<u>Rusty Blackbird Conservation Strategy Discussion: Next steps</u>

Notes from 16 August 2016, IRBWG meeting in Washington D.C.

Participants: Erin Bayne, Dean Demarest, Carol Foss, Charlotte Harding, Luke Powell, Pam Sinclair, Cindy Staicer, Chris Tonra, Jay Wright

Time Frame of "Next Steps" Discussion: 2016-2018

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I Research – **Addressing key information needs to inform and support conservation recommendations and actions. The information needs below will be prioritized/ranked in a Research Prospectus, to be developed over the next few months. Each item will play a role in helping quantify and refine specific aspects of the full annual cycle model, with the goal of determining when and where significant limiting factors are occurring.**

1. **Fill data gaps for Full Annual Cycle Model.** Various demographic and other data from specific periods of the annual cycle form the basis for modeling a comprehensive assessment of population limitation in Rusty Blackbirds, and the degree to which different periods may contribute to population limitation and why. Presently, the preliminary model for RUBL estimates several key parameters "by inference", and also relies on several   assumptions regarding populations and connectivity whose validity remain largely untested. Additional data are needed to better inform estimation of model parameters, and therefore make the model more accurate and robust in portraying the true state of Rusty Blackbird demographics , population connectivity, movements and population limitation. Preliminary full annual cycle modeling suggests that migration, especially spring, may be a key limiting period, and that survivorship is generally high during the breeding and wintering periods. Additional information that can aid in more accurate quantification of abundance, productivity and survival parameters is needed. Data that can aid in the estimation of survival values are needed for all parts of the year, but are especially needed for post-fledging and winter periods.
   a. **Fledgling Survival: Telemetry studies of marked birds throughout post-fledging periods.** Additional data from Alaska and New Hampshire for annual variation, plus data from other sites.
   b. **Annual Survival: Continue annual survival studies.** Additional years' data from color-banded birds in Alaska and New Hampshire, plus additional sites.
   c. **Productivity: Nest success.** Additional years' data from Alaska and New Hampshire, plus additional sites, with numbers of young produced, although this may be a lower priority because we have several years' data and productivity is generally high.
   d. **Productivity: Age ratios at fall stopover sites.** Determine which banding stations capture enough Rusties in fall to report on age ratios. Solicit photographs of fall flocks, explore possibility of getting age ratios from photos**.**
      i. **IDEA: "Microblitz" for fall with age documentation/bird photographers.** Post an article or announcement on eBird asking for photographs of fall flocks**.**

e. **Survival: Age ratios at wintering sites.** Age ratios from captured birds, and/or from photographs of groups of birds. Could also inform productivity. Aging birds is easier to do early in the winter, before the pre-alternate molt.

f. **Abundance: Feasibility of estimating or indexing N during spring and fall migration.** Can the Blitz data be used to estimate abundance/ population size**?**

2. **Genoscape Project for RUBL to refine population connectivity.** Although stable isotope analysis provides a good indication of breeding origin, particularly latitude, genetics could help to refine this by providing complementary information, particularly longitude. Population connectivity is needed to better establish associations between breeding, stopover, and wintering areas linked in the full annual cycle population model. Dr. Rachael Bay from UCLA gave a presentation on the genoscape project. **Note that the needs below will be refined/revised as we learn more about the Genoscape project.**

a. **Collect blood samples for eventual genoscape.** In order to establish the "genoscape" for Rusty Blackbird, we need fresh blood samples from a minimum of 5 birds per site at 5 sites *across the breeding range*. After the genoscape is established, samples can be processed to determine their place in the genoscape (i.e. their geographic breeding origin)**.**

   i. **Look for collaborators in central and far eastern Canada.** It will be important to have sites in the east that can allow differentiation between east and west populations**.**

b. **Collect feather samples from across migration and wintering areas** to compare to genoscape, to refine connectivity.

3. **Continue and expand archival GPS tag studies.** Continue deploying GPS geolocators in Alaska and New Hampshire to track migration routes and wintering locations; add new sites? This information can help to identify stopover sites/habitats of importance, as well as connectivity

4. **Use and disseminate the Blitz results.** Brian Evans has completed analysis of the Winter Blitz data and is close to completing the manuscript; he has also done some analysis of the Spring Blitz data. Brian is on a limited contract, and his time will soon be committed to other activities without additional commitments to fund continued finalization of Spring Blitz data and products. **.**

a. **Publish winter blitz manuscript.** Completing a manuscript ready for submission will be a key priority for Brian's final two weeks of work on the Blitz projects**.**

b. **Prepare report on spring blitz, including summary of hotspot consistency** (short term; this will be a second priority for Brian's time)**; publish spring blitz manuscript** (longer term; additional funding and commitment from individuals on the Steering Committee will be required for completion)**.**

c. **Communicate Blitz results to participants.** An article in eBird and/or concise 2-page summary to communicate results to participants; this is an important way to acknowledge and communicate back to the many Winter and Spring Blitz volunteers and other stakeholders and interested parties**.**

d. **Follow up with Cornell re outreach opportunities.** In addition to eBird, are there other places to post articles or short notes about Blitz results and/or updates on what we've learned, where the research is headed, and conservation efforts**?**

e. **Implications and applications of blitz results, including landscape assessment of migratory pathways.** What do the Spring Blitz data tell us about important stopover sites, habitats and migration corridors? With indications that spring migration may be the most limiting part of the Rusty year, we need to assess what we've learned and move towards on-the-ground conservation**.**

f. **Outreach to pertinent land managers and wildlife agencies.** Communicating the results of item "e" above**.**

g. **Consensus that full fall blitz not needed at this time?** With a "microblitz" to get information on age ratios in fall (as well as sex ratios, and repeated use of key sites), and indications pointing to spring migration as the most limiting, a full fall blitz is not a top priority at this time**?**

5. **Explore use of vocalizations to identify individuals for long-term monitoring.** Cindy Staicer has found that individual males in Nova Scotia can be identified by their song; this could be explored as a way of "marking" individuals, with potential for tracking annual survival without the need for color banding. Vocal signatures should be confirmed with a larger sample size. Annual consistency of song should be confirmed using color-banded birds, perhaps by recording marked males in Alaska or New Hampshire populations**.**

6. **Extend research on landscape-level habitat use during spring and fall migration.** Compile and analyze data from Blitz, GPS geolocators, eBird etc. to determine habitat use during migration; design and implement further studies; incorporate need for foraging and roosting areas**.**

7. **Replicate Ohio stopover ecology study in eastern flyway.** Jay Wright and Chris Tonra have found that Rusties using an important stopover site on Lake Erie are staying for several weeks in spring. Is this a common phenomenon? Are birds staying at this site longer because good re-fueling sites are becoming rare in this region? Studies in other locations are needed to determine whether long stays at spring stopover sites are the norm, and to identify common features of sites used for long stopovers.

8. **Scale up Ohio stopover ecology study to landscape level**. Monitor migrants in a variety of stopover sites (high quality/low quality, high disturbance/low disturbance, large/small, etc.) to compare differences in habitat use and particularly length of stay – are migrants moving quickly through low quality stopover sites to get to larger high quality sites?

9. **Expand geography of nest analysis for bird blowflies.** Carol Foss' team has found bird blow flies parasitizing Rusty nestlings, which may have an effect on juvenile survival; they have invited other researchers to collect used nests from other locations and send for analysis**.**

10. **Validate prediction that temperature is mechanism for migration speed.** Migration speed may be determined by temperature, and/or food availability, habitat availability, etc.; research to tease these apart**.**

11. **Expand monitoring of remote wetlands in Canada.** Erin Bayne found dense population of Rusties nesting in "flark" fens (flowing fens with little or no open water) in northern Alberta. More information is required from across the boreal on habitat use and centers of abundance**.**

(Flark: Elongated wet depressions separated by raised ribs in patterned peatlands. The long axis is always perpendicular to the direction of water flow. Also called patterned fen, string fen, ribbed fen, ladder fen, or ripplemark fen.

12. **Request that the Boreal Avian Modeling (BAM) Project prioritize development of a breeding season model for Rusty Blackbird for all of boreal North America.**

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II Conservation Actions

1. **Conserve migratory stopover sites.** Migratory stopover sites may be crucial, especially in spring, in the annual cycle for supporting survival and breeding. Indications are that similar migration routes are used in spring and fall, suggesting the same stopover sites may be important in both seasons. State and provincial wildlife plans, and management plans for protected areas, tend to focus on breeding and/or wintering sites and species, so outreach is needed to underscore the importance of stopover sites and species that are migrants within a jurisdiction. Recent data from eBird, the spring Blitz, and research at stopover sites need to be compiled, mined, and analysed to determine priority stopover sites and habitats for conservation, and land managers need to be brought onside in prioritizing conservation of migration sites. The following are some "next steps" towards conservation of stopover sites. ***Note that all items below can and should also be applied to wintering areas; we are emphasizing stopover sites here as part of a short-term need to address this large gap in our work to date.***

   a. **Conduct ecoregional landscape assessments of habitat quantity and quality informed by blitz results.** Similar work has been done by others, for example at www.databasin.org . Habitat information can be mined from eBird locations and the spring Blitz, as well as site/habitat information from GPS geolocators.

   b. **Investigate RUBL status in revised WAPs and provide information to important migration states to encourage inclusion in future WAPs.** Wildlife Action Plans tend to focus on breeding and/or wintering species; we need to provide information to the major migration states on their importance to Rusty Blackbirds, including timing and habitat use, so that RUBL can be included in their plans.

   c. **Encourage provinces and territories to evaluate RUBL status.** Similarly in Canada, conservation is usually focused on breeding species. Provide information on timing and routes of migration, and habitats used, to provinces which are important during RUBL migration.

   d. **Mine eBird for RUBL use of protected lands and conduct outreach.** Provide information on Rusty Blackbird migration (timing, routes, habitats) to protected areas along migration routes within Canada and the U.S., and encourage inclusion of RUBL in their management plans**.**

   e. **Evaluate importance of private lands.** Mine eBird and Blitz data to evaluate importance of private lands during migration. Provide information to landowners on Rusty Blackbird, importance of migration habitats, and tips on how to provide habitat for migrating Rusties.

    f. Management of stopover sites. Develop management recommendations for stopover sites, perhaps including planting of favored native berry-producing shrubs; providing roosting habitats and foraging habitats within a certain distance; managing water levels to maintain favorable foraging conditions (shallow water); etc**.**

2. **Increase public awareness.** Improve awareness of Rusty Blackbird, and the importance of migration habitat for Rusties and forest/wetland birds in general**.**
   a. **Prepare popular articles for publications (e.g., Smithsonian, Living Bird, Birdwatcher's Digest, Audubon, Birds and Blooms)**
   b. **Post videos on YouTube to publicize individual research projects**
   c. **Prepare fact sheets and press releases**

3. **Improve wetland inventory / spatial data.** Identification and conservation of important breeding areas requires spatial data on wetland type and location, which is lacking or inadequate in much of the breeding range.
   a. **Encourage remote-sensing teams in US and Canada to work on wetland identification and provide annual updates**

Funding Strategies Discussion 16 August 2016

Need a 2-page scoping paper to use for funding pitches

Potential Sources:

USGS
State wildlife agencies
Wetland programs
NMBCA??
Oil sands industry
Forest industry
USDA Forest Service
Crowd source funding?
Bird Studies Canada collaboration?
Mitacs (Canada)
Foundations
Innovation grants (e.g. Toyota)?

Frame as full life cycle model, knowledge gaps, incorporate Genoscape

Note: Dean can fund something on an annual basis, amount is not predictable; group consensus on priorities if funding is available on short notice