

Appendix 1: Detailed Field Methods

Appendix 1a. Mist netting operations during the 2018 – 2019/2019 – 2020 November to March overwintering seasons.

During the first field season (November 2018 – March 2019; season one) we worked in 15 of the 18 study sites. We used mist-nets to capture individuals of the two study species. In each site, we operated 6 to 13 mist nets (dimensions: 12 or 6 meter length by 2.6 meters height) placed opportunistically in areas within the study site where bird captures would be most likely or where terrain was stable (i.e., safe slopes) for operation. Sites were visited from 3 to 6 times each. Mist nets were operated from 0600 – 1400 hours. From approximately 0600 to 1000, nets were operated passively and after 1000 hours, playback tracks were used to increase the probability of capturing migratory birds. Playback type was alternated per visit with one track composed of songs and calls of nine migratory birds expected in the area, including the Wood Thrush and Wilson’s Warbler. The other track used was composed of owl-mobbing calls, prepared by researchers at Cornell University (Kenneth Rosenberg, Mathew Young and Ruth Bennett, 2015; (see (Bennett et al. 2018))).

During the second field season (November 2019 – March 2020; season two), nine sites were visited, two to nine times each. Three sites were new to the study and six were also used in season one. Working hours in the second season were from approximately 0600 – 1200 when bird activity was highest to optimize capture rates and resights. To increase our captures of the study species during season two, we used a targeted mist-netting approach by searching for individuals of the species in each site, setting up mist nets and using conspecific songs and alarm call playback to lure captures. Recordings were obtained from the Macaulay Library at Cornell Lab of Ornithology (Appendix 1b).

Appendix 1b. Track list from Macaulay Library at Cornell Lab of Ornithology used during the mist-netting sessions to lure migratory songbird captures. Below, species scientific name and the Macaulay Library media numbers used. Tracks were edited and prepared in the program Audacity ®. <https://www.audacityteam.org/copyright/>

Dumetella carolinensis (ML53296, ML52881, ML70881)

Setophaga magnolia (ML10695, ML106958, ML144909)

Mniotilta varia (ML89554, ML102236, ML10512)

Empidonax flaviventris (ML102266, ML7616)

Setophaga citrina (M:10906, ML106926)

Cardellina pusilla (ML44608, ML80305, ML105937, ML56817, ML77043)

Catharus swainsonii (ML53303, ML84225, ML89425)

Hylocichla mustelina (ML71879, ML69264, ML66089, ML26240, ML41325, ML66090)

Seiurus aurocapilla (ML167876, ML10606, ML186894)

Appendix 1c. Avian resighting protocol

After catching and color banding individuals of Wilson's Warblers and Wood Thrushes we conducted resighting surveys adapted from Ritterson et al. (2021). We began with a survey at the location of capture or last resighting and conducted 15 minutes of observation subdivided into five minutes of passive observation and five minutes each of playback with songs and calls of the Wilson's Warbler and Wood Thrush, respectively. During the playback, we attempted to re-sight individuals and if observed, we considered the survey completed until the next visit, aiming to complete weekly visits per site depending on logistics constraints. If the individual(s) were not observed during the first attempt, we selected a random direction between 0°, 120° or 240° and walked 50 meters in the selected direction. At this new point, we conducted another resighting survey and if the individual(s) were not resighted, a third and final location was selected following the same guidelines as the second location. After conducting all resighting surveys in a visit, if there were undetected individual(s), we conducted an area search of the site for approximately 30 minutes. When there were multiple individuals caught in close-by locations (e.g. ~10 meters), resighting surveys were started at an estimated point in the center of all of these locations, to avoid deploying multiple efforts in the same areas that multiple individuals use.

References

- Bennett RE, Leuenberger W, Bosarreyes Leja BB, et al (2018) Conservation of Neotropical migratory birds in tropical hardwood and oil palm plantations. PLoS ONE 13:1–18. <https://doi.org/10.1371/journal.pone.0210293>
- Ritterson JD, King DI, Chandler RB (2021) Habitat-specific survival of golden-winged warblers *Vermivora chrysoptera* during the non-breeding season in an agricultural landscape. *Journal of Avian Biology* 1–9. <https://doi.org/10.1111/jav.02442>