LEAST FLYCATCHER RANGE EXPANSION INTO WASHINGTON STATE

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ABSTRACT: The Least Flycatcher (*Empidonax minimus*) has expanded its range west over the past 50 years at least. It has occurred annually in Washington since the 1970s, and its subsequent numbers there have increased steadily. Records extend from late April to late September, with spring migration likely peaking during late May and early June and fall migration peaking during early September. Many birds appear to be seeking territories and/or mates, but as of 2004 there were only two records of nesting. No obvious habitat changes coincided with this species' arrival in Washington, and appropriate habitat seems to have long been present. The explanation for the Least Flycatcher's range expansion may be related to population increases in its core range and/or microhabitat changes not yet described. The Least Flycatcher's expansion parallels that of several other woodland birds also currently expanding west from eastern North America.

The fifth edition of the A.O.U. checklist (1957) described the Least Flycatcher (*Empidonax minimus*) as breeding west to southwestern Yukon, northeastern British Columbia, and western Montana. By the end of the 1950s, this species had moved into portions of British Columbia where it was previously absent: the Cariboo and Chilcotin areas of the interior and the Fort Nelson area of the province's extreme northeast (Johnson 1994, Campbell et al. 1997). It colonized southern British Columbia's Okanagan Valley in the mid- and late 1970s (Cannings et al. 1987). Since 1995, Least Flycatcher sightings in Idaho have also increased dramatically, perhaps partly the result of increased observer effort and skill. Idaho recorded its sixth through eighth records as recently as the summer of 1996 (Svingen 1996), but only two years later eight were recorded during one summer (Trochlell 1998). By the summer of 2002, reports from Idaho were too many to be enumerated in *North American Birds*, and only new nesting locations, in five counties, were mentioned (Trochlell 2002). South of Washington, Least Flycatchers were first noted in Oregon in 1977 (Mewaldt 1977) and have been found annually there during migration since 1981 (Marshall et al. 2003). Territorial birds have been noted at a number of Oregon locations, and nesting was confirmed near Mount Vernon, Grant County, in 1985, 1995, and 1997 (Marshall et al. 2003). The Least Flycatcher is also annual as a migrant in California, much more frequent in fall than in spring (Small 1994), in contrast to the situation in Oregon and Washington. California has two confirmed nesting records, from Modoc County in 1984 (Campbell and LeValley 1984) and Humboldt County in 2003 (Rogers et al. 2004).

METHODS

This study is based on records published in *North American Birds* and its predecessors through fall 2004. For seasons during which records were not individually listed, I obtained the details of specific records from the journal's editors. As the Least Flycatcher is not a species reviewed by the Washington

Bird Records Committee, I used the judgment of the Washington reports' editors as the basis for a records' acceptability.

RANGE EXPANSION IN WASHINGTON

Washington's first Least Flycatcher was found, surprisingly, in the northwest corner of the state near Anacortes on 23 June 1958 (Stein and Michener 1961). The next record was nearly ten years later at eastern Washington's Turnbull National Wildlife Refuge on 1 June 1968 (Rogers 1968). Thereafter, the number of Least Flycatchers increased dramatically (see Table 1). Subsequent sightings fall into two clusters: spring/summer and fall.

Spring and Summer Records

In spring Least Flycatchers probably arrive in Washington from the north or northeast. There are several other "eastern" passerines with a similar distribution in far western North America, such as the Red-eyed Vireo (*Vireo olivaceus*), Veery (*Catharus fuscescens*), Gray Catbird (*Dumetella carolinensis*), American Redstart (*Setophaga ruticilla*), and Northern Waterthrush (*Seiurus noveboracensis*). Because these species are fairly common to common breeders in northeastern Washington and British Columbia yet rare to extremely rare as spring migrants in Oregon and California (Small 1994, Marshall et al. 2003), the majority of these birds likely arrive in Washington from British Columbia or Idaho. Comparison of migration dates in Washington to those from locations farther east at similar latitudes supports this hypothesis, as these species arrive considerably later in Washington. For example, the Red-eyed Vireo migrates through Minnesota from late April through early June (Janssen 1987) but typically does not appear in Washington until late May (Wahl et al. 2005). Similarly, the American Redstart and Northern Waterthrush pass through Minnesota from late April through late May and late April through early June, respectively (Janssen 1987). In Washington, the redstart does not arrive until the very end of May, and the waterthrush appears during early or mid-May (Wahl et al. 2005). The Least Flycatcher follows the same pattern.

Of the 146 spring/summer Least Flycatchers detected in Washington,

Table 1 Least Flycatcher Numbers in Washington by Year

Interval	Individuals
1970–1974	1
1975–1979	7
1980–1984	8
1984–1989	12
1990–1994	26
1995–1999	41
2000–2004	72

127 have been east of the Cascade crest. Their dates range from 28 April through 31 July, with a peak from late May through early July (Figure 1). In an attempt to separate migrating birds from those that were nesting or establishing territories, I assigned records involving multiple birds at one location or birds present at the same location for a week or more to the latter category (group A). This categorization is conservative because many sightings not meeting these criteria may also have been of birds nesting or on territory.

Group A consists of 25 records totaling 49 birds. These records extend from 1 May to 31 July but show a distinct peak from mid-June through early July. They cluster in two areas: the frequently birded portions of the Cascades between 650 and 800 m elevation in Yakima County (7 records involving 15 birds), and a swath across the northernmost tier of counties from Okanogan to Pend Oreille plus Spokane County, mostly at elevations of 550–800 m (14 records involving 37 birds). Exceptions include a bird at 950 m along the Little Pend Oreille River in Stevens County and several records at ~300 m near the Okanogan River. The four remaining records in group A include two from western Washington, both from Monroe, Snohomish County, at ~100 m elevation, one at the Davenport Cemetery, Lincoln County, at ~700 m, and one from southeastern Washington at Dixie, Walla Walla County, at ~500 m. Notably, Pend Oreille, Stevens, and Ferry counties are birded little, and an increase in birders' activity there would likely increase the number of records from the northeastern corner of the state greatly. For instance, on the Kalispell Indian Reservation, Pend

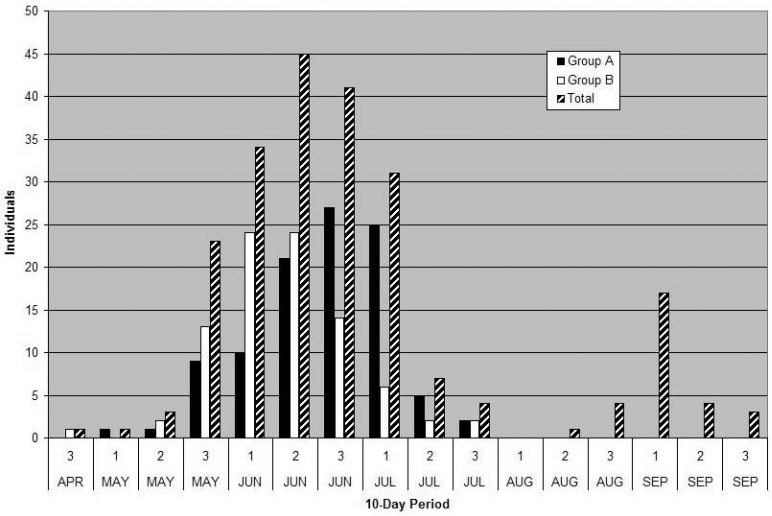

Figure 1. Temporal distribution of the Least Flycatcher in Washington. Group A, birds inferred as territorial; group B, birds possibly not territorial (see text for exact definitions). Periods 1, early month (dates 1–10); 2, mid-month (dates 11–20); 3, late month (dates 21 to month's end). Fall sightings are not sorted by group.

Oreille County, M. Moskwik found three or four pairs (but no nests) during June and July 2002 (Mlodinow and Tweit 2002).

Despite this sizeable number of potential breeders, there are only two records of actual nesting: an adult with a single fledgling along the Little Pend Oreille River, Stevens County, 4 July 1985 (Rogers 1985) and pair with a nest (no young fledged) at Monroe, Snohomish County, June/July 1990 (Tweit et al. 1979). Group A records come from a fairly specific habitat: somewhat open riparian or moist deciduous woodlands almost always containing quaking aspen (*Populus tremuloides*) or black cottonwood (*P. trichocarpa*) (Stepniewski 1999, M. Houston, M. Moskwik, and W. Weber pers. comm.). This habitat is essentially identical to the habitat occupied in British Columbia (Campbell et al. 1997) and fits closely the habitat Salt and Salt (1976) described for Alberta. The latter stated that the Least Flycatcher is a "common inhabitant of poplars and cottonwoods in coulees and river valleys. In the parklands, light growths of aspen and poplar, . . . in the north . . . open deciduous woods, and in the mountains, aspen groves on gentle slopes."

The remaining 97 spring/summer records of the Least Flycatcher, all of single birds (group B) come from a wider variety of habitats. Many are from the same habitat as group A records, indeed, many are from the same locations, but there are also some from woodlands dominated by ponderosa pine (*Pinus ponderosa*), riparian woodland of alder (*Alnus* spp.) and big-leaf maple (*Acer macrophyllum*), city parks, and migrant traps in the Columbia Basin. It is impossible to distinguish which of these birds were territorial and which were still migrating. Group B records range from 28 April through 26 July, with a peak from late May through early July, and especially from early and mid-June. Only during late May and early June does the number of birds in group B exceed the number in group A by 33% or more (44% in late May and 140% in early June), suggesting that this is peak migration time through Washington. Of the 11 spring/summer records from oases in arid regions of Washington lacking suitable nesting habitat, all but two from 26 May to 13 June, with outliers on 28 April and 11–18 July. Paralleling the differences in migration schedule noted for the Red-eyed Vireo and other species, migration of the Least Flycatcher in Minnesota is somewhat earlier, from late April to late May with a peak in mid-May (Janssen 1987).

Fall Records

On the basis of 17 records involving 21 birds, fall migration stretches from mid-August through late September and peaks in early September (Figure 1). Interestingly, fall migration in Minnesota also peaks from late August through mid-September (Janssen 1987). In contrast to spring, almost all fall records are from migrant traps in the Columbia Basin, especially the town of Washtucna, Adams County, which accounts for 8 fall records and 12 individuals. The only fall record from typical breeding habitat is of a bird seen in Oroville, Okanogan County, 12 September 2000. The only records from western Washington are from Seattle, King County, 17 August 1998 and near Conway, Skagit County, 19–21 September 1998.

POTENTIAL EXPLANATIONS FOR RANGE EXPANSION

Recent habitat changes within Washington and British Columbia do not seem to provide an explanation for the Least Flycatcher's range expansion. Over the last several decades in British Columbia, forestry practices have been neutral towards aspen groves, and there does not appear to have been a substantial increase or decrease in this habitat (W. Erickson and L. Bedford pers. comm.). In Washington, policies on public lands toward aspen and cottonwood groves have been likewise neutral, but on private lands aspens and cottonwoods have been replaced to some degree by economically more profitable conifers, and overall there appears to have been a decline in cottonwood and aspen groves (B. McKellar pers. comm.).

If the habitat in Washington has been relatively stable over the last half-century, why is the Least Flycatcher just now arriving? The last glacial retreat began about 12,000 years ago, and the distributions of oak (*Quercus* spp.) and spruce (*Picea* spp.) approached their current distributions in North America approximately 7000 years ago (Davis and Shaw 2001). The arrival of major tree species, however, does not demonstrate the establishment of an entire climax ecosystem. Newton (2003) argued that even after the arrival of major tree species, a region may take thousands of years to develop the floral and faunal balance favorable to a given bird species. Consequently, a bird may not be able to occupy an area until the area has developed sufficient, or proper, diversity of other biota, after the arrival of major tree species. Additionally, after an area becomes suitable for a given species, that species has to produce ample surplus individuals in its core range before it can colonize the new habitat. Newton (2003) effectively argued that such a delay has taken place among 28 species characteristic of the Siberian taiga currently expanding their ranges westward into northern Europe. These species continue to winter in southeast Asia, whereas most other European breeders winter in Europe or Africa, establishing their eastern Palearctic origins (Newton 2003).

The recent arrival of the Least Flycatcher in Washington may be the result of recent subtle changes creating suitable habitat. Another possibility is that appropriate habitat has been present for some time since the last glacial period, but the core population was not producing enough surplus individuals for range expansion. Consequently habitat or climate changes elsewhere may have played a role. For example, Breeding Bird Surveys have shown an increase in the Least Flycatcher, including the central and southern prairies of Canada (Dobkin 1992, Erskine et al. 1992, Sauer and Droege 1992).

Notably, there are several other "eastern" woodland species whose breeding ranges are also spreading west, including the Broad-winged Hawk (*Buteo platypterus*), Barred Owl (*Strix varia*), Yellow-bellied Sapsucker (*Sphyrapicus varius*), Eastern Phoebe (*Sayornis phoebe*), Blue Jay (*Cyanocitta cristata*), White-throated Sparrow (*Zonotrichia albicollis*), Rose-breasted Grosbeak (*Pheucticus ludovicianus*), Indigo Bunting (*Passerina cyanea*), and Baltimore Oriole (*Icterus galbula*) (Bock and Lepthien 1976, Madge and Burn 1994, Campbell et al. 1997, Campbell et al. 2001, Johnston 1994, Wheeler 2003, Erwin et al. 2004). A phenomenon similar to that Newton (2003) suggested in Eurasia may be occurring in North America.

CONCLUSION

The Least Flycatcher appears to be in the process of colonizing Washington,. Records have increased from one between 1970 and 1974 to 72 between 2000 and 2004. Some of this rise is undoubtedly due to intensified observer effort, but the increase is also real. Reasons for this species' occupation (or reoccupation) of the Pacific Northwest are not clear but do not seem to be relate to gross habitat changes in British Columbia or Washington. Instead, the cause is likely subtle habitat changes and/or population increase in the species' core range. The westward expansion is a pattern shared with several other woodland birds from from eastern North America.

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