

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

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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 in 2014). 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.

A total of 13 observers adopted one or more quads to survey, and additional supplemental data were obtained from eBird and other observers (the supplemental data were assigned to quads as before). In the end, 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.

Taken together, current data indicate a marked range retraction from the southwestern portion of New Hampshire (Figure 2), and potential losses in the central region. There was less effort in the latter in 2014 however, so more data are needed before making further conclusions. This project will continue into 2015, when effort will be directed to central New Hampshire and the north.

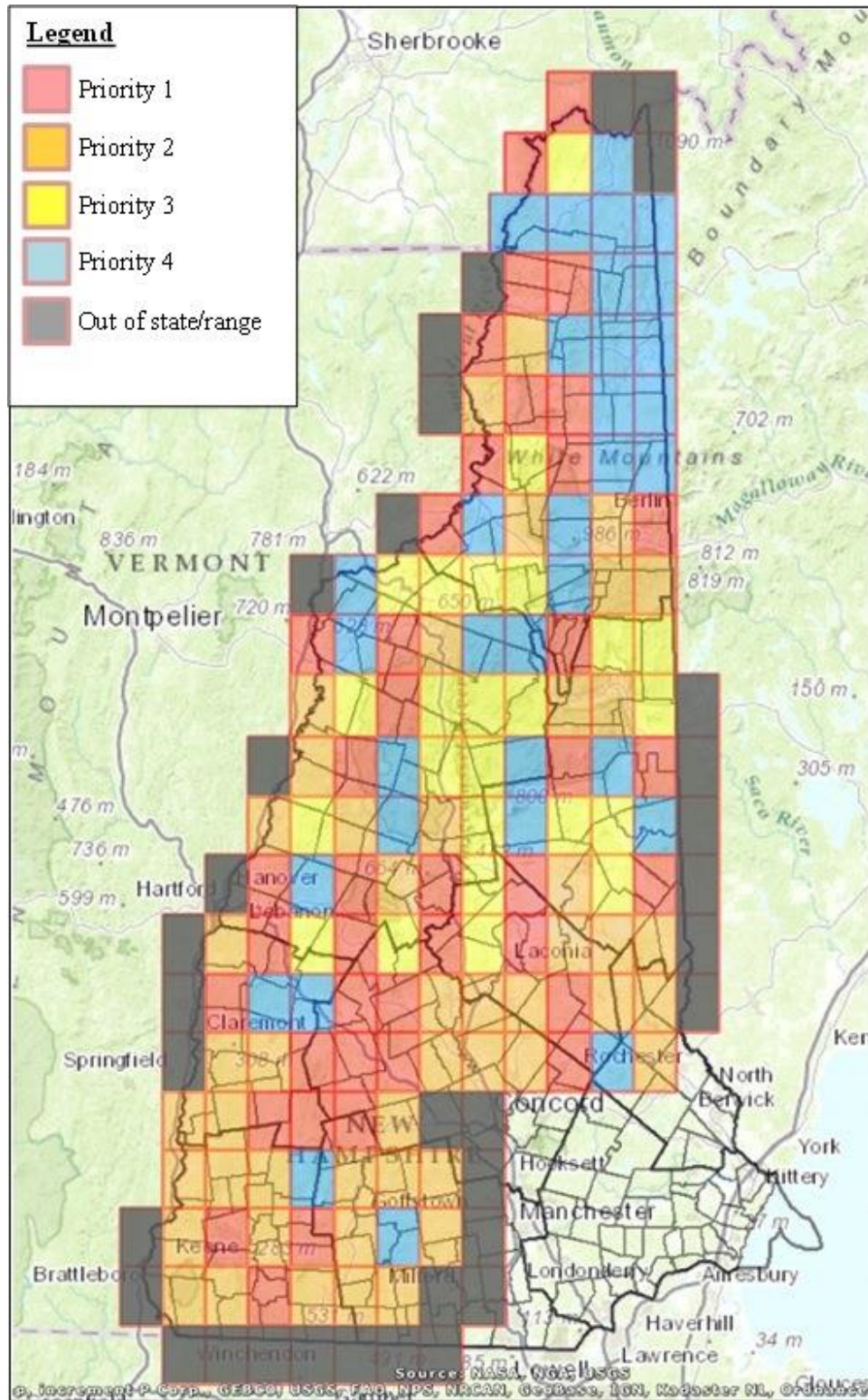


Figure 1. Map of Olive-sided Flycatcher survey quads in the BCR 14 portion of New Hampshire. Color coding indicates the survey priority of each quad at the start of the 2014 field season. See text for priority category definitions.



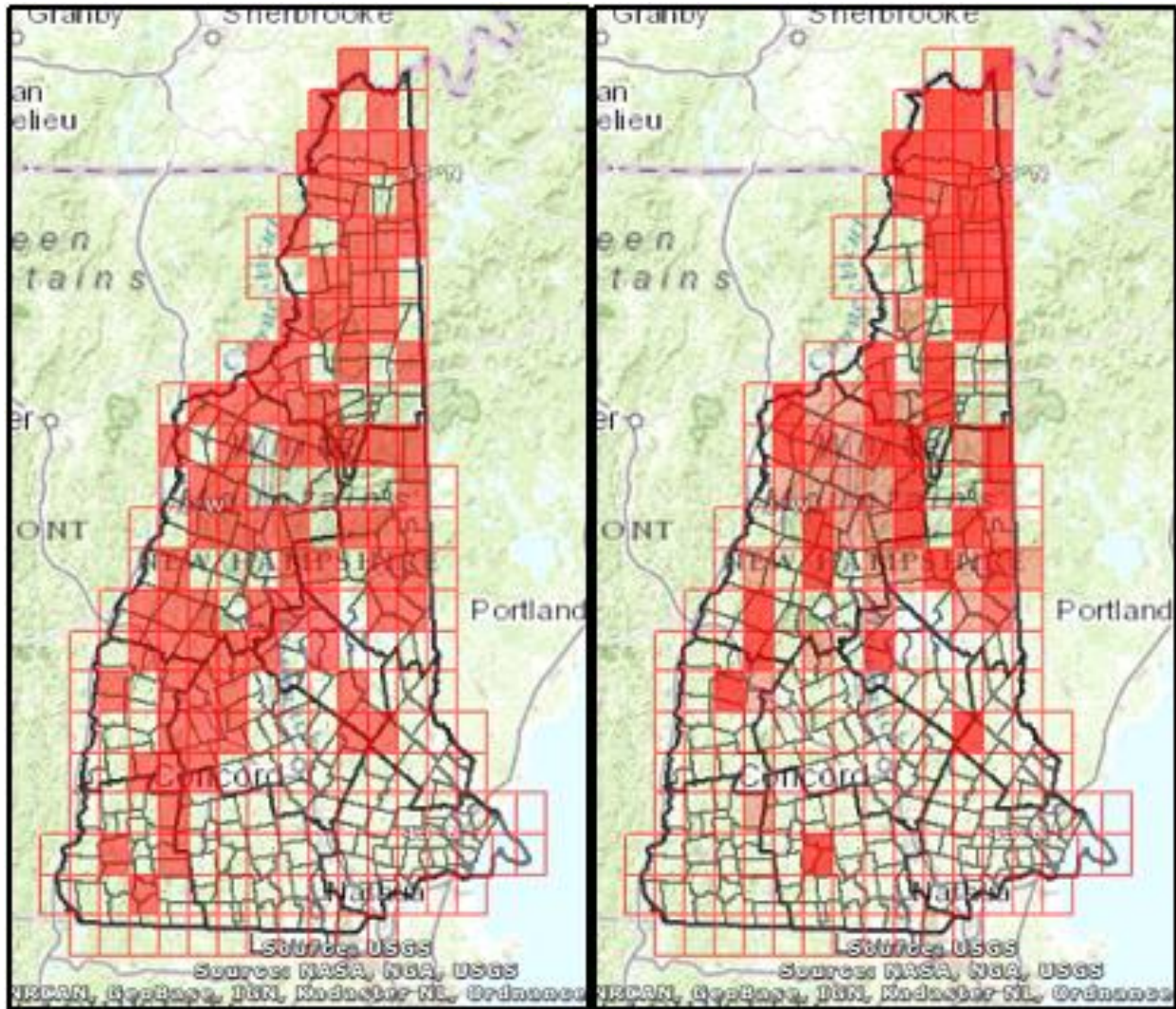


Figure 2. Comparison of Olive-sided Flycatcher range (by 7.5' survey quads) in New Hampshire during Breeding Bird Atlas (left, data from 1981-86) and since 2000 (right, darker shading indicates records since 2010). Data collected in 2014 informed the current range map.