

## OLIVE-SIDED FLYCATCHER

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### TAXONOMY

**Scientific name:** *Contopus cooperi* (Nuttall, 1831)

**Common name:** Olive-sided Flycatcher

**Family:** Tyrannidae

**Taxonomic comments:**

Formerly placed in monotypic genus *Nuttallornis* (AOU 1998).

Formerly known as *C. borealis*, but changed to *C. cooperi* following Banks and Browning (1995) and AOU (1997).



### DESCRIPTION

**Basic description:** A large flycatcher.

**General description:**

A rather large (18-20 cm) flycatcher, large-headed, with a proportionately shorter tail. Plumage is brownish-olive above (brownier on juveniles) with a dull white to yellowish throat, breast, and belly. The streaked or mottled chest patches are darker. Sexes are similar, but may be separable in the hand by wing chord length, 96-109 mm (females) and 103-117 mm (males) (Pyle et al. 1987); in Central Alaska, 97-104 mm (females; n=5) and 107-110 mm (males, n=6; Wright in Altman and Sallabanks 2000).

The juvenal plumage, "...essentially like the adult in color pattern, but darker above and brighter below" (Bent 1942), is acquired by a complete postnatal molt. Banders recognize a combination juvenal/hatching year plumage from June to November with "upperparts dark brown; wing bars distinct, brownish-buffy or brownish-white; [and] flight feathers relatively fresh" (Pyle et al. 1987).

An after-hatching-year plumage between January and October consists of grayish-olive upperparts, indistinct, pale grayish-olive wing bars, and worn flight feathers. From April to August, breeding males have a cloacal protuberance, and breeding females have a brood patch (Pyle et al. 1987).

**Diagnostic Characteristics:**

In the hand, can be separated from the wood-pewees (*Contopus sordidulus* and *C. virens*) by the longer (96-117 mm) wing, and from Greater Pewee (*C. pertinax*) by plumage, presence of tufted crest in Greater Pewee, tail length (75-92 mm in Greater Pewee), and by the horn-colored to blackish lower mandible (bright orange or orange and pink in Greater Pewee) (Altman and Sallabanks 2000).

**Length (cm):** 19

**Weight (g):** 32 (in Central Alaska: males 34.1 (31-36, n=6); females 30.7 (28-35, n=5) [Wright in Altman and Sallabanks 2000]).

**Reproduction:**

Courtship includes territorial fights between males, and males pursuing females across the canopies of coniferous forests. Courtship continues for at least two weeks until nest sites are chosen and pairing is completed (Bent 1942). Clutches normally of three (rarely four) (Harrison 1978, Altman and Sallabanks 2000); four in Central Alaska (n=10 first clutches; Wright 1997); 62% three eggs, 32% four eggs in Oregon (n=50 clutches; Altman 1999). Egg dates are 6-24 June in Ontario (Peck and James 1987), 9-27 June in New York, 14 June in Vermont (Fichtel 1985), 27 May to 29 July (n=154, Altman 1999), and 31 May-16 June for first eggs of 12 first clutches in central Alaska (Wright 1997). Renesting following loss of first clutch is common, second clutches may be smaller, three or even two eggs. The incubation period is 14-17 days in New York, 15-16 in Oregon (Altman 1999), 15-16 in Alaska with mean hatch date of 28 June (Wright 1997). Incubation is by the female. Nestlings leave the nest at 15-19 days (Harrison 1978). Most fledging occurs in early to mid July, though young from renesting efforts may fledge late in July. In New York State records of unfledged juveniles on 22 June and fledglings from 10-24 July, and in Oregon most young fledged in 19-21 days (Altman 1999). In Alaska fledging recorded at 19-20 days after hatching of first egg for 2 nests (Wright 1997). Singing behavior relative to nesting period is detailed in Wright (1997).

*Eggs:* creamy white, buff, or pink, and lightly wreathed on the broad end with brown or gray blotches (Harrison 1978).

*Nest:* a loosely formed cup of dead twigs, sticks and rootlets, often lined with arboreal lichens such as *Usnea*; constructed on branch of coniferous tree.

**Ecology:**

Considered an indicator species of the coniferous forest biome throughout North America, although occasionally found in mixed deciduous/coniferous forests. Usually territorial in non-breeding areas (Stiles and Skutch 1989) and may display strong year-to-year site fidelity on breeding (Wright 1997) and wintering grounds (Marshall 1988, Altman 1997). In a study of 16 insectivorous, aerially-foraging neotropical flycatcher species, including the Olive-sided Flycatcher, that are seasonally sympatric in the humid Caribbean lowlands of Costa Rica, Sherry (1984) found that migrants are more opportunistic while wintering than the syntopic year-round residents.

**Migration:**

Migrate regularly through most of the western U.S. and Middle America, less commonly in the eastern U.S., casually along the southern Atlantic coast and in peninsular Florida (AOU 1983), although Duncan (1988) found it to be a rare, but regular, fall migrant in extreme northwest Florida. Possibly because of their dependence upon flying insects as prey, these birds arrive rather late on their breeding grounds from South America. Spring arrivals appear during the second and third weeks of May in Vermont (Fichtel 1985) and even into June in neighboring New York (Bull 1974, Peterson 1988). Olive-sided Flycatchers are early fall migrants, usually rare after mid-September in New York. Arrive in nesting areas usually in May (or sometimes as late as early June); most depart northeastern U.S. by mid-September. Migrates through Costa Rica late August-late October and mid-March to early June (Stiles and Skutch 1989). Individuals often return to same wintering area in successive years. Present in Alaska from the middle of May to early September (Kessel and Gibson 1978); mean arrival date for males in Fairbanks for 1995 and 1996

was 24-26 May (range 11 May-8 June), with females arriving 7-9 days later (range 22 May – 10 June; Wright 1997).

**Food:**

Invertivore. Forages primarily by hovering or sallying forth, concentrating on prey available via aerial attack. Generally launches these aerial attacks from a high, exposed perch atop a tree or snag. Like others in the flycatching guild, this bird is a passive searcher, looking for easy to find prey, but is also an active pursuer, attacking prey difficult to capture (Eckhardt 1979, Terres 1980). The diet is made up almost entirely of flying insects, and this bird has a special fondness for wild honeybees and other Hymenoptera (Beal 1912, Forbush 1927, Bent 1942, Terres 1980). During breeding season in Central Alaska, most frequently preys on yellow-jacket wasps (*Vespulla* spp) and dragonflies (Odonata, *Sympetrum* spp and others) (Wright in Altman and Sallabanks 2000).

**Phenology:**

Diurnal.

**Habitat:****Global habitat:**

*Breeding:* In forest and woodland, especially in burned-over areas with standing dead trees, in taiga, sub-alpine coniferous forest and mixed coniferous-deciduous forest (AOU 1983). In Ontario, they nest in spruce or tamarack bogs, along the forested edges of beaver (*Castor canadensis*) ponds and rivers, and in burned-over forests (Cheskey 1987). In New York, however, where forest fires have been suppressed for much of this century, they favor small bog ponds and quaking bogs, swampy edges of lakes, marshy streams, backwaters of rivers, and beaver meadows. Most nesting sites contain dead standing trees, which are used as singing and feeding perches, and are bordered by forest (Peterson 1988). Birds also use small mountaintop ponds. Forests surrounding these sites are usually coniferous or mixed with deciduous trees. Black spruce (*Picea mariana*) is frequently mentioned as occurring at northern sites, and red spruce (*P. rubens*) at sites farther south, along with balsam fir, tamarack, and eastern hemlock (*Tsuga canadensis*) (Peterson 1988).

Nests are placed most often in conifers (Harrison 1978, 1979), on horizontal limbs from two to 15 m from the ground (Harrison 1979, Peck and James 1987). In Ontario, nests were found in black and white spruce (*Picea glauca*) (14 nests), jack pine (*Pinus banksiana*) (two nests), and balsam fir (one nest; Peck and James 1987). Adirondack nests were built on an outer branch from 7.6-13.7 m high in balsam fir or spruce (Peterson 1988).

*Non-breeding:* Includes a variety of forest, woodland, and open landscapes with scattered trees, especially where tall dead snags are present (AOU 1983). Primary habitat is mature, evergreen montane forest (Altman 1997). Migrants in Costa Rica occur almost anywhere, in exposed snags and open branches; in winter mostly around edges and clearings, or broken canopy of highland forest and semi-open areas (Stiles and Skutch 1989).

**State habitat:**

*Breeding:* Breeds in open coniferous forests, where temperatures tend to be cooler (Bent 1942, Pogson et al. 1999). Usually found in stands of open canopy spruce (*Picea glauca* and *P. mariana*). Associated with openings such as meadows, muskegs, burns, and logged areas and water (i.e.

streams, beaver ponds, bogs, and lakes; Altman 1997). In more northern latitudes, this species is associated with large expanses of boreal forest or taiga (Bent 1942, Pogson et al. 1999). In central Alaska, breeding territories were located in open needleleaf forest (Viereck et al. 1992), also described as scattered woodland/dwarf forest and coniferous forest by Kessel (1979). Territories often included patches of wetland, water, and meadows. Nests were placed in live coniferous trees, mostly spruce but occasionally larch (*Larix laricina*). Nest trees were slightly shorter than the surrounding canopy (Wright 1997). Nests were placed an average of 16.7 cm from the trunk in conifers averaging 6.4m tall, with nests located 7/10ths (average) up the nest tree (Wright 1997). Nests tend to occur higher in the western parts of the birds range (Pogson et al. 1999). In Fairbanks and Glennallen, Wright (1997) found 18 of 19 nests in spruce trees; nest heights averaged 6.4 m above the ground.

Regularly uses prominent dead or partially dead trees for perching, singing, and hawking. Singing perches were dominant spruce trees (averaging 1.4 times taller than surrounding canopy), usually white spruce, and more than 80% of perches were dead topped or completely dead trees. In central Alaska, perches averaged 1.4 times the height of surrounding tree canopy: 29% of perches were dead trees, 54% were partially dead (dead tops), and 18% were live.

## STATUS

**Global rank:** G4 (2000-11-02)

**Global rank reasons:**

Large breeding range in wooded areas of Canada, Alaska, and the western and northeastern U.S.; still secure in many areas, but a large, significant decline (a loss of 68% from 1966-2000) has occurred in recent decades, due probably to habitat changes in the breeding range and/or in migration and wintering areas.

**State rank:** S3S4B (2004-08-17)

**State rank reasons:**

Statewide population over 270,000 birds or about 25% of global population. Population declining -2.1% per year since 1980, paralleling nationwide decline. Occur at low densities throughout coniferous boreal and coastal forests; Alaska breeding habitats relatively pristine. Habitat potentially threatened by fire suppression and salvage logging practices associated with fires and spruce bark beetle infestations.

## DISTRIBUTION AND ABUNDANCE

**Range:**

**Global range:**

*Breeding:* Western, south and central Alaska, southern Yukon to southern Labrador, south to northern Baja California, Arizona, New Mexico, the Guadalupe mountains of western Texas, and central Saskatchewan south through central Minnesota, northeastern Ohio, and Massachusetts, locally in Appalachians south to Tennessee and North Carolina (AOU 1983, Altman and Sallabanks 2000).

*Non-breeding:* Mountains of South America, mainly in the Andes from Colombia and Venezuela to southeastern Peru; in small numbers in Central America and southern Mexico (AOU 1983, Stiles and Skutch 1989); also in Amazonian and southeastern Brazil (Willis et al. 1993).

**State range:**

*Breeding:* Breeds at low densities throughout the coniferous boreal and coastal forests of Alaska, including central, southcentral, southeast, and occasionally western Alaska (Armstrong 1995). Range extends to the northern and western extent of the coniferous forest as far as the Noatak River in the northwest, Bethel in the west, the Katmai area in the southwest, and in the northeast as far as the Colleen and Porcupine Rivers (Kessel and Gibson 1978).

**Abundance:**

**Global abundance:**

Total population estimated at 1,200,000, but suspected inaccurate (Rosenberg 2004a and b). Greatest densities occur in the Sierra Nevada, where 9.28 per Breeding Bird Survey (BBS) route are recorded on average (1966-2003; Sauer et al. 2004). Over the entire BBS survey area in North America, an average of 1.22 are recorded per route per year (Sauer et al. 2004).

**State abundance:**

Alaska population approximately 273,600 birds or about 25% of the estimated global population of 1,200,000 (Rosenberg 2004a and b, Wright 2004).

**Trends:**

**Global trend:**

North American Breeding Bird Survey (BBS) data indicate declines since 1966 across much of North American range; from 1966 – 2003, population has declined by -3.5% per year based on data from 776 routes (Sauer et al. 2004); significant overall decline of -3.6%/year from 1980 to 2003 (Sauer et al. 2004). Declines are relatively similar across range, although they appear to be more severe in the central and eastern regions of the continent (Sauer et al. 2000).

Until 1986, when 20-year analyses of BBS data became available, there appeared to be no detectable decline of this bird in North America. The lack of concern expressed by experienced field observers may have resulted from difficulty in detecting population trends for a species that is locally or patchily distributed even within the center of its range, and absent from vast expanses of apparently ideal habitat. In Ontario, for example, Cheskey (1987) found little evidence to suggest that the distribution or abundance had changed significantly within the past century. Abundance estimates suggest that this bird is thinly distributed throughout its range in the province, although it can reach densities of 100 pairs per sq km in some areas (Cheskey 1987). Trends in states in the Northeastern U.S. are discussed by Peterson and Fichtel (1992).

**State trend:**

North American Breeding Bird Survey (BBS) data indicate a statewide population decline of -2.1% per year from 1980 – 2003 based on data from 53 survey routes (Sauer et al. 2004). Rate of decline observed in Alaska is similar to that occurring nation-wide (Wright 2004); overall documented period of decline is shorter in Alaska due to lack of monitoring surveys prior to 1980.

## EXISTING PROTECTION

### Global protection:

Protected in several national, state, and provincial parks and refuges, but habitat management in such areas may not be compatible with conservation of this species.

### State protection:

Formerly listed as a Federal Species of Concern (category 2) by the US Fish and Wildlife Service (USFWS); also listed as a Species of Management Concern, USFWS Region 7 (Alaska), Alaska State Species of Special Concern, priority species for conservation on Partners in Flight National Watch List (Altman and Sallabanks 2000), and National Audubon Alaska WatchList species.

Habitat protected where species occurs in National Wildlife Refuges and National Parks.

## CHALLENGES

### Global challenges:

*Wintering habitat availability:* As a neotropical migrant that may spend only three to four months of the year on its North American breeding grounds, the flycatcher is at risk from deforestation on its wintering grounds in Central and South America. Forest land in Middle America is being cleared at a high rate (Terborgh 1980). In California, Marshall (1988) found that some forest birds breeding on Redwood Mountain in Tulare County in the 1930s were no longer present in the 1980s. Although portions of virgin sequoia (*Sequoiadendron giganteum*) forest within Kings Canyon National Park remained, the flycatcher had disappeared. Marshall (1988) speculated that the disappearance from suitable, unchanged habitat was caused by the destruction of corresponding forests in Central America, where these birds maintain their winter territories.

*Nesting habitat availability/quality:* Prefers openings with dead standing trees; these areas are naturally found near water (mountain tarns, backwaters of lakes and rivers, beaver flows), burns, and blowdowns. Many studies in western North America conclude that this species is more abundant in some types of logged forest (especially those with suitable structural features retained) than it is in unlogged stands (Altman and Sallabanks 2000). Fichtel (1985) felt that continued logging in Vermont probably created habitat by creating openings in the forest. Hall (1983) observed that recently lumbered and burned areas supported flycatchers in West Virginia. However, the continuing increase in availability of logged forest openings is at odds with the documented overall decline in numbers of this species. Perhaps logged forest, although attractive to flycatchers, is an 'ecological trap' (Altman and Sallabanks 2000) and is actually a low quality breeding habitat. This hypothesis is supported by preliminary study in western Oregon, where nest success was substantially higher in postfire habitat than it was in several types of harvested forests (Altman and Sallabanks 2000). Fire suppression throughout the breeding range undoubtedly limits the acreage of available habitat; large areas of dense, second growth forests growing up following cutting or fires are being maintained as closed canopy forests through intensive fire control. A likely threat to habitat in the southern Appalachians is acid precipitation and insect damage. A forest dominated by dead trees would not support these flycatchers (Peterson and Fichtel 1992).

*Other factors:* Pesticide applications to control blackflies, mosquitoes, or injurious forest insects could have a severe local impact upon the prey base of this flycatcher, both in North America and on its wintering grounds, but this hypothesis lacks documentation. A rare host to the brown-headed cowbird (*Molothrus ater*), with just three records of cowbird parasitism (Friedmann 1963, Terres 1980).

### **State challenges:**

Listed by Boreal Partners in Flight as an indicator species that could be affected by spruce beetle infestations, logging, and fire in southcoastal Alaska (Andres 1999). During the breeding season, may be closely associated with recently burned and, to a lesser extent, bark beetle (*Dendroctonus rufipennis*) infested forests. Fire suppression and salvage harvest as a result of beetle infestations may be detrimental to populations (Hutto 1995, Stone 1995), as this species often uses dead or partially dead trees to perch on while foraging. Fire suppression and logging limit the acreage of available breeding habitat. Salvaged/harvested stands may act as “ecological traps” that attract breeding birds because the forest openings they create resemble post-fire habitat. Unfortunately, nesting success in these openings is low compared to post-fire stands due to higher predator densities supported by adjacent live stands (Altman and Sallabanks 2000). The genus *Contopus* has the lowest reproductive rate of all North American passerines; lower survival resulting from increased predation could be detrimental to species survival (Altman and Sallabanks 2000). Known or suspected nest predators in Alaska include red squirrel (*Tamiasciurus hudsonicus*), marten (*Martes americana*), short-tailed weasel (*Mustela ermina*), and flying squirrel (*Glaucomys sabrinus*); avian predators may include Gray Jay (*Perisoreus canadensis*), Mew Gull (*Larus canus*), and Common Raven (*Corvus corax*) (Wright 1997).

## **RESEARCH AND INVENTORY NEEDS**

### **Global research needs:**

Even in Canada, where the flycatcher is considered widespread or fairly common, its distribution can be quite thin or widely scattered (Peterson and Fichtel 1992). The reason for the sparse occurrence in the far north is unknown, but lack of preferred prey, climate, or ancestral ranges may be factors. Whatever the cause, the limiting factor for the presence in the far north does not appear to be lack, loss, or destruction of habitat, although hydroelectric projects pose a possible danger. A better understanding of both the ultimate and proximate factors affecting habitat selection is needed. Site specific studies involving banding/color banding of individual birds are needed to gain information on movements, longevity, causes of mortality, and other aspects of the natural history.

A standardized wintering bird census network, which covers a variety of habitats, elevations and disturbance regimes throughout Central and South America and the Caribbean, is urgently needed. Although the flycatcher is known to winter over a wide area, census work could clarify whether the majority of the wintering population is concentrated in a particular region. Banding studies are necessary to reveal where specific breeding populations winter. Studies of winter habitat preferences should be undertaken to identify what management approaches are necessary to sustain populations on the wintering grounds.

**State research needs:**

Much of the knowledge about this species is anecdotal or incidentally acquired from multi-species projects (Altman 1997). Basic research is needed on species habitat requirements. Studies needed on the effects of forest disturbance from fires, insect infestations, and activities associated with salvage logging – the three potentially largest threats to this species in the state. Of particular immediate concern is the effect of the spruce bark beetle devastation in southcoastal Alaska, where breeding concentrations are relatively high. Effects of climate change on breeding habitat need study.

**Global inventory needs:**

Further information on winter distribution is needed. The BBS is apparently the only ongoing monitoring program that begins to adequately address monitoring needs. In some states flycatchers occur on too few BBS routes to allow a meaningful assessment of state population trends. Established BBS routes not presently being run within the bird's range should be reactivated to ensure continuity in the collection of population trend data. A study might also be made on Breeding Bird Census plots where the bird is known to occur. Such an effort might allow a better understanding of any changes detected, much as Hall (1984) did with other neotropical migrants in West Virginia.

Future state Breeding Bird Atlases should be coordinated to take place simultaneously in all states and provinces, using a common block size and mapping system, and universal codes for breeding criteria. This effort should attempt to survey all blocks in each state or province. A scale of abundance for each species within every block should be employed, as was done in Ontario (Cadman et al. 1987).

**State inventory needs:**

A catalog of nest sites and associated habitat descriptions is needed for Alaska. Long term population trend data is needed – maintain current participation in Breeding Bird Surveys (BBS). Although BBS may be the best method available to track statewide trends, BBS does not account for populations in roadless areas. Inventory of roadless areas needed, although this may be logistically unfeasible.

## CONSERVATION AND MANAGEMENT NEEDS

**Global conservation and management needs:**

*Management requirements:* In the northeastern U.S., known breeding areas should be managed by selective patch cutting or burning and also by retaining standing dead trees; maintaining beaver populations should result in the creation of favorable habitat conditions (Peterson and Fichtel 1992). In western North America, silvicultural practices should probably mimic natural disturbances; examples include clear-cuts that leave snags and some trees, and selection cuts. After a fire some standing, dead trees should be retained or some areas should be left unsalvaged. Trees to be retained should have varying heights, with some at or above the canopy of the surrounding forest (Altman 1997).

*Management programs:* There are currently no active management programs. Federal and state forest management programs, both on public and private lands, should be encouraged to

incorporate management practices such as patch clear-cutting and snag retention, which will benefit the flycatcher in regions where it currently breeds (Peterson and Fichtel 1992).

**State conservation and management needs:**

Identify critical breeding habitats and limit or manage salvage logging practices in these areas accordingly. After a fire, some standing dead trees should be retained or some areas should be left unsalvaged. Trees to be retained should have varying heights, with some at or above the canopy of the surrounding forest (Altman 1997).

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Life history and Global level information were obtained from the on-line database, NatureServe Explorer ([www.natureserve.org/explorer](http://www.natureserve.org/explorer)). In many cases, life history and Global information were updated for this species account by Alaska Natural Heritage Program zoologist, Tracey Gotthardt. All Global level modifications will be sent to NatureServe to update the on-line version.

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