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(BCR 4 & 5) OLIVE-SIDED FLYCATCHER MIGRATION AND BREEDING BIOLOGY

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Overview: In 2013 we began a multi-year study of Olive-sided Flycatchers (*Contopus cooperi*) in Interior and south-central Alaska. We have used light-level geolocators, and (as of 2015) Pinpoint GPS units to identify key migratory corridors, stopover sites, and wintering areas for conservation efforts. Other research goals include: (1) characterizing nest chronology and success, (2) sampling aerial insects at breeding sites, as food availability is hypothesized to limit reproductive success (Altman and Sallabanks 2012), and (3) re-surveying historical breeding sites from Wright (1997) to document any changes in bird occupancy.

Summary of geolocator efforts: In 2016, we had our first two-year geolocator recovery. This bird was released in 2014, but not detected in 2015 (a different male was breeding on its original territory). It was recovered the following year. A two-year return highlights the scientific and ethical responsibility of monitoring deployment sites for multiple seasons, in order to maximize recoveries. Data from this bird indicate that it completed two full migratory cycles to Alaska. However, spatial error inherent to geolocation makes it impossible to discern where, exactly, it returned during the intervening year. We made exhaustive searches at each site and neighboring territories in order to detect recoveries.

To date, 20 units have returned (3 of 8 [38%] deployed in 2013, and 8 of 27 [30%] deployed in 2014, and 9 of 38 [24%] deployed in 2015). In the 2016 season we also deployed a total of 19 new units in Anchorage and Fairbanks (Lotek Pinpoint GPS— a combination of 80point “Swiftfix” units and standard 10point units). All recovered birds in 2016 showed no noticeable loss of mass or fat, similar to previous years. For the first time, however, one bird exhibited signs of injury (skin irritation + feather loss) on its lower back, directly underneath the geolocator, possibly from rubbing. However, this bird also appeared to be molting head and scapular feathers at an unusual time (late June), which may have indicated other health

issues. Of the nine birds that returned with geolocator units, the injured individual and six others fledged young, whereas two experienced nest failure. One returning bird never paired.

We are continuing to analyze geolocator data in collaboration with Michael Hallworth at the Smithsonian Migratory Bird Center. Units collected to date have provided data on 13 individuals (12 male, 1 female) representing 16 round-trip journeys. Three birds have two consecutive years of data. Only five of the 13 birds (38%) crossed the Gulf of Mexico in fall, whereas eight traveled south along the eastern coast of Mexico. The east coast of Mexico is also a key northward route for OSFL in spring, as documented in our previous report. Two key wintering areas for Alaskan populations identified in our previous report remain the same: (1) Ecuador/northern Peru, and (2) southern Peru/western Brazil. We are in the process of identifying important stop-over areas along the annual route. The goal is to rank stop-over sites with regard to conservation need, by determining which sites currently have the least protection.

Nest chronology: Table 1 summarizes nest data for 2013-2016 seasons by location. Egg-laying in Anchorage preceded Fairbanks each year except in 2015, which was an exceptionally warm, early spring in the Interior (Table 1). Mean fledging dates, however, show significant overlap in both regions (Table 1). All nest chronology dates in Fairbanks fell within previously-reported date ranges for central Alaska (Wright 1997), including the earliest fledging nest (17 June 2016).

Nest success by location: Anchorage and Interior locations also showed no marked differences in nest success. Over the past four seasons, 21 of 25 nests (84%) fledged at least one nestling in Fairbanks, compared to 14 of 19 nests (74%) in Anchorage (Table 1).

Historical site surveys and insect data: Last season we completed three consecutive years of surveys at nine “historical” breeding sites in the Fairbanks area, previously studied by Wright (1997). Surveys covered a listening area of ~987 hectares per site and maintained a high detection probability (> 90%) at each of five survey points per site, given detection distances and singing rates from Wright (1997). In spring 2015 and fall 2016, single singing individuals were detected within 1km of two different historical sites. It is unlikely that either bird had bred at these locations, as singing only lasted a few days and fell outside the breeding season. Birds appeared to be passing through as part of spring or fall migration.

University of Alaska, Fairbanks Insect Collection (D. Sikes) is finalizing insect samples for three years of collections. Preliminary results regarding insect diversity indicate that historical sites (all of which were no longer occupied by OSFL) exhibited lower insect diversity (Shannon Index, calculated at the taxonomic Order level) than sites where birds were actively breeding. Work is ongoing, and patterns should be interpreted cautiously, as there appears to be substantial regional and inter-annual variation.

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Table 1: Nesting chronology of Olive-sided Flycatchers in Anchorage (n=4 nests in 2013, n= 4 nests in 2014, n=5 nests in 2015, n=6 nests in 2016) and Fairbanks (n=4 nests in 2013, n=5 nests in 2014, n=9 nests in 2015, n=7 nests in 2016).

	Mean Date (range)				Location
	2013 (n=8 nests)	2014 (n=9 nests)	2015 (n=14 nests)	2016 (n= 13 nests)	
First egg laid	3 June (28 May–14 June*)	5 June (28 May*–8 June)	6 June (29 May*–13 June*)	4 June (23 May*–20 June*)	Anchorage
	13 June (5*–18June)	12 June (01*–21* June)	3 June (25 May*– 12 June*)	10 June (27 May*–30 June*)	Fairbanks
Clutch size	4.3 eggs (4–5)	4 eggs	4 eggs (3–5)	4 eggs (3-4)*	Anchorage
	3 eggs (2–4)	3.4 eggs (3–4)	3.6 eggs* (3-4)	4 eggs*	Fairbanks
Hatching	22 June (16 June–3 July)	17 June (12–17 June)	23 June (13 June*–1 July)	19 June (8 June*–6 July*)	Anchorage
	30 June (22 June*–4 July*)	29 June (20June*–6 July*)	20 June (12 June*– 30 June*)	17 June (13 June*–21 June*)	Fairbanks
Fledging	12 July (6–21 July)	5 July (1–5 July)	12 July (3 July–21 July*)	10 July (27 June–25 July)	Anchorage
	20 July (12 July*–24 July)	17 July (9*–25* July)	10 July (29 June –21 July*)	5 July (16 June*–18* July)	Fairbanks

*Date back-calculated based on other data, such as number of eggs in nest, estimated chick age (per Jongsomjit et al. 2007), fledge date, etc. If eggs were not seen, brood size was used as proxy for clutch size.

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2016 Summary of Landbird Projects For Boreal Partners in Flight



December 3, 2017

Individual project reports were merged and lightly edited by the compiler, G. Baluss. For more information about each study, please contact the individual authors.

For more information about Boreal Partners in Flight, see

<http://alaska.usgs.gov/science/biology/bpif/index.php>

For more information about Partners in Flight in the Americas see

<http://www.partnersinflight.org/about/>

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