

2025 Fall Report
Canada Jay Research Project
Paradise Meadows, Strathcona Provincial Park
British Columbia

Dan Strickland, October 20, 2025

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Begun in the fall of 2016, the Paradise Meadows Canada Jay research project has now accumulated nine years of data on the behaviour, ecology, and population structure of the Canada Jay's "Pacific morphotype", a distinct western form confined to subalpine areas of coastal BC south through the Cascades and coastal ranges of Washington and Oregon to northern California. The project began as a collaboration by the author and Dr. Ryan Norris of the University of Guelph and is an offshoot of an even longer study we continue to conduct in Algonquin Park, Ontario on the Canada Jay's much more widespread Boreal morphotype. In 2023-24, Dr. John Reynolds and Dr. David Green of Simon Fraser University lent their support to the Paradise Meadows study and this year, SFU PhD candidate, Andie Siemens (Fig.1) completed her second year of detailed behavioural studies of the Paradise Meadows population under the supervision of Drs. Norris and Green.

The study is conducted under the authority of BC Parks Research Permit No. 108249 and Canadian Wildlife Service banding permit no. 10416. In the field, technical assistance in 2025 was provided to Andie Siemens by Lianna Dall'Antonia (Fig. 2) in March and by Halina van de Ligt (Fig. 3) in June-July. We also greatly benefitted from the cooperation and logistical help of Mount Washington Alpine Resort and its staff, from the deep natural history knowledge of local naturalists Loys and Alison Maingon, and from the year-round observations and help of volunteers Heather Holmes, George and Sharon McLeod, Danielle Lacasse (Fig. 4), Roxan Chicalo, and Donna Talluto.

New developments and main findings in 2025 are listed below:

1. Less emphasis was placed on finding the nests of all study area pairs in 2025 than in previous years. This was because previous experience has shown that most nests are too high and well-hidden to be usefully observed in any case, and they also tend to be found very close to previous nests, again reducing the usefulness of finding the exact location of every last nest.
2. Emphasis was placed instead on finding the nests on territories where there were new breeders or where there was the possibility of plural nesting, i.e., more than one breeding pair on the same territory. There were three such territories in 2025, each with two nesting pairs, and the single nests on 17 other territories were also found. We did not find the nests on 4 other territories but these belonged to pairs that had remained unchanged from 2024 and were consequently of less interest (Fig.5).

3. The 2025 Canada Jay breeding season at Paradise Meadows was the most successful yet recorded. Sixteen of the 24 territories in the study area produced 56 fledglings that survived to banding age in June, well above the average figure of 32 in the 2017-2024 period and greater than the previous high (53 fledglings banded in 2019). See Fig. 6.
4. Two of the three territories with two breeding pairs had both pairs successful, one producing six fledglings that survived until June, and the other producing seven. The last time any territories had two successful nests was in 2019 when one territory produced 8 June fledglings, and three others produced 7, 6, and 5 respectively.
5. After this year's young birds had been banded and were still being fed by their parents, we saw two clear cases of nonbreeders in the same social group also feeding begging fledglings. We have seen this only once before (in 2019). Figure 7 shows a fledgling using an extreme appeasement display to dissuade an older bird from displacing it from a cheese bait.
6. In June and July, PhD candidate Andie Siemens and her assistant Halina van de Ligt continued Andie's 2024 work on dominance within jay social groups. A paper will soon be submitted describing Canada Jay society at Paradise Meadows as "despotic" with dominance determined mostly by sex (males over females) and length of time on the territory. Andie also began a new "Goshawk experiment" in which Goshawk vocalizations were played back to different Canada Jay social groups crowded around a bait. The aim of the experiment was to record the reactions of the jays to the apparent sudden nearby presence of their most serious predator. The most common reaction was that the jays flew up into the treetops evidently looking for the Goshawk but they did not seek cover or otherwise seem overly concerned. Andie has prepared a detailed separate report on her work that interested parties may obtain by contacting Andie directly at <andie_siemens@sfu.ca>
7. On June 28, Halina videoed one of our Canada Jays gathering, and flying off to store, parts of a slime mould (Figures 8 and 9). While Canada Jays have been known to consume the slime mould *Fuligo septica* since 1979, to our knowledge this is the first time such consumption has been videoed. The first still photographs, however, were taken just a year earlier on Mount Arrowsmith near Nanaimo by well-known BC birder, Liam Ragan (Figures 10, 11, and 12). His photos are even more remarkable because they show the subject jay actually storing the slime mould in a nearby tuft of the arboreal lichen *Alectoria sarmentosa*. As surprising as it may seem, and again to our knowledge, Liam's photos are the first to show a Canada Jay in the act of storing any food item, let alone a slime mould. An article featuring the photos of Halina and Liam is being prepared for publication in a suitable natural history journal.
8. While not part of our study, a very important paper has just been published that touches on the future of Canada jays in British Columbia, including on Vancouver Island (Figure 13). By comparing bird surveys done three decades ago just north of Vancouver with repetitions of the same surveys in 2023, a group of Canadian and American researchers have shown that Canada Jays in BC are indeed declining and shifting their abundance to higher elevations in response to climate warming. This parallels similar findings from long-term studies carried out by ourselves, collaborators, and

students in Algonquin Park, Ontario. We strongly suspect that the only reason we have not detected a similar slow decline at Paradise Meadows is that the study has not yet lasted long enough (only 9 years as opposed to 30+) for us to detect it.



Figure 1. Andie Siemens holding ROSLOOOR at the beginning of the 2025 spring census (March 2, 2025).



Figure 2. Lianna Dall'Antonia and LOGLOOSR, the new Campground Budoff female, March 7, 2025.

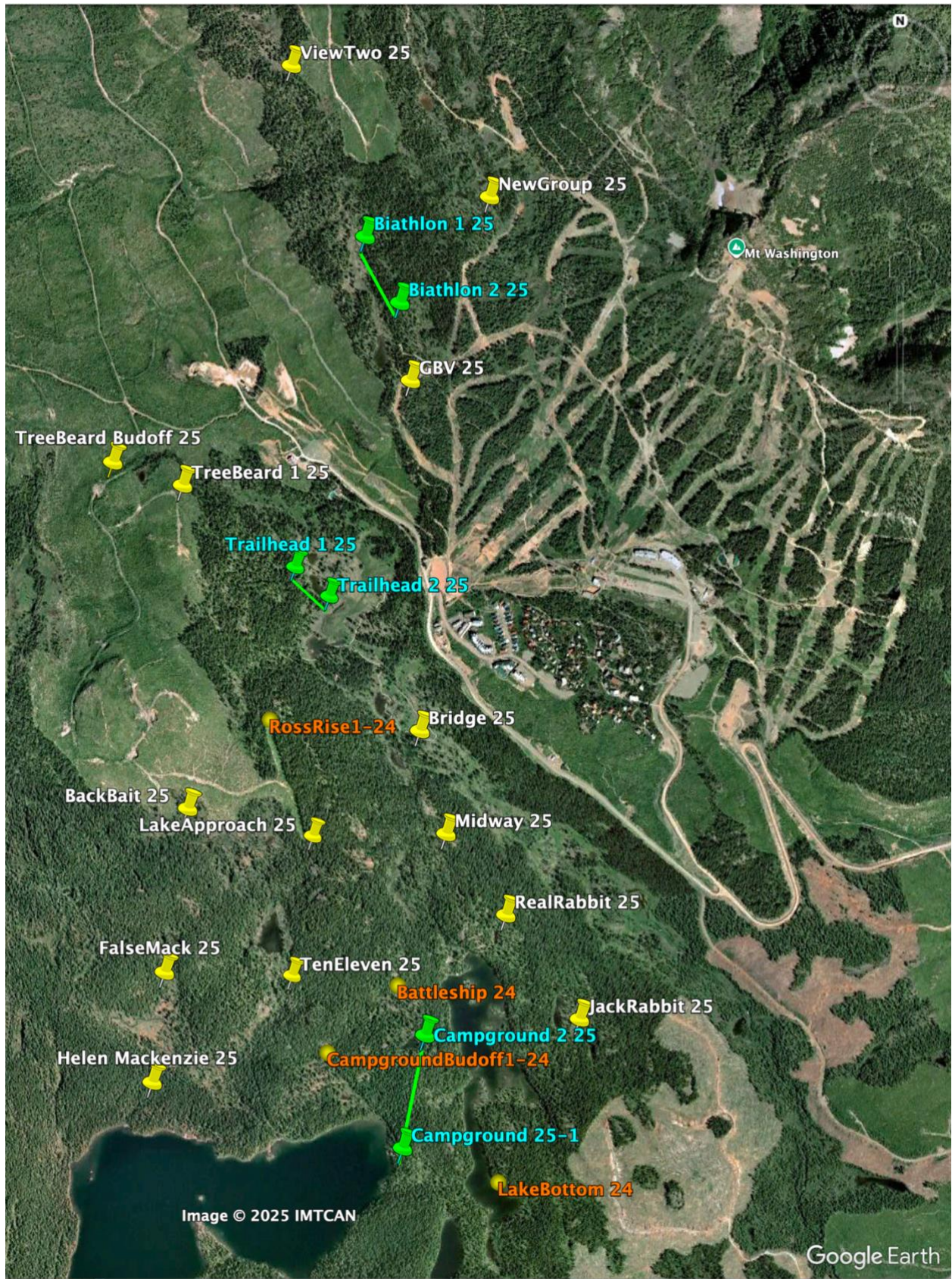


Figure 3. Halina van de Ligt with TORLGOSR, one of 5 fledglings on the Bridge territory
June 12, 2025. Photo by Andie Siemens



Figure 4. Danielle Lacasse (2024 field assistant and occasional volunteer in 2025) pointing to the just-discovered RealRabbit nest, March 30, 2025.

Figure 5 (below). Canada Jay nest locations in 2025. Yellow pins indicate nests on territories where there was only one breeding pair. Green pins joined by a green line indicate the alpha and beta nest locations on three plural breeding territories. Orange pins indicate the 2024 nest locations of 4 pairs whose nests were not found in 2025 but were almost certainly very close to the 2024 locations.



June-Fall Composition of Paradise Meadows Canada Jay Social Groups (as of October 17, 2025; Contact Dan Strickland: perisoreus1@gmail.com)																
2025	ViewTwo		Bathson ^{3,7}		NewGroup		GreatBigView		Trailhead ^{2,8}		Treebeard		RossRise Bud-off		Rossiter's Rise	
	June	Fall	June	Fall	June	Fall	June	Fall	June	Fall	June	Fall	June	Fall	June	Fall
Adults	WOLLOOBL.M21 YOLLOOBL.F18	WOLLOOBL.M21 YOLLOOBL.F18	LOLOBL.M16 BOLOBL.F23	LOLOBL.M16 BOLOBL.F23	YOLLOBL.M18 LOLOBL.F23	YOLLOBL.M18 LOLOBL.F23	YOLLOBL.M21 LOLOBL.F18	YOLLOBL.M21 LOLOBL.F18	YOLLOBL.M16 LOLOBL.F18	YOLLOBL.M16 LOLOBL.F18	YOLLOBL.M17 YOLLOBL.F18	YOLLOBL.M17 YOLLOBL.F18	YOLLOBL.M18 YOLLOBL.F18	YOLLOBL.M18 YOLLOBL.F18	YOLLOBL.M22 YOLLOBL.F18	YOLLOBL.M22 YOLLOBL.F18
YOUNG Hatched Locally in 2025	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25
Hatched Elsewhere																
2025	LakeBottom		Campground ^{2,8}		Campground Budoff ⁴		HelenMackenzie		FalseMack		BackBait		TendLeven		LakeApproach	
	June	Fall	June	Fall	June	Fall	June	Fall	June	Fall	June	Fall	June	Fall	June	Fall
Adults	YOLLOBL.M17 YOLLOBL.F18	YOLLOBL.M17 YOLLOBL.F18	YOLLOBL.M18 YOLLOBL.F18	YOLLOBL.M18 YOLLOBL.F18	YOLLOBL.M18 YOLLOBL.F18	YOLLOBL.M18 YOLLOBL.F18	YOLLOBL.M18 YOLLOBL.F18	YOLLOBL.M18 YOLLOBL.F18	YOLLOBL.M18 YOLLOBL.F18	YOLLOBL.M18 YOLLOBL.F18	YOLLOBL.M18 YOLLOBL.F18	YOLLOBL.M18 YOLLOBL.F18	YOLLOBL.M18 YOLLOBL.F18	YOLLOBL.M18 YOLLOBL.F18	YOLLOBL.M18 YOLLOBL.F18	YOLLOBL.M18 YOLLOBL.F18
YOUNG Hatched Locally in 2025	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25
Hatched Elsewhere																
2025	JackRabbit		JackRabbit Budoff		RealRabbit		Battleship		Midway		Bridge ⁵		Canada Jay Naming System ¹			
	June	Fall	June	Fall	June	Fall	June	Fall	June	Fall	June	Fall	Name based on bird's combination of coloured bands: Y = Yellow T = light blue P = Purple L = pink B = Standard R = dark blue G = dark green W = White O = Over (between 2nd letter or 3rd letter) or Orange U = left (between 2nd/3rd letter) or Blue R = Right (between 3rd letter) or Red Sex indicated by M or F if over a breeder; by an or if before year owner bird's age is uncertain but that it hatched no later than a year earlier Year of Hatching Example: YOLLOBL.F18 = light blue Over Standard Left, Red Over White Right, a breeding female hatched in 2019 (6 years old in 2025) Example: YOLLOBL.M16 = Purple Left, dark blue Over Standard Right, a breeding male, exact age unknown but hatched no later than 2025			
Adults	YOLLOBL.M18 YOLLOBL.F18	YOLLOBL.M18 YOLLOBL.F18	YOLLOBL.M22 YOLLOBL.F22	YOLLOBL.M22 YOLLOBL.F22	YOLLOBL.M22 YOLLOBL.F22	YOLLOBL.M22 YOLLOBL.F22	YOLLOBL.M22 YOLLOBL.F22	YOLLOBL.M22 YOLLOBL.F22	YOLLOBL.M22 YOLLOBL.F22	YOLLOBL.M22 YOLLOBL.F22	YOLLOBL.M22 YOLLOBL.F22	YOLLOBL.M22 YOLLOBL.F22				
YOUNG Hatched Locally in 2025	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25	YOLLOBL.M25 YOLLOBL.F25				
Hatched Elsewhere																

¹Sex (if known) and year of hatching indicated by number after name (e.g. "17" = 2017). A "-" before the year (e.g., "-17") indicates that the bird's age is uncertain but it hatched some time before the indicated year (2015 in this example).

²Two or more pairs known to have attempted nesting on this territory in 2025. Known breeders indicated in boldface.

³LOLOBL rebanded in fall 2022 as "LOLOBL" (Standard Over Lines Left, Red Right).

⁴LOLOBL rebanded in fall 2022 as "LOLOBL" (Standard Over Lines Left, Purple Right).

⁵After rebanding in fall 2022, WOLLOBL now appears as "WOLLOBL" (Standard Over White Left, pink Right).

⁶The Trailhead territory had two nesting pairs in 2025 but we believe that the three young hatched this year were all from the primary pair, YOLLOBL and YOLLOBL.

⁷The Bathson territory had two nesting pairs in 2025. Given the large number of young (50) produced on the territory, both nests were probably successful but we must await DNA analysis of blood samples to determine which parents produced which young.

⁸The Campground territory had two nesting pairs in 2025. Given the large number of young (7) produced on the territory, both nests were probably successful but we must await DNA analysis of blood samples to determine which parents produced which young.

⁹Although WOLLOBL and YOLLOBL attempted to nest on Midway in April, nothing came of it and both birds are now subordinates on the neighbouring Battleship territory (which, in effect, has expanded to include the former Midway territory).

Figure 6. Identities of adults and juveniles on 22 Canada Jay territories at Paradise Meadows in June and in "fall" (early October) 2025.



Figure 7. A 2025 fledgling performing an extreme appeasement display probably to avoid being displaced from a cheese bait by an older member of the Campground territorial group. July 12, 2025.



Figure 8. Still from a video taken by Halina van de Ligt on June 28, showing a Canada Jay filling its throat pouch with a slime mould, *Fuligo septica*.



Figure 9. Close-up of the slime mould harvested by a Canada Jay, June 28, 2025. Photo by Halina van de Ligt. Slime Mould (*Fuligo septica*)

Identified by Loys Maingon.



Figure 10. A Canada Jay that has just seized part of an unidentified slime mould preparatory to storing it, June 3, 2024, Mount Arrowsmith, Vancouver Island. Photo by Liam Ragan.



Figure 11. Same Canada Jay as in Figure 10, having hopped up into a tree and apparently searching for a place to store the slime mould it is still holding in its bill and throat, Mount Arrowsmith, Vancouver Island, June 3, 2024. Photo by Liam Ragan.



Figure 12. The same Canada Jay seen in Figures 10 and 11, caching slime mould in the lichen *Alectoria sarmentosa*, a conspicuous fruticose lichen in the subalpine zone of Vancouver Island, June 3, 2024, Mount Arrowsmith. Photo by Liam Ragan.

ARTICLE

Pacific Northwest birds have shifted their abundances upslope in response to 30 years of warming temperatures

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Abstract

Mountain species are predicted to respond to warming temperatures by moving to higher elevations that remain relatively cool. Species can track warming by shifting their entire distributions upwards (the “escalator to extinction” hypothesis) or by increasing in abundance in the upper portion of their elevational range while maintaining stable elevational limits (the “upslope lean” hypothesis). Alternatively, mountain species may not change their abundance or distribution despite climate change (the “persist-in-place” hypothesis). Here we evaluate these three contrasting hypotheses by analyzing responses of breeding forest bird species to three decades of warming in southwestern British Columbia, Canada. Consistent with the upslope lean hypothesis, species’ optimum elevations (elevations of highest abundance) increased by an average of 126 m, approximately tracking upslope movements in temperature isotherms. In contrast, species’ elevational range limits were stable on average, contra the escalator to extinction hypothesis. Many individual species had stable distributions and abundances, and species with upslope abundance increases typically maintained stable abundances within the lower elevation portions of their range. Taken together, most species in our study region appear to be responding neutrally or favorably to warming temperatures. Nevertheless, one mountain species, the Canada Jay, Canada’s national bird, is declining and vulnerable to the escalator to extinction within our study region. Overall, we emphasize the importance of empirical data—and abundance data in particular—when evaluating mountain species’ vulnerability to climate change.

Figure 13. Title and abstract of an important 2025 paper documenting the climate-warming associated decline of Canada Jays at lower elevational levels on the BC mainland north of Vancouver and opposite our Paradise Meadows study area on Vancouver Island.