Desert Thrasher Working Group: An Example of Regional Collaborative Conservation

Corrie Borgman, U.S. Fish and Wildlife, NMACP Meeting, 13 February 2019
Species at Risk

- Bendire’s and LeConte’s Thrashers
- Threats include:
  - Poorly planned growth and development
  - Habitat degradation/loss
    - Desertification
    - Climate and weather
  - Climate change?
  - Competition with other thrashers?

- Partners in Flight Red List
- Species of Concern
  - Both federal and for multiple states
### 2016 Partners in Flight Landbird Conservation Plan – Red List

<table>
<thead>
<tr>
<th>Species</th>
<th>Vulnerability Factors</th>
<th>Loss</th>
<th>Urgency/Half-Life (years)</th>
<th>Continental Threat</th>
<th>Regions of Highest Importance</th>
<th>Primary Breeding Habitat</th>
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<td>BD</td>
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<td>Gunnison Sage-Grouse</td>
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<td>Lesser Prairie-Chicken</td>
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<td>California Condor</td>
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<td>Red-cockaded Woodpecker</td>
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<td>Ivory-billed Woodpecker</td>
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<td>Red-crowned Parrot</td>
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<td>Black-capped Vireo</td>
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<td>Bicknell's Thrush</td>
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<td>Bendire's Thrasher</td>
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<td>Le Conte's Thrasher</td>
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<td>Bachman's Warbler</td>
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### RECOVER: Red Watch List - Species with extremely high vulnerability due to small population and range, high threats, and rangewide declines (19 species)

- Sagebrush
- Chaparral
- Grassland
- Eastern Forest
- Tropical Dry Forest
- Desert Scrub
- Eastern Scrub
- Boreal Forest
- Desert Scrub
- Eastern Forest
New Mexico Avian Conservation Partners
Species Conservation Lists*

Species Conservation Level 1

Bendire's Thrasher (22)
Lesser Prairie-Chicken (21)
Brown-capped Rosy-Finch (breeding and winter; 21)
Pinyon Jay (19)
Juniper Titmouse (19)
Chestnut-collared Longspur (winter; 19)
Virginia's Warbler (19)
Flammulated Owl (19)
Black Rosy-Finch (winter; 19)
Spotted Owl (18)
McCown's Longspur (winter; 18)
Lewis's Woodpecker (18)
Grace's Warbler (18)
Scaled Quail (17)
Red-faced Warbler (17)
Mexican Whip-poor-will (17)
Woodhouse's Scrub-Jay (17)

Highest Ranking Species in NM

Based on:
• Population trend
• NM threats
• Range-wide threats,
• Importance of NM
Distribution

Map generated by Dawn Fletcher, Great Basin Bird Observatory
DTWG Background

- **Established in** 2011
  - Numerous Partners

- **Goals:**
  - Raise awareness
  - Enhance monitoring strategies
  - Promote research
  - Conduct habitat suitability modeling
  - Develop Best Management Practices

The DTWG, January 2010; Photo credit, J. Sheppard
The Desert Thrasher Working Group

- U.S. Bureau of Land Management
- U.S. Fish and Wildlife Service
- U.S. Forest Service
- Sonoran Joint Venture
- Arizona Game and Fish Department
- California Department of Fish and Wildlife
- Nevada Department of Wildlife
- New Mexico Department of Game and Fish
- Utah Division of Wildlife Resources
- Santa Fe County

- New Mexico State University
- Point Blue Conservation Science
- Great Basin Bird Observatory
- Atwell LLC
- Audubon Arizona
- Tucson Audubon Society
- Sonoran Audubon Society
- Red Rock Audubon Society
- Red Cliffs Desert Reserve
Range-Wide Survey Framework

- Estimate distribution, density, and population sizes.
- Determine habitat preferences.
- Next Steps and things considered.
Established a Standardized Protocol

designed using the most effective and efficient methods for detecting these cryptic species and measuring their habitats.
Area Search Survey Method

- Plot size 300mx300m.
- Surveyed 3x/season.
  Based off of a protocol by Point Blue Conservation Science.
- Three plots per morning.

Example thrasher plot with survey route highlighted in red.
Habitat Evaluation

- Based off a protocol from AZGF
- Measurements taken at the center point of plot
- Point-Centered Quarter method

- Record density estimates of Cholla, Yucca, trees, and shrubs
- Total counts of fruit bearing shrubs, Joshua tree, and mistletoe
- Grass/forb estimate (within 50m)
Where to Survey?

- Low numbers were obtained during previous studies.
- Conduct in optimal habitat!
- Habitat suitability model. *used to identify areas with a higher probability of species presence*
- Model design. *vetted eBird data, Landfire vegetation classification, climate data and terrain*
Accomplishments
2018 BETH Model

Model Created by: Point Blue Conservation Science Dennis Jongsomjit
Sampling Design

- Created a grid of 9 points 600m apart
- Points ranked for both species
  
  High, Medium and Low suitability selection
Sampling Design

- Created a grid of 9 points 600m apart
- Selected High, Med, and Low suitability (for each species)
- Criteria:
  - < 2K from a road
  - Land Ownership: BLM, NWR, NP, FS

Locations:
- AZ
- CA
- UT
- NV
- NM
2017-2018 Survey Results

Photo Credit: Chrissy Kondrat-Smith
Two years, 911 plots

LeConte’s Thrasher
- 663 detections
- 130 plots occupied
- 97 nests

Bendire’s Thrasher
- 183 detections
- 59 plots occupied
- 15 nests
Preliminary Survey Results in New Mexico - 2018

- Plots surveyed \( (n=117) \)
- Total Detections Bendire’s Thrasher \( (n=6) \)
- Plots with Detections Bendire’s Thrasher \( (n=1) \)
2018 NM BETH Results

- 117 Plots surveyed (342 total surveys)
- Only 1 BETH Detection on-plot
- 6 Incidental Observations

Possible Causes of Low Detection in 2018
- Extreme drought during survey period
- Model not optimized to perform in NM habitats?
  - Very few high suitability plots identified
  - Some plots selected not suitable habitat
  - Higher elevations in NM (and UT)?
  - Less structural diversity in NM?

Goal: Improve model performance using negative data and what we’ve learned from habitat analysis to date.
Habitat in NM

Catron Co.

Hildalgo Co.

Sevilleeta NWR, Socorro Co.
Preliminary Survey Results in Arizona 2017-2018

- Plots surveyed (n=209)
- Total Detections
  - Bendire’s Thrasher (n=70)
  - LeConte’s Thrasher (n=2)
- Plots with Detections
  - Bendire’s Thrasher (n=29)
  - LeConte’s Thrasher (n=2)
Preliminary Survey Results in California 2017-2018

- Plots surveyed (n=149)

- Total Detections
  - Bendire’s Thrasher (n=61)
  - LeConte’s Thrasher (n=69)

- Plots with Detections
  - Bendire’s Thrasher (n=4)
  - LeConte’s Thrasher (n=9)
Preliminary Survey Results in Nevada 2017-2018

- Plots surveyed (n=105)
- Total Detections
  Bendire’s Thrasher (n=7)
- Plots with Detections
  Bendire’s Thrasher (n=? )
Preliminary Survey Results in Utah - 2018

- Plots surveyed \((n=59)\)
- Total Detections
  - Bendire’s Thrasher \((n=1)\)
- Plots with Detections
  - Bendire’s Thrasher \((n=1)\)
Accomplishments

• Avian Knowledge Network (AKN)

https://data.prbo.org/cadc2/
The Desert Thrasher Working Group (DTWG) was formed in January 2010, following enthusiasm generated from a LeConte’s Thrasher Workshop held at the Barry M. Goldwater Range in Southwest AZ. During this workshop, concerns were raised about negative population trends in LeConte’s Thrashers, and concerns were mirrored for Bendire’s Thrashers. Loggerhead Shrikes also exhibit significant population declines, and in desert habitats are largely overlapping with these two thrasher species. All three species have shown significant population declines based on BBS data, and are listed as species of conservation concern by the USFWS and Partners in Flight (PIF). In fact, PIF considers these two thrasher species among species requiring the most urgent
Looking Forward

• **Test and improve** abundance/distribution model.

• **Statistically model U.S. habitat use** based on current data.

• **Establish** a long-term range-wide monitoring program.

• **Meet state-specific needs** for desert thrasher conservation effectiveness – provide management guidelines
Goal: Provide Management Targets

- Bureau of Land Management has funded project
  - Provide useful information about:
    - Hotspots and Important Areas
    - Habitat characteristics
    - Specific management guidelines or habitat goals
For more info on the DTWG check out: https://sonoranjv.org/desert-thrashers/

Contact: Corrie Borgman, corrie_borgman@fws.gov
Acknowledgements

- Funding and support: Bureau of Land Management
- Technical support: Sonoran Joint Venture, Point Blue Conservation Science
- Ebird: citizen science data
- The Desert Thrasher Working Group
- And dedicated field crews!
Questions