



## Breeding Range Expansion of White-throated Sparrow (*Zonotrichia albicollis*) into Southeastern British Columbia

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### Introduction

White-throated Sparrow (*Zonotrichia albicollis*; Figure 1) is an eastern species which has been expanding its breeding range from the Peace River region in British Columbia westward and southward, with confirmed breeding records south to Quesnel by 2001.<sup>1</sup> The confirmed breeding range was further refined to include the Bulkley Valley

to the west and the Cariboo-Chilcotin region to the south.<sup>2</sup> By 2012, the expanded potential breeding range included the Robson Valley in eastern British Columbia.<sup>6</sup> There was also a southward range expansion on the eastern slope and foothills of the Rocky Mountains in Alberta.<sup>7,8</sup> This article describes further confirmed breeding expansion for the White-throated Sparrow into southeastern British Columbia with evidence of probable breeding there by 2001.



**Figure 1.** During the late 1980s and through the 1990s, White-throated Sparrow has expanded its breeding range from the Peace River region of southeastern British Columbia westward and southward in the interior of the province.

My Golden area bird observations began in the spring of 1993 and the first hint of possible local White-throated Sparrow breeding came the following spring. Between 24 and 26 June 1994, a male sang on our property in the lower Blaeberry valley, about 15 km north of Golden (hereafter referred to as “the Blaeberry”). It was in a mixed, multi-aged and patchy white spruce (*Picea glauca*), trembling aspen (*Populus tremuloides*), white birch (*Betula papyrifera*), and black cottonwood (*Populus trichocarpa*) forest habitat similar to their breeding habitat in northeastern British Columbia<sup>1</sup> and Alberta.<sup>8</sup> All subsequent observations were in, or adjacent to, similar habitats. Although mixed forests extend well up adjacent slopes in many areas, to date, White-throated Sparrows have only been found in large valley bottoms near water.

Three years later, on 18 May 1997, another White-throated Sparrow sang in the Blaeberry for one day. Four more one-day singers were found in the area in the next two years. One was found near Moberly Marsh aka Burges & James Gadsden Provincial Park on 29 May 1998 and 1 June 1999, another on the Bush Forest Service Road north of Donald at the ‘blackwater wetlands’ on 19 May 1998, and one near Bush Harbour on Kinbasket Lake on 15 June 1999. Three silent birds were also at the latter location on 12 May 1998.

About the same time, a notable autumn migration became evident at the Blaeberry feeders, a pattern that continued through 2017. The 1998 autumn migration proved to be the largest until 2012 when a cumulative total of 44 birds (up to 5 one day) were recorded on 23 days from 6 September to 16 November. The latter date is still the latest record to 2017.

By the summer of 2001, it appeared that White-throated Sparrow was a more common migrant, particularly in autumn, than expected in this area but was still not a local breeding bird. But on 4 and 6 August that year, a heavily streaked juvenile, just starting to show its adult field marks, appeared in the Blaeberry. This young bird clearly appeared to be the product of local breeding and my limited birding range that year would explain missing any signs of that. It, or a more developed second young bird, was seen there again on August 13 and 14 and probably once later that month. Unfortunately no photographs were taken.

In 10 of the next 12 years, males were found singing in the area for up to three days before disappearing. In 2013, two sang longer: for about 11 days at Moberly Marsh (29 May-8 June) and about 7 days at Kettleson Pond adjacent to the Blaeberry (28 May-3 June). More were heard in 2014 including one on the same Moberly Marsh territory for about 23 days (20 May-12 June) when observations paused there; it may have sung longer. Most significantly, a juvenile (with an unaged second bird) was photographed at “Kettleson Pond” on 13 August. It appeared to be about the same age as the bird seen in the Blaeberry on the same date in 2001. It may have already travelled some distance from its nest territory but this appeared to be the first tentative documentation of breeding in the larger area.

Only one singing male was heard for one day in the Blaeberry in 2013 and 2014, but breeding was confirmed there in 2015. In addition, four other White-throated Sparrows were heard in the vicinity of Moberly Marsh in 2015 from 7 May to 14 June indicating probable nesting there again. That spring, the first silent (white-striped) migrant was at the Blaeberry feeder area by 10 May. Three were there on 12 May, one the next day, then none visited the feeder for almost three months. Meanwhile, a white-striped male started singing on 20 May, a second started nearby on 25 May, and both continued singing on their respective territories. The last song was heard on 1 August. That prompted a serious search to confirm breeding.

In the Blaeberry area, White-throated Sparrows are found in and on the edges of mostly thick and dense shrubs and trees. Singing males are easier to see – and had narrowed my search by defining their territories – but when silent these birds proved extremely difficult to find and impossible to follow any distance. No nest has been found to 2017. I briefly observed one pair interacting on 23 and 24 June and possibly on July 1. Then on 15, 16, and 19 July, agitated adults carrying food were found and photographed (Figure 2) and at least two fledglings were confirmed but not seen. On 21 July, both adults were found carrying food in a relatively open area and I finally photographed one of the fledglings they were feeding (Figure 3).



**Figure 2.** An adult White-throated Sparrow found carrying food and agitated suggests that recently-fledged young may be nearby. *Photo by Douglas Leighton, 15 km north of Golden, BC. 16 July 2015.*



**Figure 3.** This fledgling White-throated Sparrow, about two weeks old, was being fed regularly by both adults. Young may leave the nest on day eight or nine.<sup>4</sup> *Photo by Douglas Leighton, "Blaeberry Valley", 22 July 2015.*

This family, with three and later two surviving juveniles, gradually moved closer to our house (feeder and water). The male was first seen there on 5 August and the first juvenile, with the female, by 10 August. Growing juveniles were photographed on 2 August (Figure 4) and 14 August. The similarity to the young birds seen in 2001, particularly on 4 and 6 August that year, and at "Kettleson Pond" on 13 August 2014 adds to the probability that White-throated Sparrow probably nested locally in 2001.



**Figure 4.** This juvenile White-throated Sparrow was still being fed by both adults in early August. *Photo by Douglas Leighton, "Blaeberry Valley", 2 August 2015.*

White-throated Sparrow nested in the Blaeberry again in 2016 and 2017. In 2016, a white-striped male was singing on one of the 2015 territories by 3 May (second earliest arrival date) and sang there until 6 August. Based on its relatively habituated behaviour, apparent familiarity with the feeder and choice of territory, this appeared to be the same male returning. On 13 May, it was seen near its probable mate. A second tan-stripe male was heard from 2 June to late July. Both visited the seed feeding area more regularly than in 2015 and juveniles were first seen there by 31 July, 10 days earlier than 2014.

In 2017, what appeared to be the same white-striped male, was singing near the feeder area by 5 May. It had apparently shifted its territory closer to that resource and used it throughout the nesting season. A juvenile was first observed there with that male on 7 July, more than three weeks earlier than in 2016, and a month earlier than 2015. The juvenile's age appears comparable to one photographed on 2 August 2015 (see Figure 3). Assuming that this was the same returning male, this trend may suggest that its accumulated knowledge of this area (and feeder) may have facilitated an advanced breeding schedule. The cool, late spring of 2017 may have otherwise produced the opposite effect.

A second (tan-stripe) male was present in 2017 but disappeared early with no indication of breeding. In contrast, the first male may have produced a second brood. On 28 June it was observed mating with a female, timing which clearly did not fit the age of the first juveniles observed just 9 days later. Presumably, this was a recently arrived and/or unpaired female and this pairing may have produced juveniles seen in mid-August. Compared to "tan males, white males are more aggressive... spend less time guarding their mates, occasionally attempt polygyny, and provide less parental care."<sup>10</sup>

## Discussion

In the northern Rocky Mountains, which include most new White-throated Sparrow range in British Columbia, breeding bird survey data shows a breeding population increase of 964 % from 1970 to 2015 and 204 % increase from 2005 to 2015 in the province, with 700 % and 64 % growth respectively in the Alberta part of that region. (<https://wildlife-species.canada.ca/breeding-bird-survey-results>). In contrast, breeding bird survey data shows declines across most eastern White-throated Sparrow range.

There was also a southward White-throated Sparrow range expansion on the eastern slope and foothills of the Rocky Mountains in Alberta that began earlier.<sup>7,8</sup> In the 1990s, the Alberta White-throated Sparrow population was the closest to Blaeberry and initially seemed a possible source. However, subsequent observations suggested that most – and all observed – were migrating in the

Rocky Mountain Trench. While the passes over the Rocky Mountains at that latitude (e.g., Howse and Kicking Horse passes) are marginal migration routes for White-throated Sparrow, particularly in spring, the Rocky Mountain trench is a direct low-elevation valley route to and from the Robson Valley, where White-throated Sparrow was established by 2000,<sup>1</sup> and the larger Northern Rockies population.

In northeastern British Columbia, where highest numbers of White-throated Sparrow occur, breeding habitats are described as brushy edges or forested habitats of trembling aspen, birch, balsam poplar, and white spruce but it is most common in mature trembling aspen and mixed wood forests with a dense shrub layer, particularly around openings and edges (Figure 5).<sup>5,9</sup> Although similar habitat was lost to the



**Figure 5.** In the Boreal and Taiga plains ecoprovinces of northeastern British Columbia, White-throated Sparrow favours brushy young and mature stands of trembling aspen to nest. Photo by R. Wayne Campbell, Beaton Provincial Park, BC, 23 June 1996.



Kinbasket Lake reservoir in the Rocky Mountain trench, edge habitats have greatly increased due to fire, logging, and road-building and along some shorelines of that reservoir. There are now increasing numbers of Rocky Mountain trench migration records of White-throated Sparrow from the Robson valley south to and beyond the international boundary.

This trend is also evident in the West Kootenay region of the province. Since 2000, in the Lower Arrow Lake area, about 150 km southwest of Blaeberry, White-throated Sparrow is a, “very rare in spring, rare in autumn, and rare in winter.”<sup>3</sup> And since 2000, the sparrow is considered “rare spring migrant, uncommon autumn migrant and rare in winter” in the Creston Valley, located 240 km south of Blaeberry.<sup>11</sup> This recent trend also mirrors the sparrow’s status of increasing numbers of birds migrating and wintering on southeastern Vancouver Island and the Lower Mainland region.<sup>1</sup>

In the Rocky Mountain Trench, a 14 July 2016 record near Windermere of an adult and “young”, where a singing male was heard earlier that spring, suggests further southward breeding range expansion in the East Kootenay (BC Nest Record Scheme files). †

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### Acknowledgements

Editorial comments were received from Wayne Campbell, Spencer Sealy, Dennis Demarchi, and Patricia Huet.

### About the Author

See *Life Member* biography on inside front cover.