

P-PIF. PARTNERS IN FLIGHT POSTERS

P-PIF-01. DETERMINING POPULATION STATUS AND GOALS FOR CANADA'S BIRDS

DETERMINANDO EL ESTADO DE LAS POBLACIONES Y LOS OBJETIVOS PARA LAS AVES DE CANADÁ

*Constance Downes, Paul Smith, Adam Smith, Marie-Anne Hudson, and Charles Francis
Environment and Climate Change Canada, National Wildlife Research Centre, 1125 Colonel By Dr., Ottawa, Ontario,
Canada, K1A 0H3, connie.downes@canada.ca

Understanding the status of bird populations in the context of clear management goals is important to highlight species of concern and to help prioritize the use of limited resources. Environment Canada's web-based Status of Birds in Canada database currently provides status and trend information for each bird species in Canada. The next update will use a new framework to identify quantitative, species-specific population goals, and assess each species' population status with respect to the goal. The framework establishes a range of goals depending on whether: the species is harvested, distribution has changed from historical levels or is very restricted in Canada, species' abundance has declined, and if current abundance is sufficient to meet societal and ecological needs. The framework also establishes a range of acceptable variation around each quantitative goal, recognizing that bird populations vary naturally over time and thus some deviation from the goal can be acceptable. Species' population trend and relative abundance (with respect to the goal) are assessed using one or more of a large array of population monitoring programs. These monitoring programs use a variety of methods, each optimized for particular species, groups of species, or habitat types. The most appropriate surveys are used for each species. Data sources with a long time series, extensive geographic coverage and standardized survey methods are preferentially selected. The first Status of Birds database (2010) assessed 100 species of conservation concern; it was revised in 2011 and 2014 and expanded to include all birds that regularly breed or visit Canada. This fourth iteration will be released in early 2018. The Status of Birds in Canada database helps inform management agencies by identifying and tracking changes in bird population trend and status in relation to goals, and how well birds are monitored. These metrics help track the success of conservation actions.

P-PIF-02. THE MOTUS WILDLIFE TRACKING SYSTEM: A COLLABORATIVE RESEARCH NETWORK TO ENHANCE THE UNDERSTANDING OF WILDLIFE MOVEMENT

Philip D. Taylor^{1,2}, Tara L. Crewe^{2,3}, Stuart A. Mackenzie², Denis Lepage², Yves Aubry⁴, Zoe Crysler^{1,2}, George Finney², Charles M. Francis⁵, Christopher G. Guglielmo⁶, Diana J. Hamilton⁷, Rebecca L. Holberton⁸, Pamela H. Loring^{9,10}, Greg W. Mitchell¹¹, D. Ryan Norris¹², Julie Paquet¹³, Robert A. Ronconi^{1,14}, Jennifer R. Smetzer⁹, Paul A. Smith¹¹, Linda J. Welch¹⁵ and Bradley K. Woodworth^{1,12}

¹Biology Department, Acadia University, Wolfville, Nova Scotia, Canada; ²Bird Studies Canada, Port Rowan, Ontario, Canada; ³Department of Biology, University of Western Ontario, London, Ontario, Canada; ⁴Canadian Wildlife Service, Environment and Climate Change Canada, Quebec, Quebec, Canada; ⁵Canadian Wildlife Service, Environment and Climate Change Canada, Ottawa, Ontario, Canada; ⁶Department of Biology, Advanced Facility for Avian Research, University of Western Ontario, London, Ontario, Canada; ⁷Department of Biology, Mount Allison University, Sackville, New Brunswick, Canada; ⁸Lab of Avian Biology, University of Maine, Orono, Maine, USA; ⁹Department of Environmental Conservation, University of Massachusetts Amherst, Massachusetts, USA; ¹⁰United States Fish and Wildlife Service, Division of Migratory Birds, Northeast Region, Hadley, Massachusetts, USA; ¹¹Wildlife Research Division, Environment and Climate Change Canada, Ottawa, Ontario, Canada; ¹²Department of Integrative Biology, University of Guelph, Guelph, Ontario, Canada; ¹³Canadian Wildlife Service, Environment and Climate Change Canada, Sackville, New Brunswick, Canada; ¹⁴Canadian Wildlife Service, Environment and Climate Change Canada, Dartmouth, Nova Scotia, Canada; ¹⁵United States Fish and Wildlife Service, Maine Coastal Islands NWR, Milbridge, Maine

We describe a new collaborative network, the Motus Wildlife Tracking System (Motus; <https://motus.org>), which is an international network of researchers using coordinated automated radio-telemetry arrays to study movements of small flying organisms including birds, bats, and insects, at local, regional, and hemispheric scales. Radio-telemetry has been a cornerstone of tracking studies for over 50 years, and because of current limitations of geographic positioning systems (GPS) and satellite transmitters, has remained the primary means to track movements of small animals with high temporal and spatial precision. Automated receivers, along with recent miniaturization and digital coding of tags, have further improved the utility of radio-telemetry by allowing many individuals to be tracked continuously and simultaneously across broad landscapes. Motus is novel among automated arrays in that collaborators employ a single radio frequency across receiving stations over a broad geographic scale, allowing individuals to be detected at sites maintained by others. Motus also coordinates, disseminates, and archives detections and associated metadata in a central repository. Combined with the ability to track many individuals simultaneously, Motus has expanded the scope and spatial scale of research questions that can be addressed using radio-telemetry from local to regional and even hemispheric scales. Since its inception in 2012, more than 9000 individuals of over 87 species of birds, bats, and insects have been tracked, resulting in more than 250 million detections. This rich and comprehensive dataset includes detections of individuals during all phases of the annual cycle (breeding, migration, and nonbreeding), and at a variety of spatial scales, resulting in novel insights into the movement behavior of small flying animals. The value of the Motus network will grow as spatial coverage of stations and number of partners and collaborators increases. With continued expansion and support, Motus can provide a framework for global collaboration, and a coordinated approach to solving some of the most complex problems in movement biology and ecology.

P-PIF-03. BIRD MONITORING IN ATLANTIC CANADA IN SUPPORT OF CONSERVATION

MONITOREO DE AVES EN LA COSTA ATLÁNTICA DE CANADÁ EN APOYO DE LA CONSERVACIÓN

Becky Whittam¹, Laura Tranquilla², Peter Thomas¹, and Cheri-Gratto-Trevor³

¹Canadian Wildlife Service, Environment and Climate Change Canada, Atlantic Region, PO Box 6227, Sackville, NB E4L 1G6, becky.whittam@canada.ca

²Bird Studies Canada, Atlantic Region, PO Box 6227, Sackville, NB E4L 1G6, ltranquilla@bsc-eoc.org

³Science and Technology Branch, Environment and Climate Change Canada, Prairie and Northern Wildlife Research Centre, 115 Perimeter Road, Saskatoon SK S7N 0X4, cheri.gratto-trevor@canada.ca

Monitoring provides a foundation for decision making for conservation and management of wildlife, including migratory birds. The Canadian Wildlife Service (CWS) and its many partners and volunteers support and deliver a suite of monitoring projects that allow CWS to fulfil its mandate to protect migratory birds by providing data on status, distribution, trends and vital rates, while also connecting Canadians with nature and science. This paper illustrates, using several key examples from Atlantic Canada, the value of monitoring for conservation. Examples will include: 1) the Second Atlas of Breeding Birds of the Maritime Provinces, a partner-driven volunteer-based project to gather data on breeding bird abundance and distribution in the Maritimes, and its contribution to the development of a Habitat Conservation Strategy for southwest Nova Scotia which is now guiding an Integrated Conservation Action approach in this region; 2) a banding and resighting project for Endangered Piping Plovers breeding in eastern Canada which is helping to assess the contribution of adult and juvenile survival to population declines; 3) the High Elevation Landbird Program, designed to assess population status of high elevation landbirds in Maritime Canada, and its recent utility in the assessment and listing of Bicknell's Thrush as Threatened under the Canadian Species At Risk Act; and 4)

Recent pilot surveys designed to inform landbird monitoring in the boreal forest to fill significant gaps in our assessment and ultimately conservation abilities for neotropical migrants.

P-PIF-04. USING OCCUPANCY AND ABUNDANCE MODELS AND SPATIAL TOOLS TO PLAN REGIONAL GRASSLAND BIRD CONSERVATION IN THE CENTRAL HARDWOODS JOINT VENTURE, USA

USO DE ANÁLISIS ESPACIAL, MODELOS DE OCUPACIÓN Y ABUNDANCIA PARA PLANEAR LA CONSERVACIÓN DE AVES EN LA REGIÓN DE CENTRAL HARDWOODS JOINT VENTURE, EE.UU

Cara J Joos¹, Christopher M. Lituma², David Beuhler³, Jane A. Fitzgerald⁴

¹Central Hardwoods Joint Venture, 1504 Lowe St. Columbia, MO 65203 cjoos@abcbirds.org

²West Virginia University, Davis College of Agriculture, Natural Resources and Design, 310B Percival Hall, Organtown, WV 26506-6108, cml0017@mail.wvu.edu

³University of Tennessee- Knoxville, Ecology and Evolutionary Biology, 569 Dabney Hall, Knoxville, TN 370996-1610, dbeuhler@utk.edu

⁴Central Hardwoods Joint Venture, 14264 Reno Springs Rd, Reeds Spring, MO 65737, jfitzgerald@abcbirds.org

The Central Hardwoods Joint Venture (CHJV) is a partnership of state and federal land-managing agencies and non-governmental conservation organizations working together to insure the long-term viability of native bird populations across the Central Hardwoods Bird Conservation Region (CHBCR). Many CHJV priority grassland breeding bird species have experienced dramatic population declines since the inception of the Breeding Bird Survey. A strategy we can use to reverse these trends is targeting habitat conservation in areas predicted to have high occupancy rates or relative abundances of species of conservation concern. Here we demonstrate how the combination of regional maps of occupancy and abundance, exhibited by geographic patterns in population trends, may guide more effective and efficient on the ground habitat management activities across the CHBCR. First, we modeled occupancy and abundance of five priority grassland nesting species based on landcover composition and 5000 points counts conducted throughout the CHBCR between 2010-2012. We then used the coefficients from the most supported model for each species to build spatially-explicit regional occupancy and abundance maps. Knowledge of spatial variation of occupancy and abundance allows managers and practitioners to allocate limited resources most efficiently by locating habitat management activities where empirical data predict landscape composition to be most amenable. This exercise demonstrates how science can be applied directly to on-the-ground conservation efforts needed to reverse declining populations of migratory birds.

P-PIF-05. THE BOBOLINK PROJECT: HELPING FARMERS PROTECT GRASSLAND BIRDS

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Jonathan, Atwood¹, Mark LaBarr², Allan Strong³, Anwasha Chakrabarti⁴, and Stephen Swallow⁴

¹Mass Audubon, 208 South Great Road, Lincoln, MA 01773 USA, jatwood@massaudubon.org

²Audubon Vermont, 255 Sherman Hollow Road, Huntington, VT 05462 USA, mlabbarr@audubon.org

³University of Vermont, Rubenstein School of Environment and Natural Resources, 81 Carrigan Drive, Burlington, VT 05405 USA, allan.strong@uvm.edu

⁴University of Connecticut, Agriculture and Resource Economics, 1376 Storrs Road, Storrs, CT 06269-4021 USA, stephen.swallow@uconn.edu

Grassland-nesting birds are disappearing in the northeastern United States. This decline is largely due to mowing of hayfields during the weeks that birds like Bobolinks are actively breeding. To protect these grassland birds we are exploring new strategies for promoting conservation on private farms. New England's

working farmers, in particular, face financial pressures that force them to mow earlier and more frequently. The Bobolink Project uses funds from conservation-minded donors to provide financial assistance to participating farmers who modify their mowing schedules, thereby allowing grassland-nesting birds to successfully complete their breeding cycles. Begun in 2007 as an experiment by researchers at the Universities of Rhode Island, Connecticut, Vermont, and Washington, by 2011 the Project had reached portions of Rhode Island and into Vermont. Subsequent administrative changes allowed the work to extend into Massachusetts, New York, New Hampshire and Connecticut. In 2016 a total of \$42,000 in private donations was received, allowing the participation of New England farms totaling about 210 ha. In 2017 17 farms (257 ha) were included through donations totaling \$38,000. Participating farmers are selected through a single price, reverse auction process aimed at encouraging farmers to offer their acres at the lowest possible cost, thereby enabling a balance between the benefits to farms and to conservation donors. This approach strives to integrate conservation into the farm business in a manner that is comparable to and competitive with traditional farm products. Available donations have typically been the limiting factor in terms of how many farms have been included; in both 2016 and 2017 The Bobolink Project was only able to fund about 50% of farmers who had submitted bids to participate in the program, while the use of economic competition has allowed the project to sustain a consistent number of hectares even in years with lower donations.

P-PIF-06. DIFFERENCES ON SHORT AND LONG DURATION SONG ELEMENTS DEGRADATION OF CLAY-COLORED THRUSH

DIFERENCIAS EN DEGRADACIÓN DE ELEMENTOS DE CORTA Y LARGA DURACIÓN EN CANTOS DE MACHOS DE *TURDUS GRAYI*

Katherine Bonilla-Badilla y Luis Sandoval
Escuela de Biología Universidad de Costa Rica

In songbirds, it has been suggested that the presence of songs or elements of different duration within the vocal repertoire of the same species could be an optimization strategy for sound signal transmission. Each type of sound may be used to transmit to different distances or receptors. Turdidae is a bird family where the occurrence of sounds of different duration in vocalizations (i.e., elements) is common. However, the function of these elements within the communication of the species of this family remains poorly studied. Our goal was to compare the distance that long and short-duration elements of Clay-colored Thrush (*Turdus grayi*) songs transmit inside their habitat. We conducted a sound transmission experiment where we broadcast and re-recorded long and short duration elements present in Clay-colored Thrush songs at four distances inside the territories. We measured four attenuation and degradation measurements (signal-to-noise ratio, tail-to-signal ratio, blur ratio, and excess attenuation) and found that both elements showed similar patterns of degradation and attenuation with distance. These results suggest that both short and long distance elements are adapted to transmit information for short and long range. Therefore, the presence of both elements within the song is not to communicate with receptors at different distances and its occurrence may be to create a rhythmic contrast in time and frequency to attract female's attention and therefore increase his reproductive success.