

Interim Report on Assessment of Olive-sided Flycatcher (*Contopus cooperi*) Status and Distribution in NH

(Update to the Interim Report submitted in September 2014)

Submitted to the Nuttall Ornithological Club: September 1, 2015

Pamela D. Hunt, Ph.D.
Audubon Society of New Hampshire
84 Silk Farm Road
Concord, NH 03301
(603) 224-9909 ext. 328
Email: phunt@nhaudubon.org

Introductory Note: The Olive-sided Flycatcher surveys funded by the Nuttall Ornithological Club were originally intended to occur in 2014-15. However, because of lower than expected coverage in 2015, and sufficient funds to continue the project for another year, it will be extended into the 2016 field season. The report below contains the same introductory material as the 2014 report to the Club, but has been updated to reflect data collected in 2015. Upon completion of the project in 2016, I will send a final report to the Club and other funders.

The Olive-sided Flycatcher (*Contopus cooperi*, hereafter OSFL) is a large flycatcher found in coniferous forests across the boreal zone of North America, and south in appropriate habitat in the Pacific coastal ranges, Rocky Mountains, and Appalachians (Altman and Sallabanks 2012). Across this broad range, the species has been in consistent decline since at least the mid-1960s, with an average loss of 3.5% per year (-2.4% since 2001) according to the Breeding Bird Survey (BBS, Sauer et al. 2012). These declines are also seen in Breeding Bird Atlases, where projects repeated in the early 2000s have consistently shown range retractions when compared with original Atlases from the 1970s and 1980s. Atlases in New York, Vermont, and Massachusetts found OSFLs in roughly a third fewer blocks than 20-30 years previously (McGowan and Corwin 2008, Renfrew 2013, Mass Audubon data). At the southernmost edge, it largely disappeared from New York's Catskill Mountains between Atlases, and was not confirmed as breeding during the second Massachusetts Atlas from 2007-2011.

Based largely on these declines, the OSFL was listed as Threatened in Canada in 2007 (COSEWIC 2007) and is currently considered a Special Concern species in Vermont and New Hampshire. Causes for the decline are unknown, but may include habitat loss or alteration on the breeding and/or wintering grounds. Breeding habitat is characterized as open forest or forest edge with isolated tall trees or snags that serve as singing and foraging perches (Altman and Sallabanks 2012). Specific examples include burns, harvested areas, and – particularly in New England – bogs or beaver meadows. Because such habitats have not declined significantly over much of the species' range during the last several decades (but see Robertson and Hutto 2007), speculation on the decline has often focused on changes to winter habitat in the highland forests

of Central and South America, although there are currently no data with which to evaluate a winter threat hypothesis.

In light of regional declines, and the species' conservation status in New Hampshire, it is desirable to obtain more up-to-date information on OSFL distribution in the state. The first New Hampshire Breeding Bird Atlas was conducted during the 1980s (Foss 1994), and documented the species in 82 priority blocks, with probable or confirmed breeding in 43 of these. The species was fairly widespread in the northern half of the state (63 blocks), with most remaining records in the western highlands (14 blocks). A very similar pattern was seen in Vermont in their first Atlas (late 1970s), with most records in the north and a handful in southern highland areas. Between Atlases, however, the number of occupied blocks in southern regions declined more than that in the north (Renfrew 2013), another indication of retraction from the species' southern range edge. Given similarities between New Hampshire and Vermont, it would not be surprising to find a similar loss of range, but there are limited data with which to evaluate this hypothesis.

Using funds from the Nuttall Ornithological Club, New Hampshire Audubon initiated a targeted survey for Olive-sided Flycatchers in 2014. We started by dividing the state into 7.5' USGS topographic quads (hereafter "quads"), which were the baseline unit of survey effort in the original Breeding Bird Atlas (priority blocks in the Atlas were randomly selected sixths of these quads). For the OSFL surveys, we excluded quads that were 1) not surveyed during the original Atlas, 2) largely outside the state, or 3) outside the expected range of OSFL in New Hampshire (here defined as Bird Conservation Region 14). This preliminary reduction of survey area yielded 147 quads as the sample frame for surveys in 2014.

We next obtained recent OSFL data (2000-2013) from several sources: *New Hampshire Bird Records*, eBird, USGS Breeding Bird Survey, White Mountain National Forest, and independent researchers. Whenever possible, these records were assigned latitude and longitude, which allowed them to be assigned to one of the survey quads. Over 300 records were obtained and assigned to quads, and the latter then placed into one of four priority categories as follows:

- 1) Priority 1 = OSFL in quad during Atlas but NOT in 2000-2013
- 2) Priority 2 = OSFL not present during Atlas OR 2000-2013
- 3) Priority 3 = OSFL present 2000-2009, either present or absent during Atlas
- 4) Priority 4 = OSFL present in BOTH Atlas and 2010-2013

This prioritization scheme was designed to focus effort on sites that had the species during the early 1980s, since these would be the areas where range retraction would be easiest to document. Priority 2 quads were ranked highly in an effort to ensure thorough coverage of potential range. Priority 3 and 4 reflect different degrees of confidence in continued presence of OSFL, with the latter considered occupied and not in need of surveys during the new project. Quads were roughly evenly distributed among the four categories, with 40, 48, 24, and 35 in each (Priority 1-4 order). Figure 1 shows the distribution of quads and priorities across the state.

New Hampshire Audubon then created maps for all quads that showed general topography, major roads, and potential OSFL habitat (peatlands and wetlands). We then recruited birders through New Hampshire Audubon publications and the NH.Birds email list, and assigned them – when possible – Priority 1 quads for surveys (some Priority 2 and 3 quads were

also surveyed). Volunteers were encouraged to visit all areas of suitable habitat in their assigned quads at least three times in June and July, and record the presence or absence of OSFL. If birds were detected, they also recorded the number of individuals and any noteworthy behaviors. Observers were also asked to note the general habitat at each site in a quad, whether it had OSFL or not. After the 2014 surveys were completed, quads were re-assigned priorities to reflect recent data, and the same will happen once all data from 2015 have been received.

In 2014-15, a combined total of 19 observers conducted surveys in one or more quads, and additional supplemental data were obtained from eBird and other observers (the supplemental data were assigned to quads as before). Volunteer effort was higher in 2014 than 2015, and each year is summarized separately below.

In 2014, data of some sort were obtained from 35 Priority 1-3 quads, but OSFL detected in only 11. Of 16 quads in the southwestern part of the state (Cheshire, Sullivan, and western portions of Hillsborough and Merrimack Counties), only one had OSFL, and this was at the northern edge of the region. In contrast, the species was detected in six of 13 quads in central NH (Grafton, Belknap, and Carroll Counties) and five of six quads in Coos County. This pattern of decreasing occupancy to the south mirrors the range retractions seen in neighboring states and corroborates the hypothesis that the decline is a regional problem. Overall, the number of Priority 1 quads dropped from 40 to 25, with OSFL in only five of the 15 quads fully surveyed in 2014.

In 2015, data were obtained from 23 quads, but a significant percentage only received a single visit. For this reason, among others, surveys will continue in 2016, with a special focus on obtaining full coverage of the 2015 quads. As in 2014, OSFL occupancy was lowest in the southwestern portion of the state, and there were no detections in any of the four quads in this region (but note that most of these quads did not receive complete coverage). A single bird was detected in mid-June in a quad surveyed in 2014 that lacked the species, suggesting that additional effort in the southwest could still turn up OSFL. In central NH, single birds were found in two of 13 quads that were surveyed to some extent (again, some did not receive all three visits), a lower percentage than in 2014. Success was also lower in the north, where two of five quads had OSFL. These results may be supplemented with sightings from eBird, but at present I have yet to receive further details on several eBird reports.

If data from 2014 and 2015 are combined, occupancy is as follows:

- 1) Two of 19 quads in Southwest NH (10%)
- 2) 8-9 of 25 quads in Central NH (36%)
- 3) Seven of the 11 in Northern NH (64%)

Taken together, current data support the 2014 conclusion that OSFL has largely retracted from its historic range in southwestern New Hampshire, and also disappeared over significant portions of the central part of the state (Figure 2). With increased cumulative effort in the North, it appears that OSFL may be declining there as well, particularly in the southern half of Coos County. Efforts in 2016 will continue to focus on parts of Grafton County and southern Coos County where there are still several unsurveyed Priority 2 and 3 quads, as well as obtaining full coverage in several Priority 1 quads from 2015.

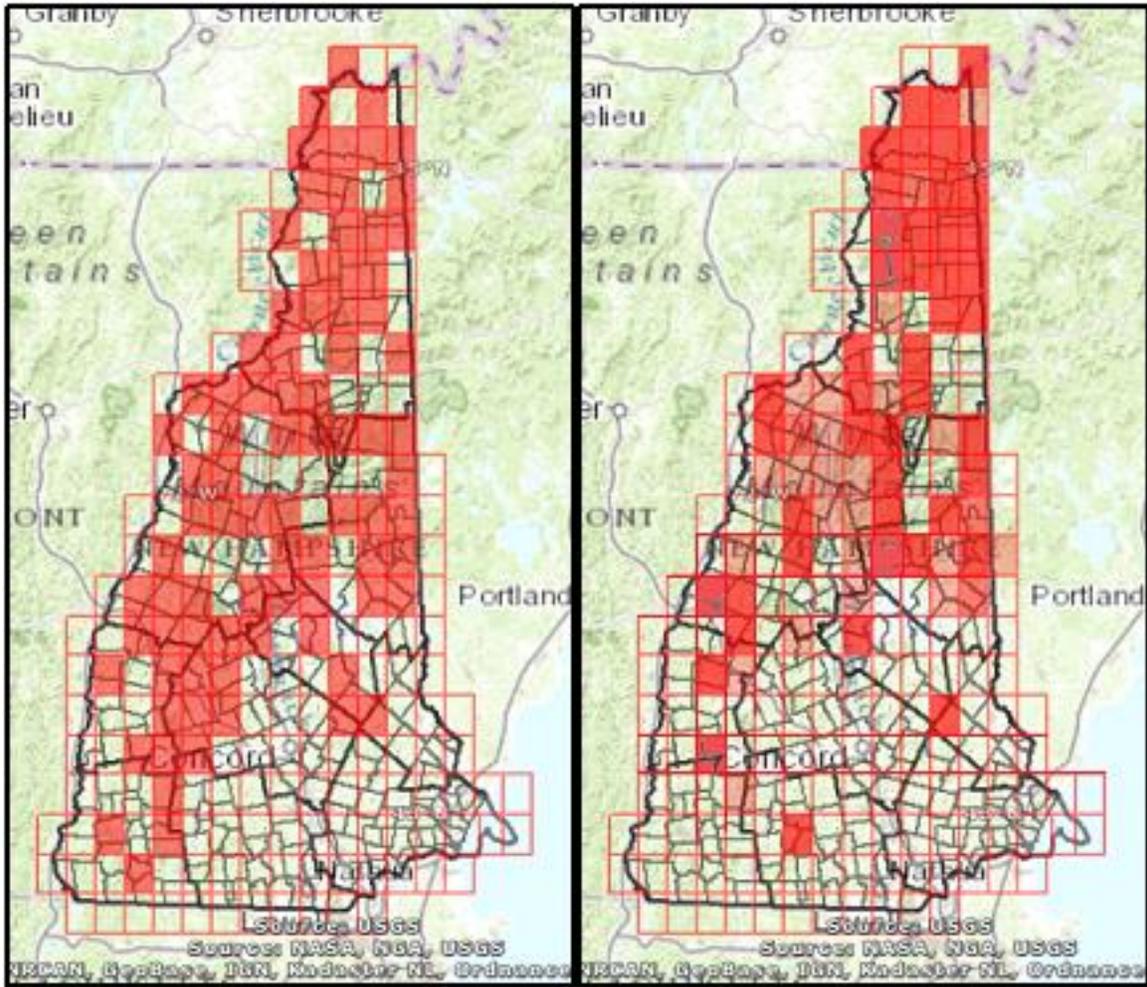


Figure 2. Comparison of Olive-sided Flycatcher range (by 7.5' survey quads) in New Hampshire during Breeding Bird Atlas (left, data from 1981-86) and since 2000 (right, darker shading indicates records since 2010). Data collected in 2014-15 informed the current range map.