Rufous Hummingbird

(Selasphorus rufus)

Rufous Hummingbirds are a signature nectar migrant of the Pacific Flyway. They are tiny, copper birds that leave the pine-oak forests of western Mexico each February, follow the California coast, nest from the redwood fringe of northern California through the Douglas-fir slopes of Oregon and Washington to spruce hemlock forests in British Columbia and southeastern Alaska, and then return south by early autumn. Their annual 7,800-mile loop is the longest body-length migration yet measured in any bird, and it ties the conservation of temperate rainforests, interior montane meadows, and Neotropical cloud forests into one biological story. (All About Birds).

Continental conservation status

- **IUCN / BirdLife International** *Least Concern*, but the global population (~22 million breeding adults) is declining (Birdlife International, 2024).
- **Partners in Flight Watch List** Yellow "Declining" watch-list species; long-term continental loss estimated at >60 % since 1970 (Partners in Flight, 2024).
- U.S. Fish & Wildlife Service Birds of Conservation Concern 2021 Listed for the Northern Pacific Rainforest (BCR 5), Northern Rockies (BCR 10), Great Basin (BCR 9), and several Pacific-island BCRs, elevating the species for proactive management (USFWS, 2021).

Recent population-trend signals along the Pacific Flyway

- eBird Status & Trends (2012-2022) show a median -14.5 % cumulative decline in relative abundance across the breeding range, with the steepest losses concentrated in the coastal Douglas-fir province and Cascades foothills. The decline for the Grays Harbor area ranges between -11 and -31% over the decade, with a -17% decline in the region that includes Westport Light State Park (Fink et al. 2023)
- North American Breeding Bird Survey (1966-2022) corroborates a long-term annual decline of RUHU, with roughly 2–3 % in Bird Conservation Regions 5 (Western Washington); equivalent to a 65 % loss since the early 1970s. Those numbers are echoed in the 2024 analysis below (Jefferys et al, 2024).
- A 2024 peer-reviewed study that back-cast Landsat imagery across 36 years found a **54 % reduction in modeled breeding habitat for RUHU on the Pacific coast**, tightly linked to BBS route-level declines (Jefferys et al, 2024).

Key drivers of decline

In the moist coastal belt, decades of intensive timber rotations have shortened the window of early-seral, flower-rich openings that Rufous Hummingbirds prefer for nesting and foraging. Widespread herbicide use to suppress deciduous shrubs further depletes nectar and insect resources. Climate change compounds this by advancing peak bloom 10–20 days. Arriving birds

now face phenological mismatch, and drought-driven floral failures on the south-bound leg through California's montane meadows reduce pre-migration fattening. On the wintering grounds, land-use conversion in Mexico is erasing mid-elevation pine-oak foraging sites. Together, these pressures create a full-annual-cycle bottleneck, with juvenile recruitment emerging a likely reason for population declines (Jefferys et al, 2024).

Current conservation architecture along the Flyway

- Western Hummingbird Partnership (WHP) Coordinates a hemispheric action plan that unites U.S. federal agencies, Mexican NGOs, Tribes, and provincial ministries around habitat restoration, pollinator-friendly forestry prescriptions, and citizen-science monitoring. (Gillespie et al, 2020)
- **Pacific Birds Habitat Joint Venture** Uses "nectar corridor" modelling to steer conifer-harvest openings, right-of-way plantings, and post-fire seeding toward suites of native penstemons, lupines, and *Castilleja* that bloom sequentially along the migratory path (Gillespie et al. 2020).
- State Wildlife Action Plans
 - Washington lists the species as "Sensitive Vulnerable/Declining" (S-rank S4B), triggering voluntary forestry best-management practices that retain flowering shrub cover in early rotations (WADNR, 2024).
 - The 2025 Draft Washington State Wildlife Action Plan includes Rufous Hummingbird on the list of Species of Greatest Information Need as details about the status of this species in Washington isn't well-understood and there is evidence of declines of this species across its migratory range. (WDFW, unpublished draft)
- USFS & BLM Early-Seral Pollinator Initiatives Pilot projects on the Siuslaw, Mt. Hood, and Mendocino National Forests leave clumped canopy gaps and limit broad-spectrum herbicides, increasing Rubus, *Salmonberry*, and *Ceanothus* cover critical to pre-fledging females.
- **Tipping Point Species** Rufous Hummingbird are on national conservation watch lists due to dramatic declines, including on the State of the Birds 2022 "Tipping Point" species list (Partners in Flight, 2024) which underscores the need for immediate conservation action.

Outlook

The Pacific Flyway still supports roughly 8–10 million Rufous Hummingbirds each summer but modelling from Audubon's *Survival by Degrees* project suggests that, under an unchecked 3 °C warming scenario, as much as two-thirds of the current coastal breeding range could become climatically unsuitable by 2080, forcing the species into patchier interior refugia (National Audubon Society, 2023). The good news is that many of the management tools that benefit early-seral forest birds, native pollinators, and wildfire-resilient landscapes simultaneously bolster hummingbird habitat.

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Olive-Sided Flycatcher

(Contopus cooperi)

Continental conservation status

- IUCN / BirdLife International *Near Threatened*, but the global population (~1.9 million breeding adults) is declining, about a 79% decline since 1970 (BirdLife International, 2020)
- **Partners in Flight Watch List** Yellow "Declining" watch-list species (score D); Steepest losses of any western forest aerial-insectivore on the list (Partners in Flight, 2025).
- U.S. Fish & Wildlife Service Birds of Conservation Concern 2021 Listed for the Northern Pacific Rainforest (BCR 5), Northern Rockies (BCR 10), Great Basin (BCR 9), and several adjacent BCRs, elevating the species for proactive management on Federal lands. (USFWS, 2021)

Recent population-trend signals along the Pacific Flyway

- eBird Status & Trends (2012-2022) show a median -22 % cumulative decline in relative abundance in the Grays Harbor area (Fink et al., 2023)
- Breeding Bird Survey (1966-2022) Numbers of OSFL have fallen by 79% since 1970. The species rates a 13 out of 20 on the Continental Concern Score and is on the Yellow Watch List for declining populations (Sauer et a, 2014).

Key drivers of decline

• Loss of post-fire & early-seral structure — Olive-sided Flycatchers rely on tall snags in recent high-severity burns for nesting and aerial foraging. Salvage logging removes those snags and shortens the seral window, so the highest occupancies are now confined to the few burns that retain untouched snag cores.

• Ecological traps — Clear-cuts and selectively harvested stands offer plenty of perches, but insect prey densities are lower and predator exposure is higher, leading to roughly half the nest success recorded in natural burns (Robertson, 2012).

• Wintering-ground deforestation in the Andes — About 85 % of the species' montane-forest winter habitat has been cleared or degraded, eroding food resources and driving full-annual-cycle declines identified by species recovery plans.

• **Global insect decline & phenology mismatch** — Shrinking aerial-insect populations, combined with earlier spring green-up, leave adults with food gaps during brood-rearing. Phenology models have shown earlier bloom timing and reduced insect biomass on the flycatcher's Pacific arrival.

• Climate-driven fire-regime change — Hotter, larger fires can create suitable snag structure, but aggressive post-fire salvage or rapid replanting often remove those snags within a few years. Vulnerability assessments note increasing fire-weather extremes as a growing threat.

Current conservation architecture along the Flyway

- **Pacific Birds Habitat Joint Venture** Promotes "snag stewardship" guidelines that retain ≥ 12 large snags / ha after wildfire and suspend salvage in 15 % of high-severity polygons to secure flycatcher nesting cores.
- Interagency Fire-Bird Working Groups (USFS, BLM, NPS) Integrate snag-density targets and leave-tree clumps in Burned Area Emergency Response (BAER) plans. There are current pilot sites on the Klamath, Siskiyou, and Okanogan-Wenatchee forests.
- State wildlife action plans
 - Washington lists the species as "Apparently Secure Vulnerable" (global rank G4, state rank S3B) triggering voluntary forestry best-management practices that retain flowering shrub cover in early rotations (WADNR, 2024)
 - The 2025 Draft Washington State Wildlife Action Plan includes Olive-sided Flycatcher on the list of Species of Greatest Information Need as details about the status of this species in Washington isn't well-understood and there is evidence of declines of this species across its range. (WDFW, unpublished draft SWAP)
 - Oregon and California both treat the the OSFL as a Strategy Species, emphasizing snag retention & fire-regime restoration (OR and CA SWAPs).
- **Tipping Point Species** Olive-sided Flycatchers are on national conservation watch lists due to dramatic declines, including on the State of the Birds 2022 "Tipping Point" species list (Partners in Flight, 2024) which underscores the need for immediate conservation action.

Recommended conservation actions

- Retain large snags and stump-sprouting hardwoods in at least 15–25 % of burn units; delay salvage > 5 yrs where possible.
- Use variable-density thinning (rather than clear-cutting) to create scattered canopy gaps with residual snags in second-growth stands.

Outlook

Despite drastic historical losses, modelling suggests that maintaining snag-rich, early-seral habitat across a mosaic of recent fires and variable-density harvests, along with support of insect populations, could halt declines within two flycatcher generations (~10 years). Progress hinges on balancing post-fire economics with structural retention and connecting that effort to winter-range forest conservation in South America.

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