**Long-billed Curlew Survey Protocol: Montana 2019.**

* Survey between April 8th and May 31st during 1 of 2 survey windows: Window 1 - April 8th- May 7th and Window 2 -May 8th – May 31st. If you want to survey your route twice, please do one in each window!
* Survey anytime between just after sunrise and ~ noon, *a little longer if temperatures remain cool*. **The earlier you survey the better traffic conditions will be!**
* Do not conduct surveys in the following weather conditions:
  + Temperature >85°F
  + Consistent wind speed >20 mph; note effects of higher winds on counts under count quality.
  + Fog or precipitation that reduces visibility to ~ <125 meters.
* Sample 10-15 locations, ½ mile or 800-m apart along primary or secondary roads. Try for at least 10 points, but as many as you can get in give the route and time.
* Use car odometer to measure between points. Or if know how to use GPS, you can create a waypoint at first stop and then use GPS to “find – nearest waypoint” and travel away for ~800m.

**At each survey stop location and on accompanying form**:

* **Record** the Route and **stop number** information. Route # will be provided; stop is 1 – 15.
* **Record the start time** of each survey stop
* **Record** your **stop location** on the provided **road map**!
* If you have GPS, write down latitude/long WGS 84 (e.g. 44.45494, -114. 54935). If doing many routes and you know how to create a GPS waypoint you can download the lat/longs from your unit after. Label carefully!
* **Record** the **count quality** at each stop.
* **Record** the **Dominant land use** *(see below)* at each stop, and for each ***curlew or group of curlews*** observed record **dominant land use** within ~ 200-m radius of the point.
* **Record any curlews** that flush on arrival and make note that they flew upon arrival.
* Conduct a 5-minute survey. Stand in one place and scan with binoculars to locate birds, use spotting scope if you have one to confirm sightings.
* **Record each bird one time only**. For each bird observed:
  + Record how you detected the bird under How detect?: **V** – visual, **C** – calling, **F** - flyover
  + Record the approximate distance (meters) to each ***curlew or group of curlews***. A distance is required for all curlew observations except Flyovers (marked as F).
  + Record the total number of birds in the group. Group is defined as an aggregation of more than one bird
* If you detect Curlews ***between points or before/after*** the 5 minute count, add to the closest point and add any relevant detail (where found and distance from you).
* **Record** number of **Sandhill Cranes** at each location using the check-box on the data sheet

**Count Quality**:

E – Excellent – quiet, good visibility, no wind, not interrupted by traffic, temperatures not too hot or cold

M – Moderate – light disturbance (wind, traffic, other noise), cold (< 32F or hot (> 75 F)

P – Poor – hard to hear or see for some reason, really cold or hot or wet!

**Dominant Land Use**

**R** – Rangeland/grassland **C** – Cropland **S** – Sagebrush steppe **O** – Other (residential, forest – describe)

***Sample Data for one stop****:*  
**STOP 1:** start time: \_\_6:35\_\_ Marked map: yes no. Lat: 44 . 59815 long - 114 . \_69844 Way point? \_no\_

**Curlews: NO YES** (circle one). If yes, numbers of curlews, distance to each individual or group, if flyover only, and how detected (Visual, Call, Both), and dominant cover (if you can): R, C, S O.

1 pair. 50 meters, north side of road. Detected via V - visual. Pecking around in R (rangeland).

1 individual – Flyover – 300 meters

If YES, **Count Quality**: Excellent Medium Low (*circle one*). Breezy but no big gusts. Two cars drove by during stop.

x Sand Hill Cranes – Y/N? Number? **2**

x