2024 Fall Report
Canada Jay Research Project
Paradise Meadows, Strathcona Provincial Park
British Columbia

Dan Strickland, October 31, 2024
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This was the eighth year of the Canada Jay project at Paradise Meadows. From the beginning, the project has benefitted from the advice and financial support of Ryan Norris (U. of Guelph), with additional support being provided by Brendan Graham and Theresa Burg (U. of Lethbridge) and most recently by John Reynolds and David Green (Simon Fraser U.). I also wish to acknowledge the past and ongoing help and expertise of Éric Demers (Vancouver Island U.), of Loys and Alison Maingon of the Strathcona Wilderness Institute, and of volunteers Heather Holmes, George and Sharon McLeod, Roxan Chicalo, and Bryan Gates.

New developments and main findings in 2024 were as follows:

1. Excellent field support was provided March through May by Danielle Lacasse, a recent VIU graduate with strong ties to, and knowledge of, Vancouver Island. Subsequent support in June and July (monitoring and help with the banding of juveniles) was provided by Andie Siemens, a new PhD student at SFU and her assistant Zoe Strothkamp (see No. 9 below).

2. Our beginning-of-March census of the study area (Figure 1) revealed 21 occupied territories, two having gone vacant since 2023, albeit with 3 of the 4 breeders still alive but moving to fill breeding vacancies on nearby territories.

3. Twenty-four nests were found in 2024 (Figure 2) as opposed to 34 last year. Part of the difference is attributable to this year's loss of two territories but more is due to 2024's lower number of territories with extra breeding pairs. In 2023 there were 7 territories with two breeding pairs and 3 with three breeding pairs whereas, this year, there were none with three and only 3 territories with two breeding pairs.

4. Even saying there were three plural-nesting territories is a partial exaggeration. In one case a long-standing alpha female was apparently overthrown by the beta female but nevertheless mated again and built a nest with the alpha male. That is, each of the new and the old alpha females built a (separate) nest with the same single alpha male (and only the nest involving the new alpha female produced [a single] young).

5. In spite of unseasonably warm, rainy weather in February (or perhaps because of it?) nesting was much later in 2024 than in previous years. Over half of this year's nests were not found (under construction) until April and, correspondingly, many fledglings did not become capable of travelling with their social groups until well into July.

6. This year was unusual insofar as four nests were low enough to permit using a small digital camera on a pole (lent to us by Dr. Éric Demers of VIU) to see their contents (Figure 3) or, at the appropriate time in May and early June, to use a ladder to access and band the (nine) nestlings contained in three of them (Figures 4 thru 6). All the other young banded this year were, as is usually the case, free-flying fledglings captured on the ground in June or early July. This year, because nesting was so exceptionally late, the last 7 of the 35 total young handled in 2024 were not banded until July 11 and 12 (see Figure 7 for a list of all the birds present in "June" [including fledglings] and again in Fall).

7. The 2024 nesting on the New Group territory was of particular interest. In 2023 the territory had two nesting pairs but the alpha pair eventually attacked the beta pair and killed their two nestlings. In the following months the 2023 alpha female disappeared, paving the way for the 2023 beta female to become the new, 2024 alpha female and this year's mate of the unchanged alpha male. In short, this year, the new alpha female mated and produced two proven fledglings with the same male who, last year, killed her two 2023 nestlings and presumably fed them to his own young (Figure 8).

8. Given the proven case of infanticide in 2023 and the strong suspicion that such behaviour has occurred before in the Paradise Meadows population, we were especially interested to see if we might observe more cases in 2024. Unfortunately, there was only one territory where this was possible this year (Figure 9). As it turned out, the beta pair of the Campground territory uneventfully fledged three young with no sign of antagonism from the alpha pair (whose own nesting failed for unknown reasons). It has been reasonably suggested that infanticide is unlikely to occur when a beta breeder is a previous offspring of the alpha breeders (parents should not harm their own genetic interests by hurting those of their own offspring). However, that does not explain why we saw infanticide in 2023 and not in 2024 because, in both cases, the beta breeders were unrelated to either of the alpha birds.

9. On June 3, Danielle's contract ended and Andie Siemens (Figure 10), our new PhD student, arrived and, with her assistant, Zoe Strothkamp (Figure 11), began to collect data on the dominance hierarchies in the Paradise Meadows Canada Jay social groups. This involved videotaping, for 15 minutes or longer, the interactions among group members attracted to a suet or cheese bait (Figure 12). In just two months Andie and Zoe recorded almost 200 of these "Dominance Sessions" with special emphasis on groups that included surviving fledglings, with the aim of understanding how dominance hierarchies develop in young birds and are maintained in older, more established groups. Andie is now using specialized behaviour-analysis software to quantify the relationships recorded in the videos.

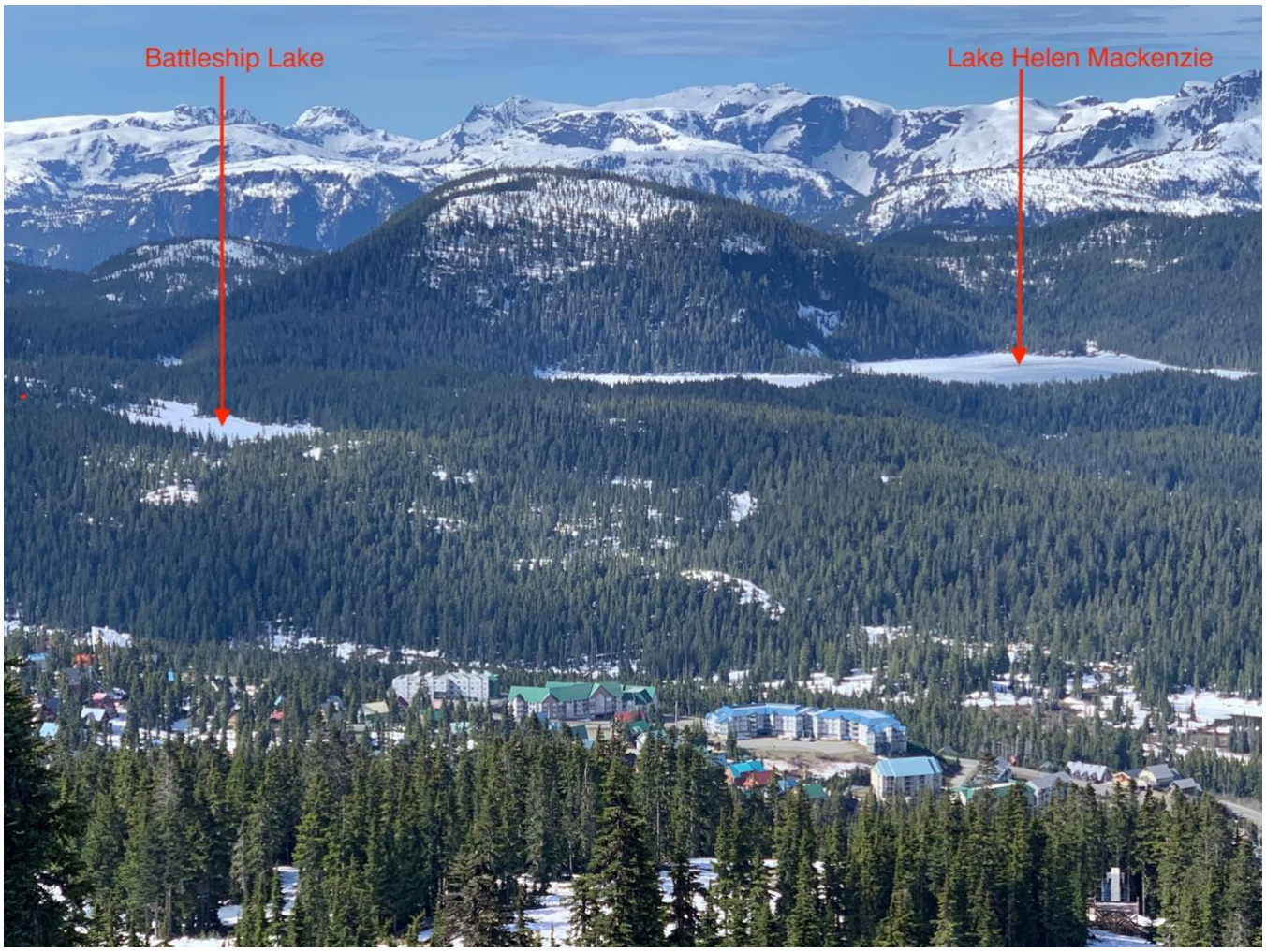

Figure 1. View of the Paradise Meadows Canada Jay study area beyond the Mount Washington “village” and stretching out to Battleship and Helen Mackenzie lakes, May 17, 2024.

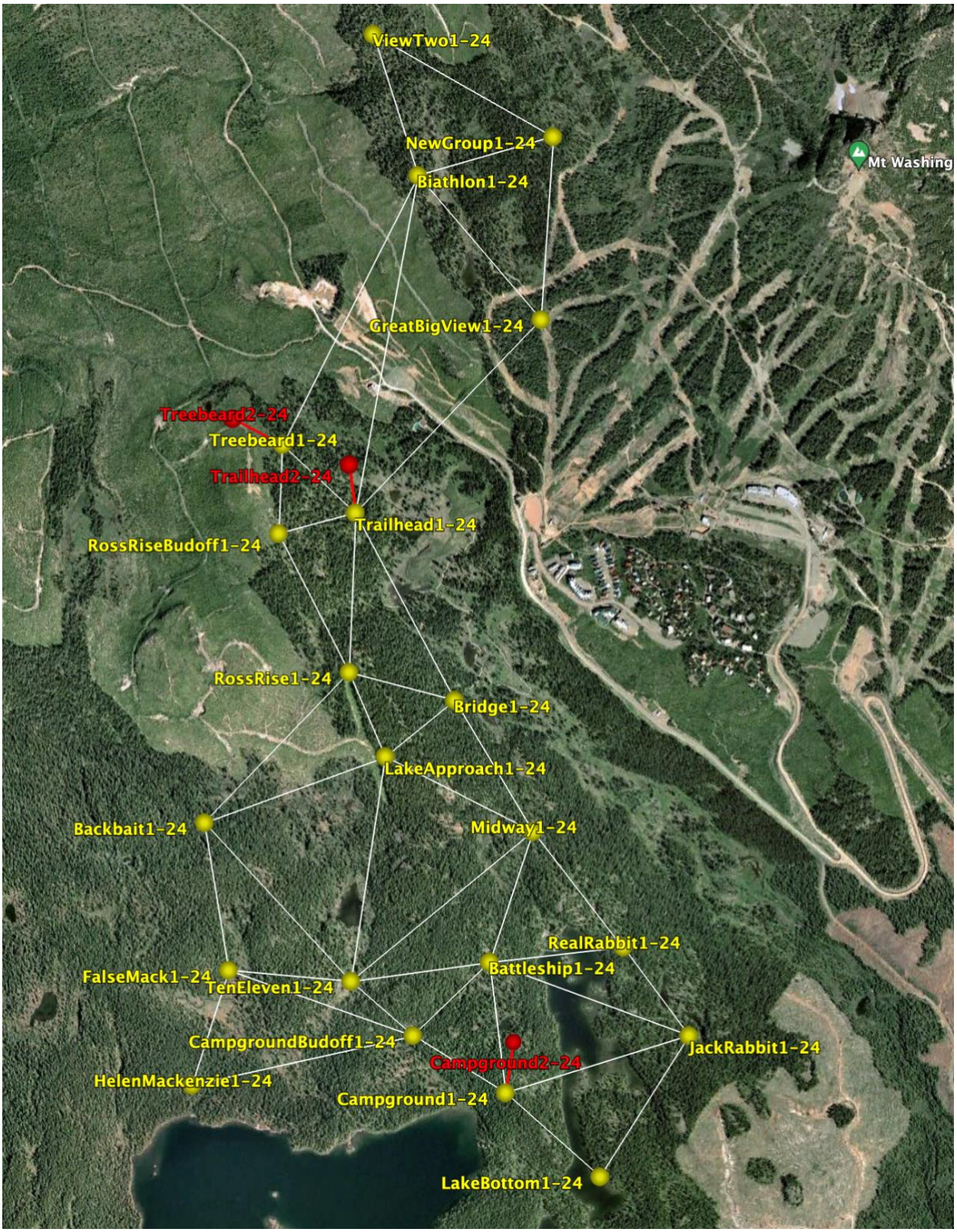

Figure 2. Location of the 2024 alpha pair nests (yellow) on 21 of the 22 territories comprising the Paradise Meadows Canada Jay study area. Beta nest locations appear in red.

Figure 3. The 4 eggs in the LakeBottom nest, May 23. There were 4 chicks in this extremely late nest on May 27 but it was empty on May 30. Photo by Danielle Lacasse.

Figure 4. Danielle Lacasse on our way to band the three Midway nestlings, May 12, 2024.

Figure 5. The three Midway nestlings (count the beaks) just before banding, May 12, 2024. Photo by Danielle Lacasse.

Figure 6. Danielle banding GOLLOOSR, one of the three Midway nestlings, May 12, 2024.

June-Fall Composition of Paradise Meadows Canada Jay Social Groups to OCTOBER 5, 2024 (Contact Dan Strickland: perisoreus1@gmail.com)

2024	ViewTwo		Biathlon		NewGroup		GreatBigView		Trailhead[2]		TreeBeard[2]		RossRise Bud-off		Rossiter's Rise	
	June	Fall	June	Fall	June	Fall	June	Fall	June	Fall	June	Fall	June	Fall	June	Fall
"ADULTS"	**BOSLWR**$_{m17}$	**BOSLWR**$_{m17}$	**LOSLRR**$_{m09-}$[1]	**LOSLRR**$_{m09-}$[1]	**TOYLPOSR**$_{m19-}$	**TOYLPOSR**$_{m19-}$	**LOSLYOPR**$_{m19}$	**LOSLYOPR**$_{m19}$	**PLBOSR**$_{m15-}$	**PLBOSR**$_{m15-}$	**WLKOSR**$_{m17}$	**WLKOSR**$_{m17}$	**WLLOSR**$_{m15-}$	**WLLOSR**$_{m15-}$	**BOSLYOTR**$_{m19}$	**BOSLYOTR**$_{m19}$
	POSLTR$_{fe15-}$	**POSLTR**$_{fe15-}$	**TOSLROBR**$_{fe19-}$	**TOSLROBR**$_{fe19-}$	**RLSR**$_{fe22-}$	**RLSR**$_{fe22-}$	**GOSLRORR**$_{fe16-}$	**GOSLRORR**$_{fe16-}$	**TOSLROWR**$_{fe19}$	**TOSLROWR**$_{fe19}$	**YOSLWOBR**$_{fe18-}$	**YOSLWOBR**$_{fe18-}$	**KOSLROLR**$_{fe19}$	**KOSLROLR**$_{fe19}$	**KLGOSR**$_{fe16}$	**KLGOSR**$_{fe16}$
	WOLLKOSR$_{21}$		OOSLWOPR$_{m18-}$	OOSLWOPR$_{m18-}$	GOSLYOLR$_{m19-}$	GOSLYOLR$_{m19-}$	YOBLOOSR$_{fe21}$	YOBLOOSR$_{fe21}$	**LOSLBR**$_{fe15-}$[7]	**LOSLBR**$_{fe15-}$[7]	BOWLROSR$_{m19}$[8]		ROSLLOYR$_{m19}$	ROSLLOYR$_{m19}$		
	WOSLLOBR		GOSLYOPR$_{m20}$	GOSLYOPR$_{m20}$	LOBLYOSR$_{m20}$	LOBLYOSR$_{m20}$[10]	LOSLGOWR$_{23}$	LOSLGOWR$_{23}$	PORLPOSR$_{fe21}$	PORLPOSR$_{fe21}$	POWLTOSR$_{m21}$	POWLTOSR$_{m21}$				
	OOGLPOSR$_{22}$	OOGLPOSR$_{22}$	YOSLTORR$_{22}$	YOSLTORR$_{22}$			GOSLLOOR$_{23}$	GOSLLOOR$_{23}$	TOPLSOYR$_{22}$	TOPLSOYR$_{22}$						
			BOSLGOLR$_{23}$				BOSLYOGR$_{23}$	BOSLYOGR$_{23}$	WOSLROGR$_{23}$	WOSLROGR$_{23}$						
			WOGLYOSR$_{23}$	WOGLYOSR$_{23}$					KOBLGOSR$_{22}$	KOBLGOSR$_{22}$						
YOUNG Hatched Locally in 2024	OOBLROSR$_{24}$				WOBLOOSR$_{24}$		OOWLTOSR$_{24}$	OOWLTOSR$_{24}$	BOOLLOSR$_{24}$	BOOLLOSR$_{24}$	LOSLOOLR$_{24}$		YOSLGOGR$_{24}$	YOSLGOGR$_{24}$	OOLLTOSR$_{24}$	
	LOGLYOSR$_{24}$				LOSLTOGR$_{24}$	LOSLTOGR$_{24}$					YORLGOSR$_{24}$	YORLGOSR$_{24}$	LOTLOOSR$_{24}$	LOTLOOSR$_{24}$	BOYLROSR$_{24}$	
													BOSLWOLR$_{24}$	BOSLWOLR$_{24}$	LORLGOSR$_{24}$	LORLGOSR$_{24}$
															WOSLTOBR$_{24}$	WOSLTOBR$_{24}$
Hatched Elsewhere		YOSLBOOR$_{24}$														
		ROWLTOSR$_{24}$														

2024	LakeBottom		Campground[2,4]		CampgroundBudoff		HelenMackenzie		FalseMack		BackBait		TenEleven		LakeApproach	
	June	Fall	June	Fall	June	Fall	June	Fall	June	Fall	June	Fall	June	Fall	June	Fall
"ADULTS"	**POSLGOLR**$_{m16-}$	**POSLGOLR**$_{m16-}$	**TOSLLOBR**$_{m18}$	**TOSLLOBR**$_{m18}$	**BOSLPR**$_{m15-}$[4]	**BOSLPR**$_{m15-}$[4]	**ROSLPR**$_{m15-}$	**ROSLPR**$_{m15-}$	**TOBLGOSR**$_{21-}$	**TOBLGOSR**$_{21-}$	**GOSLTR**$_{m15-}$	**GOSLTR**$_{m15-}$	**TLOOSR**$_{m15-}$	**TLOOSR**$_{m15-}$	**GLROSR**$_{m15-}$	**GLROSR**$_{m15-}$
	OOSLPOTR$_{fe19-}$	**OOSLPOTR**$_{fe19-}$	**POSLBOKR**$_{fe18}$	**POSLBOKR**$_{fe18}$	**ROSLTOPR**$_{fe20}$	**ROSLTOPR**$_{fe20}$	WOLLBOSR	WOLLBOSR	**LOSLKR**$_{fe17}$	**LOSLKR**$_{fe17}$	**TOSLYOBR**$_{fe18}$	**ROSLOOOR**$_{23}$	**YOOLTOSR**$_{22-}$	**YOOLTOSR**$_{22-}$	**WOSLPOOR**$_{fe20}$	**WOSLPOOR**$_{fe20}$
	BOSLOOBR$_{23}$	BOSLOOBR$_{23}$	**BOSLWOGR**$_{m22}$	**BOSLWOGR**$_{m22}$	LOSLGOYR$_{23}$	LOSLGOYR$_{23}$	LOGLOOSR	LOGLOOSR	YOSLBOLR$_{23}$	YOSLBOLR$_{23}$		WOSLBORR$_{23-}$	BOSLTOBR$_{23}$	BOSLTOBR$_{23}$		
	ROSLGOWR$_{23}$	ROSLGOWR$_{23}$	**YOSLBOTR**$_{fe19}$	**YOSLBOTR**$_{fe19}$									YOWLOOSR$_{23}$	YOWLOOSR$_{23}$		
YOUNG Hatched Locally in 2024			LOLLOOSR$_{24}$[9]		GORLOOSR$_{24}$	GORLOOSR$_{24}$	TOBLYOSR$_{24}$	TOBLYOSR$_{24}$			LOOLBOSR$_{24}$		BOLLGOSR$_{24}$	BOLLGOSR$_{24}$		
			WOSLTOGR$_{24}$	WOSLTOGR$_{24}$			TOSLOOBR$_{24}$	TOSLOOBR$_{24}$			ROSLYOGR$_{24}$		ROTLROSR$_{24}$	ROTLROSR$_{24}$		
			(ROSLGOLR$_{24}$)[6]								BOWLLOSR$_{24}$	BOWLLOSR$_{24}$				
Hatched Elsewhere																

2024	JackRabbit		JackRabbit Budoff		RealRabbit		Battleship		Midway		Bridge		**Canada Jay Naming System**[1]			
	June	Fall	June	Fall	June	Fall	June	Fall	June	Fall	June	Fall				
"ADULTS"	**ROLLWOSR**$_{m18-}$	**ROLLWOSR**$_{m18-}$	**LOGLROSR**$_{m19}$		**WOGLOOSR**$_{23}$	**WOGLOOSR**$_{23}$	**POYLWOSR**$_{m21}$	**POYLWOSR**$_{m21}$	**ROSLOOTR**$_{m21}$		**WOSLKR**$_{m16}$[5]	**WOSLKR**$_{m16}$[5]	**Name is based on each bird's unique combination of coloured bands; subscript is Hatch Year**			
	TOSLGR$_{fe16-}$	**TOSLGR**$_{fe16-}$	**OOSLBOGR**$_{22}$	**OOSLBOGR**$_{22}$	**YOBLTOSR**$_{fe18-}$	**YOBLTOSR**$_{fe18-}$	**LOSLWOBR**$_{fe18}$	**LOSLWOBR**$_{fe18}$	**SORLGR**$_{fe16}$	**SORLGR**$_{fe16}$	**GLWOSR**$_{fe15-}$	**GLWOSR**$_{fe15-}$	**Sex (fe or m) assigned when breeding role (2024 or earlier) is known**			
	POSLLOYR$_{fe21-}$	POSLLOYR$_{fe21-}$	YOSLOOBR$_{22}$	YOSLOOBR$_{22}$			ROTLLOSR$_{fe21}$	ROTLLOSR$_{fe21}$			GOWLOOSR$_{23}$	GOWLOOSR$_{23}$	O = Over (when 2nd letter or 3rd last) or Orange			
	TOSLGOYR$_{23}$	TOSLGOYR$_{23}$	GOYLOOSR$_{23}$	GOYLOOSR$_{23}$									L = Left (when 2nd or 4th letter) or Light green			
	WOSLTOKR$_{fe21}$	WOSLTOKR$_{fe21}$											R = Right (when last letter) or Red			
YOUNG Hatched Locally in 2024					LOSLBOTR$_{24}$	LOSLBOTR$_{24}$	GOLLROSR$_{24}$	GOLLROSR$_{24}$	GOLLOOSR$_{24}$	GOLLOOSR$_{24}$	YOGLROSR$_{24}$	YOGLROSR$_{24}$	Y = **Y**ellow	T = ligh**T** blue	P = **P**urple	K = pin**K**
							BOSLBOOR$_{24}$	BOSLBOOR$_{24}$	YOSLWOGR$_{24}$		OOWLBOSR$_{24}$	OOWLBOSR$_{24}$	S = **S**tandard	B = dark **B**lue	G = dk **G**reen	W = **W**hite
							TOOLGOSR$_{24}$	TOOLGOSR$_{24}$	(LOSLTOBR$_{24}$)[6]				**Example: ROSLTOGR**$_{19}$ = **R**ed **O**ver **S**tandard **L**eft, ligh**T** blue **O**ver dark **G**reen **R**ight (hatched in 2019)			
Hatched Elsewhere					GOBLROSR$_{24}$	GOBLROSR$_{24}$							**Example: WLLOSR**$_{15-}$ = **W**hite **L**eft, **L**ime green **O**ver **S**tandard **R**ight (hatched no later than 2015)			

[1] Sex (if known) and year of birth indicated by subscript after name. A minus sign following the year indicates that denoted year is latest possible year of birth. Breeders in bold.

[2] Two or more pairs known to have attempted nesting on this teritory in 2024

[3] LOSLRR rebanded as "SOLLRR" in fall 2022

[4] BOSLPR rebanded as "SOBLPR" in fall 2022

[5] After rebanding in fall 2022, WOSLKR now appears as "SOWLKR"

[6] Brackets around name of a 2024 juvenile indicates it was banded (with its nest mates) as a nestling but did not appear as a fledgling

[7] LOSLBR, the longtime primary breeder on the Trailhead territory was "overthrown" in 2023 by TOSLROWR, the secondary female, but both females built separate nests with PLBOSR, the primary male, in 2024

[8] BOWLROSR, the secondary breeding male on the TreeBeard territory built a nest with the secondary female in 2024 but that female had disappeared by June

[9] The 3 2024 Campground young (banded as nestlings) were the offspring of the Beta (secondary) pair on the territory

[10] LOBLYOSR now appears as "BOLLSR"

Figure 7. List of the colour-banded birds present on 22 Canada Jay territories in the Paradise Meadows study area in June (grey columns) and in Fall (white columns) of 2024

Figure 8. TOYLPOSR (upper bird) and RLSR, the 2024 NewGroup alpha pair on April 24, 2024, before RLSR began to incubate and eventually produce two surviving fledglings banded on July 11. In 2023 RLSR was the female of a Beta pair on the same territory and her two nestlings were killed by TOYLPOSR, then, as in 2024, the alpha male. RLSR moved up in rank, from Beta female to alpha female, in the summer of 2023, following the disappearance of OOSLPOBR, the alpha female in the 2023 breeding season.

Figure 9. Andie Siemens holding the ladder while I retrieved the three nestlings from the Campground Beta nest, June 7, 2024. I decided the young were a little too small for banding that day so we returned on June 10 to complete the task. The alpha male of the Campground territory was present on both occasions but made no aggressive moves towards the Beta pair or their nestlings.

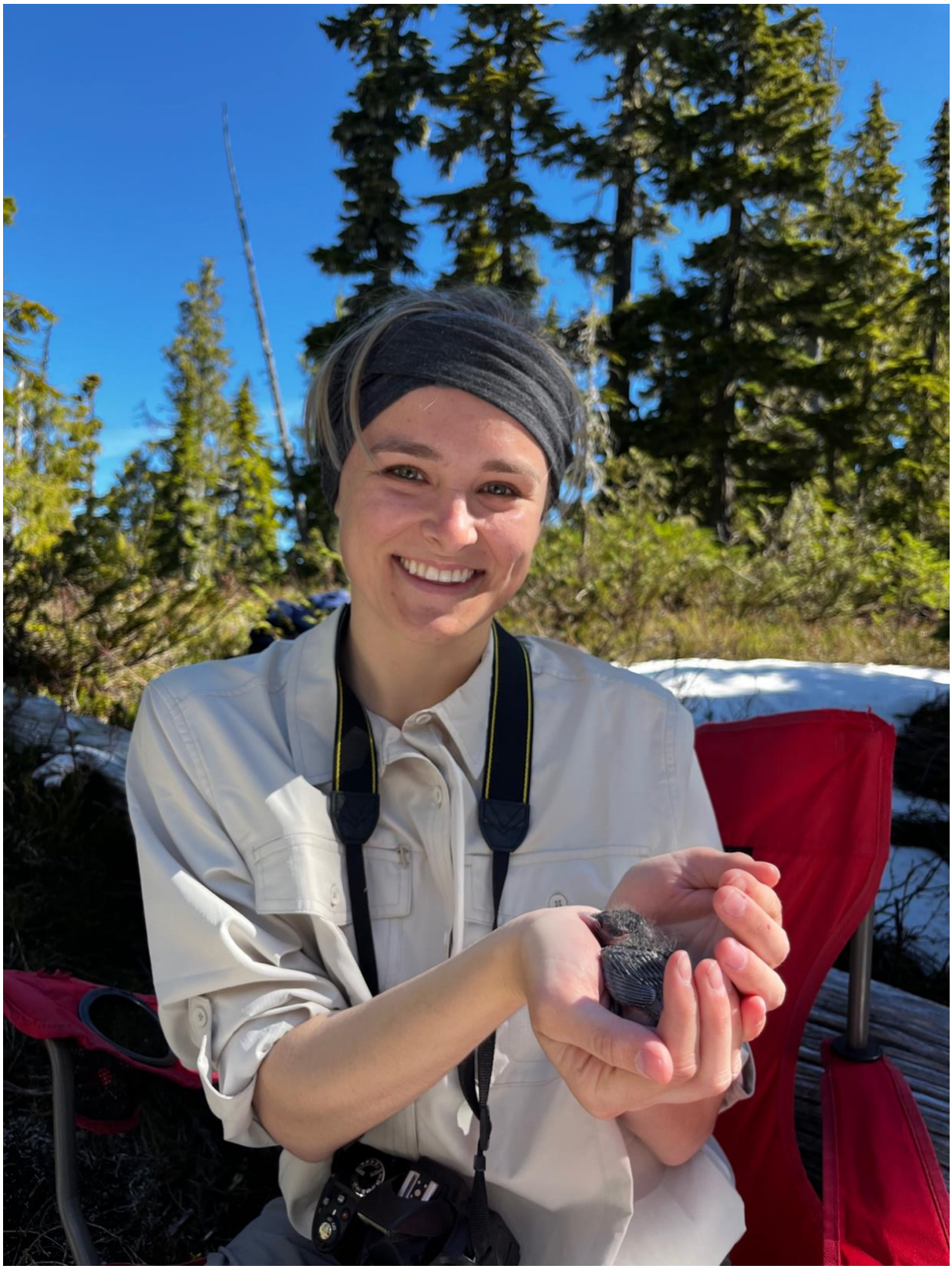

Figure 10. Andie holding one of the just-banded Campground Beta nestlings, June 10, 2024.

Figure 11. Zoe Strothkamp holding a newly caught fledgling on the RossRise territory, June 16, 2024.

Figure 12. An example of familial tolerance on the GBV territory, October 5, 2024. The male (far bird—bands not visible) is tolerating the simultaneous presence at the cheese bait of his mate, GOSLRORR (left), and his one 2024 juvenile offspring, OOWLTOSR (right). He would not allow any of the four other birds in the GBV group to do this.