



# NOCTURNAL OWL MONITORING PROJECT

## 2025 REPORT

*A summary and discussion of owl banding data from Rocky Point and Pedder Bay*

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Cover photo: Northern Saw-whet Owl. Photo: Ann Nightingale.

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Since the inception of Northern Saw-whet Owl Migration Monitoring by Paul Levesque in 2002, thousands of volunteer hours have made the project what it is today. In 2025, 52 volunteers contributed 1945.3 hours to the monitoring project at Rocky Point and Pedder Bay.

Access to the Rocky Point site is provided by the Department of National Defense, including the staff at Formation Safety & Environment, the Range Control staff, and the ever-helpful Commissionaires at the gate. RPBO gratefully acknowledges the assistance of all those involved to ensure continued operation of this long-term project.

Access to the property at Pedder Bay is provided by the Pedder Bay RV Resort & Marina and we are extremely grateful to them.

Jannaca Chick and Mark Byrne served as the Banders for the project this year, and were assisted by volunteer banders Robyn Byrne, Katie McCreesh, and Ann Nightingale. A special thank you goes to Jo and Mike Motek, the Project Coordinators, Robyn Byrne, the Volunteer Coordinator, and her team, Gaylia Lassner for coordinating the visitors this year, and the many volunteers who showed up every night to provide their support for the project.

All data from this project have been submitted to the Canadian Wildlife Service and the Bird Banding Laboratory of the U.S. Geological Survey.



*Figure 1. Northern Saw-whet Owl, checking eye colour.  
Photo: Dan Burgin.*

## Abstract

The 2025 season marked the 23rd year of Northern Saw-whet Owl Migration Monitoring at Rocky Point Bird Observatory (RPBO). Volunteers and staff have conducted the monitoring of owl movement through the most southerly point of Vancouver Island each year since 2002, with the exception of 2007. In 2026, a total of 737 Northern Saw-whet Owls (NSWO) were banded, and 75 owls were recaptured (not including same-night recaptures), at the Rocky Point and Pedder Bay banding stations. The recaptures included eleven owls banded at RPBO in previous years and no foreign recaptures (i.e., banded at banding stations other than those operated by RPBO). In 2025, one of our owls was recaptured by Andy Stewart in Cobble Hill, Vancouver Island on October 7, 2025; this owl (1124-17016) was banded by RPBO on 4 October 2024 as an after second year female. Rocky Point Bird Observatory has now banded a total of 16,479 Northern Saw-whet Owls in the Nocturnal Owl Monitoring Program.



*Figure 2. Northern Saw-whet Owl recapture from 2020  
Photo: Mark Byrne.*

# Introduction

## NOCTURNAL OWL MONITORING PROJECT

The Northern Saw-whet Owl (*Aegolius acadicus*) (NSWO) is considered one of the most abundant yet difficult to observe owl species in North America. In eastern North America there are a large number of banding stations participating in nocturnal owl monitoring as a part of Project OwlNet. Together, these stations provide data that continues to further our understanding of the post-breeding movements of NSWOs. With relatively few banding stations west of the Rocky Mountains, understanding of the NSWO movements in the west is comparatively lacking (Project OwlNet n.d.).



RPBO began the Nocturnal Owl Monitoring Project in 2002. The goals of this project are to collect data on NSWO to contribute to a better understanding of the population dynamics and movements of the western populations, and to increase public awareness of conservation issues regarding owls on Vancouver Island.

## STUDY AREA: ROCKY POINT AND PEDDER BAY BANDING LOCATIONS

### Rocky Point

Established as an owl banding location in 2002, the Rocky Point banding station is situated at the southernmost tip of Vancouver Island, on the grounds of the Department of National Defence's Rocky Point Ammunition Depot, which is inaccessible to the public.

The owl banding net array is located southeast of the banding station and consists of eight Avinet 60mm mesh mist nets (12m x 2.6m). Since 2021, an owl net (Avinet 60mm mesh) has been erected parallel to passerine net 5 until the end of the season. Prior to 2021, the passerine net at this location was part of the owl banding net array.

The mist nets are arranged in a loose triangle around an audio lure, with five nets situated outside of the triangle (Appendix 1). All NSWO are released at one of two release boxes, one near and one far from the banding station. The location of release boxes was changed when necessary to avoid predation events by Barred Owls (BAOW).

### Pedder Bay

Established as a full-time owl banding location in 2014, the Pedder Bay banding station is 4 km north-west of the Rocky Point site on property owned by the Oak Bay Marine Group north of the entrance road to the Pedder Bay RV Resort and Marina. Opening the Pedder Bay site has enabled RPBO to give

more volunteers the opportunity to participate and gain owl banding and extraction experience. This site has enabled RPBO to encourage public visits to observe our project, and to educate the public about owls and our banding program.

The owl banding nets are located east of the banding station and include seven mist nets (12m x 2.6m): six owl nets (Ecotone 60mm), and one passerine net (Avinet 30mm). Since 2020, a 60mm owl net has been placed parallel to the Net 4 passerine net. Prior to 2020, the passerine net (Avinet 30mm mesh) at this location was part of the owl net array. The mist nets are arranged around an audio lure in a loose “U”-shape, with several nets radiating away from the lure (Appendix 2). After processing, all NSWOW are released in a release box close to the banding station that provides egress to a bushy area to prevent potential BAOW predation.

#### METHODS: BANDING PROTOCOL

The banding protocol used at both Rocky Point and Pedder Bay follows the recommendations of Project OwlNet on their website (netting Migrant Owls – the Basics). They recommend a standardized yet flexible protocol for each station, depending on the station location, predation, net orientation, weather, etc. Standardization of data and banding protocol at each station is of primary importance.

Nets were opened 30 minutes after sunset each night, barring poor weather (rain, excessive wind), and remained open for six hours, from 15 September 2025 to 31 October 2025. An audio lure playing the territorial call of a male Northern Saw-whet Owl was used to attract owls to the net arrays. Nets were checked every 20 minutes, unless poor weather or the presence of Barred Owls (*Strix varia*; BAOW) or other predators necessitated more frequent net checks. Whenever the presence of BAOW was detected in the net lanes, volunteers and banders remained alert to immediately extract NSWOW, and to monitor and trap BAOW. Upon extraction from the net, each NSWOW was returned to the banding station in a bird bag. The bander then banded the owl with a U.S. Geological Survey-numbered aluminum band, and recorded the following morphometric data: mass, wing chord, tail length, body condition, number of tail bars, eye colour, foot colour, and bill-tip colour (See Appendix 2). The sex of each owl was determined, if possible, using the discriminant function analysis of mass and wing chord, as established by Project OwlNet (calculated automatically in spreadsheet); an overlap range between the two sexes results in a portion of individuals being sexed as “unknown”. The age of each owl was determined based on the molt pattern in the primaries and secondaries, per the criteria outlined in the Identification Guide to North American Birds (Pyle 2022) and Project OwlNet, n.d. The molt patterns of the primary and secondary feathers of owls aged as second year or older were recorded feather-by-feather in a molt card spreadsheet.

#### BARRED OWL MANAGEMENT

BAOW are relatively recent inhabitants of Vancouver Island, having spread from eastern North America and first recorded here in November 1969. A generalist in terms of habitat preferences and prey, the BAOW is suspected to have affected other owl populations such as the Western Screech-Owl (*Megascops kennicottii*) and is a known predator of the NSWOW. Of all the predators of NSWOWs observed at Rocky Point and Pedder Bay, BAOW are of the greatest concern, both for their ability to swiftly

dispatch multiple NSWOs and for their potential ability to injure volunteers and banders. If a volunteer observed a BAOW, they alerted all other volunteers and the bander by radio. In 2025 we used fishing rod bells which were attached to the net trammel lines whenever there was a known BAOW in proximity to the net lanes and also when BAOW presence was ongoing for several nights. If a BAOW was captured in any net, volunteers restrained the owl within the net pocket until the owl could be safely extracted. Once extracted, all BAOW were transported by hand to the banding station, then restrained in a casting jacket. The BAOW were banded using a USGS-numbered aluminum lock-on band, and the following morphometric data was obtained: mass, wing chord, tail length, and molt pattern of the primaries, secondaries, and tail. Age was determined, if possible, using the molt pattern as outlined in “Aging Barred Owls in Rehabilitation Settings” by Berry (2012). Sex was determined, if possible, using the weight, wing chord, tail length, and foot pad as per Pyle (2022). Each BAOW was then contained for the remainder of the banding session in a large animal carrier covered with a cloth. In 2025, we were able to obtain the necessary permissions from the Province of British Columbia for the relocation of hatch year Barred Owls. Older owls are released close to the banding stations: the main entrance gate at Rocky Point and the Hans Helgesen School parking lot for Pedder Bay.

#### BAT EXTRACTION

In 2020, RPBO established a protocol for dealing with bat extraction during the COVID-19 pandemic to prevent a potential spread of COVID-19 to the bat population. Bat kits were created and provided to both stations. Only banders wearing proper protective gloves and a mask were allowed to extract bats from nets. After removal of the bat, the net area was sprayed with a bleach formula. In 2025, three Little Brown Myotis (*Myotis lucifugus*) were caught, all at Pedder Bay. All bats were safely extracted and released.

## Results

#### TOTALS SUMMARY

During the 2025 Nocturnal Owl Monitoring season, a total of 737 NSWOs were banded (439 at Rocky Point, 298 at Pedder Bay) over a period of 3869.5 net hours and a total of 515.66 lure hours. This was our third lowest season since both stations have been operational. An additional 75 previously banded NSWOs were recaptured (41 at Rocky Point, 34 at Pedder Bay); of these 11 were banded in previous years at RPBO and there were no foreign recaptures (i.e., banded at banding stations other than those operated by RPBO). A total of 6 Barred Owls were banded (4 at Rocky Point, 2 at Pedder Bay). We also captured and banded one Long-eared Owl, our eighth, at the Rocky Point station.

In 2025, two NSWOs were lost to predation, both at the Rocky Point station. One owl was killed in net 7 by a raccoon and carried off. A second owl was struck and injured by a BAOW in net 4; it was taken to WILDARC where it was later euthanized. There was a second NSWO at the same time in net 4 that went into shock after the attack; it was sent to WILDARC to be checked and was later released. There was one BAOW attack on a NSWO at Pedder Bay; it suffered minor injuries and was taken to WILDARC and was later released. Of NSWOs captured, 0.25% were lost to predation (inclusive of all banded and recaptured

NSWO). This is our lowest predation rate to date. The use of fishing rod bells and the vigilance of banders and volunteers helped to reduce predation this year.

Of the 47 potential nights of banding, one night was cancelled at both stations due to inclement weather. At both Rocky Point and Pedder Bay there were six nights of reduced net hours due to inclement weather conditions and net replacement (deer issues). No nets were closed at Pedder Bay or Rocky Point due to BAOW predation issues.



*Figure 3. A young hatch year owl, banded at Rocky Point.  
Photo: Robyn Byrne.*

## ROCKY POINT

- **Net Hours:** 439 Northern Saw-whet Owls were captured, not including 41 recaptures, during 2078.67 net hours and 259.42 lure hours. This represents a capture rate of 0.21 owls per net hour. A graph of owl capture rate per net is detailed below (Figure 4).

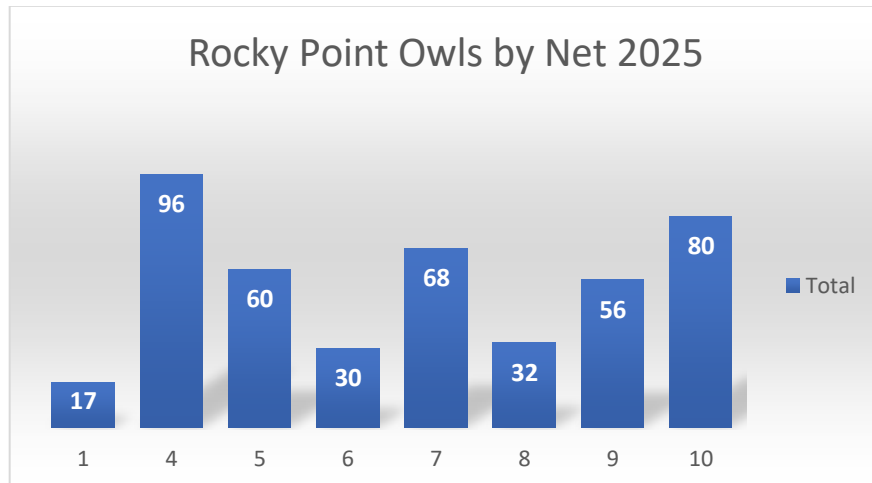


Figure 4. Rocky Point Owls by Net 2025.

- **Sex:** Of the 439 Northern Saw-whet Owls banded at Rocky Point, 253 (57.6%) were identified as female (F), 47 (10.7%) were identified as male (M), and 139 (31.7%) were identified as unknown (U) (Figure 5).

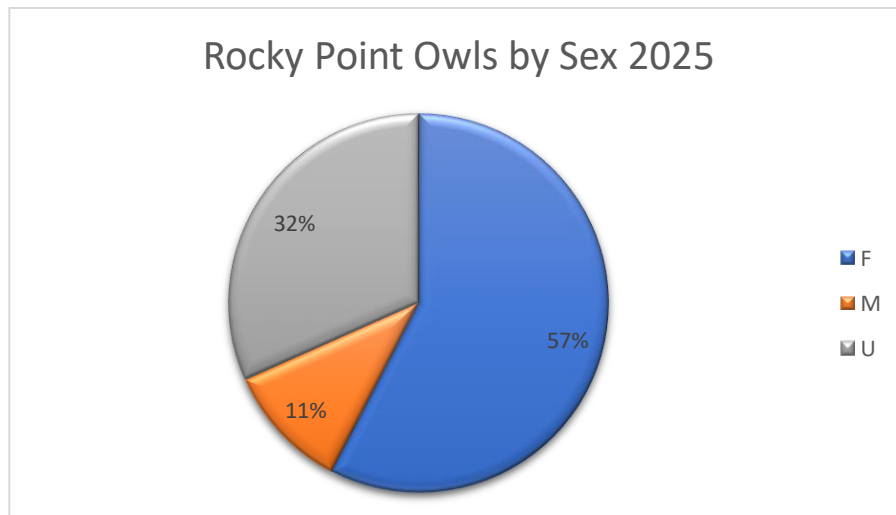
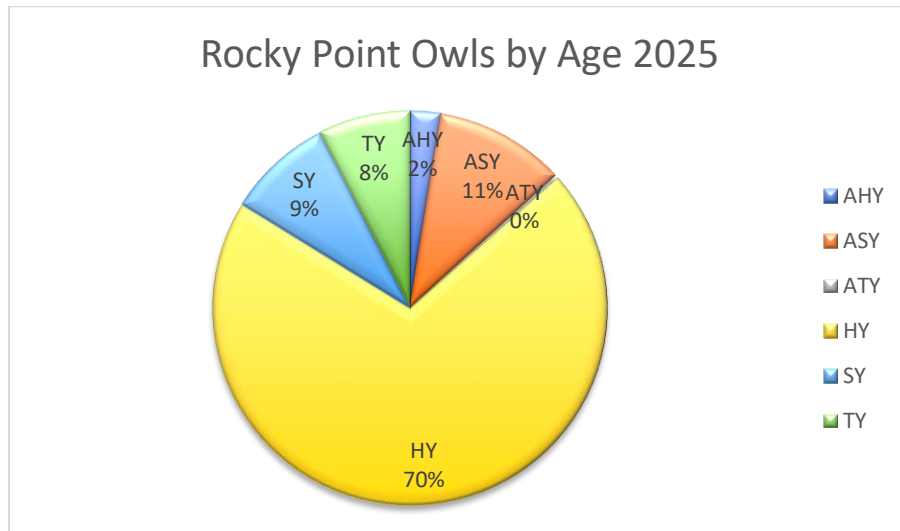


Figure 5. Rocky Point Owls by Sex 2025.

- **Age:** Of the 439 Northern Saw-whet Owls banded, 309 (70.4%) were identified as hatch year birds (HY), 38 (8.7%) as second year (SY), 33 (7.5%) as third year (TY), 1 (0.2%) as after third year (ATY), 47 (10.7%) as after second year (ASY), and 11 (2.5%) as after hatch year (AHY). (See Figure 6).



*Figure 6. Rocky Point Owls by Age 2025.*

- Recaptures:** 41 previously banded NSWOW were recaptured. Of these, 5 owls were banded in previous years. There were 36 same-year recaptures (22 originally banded at the Pedder Bay station, 14 banded at Rocky Point). This recapture total does not include 5 same-night captures, all from Rocky Point.

There were 5 recaptured NSWOW from previous years:

- 1 banded in 2023 at Rocky Point as HY F
  - 4 banded in 2024 at Rocky Point: 1 HY F, 1 SY F, 1 SY U, 1 ASY M
- Barred Owls:** 4 BAOW were captured at Rocky Point; of these, all were aged HY, 2 were sexed as male, one female and one unknown. This constituted a ratio of 1 BAOW per 120 NSWOW captured (inclusive of all banded and recaptured NSWOW). The breakdown of BAOW caught in nets is net 5 (2), net 8 (1), net 9 (1). This is the lowest ratio of BAOW captured to NSWOW since this project began. BAOW were heard and detected often but did not remain in or near the net lanes for any length of time.
- Other Owls:** one Long-eared Owl (HY U) was captured and banded on 19 September, and is the eighth individual banded here to date. A second Long-eared Owl was briefly caught in net 5 on 13 October but managed to escape.

## PEDDER BAY

- **Net Hours:** 298 NSWOs, not including 34 recaptures, were caught and banded during 1790.83 net hours and 255.83 lure hours. This represents a capture rate of 0.17 owls per net hour. A graph of owl capture rate per net is detailed below (Figure 7). Pedder Bay accounted for 40% of the season total of banded owls across both stations, which is roughly the same percentage as last year.

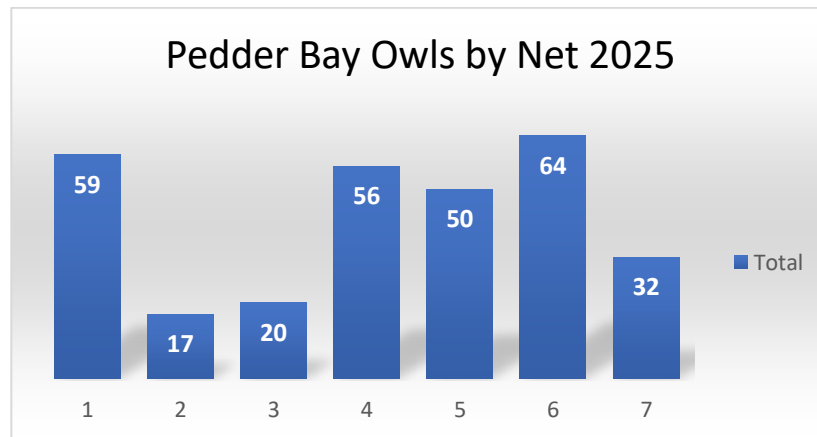


Figure 7. Pedder Bay Owls by Net 2025.

- **Sex:** Of the 298 NSWOs captured, 195 (65.4%) were female (F), 20 (6.7%) were identified as male (M), and 83 (27.9%) were unknown (U) (Figure 8).

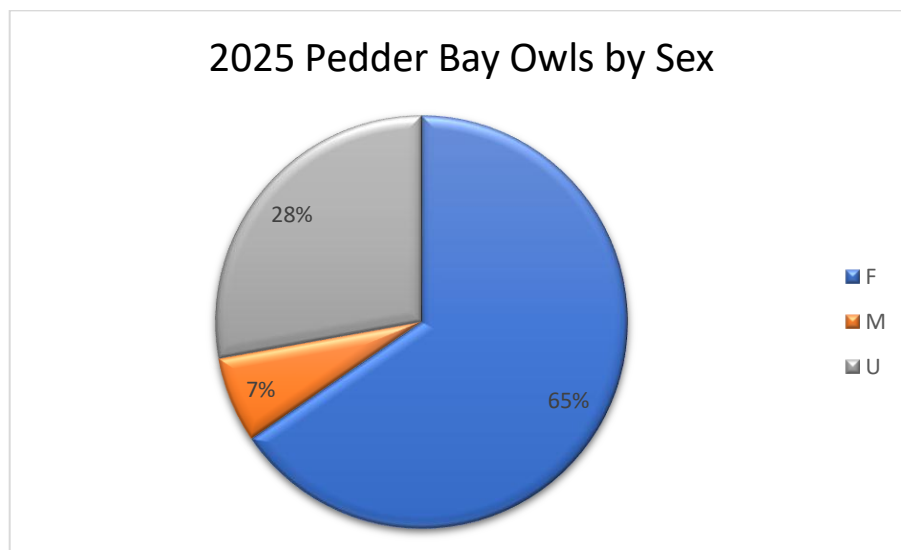
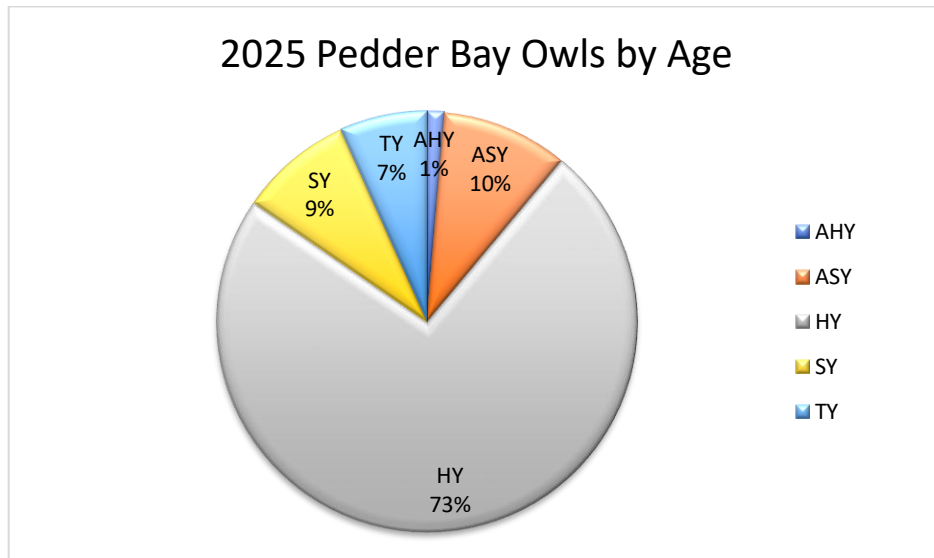


Figure 8. Pedder Bay Owls by Sex 2025.

- **Age:** Of the 298 captured, 219 (73.5%) of the owls were determined to be hatch year birds (HY), 26 (8.7%) were second year birds (SY), 20 (6.7%) were third year birds (TY), 29 (9.7%) were after-second year birds (ASY), and 4 (1.3%) were after hatch year (AHY) (Figure 9).



*Figure 9. Pedder Bay Owls by Age 2025.*

- **Recaptures:** A total of 34 previously banded NSWOW were recaptured at Pedder Bay: six prior year recaptures, and 28 owls banded this year (16 from Rocky Point and 12 from Pedder Bay). There were four same night recaptures at the station, three from Pedder Bay and one from Rocky Point (banded at 21:15 and recaptured at Pedder Bay at 23:55).

There were six recaptured NSWOW from previous years:

- 1 banded in 2020 at Rocky Point as HY F
  - 1 banded in 2021 at Pedder Bay as SY U
  - 2 banded in 2023 at Pedder Bay both as HY U
  - 2 banded in 2024, one at Rocky Point as AHY U, one at Pedder Bay as SY U
- **Barred Owls:** Two BAOW were banded at Pedder Bay (nets 1 and 6), one after hatch year female and the second, a hatch year unknown sex. This constituted a ratio of one BAOW per 166 NSWOW (inclusive of all banded and recaptured NSWOW and BAOW).
  - **Other Birds:** On the night of 23 September, a Spotted Towhee was caught in net 3 and banded. This is the second time we have caught this species during the Nocturnal Owl Monitoring Program.

## OTHER OWLS

Although Barred Owls and other owl species are not targeted, they are occasionally captured in the nets. Other owls observed at the banding sites over the course of the project include Great Horned Owl (*Bubo virginianus*), Northern Pygmy-owl (*Glaucidium gnoma*), American Barn Owl (*Tyto furcata*), Western Screech-Owl (*Megascops kennicottii*), Short-eared Owl (*Asio flammeus*), and Long-eared Owl (*Asio otus*).

On 18 September, a HY (unknown sex) Long-eared Owl, was captured in net 9 and banded at Rocky Point. A second Long-eared Owl was briefly caught in net 5 on 13 October but managed to escape. To date, RPBO has banded three American Barn Owls and eight Long-eared Owls.



Figure 10. Long-eared Owl, Rocky Point.  
Photo: Robyn Byrne.

## Discussion

This was our third lowest year in terms of owls banded since both stations have been in operation. In 2024, 44.5% of owls banded were second year birds, and 41.5% were hatch year, even though that was our third busiest season. This year the percentage of HY birds was 72%, even though the overall capture rate was down by 41%. There does not appear to be a correlation between NSWO numbers in western and eastern North America. In the eastern owl banding stations this year, numbers were down and many nights were lost due to excessive wind and occasional rain.

NSWOs are believed to have a four-year population cycle synchronized with that of deer mice, their most common prey species (Swengel and Swengel 1995). Since 2016, the pattern we are seeing does not appear to follow the four-year cycle postulated by this paper, and more study is needed to understand why this may be the case. Other environmental factors, such as weather and wildfires may have significant effects on how these owls breed, migrate, and disperse.

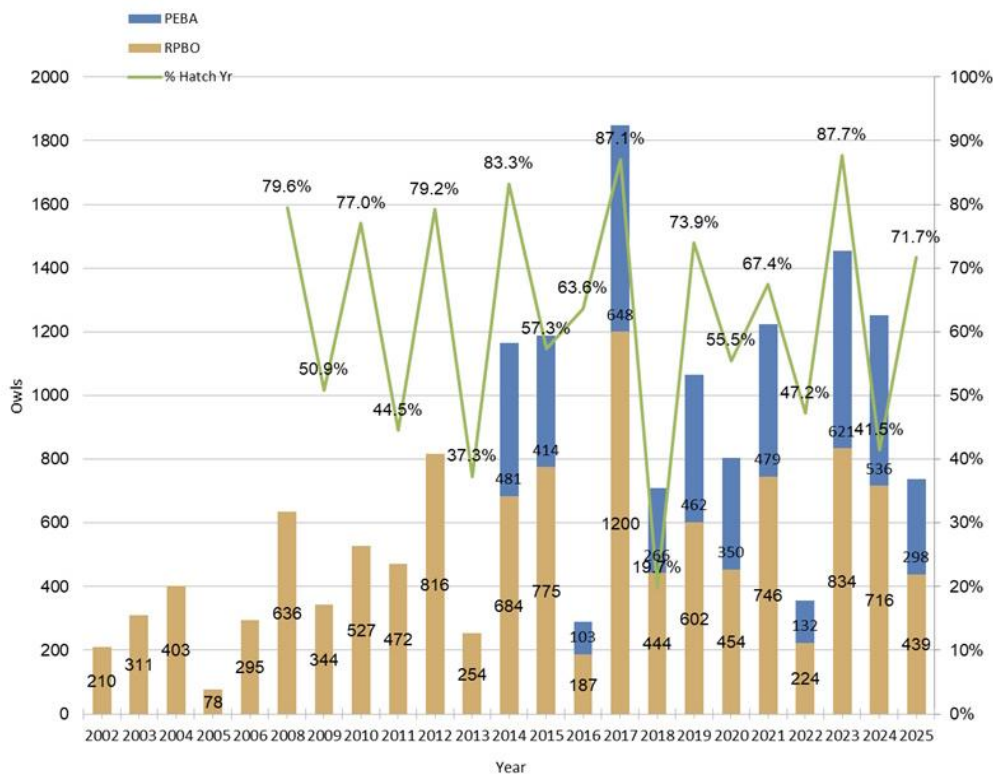


Figure 11. Owls banded by year at Rocky Point and Pedder Bay stations.

Since the Nocturnal Owl Monitoring Project began in 2002, NSWO recaptures, both at our stations and of our owls at other stations, indicate a nomadic dispersal that is clearly not well understood. In 2025, eleven owls banded in previous years were recaptured. These inter-year recaptures suggest that fall movements, at least for some NSWO, are not nomadic or random.

More banding stations west of the Rockies would help us understand the movement patterns of NSWO. Marks and Doremus (2000) state in their paper “Are Northern Saw-whet Owls Nomadic?” that some owls exhibit the characteristics of nomadism in parts of their range.

C. E. Priestley (2008) and L. T. Priestley et al. (2010) suggest that NSWO may demonstrate a northward post-breeding dispersal before a southward migration. This suggests that some birds banded at Rocky Point and Pedder Bay may originate south of Vancouver Island.

In previous years some of our banded owls have been caught at Cobble Hill (43 kilometres north of Rocky Point). Our preliminary findings from Motus tags that were deployed on NSWO between 2021–2022 indicate that owls banded at the two RPBO stations may move northwards before moving on to their wintering sites. Several of our tagged owls were detected at the Cowichan Estuary and Sidney Island in 2021. This indicates that NSWO do not necessarily travel southward immediately after being banded at the RPBO stations, and that more study needs to be done to understand their movement.

Owls were also captured and banded during Migration Monitoring at both stations this year. Rocky Point captured and banded three NSWO and three HY BAOW. At Pedder Bay, two NSWO were captured and banded during the day.

Of the two stations, Rocky Point continues to capture a higher number of NSWOs; 60% of the total owls banded were caught there. This is consistent with the ratio between the two stations from year to year. There are a number of banded NSWO moving between the two stations as evidenced every year by our inter-station recaptures, some even moving between stations on the same night. This year, there were 64 same year recaptures: 36 at Rocky Point (22 owls banded at Pedder Bay, 14 at Rocky Point), and Pedder Bay recaptured 28 owls (16 banded at Rocky Point, 12 at Pedder Bay).

Owls by Age

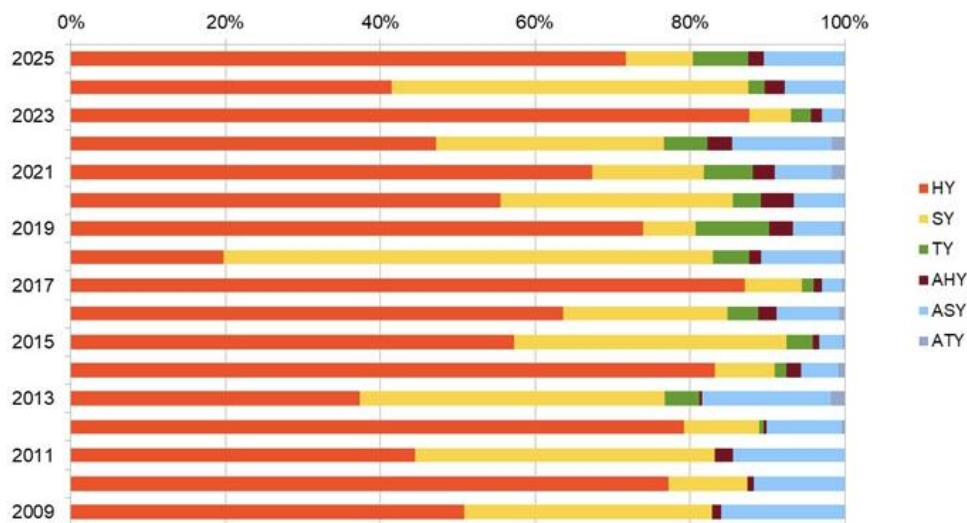


Figure 12. The age fluctuation of NSWO banded by RPBO from 2008 to 2025.

## VISITORS

For the past few years RPBO has offered free tickets to the public through EventBrite. In 2025 there were 649 visitors to the Pedder Bay station, the highest number of visitors to date and a 30% increase in visitors over last year. Most visitors saw owls being banded and processed. Due to several days of inclement weather this season, unfortunately there were people who did not see owls. Groups of about ten people attended for approximately one-hour periods. Visits were offered on EventBrite four nights a week, Friday through Monday. Thursday nights were reserved for visits by special groups. We have a visitor liaison position who assists the banding team by greeting and managing the visitors. This is an important volunteer position now that visitor numbers are increasing. The Pedder Bay station provides a valuable opportunity to educate the public about our work with NSWO. It has proven to be very popular, with many of the same people returning year after year. This year, Gaylia Lassner, RPBO's Development Director, took on the task of managing the EventBrite calendar, as well as visits by special groups. This was very helpful in managing visits and communicating with the banders. Gaylia has created a detailed document for visitor management so that this position can be passed on to a dedicated volunteer.

This year some of our visitors included staff and owners of Eagle Wing Tours, Royal Roads University students (accompanied by Alison and Jon Moran), students from the Horticultural Centre for the Pacific, participants in RPBO's Be A Better Birder Owl Workshop, RPBO monthly donors, a group from the Malahat First Nation, a VARC bander and volunteer, Power To Be staff and volunteers, the Steele family, a Boy Scouts group, and campers from the Pedder Bay RV campground. Visitors have an option to donate to RPBO either in cash or by QR code at the station, and online through PayPal and Canada Helps. We received many kind words of appreciation for the work we do from visitors this year.

Eva Anandi Brownstein, a documentary filmmaker Anandi Films <https://anandifilms.com/>, came out for three nights to shoot some footage for a potential documentary. Sheena Davies, a professional photographer <https://www.sheenadaviesphotography.ca/>, took photographs at the Pedder Bay station which she kindly donated to RPBO. Charlotte Gruneau, an artist and photographer from Bowen Island, visited the station to take photographs and conduct research for a possible book on NSWO.

At the Rocky Point station, we hosted a total of 38 DND visitors on six consecutive nights (5-11 October). Liaisons were arranged to escort the groups from the main gate to the station. These visitors included the Rear Adm Dave Patchell (Commander, Maritime Forces Pacific) and his wife, Michael Bodman's family, the Base Commander for CFAD Esquimalt Capt. (N) Kevin Whiteside and family. All the visitors were able to see owls being processed. In 2026, DND should be contacted well ahead of time, so that visits can be set up during the first two weeks of October. Many of the visitors were very senior members of the local military community and having them experience what we do at CFAD Rocky Point strengthens our relationship with the Department of National Defence.

## POWER TO BE: OWL BANDING DEMONSTRATIONS

On 19 and 20 November 2025, we held two owl banding demonstrations (non-standard banding) for Power To Be groups. The first night was the Fernlal group which included four adults and eleven children, aged 7-11. This is our third yearly owl banding demonstration for this group in November. We set up 4 mist nets in an “X” formation with the audio lure placed in the middle of the net formation. The nets were located close to the roundhouse where we hosted the groups. The nets and pop-up station were set up prior to the group’s arrival. They were there from 17:30 – 18:30. We caught and banded two NSWOW almost immediately to the delight of the group. We closed operations shortly after the group left. The following night, we hosted the Social Night group of 9 people (16+) and 4 PTOB staff from 18:30 -19:30. We did not catch any owls; however, we showed the group a Power Point slide show of owls. The group was split into two and they took turns visiting the net lanes. We took down the nets and packed up the station by 20:00. Afterwards, we received this feedback from Myah Rach-Sharpe, Power To Be Program Facilitator:

“I wanted to reach out personally and send an enormous thank you to you and the team for the incredible work you do. I have had the pleasure of being on two programs with your team this year and each time I have left deeply impressed and grateful. I wanted to share that the youth owl banding program the other week was by far the highlight of the entire season for the Fernlals program this fall. We asked the youth last night what their favourite part of this cohort was and 90% of them said it was the owl banding. I also wanted to share that how the youth were able to show up for that program was incredible and that was by in large due to the incredible facilitation on your team’s part. Many folks in this group struggle with impulse control and emotional regulation and I was so impressed with how they were all able to take turns and follow instructions. You set clear expectations and ensured everyone got a chance to engage in their own way. Thank you so much to everyone at RPBO. We appreciate you!”

The RPBO Banding Workshop was held at Power To Be in March 2025. During the owl banding portion of the workshop, they recaptured one NSWOW that had been banded there in November 2024 during our owl banding demonstration for the Fernlal group. This owl had evidently overwintered on the property.

## THE FAVOURITE OWL OF 2025 CONTEST

This year we held our second public owl contest at the end of the season. The banders chose 10 photos of some of their favourite owls, which included names and a short description for each one. The general public, RPBO followers, and visitors to the station this year, were invited via social media and email to vote for their favourite owl on our website. The contest was launched on 9 November, and the result of the voting was announced on 30 November. The winner was Miss Zap, and runners-up were Winston and Sawyer. All ten owls will be added to the “Adopt an Owl” program. Since this contest generated a lot of interest and was such a success, it is recommended that RPBO continue to hold a yearly owl contest.



*Figure 13. Miss Zap, Favourite Owl of 2025, hatch year female banded at Pedder Bay.  
Photo: Christina Lam.*

## Conclusion and Recommendations

As one of a very few NSWOW banding locations west of the Rockies, RPBO contributes valuable data towards understanding the fall migration movements of western populations of NSWOW. It is recommended that RPBO continue with the Nocturnal Owl Monitoring Project in 2025. Understanding the geographic origins of the owls captured at Rocky Point and Pedder Bay, via isotope analysis, breeding location monitoring, nestling banding, and use of a wildlife tracking system, would provide valuable insight to the post-breeding movements of NSWOW which are poorly understood.

### THE BIRD GENOSCAPE PROJECT

The Bird Genoscape Project (BGP) harnesses the power of genomics to connect bird populations across North America. A genoscape creates a map of genetic variation across the breeding range of a species. Genoscapes can then be used to track breeding populations to their respective wintering grounds and the migratory pathways in between. By harnessing recent advances in next-generation sequencing, they can use the DNA contained in a single feather to scan the genome of a bird and identify base pairs that are unique to each bird. Unique combinations of base pairs tend to cluster together and are strong predictors of geographically separated populations. In 2009, with advances in genomics, Kristen Ruegg and Tom Smith created the Bird Genoscape Project with the goal of developing connectivity maps of at least 100 species of North American migratory birds.

Amanda Carpenter of Colorado State University is the Lab and Collections Manager for BGP. In partnership with Bird Conservancy of the Rockies, BGP is actively seeking feather samples from across the breeding range of the NSW0 to understand population genomic structure. If there is genomic structure, they can then begin to genoscope migratory or wintering individuals back to their breeding/genetic population of origin. Amanda requested a minimum of 5, and upwards of 10, feather samples per age and sex class be taken during RPBO's 2025 Nocturnal Owl Monitoring season. Several Project OwlNet stations are participating in this project. Body feathers (10-15) from each bird were collected. All feathers were placed in BGP envelopes with metadata completed. 36 samples have been sent to Amanda Carpenter via Birds Canada:

Female:	HY (8), SY (1), TY (5), ASY (1), AHY (1)
Male:	HY (8), SY (2), TY (2), ASY (1), AHY (1)
Unknown:	HY (3), ASY (2)

#### LARGE OWL NON-STANDARD BANDING

Max Hellicar, our Migration Monitoring Bander-in-Charge, undertook some non-standard banding, with the hope of targeting larger owls. A rodent sound lure was played during this project. This took place over six nights in separate locations away from the NSW0 net array. The first two attempts were in the front meadow near the outhouse. The location was then switched to the back meadow for four nights, due to bright light from Bentinck Island causing too much illumination.

Two nets were operated in a V-shape for a total of 11 hours over 6 nights.

- 16 Oct – 20:45-22:15 in front meadow (closed early due to rain)
- 17 Oct – 21:15-22:45 in front meadow (closed early due to wind)
- 20 Oct – 21:45-23:45
- 23 Oct – 21:45-00:15
- 26 Oct – 22:45-00:45
- 27 Oct – 21:45-23:15

There were no sightings of Long-eared, Short-eared, nor Barn Owls. They encountered Barred and Great Horned Owls in both the front and back meadow (by sound or sight), however these showed no interest in the rodent playback. No NSW0 were encountered. This is likely due to the different mode of hunting these owl species use, hunting from perches and looking for prey while static, rather than quartering over meadows. It may be that there are no species of quartering owls present at the moment, or the locations may have not been favourable. Max is not dissuaded from trying again in future years, potentially in a different location.

#### MOLT DOCUMENTATION

During the 2025 season, we continued to photo-document NSW0 molt patterns in a consistent manner, with the goal of creating a database of wing/molt photographs. Photographs of interesting and unusual

molt patterns were usually uploaded each night to a special folder on the RPBO Google Drive. These data should be organized as a reference guide for banders and aspiring banders, as well as promoting a further understanding of molt strategy in older owls. While NSWOW have been studied extensively in eastern North America, no in-depth study of western NSWOW has been done. RPBO has more than sufficient data to conduct such a study.

#### NOCTURNAL OWL MONITORING PROJECT DATA

It is unknown how many owls are not captured due to our standard protocol of banding for a 6-hour period. Over the years we have considered extending banding hours to include the entire night when owl movement is at its peak. That way we might be able to ascertain if we are missing a significant number of owls, both unbanded and previously banded. This year owl captures were relatively low and there was no significant period of owl movement, so we did not consider extending net hours. This is something to consider in the future, provided we have enough volunteers and banders to do so.

The immense amount of NSWOW data collected by RPBO for the past 20 years needs to be analyzed and documented. It is recommended that efforts be made to write up our banding and recapture results. There are two papers currently being prepared, one providing an overview of the entirety of the project and one focussing on recaptures of previously banded owls.

Project OwlNet recommends that operators review and standardize their protocol from year to year to maximize the value of data for long-term monitoring. It is recommended that we review and revise our protocol as necessary on a yearly basis.

#### NET SUBSTITUTION

We have substituted an owl net for the passerine net at Net 4 at Pedder Bay since 2020. In 2021 we made the same change at Net 5 at Rocky Point, placing an owl net in this location for the entire season. Although the data is still insufficient to determine conclusively whether this net change is influencing the capture rate of NSWOW at Rocky Point and Pedder Bay, a two-tailed Welch's t-test on the Pedder Bay data currently shows no significant effect ( $p=0.851$ ). It is recommended that we continue this practice going forward. We should test the data for at least five years to determine if the change in nets needs to be considered during data analysis.

#### BARRED OWLS

Barred Owls were once again a threat to NSWOW throughout the 2025 season. It should be noted that BAOW were heard and seen many nights at both stations. The majority of BAOW seen and heard are at the Rocky Point station. This year one NSWOW was lost to predation by BAOW at Rocky Point. Implementation of preventative measures have greatly reduced predation events in the past several years, and 2025 was our lowest predation and capture rate to date.

Since October 2023, RPBO has used fishing rod bells to attach to the trammel lines on mist nets as an owl alert. This idea originated from Marion Clement of the Bird Conservancy of the Rockies. When an owl hits a net, the bells jingle and can be heard at the station, alerting personnel that something has hit

a net. The bells are used judiciously so as not to accustom BAOW to the sound and associate it with the presence of NSWOW in the nets. The bells were attached whenever there was a known BAOW in proximity to the net lanes and also when BAOW presence was ongoing for several nights. On the nights when the presence of BAOW was an ongoing threat, the bells were placed on the nets at net opening, and volunteers and banders extracted NSWOW immediately to prevent predation. The use of the bells is documented in our nightly log. No nets were closed at Rocky Point or Pedder Bay due to BAOW predation this year. The fishing rod bells have worked very well the last two years, and it is highly recommended that their use be continued going forward.

In 2025, six Barred Owls were banded. Additional data of BAOW population densities and post-breeding dispersal direction and distance are necessary to understand their population in the area, and their continued impact on small owl species and other prey. In fact, understanding how Vancouver Island Barred Owls breed, disperse, and establish territories could have significant conservation implications for the conservation of the Spotted Owl in BC, Washington State and beyond, where Barred Owls are culled. Given the number of BAOW that Rocky Point may band in the future, an opportunity exists to study this owl species concurrently with Northern Saw-whet Owl migration study, depending on funding. Putting tracking devices on BAOW could be efficacious in understanding their range and dispersal. RPBO should continue tracking the age and molt of older BAOWs, documenting this through photographs and the use of molt cards, with the goal of producing a study when enough material has been collected and an analysis done. According to Pyle (2002), more study is needed on the molt strategy of Barred Owls.

On 2 December an in-person meeting was held to discuss a research proposal for tracking BAOW in the Greater Victoria area. This meeting included Jannaca Chick, Mark Byrne, Robyn Byrne, Ann Nightingale, and Dan Burgin. The project will consider utilizing cellular-enabled tracking bands, capable of communicating with cell towers or smartphones (similar to airtags) and offering near-real-time data on owl movements. These devices, made by Cellular Tracking Technologies (CTT), enable frequent data uploads, robust analysis, and minimize field tracking demands. More information is needed regarding this new band technology, ECCC permitting, etc. We created a research proposal document which will be edited and shared with the group. This proposal is currently ongoing and will be submitted to the RPBO Science Committee when complete.

#### RACCOONS AND MINK

There was one raccoon predation at Rocky Point in 2025 and no mink predations. Banders and volunteers make efforts to prevent attacks; however, raccoons are extremely stealthy and able to locate owls in the nets even when people are present in the net lanes. The bells are an asset to volunteers and banders, enabling them to promptly extract owls from the nets when any predators are in the area. Volunteers and banders need to remain alert to the presence of any predators at all times.

## DEER AND MIST NETS

Most years we experience an issue with deer at night as they are unable to see the mist nets. As a result, they often create holes in or destroy our nets, especially once rutting season starts. At Rocky Point, net 8 was taken out and replaced on two separate nights. The deer appeared to be resting in the wooded area between the station and net 8. At Pedder Bay, two nets (7 and 4) had to be replaced this year. Throughout the season, the team was able to repair several holes that were likely made by deer moving through the net lanes.

At Pedder Bay, the deer usually enter the net lanes from the hill behind net 5. In 2024, a monofilament fishing line with orange flagging tape was put up behind net 5 to deter them. This seemed to work well for the rest of the season. This fishing line needs to be judiciously placed, to avoid inadvertent falls or injuries to our volunteers. It is recommended that this be continued going forward. At Rocky Point net 5 is often subject to deer issues, however there is no location where a deterrent monofilament line could be placed.

## OWL DEBRIEF 2025

The banding team and project coordinator met for a Zoom meeting on 4 November to discuss the season. RPBO has held these debriefs post season for the past few years and these meetings are very helpful to review the season and discuss any improvements that could be made to our operations. Minutes were taken by AI, then edited, and uploaded to the RPBO Google Drive. These meetings should continue to be held annually, shortly after the end of season.

## VISITORS AND THE VISITOR LIAISON POSITION

It is recommended that one individual take on the position of coordinating all the visits to Nocturnal Owl Monitoring. This position could be called "Owl Experience Coordinator". This person could manage all the public visits, special group visits, and the DND visits to Rocky Point. Gaylia Lassner created a detailed document this year for the use of EventBrite, which can be used by the coordinator. The public visits are to be scheduled EventBrite prior to the start of the season. Public visits need to be publicized on the RPBO website and social media; this can be handled by the Outreach team in conjunction with the coordinator. These visits need to be managed throughout the season, banders alerted as to the number of visitors expected, and cancelling visits due to weather conditions. The banding team would like to see a Zoom meeting for people interested in the Visitor Liaison position prior to the start of the season so that Visitor protocol can be outlined and understood by volunteers. This could be held by the Owl Experience Coordinator.

## PROJECT OWLNET WORKING GROUP

In November 2023, Ann Nightingale was invited to join a working group for a project headed by Project OwlNet and the Bird Conservancy of the Rockies. She is participating in this working group and providing regular updates by email and/or by reports to the RPBO Board. This is an exciting opportunity for RPBO, as an important western owl banding station, to be involved with the foremost owl researchers in North America. The collaboration could potentially lead to use of our NSWOW banding data. The principals are

Marion Clement (Bird Conservancy of the Rockies), David Brinker (Project Owl-net), Other invitees to the working group are Geoff Holroyd (Beaverhill Bird Observatory, Alberta), Andy Brown (Lambs Knoll, Maryland), Scott Weidensaul (Project Owl-net, King's Gap, Pennsylvania), Mitchell Pruitt (University of Arkansas), Glenn Proudfoot (Vassar College, New York), Michael R. Avara (University of Illinois, Urbana-Champaign). This working group is investigating ways to archive and standardize owl project data. Ann Nightingale and Mike Motek are providing input to that group.

This year Project Owl-net asked owl banding stations to record data into Nature Counts in order to provide better tracking of Effort Data. An RPBO account was set up on Nature Counts, linked with Project Owl-net. The banders were able to enter the data on most nights via an app on their cell phones. The 2025 data will be reviewed and updated as necessary on the Nature Counts website. Previous years' data will also be uploaded over time. The use of Nature Counts data will be useful in the future analysis of owl banding data.



*Figure 14. Visitors to the Pedder Bay banding station.  
Photo: Jannaca Chick.*

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Appendix 1. 2025 Owl net lanes at Rocky Point site.



Appendix 2. 2025 Owl net lanes at Pedder Bay site.



Appendix 3. Criteria for eye colour, foot pad colour and bill-tip colour.

Eye colour chart (Benjamin Moore Classic Color paint sample chips: 315/Oxford Gold, 322/Abstracta, 329/Golden Orchards, 336/Bold Yellow).



Foot pad colour: yellow or flesh.

Bill-tip colour: white or black.