



2020 EASTERN LOGGERHEAD SHRIKE RECOVERY PROGRAM SUMMARY REPORT

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COVID-19 PROGRAM IMPACTS

This year, certain projects and initiatives related to the Loggerhead Shrike (LOSH) Recovery Program were impacted as a result of the coronavirus disease (COVID-19) pandemic. Initiatives that were significantly affected due to measures taken to mitigate the spread of the virus included:

- **Wild population surveying and monitoring:** Field biologists typically begin surveys of the wild LOSH population at the start of May, but this activity was delayed until June, with a single biologist working in each core. As such, data collection this year was limited relative to what would be achieved in a typical season.
- **Volunteer surveys:** The community science “Adopt-A-Site” program uses volunteers to survey assigned patches of LOSH habitat three times from April 15 to June 30. Twenty-four volunteers expressed interest in the program in early March, but WPC made the decision to cancel the program in early April, and all volunteers were contacted on April 9 with that notice.
- **Conservation breeding and release:** Due to border restrictions, closures, and staffing limitations at U.S. and Ontario partner breeding facilities, only a small number of pairs were introduced and given the opportunity to breed this season. As such, a limited number of juveniles were produced and transferred to field sites for release.
- **Public education and outreach:** LOSH program staff were scheduled to participate in several presentations and outdoor outreach events in the spring, all of which were cancelled due to the COVID-19 pandemic.

WILD POPULATION

Monitoring

Sixteen pairs of Loggerhead Shrike were confirmed in Eastern Canada this season: 11 in Napanee, 4 in Carden, and 1 in Smiths Falls (Fig. 1). Napanee continues to hold steady at 11 pairs for the third year running, but Carden showed a slight contraction, decreasing by one pair compared to 2019.

Sporadic isolated pairs are becoming something of a pattern near the Ontario-Quebec border, as at least one pair has been seen in that region in three of the last four years.

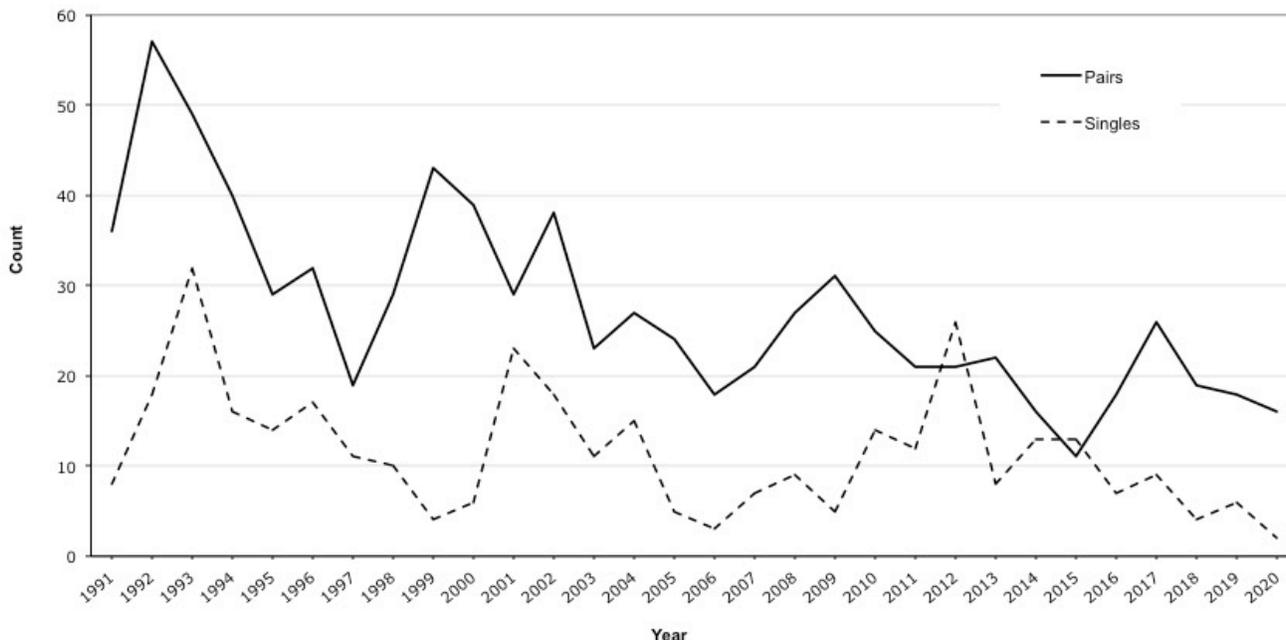


Figure 1. Number of Loggerhead Shrike pairs and single birds in Ontario and Quebec

All pairs observed in Carden this year fledged young, as did all but one pair in Napanee. **Forty-one fledglings** were confirmed this year (28 in Napanee, 13 in Carden), and the average number of fledglings per successful nest (2.9) showed a modest increase from 2019 (2.4). This number is almost certainly an underestimate, however, as staff observation of one nest started after young had already fledged. Further, survey and monitoring effort was generally lower than usual this year because of the late start to the season and the lack of field assistants in each core.

The breeding status and outcome of the isolated pair in Smiths Falls is unknown as observations were largely completely opportunistically by local volunteers. However, this pair did persist on territory until August, so though a nest tree was never confirmed there were likely breeding attempts.

In addition to breeding pairs, at least two single birds were confirmed this year, both in Napanee. Single birds were actually encountered on four different sites, but only one of these birds was banded allowing definite identification. The remaining birds were all unbanded, or band status was undetermined; given the timing and location of the sightings they could not confidently be counted as three separate individuals, so they are conservatively counted as one.

Using conservative counts of confirmed pairs and single birds, the **observed LOSH population in Ontario for 2020 was 33 adults**. This is a significant drop from the 42 seen in 2019, but as mentioned previously, this is likely an underestimate of actual population size.

Returning captive-bred birds

Eight captive-released birds were confirmed returning to Ontario breeding grounds this year. These captive-origin birds made up 24% of the population of adult shrike in eastern Canada.

Five of these birds were observed as part of breeding pairs with wild birds, two paired with birds of unknown origin either because the mate was never seen or its band status was unconfirmed, and one was a single bird. Five of the seven birds in confirmed pairs bred successfully, with at least 12 fledglings confirmed (29% of all wild juveniles seen in Ontario); however, this fledgling count may be an underestimate, as one successful nest was confirmed after young had already fledged. Of the remaining two pairs, the outcome of one (in Smiths Falls) was unknown as regular monitoring by WPC staff was not possible, and the second pair's nest failed due to mammalian predation. The female of the latter pair was the one of captive origin, and she was not seen again following the nest failure.

Five of the returning birds were confirmed as 2019-releases (7.8% return rate), and the remaining three were 2018-releases. One of those 2018 birds was also seen in 2019, but with the addition of the two novel 2018-releases, the cumulative return rate for that year's cohort is 6.9% (up from 5.4% in 2019).

Trapping and banding

Four wild LOSH were trapped and banded this year, all in Napanee. All birds were adults in breeding pairs. Additionally, one captive-origin adult was trapped in Napanee, but as this bird had a full band compliment it was simply measured and released. All newly-caught birds were banded with OR/SI on right, to indicate wild birds caught in 2020. Regular behaviour was observed at all territories the day after trapping activities.

Following all trapping, 52% the observed adult LOSH population was banded. Band status was confirmed for all birds except two individuals. One of these may have been banded SI on the left, making it a captive-origin bird, but the lack of property access on this site made observations more challenging so it was never confirmed. The second bird was not directly observed, but presumed through observation of a single adult with fledglings on an isolated site later in the season. Though the nest was not located for this family group, the mate was assumed by virtue of the fledglings.

CAPTIVE POPULATION

Captive breeding and release

Owing to limitations caused by the COVID-19 pandemic only 9 pairs were introduced and given the opportunity to rear young across partner facilities. **Six of these pairs produced 23 young** that survived to release or retention (Fig. 2). Seven of these young were released into the wild at our Carden field site, one was hand-raised as an outreach bird, and the remaining 14 were retained to add to the captive breeding population.

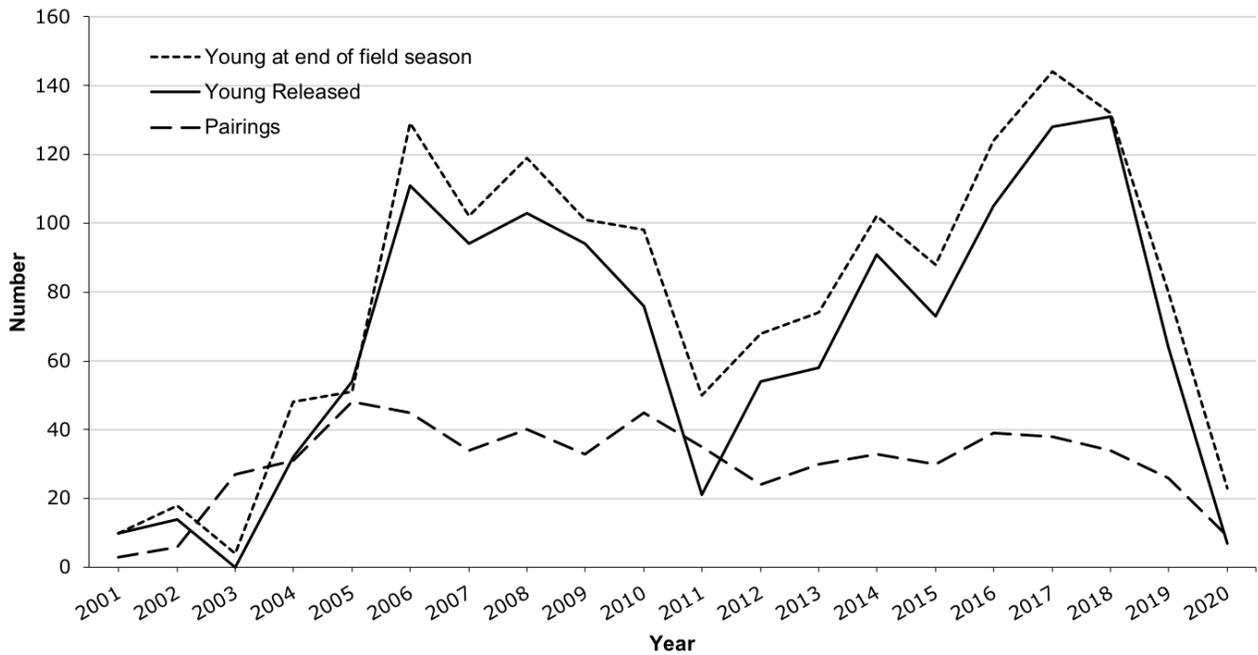


Figure 2. Captive LOSH pairings, young surviving to end of season, and young released

Banding and Radio Tags

Twenty-one captive juvenile shrikes received stainless steel bands this season (7 released young and 14 retained young). Released birds that received colour-bands were given a combination that included OR/SI on the left leg to identify them as a 2020 release bird. All birds received some sort of temporary colour-marking (Sharpie) to aid in individual identification while in the release enclosures and during post-release monitoring.

Radio-tagging was not conducted this year to prevent potential spread of COVID-19. Radio-tagging requires close contact by two staff people and subsequent handling of birds for pre-release checks, and every effort was made to reduce bird handling as much as possible this season to reduce risk to birds and staff.

Motus detections and band resightings

Four of the 10 birds released in with radio tags in 2019 were detected by the Motus network that fall; all originated from the Carden release site and were hatched at the Smithsonian Conservation Biology Institute, one of our U.S. breeding partners (Fig 3). Three of the birds were only detected on towers in Ontario; the fourth bird was picked up on a tower in Pennsylvania approximately one month after being released. This is the second consecutive year of birds being detected in PA, and interestingly all detections appear to be on a similar path. Three of the tags deployed in 2019 had a 10-month battery life (compared to 5 months for tags deployed to that point) that would allow for spring detections, but no 2020 hits have yet been uploaded. However, one captive-bred LOSH was resighted during spring migration: a 2018-release that returned to breed in Napanee in 2019 was spotted near Meadville, PA on April 9/20. It was only seen the one day, but the observer submitted a picture so band combination could be confirmed. This bird was not resighted by WPC staff in Ontario during the field season.

No juveniles were released with radio-tags this year, due to low release numbers and efforts to maintain distance between staff.

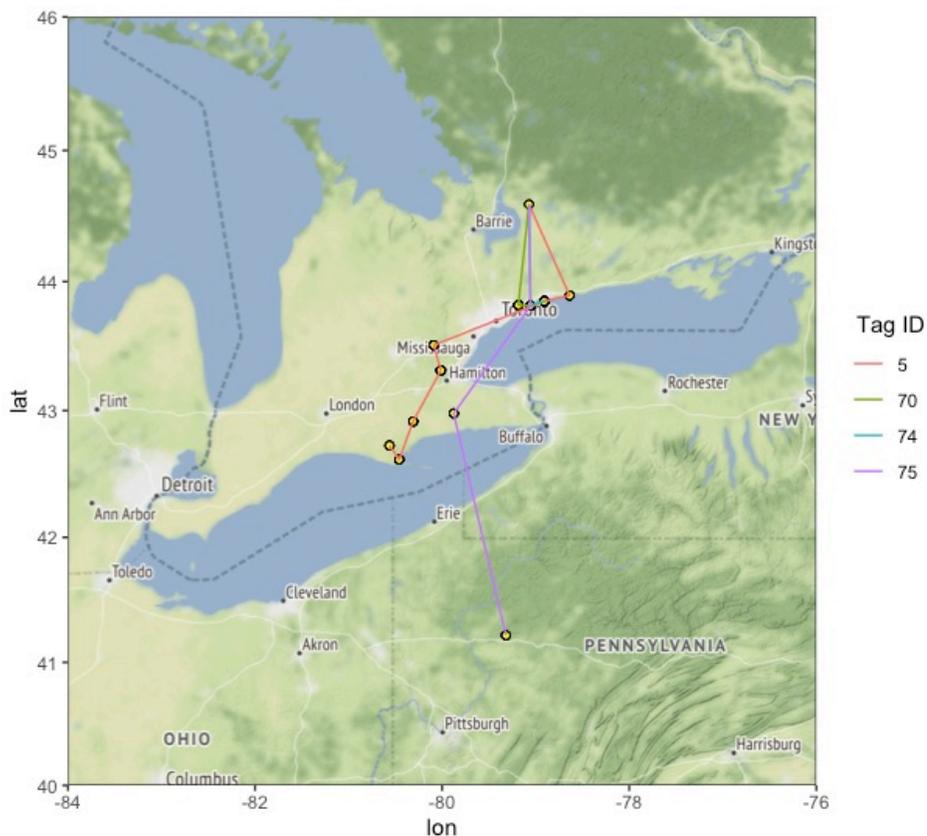


Figure 3. Fall 2019 Motus detections for birds released that year.

Status of the captive breeding population

As of November 16 there were 66 birds in the captive population (including partner facilities in both Canada and the U.S.). Sixty-one of these birds are considered breeding stock, one is a retired bird that has aged out of the breeding population, three are education/exhibit birds, and one is a non-releasable non-breeding adult, retained from the 2019 breeding season. The current breeding stock includes: 48 birds that are 5 years or younger (HY 2015-2020), 12 birds that are 6-10 years old (HY 2010-2014), and one over 10 years old. Fifteen juveniles were retained this year following a decrease in breeding stock from off-season mortalities at African Lion Safari. One juvenile was hand-reared at the Smithsonian Conservation Biology Institute and will be housed there as an education and outreach ambassador.

HABITAT STEWARDSHIP

Planning for stewardship projects is underway, with a focus this year on Napanee as several landowners with key areas of LOSH habitat have reached out about work that is needed on their properties. WPC also purchased a new Bush Hog this year, as the machine we had was in need of repairs and the parts were no longer available to bring it up to provincial safety standards. The unit is currently being held by a landowner in Napanee, and will be used for habitat stewardship over the winter.

RESEARCH

There are a number of ongoing research initiatives involving the Eastern Loggerhead Shrike Recovery Program that are being led by graduate and post-graduate students, LOSH Working Group members, and Wildlife Preservation Canada staff. Projects that have continued through this year include:

- Expression of migratory urge in captive Loggerhead Shrikes
- Diet and food preference in captive Loggerhead Shrikes
- Identification of overwintering grounds and migratory routes
- Genomic tools for species conservation and management

In addition to research initiatives that have continued through 2020, two manuscripts were accepted for publication this year:

- Morgan, G., and A. Chabot. 2020. Visually Sexing Loggerhead Shrike (*Lanius Ludovicianus*) Using Plumage Coloration and Pattern. *Journal of Visualized Experiments* 157: e59713 doi:10.3791/59713
- Schutten, K., A. Chabot, and H. Wheeler. In press. West Nile virus seroconversion in Eastern Loggerhead Shrike (*Lanius ludovicianus migrans*) after vaccination with a killed vaccine. *Journal of Zoo and Wildlife Medicine* [Publication anticipated March 2021]

Other manuscripts currently under review or in development include:

- Hudecki, J., H. Wheeler, and A. Chabot. Evidence and impact of plastic use by the Loggerhead Shrike (*Lanius ludovicianus*). Revised manuscript submitted for publication.
- Analysis of environmental contaminants in LOSH eggs
- Stainless steel band removal protocol
- Use of geolocators to study LOSH movements
- The value of quantitative genetics for conservation breeding: a review

PUBLIC EDUCATION AND OUTREACH

The majority of scheduled outreach events (in-person displays and presentations) were cancelled this year due to COVID-19. One virtual outreach event did occur, however: Hazel Wheeler, along with artists Richard Ibgby and Marilou Lemmens, was part of a panel discussion on July 21 hosted by the Wave Hill Public Garden and Cultural Centre in The Bronx, NY. The discussion followed a screening of Ibgby and Lemmens' video "Banding Young Eastern Loggerhead Shrikes in the Carden Alvar", which was recorded during the 2019 season, and included in their multimedia series, "The Violence of Care". The discussion was broadcast on Facebook live, and the recorded video remains accessible through the Wave Hill website (<https://www.wavehill.org/calendar/eco-urgency-ibgby-lemmens>).

The LOSH recovery Program was also mentioned in the following media pieces:

- "Minimalist art that speaks for the birds" (Gregory Volk, January 18th, 2020) – A Brooklyn-based arts and culture website that covered the Nebraska exhibit by Ibgby and Lemmens, which featured WPC (mentioned above) <https://hyperallergic.com/537920/minimalist-art-that-speaks-for-the-birds/> [Accessed October 27 2020]

- “Rebuilding troubled species takes decades of patience and persistence” (Aanders Gyllenhaal, May 27th, 2020) –personal blog which examined lessons from the LOSH program. Both Jane Hudecki and Hazel Wheeler quoted. <https://flyinglessons.us/2020/05/27/rebuilding-species-takes-decades-of-patience-and-persistence/> [Accessed October 27 2020]
- Saving Animals From Extinction (SAFE) – North American Songbird Working Group newsletter (Leighann Cline) – Cline (LOSH keeper at SCBI) wrote an article about their hand-reared education bird, Barb, for this newsletter. Article mentions WPC and the LOSH program, and directs any with interest in joining the program to contact Hazel Wheeler.

Finally, independent journalist, Luke Fuending, attended the captive juvenile release in Carden this year, after which he wrote a piece about the LOSH program. It has not yet been published, but ON Nature has expressed interest.

PROGRAM SUPPORT

WPC is grateful to all supporters of Loggerhead Shrike recovery activities. Funding this year was provided by:

- Private foundations
- Private donors
- BluEarth Renewables
- Environment and Climate Change Canada
- Species at Risk Stewardship Program
- Colleges and Institutes Canada Career Launcher Internship
- Kingston Solar LP
- Canada Emergency Wage Subsidy and Temporary Wage Subsidy

In addition, we would like to thank all the landowners, whose continued support and stewardship efforts are essential to recovery efforts.