

UPDATED GEOGRAPHIC DISTRIBUTION OF EIGHT PASSERINE SPECIES IN CENTRAL ALASKA

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ABSTRACT: We documented the occurrence of eight rare passerines in central Alaska. Our observations of the Yellow-bellied Flycatcher, Red-breasted Nuthatch, Arctic Warbler, Golden-crowned Kinglet, Tennessee Warbler, Palm Warbler, Mourning Warbler, and Clay-colored Sparrow, provided new distributional information on the occurrence of these species in central Alaska. Mist netting was essential to documenting the geographic distribution of these species because mist-net captures represented the only occurrence of several species. Additionally, many of these records could not have been identified to subspecies without collecting individuals as voucher specimens that could be verified by other scientists.

We used standardized mist-netting protocols to conduct intensive studies of the migration, population dynamics, and life histories of passerine birds in the Tanana River valley of central Alaska from 1992 to 1998. During these studies, we documented the occurrence of eight rare species. Here, we report captures and associated observations of these species that update our current understanding of the geographic distribution of these species in central Alaska.

STUDY AREA

The Tanana River valley is located in central Alaska and is bordered to the south by the Alaska Range and to the north by the Yukon-Tanana Uplands, an east/west highland of mature rounded hills (Figure 1). The Tanana valley is a well-documented migration corridor for many species of birds including Sandhill Cranes (*Grus canadensis*) (Kessel 1984), many species of waterfowl, shorebirds, passerines (Cooper and Ritchie 1995), and raptors (Cooper and Ritchie 1995, McIntyre and Ambrose 1999). Fairbanks is located near the confluence of the Chena and Tanana rivers at 130 m elevation. Tok and Scottie Creek are located in the Upper Tanana Valley (Figure 1) at elevations of 500 and 550 m, respectively.

The Fairbanks mist-netting station covered approximately 20 ha at Creamer's Field Migratory Waterfowl Refuge in Fairbanks (64° 50' N, 147° 50' W). A seasonally flooded wetland and a large agricultural field bordered the mist-netting station. The dominant tree species in the study site were Paper Birch (*Betula papyrifera*) White Spruce (*Picea glauca*), Balsam Poplar (*Populus balsamifera*), Trembling Aspen (*Populus tremuloides*), and willow (*Salix* spp.).

The Tok migration station was located 11 km west of Tok (63° 22' N, 143° 12' W) and 280 km SE of Fairbanks in a 65-ha patch of early

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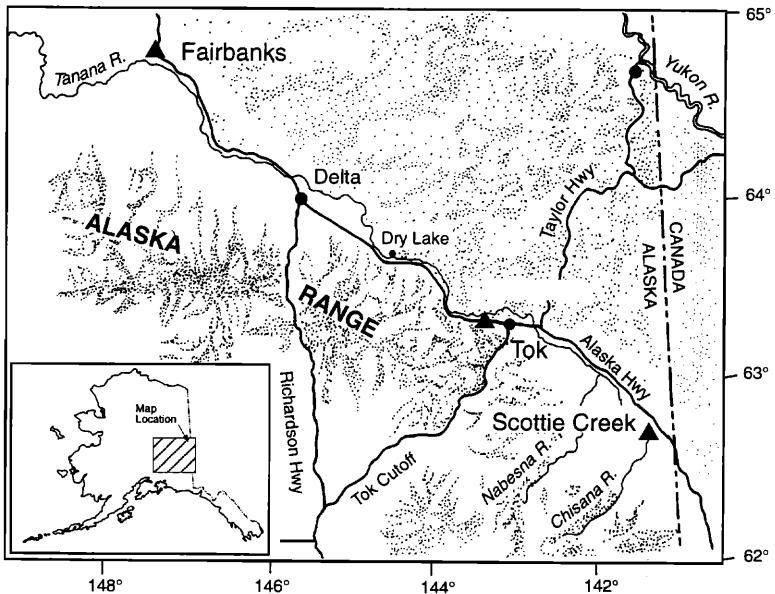


Figure 1. Location of the Fairbanks, Tok, and Scottie Creek mist-net stations (▲) in the Tanana Valley, Alaska.

successional deciduous forest on a hillside surrounded by closed forest of Black (*Picea mariana*) and White spruce.

The Scottie Creek mist-netting site was a station for monitoring avian productivity and survivorship (M.A.P.S.; DeSante et al. 1993) established along the Chisana River at the mouth of Scottie Creek (62° 41' N, 141° 16' W), near the Canadian border approximately 125 km SE of Tok. This site was located in a 400-ha stand of closed Balsam Poplar forest with an understory of open medium and tall willow and alder (*Alnus crispa*).

METHODS

At Fairbanks we conducted standardized mist netting from 1992 to 1998 using arrays of 22 to 50 standard (30 mm mesh, 2.6 m × 12 m) mist nets. During spring migration (25 April–15 June) we operated nets daily from 06:00 to 13:00. During summer (16 June–14 July) we operated nets once during five-day sampling periods from 06:00 to 13:00. During fall migration (15 July–30 September), nets were opened at sunrise and closed 7 hours later.

The Tok migration station consisted of up to 21 standard nets operated daily for 6 hours beginning at sunrise, from late April to early June during spring migration 1994–1998 and from late July to early October during fall migration 1993–1998.

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The Scottie Creek M.A.P.S. station was operated once every 10 days from 10 June to 10 August 1993-1998 with 11 standard nets used in 1993 and 12 thereafter. The station was operated for 6 days in 1993, 1997, and 1998 and for 7 days in 1994, 1995, and 1996.

The 15 specimens we collected are deposited at the University of Alaska Museum (UAM), Fairbanks.

RESULTS

We banded 51,792 individuals of 65 species during 223,708 net hours of operation from 1992 to 1998 (Table 1).

Yellow-bellied Flycatcher (*Empidonax flaviventris*)

Our data indicate a recent range expansion of this species into east-central Alaska, where it is now known as a possible breeder and rare fall visitant. We netted nine individuals from 4 to 27 August in five of seven years. Four were in Fairbanks [20 August 1993 (UAM 6373, immature female), 13 August 1997 (UAM 7427, immature female), 15 August 1997, 27 August 1998], five in Tok [three 4-16 August 1994 (immature male collected 8 August 1994, UAM 6579), 23 August 1996, 27 August 1998]. From 10 to 28 June 1992-1998 we recorded two to nine singing males annually, for a total of 18 records, along the Richardson, Taylor, and Alaska highways. We collected one adult male at Mile 43 on the Taylor Highway (63° 49' N, 142° 12' W).

The Yellow-bellied Flycatcher was previously considered a casual summer visitant in eastern central Alaska, on the basis of a single record (Kessel and Gibson 1978). In British Columbia, the northernmost published records are south of approximately 54° N, except for one from near Fort Nelson in June 1982 and one near Atlin in August 1914 (Campbell et al. 1997).

Red-breasted Nuthatch (*Sitta canadensis*)

Banding and concurrent incidental observations suggest a recent range expansion of the Red-breasted Nuthatch into the Tanana Valley. We banded 19 individuals during three autumns, four in Fairbanks and 15 in Tok. Fifteen were banded in 1994, one in Fairbanks on 23 August, 14 in Tok from 11 to 26 August. In 1995, we banded one in Tok on 27 August and one each in Fairbanks on 2 August and 27 September. Another bird was banded at

Table 1 Number of Birds Banded and Net-Hours of Operation at Tetlin National Wildlife Refuge and the Alaska Bird Observatory, 1992-1998

	Spring	Summer	Fall	Total
Individuals banded	9864	1498	40,430	51,792
Species banded	47	30	58	65
Net-hours	92,310	7249	124,149	223,708

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Fairbanks on 11 August 1996. Of the 17 individuals that were aged, three were adults, and of the 16 individuals that were sexed, eight were male.

The irruption during 1994 was widely documented by observations of this species beginning in early August. Nuthatches were first observed during this time in the Upper Tanana Valley on 6 August, and they were seen or heard almost daily thereafter until mid-September at many locations. Numbers decreased from mid-September to mid-October, but birds were seen daily at several feeders in the Tok area until the arrival of severely cold weather (-60° F) in early December, after which they were again scarce. In Fairbanks, 25 individuals were recorded on the Christmas Bird Count in 1994, five in 1995, three in 1996, nine in 1997, and five in 1998. Additionally, this species has bred in the Tanana Valley since 1994 (B. Kessel pers. comm.).

The Red-breasted Nuthatch was previously considered a casual visitant in autumn in central Alaska (Kessel and Gibson 1978).

Arctic Warbler (*Phylloscopus borealis*)

The Arctic Warbler is more widely distributed in central Alaska than previously known. We captured 20 individuals in five of seven years, 15 in Fairbanks and 5 in Tok. All but two, on 9 June and 19 September, were from 10 to 27 August. The six individuals captured in 1994 included two on 15 August (UAM 6571) and one each on 22 August and 19 September (UAM 6570) in Fairbanks and one each on 16 and 22 August in Tok. In 1995 we banded one in Fairbanks on 16 August. In 1996 we netted four, on 9 June (UAM 6940) and 17 August in Fairbanks and on 10 and 21 August (UAM 6992) in Tok. In 1997 we banded five in Fairbanks (two on 17 August and one each on 18, 20, and 27 August) and one in Tok (15 August). In 1998, we banded three in Fairbanks, on 14, 17, and 18 August. Of these 20 individuals, four were adults, captured 9 June 1996, 10 August 1996, 16 August 1994, and 18 August 1997. The 9 June 1996 capture is noteworthy as an extremely early arrival date in central Alaska (cf. Paton et al. 1995).

Arctic Warblers breed commonly in subalpine habitats in central Alaska south of the Alaska Range, primarily west of the Richardson Highway (D. D. Gibson pers. comm.). Prior to this study there was only one record from the Tanana Valley, on 28 August 1963 (White and Brooks 1964), and none in eastern central Alaska or adjacent Canada (Godfrey 1986). All our specimens are *P. b. kennicotti*.

Golden-crowned Kinglet (*Regulus satrapa*)

Our mist-netting results suggest this species is a rare fall migrant in the Tanana Valley. We captured 13 individuals from 28 August to 30 September in five of seven years, three in Fairbanks and 10 in Tok. In 1994, two were in Tok (5 and 10 September); in 1995, two in Fairbanks (11 and 25 September) and three in Tok (28 August, 14 (UAM 6767) and 25 September); in 1996, one in Tok (26 September, UAM 6982); in 1997, one in Tok (30 September, UAM 8835); in 1998, one in Fairbanks (23 September) and three in Tok (8, 9, and 25 August). Only two of these birds were adults, those captured on 25 September 1995 and 9 September 1998. In addition to our banding results, a window-killed specimen was found in Fairbanks on 24 September 1997 (UAM 7355).

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The Golden-crowned Kinglet was previously considered a casual summer and fall visitant in central Alaska (Kessel and Gibson 1978). Daniel D. Gibson of the University of Alaska Museum has identified these specimens as *R. s. amoenus*.

Tennessee Warbler (*Vermivora peregrina*)

Our studies support this species being a casual summer and fall visitant to central Alaska (Kessel and Gibson 1978). We captured two during this study, a first-year male on 10 August 1992 (UAM 6141) in Fairbanks and an adult male on 30 June 1995 at Scottie Creek. We recorded four additional Tennessee Warblers from central Alaska in 1995 and 1996: a singing male and secretive female observed 10–23 June 1995 at Mile 158 of the Richardson Highway, a singing male observed on 24 June 1995 near Delta Junction, and a singing adult male collected (UAM 6955) on 23 June 1996 at Mile 87 of the Taylor Highway (64° 07' N, 141° 33' W). The observations of the secretive female suggest this species may also breed in central Alaska.

Palm Warbler (*Dendroica palmarum*)

We netted two first-year birds in Fairbanks, a male on 25 September 1994 (UAM 6577) and a female on 14 September 1995 (UAM 6717); additionally, immature birds were netted at Dry Lake in the central Tanana Valley on 11 September 1991 (UAM 5939) and 16 October 1987. We identified all of these individuals as nominate *palmarum*. The Palm Warbler is a recent casual visitant throughout Alaska; most records are from southeastern Alaska, but there have been records as far west as Nunivak Island and as far north as Barrow (Gibson and Kessel 1992).

Mourning Warbler (*Oporornis philadelphia*)

We netted an immature male on 9 September 1992 in Fairbanks. The first substantiated record of a member of this genus in central Alaska, the specimen (UAM 6143) was identified by K. C. Parkes at Carnegie Museum of Natural History. There is only one previous Alaska record of this species, of a specimen collected 29 September 1987 at Middleton Island in the Gulf of Alaska (Gibson and Kessel 1992). This species has recently been found to be common during summer in the La Biche River drainage of extreme southeast Yukon Territory (Bowling 1995).

Clay-colored Sparrow (*Spizella pallida*)

The first confirmed central Alaska record of this species was of an adult male netted on 31 May 1995 (UAM 6706) in Tok. Prior to this study there were three records of the Clay-colored Sparrow in Alaska (Gibson and Kessel 1992). The northern extreme of the documented breeding range of this species is northeastern British Columbia and southwestern Northwest Territories, Canada (Godfrey 1986).

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