



2022 EASTERN LOGGERHEAD SHRIKE RECOVERY PROGRAM SUMMARY REPORT

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COVID-19 PROGRAM IMPACTS

The Loggerhead Shrike (LOSH) Recovery Program generally returned to typical operation this year. Field staffing was at pre-pandemic levels, the volunteer Adopt-A-Site program was reinstated in full, and conservation breeding activities are also starting to ramp back up. The largest impact that still remains is likely in staffing levels at partner facilities, which have not yet fully recovered at all locations. Travel is also still somewhat limited, as program personnel have varying levels of comfort around indoor public events. Most meetings this year have offered hybrid in-person/virtual options that have allowed all staff to attend, but this may change if more in-person-only events return.

WILD POPULATION

Monitoring

Twenty-two pairs of Loggerhead Shrike (LOSH) were confirmed in Eastern Canada this season: 15 in Napanee, and 7 in Carden (Fig. 1). There was one additional sighting of an adult with a fledgling near Meaford in July, which was reported second-hand through a program volunteer, but this report was never confirmed by field staff so is not being included in population counts.

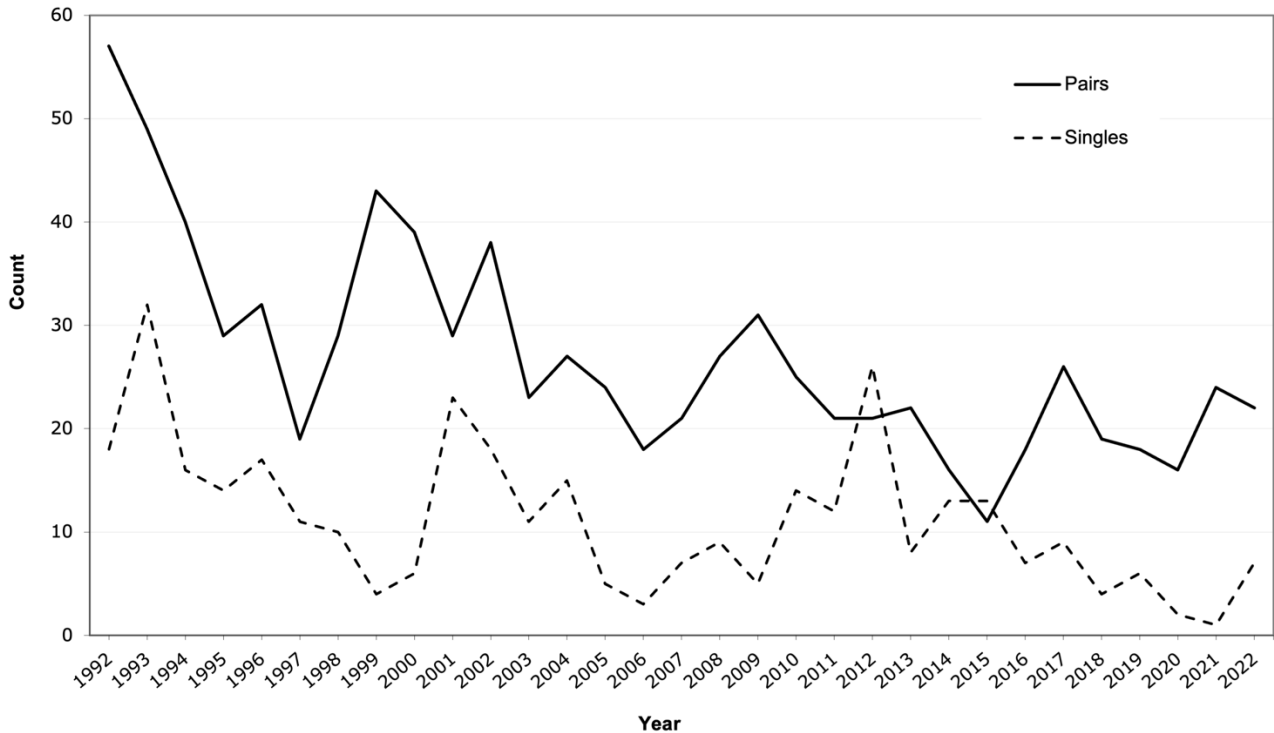


Figure 1. Number of LOSH pairs and single birds in eastern Canada

Counts in each core remained relatively stable this year, with Napanee increasing by one and Carden decreasing by two. Excluding the possible breeding near Meaford, there were no confirmed reports of pairs outside of the two main cores this year. However, there was a single bird reported on eBird in the Lower Saint-Lawrence region in May, so the spectre of unknown breeding locations in Quebec looms this season.

All pairs observed in Carden this year fledged young, though one pair had a failed first attempt and was successful on their second nest. Napanee numbers were markedly lower, with only nine pairs (60%) with confirmed fledglings. Of the remainder, one pair failed to fledge any young, and the other five pairs had unknown outcomes. The dearth of data for the “outcome unknown” pairs can be attributed to a lack of site access (three pairs), birds disappearing before outcomes were confirmed (two sites).

The 16 successful pairs in Ontario had a total of **45 fledglings observed** (28 in Napanee, 17 in Carden), with an average of 2.81 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. Further, some family groups were located after the young had already fledged, and fledgling counts tend to decrease with time after leaving the nest as the young get more mobile, thus more difficult to detect. There were no double-broods this year, though one pair in each core had a second (successful) nesting attempt after their first clutch failed.

In addition to breeding pairs, seven single birds were confirmed in Ontario this year: four in Carden, one in Napanee, and one in Quebec (reported on eBird). Only one of these birds had a band

combination that allowed definite identification, so this count was largely determined by timing and location of sightings and may be an underestimate.

Using conservative counts of confirmed pairs and single birds, the **LOSH population in eastern Canada this year was 51 adults**.

Returning captive-bred birds

Seven captive-released birds were confirmed returning to Ontario breeding grounds this year (Table 1) and made up 14% of the population of adult shrike in eastern Canada. Six of these birds had confirmed breeding with wild mates, producing at least 13 fledglings (29% of all wild juveniles seen in Ontario), though that count is likely an underestimate as one adult was found with a single juvenile after fledging so there may have been more young with the other adult, which was never observed.

Two of the returning birds were confirmed as 2021-releases (5% return rate), two were 2019-release birds that were seen breeding on the same sites in 2021, and two were 2018-releases. At least one of the 2018 birds had not yet been seen in Ontario, which brings the cumulative return rate for that cohort to 8.5%. The other 2018 bird had only a partial band combination observed, so while we can be certain of its release date, no further details could be confirmed.

One other captive-origin bird was seen, but with only a partial band combination we cannot determine year or location with certainty.

Trapping and banding

Six wild LOSH were trapped and banded this year, five 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 SI/DG as part of their four-colour combination, and Carden birds received DG/SI. Regular behaviour was observed on all territories the day after trapping activities.

Following all trapping, 37% of the observed adult LOSH population was confirmed banded, 49% unbanded, and 13% 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 seven individuals. Three of these (2 in Carden, 1 in Napanee) were birds that were not directly observed; however, three single adults were found with recently fledged young, so the other members of those breeding pairs were assumed. All remaining unknown birds were in Napanee: two were a pair on a site to which there was no access; one was a member of a pair that was reported early in the season on eBird; and one was part of a pair that was only observed two times in June before they disappeared.

CAPTIVE POPULATION

Captive breeding and release

Twenty-eight original pairs and 4 re-pairs were given the opportunity to rear young across partner facilities. Nineteen of these pairs produced 66 young that survived to release or retention (Fig. 2). Fifty-four of these young were released into the wild (34 in Carden, 20 in Napanee), and 12 young were retained to add to the captive breeding population.

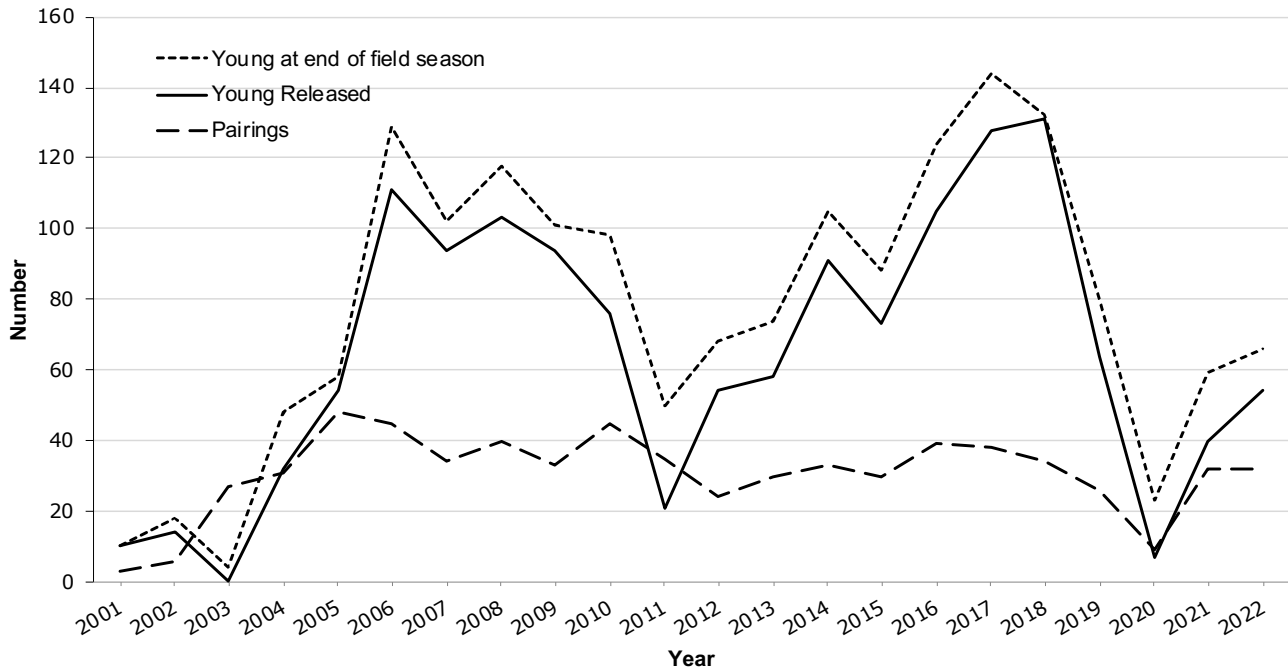


Figure 2. Captive LOSH pairings, young surviving to end of season, and young released

Banding and Radio Tags

Fifty-nine captive juvenile shrikes received stainless steel bands this season (54 released young, 5 retained young). Released birds that received colour-bands were given a combination that included either DG/SI (dark green over silver; 41 birds) or SI/DG (7 birds) on the left leg to identify them as a 2022 release bird. Five birds were not given colour bands on their right legs due to old injuries or abrasions, and two birds received only SI on left, one due to an abducted left leg, and one due to a colour band intolerance.

Birds released with radio tags (9 individuals) were banded with the year combination on their left leg only if they received a size 1D band (5 birds), or only a SI on left if they took a size 2 (4 birds).

Motus detections and band resightings

Nine birds were released with radio tags on the Motus network in 2022; two in Napanee, seven in Carden. So far, two birds released in Carden have been detected on towers on the north shore of Lake Ontario (Pickering and Darlington nuclear plants), and it is expected that more detections will be uploaded through the winter.

Of the twelve birds released with tags in 2021, three were detected on Motus stations away from their release sites. Four of the birds were only detected at the Napanee release site tower. Three birds, released in Carden, were picked up on the tower at the Pickering nuclear plant, and one bird, released in Napanee, was picked up on six towers east along the Lake Ontario shore to Bowmanville. No U.S. detections have yet been posted for any of these birds.

Status of the captive breeding population

As of December 7, there were 70 birds in the captive population at partner facilities in both Canada and the U.S. Sixty-six of these birds are considered breeding stock, two are education/exhibit birds,

one is a retired female (HY 2010) and one is a non-releasable non-breeding adult, retained from the 2019 breeding season. The current breeding stock includes: 47 birds that are 5 years or younger (HY 2017-2022), and 19 birds that are 6-10 years old (HY 2012-2016).

HABITAT STEWARDSHIP

Four habitat stewardship projects will be completed before spring 2023:

- 1) Vegetation management on Lafarge property (127 ha) – Though this site has been a successful breeding territory for the past six years, suitable habitat areas (and available grazing areas) are shrinking due to encroaching hawthorns. Hawthorns will be thinned throughout approximately 60 ha of the property, leaving a density of 1-3 trees per acre (including all past nest trees).
- 2) Vegetation management on a privately-owned 15-ha property – This site has hosted breeding LOSH for the past six years, but is becoming overgrown with prickly ash. This project will clear the large area of prickly ash, along with other small encroaching shrubs that are decreasing the amount of grazing area and shrike habitat, using a rotary mower.
- 3) Fencing on the Napanee Plain Alvar Nature Reserve (105 ha) – There was an incomplete fence on the southern border, through which cattle would sometimes escape to a neighbouring property. This project will see the southern fence rebuilt with existing cedar rail from an old fence line that is no longer used in the middle of the property. This site hosts the Napanee field release site, and is one of the most frequently used wild nesting sites in the region.
- 4) Fencing on a privately-owned 50-ha property – Installing fencing around this property will recommence grazing and control vegetation. The property had a successful breeding pair in 2021, had another pair nesting just across the road in 2017, and is within 500m of other nesting territories. A single bird was seen on this property this year, but breeding was never confirmed.

RESEARCH

There are also a number of new and 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:

- Identification of priority stewardship areas and required actions for Loggerhead Shrike Recovery in Ontario
- 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
- Quantitative genetic techniques for species conservation and management
- Retrospective analysis of mortalities and necropsies in captive population

The following manuscript was published this year:

- Sauve, D., J. Hudecki, J. Steiner, H. Wheeler, and A. Chabot. 2022. Improving species conservation plans under IUCN's One Plan Approach using quantitative genetic methods. *Peer Community Journal* 2: e50.

The following manuscript has been accepted for publication:

- Geldhart, E.A., H. Wheeler, L-A. Howes, S. Mackenzie. In press. Impacts of tracking devices on birds: A review. *North American Bird Bander*.

PUBLIC PRESENTATIONS

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

- Hamilton Naturalists' Club (Jan 17); Public presentation by Jane Spero; 83 attendees
- OVC Environmental Club (Jan 26); Lunchtime presentation by Hazel Wheeler; 15 attendees
- McMaster University (Apr 8); Guest lecture for 4th year Conservation Biology class by Hazel Wheeler; 27 attendees
- Holy Trinity Catholic School (Apr 13); Presentation to lower classes on recovery program by Jane Spero; 100 attendees
- Toronto and Region Conservation Authority (May 17); ELOSH Recovery Program presentation by Jane Spero; 50 attendees

LOSH program staff participated in three events this year:

- 1) Wildlife-at-Risk Video Series Release Party (Apr 2) – A virtual event airing the first of a video series created by staff at Sandy Pines Wildlife Rehabilitation Centre (SPWC), highlighting conservation in the region. An interview with Hazel Wheeler at the Napanee field site in 2021 was featured, and Hazel participated in a Q&A session with the audience of 35 people. A link to the video is included below.
- 2) Spring Birding Festival, Colonel Sam Smith Park (May 28) - Approximately 500 people interacted with staff and many expressed interest in donating.
- 3) Lakehead University class site visit (Aug 31) – An upper-year Environmental Sustainability Field Class (20 students) visited the Carden field site for a tour led by Hazel Wheeler. The tour included an explanation of the LOSH Recovery Program, a look at the feed shed, and scope-views of captive juveniles that were to be released the following day.

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

- Wildlife-at-Risk Episode 4: Bird's Eye Views (YouTube, April 2) – One of a series of videos made by SPWC about wildlife-at-risk in the Napanee region; features footage of LOSH release site and interview with Hazel Wheeler <https://youtu.be/MTRO5jckKuQ>
- “The return of one eastern loggerhead shrike songbird a cause for celebration at the Toronto Zoo” (Toronto Zoo, July 13)– Article about a returned TZ shrike in Napanee; WPC mentioned as coordinator of the recovery program <https://www.thestar.com/local-toronto-scarborough/opinion/2022/07/13/the-return-of-one-eastern-loggerhead-shrike-songbird-a-cause-for-celebration-at-the-toronto-zoo.html>

- "You can't catch a wild shrike twice": CAZA facilities work together to repopulate a Canadian migratory songbird (CAZA Newsletter, Oct 1)– Article about the LOSH program; WPC mentioned. Promoting Amy and Jess' talk about LOSH and the One Plan Approach at the upcoming CAZA conference <https://files.constantcontact.com/e38ed0d0801/0975ebbe-9e6a-48c8-94ed-06230f1bfc0e.pdf>
- Animalogic World of Birds (YouTube, Nov 18) – Episode of the Animalogic web series focused on shrikes. Some WPC footage used, and the release program is mentioned at the end <https://www.youtube.com/watch?v=D-KVv4n9wZM>

PROGRAM SUPPORT

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

- Species at Risk Stewardship Program
- Kingston Solar LP
- BluEarth Renewables
- Dillon Consulting Ltd.
- Colleges and Institutes Canada Career Launcher Internship
- Employment and Social Development Canada – Canada Summer Jobs
- Private foundations
- Private donors

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