



WILD LAB

PROJECTS

Citizen science and public engagement

Songbird and owl projects.

Report to Birdlife Troms
December 2023



In April 2023, Birdlife Troms gave Wild Lab Projects a grant to support two of its science projects. This report describes how we used the grant, what we have accomplished and how we will keep developing citizen science with bird projects in 2024.

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About Wild Lab Projects

Wild Lab Projects is a nonprofit organization active in Tromsø and the Senja region, dedicated to citizen science, nature conservation and regenerative traveling. Regenerative means that the participants who join our projects make a net positive impact on the place they visit. We want to give everyone, travelers and locals, opportunities to participate in projects that produce nature-positive results.

Our missions:

- To partner with research institutes to help them connect with the public and generate data and knowledge through citizen science. Every project of Wild lab Projects starts with a collaboration with a researcher or a group of researchers who have a need that can be met by citizen science and public engagement. **Goal:** build bridges between science and the rest of society.
- To use citizen science in the field of nature conservation and nature restoration, as a regenerative tool. **Goal:** help wildlife and restore natural habitats.
- To promote a regenerative form of nature-based tourism, as opposed to the dominant extractive model that uses nature as a resource only and generate negative impacts on nature and host communities. Wild Lab Projects uses citizen science as a way to create meaningful alternatives for travelers. **Goal:** make tourism regenerative.
- To raise awareness and grow a sense of caring for nature among locals and particularly among the new generations, through concrete nature-positive actions. **Goal:** grow a local community of nature advocates.



The two projects we used the grant for

1- The owl project

Partners: Karl-Birger Strann and Vigdis Frivoll.

Among the several species of owls found in Northern Norway, those who breed in hollow trees face a big problem: natural cavities are rare because trees are usually cut down before they get old. Tengmalm and pigmy owls normally use woodpeckers' cavities, but woodpeckers are uncommon in young and heavily exploited forests. This story is a familiar one: our extractive relationship to nature puts more and more stress on forests as the demand for wood is high. Effective, long-term protection measures are lacking. The Arctic is particularly vulnerable: at high latitudes, the distribution of the forest is limited by the temperature (which restricted the trees to low elevations). Trees are often small due to the harsh climate. Also, trees grow slowly, which doesn't help the forests regenerate. For owls and other species, the consequence can be summarized in two words: habitat destruction, incidentally the major threat to biodiversity in the world.

But there is good news: owls find plenty of food - rodents and birds - in these degraded habitats. Until we accept to let forests grow old, providing artificial nests to owls compensates in part for the lack of natural cavities.

Since 1978, a team of local ornithologists have been deploying artificial nests in the Troms region, to help and learn about the Tengmalm, pigmy and hawk owls. Today, more than 500 nestboxes are up in trees and closely monitored. This exceptional time series has produced a considerable amount of knowledge. It also challenged some widespread ideas concerning the Scandinavian owls' ecology, behavior, movements and breeding cycles.

There was one missing piece in this remarkable puzzle: most of the nestboxes were inland, away from the coast. The team was aware of this gap as they suspected that the coastal owls follow different patterns. Wild Lab Projects fills this gap, thereby completing the puzzle. Our observations are merged into the general database, as a contribution to this remarkable collaborative effort.

Every year for the last four decades, this project brings valuable knowledge concerning the demography, the local movements, the migration and conservation status of Scandinavian owls.

The goals of our citizen science project:

- Provide artificial nesting sites to Tengmalm, pigmy and hawk owls.
- Provide our partner with data and contribute to scientific knowledge.
- Learn about owls' demography, migration, diet, phenology and conservation status.
- Encourage forest owners and managers to let patches of forests grow old.

2- The songbird project

Partner: Barbara Tomotani, The Arctic University of Norway (UiT).

Urbanization is one of the greatest human impacts on the natural environment. An obvious difference between urban and natural environments is the amount of artificial light at night (ALAN). While the increased use of ALAN improves comfort for us, it disrupts the biological clocks of plants and animals. This is because the daily light-dark cycle is important in synchronizing those clocks. Studies show that animals modify their activity patterns in the presence of ALAN and also modify the timing of seasonal activities such as breeding.

One relevant question is how urbanization impacts wildlife in the Arctic. Because of the natural long days and nights in the Arctic throughout the year, the presence of ALAN in cities may affect animals and plants in different ways than what is observed in southern locations where most studies take place. This project studies how animals manage the time of their activities during the day and over the seasons and how this is connected to their survival and reproductive success. It focuses on small birds (great tit, blue tit, willow tit and pied flycatcher). - To better understand how artificial light at night affects songbirds.

The goals of this citizen science project:

- To better understand how artificial light at night affects songbirds.
- To raise awareness about light pollution.



How we used the grant

1- Tools, screws and paint

We bought tools to take apart pallets and build the nestboxes, plus screws and oil paint.

2- Building and painting nestboxes

Both projects require a great number of nestboxes. Their dimensions are species-specific.

To build the owls' nestboxes, we followed the instructions given by our partner who started this program in 1978 and who is monitoring a network of over 500 nestboxes in Troms County. Their experience and expertise are unmatched in Scandinavia.

For the songbirds', the dimensions are very strict, to the millimeter, since all the nestboxes must be exactly the same throughout the study sites.

We use wood from EPAL pallets that are meant to be discarded, and that we collect from various sources in Tromsø. The planks of these pallets are thick (20 mm) and durable. We equip every nestbox with a system of hooks and eyelets that facilitates their control while limiting the disturbance of the birds inside the box. We paint the nestboxes with an oil-based paint to increase their lifetime.

Since February 2023, we built **8 nestboxes for owls and 107 songbird nestboxes**. We will build 23 additional songbird nestboxes in January, and we will keep building more boxes in 2024.

2023:
115 nestboxes
built from
recycled
wood material.



3- Organizing workshops with locals

Volunteers joined building sessions spontaneously on a regular basis. In summer, we organized an event with locals to build nestboxes that were to be put up in their neighborhood (Radioskogen). About 10 participants joined the event that took place at Økopark. In autumn, we organized another event to put up a series of boxes in Radioskogen.



4- Putting up nestboxes

Owls -

Of the 8 owl nestboxes, 7 have been put up in trees in the lower part of Tromsdalen where the birch forest is still relatively dense, and mixed with spruce plantations. We put the nestboxes up in trees with participants, volunteers and travelers, in February, June, August and September and recorded their position. We are now waiting for the next breeding season to see if they will be occupied.

Songbirds -

Of the 107 songbird nestboxes we built, 79 have been put up on Tromsøya, in the forest that covers the top of the island. The remaining 28 boxes that we built will be put up as soon as possible, and the same applies to the 23 nestboxes that we will build in January. Most nestboxes we built were put up by Barbara Tomotani's team.



Up in the trees:
. **79** nestboxes
for **songbirds**
. **7** nestboxes
for **owls**

5- Checking the nestboxes

Owls -

We considered every new visit as an opportunity to control the nestboxes already in trees, using non-intrusive methods to limit disturbing potential occupants. We organized 5 events with volunteers and visitors to put up new nestboxes, and control nestboxes that had been previously deployed.

Songbirds -

We organized 8 events to put up nestboxes in trees between February and December. Nestboxes were also taken down when damaged, maintained on site if possible or replaced. These visits were done with volunteers and travelers. More controls of nestboxes were done by Barbara Tomotani's team.



6- Filling up feeding stations

Barbara Tomotani and her team have set up 5 feeding stations on Tromsøya to study the birds' activity. Camera traps are deployed close to the feeders and take photos of visiting birds (some have been previously marked with a unique combination of color-coded rings). In winter especially, the birds empty the feeders quickly and they need to be filled up frequently. This is what we started doing with volunteers in November and December.



What's next?

In 2024, we will strengthen our collaborations with our UiT research partner Barbara Tomotani and with the leaders of the owl project Karl-Birger Strann and Vigdis Frivoll.

We will keep building and putting up owl and songbird nestboxes and engage the public in the citizen science activities described in this report.

We will keep promoting a more regenerative form of tourism by engaging travelers in actions that produce positive impacts on nature and host communities. We have started new partnerships with tour operators to reach out to and engage more travelers.

We will keep raising awareness and cultivating a sense of caring in participants. More specifically, we want to involve more locals with a focus on youth. We want to give young people the opportunity to participate in science- and nature conservation-related actions.

