Wildlife Work Group

Malheur National Wildlife Refuge

Survey ID: FF01RMLH00-086

**Survey Name:** Wet Meadow Landbird Point Count on Malheur National Wildlife Refuge

**Survey Coordinator:** Alexa Martinez, Wildlife Biologist, Malheur NWR (Melinda\_Martinez@fws.gov)

**Target Species**: We will monitor all birds but will target bobolink, western meadowlark, and savannah sparrow because they are believed to be specifically tied to wet meadow habitats.

**Objective of the Survey**: Assess trend in relative abundance and composition of landbird species in meadow habitats in Unit 12.

**Products:** Trends over time (5+ years) may be applied to habitat-based conservation planning.

**Estimated Attribute:** Trend in species composition and relative abundance

**Personnel Requirements and Training:** Observers must be able to identify birds by sight and sound and should not have hearing impediments. Observers must be able to navigate to sample points in the dark, using GPS, maps, or other navigation aids and be able to walk up to 8 miles on uneven terrain.

**Methodology** :

All fields within Unit 12 were assigned a number and prioritized by a random number generator. A 400 meter point grid was then placed within each field and those points including any habitat types other than wet meadow were excluded. The first 30 suitable points were selected in the field and grouped into three distinct areas.

Point Counts: Typical detections and flyover detections

* Spend five minutes at each point, separating birds detected into 2 time intervals: 0-3 minutes and 3-5 minutes.
* Record bird detections as either “typical,” “associated fly-over,” or “flush” detections. A typical detection is recorded the first time a bird is seen or heard from ground or water level to the top of the highest level of vegetation. A fly-over detection is defined as a bird which is only detected above the highest vegetation. An associated fly-over detection is one where the bird appears actively involved in the site (habitat type), whereas an independent fly-over is not using the site. Do not record independent fly-overs. A flush detection is a bird that is not detected during the count but is detected before or after the count within 200m of the point.
* Estimate the distance (in meters) to each bird detected (typical detections only) and record on the datasheet. Distances will be estimated with the aid of a rangefinder and/or landmarks (e.g. flagging, unique ground features). Actual distance will be recorded for all detections within 200 m of the point.
* Vary the order of each day's station array as specified below so that stations are counted at different times of day on each visit:

Area 1, Visit 1- 18, 16, 15, 17, 19, 20, 1, 2, 3, 4

Area 1, Visit 2- 4, 3, 2, 1, 20, 19, 17, 15, 16, 18

Area 1, Visit 3- 1, 2, 3, 4, 18, 16, 15, 17, 19, 20

Area 2, Visit 1- 6, 5, 7, 9, 12, 21, 14, 13, 11, 10, 8

Area 2, Visit 2- 8, 10, 11, 13, 14, 21, 12, 9, 7, 5, 6

Area 2, Visit 3- 14, 21, 12, 9, 7, 5, 6, 8, 10, 11, 13

Area 3, Visit 1- 24, 23, 22, 25, 26, 27, 28, 29, 30

Area 3, Visit 2- 30, 29, 28, 27, 26, 25, 22, 23, 24

Area 3, Visit 3- 25, 26, 27, 28, 29, 30, 24, 23, 22

**Survey Season**: Mid-May to late June

**Frequency of Survey:** Biweekly (>10 days apart), resulting in three visits per point each year.

**Equipment:**

GPS unit Digital timer

Binoculars Range finder

Clipboard Supplemental handouts

Point Count Data Form Maps

Pencil Insect repellant / hood

Waterproof boots/hip waders

**Field Procedure**:

*Pre-work*: Load coordinates for the morning's sample points into GPS unit file located under “Common/Biology/Wildlife I&M/Wet meadow landbird point count.

*Weather*: Evaluate weather conditions each morning before beginning counts. Do NOT conduct the survey if wind speeds exceed 5 mph, or if it is raining. Surveys could be conducted during light drizzle if birds are active. Surveys may be temporarily suspended during showers and resumed after rain has stopped and birds have resumed activity.

*Timing*: Begin counts 15 minutes before sunrise and conclude by 10am (or stop earlier if there is a marked decrease in bird activity). Each complete point array must be completed in a single morning.

*Conducting the point count*: Navigate to the survey point using the GPS unit. Wait for two minutes to allow the birds to settle before beginning the count. Record all individual birds seen and heard. Assign each individual bird to the distance and time band where it was first detected. Record birds that fly over the point but do not land, and are actively involved in the habitat as associated fly-overs. Record birds that are not detected during the count but are detected before or after the count within 200m of the point as flush detections. Use the 4-letter AOU code to record species.

*Recording Data*:

1. Complete all header fields on each datasheet (Appendix 1). Record temperature (approximate) and wind speed via Beaufort scale (Appendix 2) at the start and end of the completed survey.
2. Record the identification effort for each point on the data sheet, even if no birds are detected at that point.
3. Record the time the count was started at each point.
4. Species code: use the AOU code for each species detected at the point. The most recent species codes are also available at the following website: http://www.birdpop.org/alphacodes.htm
5. Estimate the distance (in meters) to each typical detection. It is not necessary to estimate distance to flyovers and flush birds—these birds can just be tallied.

**Data Management:** Data will be managed via the National Point Count Database on the Avian Knowledge Network (AKN) as well as locally by Malheur NWR staff.

A user guide for the AKN is available on ServCat: <https://ecos.fws.gov/ServCat/Reference/Profile/55678>

The AKN hierarchy for the project is as follows:

**Project:** MALHEURNWR

**Study Area:** Malheur Bird Studies

**Point Count Transect:** Wet Meadow Point Counts

**Observation Protocol:** VCP200\_ASSOC – Variable-radius plot, with actual distance estimated to 200 meters; habitat associated flyovers; 3 and 5 minute time bins

**Site Condition Protocol:** FWS\_LANDBIRD\_SITE\_INFO

After data entry is completed for the season, raw data are exported from AKN and stored on the computer of the wildlife biologist, associated external hard drive, and backed up regularly onto the Refuge server. The file is located under documents/I&M/wildlife/wet meadow landbird survey.

**Data Analysis and Reporting:** Summarize the maximum number of detections for each species at each count station, then calculate trend over time comparing station and unit results per year. Resultant spreadsheet(s) will be attached to the annual summary for Objective 4d in the RHMB. Programs such as *DISTANCE* may be used for estimating detection probabilities.

**Appendix 1**

**Wet Meadow Landbird**

**Point Count Data Form**

**Refuge**:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Unit:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Observer:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Page\_\_\_\_\_ of \_\_\_\_\_\_**

**Weather Start: (wind)\_\_\_\_\_ (temp)\_\_\_\_\_ Weather End (wind)\_\_\_\_\_\_\_ (temp)\_\_\_\_\_\_\_\_\_**

**Sky Code: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Visit Number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | **0 to 3 minutes** | | **3 to 5 minutes** | |  |
| **Point #** | **Start Time** | **Spp Code** | **Typical Detection** | **Assoc. Fly- over** | **Typical Detection** | **Assoc. Fly-over** | **Flush Detection** |
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**Appendix 2**

WIND SPEED CODES: (Enter Beaufort Numbers on Cover Sheet, not m.p.h. or km.p.h.)

|  |  |  |
| --- | --- | --- |
| **Beaufort Number** | **Wind Speed Indicators** | **Wind Speed in mph/kmph** |
| 0 | Smoke rises vertically | <1/<2 |
| 1 | Wind direction shown by smoke drift | 1-3/2-5 |
| 2 | Wind felt on face; leaves rustle | 4-7/6-12 |
| 3 | Leaves, small twigs in constant motion; light flag extended | 8-12/13-19 |
| 4 | Raises dust and loose paper; small branches are moved | 13-18/20-29 |
| 5 | Small trees in leaf sway, crested wavelets on inland waters | 19-24/30-38 |

SKY CONDITION CODES

|  |  |
| --- | --- |
| Sky Code | Description |
| 0 | Clear or a few clouds |
| 1 | Partly cloudy (scattered) |
| 2 | Cloudy (broken) or overcast |
| 4 | Fog or smoke |
| 5 | Drizzle |
| 7 | Snow |
| 8 | Showers |

Acceptable conditions for counting birds include sky code 0 through 2.

**Appendix 3**

**Location of Points**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Point** | Easting | Northing |
| Baker | 1 | 345376.942 | 4748542.789 |
| 2 | 344827.543 | 4747999.743 |
| 3 | 345234.094 | 4748103.354 |
| 4 | 345221.137 | 4747571.223 |
| 5 | 344828.194 | 4747166.427 |
| 6 | 345280.342 | 4747082.133 |
| N Meadow | 7 | 344430.963 | 4746765.637 |
| 8 | 344827.9 | 4746765.671 |
| 9 | 344031.09 | 4746365.705 |
| 10 | 344425.109 | 4746365.784 |
| 11 | 344827.938 | 4746368.686 |
| 12 | 344140.828 | 4745955.788 |
| 13 | 344827.912 | 4745968.814 |
| 14 | 345224.775 | 4745959.987 |
| Faye | 15 | 345840.234 | 4750190.649 |
| 16 | 345435.481 | 4749797.756 |
| 17 | 345840.245 | 4749797.776 |
| 18 | 345239.801 | 4749398.73 |
| 19 | 345797.569 | 4749385.084 |
| 20 | 345489.98 | 4748990.896 |
| WS Meadow | 21 | 344130.502 | 4745554.037 |
| S Addition | 22 | 345887.028 | 4741154.599 |
| Warmsprings | 23 | 345479.529 | 4742361.104 |
| 24 | 344998.98 | 4742240.462 |
| Bridge Creek | 25 | 349226.083 | 4748113.216 |
| 26 | 348829.16 | 4748113.153 |
| 27 | 348823.868 | 4747716.296 |
| 28 | 348427.037 | 4747324.722 |
| 29 | 348427.001 | 4746922.527 |
| 30 | 347847.768 | 4746691.218 |

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