2023 EASTERN LOGGERHEAD SHRIKE RECOVERY PROGRAM SUMMARY REPORT

Prepared by:
Hazel Wheeler, Conservation Programs Director
Helmi Hess, Recovery Biologist

January 31, 2024

Executive Summary

This was a challenging year for the Loggerhead Shrike (LOSH) Recovery Program, due to an unforeseen reduction in funding that has historically supplied the bulk of operational funding for the program. As a result, staffing and project activities were restricted, with resources focused towards core program activities.

Relatively few wild birds were detected in the main cores in Ontario in 2023, and low breeding success at Ontario conservation breeding facilities contributed to diminished release numbers for the year. The low breeding success can be attributed to space limitations arising from repairs that breeding enclosures required at the start of the breeding season, and to a high proportion of young breeders in the conservation breeding population that generally have lower reproductive success.

The volunteer Adopt-A-Site program proceeded as normal this year with 35 volunteer site surveyors participating across Ontario. LOSH program staff participated in two outreach events this year and held six presentations. A new breeding partner facility, Parc Omega in Quebec, was onboarded this year and will contribute to the conservation breeding effort beginning in 2024. Furthermore, a new three-unit release enclosure was constructed on the Napanee release site, which will greatly increase the housing capacity for juvenile shrikes preparing for release.

Wild Population

Monitoring

Sixteen pairs of Loggerhead Shrike (LOSH) were confirmed in Eastern Canada this season: 11 in Napanee, and 5 in Carden (Fig. 1). One “pair” in Napanee was in fact a triad of birds with two females and one male, which was confirmed when both females were trapped and banded. There were no confirmed reports of pairs outside of the two main cores this year, though there was one pair reported on eBird in Smiths Falls in August. No pictures were submitted with this observation though, so without follow-up this report will be treated as “unconfirmed”. There were, however, six other reports of single

birds in Eastern Canada on eBird, all either with pictures of from known and highly-skilled birders, so they are included in counts for the year. Birds were seen in the following locations: northern Quebec (Rouyn-Noranda) on May 7, eastern Quebec (Baie Comeau) on May 15-17, near Erieau for five days at the end of May, Smiths Falls on May 31 Leamington on June 6, and near Halifax in mid-June.

Figure 1. Number of LOSH pairs and single birds in eastern Canada

Counts in each core decreased significantly this year, with Napanee decreasing by four pairs and Carden decreasing by two, though this may partially be an observer bias due to decreased staffing. Only two of the pairs observed in Carden (40%) this year fledged young; one was successful on the first known attempt, and the other had two failed nests before a successful third attempt. Napanee numbers were markedly higher, with ten pairs (91%) with confirmed fledglings. The remaining pair had an unknown nest presence or outcome, which is attributed to an inability to monitor the site due to a lack of access.

Nest success rates were incredibly low in Carden (29% of observed nests fledging young), with abundant nest failures. These numbers were eclipsed by success rates in Napanee (83% compared to 75% in 2022). A total of seven known nests (5 in Carden, 2 in Napanee) failed in 2023. Determining causes of nest failures is always challenging in the absence of direct observation, but predators and extreme weather (freezing and strong winds) are considered likely contributors to the failure of these nests. There was another instance of an entangled fledgling in Napanee this year, which we last observed in 2022. As with last year, the entangled juvenile found this year was already dead at the time of discovery, caught in plastic bailing twine that had been incorporated during nest building.

The 12 successful pairs in Ontario had a total of **37 observed fledglings** (30 in Napanee, 7 in Carden), with an average of 3.08 confirmed fledglings per successful nest. As with most years, the observed fledgling count is likely an underestimate, as some pairs nested on sites that were inaccessible to field staff, making detailed observations difficult. There were no double-broods this year, and only one second nest attempt (failed) after a first attempt with nestlings (successful). Other second or third attempts were undertaken after failed nests with eggs.

In addition to breeding pairs, single birds were observed on 13 occasions in Ontario this year: three in Carden and four in Napanee, plus the six reported eBird observations mentioned above. Only one of the single birds seen in Napanee could confidently be counted as a unique individual, and none in Carden could be so counted; however, all of the eBird reports are counted as separate individuals, based on timing and locations of sightings.

Using conservative counts of confirmed pairs and single birds, the wild **adult population** of Loggerhead Shrikes in eastern Canada in 2023 was **40 birds**.

Returning captive-bred birds

Three captive-released birds were confirmed returning to Ontario breeding grounds this year (Table 1) and made up 7.5% of the population of adult shrike in eastern Canada. All of these birds had confirmed breeding with wild mates, though one failed to successfully produce fledglings. The two successful nests were in Napanee and produced at least five fledglings (13.5% of all wild juveniles seen in Ontario). This count may be an underestimate, as one of the nests was on a site with no access, so observations were limited.

One of the returning birds was confirmed as a 2021-release that had also been observed in 2022 at a different site in Napanee approximately 1.5km away. One was a 2019-release bird that was seen breeding on the same site in Carden in both 2021 and 2022. The third was a 2017-release that had only been seen in 2019 on a neighbouring attached site to the one it was seen on this year. None of the 54 birds released in 2022 were confidently observed this year, though one other possible captive-origin bird was reported in Carden. This bird was reported via eBird with a photo, but was never confirmed by field staff. We are hopeful that more 2022-release birds will return next year.

Trapping and banding

Ten wild LOSH were trapped and banded this year; nine in Napanee and one in Carden. All of these birds were adults in breeding pairs. Band combinations were partitioned this year such that Napanee birds received a white band above their silver ID band, and Carden birds received white under the silver band, both on the right leg. Regular behaviour was observed on all territories the day after trapping activities.

Following all trapping, 56% of the observed adult LOSH population across Carden and Napanee was confirmed banded, 38% unbanded, and 3% with unknown band status. The distribution of banded birds continues to skew heavily towards Napanee, with 84% of all banded birds observed in that core, with Carden remaining largely unbanded.

Band status was not confirmed this year for one individual, which was in Carden on a site with no access.

Captive Population

Captive breeding and release

Thirty-four pairings occurred across partner facilities. Twelve of these pairs produced 40 young that survived to release or retention, across seventeen nests (Fig. 2). Seventeen of these young were released into the wild, all at the Carden release site. 23 young were retained to add to the captive breeding population.

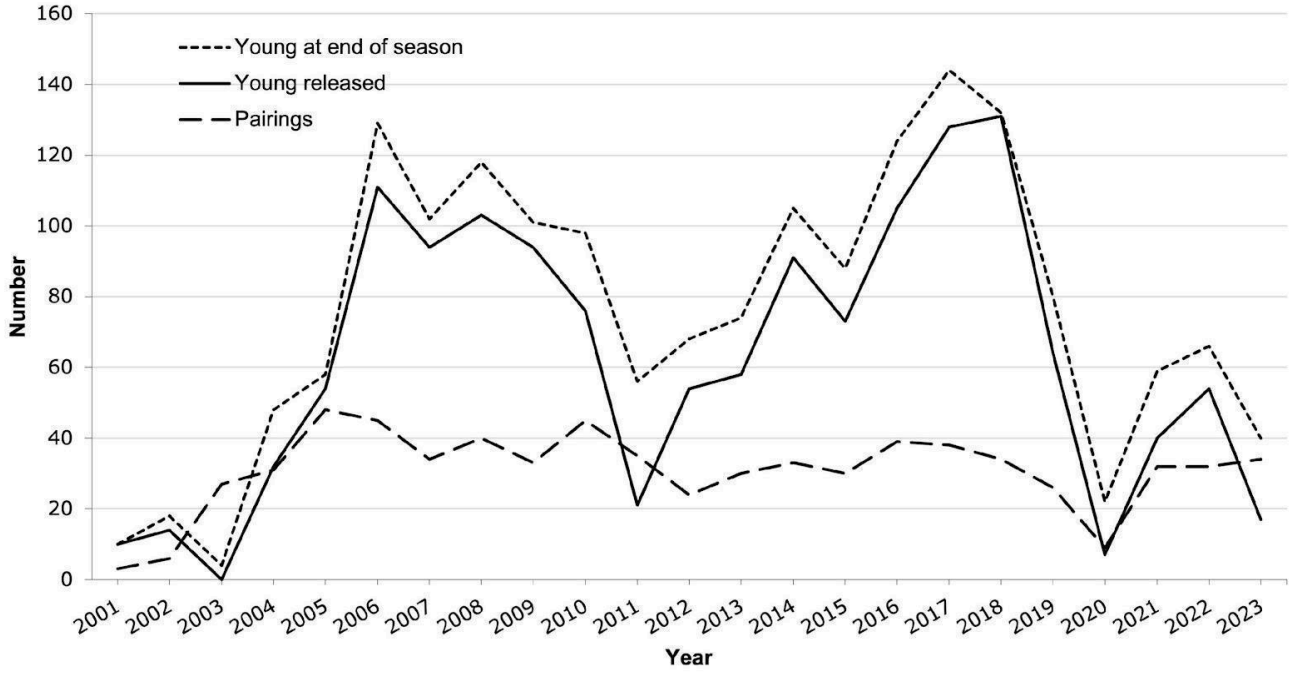

Figure 2. **Captive LOSH pairings, young surviving to end of season, and young released**

Banding and Radio Tags

Twenty-one captive juvenile shrikes received stainless steel bands this season (17 released young, 4 retained young). Most released birds that received colour-bands were given a combination that included either white and silver bands on the left leg to identify them as a 2023 release bird. Five birds were released with radio tags, to be tracked on the Motus network.

Motus detections and band resightings

Five birds were released with radio tags on the Motus network, all in the Carden core as no releases occurred in Napanee this year (see Section D.1). Two birds, both released on August 16, have been detected locally so far: one on a tower in High Park in Toronto on August 27, and one on towers at the Pickering OPG plant and Toronto Zoo (in close succession) on September 10. Four of the tags applied were left over from 2022, and one was a new tag purchased this year with funds from SCBI; all have a 10-month battery life.

To-date we have received very few detections of the nine birds tagged and released in 2022; however, there is one detection of a bird on a station in Ohio in August 2023. Given the 10-month battery life of the tags is it possible that this is an erroneous detection, but this point will be investigated further. If it does appear to be a valid detection, this would be the first we have received from Ohio.

Status of the captive breeding population

As of January 4th, there were 73 birds in the captive population at partner facilities in both Canada and the U.S. Sixty-seven of these birds are considered breeding stock, two are education/exhibit birds, and one is a non-releasable non-breeding adult (2019HY), and three are 2023HY birds that could not be released due to permit delays so are slated to be released in spring 2024. Excluding holdings for education/outreach birds, holding capacity across all project partners heading into 2024 is 88 birds.

Habitat Stewardship

No WPC-led habitat stewardship projects were completed this year, due to a lack of funding. However, WPC staff were consulted on some vegetation management undertaken by a rancher on a property in Carden that they lease from Lafarge Aggregates. The landowner continued thinning work that was started in partnership with WPC in 2022, with the goal to leave a density of 1-3 trees per acre (including all past nest trees), as per the habitat stewardship guidelines developed for Ontario. WPC staff contributed by visiting the site in late August to tag all past nest trees, to ensure they were not included in the thinning.

Program Opportunities

This was the first year of breeding for one of our new partners, the National Aviary in Pittsburgh. As a new facility, the Aviary was given a single breeding pair in 2023, which successfully produced three fledglings. These juveniles are being held over the winter for potential spring release. National Aviary holdings will increase to two pairs for 2024. They also participated in the LOSH Species Conservation Planning process, adding representation from Pennsylvania.

The LOSH program is excited to welcome Parc Omega, a new partner facility with the Loggerhead Shrike Conservation Breeding and Release Program, that is officially housing their first four breeding pairs of Loggerhead Shrike. Parc Omega is a safari park nestled in the hills of western Québec where visitors can drive a 12 kilometre trail through lakes, forests, and meadows, all while viewing Canadian wildlife. Although Parc Omega has been involved in the Loggerhead Shrike Recovery Program for several years now, 2024 will mark their first breeding season.

A new shrike enclosure was constructed at the program's Napanee release site in November. Wildlife Preservation Canada staff worked in conjunction with partners from African Lion Safari, the Nature Conservancy of Canada and Queen's University to construct this new enclosure that will allow for three separate groups of shrikes to be housed within before release. The addition of this triple-unit enclosure has increased our release capacity in this core by 33%, and provides a safe space for up to 12 young to acclimate to their wild surroundings before release. Research suggests that birds released in larger groups are more likely to return to Ontario, thus large enclosures such as this new one are beneficial. A big thank you to the Nashville Zoo at Grassmere and the Stephen L. McDonough Family Wildlife Conservation Fund for generously supporting this enclosure and its construction.

Research

There are a number of new and ongoing research initiatives involving the Eastern Loggerhead Shrike Recovery Program that are being led by WPC or researchers outside of WPC, but with WPC staff assisting with planning and data collection. Advancements were made in the following projects this year:

- Investigation into causes of nest failures
- Identification of wintering grounds and migratory routes
- Expression of migratory urge in captive Loggerhead Shrikes
- Genomic tools for species conservation and management
- Retrospective analysis of mortalities and necropsies in captive population

The following project remains on the radar, though no progress was made in 2023:

- Diet analysis and food preference study

The following manuscripts were in preparation this year:

- Geldhart, E.A., H. Wheeler, L-A. Howes, S. Mackenzie. Impacts of tracking devices on birds: A review.
- Hughes, K.D., P.A. Martin, S.R.de Solla, J. Hudecki, J. Steiner, H. Wheeler, and A. Chabot. Contaminants in eggs of Loggerhead Shrikes, eastern subspecies (*Lanius ludovicianus ssp.*).
- Chabot, A.A. and S.C. Lougheed. Genotypic and phenotypic differentiation among subspecies of Loggerhead Shrike (*Lanius ludovicianus*).

The following conference presentations were given:

- Wheeler, H. Conservation-breeding as a recovery tool for Eastern Loggerhead Shrike in Canada. July 2023. 5th International Shrike Symposium, Vairão, Portugal (virtual presentation).
- Wheeler, H., and A. Samuelson. Full annual cycle modelling to improve Endangered Loggerhead Shrike population management in Ontario. August 2023. Birds and Bridges: AOS & SCO-SOC Joint Conference, London, ON.

Public Presentations

The LOSH program was the subject of four public presentations this year. All presentations were well received with excellent feedback from collaborators and those in attendance.

- Robert L Bowles Nature Center (May 31)**:** Presentation by Helmi Hess, 45 min in duration to an audience of 30 from the Lake Simcoe and Vancouver sections of Friendship Force International.
- *rare* Charitable Research Reserve in Cambridge (July 11): Presentation by Helmi Hess at ECO (Every Child Outdoors) camp, 1.5 hours in duration to 22 children aged 5-13 and 4 adults.
- Seedrioru Estonian Children's Camp in Elora (July 11): Presentation by Helmi Hess, 1 hour in duration to 60 children aged 5-16 and 10 adults.
- University of Guelph (Oct 12): Guest lecture by Hazel Wheeler to a Master of Wildlife Biology class, 39 students in attendance.

LOSH program staff participated in two events this year:

- Spring Bird Festival, Colonel Sam Smith Park (May 27): The event was very well attended and the program's tent was ideally situated for a high volume of foot traffic (along the entrance pathway where all attendees passed). Approximately 500 people interacted with the booth, with Helmi Hess speaking to over 150 people directly.
- Lakehead University class site visit (Aug 30): An upper-year Environmental Sustainability Field Class (Instructor: Chase Moser) visited the Carden field site for a tour led by Hazel Wheeler. The tour took approximately 1.5 hours, and included an explanation of the LOSH Recovery Program, and a look at the feed shed and release enclosures. All birds had been released approx. 2 weeks prior, so no shrike were seen. The class was approximately 20 people, and many students expressed interest in applying to field positions in coming years.

The LOSH Recovery Program was mentioned in the following media pieces:

- "Shrike status: Captive-raised young are released into the wild to bolster shrike populations" (OFO News, Feb 2023) – Article on the status of LOSH in Ontario; featured interview with Wheeler about the Recovery Program http://www.ofo.ca/library/serve/on-41-1/index.html?page=18

- “The return of one eastern loggerhead shrike songbird a cause for celebration at the Toronto Zoo” (Toronto Zoo, originally published July 13/22, updated May 27/23)– Article about a returned TZ shrike in Napanee; WPC mentioned as coordinator of the recovery program https://www.toronto.com/opinion/the-return-of-one-eastern-loggerhead-shrike-songbird-a-cause-for-celebration-at-the-toronto/article_27cd9321-87b5-5db1-a638-0b3ceb5659bf.html
- "Land is not a mat to be rolled up and taken away" - multimedia art piece by Richard Ibghy and Marilou Lemmens featuring video of the Carden release site - on exhibit at the Confederation Centre for the Arts (Charlottetown, PE) from Feb 16 - May 21/23

Program Support

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

- Employment & Social Development Canada – Canada Summer Jobs
- EcoCanada Science Horizons Wage Subsidy
- Hodgson Foundation
- BluEarth Renewables
- Kingston Solar LP
- Panacea Products
- Nashville Zoo
- Ontario Parks
- Private donors

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