

GRAY HAIRSTREAK:

STATUS UPDATE FOR A RARE BUTTERFLY IN MANITOBA



FIGURE 1. Gray Hairstreak butterfly near Pinawa, Manitoba on 24 August 2018 (main photo, dorsal view; inset, ventral view). Photo credit: Peter Taylor.

Peter Taylor

P.O. Box 597

Pinawa, MB R0E 1L0

taylorp@granite.mb.ca

William H. Christie

256 Kingsway

Winnipeg, MB R3M 0H3

William.Christie@umanitoba.ca

On 24 August 2018, while observing insects along a trail about 5 km NW of Pinawa, Manitoba, PT saw an unfamiliar lycaenid butterfly in a small clearing in mixed-wood forest at 50.173°N, 95.933°W. It was alternately visiting red and Alsike clover flowers (*Trifolium pratense* and *T. hybridum*) and basking on herbaceous vegetation. Initially thought to be an Eastern Tailed Blue (*Cupido comyntas*), its hind-wing "tails" and adjacent orange spot were too prominent, and the grey dorsal coloration lacked blue (Figure 1). The butterfly was identified as a female Gray Hairstreak (*Strymon melinus*; the male has an orange-tipped abdomen). Ventral views were difficult to obtain but showed the diagnostic tri-coloured (orange-black-white) postmedian line on the hind-wing (Figure 1 inset; see also Figure 2). The spread-winged resting posture is common for Gray Hairstreak, unlike other Manitoba hairstreaks (*Satyrion* spp.) and elfins (*Callophrys* spp.), which typically perch with wings folded over the back permitting only ventral views.^{1,2}

More than a decade earlier, on 11 September 2007, WHC collected a female Gray Hairstreak at Jessica Lake, within his long-running study area centred on Red Rock Lake in Whiteshell Provincial Park, about 35 km SE of the Pinawa-area sighting.



FIGURE 2. Gray Hairstreak butterfly collected at Jessica Lake, Manitoba on 7 September 2011 (left, dorsal view; right, ventral view). Photo credit: William H. Christie.

This butterfly, shown in Figure 2, was recently donated with other specimens to the J.B. Wallis / R.E. Roughley Museum of Entomology at the University of Manitoba in Winnipeg. The two individual Gray Hairstreaks described above comprise the authors' only records of this species during 40 years of observations in the Pinawa area (PT) and 50+ seasons of collecting in the Red Rock Lake area (WHC).

The Gray Hairstreak occurs continent-wide from northern South America to southern Canada, but it is rare in Manitoba with just four records mentioned as of 1989 in *The Butterflies of Manitoba*.³ These include a male and female collected by Paul Klassen at Brereton Lake, just 12 km south of Jessica Lake, on 13 August 1987.

Through correspondence, literature review, and online searching, we found four additional records from between 2004 and 2018. All Manitoba records known to us are compiled in Table 1. These represent only a marginal range extension, but they expand the known flight period in Manitoba from 5-13 August to 29 July - 7 September.³ For Saskatchewan (up to 1973), Hooper evidently had few records, including just one in July, which he interpreted as two flight periods: (May 20-28) (July 21-).⁴ A

recent checklist for the Saskatoon area gives extreme flight dates of 19 May and 19 September.⁵ As of 1995, the flight period in Alberta was 9 May - 16 August.⁶ Canada-wide (from British Columbia to Nova Scotia) the flight period extends from April to September, with two overlapping broods.⁷

It may be that the species is also double-brooded in Manitoba, but the Gray Hairstreak is one of many butterfly species that exhibit seasonal, not necessarily annual, northward range expansion without a documented return migration.^{8,9} In Ontario, "local resident" and "breeding migrant" populations (both uncommon) are recognized in the eastern Canadian Shield and SW Ontario, respectively.² Apparent migrants have also been found (described in 1991 as "recently discovered") in a small portion of NW Ontario adjacent to extreme SE Manitoba.^{2,7,10}

Based on their scarcity and late summer dates, southern Manitoba records appear to represent the outer fringe of Gray Hairstreak northward movements, with only the second annual brood represented to date, unlike in other Canadian provinces, including Saskatchewan and Alberta. Nevertheless, the collection of

both male and female specimens at Brereton Lake in 1987 suggests that breeding might occur at some locations in some years.

The Gray Hairstreak's most common larval food plant in Nova Scotia and Ontario (a resident population) is Sweetfern (*Myrica*: *Comptonia peregrina*), whose range extends westward to northern Minnesota and NW Ontario, but which has yet to be confirmed in Manitoba.^{2,11-15} Elsewhere, the Gray Hairstreak uses numerous larval food plants belonging to several families, and has been a pest in some crops including beans, cotton, and hops in the United States.^{2,3,6,7}

In conclusion, the Gray Hairstreak continues to be a Manitoba rarity, as described by Klassen et al. 1989,³ and is likely a late-summer immigrant with scattered occurrence across the south. As such, no conservation measures are plausible unless a regular association with Sweetfern is eventually found in the province. Sweetfern thrives on dry, sterile, sandy to rocky soils, often in association with jack pine (*Pinus banksiana*), and especially in areas altered by fire, logging, or other human activities.^{14,15} Such habitat is quite common in SE Manitoba, but other factors such as climate may exclude Sweetfern from the province.

TABLE 1: Manitoba records of Gray Hairstreak

DATE	LOCATION	COORDINATES (°N, °W)	OBSERVER, NATURE OF RECORD, AND REFERENCE
1914 (exact date unknown)	Aweme	49.71, 99.60	Specimen, E. Criddle, 1914, Wallis / Roughley Museum, University of Manitoba; also cited by Klassen et al. ³ NOTE: A second specimen in the Wallis / Roughley Museum lacks details, <i>vide</i> Terry Galloway.
Unknown	Winnipeg	49.9, 97.1	Specimen, details unknown; cited as Winnipeg by Klassen et al. ³
5 August 1983	Carberry	49.87, 99.36	Paul Klassen, female specimen, Manitoba Museum No. 17942; also cited by Klassen et al. ³
13 August 1987	Brereton Lake	49.90, 95.52	Paul Klassen, male and female specimens, Manitoba Museum No. 17940 & 17941; also cited by Klassen et al. ³
29 July 2004	Spruce Woods Provincial Park	49.663, 99.287	Gary G. Anweiler, specimen, EH Strickland Entomological Museum, University of Alberta, UASM58202, GBIF database. ^a
31 August 2007	Culross	49.71, 97.91	Richard Makowski, specimen, cited by Allard. ¹
7 September 2011	Jessica Lake	50.008, 95.518	William H. Christie, female specimen (now in Wallis / Roughley Museum); this article.
10 August 2016	N of Glenboro	49.62, 99.25 (approximate)	Carla Church, photo, iNaturalist No. 5042406; GBIF database.
16 August 2018	Wolseley (Winnipeg)	49.879, 97.178	Jason Gibbs, photo, iNaturalist No. 15511186; GBIF database.
24 August 2018	NW of Pinawa	50.173, 95.933	Peter Taylor, photo; this article

^a *Strymon melinus* Hübner, 1818 in GBIF Secretariat (2019). GBIF Backbone Taxonomy. Checklist dataset <https://doi.org/10.15468/39omei> accessed via GBIF.org on 14 December 2019.

Acknowledgements

We thank David Delf, Deanna Dodgson, Terry Galloway, Jason Gibbs, Larry de March, Randall Mooi, Richard Staniforth, and Richard Westwood for helpful correspondence, and John Acorn for his careful review.

All websites cited below were accessed for verification on 4 February 2020.

- Allard SH (2013). *Manitoba Butterflies: A Field Guide*. Turnstone Press, Winnipeg.
- Hall PW, Jones CD, Guidotti A, Hubley B (2014). *The ROM Field Guide to Butterflies of Ontario*. Royal Ontario Museum, Toronto.
- Klassen P, Westwood AR, Preston WB, McKillop WB (1989). *The Butterflies of Manitoba*. Manitoba Museum of Man and Nature, Winnipeg.
- Hooper RR (1973). *Butterflies of Saskatchewan: A Field Guide*. Saskatchewan Department of Natural Resources, Regina.
- Salisbury C, Gollop M (2018). A checklist for butterflies of the Saskatoon area. *Blue Jay* 76(3):16-17.
- Bird CD, Hilchie GJ, Kondla NG, Pike EM, Sperling FAH (1995). *Alberta Butterflies*. The Provincial Museum of Alberta, Edmonton.
- Layberry RA, Hall PW, Lafontaine JD (1998). *The Butterflies of Canada*. University of Toronto Press, Toronto.
- Opler PA, Krizek GO (1984). *Butterflies east of the Great Plains: an illustrated natural history*. Johns Hopkins University Press, Baltimore.

- Master Gardener Volunteers of the University of Wisconsin Extension (undated). Winter survival strategies of common Wisconsin butterflies. <https://fyi.extension.wisc.edu/sewmg/files/2011/01/Winter-Survival-Strategies.pdf>.
- Holmes AM, Hess QF, Tasker RR, Hanks AJ (1991). *The Ontario Butterfly Atlas*. Toronto Entomologists' Association, Toronto.
- Naturalist (2019). Sweetfern (*Comptonia peregrina*). <https://www.inaturalist.org/taxa/121031-Comptonia-peregrina>.
- Scoggan HJ (1957). *Flora of Manitoba. National Museum of Canada Bulletin No. 140*.

- Database of Vascular Plants of Canada (VASCAN) (2019). *Comptonia peregrina* (Linnaeus) J.M. Coulter <https://data.canadensys.net/vascan/taxon/6678?lang=en>.
- eFloras (2008). *Flora of North America Vol. 3. Myricaceae: Comptonia peregrina* (Linnaeus). Missouri Botanical Garden, St. Louis, Missouri & Harvard University Herbaria, Cambridge, Massachusetts. http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=233500420.
- Hall IV, Aalders LE, Everett CF (1976). The biology of Canadian weeds: 16. *Comptonia peregrina* (L.) Coult. *Canadian Journal of Plant Science*, 56(1):147-156. 🐦



Are you interested in enhancing and protecting habitat for species at risk?

We are looking for landowners interested in enhancing habitat for **Burrowing Owl, Piping Plover, and Sprague's Pipit**.

Projects include:

- Native grass seeding
- Wildlife-friendly fencing
- Water developments

NEW!

We are looking for landowners interested in protecting **Ferruginous Hawk** nesting sites.

Projects include:

- Wildlife-friendly fencing around recently active nesting trees and platforms

For more information on financial assistance, to discuss eligibility, and how to apply, please contact:

Nature Saskatchewan
1.800.667.4668
306.780.9833
obo@naturesask.ca