

VIOLET-GREEN SWALLOW

TAXONOMY

Scientific name: *Tachycineta thalassina* (Swainson, 1827)

Common name: Violet-green Swallow

Family: Hirundinidae

Taxonomic comments:

Originally named *Hirundo thalassinus*.

Three subspecies recognized:

Tachycineta thalassina lepida breeds from Alaska and southwest Alberta to central Baja California and southern New Mexico, *T. t. thalassina* breeds on the Mexican plateau from southern Chihuahua to Oaxaca and Veracruz (but not on the east coast) and *T. t. brachyptera* breeds in Baja California and the coastal plain of southern

Sonora (Brown et al. 1992). The distinction between *lepida* and *thalassina* is questionable (Brown et al. 1992). See Sheldon and Winkler (1993) for information on intergeneric phylogenetic relationships of Hirundinidae based on DNA.



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DESCRIPTION

Basic description: A swallow.

General description:

Dark, metallic, bronze-green upperparts; iridescent violet rump and tail, the latter slightly forked. Underparts are white, extending to the ear coverts and almost encircling the eyes; also white patches on each side of the rump, sometimes connecting to form a continuous white band above the tail. Female coloration is less brilliant, more brown, especially on the head. Distinguished from the similar Tree Swallow (*Tachycineta bicolor*) by the Violet-green's shorter, less-forked tail, greener color above and white color almost encircling eyes (Brown et al. 1992).

Length (cm): 13

Weight (g): 14

Reproduction:

Egg laying begins May to early July in south, late-May in north. Clutch size is typically four to six eggs. Incubation, by female, lasts an average of 15 days. Altricial nestlings are tended by both parents; young leave nest between 23 and 24 days. Usually one brood per season, though two per season reported in Montana, Nevada and Oregon. May nest in loose colonies if nest sites are abundant (Brown et al. 1992).

Ecology:

Generally gregarious; usually feeds in flocks and may nest alone or in colonies; colonies as large as 20 pairs in a single dead pine have been reported (Brown et al. 1992). Colonies of three to 50 individuals in Alaska (Brown et al. 1992). Often competes for nest sites with introduced House Sparrow (*Passer domesticus*) and other secondary, non-excavating cavity-nesters including Mountain Chickadee (*Parus gambeli*), Western Bluebird (*Sialia mexicana*) and Western House Wren (*Troglodytes aedon*; Edson 1943, Franzreb 1976, Brawn 1990, Brown et al. 1992). Interspecific cooperation with nesting Western Bluebirds was reported near Corvallis, Oregon, in which swallows were observed defending the nest and caring for young bluebirds (Eltzroth and Robinson 1984). Breeding densities of 2.5 to 15 breeding pairs per 40 ha recorded in northern Arizona and up to 50 pairs per 40 ha in thinned forest with added nest boxes (Brawn and Balda 1988).

Migration:

Migrates northward from wintering areas March through mid-May; peak migration occurs in late March and April (Brown et al. 1992). Arrives in northern breeding areas between April and early May, departs in late July to August in the north, August and September farther south (Turner and Rose 1989, Brown et al. 1992, Semenchuk 1992, Sinclair et al. 2003). Early arrival date in Alaska is 8 May (Fairbanks), latest occurrence date is 22 August (Thomas Bay) (AOU 1983). See Brown et al. (1992) and Oberholser (1917) for early spring migration dates and late fall dates for the species.

Food:

Feeds on flying insects, especially of the orders Hemiptera, Diptera, Coleoptera, Hymenoptera and Lepidoptera (e.g., flies, leafhoppers, ants, wasps, bees, beetles, moths). Usually in small groups or loose flocks, forages over ponds, streams, fields, and wooded areas catching insects in flight (Beal 1918, Brown et al. 1992). Individuals may also forage on the ground; likely when aerial insects are scarce (Erskine 1984, Bent 1942).

Phenology:

Diurnal. Long-distance migration occurs in spring and fall.

Habitat:

Inhabits open coniferous, deciduous or mixed forest and woodland, primarily in highlands (frequently at low elevations in north); during migration and winter, also uses meadows, fields and watercourses, more commonly in highland regions (AOU 1983). Preferred nest trees are in open areas, e.g. open groves or woodland edges (Brown et al. 1992). Species is a secondary (non-excavating) cavity-nester, may nest in a crevice in a clay or rock cliff, natural tree cavity or hole in columnar cactus, woodpecker hole, crevice in building, or bird box; also reported to use old nests of Cliff Swallow (*Hirundo pyrrhonota*) or Bank Swallow (*Riparia riparia*) (Erskine 1979, AOU 1983, Brown et al. 1992, Houston 1999).

STATUS

Global rank: G5 (2Dec1996)

Global rank reasons:

Secure – widespread and abundant.

State rank: S4B (27Jun2006)

State rank reasons:

Widespread distribution. Alaska population estimated at >1.2 million birds, but Breeding Bird Survey data indicate a decline of 2.5%/year over the past 25 years. Population is considered stable across broader breeding range in North America. Reasons for the negative trend in Alaska are unknown. Threats are minimal and include nesting habitat loss as a result of timber harvest practices and adult mortality due to extremely cold weather conditions.

DISTRIBUTION AND ABUNDANCE

Range:

Global range:

Breeding: Yukon River valley in Alaska and central Yukon Territory and southwestern Alberta south through southern Alaska, British Columbia, southwestern Saskatchewan, Montana, southwestern South Dakota, northwestern Nebraska, to southern Baja California and northern mainland of Mexico, and through Colorado and western Texas (Bent 1942, Brown et al. 1992, Sinclair et al. 2003). Recent range extensions have been reported in the northeast part of range (e.g., Saskatchewan, Canada; Wright 1992, Houston 1999).

Non-Breeding: Central coastal and southern California, Mexico south regularly to Honduras, casually or accidentally to western Panama and Costa Rica (Terres 1980, AOU 1983, Stiles and Skutch 1989, Brown et al. 1992).

State range:

Breeding: Southern, southwestern and central Alaska; as far west as Kvichak and Innok-Iditarod areas, north to Fairbanks, in the valleys of the Yukon, Kuskokwim, and Copper Rivers, and likely on the Kenai Peninsula (Gabrielson and Lincoln 1959, Brown et al. 1992). Casual or accidental in the Aleutian Islands (Shemya, Unalaska; Brown et al. 1992) and reported rarely from St. Paul Island, Barrow and Nome (Bent 1942, AOU 1983, Johnson and Herter 1989, Kessel 1989).

Abundance:

Global abundance:

Global population estimate is 11,000,000 birds (Rich et al. 2004). North American Breeding Bird Survey (BBS) data estimate a relative abundance of 4.2 birds/survey route (n = 669) throughout the North American survey area between 1966 and 2005 (Sauer et al. 2005); 3.96 birds/route (n = 592) were reported for the same period in the United

States and 5.78 birds/route ($n = 77$) for Canada (Sauer et al. 2005). The BBS recorded 550 nests in Canada, all located in British Columbia (Erskine 1979).

State abundance:

Statewide population estimate is 1,200,000 individuals (11% of global population; Rosenberg 2004 a, b). Breeding Bird Survey (BBS) data for 1966 to 2005 estimated a relative abundance of 1.2 birds/ survey route ($n = 43$) in Alaska (Sauer et al. 2005).

Trends:

Global trend:

As a whole, population is apparently stable but has increased in northern plains states in the late 1980s and declined locally in Mexico over the past few decades (Turner and Rose 1989). Between 1966 and 2005 a stable trend of 0.6%/year ($P < 0.28$, $n=669$) was observed in BBS data survey-wide in North America, with an observed increase of 1.6%/year ($P < 0.19$, $n=77$) in Canada (Sauer et al. 2005).

State trend:

BBS data for Alaska indicate a non-significant negative trend of -2.5%/year ($P < 0.23$, $n = 43$) for the period 1980 to 2005 (Sauer et al. 2005).

EXISTING PROTECTION

Global protection:

In the U.S., all swallows are classified as migratory insectivorous birds under the Migratory Bird Treaty Act of 1918; it is illegal to take, possess and transport swallows or their nests, eggs and feathers, without a permit. Swallows are often protected under state regulations as well (Gorenzel and Salmon 1994).

State protection:

See Global protection comments.

CHALLENGES

Global challenges:

Threats include introduced nest-site competitors, nesting habitat loss, and sensitivity to extreme weather conditions. Introduced secondary cavity nesters, including the House Sparrow and European Starling (*Sturnus vulgaris*), threaten nesting success by competing for suitable nesting cavities; these species often begin nesting prior to the Violet-green sparrow, so they have an advantage in site selection (Bent 1942, Erskine 1979, Brown et al. 1992). Removal of snags may have a strong negative impact on the species. In northern Arizona's ponderosa pine forests, this species was exclusively reliant on snags for nest-site locations (Cunningham et al. 1980, Brawn and Balda 1988). Clearing of forest for settlement and agriculture removes natural nest sites, as do forest harvest strategies that remove snags (Erskine 1979, Brawn and Balda 1988). This species is sensitive to extremely cold weather and accompanying low insect activity; large numbers

of individuals have been found dead in emaciated condition after spring storms along migration routes (Bent 1942).

State challenges:

Threats include nesting habitat loss and sensitivity to extreme weather conditions, especially during migration. Timber harvest practices that clear entire patches of forest (i.e. clearcutting) remove natural nest sites, as do harvest practices which remove snags (Erskine 1979, Brawn and Balda 1988). Extreme cold weather and the accompanying lack of insect prey pose a threat to swallows migrating to nesting habitat in Alaska; large numbers of individuals have been found dead in emaciated condition after spring storms along migration routes (Bent 1942).

RESEARCH AND INVENTORY NEEDS

Global research needs:

Breeding biology and behavior need study. Research needed on the degree of competition with introduced species such as the House Sparrow and long-term impacts of competition on population abundance and distribution. Research also needed on the extent of ecological overlap with the Tree Swallow, which shares breeding habitat (ADFG 2005).

State research needs:

Conduct research and/or analyses of existing data to identify key nesting habitats, habitat attributes, and local areas that support high densities of the species during breeding and migration. Determine factors that may be contributing to the observed decline. Determine if the population decline is linked to habitat loss (ADFG 2005).

Global inventory needs:

Continue participation in the BBS and other monitoring surveys.

State inventory needs:

Maintain current participation in the BBS. Examine independent data on trends from migration stations, other breeding surveys such as the Off-road Breeding Bird Survey, and demographic monitoring to determine if declines are evident in areas not sampled in the traditional roadside BBS (ADFG 2005).

CONSERVATION AND MANAGEMENT NEEDS

Global conservation and management needs:

Forest harvest strategies that preserve snags and leave some standing live trees should be employed in high density breeding areas to aid in conservation of nesting habitat. Provision of artificial nest boxes may also compensate for removal of natural nest sites. Exclusion programs for introduced House Sparrows may also improve nesting success. Where possible, populations should be monitored to accurately determine population size and trends, and to relate trends to forest harvest strategies and House Sparrow exclusion strategies.

State conservation and management needs:

Develop map of known breeding areas and identify important or threatened habitats. Forest harvest strategies that preserve snags and leave some standing live trees should be employed in high density breeding areas to conserve nesting habitat. Provision of artificial nest boxes may also compensate for removal of natural nest sites. Conservation and management efforts should continue to focus on monitoring abundance and trends and determination of breeding habitat requirements (ADFG 2005).

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Acknowledgements

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