

Bendire's Thrasher: 2016 Arizona Project Information and Survey Protocol for Arizona Volunteers

Species Description

The Bendire's Thrasher (*Toxostoma bendirei*) is a medium sized pale brown song bird (60g), with small triangle patterns on the breast, a pale lower mandible and base, yellow to orange iris, and a short slightly curved bill (bill to nares 19-21 mm). The call is a quick "tirup" and the song is a continuous warbly mumble - in comparison to the Curve-billed Thrasher (*Toxostoma curvirostre*) which has a crisp continuous song. As far as flight patterns, the Bendire's Thrasher can be seen doing short flights in between vegetation - unlike desert thrashers such as the LeConte's Thrasher (*Tomostoma lecontei*) which travel running on the ground between vegetation. Bendire's Thrashers nests can be found in a variety of vegetation types in their natural



habitat with a range height of 1.9 to 9.8 ft (0.6-3 m) (2005). In the urban areas, nesting habits can be similar as these birds place their nests in the average known range of 1.9 to 9.8 ft (0.6-3 m) in vegetation along fence lines – nests have also been observed in a patio awning at 4 m high.

The Bendire's Thrasher occurs within a variety of lowland to upland deserts across northwestern Mexico and in the U.S. - Arizona, California, Nevada, New Mexico and Utah. The Bendire's Thrasher (BETH) is listed as a USFWS Species of Conservation Concern (2002), an IUCN red list category VU, National Audubon red list (2002), and already a third priority as a species of special concern by the California Department of Fish and Game (2008). Threats to the BETH persist with habitat loss, invasive vegetation, and possible apparent displacement due to the Curve-billed Thrasher. Populations are common to locally uncommon at elevations that range from 500 ft (151 m) in southern Arizona to 6100 ft (2000 m) on the Colorado Plateau in northwest Arizona. The species natural habitat includes a range of different habitat types: semi-desert and desert areas scattered with large shrubs and open ground; on the edges of mesquite patches found in grasslands; and pinyon-juniper. Among these desert areas these birds have established residential (non-migratory) populations within human modified habitats around urban edges such as small ranches, stock yards and acreage properties in rural neighborhoods.

Background

In 2014, the Desert Thrasher Work Group (DTWG) was reactivated to establish coordinated efforts to be proactive and identify thrasher species at risk, develop Best Management Practices, and collaborate on survey protocols and develop management strategies. The DTWG consists of partners from throughout the southwest, such as Fish and Wildlife Services, Department of Defense, New Mexico Game and Fish, Arizona Game and Fish, New Mexico State University, Tucson Audubon, Sonoran Audubon, Point Blue, and Great Basin Bird Observatory. One of the first tasks of the year the DTWG took on was to move forward and work together to establish a standardized protocol for detecting Bendire's Thrasher in NM. Using the newly designed protocol, a pilot year of state-wide surveys were conducted in New Mexico during the 2015 field seasons.

Results in NM conclude that their populations are in decline. A management plan is in the works for the population in New Mexico. The Bendire's Thrasher Arizona is believed to have steady populations throughout the state and in different types of habitats. This is known through historical records from resources such as ebird and recent surveys conducted to establish the first IBA for Bendire's Thrashers, such as in Wikieup, AZ. With the relative understanding of an abundant population numbers, a platform is set to utilize a study to further understand the birds needs from the AZ populations and the habitat they use in this state.

Project Objective

1. To better understand the Bendire's Thrasher in Arizona relative abundance and distribution.
2. Locate BETH territories throughout their breeding range in Arizona to determine and define density and spatial use.
3. Quantify vegetation characteristics around territories and compare them to paired randomly selected points not occupied by BETH here in AZ. Then compare finding with NM vegetation.



Survey Time and Location

Breeding surveys will take place between February 15 and June 15, 2016. We would like to volunteers to sign up for one or more transects by the first week of April (link for editable list available on the website at http://aziba.org/?page_id=1783) Point counts will be restricted to morning hours (30 minutes before sunrise to 4 hours after sunrise), and will not be conducted in rainy or windy conditions (≥ 12 mph). If it is raining and/or leaves are rustling and dust is blowing, it will be necessary to reschedule your visit.

This study will be focused on finding Bendire's Thrashers in four broad habitat types:

- 1.) Desert scrub - both upper and lower desert
- 2.) Grasslands with scattered shrubs
- 3.) Sagebrush shrub and
- 4.) Pinyon-juniper.

In AZ surveys will occur mainly around the Tucson and Phoenix area and other Bendire's Thrasher hot spots. Birds will be surveyed using the Bendire's Thrasher playback protocol. A survey can be done by 1 person or 2 people (with one person as the data recorder). There are 110 transects that were randomly placed across 4 types of habitat the bird is known to be found. The transects have been placed in clusters of 2 or 3; with each transect being a minimum of 3 km apart. The clustering of transects allows some flexibility to volunteers in terms of survey strategy. One scenario here could be that one observer surveys one transect, while observer 2 surveys the second near-by transect. You could also survey each transect together and survey the two transects in a morning – just be sure to start early enough to give yourself enough time.

Most transects are easy to access and were established relatively close to known roads (paved highways have a 200 m buffer to avoid transects being too close to the road). Each transect consists of three points spaced 400m apart (total transect length is 1200m). Jennie McFarland (Tucson Audubon Society: jmacfarland@atucsonaudubon.org) will coordinate surveys for Cochise, Greenlee, Pima, Pinal, and Santa Cruz counties. Chrissy Kondrat-Smith (Arizona Game and Fish Dept.: ckondrat-smith@azgfd.gov) will coordinate surveys for La Paz, Maricopa, Mohave, Yavapai and Yuma County. Your coordinator will provide you with the map, access information on the assigned transect, and any other information needed to complete a successful survey.

Survey Method Overview

Each transect has 3 survey points. The playback survey will last 8.5 minutes. At each point, the first part of the survey will consist of 3 minutes with no playback – during these three minutes all bird species present are recorded in distance bands from 0-50, 50-100, >100 meters (similar to Arizona IBA protocol). The second part of the survey will include the playback, consisting of three 90-second intervals (a 30 second playback followed by 60 seconds of silence). You will remain at the point for an additional 60 seconds after the conclusion of the three 90 second intervals. The 90-second intervals with call playback will be focused exclusively on Bendire's by playing just their song (but all mimids will be recorded). During the call playback intervals, be sure to hold your speaker up and point it in different cardinal directions on different playback intervals. This will increase the chance of a thrasher hearing the recording and responding. Please collect information on the direction and distance of all mimid species (mimids includes all thrasher species and Northern Mockingbird) during the duration the whole 8.5 minute survey.

SAFETY FIRST!!!!

Please take all necessary and logical safety precautions. Make sure that someone knows where you are going and when you plan on being back. Also, watch for snakes!

Be sure to carry:

- Water
- Sunscreen
- Snacks, etc.
- Appropriate clothing - Weather should also be taken into consideration.

OPTIONAL: Vegetation Observation OR Photo Observation

This is a very simple observation on the number of big and little plants there are. There are 2 options to complete a simple vegetation observation form. There is an additional form that will coincide with what you find at each point *prior* to starting your survey.

1. Rotate 360 degrees at each point and look out 25 meters/80 feet out from each point before starting your survey. Count all plants under 1.5 meters/5 feet; the number of trees over 1.5 meters/5 feet; and any dominating vegetation with fruit (for example, wolf berry). Also, note other observations you would like to share. Complete the information in the spaces provided on the Vegetation Observation Data Form.

OR

2. Take a photo in each direction N, S, E and W and west at point 1, 2, and 3 on the point. Label each photo by transect #_point #_ photo #.

PROTOCOL for Bendire's Thrasher Point Count Survey

Once you have signed up and selected your transect(s), contact your coordinator by email. Confirm your location, maps, access information and survey date.

You will need:

- 1.) Maps, directions and data forms
 - 2.) GPS (preset with coordinates)
 - 3.) Binoculars
 - 4.) Portable speaker
 - 5.) digital device with correct audio file, GPS unit or GPS app on smart phone
 - 6.) Compass (or other way to determine "bearing")
 - 7.) Watch or other device that can be used as a timer.
1. Use GPS to locate first the first point on the transect (We use NAD 83 and UTM's)
 2. After arriving at the first point record date, point ID, transect/cluster ID, wind, cloud cover (CC), and temperature. Volunteers that bring a partner should be careful to have one surveyor be the main observer and the other the data recorder (the recorder CANNOT help spot birds). This will help keep results consistent with New Mexico surveys done by only one person.
 3. Record time, set your timer for 3 minutes, and begin your point count.
 4. Record every bird species seen or heard during this first 3 minutes and estimate distance band (0-50m etc.). If any mimids (Mockingbird or Thrasher) are detected, you will record the actual distance (using a rangefinder or your best estimate) and actual bearing (using a compass – bearing is the degrees around a

compass. See video on website for demonstration of how to do this) in the appropriate section of the data form. Make sure to keep any notes of interesting behaviors or other things about birds or point.

5. After the initial 3 minutes, start the first 30 seconds of playback; make sure to watch for any movements of birds while playback occurs. Be very aware – sometimes birds silently investigate, don't rely on them to call or sing.
6. The official playback recording is set up to play three intervals with 30 seconds of song and 60 seconds of silence automatically, so observers should be focused only on the surroundings, scanning for BETH and other mimids. Make sure you direct the playback in all four cardinal directions, and be sure to scan for mimids (mimids includes all thrashers and Northern Mockingbird) in a complete circle.
7. If a Bendire's Thrasher (or another mimid species) is detected at any point during the survey make sure to pay attention to/note exactly where you first spotted it or heard it (distance and bearing). If you find a Bendire's Thrasher make sure to note at which point during the survey the BETH was detected, the sex and any behavior. Once the survey is over, walk to the area where the BETH was first detected and record a GPS point – be sure to accurately write down the UTM numbers into the data form.
8. If you did not find a Bendire's Thrasher – you are done and can move on to the next point. If you DID find a Bendire's Thrasher, now the real fun begins! You will need to immediately go to your Territory Mapping datasheet and proceed through the following protocol.
9. **OPTIONAL:** Before moving on to the next location. It will be helpful to have a photo at each point (one photo North, South, East and West – you can use your compass for the correct bearing). At the bottom of your survey data form there is a section to list the photo number and include the point and direction (e.g. pic# 001-pt3-N).

Territory Mapping

For territory mapping we will use a combination of spot-mapping (Reed 1985) and the territory flush technique (Gregory et al. 2004 and Weins 1969). Spot mapping is a passive method that can help determine and define the density and spatial use of a habitat. The use of flush techniques involves repeatedly flushing an individual while noting its direction of flight and locality to where the bird flushes.

NOTE: Birds are **NOT** to be flushed when it appears they are actively visiting a nest site (building, incubating, carrying food and feeding). When signs of nesting have been detected, you can conduct passive observation from no more than 20 m away. Record the coordinates, bearing and estimated distance on the spaces provided on the Territory Mapping data form.



Spot mapping protocol when nesting behaviors are not detected:

1. Record the time the bird was first detected. Start your passive monitoring of the bird – you will do this for no more than 30 minutes. When necessary to flush the bird off the perch or out of vegetation, slowly approach spot where the bird was located while keeping an eye on the next spot the bird stops at.
2. Now record the UTM on the data form on the line for the appropriate track # (or if with a partner, the partner records this information).
3. Record any notes, such as: was the bird calling; and anything else regarding behavior.
4. Repeat steps 1-3 no more than 20 times (until the 30 minutes are up). It will not be unusual to only get 2 to 10 points. The goal is to gain an idea of how the bird uses their territory. Any information you are able to get is useful.
5. When finished tracking the bird, record all your information at the top of the form upon completing your mapping data: date, observer name(s), transect ID, point, and visit number.
6. Be sure to review all your data form to make sure they are complete.

Repeat Visit

A minimum of one additional visit is required (if you detect a BETH on your first visit) for the designed territory mapping method. Three visits 3-7 days apart is preferred.

1. Schedule a return visit to the transect point where the BETH was detected 3-7 after the initial visit.
2. Follow the steps above in the protocol described above using the Territory Mapping data form.

Incidental Detections

1. The form is available on the <http://www.aziba.org/> . Contact your coordinator with any questions.
2. Please complete the observation form of Bendire's Thrasher located outside of the survey points. When possible, the Observation and Territory Data form can also be used when incidental birds are located incidentally during your day to day activities (when possible). When possible, also complete the Territory Mapping data form (protocol above). Rural observations welcome.
3. Return to: Chrissy Kondrat-Smith at ckondrat-smith@azgfd.gov or mail to Arizona Game & Fish Department| Terrestrial Wildlife Branch, Attn: Chrissy Kondrat-Smith, 5000 W Carefree Hwy, Phoenix, AZ 85086-5000

Other Photographs and Recordings

If you wish to submit any additional photographs and/recording of the birds you survey and monitor, please title the file with the transect ID, point, and track ID# of the bird (e.g. BETH 2016_72-1-01). Email the file or mail to your coordinator.

IMPORTANT!!!

What to Do if You Encounter Barriers to Your Transect

Due to the large scale of these surveys these transects have not been ground truthed and though every effort possible has been made to place them in accessible areas, sometimes there are fences or gates that we are not aware of before you find them in person.

If this happens to you where you cannot access the exact location you adopted due to unforeseen barriers - don't despair, you can still do the survey. You can create new random locations to replace the locations you are unable to reach. It is preferable that there new point count locations be within 3 km of the predetermined transect but not absolutely necessary. Your three new point count locations need to be at least 400 meters apart from each other and you need to be sure to document the UTM coordinates (in NAD 83) of the new location and why you moved it on your data form - this is very important! Then you can proceed through the protocol as normal.