



## 2021 EASTERN LOGGERHEAD SHRIKE RECOVERY PROGRAM SUMMARY REPORT

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### COVID-19 PROGRAM IMPACTS

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Though 2021 was closer to a typical season than last year, certain projects and initiatives related to the Loggerhead Shrike (LOSH) Recovery Program continued to be impacted by the ongoing COVID-19 pandemic. Initiatives that were affected due to measures taken to mitigate the spread of the virus included:

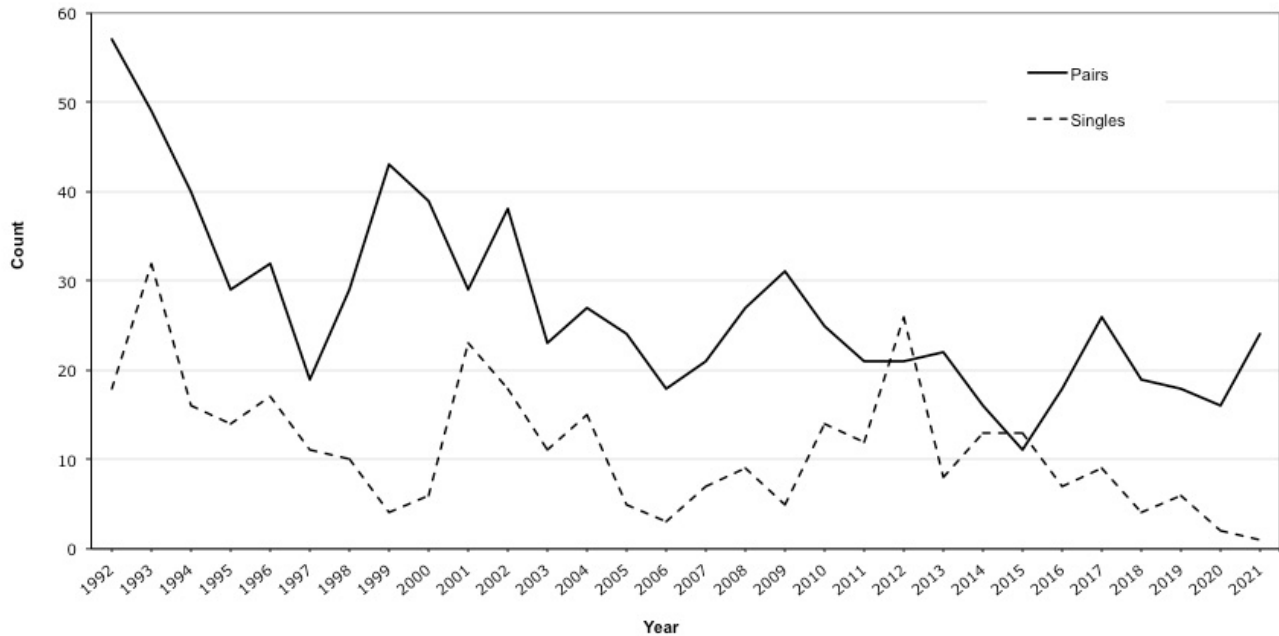
- **Wild population surveying and monitoring:** Field staffing returned to typical levels this year, with teams of two in Carden and Napanee that began surveying at the beginning of May. Implementation of the volunteer Adopt-A-Site program was still suspended in 2021 due to ongoing government travel restrictions and guidelines. Limited surveys were conducted by volunteers that had sites in their vicinity, but effort was greatly diminished from a typical year.
- **Conservation breeding and release:** Cross-border transfers were able to proceed in 2021 and there were not as many staffing restrictions at facilities, especially once vaccines were made widely available. The building of new release enclosures in Napanee, which was initially planned for 2020, was again postponed given the government recommendations for social distancing and inflated lumber prices.
- **Public education and outreach:** No in person events occurred this year, but program staff did deliver several online presentations about the program.

### WILD POPULATION

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#### **Monitoring**

**Twenty-four pairs** of Loggerhead Shrike were confirmed in eastern Canada this season: 14 in Napanee, 9 in Carden, and 1 in Smiths Falls (Fig. 1). The Napanee pair count increased over 25% compared to 2020 and Carden more than doubled; however, despite limited monitoring effort in 2020, when comparing 2021 results to 2019 the same increase occurred. This is also the third consecutive year that a pair was observed in Smiths Falls core.



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

All pairs observed in Napanee this year fledged young, as did all but one pair in Carden, with a total of **76 fledglings observed** (50 in Napanee, 26 in Carden); which almost doubles the recent low count of 34 fledglings in 2019. This count may be attributed to a high nesting success in Napanee (89% vs. 70% in Carden) along with a relatively high proportion of successful double-broods in that core.

The breeding status and outcome of the isolated pair in Smiths Falls was again unknown this season, despite WPC staff presence in the region. The pair was observed twice in late April by local community members, with only a single bird seen sporadically thereafter. The habitat patch where the birds were seen was surveyed extensively by WPC staff, but a shrike was only observed once on July 8. It is possible that nesting may have occurred on a nearby site, with the target patch used as foraging habitat. This is the second consecutive year that a pair of birds has been seen on this site.

In addition to breeding pairs, transient single birds were seen on six occasions from May 16 through to July 31, when birds would typically be breeding (Table 1). Notably, only one of these transient singles was seen in an established core (Napanee), with the rest in areas where shrikes are typically only seen during migration.

Using conservative counts of confirmed pairs and single birds, and counting two of the Napanee pairs as having the same female but different males, **the observed LOSH population in Ontario was 48 adults this year.**

**Table 1.** Single birds observed in 2021

Location	Nearest city/town	First reported	Days present	Band status	Confirmed LOSH
Tommy Thompson Park	Toronto	May 16	1	UNB	Y
Huron County	Goderich	May 31	1	UNB	Y
Nap177L	Napanee	June 2	1	UNB	Y
Dufferin County	East Garafraxa	June 29	2	UNB	Y
Huron County	Seaforth	July 27	1	Unk	N
Lambton County	Sarnia	July 31	1	UNB	Y

### Returning captive-bred birds

**Six captive-released birds** were confirmed returning to Ontario breeding grounds this year. These captive-origin birds made up 13% of the population of adult shrike in eastern Canada. Five of these birds had confirmed breeding with wild mates, producing at least 15 fledglings (20% of all wild juveniles seen in Ontario); however, one of these pairs was on a site where observations were complicated due to limited site access, so this number may be an undercount. The remaining bird, which was observed on the same territory in the Smiths Falls core for the second consecutive year, was only seen with another individual twice in late-April, and both of those observations were by local volunteers. All other sightings, which were sporadic, were of just one bird, so breeding was never confirmed.

Four of the returning birds were confirmed as 2019-releases, two of which were not seen in 2020 so brings the cumulative return rate for that cohort to 10.9% (up from 7.8% in 2020). One bird was a radio-tagged 2018-release that had also not been observed in Ontario in the intervening years; that cohort's cumulative return rate is now 7.7% (up from 6.9% in 2019). This radio-tagged bird was only detected locally in Carden just after release in 2018, so we have no further data on where this bird may have been between release and its discovery in Ontario this year, but it is notable that it was relocated in Napanee rather than in its release core.

The final captive-origin bird had only a metal band, so individual identification was not possible. However, this was likely a bird released with a radio-tag, as some tagged birds released from 2014 to 2019 were given only a metal band due to weight restrictions. The other possibility is that this bird removed all of its colour bands, but loss of all bands has become a rare occurrence. Unfortunately, this bird could not be trapped as it was on a property to which staff did not have access.

### Trapping and banding

**Eight wild LOSH were trapped and banded** this year, seven in Napanee and one in Carden. Seven of these birds were adults in breeding pairs, and one was an independent fledgling. All newly-caught birds were banded with SI/LB on right, to indicate wild birds caught in 2021. Regular behaviour was observed at all territories the day after trapping activities. Additionally, one captive-origin bird was trapped in Napanee. This bird had only a partial band combination (DB/SI on left) as it had been released in 2018 with a radio-tag, so it was given a full colour band compliment upon capture this year.

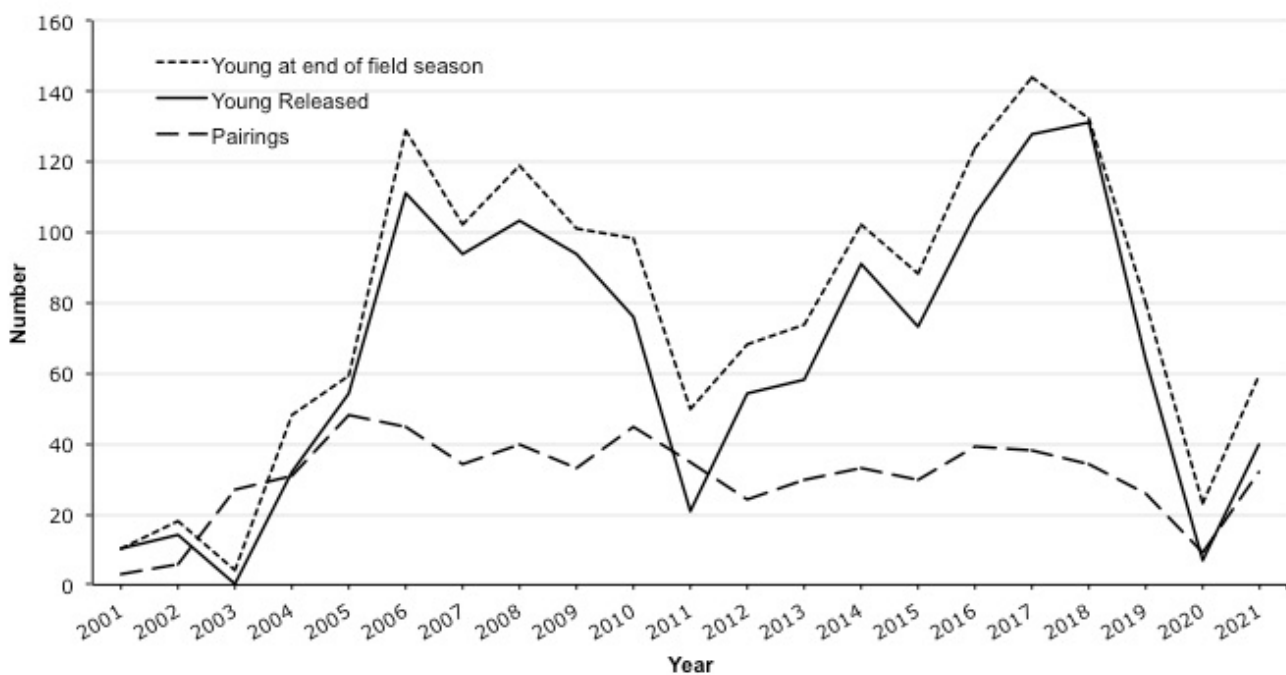
Following all trapping, 42% of the observed adult LOSH population was banded, but banded birds were heavily weighted towards Napanee (57% of adults banded), whereas Carden was

overwhelmingly unbanded individuals (72% of observed adults). Band status was confirmed for all but five birds. Two of these were a pair in Carden that was found on a property to which staff did not have access. In Napanee, two unknown birds were simply seen infrequently, and one was the mate of the unbanded adult that was found with fledglings on a property in Belleville in August.

## CAPTIVE POPULATION

### Captive breeding and release

Twenty-six pairs (7 re-pairs) were introduced and given the opportunity to rear young across partner facilities. Twelve of these pairs produced 59 young that survived to release or retention (Figure 2). Forty of these young were released into the wild at our field sites (23 in Carden, 17 in Napanee). Nineteen young were retained from high-priority pairings 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-four captive juvenile shrikes** received stainless steel bands this season (40 released young, 14 retained young). Released birds that received colour-bands were given a combination that included either LB/SI (light blue over silver; 27 birds) or SI/LB (7 birds) on the left leg to identify them as a 2021 release bird. One bird was given a SI band only on its left leg and a full colour combination on its right leg owing to a scab that had formed on its left tarsus.

Birds released with radio tags (12 individuals) were banded with the year combination on their left leg only (three released with SI/LB, four with LB/SI) if they received a size 1D SI band; radio-tagged birds that received a size 2 SI band (five individuals) did not receive any colour bands. Twelve birds were released with radio tags on the Motus network this season (five in Napanee, seven in Carden) using the same nylon-coated elastic cord harness attachment technique used since 2015. No tags had to be

removed. All tags applied had a 10-month battery life, which creates the potential for detections on both fall and the subsequent spring migration.

### **Motus detections and band resightings**

A wild-origin LOSH banded in Napanee in 2020 (YE/WH:OR/SI) was resighted on February 21 in Tabor City, North Carolina. This bird was found trapped in the attic of an old farmhouse, and the person who found and caught it took a picture of the bands before releasing. This is the southernmost band resighting we've ever recorded for an Ontario bird, and might have elicited scepticism if not for the submitted picture.

No other banded birds were seen in the pre-season, but two 2021-released juveniles were spotted in Ontario during fall migration: a bird released in Napanee on August 1 was seen in Prince Edward County on August 27 (reported on eBird; exact location unknown), and another bird released in Carden on August 18 was seen in St. Catharines on September 3. The latter was a radio-tagged bird, confirmed through pictures, and it remains to be seen if it was detected on any telemetry towers to that point.

Of the birds radio-tagged in 2021, so far one bird released in Napanee on August 14 was picked up on a tower in Brighton ON two weeks later, and it is expected that more detections will be uploaded through the winter.

### **Status of the captive breeding population**

As of October 25, 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, 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: 50 birds that are 5 years or younger (HY 2016-2021), 14 birds that are 6-10 years old (HY 2011-2015), and two over 10 years old. The two that are over 10 years old did not have any breeding success this past season so will most likely be retired in 2022. Nineteen juveniles were retained this year.

## **HABITAT STEWARDSHIP**

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The following projects are planned for completion in 2021:

- 1) Vegetation management on a northeastern portion of Carden Alvar Provincial Park that is slowly being lost to succession. Though this site hasn't had consistent shrike occupancy (there was a successful nest in 2008, a single bird seen nearby in 2009, 2010, 2014, and 2018), this clearing is occurring within 1km of consistently occupied territories, so will expand the amount of high-quality habitat in an important area.
- 2) Fencing a privately-owned 50-ha property to recommence grazing and control vegetation. This property had a successful breeding pair this year, another pair nesting just across the road in 2017, and is within 500m of other nesting territories.
- 3) Fencing the southern boundary of the Nature Conservancy of Canada (NCC) Napanee Plain Alvar Nature Reserve. This is one of the most important sites in the Napanee core, as it is a consistent breeding territory for 1-2 pairs of wild shrikes each year, and hosts the Napanee LOSH release site.

## RESEARCH

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There are also 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
- Quantitative genetic techniques for species conservation and management

In addition to research initiatives that have continued through 2021, one manuscript was accepted for publication this year and one Master's thesis was successfully defended:

- Hudecki, J., Wheeler, H., and A. Chabot. 2021. Evidence and Impact of Plastic Use by the Loggerhead Shrike (*Lanius ludovicianus*). *Wilson Journal of Ornithology* 132:729-733.
- Isabelle Zimmermann, MSc thesis, Laurentian University (co-supervised by Albrecht Schulte-Holstedde and Gabriela Mastromonaco) – The presence and effects of parasites on breeding success in Loggerhead Shrikes

## PUBLIC EDUCATION AND OUTREACH

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The LOSH program was the subject of six public presentations this year, all on virtual platforms, as listed below. All presentations were well received with excellent feedback from collaborators and those in attendance.

- Wild Ontario (Mar 25); Presentation by Jane Spero to volunteers; 40 attendees
- Fleming College (Mar 29); Conservation Biology guest lecture by Hazel Wheeler; 25 attendees
- Holy Trinity Catholic School (Apr 27); Presentation by Jane Spero to grade 2 classes; 45 attendees
- Holy Trinity Catholic School (Apr 2); Presentation by Jane Spero to lower school classes; 200 attendees
- Toronto Region Conservation Authority (May 20); Presentation by Jane Spero; 75 attendees
- Lakehead University (Oct 24); Guest lecture by Hazel Wheeler to third year Environmental Studies students; 25 attendees

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

- “Ontario government announces funding for shrike and turtle habitats in Lennox and Addington” (The Napanee Beaver, January 6, 2021)– press release on species at risk funding for Napanee region; both WPC and the LOSH Recovery Program are mentioned. <http://www.napaneebeaver.ca/2021/01/06/ontario-government-announces-funding-for-shrike-and-turtle-habitats-in-lennox-and-addington/>. [Accessed October 21 2021]
- “Butcher of the Alvar” (Luke Fuendling, Ontario Nature, Spring 2021) – in-depth article on the LOSH Recovery Program by independent journalist Luke Fuendling, who attended a captive juvenile release in Carden in 2020. Hazel Wheeler is quoted and all captive program partners

are mentioned. <https://view.publitas.com/on-nature/spring-2021/page/30-31>. [Accessed October 21 2021]

- “How do you raise a Loggerhead Shrike?” (Leighann Cline, Smithsonian’s National Zoo & Conservation Biology Institute News, November 5, 2021) – online news article written by SCBI’s shrike keeper about the captive-breeding process; WPC mentioned. <https://nationalzoo.si.edu/center-for-species-survival/news/how-do-you-raise-loggerhead-shrike> [Accessed November 5 2021]
- "Look, it's daybreak, dear, time to sing", a multimedia art installation by Richard Ibgby and Marilou Lemmens that features video of the Carden release site (filmed in 2018), is on exhibit at the Ulrich Museum of Art (Wichita KS), and is part of a group exhibition (“Eco-urgency: now or never”) at the Wave Hill gallery in Bronx NY; both exhibits run from August to December.

## **PROGRAM SUPPORT**

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

- Species at Risk Stewardship Program
- BluEarth Renewables
- Employment and Social Development Canada – Canada Summer Jobs
- Kingston Solar LP
- 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.