaining to the observation (e.g. other notable wildlife species present, notable behavior, habitat disturbances, etc.)
4. It is critically important to identify both location and habitat accurately. Compare landmarks on the landscape and the route map aerial to ensure location accuracy. Surveyors should be familiar with habitat codes and applicable native vegetation along survey route. Resetting your vehicle’s trip odometer at select intersections or corners can help you track where you and the cranes are on the landscape.
5. Observed fly overs (Habitat Code 99) are considered to be located at the location of the surveyor.
6. Limit double counting. Often, groups of cranes can be viewed from multiple vantage points along the survey route. Surveyors must be aware of what cranes they have already counted and from what vantage point. Do not count fly-overs that appear to be from a location or group that has already been counted. In addition, do not count fly-overs if they are flying over the opposite route (or flying towards the opposite route). Observers may need to count the same field from more than one vantage point if views of the entire field are obstructed due to topography or other factors. Only record the count once on the datasheet.
7. Stop at good vantage points along the route to scan for cranes. Please remain in your vehicle to minimize disturbance to cranes, as they will often flush if you leave your vehicle.
8. Please note Canada Geese can often be foraging in the same fields as cranes. Be sure you are only counting cranes, not geese. Geese are smaller in stature, have shorter necks and beaks, and are darker in color.